



Installation and User Instructions
For 12 / 24 Volt DC Compressor
Refrigerators & Freezers fitted with
SECOP / Nidec - **BD35 & BD50**

Issue 21: 150618

MODEL:

SERIAL No.:

**PLEASE READ CAREFULLY
BEFORE INSTALLING**

- **THIS APPLIANCE IS INTENDED FOR USE ON BOATS OR VEHICLES ONLY. IT IS NOT DESIGNED FOR HOUSEHOLD USE.**
- **THIS APPLIANCE MUST NEVER BE LAID DOWN ON ITS BACK OR SIDES, OR TURNED UPSIDE DOWN.**
- **THIS APPLIANCE MUST BE ALLOWED TO RUN FOR AT LEAST 6 HOURS FROM STARING BEFORE LOADING WITH FOODS TO ENSURE CORRECT COOLING OPERATION.**
- **IT IS RECOMMENDED THAT THIS APPLIANCE IS INSTALLED BY A COMPETANT MARINE OR AUTOMOTIVE ELECTRICIAN.**

INTRODUCTION -

Thank you for choosing SHORELINE for your mobile cooling needs. This appliance is manufactured using the very latest 'low-energy' compressor technology. To ensure that this appliance consumes the least amount of DC power, we ask you to read these instructions carefully before installing.

• CLEANING YOUR APPLIANCE -

Your appliance is easy to keep clean. Regular cleaning is important for health reasons.

Exterior: Use a good wax polish, which will clean and polish the appliance in one easy application. Do not use an aerosol polish as the spray may damage or discolour plastic parts.

Interior: Before using for the first time, and before reusing after a period on not being used, the interior of your appliance should be wiped with a cloth dampened with a solution of one teaspoon of Bicarbonate of Soda to one litre warm water and dried thoroughly.

DO NOT use soaps, wire wool, scouring powders or disinfectants of any type.

• POSITIONING -

To operate correctly and efficiently, your appliance must have sufficient air ventilation around the rear; sides and top, to ensure the free flow of heat generated from the compressor and condenser during the cooling operation. This is most important on those models with 'side skin' condensers; i.e. if it has no black pipe-work on the rear exterior wall of the appliance.

Position the appliance on a level floor using the adjustable front levelling foot where fitted, and allow at least 25 mm clearance above, to each side, and to the rear to provide sufficient air gap between the appliance and the adjacent galley walls. Re-position any interior shelves or storage trays correctly to ensure vibration free operation.

Important - DO NOT OBSTRUCT the top or rear of the appliance or the condenser heat will not be able to escape and overheating could occur. This will result in excessive running periods of the compressor and reduce the life of your appliance.

Remember - Better air flow means shorter running periods and lower energy consumption.

• **CONNECTION -**

Your appliance can be powered from either a 12 or 24 Volt DC supply. Once connected to the power, the compressor electronic unit will automatically calibrate to the applied voltage.

Warning - Connection direct to a 240-Volt AC mains power supply will result in irreparable damage to the compressor electronic control unit.

Your DC power connection must be made to the terminals marked + and - at the top of the electronic control unit.

Note - If the DC wires are reversed in their polarity then the appliance will not operate - refer to the Data Sheet at the rear of this booklet for correct polarity.

Only models fitted with an internal light are supplied with short RED and BLACK cable tails ready for connection to the battery supply cable. These are supplied with an LED interior lamp that works on both 12 & 24 Volt.

Caution – The interior lamp is connected directly off the DC battery feed. If the light is allowed to be on for long periods, i.e. the door left open, this could cause overheating of the lamp and the surrounding lamp housing.

A fuse rated for 15 Amp (Max) for 12-volt installations, or 7.5 Amp (Max) for 24-volt installations, must be fitted to the POSITIVE lead from the battery to protect the appliance. To allow power isolation of your appliance, a switch rated for 20 Amp (12 volt) switch, or 10 Amp (24 volt) should be fitted close to the appliance.

• **CABLE SIZES -**

Connection from the battery to your appliance should be made using a cable size selected from the chart below:

CABLE SIZE		CABLE LENGTH (metres) (distance from battery to fridge)	
AWG	(MM2)	12 Volt	24 Volt
12	2.5	2.5	5
12	4	4	8
10	6	6	12
8	10	10	20

A Copy of the Danfoss Compressor Motor Data Sheet can be found at the back of this booklet for your reference.

- **BATTERY PROTECTION –**

To protect your battery from any permanent damage, your appliance is fitted with an automatic low voltage cut-out protector. This will cut the power supply to the appliance if the battery voltage falls below the limit stated below:

	Cut-out	Cut-In
12 volt	10.0 volts	11.2 volts
24 volt	22.0 volts	24.4 volts

In addition, your appliance is fitted with a RED low-voltage LED alarm warning light. This is either mounted into the thermostat housing, the top facia, or behind the interior lower storage container. This indicator is continually OFF during normal operation. If the battery voltage falls below the limits stated above, this indicator will begin to flash once every 4 or 5 seconds to warn that the battery supply is low and that the appliance is no longer running.

Warning - Low voltage limits are to be measured at the compressor electronic control unit. Beware of voltage drop over long cable lengths and through any cable connections and isolation switches of insufficient rating. Other electrical equipment, i.e. water pumps, should NOT be installed along the same cables supplying the appliance as low-voltage tripping can occur when these are switched on.

- **APPLIANCE OPERATION –**

The cold control or thermostat can be manually adjusted from position 1 (WARMEST / FULLY ANTI-CLOCKWISE) to position 5 or Higher (COLDEST / FULLY CLOCKWISE). It is recommended that a position somewhere between 1 and 3 is most suitable. Allow your fridge or freezer to operate for at least six hours from starting before loading with foods to ensure its correct operation.

To achieve the optimum storage temperature for your food products, refrigerators should hold an average internal temperature of +5°C, and freezers and freezer compartments below -12°C. If your appliance is holding temperatures colder than these recommended settings, the appliance will be running unnecessarily. In ambient temperatures approaching +32°C the motor compressor will be running for longer periods.

Note - Correct storage temperatures inside the appliance cannot be ensured in ambient temperatures warmer than +32°C.

Note - These 12/24 Volt DC freezers are designed to store pre-frozen foods, not to freeze down large quantities of fresh foods. Expect the motor compressor to run for very long periods without cutting off if you attempt to freeze quantities of fresh foods.

Caution: If the room temperature drops below +16°C the freezer section in two-door fridge/freezers and refrigerators with freezer compartments may begin to defrost and may reduce the life of your frozen foods

Caution: If the room temperature starts to rise above +25°C the motor compressor will begin to run for longer periods and consequently require more battery power. Room temperatures above +30°C could result in correct storage temperatures not being maintained inside the appliance.

If you intend to leave the appliance operating for longer periods in cold weather we suggest you remove the contents of the freezer compartment. The refrigerator section will continue to operate normally within correct storage temperatures.

You may notice some unusual noises particularly if the fridge or freezer is placed in a quiet location. Most of these are perfectly normal, but you should be aware of them. *Gurgling, Whooshing*: these are the noises caused by the circulation of the liquid refrigerant in the cooling systems. These types of noises have become more pronounced since the introduction of CFC free gases. This is not a fault and will not affect the performance of your refrigerator or freezer. *Humming, Purring or Pulsating*: This is the compressor motor working as it pumps the refrigerant around the system.

• DEFROSTING -

It is necessary to regularly defrost your appliance in order to ensure efficient operation. The frost build up in the freezer compartments should not exceed 6 mm in thickness before defrosting. Use a PLASTIC scraper to keep the frost build up to a minimum. Freezers should be defrosted when the ice build-up becomes greater than 10mm.

Before starting, ensure your food products are stored temporarily in an insulated container to minimise any temperature rise, particularly any frozen products. DO NOT re-freeze frozen foods if they have defrosted.

To defrost your appliance, isolate the power to your appliance. Allow the defrost water to collect in plastic tray (where fitted) beneath the ice compartment. When defrosting is completed, remove the drip tray, empty the water, and wipe dry and put back into its normal position.

Larder refrigerator models and the refrigerator section in fridge/freezers will defrost automatically. You will notice frost or ice or water droplets down the inside back wall – this is normal. This moisture will drip out of the drain hole into the evaporation tray mounted above the motor/compressor unit at the rear. It is important to keep food stuffs and food containers clear of the rear wall and to keep the drain hole clear using a proprietary pipe cleaner, or the pipe stick if provided.

Caution - Do not use sharp instruments to remove frost build-up as this could result in damage to the cooling plates or shelves.

- **AFTER SALES SERVICE –**

In the unlikely event of you experiencing problems with your appliance, please refer to the attached electrical fault analysis sheet. If you require any additional service information, contact your installer or you may contact Shoreline at the address below, **quoting your appliance model number and serial number as displayed on the inside of your appliance.**



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