COLD CAR

Isothermal and refrigerated bodies

GB

Instruction manual

CE

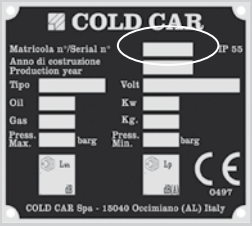
COLD CAR

index

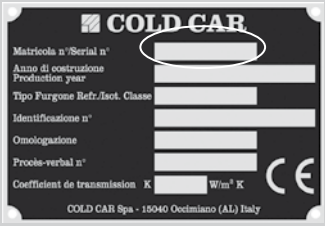
Read this instruction manual carefully before using the refrigerated body

FOR THE ISOTHERMAL BODIES EQUIPPED WITH AIR-BLOWN REFRIGERATING UNIT FOLLOW THE ENCLOSED MANUFACTURER INSTRUCTION MANUAL OF THE REFRIGERATING UNIT.

This instruction manual is designed to aid in the understanding of the Bodies and facilitate correct usage and maintenance for optimum performance. In order to safeguard proper usage, this manual also contains information related to risks and problems that the user may experience. This manual must be preserved and kept legible for future reference.



Identification plate fixed to the Cold Car refrigerating unit



Identification plate fixed to the body

In the event of a malfunction, contact your local engineer, provide a copy of this manual and request that it be consulted prior to attempting repairs. If the body is still under warranty, call your COLD TRADING Assistance Service. You will need to provide the serial number which is found on the plate affixed to the refrigerating unit and on the outside of the body. The serial number is essential for proper service.

COLD TRADING
Via A.Grandi, 19 - 15033 Casale Monferrato (AL)
Tel. +39 0142.462 011 - Fax. +39 0142.462001
www.coldcar.it - info@coldcar.it

GENERAL CONDITIONS OF WARRANTY

The isothermal body and the refrigeration system produced by Cold Car are covered by warranty for a period of twelve (12) months from the date of delivery or shipment of goods. During this period Cold Car will repair by its facility or by appointed service centers specifically authorized, or replace those parties who, for construction defects, or workmanship, prove ineffective. Shall be borne by the Buyer all incidental costs, for example, transportation to and from the repair location, the fees, packaging, etc.. which may be required to undertake warranty repairs. Any inspections required by the Purchaser will be at the expense of the same. Warranty does not cover defects and problems arising from poor maintenance, as well as those resulting from misuse, abuse made by the Buyer. Any delays in repairs, arising from any cause, do not entitle the Buyer to claim any compensation or extending the warranty period. It 'also excluded compensation for damaged food transported or stored in the products sold by Cold Car.

The Cold Car is in any case released from all further liability for incidental or consequential damages caused to the Buyer or third party, including, for example, higher costs, lost profits,

downtime, damage of the image. Any limitation of liability contained in these conditions General fails to act in cases of intent or gross negligence of the Cold Car.

NOTE
The term 'eutectic evaporator' is used to indicate the eutectic plate or eutectic beam. The word 'Body' is used to indicate the isothermal or refrigerated box. You will also find references to hazardous situations and the need for personal protective equipment in the following order of severity:

WARNING	WARNING	DANGER	3CARS
Reference that indicates a potentially dangerous situation that could cause damage or the machine's malfunction.	Reference that indicates a potentially dangerous situation that could cause injury and/or damage to property, persons and the environment.	Reference that indicates a potentially dangerous situation that could cause injury and/or damage to property, persons and the environment.	ATTENTION Procedure modified in presence of 3CARS control system. ***See Chapter. 8.3***.

1.0 USER'S SAFETY STANDARDS

The safety devices and parts that have been installed by Cold Car must not be removed or modified. Otherwise Cold Car assumes no responsibility for any damage to property or persons.

Repairs must be carried out only by qualified personnel.

Any modifications to the body (inner volume, opening dimensions, modifications or additions of bulkheads etc.) that may affect the regular performances of the body (under ATP regulations) must be authorized by Cold Car, otherwise manufacturer's responsibility decays and it is replaced by the owner's.

WARNING:

- Do not remove the protection cover of the refrigerating unit. This should be performed only by qualified personnel.
- Do not open the electric control panel unless the power supply has been previously disconnected.
- Do not carry out operations on the motor-compressor unless the power supply has been previously disconnected.
- Do not open the junction boxes containing the electrical connections unless the power supply has been previously disconnected.
- Do not touch the electric fan, unless the power supply has been previously disconnected and the blades have stopped turning.

DANGER:

- In the event of repair or maintenance of the refrigerating circuit, absolutely avoid or take necessary actions to reduce to a minimum the dispersion into the environment, the inhalation and the contact with the refrigerating fluid and/or oil contained in the system. Recover as much as possible any dispersed or spilled material and dispose of it in accordance with the requirements of applicable laws.
- In the event of leakage of eutectic solution from the evaporator (eutectic plate or beams) avoid dispersion in the environment, inhalation and contact with goods or persons. Recover as much as possible the eutectic solution and dispose of it in accordance with applicable laws.
- Do not enter the body unless absolutely necessary for repairs or cleaning. Do not enter the body without confirming that the refrigerating system is off and leave at least one door open. Ensure that personnel authorized to enter the body have suitable individual protection equipment, including but not limited to protective gloves, non-slip shoes, suitable clothing, etc.

WARNING:

- The right-hand door should be opened with the right hand, and the left-hand door should be opened with the left hand.

1.1 REFRIGERATING SYSTEM SAFETY STANDARDS

WARNING: NON-COMPLIANCE WITH THE FOLLOWING INSTRUCTIONS COULD CAUSE SERIOUS DAMAGES TO THE MOTOR-COMPRESSOR

Do not change the calibration of the pressostat. This device is vital for the safety of the refrigerating system. It has been calibrated to shut down the motor-compressor when excessively high or excessively low pressure values are reached that could damage the components of the system. Modification of the pressostat calibration that controls the systems with dual-speed electric fans could cause malfunction of the fan.
If the motor-compressor makes an irregular knocking noise when the refrigerating unit is started – especially when the body is hot – immediately activate the selector switch that temporarily stops the motor-compressor (see starting instructions). Press the safety button or selector switch repeatedly at regular intervals until the motor-compressor runs normally.
In case of start-up of the refrigeration unit with very high ambient temperatures (especially in premises with little air circulation), it may cut in the high pressure switch causing several stops and starts of the refrigeration unit. In these cases, you must check the proper cleaning of the condenser, remove the refrigerating unit cover and possibly moving the vehicle in more ventilated or cool areas.
When defrosting or before a prolonged stoppage/inactivity of the body, the refrigerating unit must be stopped by means of the PUMP DOWN function (see stop instructions). This avoids possible damage to the motor-compressor for the next starting procedure (water hammer), because the refrigerating gas is restricted within the receiver.

1.2 DIRECTIVE CE 852/2004 “HYGIENE PACKAGE” OF HACCP SYSTEM (Hazard Analysis and Critical Control Points)

“The bodies used for the transport of perishable foodstuffs must be kept clean and regularly mantained in order to protect food from contamination.”

1.3 EC REGULATION NO. 842/2006 REGARDING THE REDUCTION OF EMISSIONS OF GREENHOUSE GASES IN ACCORDANCE WITH THE KYOTO PROTOCOL

The bodies are excluded from the scope of this Directive (Art.10). However Cold Car is aware of the needs and priorities of preserving the environment on the subject of the “global warming”. In effect the fluorinated gases (HFC), contained in the cooling system, although in small quantities, are partly responsible of this “global warming”.
Therefore we invite our users to have the same attention during the entire life cycle of the equipment, in particular: to prevent any refrigerating liquid leaks, by frequent controls (at least once a year), to limit any extent of gas leaks, making them promptly repaired, to recover all the liquid contained when the equipment ends its life. These operations must be carried out by qualified personnel for proper handling and use of the refrigerants as required by law.

N.B.: the end user must check the application of the Rules in force in the country where the body is put into service.

Applicable only to bodies not installed on vehicles

WARNING: OPERATIONS ARE TO BE CARRIED OUT ONLY BY QUALIFIED PERSONNEL

2.0 HANDLING

- **With overhead crane:** When using the overhead crane, make sure to use a large lifting frame in order to ensure that the straps do not apply pressure on the upper edges of the body. The straps have to go through the openings of the side doors

In some cases, our bodies are equipped with lifting bolts on the lower part of each side: in this case, use 8.8 M18x110mm bolts in the threaded housings leaving them protruding by at least 70-80 mm.

WARNING lift the load very slowly, making sure that the load remains parallel to the ground. The points where the cables come into contact with the body must be protected with suitable materials to ensure the weight does not damage the body.

- **With Fork-Lift Truck:** Ensure that the fork-lift truc k has sufficient lifting capacity and that the forks are sufficiently long. Approach the side of the body as near to the middle as possible, with the fork open approximately one meter. While lifting, the forks must rest on the side members of the body's sub-frame. Take care not to damage parts of the body. Lift slowly from the ground making sure that the load is correctly balanced.

WARNING: If lifting bodies without a sub-frame, the tips of the forks must not come into contact with the floor of the body as this could cause damage.

2.1 TRANSPORTATION

Bodies that are not installed on vehicles are securely fixed to two or more metal stands when leaving the factory. These stands are positioned at the front, rear and the central part of the body floor. The base of each stand must be secured to the transport vehicle by riveting metal, wooden or aluminium wedges to the platform to prevent the load from moving horizontally. One or more ratchet straps must be placed over each body to prevent lateral movement.

WARNING: Place protective material at the contact points of the straps. Do not over-tighten the straps as that may damage the body.

Applicable only to bodies not installed on vehicles

2.2 INSTALLATION

All bodies manufactured by Cold Car have been designed to be installed on a specific vehicle. Both mechanical and electrical installation must be completed by a certified technician and in compliance with the instructions provided by the manufacturer of the vehicle. Cold Car supplies a kit with each body that includes materials and instructions for installation.

In case of disinstalling the body from first chassis cab to another it is advisable to contact our service department in order to work out the operation in the proper way. In case of non-conforming installation, Cold Car disclaims any liability for any damages.

2.3 MACHINE IDLE (to be carried out by the user)

The following instructions must be carefully followed for all bodies that remain idle even if only for a few days:

- Disconnect the power supply cable of the body.
- Defrost and clean the inside of the body, ensuring it is completely dry and that any build-up of water or condensate is removed.
- Open at least one door on each side of the body while it is idle to prevent the formation of mold.

WARNING: Do not leave the machine idle for more than 60 days without performing a complete refrigerating cycle. Failure to observe this requirement could cause serious damage to the system and invalidates the warranty period on all components of the refrigerating system.

Figure 1

Figure 2

Standard selector

Selector for Scroll compressor

Figure 3

INTRODUCTION: Our bodies are designed to maintain the temperature of the products (frozen or fresh) at the loading temperature level. The system is not suitable for refrigerating products that are warmer than the temperature required for correct preservation.

3.0 LOCATION

The refrigerated vehicle must be located in a well ventilated place to ensure good air circulation.
Heat sources must be kept away from the refrigerating unit.
Avoid starting the body in confined areas or close to reverberating surfaces – these conditions increase noise levels and reduce the performance of the machine.

CHAP. 3 use instructions

3.1 INSPECTIONS PRIOR TO STARTING

Check that the voltage of the power supply is the same as the rated voltage of the evaporator unit (a voltage tolerance of ± 10% is accepted).
Check that the user's power supply system has been made in accordance with the law and equipped with a neutral wire (where required).

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3.2 STARTING (see page 42)

1) Insert the power supply socket into the plug on the body making sure that the start selector is in the "**0**" STOP position (figure 1-2).

2) According to the selector type, start the refrigerating system by turning the selector from position "**0**" to position "**I**" (figure 2).
If the motor-compressor makes an irregular knocking noise, turn the selector back to the "**0**" STOP position, and repeat the operation at regular intervals until the knocking stops (Figure 2).
For refrigerating units with SCROLL type compressors and/or 3CARS Control System, the starting procedure does not require any particular precautions. The starting of the latter is electronically managed and occurs through impulses which increase in frequency so as to avoid the problem described in the previous point.

3) Once started, check that the refrigerating unit electrofan rotates in the correct direction. Air has to be drawn from the outside directly toward the condenser. If the fan is not rotating correctly, the main power supply cable must be disconnected and the contact inside the plug on the body must be turned with a flat screwdriver. This warning does not apply to refrigerating units equipped with SCROLL type compressors with monophase electrofan (figure 3) 3CARS Control System.

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3.3 DUAL TEMPERATURE BODIES

A switch is located on the control panel to bypass the function of the positive compartment if not in use. During distribution the ventilation compartment must be switched on by means of the switch placed close to the vehicle commands. The compartment may be provided with a heater to try to keep the temperature above 0°C/32°F. The heating resistor operates only when the cable is connected to the mains.

The temperature in these applications is controlled by a digital thermostat that maintains it in the set values. In case of need, the user can vary the parameters of the temperature by the following procedure: Press and release the "SET" button until the display shows "SP1", press again "SET"; at this point the display will show the temperature setting; press the UP and DOWN (« ») keys to change the setting with the new desired temperature and press the "FNC" key to confirm the change.

CAUTION: changing the temperature values is to be carried out with caution as incorrect setting may damage the product stored inside the compartment.

WARNING: If the switch is left off during transportation, the temperature in the compartment may be unsuitable for product storage.

3.4 OPERATING TIME

To solidify the eutectic solution inside the evaporators, the refrigerating system must be run until the thermostat shuts off. Do not place products into the body until this has occurred. This operation must be performed after each full defrost cycle.
On average, 8 to 10 hours are needed for the necessary charge for daily operation of the unit. Before starting daily operations, it is necessary to ensure that the temperature is correct. If the temperature is not correct, the body cannot be used and the cause of the malfunction must be found. The manufacturer is not responsible for damage to products due to the malfunction of mechanical parts, electrical parts, the absence of electricity, and/or the imprudent use of the body itself.

WARNING: NEVER ALTER THE ORIGINAL SETTING OF THE THERMOSTAT!

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3.5 SYSTEM STOP

The system can be stopped in the following ways:
1) Manual stop

- **The selector** is placed in the "**0**" STOP position for an immediate stop of the refrigerating unit (emergency stop).
- **The selector** is placed in the PUMP DOWN (if present). In this case the motor-compressor will continue to run for a short time to allow the refrigerating liquid to be stored in the receiver.

WARNING: When the motor-compressor is stopped in PUMP DOWN (if present), if the selector is not turned to the "**0**" STOP position, the refrigerating unit could start again.

2) Automatic stop
When the temperature inside the body reaches the thermostat selection, the system will stop temporarily and starts again as the temperature level increases.

WARNING: Before moving the vehicle, make sure that the power supply cable has been disconnected from the electrical supply socket and from the refrigerating unit.In case of remote refrigerating unit, a buzzer informs the driver of failure to disconnect the fast coupling system

3.6 AUTONOMY OF THE REFRIGERATING BODY

Note that the autonomy of the unit is strictly related to the way in which the body is used. For optimal daily use we recommend:

- Limiting the time the doors are opened.
- Introduction of products at operating temperature only.
- Rotating the goods frequently so that the first loaded is always the first unloaded.
- Defrosting frequently, avoiding excessive build-up of frost on the eutectic evaporators.

WARNING: When loading products, the refrigerating unit must be off.

CHAP. 4 defrosting

The defrosting of a body is essential to always have a good efficiency of the refrigerating plant.
A monthly periodical defrosting allows you to:

- Preserve the compressor and its duration;
- Reduction of the lubricating oil in the refrigerant;
- Reduction of energy consumption;
- A better preservation of the product to consumers

Defrost type:

1. Natural Defrost: when returning back from the deliveries unload all the remaining goods and connect the unit to the mains. Turn the switch to PUMP DOWN "I" (figure 2 pag. 10) till the automatic stop of the refrigerating unit. Turn the switch to "0" STOP position again (figure 2 pag. 10) after the compressor stops after the PUMP DOWN. Leave all side doors open until all the ice on the evaporators will be gone.

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2. Reverse Cycle Defrost (**Please note that this defrost system works only with AL2 eutectic evaporators**) when returning back from the deliveries unload all the remaining goods and connect the unit to the mains. Leave all side doors open then turn the switch to defrost, after 45/50 minutes of functioning the evaporators will be completely deiced and the refrigerating unit will automatically stop after the PUMP DOWN.

3. Defrost with Forced air (**only for mid-temp bodies or bodies with a positive temperature compartment**): when returning back from the deliveries unload all the remaining goods and connect the unit to the mains. Turn the switch to PUMP DOWN "I" the fans of the positive compartment will run to facilitate the defrost of the evaporators that are located behind the plate cover. To stop the fans bring the switch in STOP position "0". Leave the side doors open until all the ice is completely defrosted.
Please note that bodies with rear doors are provided with magnetic sensors that prevent the fan to run when rear door is open.

WARNING: OPERATIONS ARE TO BE CARRIED OUT ONLY BY QUALIFIED PERSONNEL

5.0 AFTER THE FIRST 1.000 Km ON THE ROAD

- Check and, if necessary, tighten the bolts on all external accessories including the refrigerating unit.
- Check and, if necessary, tighten the connections between the body and the sub-frame.
- Check the connection between the sub-frame and the chassis cab – particularly the left and right front “flexible” and “fixed” fastenings.

BODIES WITHOUT SUB-FRAME

- Check and, if necessary, tighten the fastening bolts of the body to the chassis cab.

5.1 MONTHLY (to be carried out by the user)

- Grease the hinges and handles.
- Clean the condenser **(avoid directing the high-pressure water lance on it).**
- Check the tightness seal doors.
- Remove possible build-ups of ice on the seals of the doors using a plastic scrapper.
- Check that the internal and external lighting of the body are working correctly.
- Completely defrost the refrigerating system.

WARNING: The thicker the ice on the eutectic evaporators the lower the efficiency of the evaporator itself. Thereby there is an increase in the operating of the refrigerating unit, increase in electrical consumption and the premature failure of the motorcompressor time.

5.2 YEARLY

- Check the seal of the rubber gaskets and if necessary adjust the doors.
- Check for possible oil leaks.
- Check for possible gas leaks.
- Make sure that the electrical junction boxes are perfectly closed.
- Check the oil level of the motorcompressor.
- Check that the thermometer is working correctly.
- Check that the pressostat is working correctly.
- Make sure that the sub-frame is correctly secured to the side members of the truck.
- Make sure that the body is correctly secured to the sub-frame.
- Make sure that the refrigerating unit and the footboards are correctly secured to the body.
- Change the refrigerating system’s dehydrator filter located on the refrigerating unit. For versions with filter on the intake line, replace this filter too.

WARNING: The replacement of the filters is extremely important for the correct functioning of the refrigerating system. A new filter retains the acidity and impurities that have formed during the functioning, and as time passes these functions diminish and the impurities that were previously detained, are once again circulated with negative consequences for the function and the duration of the refrigerating system’s parts.

BODIES WITH OR WITHOUT SUB-FRAME

- Check and, if necessary, tighten the connections of the body to the chassis cab (if necessary change unsuitable parts).
- Check the first right and left double “elastic” fittings and the “fixed” fittings inside and outside the side members.

BODIES WITH BUILT-IN OR EXTERNAL REFRIGERATING UNIT

- Make sure the fastenings of the motorcompressor to the base of the refrigerating unit are correctly tightened.

CHAP. 6 electrical system

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INTRODUCTION

The electrical system is protected against short circuits and against possible increase of the motor's full load amperes by means of a magnetothermal switch set to the motor's maximum load amperes. When the refrigerating unit is switched on, the solenoid valve is powered first (green LED on) and the motors will start after a few seconds (motor-compressor and motorfan). All electrical specifications of your body are detailed in the system diagram enclosed with the present manual.

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6.0 CONTROL PANEL

The control panel includes:

- Master plug for connection to the power supply.
- General start switch "**O/I**".
- Motor-compressor emergency stop switch (where present).
- On indicator light.
- Overheat cut off switch capable of isolating the power supply sources for the heating resistors on the compartment doors "**O/I**" (where present).
- Overheat cut off switch with relevant reset button capable of isolating the power supply sources.

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6.1 ELECTRICAL RESISTANCES (where present)

An electrical heating resistor is located on the external edge of the door openings. It is protected by stainless steel edges and powered at low voltage by a special transformer placed in the refrigerating unit compartment or externally below the body.

WARNING: If it is necessary to leave the heating resistor on, the unit must be connected to the power supply, leaving only the magneto thermal switch of the resistors on.

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6.2 INTERNAL LIGHTING SYSTEM

The internal light of the body is supplied by interior LED lights powered by the vehicle's battery with 10W lamp or LED lights. The on switch with warning light indicating that the interior lights are on is positioned in the control zone inside the cabin of the vehicle.

WARNING: The lighting system should not be left on when not in use as this could cause the vehicle's battery to complete discharge or die.

6.3 ELECTRICAL TROUBLESHOOTING SYNOPSIS SHEET

DANGER: Never open the control panel unless the power supply socket has been disconnected. All electrical equipment is protected against accidental contact. Do not use tools that are not insulated. In the event of failure of the refrigerating unit, the first checks that the user must perform are:

- Change the power supply cable.
- Change the normal connection location.

These tests should be performed to exclude possible problems caused by the electrical power supply. If the problem persists, a qualified engineer must be called to diagnose the fault with the following criterion:

WARNING: OPERATIONS ARE TO BE CARRIED OUT ONLY BY QUALIFIED PERSONNEL

N°	VERIFIED FAULT	PROBABLE CAUSE
1	**Motor-compressor hums but doesn't run. After a short period the motor's safety magneto thermal switch trips.**	1) Missing phase. 2) Motor-compressor with interrupted winding. In this case the electric fan turns. 3) Check integrity of fuses.
2	**Motor-compressor doesn't run and the motor's safety magneto thermal switch trips when power is switched on.**	1) Short circuited winding. 2) Check integrity of fuses.
3	**Motor-compressor runs for a few minutes, stops and starts again after a short period.**	1) Possible activation of the high pressure side pressure switch. 2) Possible activation of the low pressure side pressure switch.
4	**The door resistors do not heat.**	1) Check if the bipolar magneto thermal switch is in the OFF position. 2) Check integrity of fuses.
5	**One of the door resistors does not work.**	1) Disconnection between the heating cable and connection terminals.
6	**The electric fan does not turn.**	1) Electric motor failure. 2) Starting or run condenser burnt out (if single phase electric fan is present). 3) The contacts of the Danfoss KP5 pressure switch are defective (if a dual speed electric fan is present). 4) Check integrity of fuses.
7	***OPTIONAL: motor compressors with temperature control (PTC/KRIWAN).*** **The refrigerating unit stops.**	1) High temperature in the motor-compressor or electronic card failure.
8	***OPTIONAL: dual temperature body.*** **The internal air circulation electrofan not turn.**	1) No power supply, check the power supply fuses. 2) Electrofan failure. 3) Thermostat failure or incorrectly adjusted.

WARNING: In case of intervention first consult the wiring diagram provided in the enclosure to this manual.

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7.0 CALIBRATION OF THE REFRIGERATING SYSTEM

The bodies leave our production plant tested and adjusted; therefore no further adjustments are required. Below is the original calibration table in the event a control may be necessary or for extraordinary maintenance. **Never modify the original parameters** because this could have a negative effect on the functioning and the safety of the system.

WARNING: THE MODIFICATION OF THE ORIGINAL PARAMETERS WILL ANNUL THE EFFECTS OF THE WARRANTY AND OF THE MANUFACTURER'S RESPONSIBILITIES FROM EVENTUAL DAMAGES

CALIBRATION OF THE SAFETY ACCESSORIES OF THE REFRIGERATING UNIT

LOW TEMPERATURE REFRIGERATING SYSTEM		
	CALIBRATIONS	
Pressure switch	HIGH PRESSURE	Max.28/29 bar Differential: 3 bar (fixed)
	LOW PRESSURE	- 06.bar Differential: 0,5 bar
Starter regulating valve (KVL)	Operating pressure with **HOT SYSTEM**: 1,0/1,2 bar	

N.B.: In case of replacement of other components, such as thermostats, it is advisable to keep the original setting.

7.1 INTRODUCTION

Before making any sort of components replacement or opening the refrigeration circuit for controls it is necessary to defrost the evaporators to avoid any moisture formation in the circuit and an accumulation of refrigerant gas in the evaporators. It is recommended not to make unnecessary refilling of refrigerant gas before determining the leak and have it repaired. To detect the faults of an incorrect operation of the refrigerating plant, always use the manometers and never speak hypothetically. We suggest to replace always the drying filter whenever action is taken to the replacement of one or more components of the refrigerating plant. (for example thermostatic valves, eutectic evaporators etc.), and always return (if any) the copper truncated gaskets.

WARNING
For the replacement of the refrigerating system's internal parts, the body must be defrosted and at an ambient temperature so as to avoid the infiltration of humidity into the system.

7.2 SYNOPTIC TABLE OF FAULTS RESEARCH IN THE REFRIGERANT PLANT

WARNING: OPERATIONS ARE TO BE CARRIED OUT ONLY BY QUALIFIED PERSONNEL

N°	VERIFIED FAULT	PROBABLE CAUSE
1	**The motor-compressor starts and stops.** ***a) Excessive high pressure.***	1) Condenser dirty. 2) Poorly ventilated and hot environment or electrofan failure. 3) Starting regulating valve (KVL) open too much. 4) Excessive gas in the system. 5) Incorrect electric fan rotation (if three-phase fan is present).
2	**The motor-compressor starts and stops.** ***b) Insufficient low pressure with intervention of the pressure switch.***	1) Dirty filters or orifices of the thermostatic valves. 2) Starting regulating valve (KVL) excessively closed. 3) Thermostatic valve discharged. 4) Insufficient gas due to a leak.
3	**The motor-compressor runs continually without stopping.**	1) Thermostat malfunction or defective. 2) Eutectic evaporators have too much frost. 3) Introduction of products at temperature over the operating temperature. 4) Worn motor-compressor.
4	**The temperature within the body is insufficient.**	1) Excessively frosted eutectic evaporators. 2) Thermostatic valves set incorrectly (excessively closed). 3) Defective thermostatic valves or openings closed.
5	**The motor-compressor is idle with the body not at temperature.**	1) Defective solenoid coil or solenoid valve.
6	***OPTIONAL: bodies with positive com partment.*** **The internal ventilation does not work.**	1) No power to the electrofan or defective fuses. 2) Defective electrofan. 3) Incorrectly adjusted or defective thermostat.
7	**Too cold temperature in the positive compartment**	1) Faulty or incorrectly adjusted thermostat.

8.0 MANUAL CENTRAL LOCKING

The body can be equipped with central locking of the side doors by means of a manual control positioned on the outside of the front bulkhead. The control handle is equipped with a locking cylinder with a related key that allows blocking of the handle in two positions. When the handles is locked, the key can be removed:

- downward “vertical” position (central locking “on”),
- “horizontal” position towards the external edge of the body (central locking “off”).

POSSIBLE PROBLEMS WITH THE MANUAL CENTRAL LOCKING

VERIFIED FAULT	PROBABLE CAUSE	REMEDY
Difficulty in unlocking (turning the central locking handle into the horizontal position).	One or more side doors incorrectly closed.	Check which of the doors is not correctly closed and close them correctly.
Difficulty in locking (turning the central locking handle into the vertical position).		

WARNING: NEVER FORCE THE CENTRAL LOCKING HANDLE IF DIFFICULT TO TURN. FIND THE CAUSE OF THE PROBLEM.

8.1 REMOTE ELECTRIC CENTRAL LOCKING SYSTEM

On request, the body can be fitted with electric central locking of the doors, with electric device positioned in each handle. If present, the central docking system can be supplied with electric piston (motor unit) or pneumatic piston (connected to the chassis cab air system).

Supplied remote control

BUTTON “A”: door locking and internal light off (if on).
BUTTON “B”: door unlocking.
BUTTON “C”: internal light on.
BUTTON “A+B”: internal light off.

WARNING: Before locking the hatches with the remote control, make sure that all locks are closed properly. Replace the remote control battery every 2 years.

In the event the central locking is blocked in the locked position, unlocking can be performed manually using the supplied key as follows:
1) Insert the key into the lock.
2) Turn the key fully clockwise and then counter clockwise; this should be done without applying excessive force on the key.
3) Open the door.

WARNING: Avoid directing high pressure water jets on the doors handles.

8.2 REMOTE REFRIGERATING UNIT

Bodies with remote refrigerating unit have the same functions as described in the previous points; nevertheless, particular attention must be given to the connection and disconnection of the unit.

1) Remove the protective cover of the fast coupling device on the body by means of the release lever, after having pressed the red button (figure 1-2).
2) Make sure that the unit's control panel is disconnected from the power supply, and check that both are clean and there is no dampness (if necessary remove any contaminants)
3) Insert the remote coupler so that it coincides with the related guides (figure 3).
4) After having pressed the red button, manoeuvre the lever until it clicks (figure 4).
5) Start the unit (see 3.2).
6) RELEASE: press and hold the red button and pull the lever straight towards you with a fluid motion without interrupting the run.

⚠ **WARNING**: do not force with mechanical tools; if the release seems to be difficult, check the cause of the malfunction.

Figure 1

Figure 2

Figure 3

Figure 4

⚠ **WARNING:** Do not change out the refrigerating units with other bodies, keep the snap couplings always clean and away from humidity.

⚠ **WARNING:** When starting the vehicle, if the snap coupling is still connected to the refrigerated body, a buzzer will sound

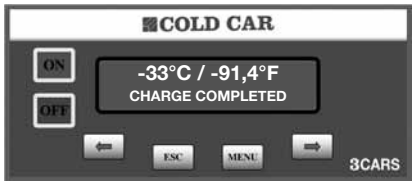
8.3 3CARS

START

Body connected to the mains with refrigerating unit to be started
The lit display shows the inner room temperature, presence of power with an acoustic alarm.

To start press ON
The unit will start with a delay of 10 seconds to grant the control of the tensions and the phase sequence. At the end of suchtime the unit will start by impulses (refrigerating unit starting and turning off in sequence for a maximum of 8 minutes) if necessary. If the electric phases are out of the operating range it will be displayed "NETWORK FAILURE" and the refrigerating unit will stop. Note: If the ignition key of the vehicle is in the ON position the refrigerating unit will not start. If the ignition key of the vehicle is turned in the ON position while the refrigerating unit is running the display will show "CABLE" but will not stop the refrigerating unit.

Refrigerating unit started
It will be shown the message "IN CHARGE". After it will be displayed the graphic bar that shows the charging level, or the complete freezing of the eutectic solution.



Charge completed
It will be shown the message "TOTALLY CHARGED" when the temperature is reached.

8.3 3CARS

AUTOMATIC STARTING selectable from the menu list – WHERE PRESENT

From the menu list “Start mode” select the key “Start by Power” by means of menu key.
When the body is connected to the mains the starting will be automatic.

STOP

Stop
Press the OFF key before unlatching the plug from the mains. If the plug is unlatched without pressing the OFF key, the first time that the body is connected to the mains the Stop will be activated automatically.

SERVING

Serving
On the display it will be shown the inner room temperature and the graphic bar that shows the charging status.

PUMP DOWN

Body connected to the mains
From the menu select the function “PUMP DOWN”, and confirm with the key “MENU”,
the compressor will automatically stop after 8 minutes maximum.

REVERSE CYCLE DEFROSTING

Refrigerated Body connected to the mains with the side doors open
On the Menu select “DEFROST “ and confirm by pressing the key “MENU”. At the end of defrost, the compressor will stop automatically.
Please note that the defrost system works only with AL2 eutectic evaporators

TURNING ON OF INNER LIGHTS

Inner lights of the body
Body connected to the mains: lights turned off.

Electric board of the vehicle turned on: lights enabled only for manual use from menu selection.

During service the lights will automatically turn on at the body side doors opening for 10 minutes maximum. **The automatic starting system works only in presence of natural outdoor light**, in case of use in a dark ambient the inner lights will have to be turned on manually (**within the first 10 minutes from the vehicle turning off, the keyboard of the display will be enabled for this function**).

The lights will turn off automatically after a maximum time of 2 minutes from when the side doors are closed. If the voltage of the vehicle's battery is lower than ..... the lights will be automatically excluded.

COMPARTMENT AT POSITIVE TEMPERATURE

Temperature change
From the menu select the function "CHANGE SETPOINT", and confirm with the key "MENU". When setting +20°C/+68°F the refrigeration of the positive compartment will be automatically excluded.

DOWNLOAD DATA

By means of the SD memory card it is possible to download the data.

The SD card must always be removed.

8.3 3CARS

PROCEDURE DOWNLOAD DATA

WARNING: The operation must be carried out with cable connected to the mains.

STEP 1

- Insert the SD card into the appropriate slot located on the side of the electric board.
- Press the key “MENU”.
- Press the key for the scroll until you see “DOWNLOAD DATA”.
- Confirm pressing the key “MENU”.

STEP 2
ATTENTION!
Wait until the message
“TRANSFER COMPLETED”
The wait can last several minutes.

STEP 3
When the transfer is completed you can remove the SD card.
The SD card must always be removed.
After removing the SD card close the side door.

MENU STRUCTURE

Press the MENU button to access the list of menus and use the scroll keys.

LIGHT TURN ON << esc OK >>		Turning on of inner lights
START MODE << esc OK >>	SELECT MODE START BY POWER *	SELECT MODE START BY KEYBOARD **
PUMP DOWN << esc OK >>		Stop for defrosting
CHANGE SET POINT		Where present. Setting 20°C/68°F excludes the functioning of the area at positive temperature.
SET LANGUAGE << esc OK >>		Selection of language: Italian, English, French, German, Spanish
DOWNLOAD DATA << esc OK >>		Download data
OTHER << esc OK >>	SET DATE / HOUR << esc OK >>	Set data and hour
	SERVICE << esc OK >>	Assistance protected by password

*Automatic starting
Key “MENU” to select

**Manual starting
Key “MENU” to select

8.3 3CARS

MENU

Use the scroll keys

15/12/08 12:50:35	Date, hour
A-38 B-40 C-39 D-38	Plates temperatures
PRESSURES [bar] HI 15.6 LO 8.9	Pressures only operating
CONDENSER 21°C/69,8°F 35.5°C/95,5°F	Inlet and outlet condenser air temperature
PLATRE AIR PT -15.5°C/-59,9°F +6.5°C/+43,7°F	Temperature 2 area where expected
POWER PHASES 398V 396V 398V	Mains voltage operating
BATTERY 12.6 VOLT	Battery voltage of the vehicle
PERIODIC CONTROL In 2500 hours	Periodic control
ROAD 00015 hours CHARGE 00058 hours	Hours of operation on the road Hours of operation in charge

INSTRUCTIONS FOR BATTERY REPLACEMENT

In the display if the request set date/hour appears the battery could be run-down (such a notice does not prejudice the functioning of the body).
The replacement of the battery has to be done when the body is switched-off, without the mains connection and making sure to disconnect the connector from the electric board.

8.3 3CARS

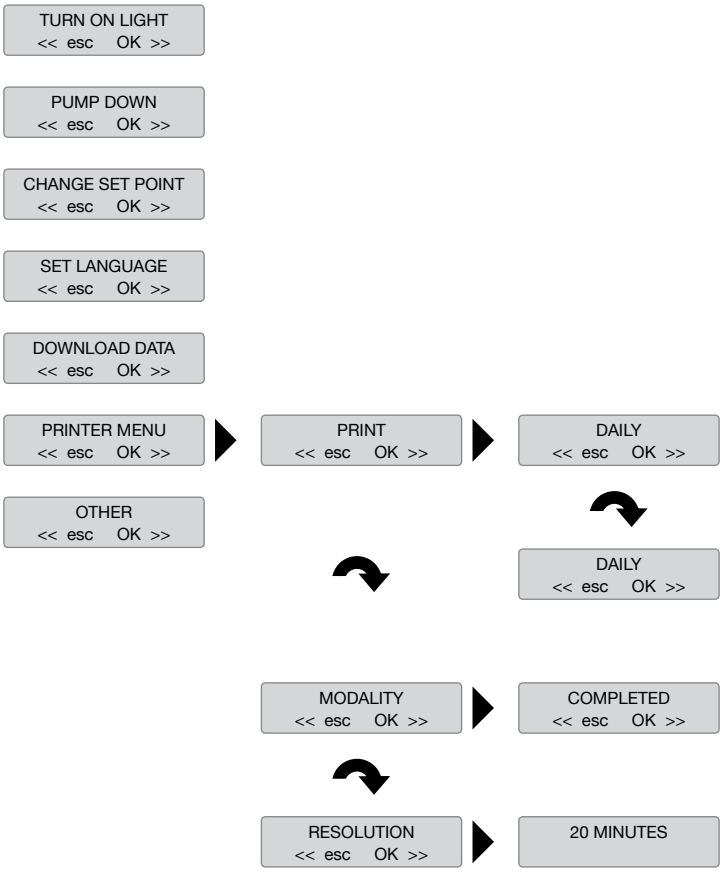
CABIN DISPLAY-PRINTER OPTION

FUNCTION OF THE BUTTON JOG

Press it to confirm

Rotate to select

With the pressure of several seconds you exit from the menu



8.3 3CARS

ALARMS LIST

SHOWN ON THE DISPLAY	EVENT
PHASES FAILURE	*Power voltage not correct*
HIGH PRESSURE	*High pressure*
LOW PRESSURE	*Low pressure*
FAILURE PROBES	*Probe for temperature detection*
BATTERY DISCHARGED	*Vehicle' battery discharged*
TIME OF CHARGE	*Maximum time of operation for charging*
TEMP. DIFF.	*Difference of temperature between the plates*
SET DATE / HOUR	*Watch*
POWER PRESENCE	*Power presence*
POWER ABSENCE	*Power lack*
POWER CABLE	*Warning of cable disconnected if you turn on the vehicle with stop of the refrigerating unit*
PRE-HEATING OIL	*Wait for carter heating (where present)*
POSSIBLE FROST	*Presence of frost*
SERVICE	*Periodic control*
DOOR OPEN	*Door open*
HIGH TEMPERATURE	*High temperature of the compartment at negative temperature*
HIGH TEMPERATURE	*High temperature of the compartment at positive temperature*
LOW TEMPERATURE	*Low temperature of the compartment at positive temperature*
TEMPERATURE OF THE COMPRESSOR	*High temperature of the compressor*
PROTECTION	*Protection of the condenser fan*
HI-PRESSURE PROBE	*High pressure sensor failure*
LO-PRESSURE PROBE	*Low pressure sensor failure*

CAP. 9 environmental information

Below is vital information that the user must take into consideration to safeguard the unit's environmental impact, both during the working life of the system as well as on its decommissioning or disposal of the body. In some respects the recommendations that follow, if implemented correctly, translate into energy savings for the user.

9.0 USE:

- Keep the refrigerating system correctly maintained.
- Clean the condenser frequently.
- Start the body in a well ventilated place, if possible out of direct sunlight.
- Avoid starting the body in narrow places or close to reverberant surfaces.
- Defrost the system frequently.
- Do not introduce warm products.
- If when charging the system the external temperature is equal to or greater than 20°C/68°F, the heating resistance of the doors can be disconnected to ensure ice has not built-up on the doors.

9.1 DISPOSAL:

WARNING: OPERATIONS ARE TO BE CARRIED OUT ONLY BY QUALIFIED PERSONNEL

Specialized businesses must be contacted for the correct recovery and disposal of the body in compliance with applicable laws. Particular attention must be given to the following materials that if incorrectly handled may have a negative effect on the environment and/or the safety of persons:

HAZARDOUS COMPONENTS AND MATERIALS

- **Refrigerating gas and lubricating oil contained in the system**: these must be completely and correctly recovered, recycled or disposed of at authorised centers.
- **Eutectic fluids inside the evaporators**: these must be completely and correctly recovered and disposed of at authorised centers.
- **Electrical and electronic components**: the electric motors, remote controls, transformers, thermostats and electronic cards must be separately disposed of at authorised centers in compliance with the law.

NON-HAZARDOUS COMPONENTS AND MATERIALS

- **Refrigerating system components**: except for the dehydrator filters that are disposed of at authorised centers, the parts of the purged system can be recovered as ferrous or non-ferrous materials.
- **Body components and accessories**: the components and accessories can be recovered as ferrous materials (sub-frame, refrigerating unit base, edgings) and non-ferrous (piping, internal accessories). The body, once void of all components, can be disposed of at collection facilities authorized for special NON HAZARDOUS waste.

DECLARATION OF CONFORMITY

Cold Car Spa declares under its responsibility that the product

Body serial N°.....

has been built in accordance with the following standards and directives

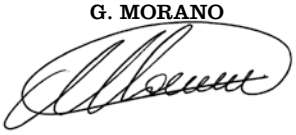
Harmonised standards:
UNI EN ISO 12100
UNI EN ISO 3744
UNI EN 378-2
CEI EN 60204-1
CEI EN 60335-1
CEI EN 60335-2-24
CEI EN 55022
CEI EN 61000-6-3
CEI EN 61000-3-2
CEI EN 61000-3-3
UNI EN ISO 9001-08: O.C. SAI Global Srl - C.so Montevecchio, 38 - Torino - Italy
Cert. n° SGQ324

European Directives and Regulations:
06/42/CE
06/95/CE
04/108/CE
05/88/CE
1935/04/CE
89/297CEE
97/23/CE/PED: O.N. CSI spa - V.le Lombardia, 20 - Bollate (Mi) - Italy
Cert. n° PED/0497/323 - Mod.D1

*any specific declaration will be provided on request

CE 0497

COLD CAR SPA
Il Presidente
G. MORANO



notes