Carrier TRANSICOLD

PULSOR® Series

Driver's manual

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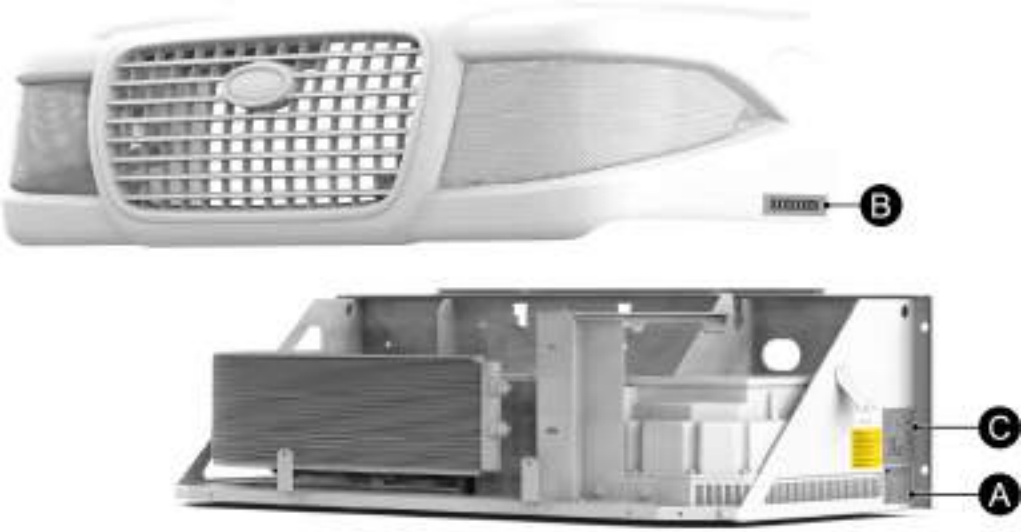
ENGLISH


B
C
A


Carrier
TRANSICOLD
CARRIER TRANSICOLD INDUSTRIES SCS
Model :
Code :
Country of origin :
Year :
Serial number :
Unit weight (kg) :
Sound Power LWA :
Refrigerant :
Charge Refr. :
Max. Serv. HPNP :
Volts :
Amps :
Cycles :
Phase :

A


LWA
XX.XdB
UK
CA
EAC

B


XXXXXXXXX

C

GB

PULSOR® Series

DRIVER'S MANUAL

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GB

1. INTRODUCTION

The original guide was written in English. It has been prepared for the end user of Carrier Transicold refrigeration units. It contains basic instructions for the daily operation of the refrigeration unit as well as safety information, troubleshooting tips, and other information that will help you to deliver the load in the best possible condition.

Please take the time to read the information contained in this booklet and refer to it whenever you have a question about the operation of your Carrier Transicold unit.

Your refrigeration unit has been engineered to provide long, trouble-free performance when it is properly operated and maintained. The checks outlined in this guide will help to minimize on the road problems. In addition, a comprehensive maintenance program will help to ensure that the unit continues to operate reliably. Such a maintenance program will also help to control operating costs, increase the unit's working life, and improve performance.

When having your unit serviced, be sure to specify genuine Carrier Transicold replacement parts for the highest quality and best reliability.

At Carrier Transicold, we are continually working to improve the products that we build for our customers. As a result, specifications may change without notice.

2. SAFETY

Always observe the following safety instructions and regulations.

⚠ DANGER

ELECTRICAL HANDLING OF THE UNIT SUCH AS "STAND-BY" OR "GRID" MODE, MUST BE PERFORMED AS DESCRIBED IN THIS MANUAL TO AVOID ANY RISK OF ELECTROCUTION.

E & ECOOL UNITS OPERATE UNDER VERY HIGH VOLTAGE. NEVER ATTEMPT TO OPEN OR REPAIR YOUR UNIT AS IT MAY RESULT IN FATAL INJURY.

⚠ CAUTION

SOME UNITS CAN AUTOMATICALLY RESTART IN THE EVENT OF A LOSS OF ELECTRICAL POWER OR IF IT IS SET TO START-STOP MODE.

⚠ WARNING

NEVER INTERVENE ON THE UNIT OR REMOVE SAFETY ELEMENTS & STICKERS. MAINTENANCE AND REPARATION SHOULD ALWAYS BE PERFORMED BY A CARRIER TRANSICOLD CERTIFIED TECHNICIAN.

⚠ CAUTION

NEVER TOUCH ANY SURFACE DURING OR SHORTLY AFTER OPERATION OF THE UNIT. OPERATING TEMPERATURES CAN CAUSE SEVERE HOT AND COLD BURNS.

⚠ CAUTION

DO NOT TOUCH THE EVAPORATOR AND CONDENSER FINS. THESE FINS ARE SHARP AND CAN CAUSE SERIOUS CUTS.

⚠ CAUTION

KEEP HANDS AND CLOTHING AWAY FROM FANS WHILE THE UNIT IS OPERATING AS MOVING COMPONENTS CAN CAUSE CUTS AND INJURIES.

⚠ DANGER

LEAVE THE DOORS OPEN WHEN LOADING AND MAKE SURE THAT NO-ONE REMAINS INSIDE THE REFRIGERATED COMPARTMENT WHEN CLOSING THE DOORS.

⚠ WARNING

THIS UNIT PRODUCES HIGH NOISE LEVEL. MINIMISE CLOSE EXPOSURE TO THE UNIT WHILE IT IS IN OPERATION.

⚠ CAUTION

NEVER OPERATE THE CAB COMMAND WHILE DRIVING.

3. IDENTIFICATION & NOISE LEVEL

3.1. NAMEPLATE

Each unit is identified by a nameplate (A) attached to the frame of the unit. The nameplate identifies the complete model number of the unit, the serial number (B) and additional information (see manual cover for sticker location).

If a problem occurs, please refer to the information indicated on this plate, and note unit the model and serial number before calling for assistance.

This information will be needed when you contact a technician so that he may properly assist you.

3.2. NOISE LEVEL

The noise level is also indicated on a sticker (C) attached to the unit (see manual cover for sticker location).

Unit	Maximum Sound Power level L_{WA}(dB)
PULSOR® Series	83

4. DESCRIPTION

4.1. CAB COMMAND DESCRIPTION

The cab command shown in this manual is a multi-temperature model.

The procedures described in this document are the same for a single-temperature cab command. The only difference are the additional "COMP2" display and control keys.

1. Display (C1)
2. **COMPARTMENT STATUS** led (C1)(1)
3. **MANUAL DEFROST** key (C1)
4. **-** key (C1)
5. **SET** key (C1)
6. **+** key (C1)
7. **OFF** key (C1)
8. **ON** key
9. **OFF** key (C2)
10. **-** key (C2)
11. **SET** key (C2)
12. **+** key (C2)
13. **MANUAL DEFROST** key (C2)
14. **COMPARTMENT STATUS** led (C2)(1)
15. Display (C2)
16. **ROAD OPERATION** led
17. **STANDBY OPERATION** led

(1) Green: normal cycling (left half) / Red: malfunction (right half).

(C1): Compartment 1 / (C2): Compartment 2.

Multi-temperature unit only.

If the cab command is built into the vehicle control panel it must be located as far as possible from the heating ducts. Maximum temperature of exposure: 70°C (150°F).

4.2. OPERATION PRINCIPLE

4.2.1. POWER SOURCE

4.2.1.1. IN "ROAD" MODE

PULSOR® units are equipped with the E-Drive all electric system, which removes mechanical transmissions found in belt-driven refrigeration systems and transforms engine power into electricity through a generator.

The generator is driven by the vehicle's batteries and supplies voltage to an inverter, which distributes it to the various components of the unit.

The unit automatically starts or stops when the vehicle's engine is switched on or off using the ignition switch.

4.2.1.2. IN "STANDBY" MODE

PULSOR® units can operate when the vehicle is docked by plugging it into the mains.

The power connection is automatically detected by the unit, which starts in "Standby" mode after pressing the **ON** key.

4.2.2. OPERATING MODES

4.2.2.1. CONTROLLED TEMPERATURE (COOLING & HEATING)

As soon as the setpoint temperature has been reached, the temperature control is achieved by the start-up and shut down of the compressor.

The evaporator(s) fan(s) are programmed to stop during regulation. When transporting fragile loads such as fresh meat, vegetables and cheese, it is possible to program the microprocessor to obtain continuous ventilation by the evaporator during regulation.

To activate or deactivate the function, please refer to the Section 5.8, “Set user function” > "EFOr" function.

4.2.2.2. DEFROST

Frost gradually builds up on the evaporator coils during normal operation. The evaporator coil is defrosted by sending hot gas through the coil (*or by using optional electric heater(s)*).

Defrost operation is fully automatic from start to finish but, can be manually initiated if required.

For further information, please refer to the Section 5.4, “Start a manual defrost mode”.

The start-up parameters can also be changed from automatic to fixed interval. Please refer to the Section 5.8, “Set user function”.

4.2.2.3. EUTECTIC SPECIFICITIES

PULSOR® units can be equipped with eutectic plates in addition to an evaporator in order to reach deep-frozen temperatures.

Theses units require special care in order to work properly:

- Deep-frozen temperature require extra time to be reached, therefore, units must be started well before your drive (e.g. the night before) to reach the desired temperature.

- Frost gradually builds up on the eutectic plates. Unlike a regular evaporator, the defrost sequence is not automatic, but is still crucial for proper operation, which is why the unit must be defrosted manually on a regular basis.

For further information, please refer to the Section 5.6, “Defrost the eutectic compartment”.

The eutectic compartment is locked at -40°C (-40°F) and its set point cannot be changed.

5. OPERATION

5.1. START THE UNIT

Power source selection is fully automatic. This is why there is no button to select the desired mode. A soon as one operating mode is disabled, the unit automatically starts up in the other mode.

If the vehicle's ignition is switched on while the PULSOR® unit is connected to the mains ("Standby" mode) or if the power plug is connected while the vehicle's engine is running ("Road" mode), the cab command unit will trigger a visual alarm, in the form of a flashing red malfunction indicator light and a A035 code.

As soon as one operating mode is disabled, the unit automatically starts up in the other mode and returns to normal functioning.

5.1.1. "ROAD" MODE

1. Switch on the vehicle's ignition.
2. Press the **ON** key to start the unit.*

   After a prolonged shutdown in cold weather, the compressor needs to warm up.

   During this sequence, the unit displays "CPHT" for 3 to 12 minutes (the duration varies according to the ambient temperature).

   DO NOT SWITCH OFF while "CPHT" is displayed.
3. The setpoint will be highlighted for 5 seconds, followed by the actual box temperature.

* Once you have started the unit at the beginning of your drive, the following start and stop sequences are performed automatically by the vehicle's ignition system.

5.1.2. "STANDBY" MODE

For safe & reliable operation in "Standby" mode, it is important to consider the following guidelines:

A. ALWAYS check that the unit is **OFF** from the cab command before connecting or disconnecting it from the mains.

B. The unit connection cable must be fitted with a ground connection. The cable must be connected to earth.

C. On the 230V / 400V power supply, the unit must be connected to a high sensitivity differential protection (30 mA).

D. Operations on the 230V / 400V power supply to the unit must only be carried out by authorized personnel.

THE USER IS RESPONSIBLE FOR ENSURING THAT THE ABOVE MEASURES ARE TAKEN AND COMPLIED WITH.

5.1.2.1. GUIDELINE CHART

Unit	Electrical protection		Standardized extension cable H.07.RNF Maximum 30m	
	230V 1Ph 50Hz	400V 3Ph 50Hz	230 V	400 V
PULSOR® 300	16 A	10 A	3 x 4 mm^2	4 x 2,5 mm^2
PULSOR® 350	16 A	10 A	3 x 4 mm^2	4 x 2,5 mm^2
PULSOR® 400	16 A	10 A	3 x 4 mm^2	4 x 2,5 mm^2
PULSOR® 400 MT	16 A	10 A	3 x 4 mm^2	4 x 2,5 mm^2
PULSOR® 500	16 A	10 A	3 x 4 mm^2	4 x 2,5 mm^2
PULSOR® 600 MT	-	10 A	-	4 x 2,5 mm^2

5.1.2.2. PROCEDURE

1. Switch off the vehicle's ignition.
2. Plug the unit to the mains.

3. Press the **ON** key to start the unit.

   After a prolonged shutdown in cold weather, the compressor needs to warm up.

   During this sequence, the unit displays "CPHT" for 3 to 12 minutes (the duration varies according to the ambient temperature).

   DO NOT SWITCH OFF while "CPHT" is displayed.
4. The setpoint will be highlighted for 5 seconds, followed by the actual box temperature.

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5.2. STOP THE UNIT

1. *In "Road" mode*, switch off the vehicle's ignition.

   In "Standby" mode, press the **OFF** key(s).
2. The display(s) & the operation led(s) will go blank once the unit is off.

On multi-temperature units, if you wish to deactivate a compartment, simply press the **OFF1** or **OFF2** key. Doing so, the unit will continue to operate, but the selected compartment will no longer be temperature-controlled.

5.3. ADJUST THE SETPOINT TEMPERATURE

If you wish to return to the compartment temperature display, either press the **ON** key or wait 10 seconds. Note that doing so, **any changes made WILL NOT be saved**.

1. Press the **SET** key to enter the setpoint menu (the actual setpoint temperature will be displayed).
2. Press the **SET** key again and hold it down until the display starts flashing.

3. Press or hold down either the **-** or **+** key to adjust the temperature.
4. Press the **SET** key to save the change.

For multi-temperature units, this procedure is the same for both compartments but must be carried out individually.

For eutectic units, the compartment fitted with eutectic plates has its setpoint locked and can only operate at freezing temperatures. Defrost related parameters are also locked.

Setpoint parameters such as setpoint lock, highest or lowest threshold, etc. can be set as required.

Please refer to the Section 5.8, “Set user function”.

5.4. START A MANUAL DEFROST MODE

Defrost operation is fully automatic from start to finish but, can be manually initiated if required.

The start-up parameters can also be changed from automatic to fixed interval. Please refer to the Section 5.5, “Change Defrost parameters”.

This does not apply to eutectic units.

1. Press the ⅏ key.

   If the temperature inside the refrigerated box is too high (> 3°C (37.4°F)) when pressing the key, the defrost sequence will not start.

   The unit will continue to operate normally in its current mode.
2. "dFSt" will be displayed until defrost termination.

   Note that on multi-temperature units, when one compartment is defrosting, the other continues to operate normally.

For multi-temperature units, this procedure is the same for both compartments but must be carried out individually.

For eutectic units, the compartment fitted with eutectic plates has its setpoint locked and can only operate at freezing temperatures. Defrost related parameters are also locked.

5.5. CHANGE DEFROST PARAMETERS

If you wish to return to the compartment temperature display, either press the **ON** key or wait 10 seconds. Note that doing so, **any changes made WILL NOT be saved**.

1. Press the **SET** and ⌇⌇⌇ keys simultaneously (the currently selected parameter is displayed).

2. Press either the **-** key or **+** key to change the parameter (see the complete list below). The display starts flashing.
3. Press the **SET** key to validate the change.

For multi-temperature units, this procedure is the same for both compartments but must be carried out individually.

For eutectic units, the compartment fitted with eutectic plates has its setpoint locked and can only operate at freezing temperatures. Defrost related parameters are also locked.

ORD	Display	Description	Available parameters
1	dF d	Defrost interval (delay between two defrost sequences).	**OFF** **Auto** **0.5H to 6.0H**
2	dF H	Defrost coefficient K (multiplies the waiting time between two defrost sequences). **Only accessible if "df d" is set to "Auto".**	**0.5 to 2.0**

5.6. DEFROST THE EUTECTIC COMPARTMENT

Frost gradually builds up on the eutectic plates. Unlike a regular evaporator, the defrost sequence is not automatic, but is still crucial for proper operation, which is why the unit must be defrosted manually on a regular basis.

Failing to perform proper defrost as described below, will result in poor unit performance.

Never use hot water or any flammable source to defrost eutectic plates, as this could damage the system and present a safety risk for you and your surroundings.

Frost build-up can be avoided by brushing the plates regularly.

1. Stop the unit.
2. Open the box doors and wait for the plates to defrost naturally (duration varies from 3 to 12 hours depending on ambient condition).

⚠ WARNING

WATER WILL REMAIN ON THE FLOOR OF THE COMPARTMENT AFTER DEFROSTING, POSING A RISK OF SLIPPING. MOVE CAREFULLY AROUND THE UNIT AND DRAIN OFF ANY REMAINING WATER, TO PREVENT IT FREEZING ON THE FLOOR.

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5.7. DISPLAY UNIT DATA

If you wish to return to the compartment temperature display, either press the **ON** key or wait 10 seconds. Note that doing so, **any changes made WILL NOT be saved**.

1. Hold down the **SET** key during 5 seconds.
2. Press the **SET** key again to scroll through the list.
3. Wait a few seconds or press the **SET** and **+** keys simultaneously to access the data.

For multi-temperature units, this procedure is the same for both compartments but must be carried out individually.

For eutectic units, the compartment fitted with eutectic plates has its setpoint locked and can only operate at freezing temperatures. Defrost related parameters are also locked.

ORD	Display	Description	Data
1	AAAA	Active alarms.	Up to 10 alarms.
2	PAAA	Inactive alarms.	Up to 15 alarms.
3	rd H	Operating time in Road mode (in hours).	Tens of hours eg. 0010 displayed = 100 hours
4	StbH	Operating time in Standby mode (in hours).	Tens of hours eg. 0005 displayed = 50 hours
5	dF C	Calculated time between two defrost sequences (Automatic defrost).	Time in minutes.
6	dF n	Time remaining before the next defrost sequence.	Time in minutes.
7	n icS	Microprocess Software version.	X.XXX
8	n icH	Microprocess Hardware version.	XXXX
9	CAbS	Cab Command Software version.	X.XX
10	In S	Inverter Software version.	X.XX
11	In H	Inverter Hardware version.	XXXX

5.8. SET USER FUNCTION

If you wish to return to the compartment temperature display, either press the **ON** key or wait 10 seconds. Note that doing so, **any changes made WILL NOT be saved**.

1. Hold down the ⅏ key then while holding it, press the **-** and **+** keys simultaneously.

2. Press the **SET** key to scroll through the list.
3. Press either the **-** or **+** key to change the function value.
4. Press the **SET** key to validate the change.

For multi-temperature units, this procedure is the same for both compartments but must be carried out individually.

For eutectic units, the compartment fitted with eutectic plates has its setpoint locked and can only operate at freezing temperatures. Defrost related parameters are also locked.

ORD	Display	Description	Available parameters ** Factory setting*
1	LOSP	Lowest Set-Point treshold.	0°C/-20°C*/-25°C/-30°C (32°F/-4°F/-13°F/-22°F).
2	H ISP	Highest Set-Point treshold.	+20°C*/+30°C(68°F/86°F).

The list continues on the next page.

ORD	Display	Description	Available parameters ** Factory setting*
3	SPL	SetPoint Lock.	OFF (*SPOF*): The setpoint temperature can be modified. ON (*SPOn*)*: The setpoint temperature cannot be modified.
4	EFDr	Evaporator Fan(s) active during regulation.	OFF (*OFF*)*: The evaporator fan will not turn during regulation sequences. ON (*On*): The evaporator fan will turn during regulation sequences (best practice when transporting fragile load).
5	Pr io	Compartment Priority *(only for multi-temperature unit)*.	AUTO (*Auto*)*: The unit will give priority to the compartment with the lowest setpoint. Compartment 1 (*1*): The unit will give priority to the compartment 1. Compartment 2 (*2*): The unit will give priority to the compartment 2.

6. CHANGE SCREEN BRIGHTNESS

1. Hold down the **-** key to reduce screen brightness.
2. Hold down the **+** key to increase screen brightness.

For multi-temperature units, this procedure is the same for both compartments but must be carried out individually.

7. ALARMS

7.1. DISPLAY THE ALARM LIST

If you wish to return to the compartment temperature display at any time, press the **ON** key.

The microprocessor monitors the unit's performance at all time. It will trigger alarm codes & lights up the alarm led, when detecting abnormal conditions.

Several alarms can be triggered at the same time and will remain in memory until they are cleared. Alarms can be cleared by any Carrier Service Center.

1. Hold down the **SET** key during 5 seconds to access the active alarm list (***A**XXX*) or press again the **SET** key to access the inactive alarms list (***P**XXX*).
2. Press the **-** or **+** key to scroll trough the alarm list.

7.2. ALARM LIST

The list of alarms below is not exhaustive. If the alarm occurring on your unit is not listed below, stop the truck and contact the nearest Carrier Service Center.

ALARM SEVERITY	
⚠	Alarm only. The unit continues to operate.
⚠	Shutdown alarm. The unit can no longer operate.

MALFUNCTION - RED FLASHES			
AS	**CODE**	**DESCRIPTION**	**ACTION**
	A000	No malfunction. Unit is fully operational.	
⚠	A001 to A003	Compressor related fault.	Contact the nearest Carrier Service Center.
⚠	A004	AAT Thermistor fault.	The thermistor value is out of range. Wait until the temperature is within the normal range. If the problem persists contact the nearest Carrier Service Center.
⚠	A010 to A15	Pressure Eq. valve fault.	Contact the nearest Carrier Service Center.
⚠	A016	VCAB supply failure.	Over current is detected. The cab command is switched off. Contact the nearest Carrier Service Center.
⚠	A017	Wake-up signal failure.	Contact the nearest Carrier Service Center.
⚠	A018	Microprocessor temperature too high.	The microprocessor board overheated. Wait until the temperature is within the normal range.

MALFUNCTION - RED FLASHES			
AS	CODE	DESCRIPTION	ACTION
			If the problem persists contact the nearest Carrier Service Center.
!	A019 to A020	Inverter or Compressor related fault.	Contact the nearest Carrier Service Center.
!	A021	Cab command comm. failure.	A communication failure with the cab command has been detected. Contact the nearest Carrier Service Center.
!	A025	Logic board power relay failure.	Contact the nearest Carrier Service Center.
!	A030 to A031	Battery related fault.	
!	A035	Double power supply	The unit detects two power sources. Switch off the vehicle's ignition or disconnect the unit from the power grid. If the problem persists contact the nearest Carrier Service Center.
!	A040	Runtime not valid	Road or Standby hour meters not filled. Contact the nearest Carrier Service Center.
!	A050 to A080	Compressor related fault.	Contact the nearest Carrier Service Center.
!	A081 to A082	Condenser fan motor related fault.	
!	A083 or SEr	General maintenance alert.	Road + Standby runtimes have exceeded the maintenance period. Contact your local Carrier Service Center.
!	A084 or SErC	Compressor maintenance alert.	The compressor runtimes has exceeded the maintenance period. Contact your local Carrier Service Center.
!	A100 A200	RAT Thermistor fault.	The thermistor value is out of range. Wait until the temperature is within the normal range. Contact your local Carrier Service Center. If the problem persists contact the nearest Carrier Service Center.
!	A101 A201	DTT Thermistor fault.	
!	A110 to A117 A210 to A217	Evaporator component related fault.	Contact the nearest Carrier Service Center.
!	A140 to A151 A240 to A251	The box temperature is outside the setpoint range.	Wait until the temperature is within the setpoint range (±5°C). Contact the nearest Carrier Service Center.

MALFUNCTION - RED FLASHES			
AS	CODE	DESCRIPTION	ACTION
!	A155 A255	Defrost sequence too long.	The defrost duration exceeded the normal duration. A new defrost sequence is automatically scheduled (if in AUTO mode). If the problem persists contact the nearest Carrier Service Center.
!	A165 A265	Evaporator component related fault.	Contact the nearest Carrier Service Center.
!	A170 to A173 A270 to A273	Heater related fault.	Contact the nearest Carrier Service Center.
!	A500 to A530	Generator related fault.	The unit can still operate in Standby mode (except for the A530). Contact the nearest Carrier Service Center.
!	A600 to A645	Inverter related fault.	Contact the nearest Carrier Service Center.
!	A647	Battery mismatch (12V/24V)	The battery installed or the configuration is incorrect. Contact the nearest Carrier Service Center.
!	A648 to A672	Inverter related fault.	Contact the nearest Carrier Service Center.

8. MAINTENANCE

8.1. INTRODUCTION

A comprehensive maintenance program ensures that the unit continues to operate reliably. Such a maintenance program will also help to control operating costs, increase the unit's working life, and improve performance.

IMPORTANT TO READ AND FOLLOW

Regular maintenance includes a quick overview of the unit from a safety perspective. Service Technician must pay particular attention, but not exclusively to: nuts and bolts tightening (replacing if missing), electrical wires, harnesses, fuel lines routing (repairing or replacing if needed), doors, skins grills, panels conditions (repairing or replacing if needed).

Confirmation of such operations can be detailed on request.

All maintenance services must be done by a technician trained on Carrier Transicold products, respecting all safety and quality standards of Carrier Transicold.

8.2. WARNING STICKERS MAINTENANCE

1. Keep the warning pictograms clean and without any obstruction material.
2. Clean the pictograms with water and soap and wipe them with soft fabric.
3. Replace damaged or missing pictograms with new pictograms available from the Carrier Transicold network.
4. If a component bearing a pictogram is replaced by a new one, make sure that the new component has the correct pictogram.
5. Place a warning pictogram by applying it on a dry surface. Press down on the outside to remove any air bubbles.

8.3. MAINTENANCE SCHEDULE

Service Type		Service frequency		
Hours*	**Km***	**Initial Service**	**Service A**	**Service B**
100	5000	X		
1000	30 000		X	
2000	60 000		X	
3000	90 000			X
4000	120 000		X	
5000	150 000		X	
6000	180 000			X

** Whichever comes first.*

9. RECOMMENDATION

9.1. BEFORE LOADING

DEFROST Properly defrost your transport refrigeration unit.

CLEAN THE EQUIPMENT Especially the interior: walls, roof and floor.

When washing the vehicle, DO NOT point the high-pressure water under the skin.

DO NOT spray water on electric components.

Units charged with low GWP refrigerant are equipped with refrigerant detectors that are located in the evaporator section (these detectors are identified by a sticker). Pay special attention to these electrical detectors when cleaning, DO NOT spray water on them.

When washing the interior, DO NOT spray the fan with detergent.

PARTIAL LOADING Use movable bulkheads to limit compartment size in case of partial loading.

STRIP CURTAINS To limit the flow of cold air to the outside, use strip curtains and make sure they are not too old and with a proper length down to the floor.

PRE-COOL THE BODY When possible, pre-cool the body on standby mode to reduce noise and CO_2 emissions. Do not leave the vehicle unattended during pre-cooling.

GOODS TEMPERATURE Goods must be at the right temperature before loading.

9.2. DURING LOADING

RESPECT CORRECT TEMPERATURE Products should always be loaded from a refrigerated loading bay in order to maintain the correct temperatures. The setpoint doesn't need to be at -26°C if only -18°C are required.

SEPARATE GOODS Do not mix refrigerated and dry goods in the same compartment. The second compartment cannot be cooled by a fan from the first compartment for hygiene reason.

TEMPERATURE CONTROL Perform load tests with the right materials to ensure the products are loaded in at the optimal temperature. Do not obstruct the evaporator with the loaded goods. Make sure that air circulation is not impeded. Properly orientating the pallets allows the airflow to reach above, through and underneath the load. Do not load up to the ceiling, as this will cause short cycling.

DETECTORS CLEARANCE Units charged with low GWP refrigerant are equipped with refrigerant detector that are located in the evaporator section (these detectors are identified by a sticker). Pay special attention to these detectors. At no time should their access be blocked. Ensure proper airflow to these detectors.

9.3. AFTER LOADING

SHUT DOWN UNIT WHEN OPENING DOORS Cold air is heavier than hot air. Opening doors with no curtains leads warmer air to replace cooler air. Operating the unit when doors are opened may result in frost and increase energy consumption. Carrier also offers door switches to shut down the unit automatically when loading the van, which reduces the warm air penetration into the box.

KEEPING DOORS CLOSED Keep doors closed as long as possible.

WAITING TIME Minimize the wait time during which the goods are on the loading dock.

PARKING Park the vehicle in the shade. Do not park your vehicle in a slope greater than 10% to avoid poor water drainage.

UNIT STORAGE In the event of a prolonged shutdown, open the doors and compartments of the refrigerated box. Never leave your unit more than a month without running.

AIR RENEWAL Units charged with low GWP refrigerant should operate for at least one hour once a month with the refrigerated box doors and compartments open.

10. ATP AGREEMENT

This unit is subject to the Agreement on the International Carriage of Perishable Foodstuffs and on the Special Equipment to be used for such Carriage (ATP).

This refrigeration unit has therefore been approved by the Regional Health Department and is marked with a plate indicating the date of expiration of the approval form.

** Example of an ATP plate showing (from top to bottom) the unit approval number, equipment number, classification and expiry date. The plate location might differ depending on the installation.*

Regularly check the expiry date of the certificate of approval. During transport, the certificate of approval or provisional certificate must be presented to qualified officials who request it.

11. SUPPORT

Whether you need breakdown support in your own country or internationally, our team is on hand to help get you back on the road as soon as possible -- 24/7/365 -- with the minimum of hassle.

WE'RE JUST

ONE CALL AWAY

FIND THE NEAREST

SERVICE CENTER

Our company is constantly seeking to improve the quality of its products and, therefore, reserves the right to modify its products without prior notice.

Over 600 Carrier Service Centers
in Europe, Russia,
Middle East and Africa

CARRIER TRANSICOLD EUROPE S.C.S.
LE CRISTALIA
3 rue Joseph Monier
92 500 Rueil-Malmaison
Phone: +33 (0)1 41 42 28 00
Fax: +33 (0)1 41 42 28 28
www.carriertransicold.eu

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