Operator's Manual

Supra™ Series
TruckRefrigeration Units



SUPRA SERIES

62-12342

Carrier TRANSICOLD

Operator Manual
for
Supra Series
Truck Refrigeration Units

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1. Introduction

This guide has been prepared for the operator of Carrier Transicold diesel truck 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 Supra Series 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 over-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.

This guide is intended to be an introduction to your unit and to provide general assistance when needed. More comprehensive information can be found in the Supra Series Operation and Service manual (62-12345), which is available from your local Carrier Transicold dealer.

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, unit specifications may change without notice.

2. Unit Identification

2.1 Nameplate

Each Supra Series unit is identified by a nameplate attached to the frame. This nameplate identifies the complete model number of the unit, the serial number, the refrigerant charge and quantity, and the date the unit was placed in service.

If a problem occurs, please refer to the information on this plate, and make a note of the model and serial number before calling for assistance. This information will be needed when you contact a technician for assistance.

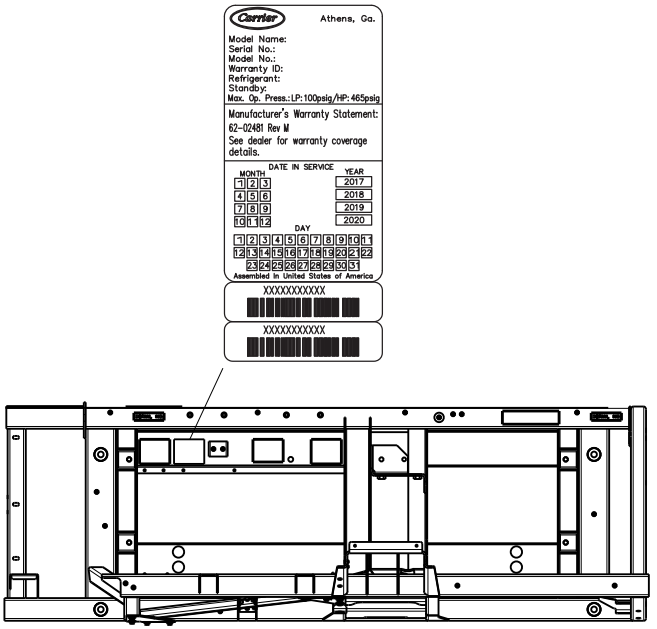


Figure 1 - Nameplate Location (Rear of Unit)

3. Safety

Your Carrier Transicold refrigeration unit has been designed with the safety of the operator in mind. During normal operation, all moving parts are fully guarded to help prevent injury. During all pre-trip inspections, daily inspections, and problem troubleshooting you may be exposed to moving parts. Please stay clear of all moving parts when the unit is in operation and when the unit main power switch is in the RUN position.

⚠ WARNING

- **Unit may start automatically at any time even if the switch is in the OFF position. Use proper lockout/tagout procedures before inspection/ servicing. All unit inspec-tion/servicing by properly trained personnel only.**
- **Under no circumstances should ether or any other starting aids be used to start the engine.**
- **Be aware of HIGH VOLTAGE supplied at the power plug or from the generator. When performing service or mainte-nance procedures: ensure the START/RUN-OFF switch is in the OFF position, lockout/tagout the high voltage recep-tacle, and lockout/tagout the negative battery connection.**

3.1 Auto-Start/Stop

Your refrigeration unit is equipped with Auto-Start/Stop, a valuable fuel saving feature. When the unit is set for Auto-Start/Stop operation, it may start at any time and without warning. When performing any check of the refrigeration unit (e.g., checking the belts, checking the oil), make certain that the main power switch is in the OFF position.

3.2 Engine Coolant

The engine is equipped with a pressurized cooling system. Under normal operating conditions, the coolant in the engine and radiator is under high pressure and is very hot. Contact with hot coolant can cause severe burns. Do not remove the cap from a hot radiator. If the cap must be removed, do so very slowly in order to release the pressure without spray.

3.3 Refrigerants

The refrigerant contained in the refrigeration system can cause frostbite, severe burns, or blindness when in direct contact with the skin or eyes. For this reason and because of legislation regarding the handling of refrigerants during system service, we recommend that whenever this unit requires service of the refrigeration system, you contact your nearest Carrier Transicold authorized repair facility for service.

3.4 Battery

This unit utilizes a lead-acid type battery. A lead-acid battery normally vents small amounts of flammable hydrogen gas. Do not smoke when checking the battery. A battery explosion can cause serious physical harm and/or blindness.

4. Pre-Trip Inspection

Perform a pre-trip inspection before picking up any load. This inspection is essential to anticipate and help minimize the possibility of over-the-road problems. These checks take only a few minutes.

⚠ WARNING

Inspect battery cables for signs of wear, abrasion or damage at every pre trip inspection and replace if necessary. Also check battery cable routing to ensure that clamps are secure and that cables are not pinched or chafing against any components.

1. Place the unit's main switch in the STOP (0) position.
2. **Fuel:** Drain any water and impurities from the sump of the refrigeration unit fuel tank by opening the drain-cock located on the bottom of the tank (if so equipped). Close the valve when only pure fuel emerges. Check the fuel level in the tank, ensuring that the fuel supply is adequate for unit operation. Refuel if necessary.
3. **Belts:** Check the belt tension by using an electronic belt tensioner. Properly adjusted belts give long lasting and efficient service. Too much tension shortens belt and bearing life, and too little tension causes slippage and excessive belt wear. It is also important to keep belts and sheaves free of any foreign material which may cause the belts to slip.
4. **Battery:** On units equipped with serviceable batteries, check the level of the electrolyte in each of the cells. If the level is low, add distilled water to the correct level. Most units, however, are equipped with low- or no-maintenance batteries, which must be inspected to ensure that the connections are clean and tight. The battery hold-down must also be checked to ensure it is tight enough to keep the battery in place.
5. **Engine Oil:** The engine oil must be checked last as it is necessary for oil to drain from the block and into the oil pan to obtain a correct reading. Remove the dipstick, wipe it off and re-insert it fully into the engine block. Once again, remove the dipstick and observe the oil level, which normally falls between the full and add marks. If it falls below the add mark, add oil until the level is correct.

4. Pre-Trip Inspection (continued)

6. **General Unit:** Visually inspect the entire unit for leaks, loose bolts, frayed, loose, or broken wires, etc. The radiator and condenser coils of the unit must be free of dirt, bugs, cardboard, or any other debris that may obstruct airflow across the coils. The evaporator (s) must also be free of debris, especially stretch-wrap, which is often used during transport to prevent cargo shifting.

7. **Truck Body:** Inspect the truck body prior to loading. Check the door and vent seals for damage and wear. Inspect the entire interior and exterior of the body for damage, and check for damage to the inner and outer skins of the body. Damage to the insulation may compromise the unit's ability to maintain the product temperature by increasing the amount of heat gain across the truck body.

5. Unit Operation

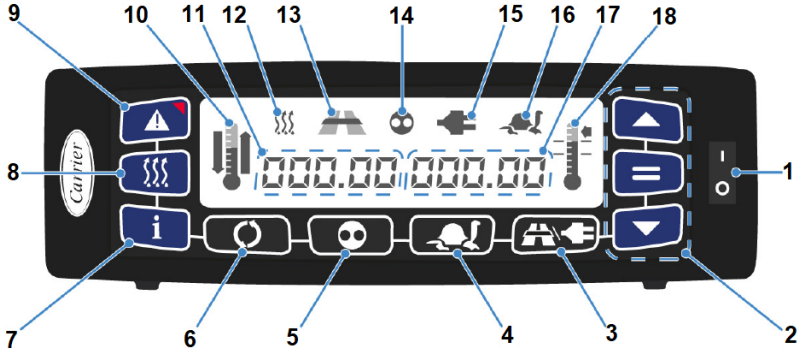


Figure 2 - Cab Command

1. RUN/STOP
2. UP ARROW (▲)/ENTER (=)/ DOWN ARROW (▼)
3. ROAD/STANDBY MODE
4. CITY SPEED MODE
5. AUTO START/STOP & CONTINUOUS
6. FUNCTION
7. UNIT DATA (SINGLE T°)
   - UNIT DATA + COMPARTMENT (MULTI T°)
8. MANUAL DEFROST
9. ALARM & LED
10. RUNNING MODE
    - UP arrow: Heating Mode
    - DOWN arrow: Cooling Mode
11. SETPOINT
12. DEFROST
13. ROAD MODE
14. AUTO START/STOP
15. STANDBY MODE
16. CITY SPEED
17. BOX TEMPERATURE
18. OUT OF RANGE TEMPERATURE

5.1 Starting the Unit - Road Operation

1. Place the RUN/STOP switch (1) in the RUN position (I).
2. If the unit was running in Standby mode, press the ROAD/STANDBY key (3) to switch to Diesel mode.

5.2 Starting the Unit - Standby Operation

1. Place the RUN/STOP switch (1) on the RUN position (I).
2. If the unit was running in the Road mode, press the ROAD/STANDBY key (3) to switch to Electrical mode.
   - “DSP LOCK” is displayed for 10 seconds when locking
   - “DSP UNLCK” is displayed for 10 seconds when unlocking

5.3 Lock/Unlock Cab Command

1. To lock or unlock the cab command, hold together the ENTER (=) **AND** UNIT DATA (7) keys for five seconds.
   - “DSP LOCK” is displayed for 10 seconds when locking
   - “DSP UNLCK” is displayed for 10 seconds when unlocking

5.4 Start a Pretrip

1. Press the FUNCTION key (6) until "PRETRIP" is displayed.
2. Press the ENTER key (=).
3. Press the ▲ or ▼ key until "PRETRIP Y" is displayed.
4. Press the ENTER key (=) to start the PRETRIP.
   - The PRETRIP starts and its status ("TEST X/Y") is displayed. X = current test number. Y = total number of tests to be performed

5.5 Compartment Display Status Display & Enable / Disable Compartment (Multi-Temp ONLY)

5.5.1 Compartment Display Status Display

1. Press once the UNIT DATA + COMPARTMENT key (7) to display compartments status.
    - Only active compartments are displayed.

5.5.2 Enable/Disable Compartment

1. Press the UNIT DATA + COMPARTMENT key (7) twice to access the "ENABLE / DISABLE" display.
2. Press the ▲ or ▼ key to switch between "C1" / "C2".
3. Press the ENTER key (=) to toggle compartment status between "ON" & "OFF".
    - If no key is pressed within five seconds the screen goes back to the default display.

5.6 City Speed Mode

(I)- By using the City Speed mode, the unit operates in low speed/low noise.

1. Press the CITY SPEED key (4) to toggle between low speed and normal operating mode.
    - The CITY SPEED MODE icon lights up and “CITY ON” is displayed for 10 seconds when activated.
    - The CITY SPEED MODE icon lights off and “CITY OFF" is displayed for 10 seconds when deactivated.

5.7 Auto Start/Stop & Continuous Mode

1. Press the AUTO START/STOP - CONTINUOUS key (5) to toggle between the AUTO START/STOP & CONTINUOUS mode.
    - The "AUTO START/STOP" icon lights up and “S/S ON” is displayed for 10 seconds when activated.
    - The "AUTO START/STOP" icon lights off and "S/S OFF" is displayed for 10 seconds when deactivated.

5.8 Adjust the Temperature Setpoint

1. Press or hold the ▲ key to increase / ▼ key to decrease the temperature set point.
2. Once the desired set point is displayed, press the ENTER key (=) to set the change.
    - If the ENTER key is not pressed within five seconds, LED will flash and the set point return to its previous value.

5.9 Launch a Manual Defrost Cycle

1. Press the MANUAL DEFROST key (8) to initiate a defrost cycle.
    - The "DEFROST" icon lights up and "DF" is displayed for the entire defrost cycle duration.

5.10 Unit Data

1. Press the UNIT DATA key (7) to access the unit data menu.
2. Press again the UNIT DATA key to scroll through the menus.
3. Press the ▲ or ▼ key to scroll through the data list.
4. Press the ENTER key (=) to access a menu (for example, the SENSORS menu).
5. Press the ENTER key (=) at any time to exit the menu or hold it down for three seconds to lock the display (the data displayed will remain until the ENTER key is held down again for three seconds).

Table 1 - Unit Data List

Sensors	
AAT	Ambient Air Temperature (entering condenser)
RAT	Return Air Sensor (entering evaporator)
SAT	Supply Air Temperature (leaving evaporator)
DLT	Delta-T: Supply Air Temperature minus Return Air Temperature (negative value indicates cooling and a positive value indicates heating)
DTS	Defrost Termination Temperature
RS1	Remote Sensor 1
RS2	Remote Sensor 2
RS3	Remote Sensor 3

Meters	
SBY	Standby Hour Meter (Electrical mode)
SON	Switch On Hour Meter
HS	High Speed running Hour Meter
STRT	Start Cycle Counter
MENG	Maintenance Engine Hour Meter
MSBY	Maintenance Standby Hour Meter
MSON	Maintenance Switch On Hour Meter
ENG	Engine Hour Meter (Road mode)

System	
CDT	Compressor Discharge Temperature (leaving the compressor)
CDP	Compressor Discharge Pressure (leaving the compressor)
CSP	Compressor Suction Pressure (entering the compressor)
CST**	Not applicable
SMV	Compressor Suction Modulation Valve% opening

Table 1 - Unit Data List (continued)

Engine	
ENCT	Engine Coolant Temperature
RPM	Diesel Engine Speed
BATT	Battery Volts
DCS	DC Current Sensor (displayed in amps)
FLS	Fuel Level% Displayed only if the fuel level sensor is installed

5.11 Function

1. Press the FUNCTION key (6) to access the function menu.
2. Press the FUNCTION key again to scroll through the menus.
3. Press the ENTER key (=) to access a menu (for example, the TIMER menu).
4. Press the ▲ or ▼ key to scroll through the function list.
5. Press the ENTER key (=) once on the desired function.
   - The function should be flashing, indicating that it can be set.
6. Press the ▲ or ▼ key to change the value.
7. Press the ENTER key (=) to validate.

5.11.1 Function/Parameter List

Table 2 - Functional Parameters

Parameter	Description	Range
Timer		
SLEEP	Enable or disable Sleep mode	0 - Off 1 - On **Default:** Off
SLEEPWAKE	Set a wake-up time - when Sleep mode will wake up, ranging from one hour to eight days from current time. (Only if Wake Up is ON)	0 - Off 1 - On **Default:** Off
Temp		
RSTR	Restart temperature for perishable setpoints in S/S	32.5° to 50°F in 0.5° increments (0.3° to 10°C) in 0.1° increments **Default:** is 39°F (4°C)
PROBE RAT or SAT	Indicates the primary sensor that is used for performing temperature control in the system	0 - Return Air 1 - Supply Air **Default:** Return Air
Setting		
TEMP	Determines temperature units on display	0 - Fahrenheit °F 1 - Celsius °C **Default:** Fahrenheit This parameter is also defaulted to "locked" for NAO Region models.
PRESS	Determines pressure units on display	0 - Psig 1 - Bars **Default:** Psig This parameter is also defaulted to "locked" for all NAO Region models.

Table 2 - Functional Parameters (continued)

DATE	Determines date format on display	0 - MM/DD/YYYY 1 - DD/MM/YYYY **Default:** MM/DD/YYYY
BRIGHT	Determines brightness on display	Setting is 0 to 100.
SS Parameter		
MIN RT	Minimum run time for perishable setpoints in Start/Stop mode	4 to 60 minutes, with 1 minute intervals **Default:** 4 minutes
MIN OFF	Minimum off time for perishable setpoints in Start/Stop mode	10 to 90 minutes, with 1 minute intervals **Default:** 10 minutes
OVER	Defines how far away the active temperature must be away from the setpoint before the minimum off time can be overridden in Start/Stop mode for perishable setpoints	36° to 50°F in 0.5° increments 2° to 10°C in 0.1° increments. **Default:** 39°F (4°C)
MAX OFF	Maximum off time for perishable setpoints during Start/Stop mode	0 - Off 1 - 10 to 255 minutes, with 1 minute intervals **Default:** Off
Mode		
LS CON	Determines the low speed delay adjustment for Continuous	0 - Off 1 - 0 to 255 minutes, with 1 minute intervals **Default:** 1 minute
LS SS	Determines the low speed delay adjustment for Start/Stop mode	0 - Off 1 - 0 to 255 minutes, with 1 minute intervals **Default:** 1 minute
CITY	Disable high speed in the speed control overrides	0 - Off 1 - On **Default:** Off Only applies to EMEAR Region

Table 2 - Functional Parameters (continued)

Other		
DEFR	The time interval between defrost cycles	0 - 1.5 hours 1 - 3 hours 2 - 6 hours 3 - 12 hours **Default:** 6 Hours
SWT DSL	Switch to Diesel: When this functional parameter indicates No, the No Power configuration parameter is overridden and the system can be shut down.	0 - No 1 - Yes **Default:** No
FRESHNO	Fresh Protect: Used for supply air control.	0 - OFF 1 - A 2 - B 3 - C (**Default**) 4 - D 5 - E
TRANGE	Out-of-range temperature tolerance selection.	0 - Off 1 - 2°C (NDTP Display A) 2 - 3°C (NDTP Display B) 3 - 4°C (NDTP Display C) **Default:** 4°C
OVR DOOR	Indicates if the door switch alarm should override the shutdown of the unit. If the Override Door switch Shutdown functional parameter = Yes, the door switch alarm controller response is alarm only regardless of the configuration parameter. Low speed Alarm only could still be applicable.	0 - No 1 - Yes **Default:** No

Table 2 - Functional Parameters (continued)

OVR SWITCH	Indicates if the remote switch 1 alarm should override the shutdown of the unit. If the Override Remote Switch 1 Shutdown functional parameter = Yes, the remote switch 1 alarm controller response is alarm only regardless of the configuration parameter. Low speed Alarm only could still be applicable.	0 - No 1 - Yes **Default:** No
	Airflow function. Normal Air = no effect High Air = SPEED = HIGH in Perishable Range.	0 - Normal Air 1 - High Air **Default:** Normal Air
	Start/stop shut down offset for frozen	0°F to 1.1°F 0°C to 0.6°C **Default:** 0
	Display alarm description in alarm list	0 - No 1 - Yes **Default:** Yes
	Top Freeze Protection: If Yes, use supply air temperature as active probe If No, use selected probe in Temp Control setting This can only be turned on when 0 <= setpoint <= 18.4 °C. It will be automatically turned to NO if system is set outside of these conditions or if the SAT probe is bad.	0 - No 1 - Yes **Default:** No

5.12 Unit Shutdown

1. Place the RUN/STOP switch (1) on the STOP position (O).
   - The screen turns off instantly, but the unit continues to operate for a few seconds before shutting down.

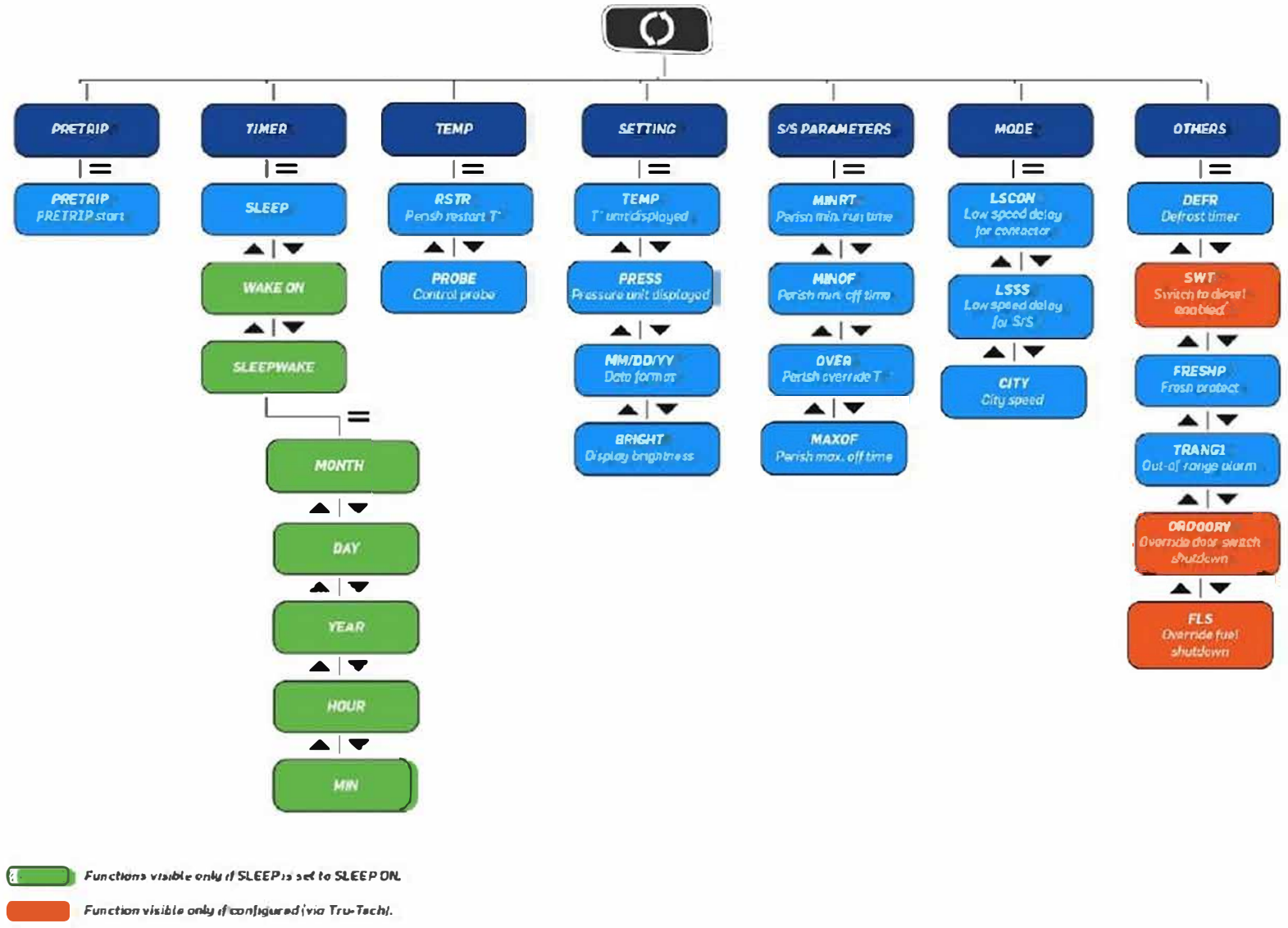


Figure 3 - Functional Parameters

6. Troubleshooting Considerations and Alarms

6.1 Overview

Everything possible has been done to ensure that your unit is the most reliable, trouble-free equipment available today. If, however, problems occur, the following section may be of assistance.

If the problem you are experiencing is not listed, please contact your Carrier Transicold dealer for assistance.

Table 3 - General Problems

Starter Motor will not crank or low cranking speed	Battery insufficiently charged
	Battery terminal post dirty or defective
	Bad electrical connections at starter
	Starter motor malfunctions
	Starter motor solenoid defective
	Open starting circuit
	Incorrect grade of lubricating oil
Starter Motor cranks but engine fails to start	No fuel in tank
	Air in fuel system
	Water in fuel system
	Plugged fuel filters
	Plugged fuel lines to injector(s)
	Fuel control operation erratic
	Glow plug(s) defective
	Fuel pump (FP) malfunction
Starter cranks, engages, but dies after a few seconds	Engine lube oil too heavy
	Voltage drop in starter cable(s)

Table 3 - General Problems (continued)

Engine stops after several rotations	Fuel supply restricted
	No fuel in tank
	Leak in fuel system
	Faulty fuel control operation
	Fuel filter restricted
	Injector nozzle(s) defective
	Injection pump defective
	Air cleaner or hose restricted
	Safety device open
	Fuel pump (FP) malfunction
Starter motor turns but pinion does not engage.	Pinion or ring gear obstructed or worn
Starter motor does not disengage after switch was depressed.	Starter motor solenoid defective
Pinion does not disengage after engine is running.	Defective starter
No power to starter motor solenoid (SS)	Battery defective
	Loose electrical connections

6.2 Silence the Alarm Buzzer

Hold the ALARM key (9) for three seconds.

6.3 Display Alarms

1. Press the ALARM key (9).
2. Press the ▲ or ▼ keys to scroll through the list.

6.4 Clear Alarms

1. From the alarm display, push the ▲ or ▼ keys until "ALARM RST" is displayed.
2. Press the ENTER key (=).
   - If conditions are met, the ALARM led lights off and "ALARM CLR" is displayed.

7. Product Loading



Defrost: Properly defrost your transport refrigeration unit.

Clean the Equipment: Especially the interior - walls, roof and floor.

NOTE
When washing the vehicle, DO NOT point the high-pressure water under the skin. DO NOT spray water on electric components

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 proper length down to 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-cool.

Goods Temperature: Goods must be at the right temperature before 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 a -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 reasons.

Temperature Control: Measure the temperature of goods with the right equipment to ensure correct product loading 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 detectors 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 (10cm minimum between the unit back panel and load).



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 open 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 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: Part the vehicle in the shade. Do not park your vehicle in a slope greater then 10%.

Unit Storage: In the event of a prolonged shutdown, open the doors and compartments of the refrigerated box. Never leave your unit more that a month without running.

Air Renewal: Units charged with low GWP refrigerant must operate for at least one hour once a month with the refrigerated box doors and compartments open.

8. Fuse and Relay Locations

The fuses and relays that protect the unit are located on the TPC board in the control box on the roadside of the unit. They are accessible by loosening the screws that hold the control panel closed.

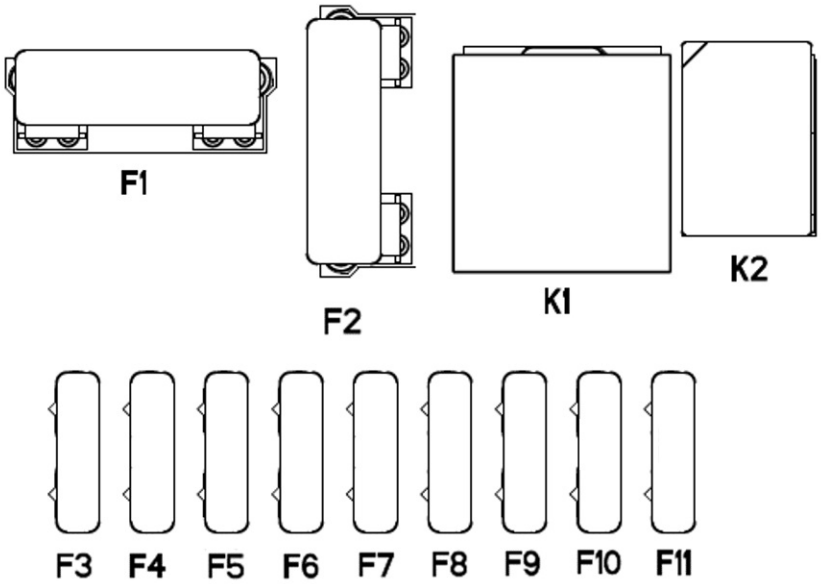


Table 4 - Fuse Identification

Fuse		Designation
Fuses on TPC Board		
F1	80 Amps	Main Fuse
F2	30 Amps	PER Relay
F3	5 Amps	12V Options
F4	5 Amps	Stepper Motor
F5	5 Amps	ENCU (12-00702)
F6	4 Amps	MCA Logic Power
F7	20 Amps	Fuel Heater
F8	5 Amps	Option (not used)

Table 4 - Fuse Identification (continued)

Fuse		Designation
F9	5 Amps	Automatic Phase Reversal
F10	7.5 Amps	Evap Fan Relays
F11	20 Amps	Fuel Pump Fuse
Fuses Outside TPC Board		
F20	50 Amps	Condenser Fans
F21	40 Amps	Condenser Fans
F22	30 Amps	Evaporator Fans
F23	30 Amps	Evaporator Fans
F24	30 Amps	Evaporator Fans

Table 5 - Relay Identification

Relay	Designation
K1 (PER)	Power Enable Relay (on TPC)
K2 (DER)	Diesel / Electric Relay (on TPC)

9. Unit Maintenance

For the most reliable operation and for maximum life, your unit requires regular maintenance. This includes oil and filter changes, fuel and air filter replacement, and coolant system maintenance. Perform maintenance according to the following schedule (in hours):

Table 6 - Maintenance Intervals

Service	Hours
Initial Service	1000
Service A	2000
Service B	4000

9.1 Engine Oil

The petroleum oils recommended for use in this refrigeration unit must comply with the American Petroleum Institute (API) Class CJ or better rating. The only recommended synthetic oil is Mobil Delvac 1.

- The use of any oil that does not meet this rating may affect the warranty on the engine.
- The use of oil of the proper weight (viscosity) is also essential.

The following chart indicates the SAE weight rating of the oil to be used in various climates:

SAE Weights		
Outdoor Temperatures		SAE
Fahrenheit	Centigrade	
Below 32°	Below 0°	10W 30 or Mobil Delvac 1 (5W 40)
Above 32°	Above 0°	10W 30 or Mobil Delvac 1 (5W 40) or 15W 40

9.2 Unit Maintenance Schedule

Table 7 - Maintenance Schedule

	Initial	Check Up	Service A	Service B
Before running				
Report any sign of damage on vehicle/ body/ refrigeration unit.	O	O	O	O
Check coolant level; report strength.	O	O	O	O
Write down hour meter diesel and standby.	O	O	O	O
Visually check the tightness of fixing bolts/screws, frame, metalworks including remote evaporators and heater bracket when applied.	O	O	O	O
Check software revision. Write it down.	O	O	O	O
Check exhaust system security and visually check for signs of corrosion, including sections where exhaust insulation is installed (silent-city units).	O	O	O	O
Visually check vibrasorber LP/HP and fixations.	O	O	O	O
Visually check - shaftseal + oil level in compressor.	O	O	O	O
Check routing of electrical wires, harnesses, fuel lines (repair or replace if needed), cab command routine, plug from standby module, check oil tubes routing and security Check battery security, lubricate terminals against corrosion, check battery cables routine.	O	O	O	O
Check fuel tank straps integrity, fixing bolts, cap. Drain water from fuel tank if applicable.		O	O	O

Table 7 - Maintenance Schedule (continued)

	Initial	Check Up	Service A	Service B
Connect gauges and start the engine				
Check operator panel, display, light, switches (including evaporator door switch, undermount safety switch)	O	O	O	O
Check all sensors, transducers consistency between each others			O	O
Check glow plug operation, connections, secure the wire	O	O	O	O
Perform pull down test	O	O	O	O
Check on sight glass refrigerant flow and cleanliness	O	O	O	O
Check coolant system temperature, thermostat, leaks	O	O	O	O
Initiate manual defrost and confirm termination; check defrost drain pipes and water evacuation	O	O	O	O
Check the engine high / low speed and adjust if required			O	O
In heat mode, check hot gas functionality. Check heater bars.			O	O
Check battery state of charge		O	O	O
Check alternator charge output			O	O

Table 7 - Maintenance Schedule (continued)

	Initial	Check Up	Service A	Service B
Stop the engine. Lock out tag out.				
Check fuel pump filter, clean if necessary, replace bowl gasket		O	O	
Check oil level and refill if required. Check for oil leak		O		
Drain and refill oil			O	O
Replace oil filter and bypass filters, fuel filter, air filter			O	O
Check air filter element. Replace if necessary		O		
Check all belts (wear + tension)	O	O	O	
Check clutch and connections, pulleys, standby motor, alternator, (noise test). Hand test				O
Replace all belts				O
Check operation of evaporator fan / turbine (bearing/noise)			O	O
Check evaporator fan brushes - Clean if necessary (if applicable)				O
Check high and low voltage wiring, and connections into control box, corrosion, chafing and signs of heat build up	O	O	O	O
Visually check cleanliness of condenser and clean if necessary	O	O	O	O
Visually check cleanliness of evaporator and clean if necessary	O	O	O	O
Check air switch calibration				O
Check alternator brushes			O	O
Check and lubricate all linkages, hinges and lock mechanisms				O
Grease serviceable bearings				O

Table 7 - Maintenance Schedule (continued)

	Initial	Check Up	Service A	Service B
Remove lock-out/tag-out. Start the unit on standby.				
Check date and time in micro.	O	O	O	O
Check and confirm all current product upgrades have been completed	O		O	O
Replace maintenance sticker & clean unit of marks made during service	O		O	O
Every two years				
Replace coolant and coolant bottle cap				
Check valve clearance of diesel engine and adjust if necessary (Refer to engine technical manual)				

These maintenance schedules are based on the use of the approved oils and filters and regular Pre-Trip inspections of the unit. Failure to follow the recommended maintenance schedule may affect the life and reliability of the refrigeration unit.

All units are shipped with Extended Life coolant. Replace coolant every two years.

10. Standby Operation Guidelines

For safe, reliable operation in Standby mode, it is important to follow a few guidelines:

- Never plug the unit into the power source with the main switch in the RUN (I) position. The main switch must always be in the STOP (O) position when connecting the unit to the power source.
- The circuit breaker and extension cable used for Standby operation must conform to the following specifications:

Table 8 - Circuit Breaker and Extension Cable Specifications

Operating Voltage	FLA Rating*	Circuit Breaker Capacity	Cable Requirement
208/230 V 60 hz 3 phase	20-35 Amp*	50 A	8/3 with ground up to 50 ft / 15.25 m
460 V 60 hz 3 phase	10-25 Amp*	30 A	10/3 with ground up to 75 ft / 23 m

- When multiple units are in use, each unit must be operated on its own electrical circuit. Never operate more than one unit on a circuit breaker.

NOTE

This information is provided as a guideline only.

Contact a licensed electrician when preparing a circuit for operation of the refrigeration unit A licensed electrician is familiar with all local ordinances and special requirements for your area and can ensure that the circuits are properly designed and installed, and that connections are correct.

11. Emergency Road Service

Carrier Transicold works hard to provide complete service when and where it is needed. That means a network of dealers that offer 24-hour emergency service. These service centers are manned by factory trained service personnel and backed by extensive parts inventories that will assure a prompt repair.

If you experience a problem with your unit, follow your company's road service procedure or contact the nearest Carrier Transicold service center. Visit www.trucktrailer.carrier.com and click on "Dealer Locator" to locate the service center nearest you.

The Carrier Transicold North American Truck/Trailer Dealer Locator app can also be downloaded to your smart phone. The Dealer Locator App provides:

- Location information Carrier Transicold dealers in North America
- Nearest dealer from present location
- Dealer services (Trailer, Truck, APU, Mobile Support, etc.)
- Maps
- Phone number
- Hours of operation
- Link to dealer website

To download the Carrier Transicold North America Truck/Trailer Dealer Locator App, scan this QR code, or go directly to your App store.

If you are unable to reach a service center, call our 24-hour Action Line: (800) 448-1661.

We will do everything we can to get your problem taken care of by an authorized CTD dealer and get you back on the road.

⚠ **WARNING:** Breathing diesel engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

- Always start and operate engine in a well-ventilated area.
- If in an enclosed area, vent the exhaust to the outside.
- Do not modify or tamper with the exhaust system.
- Do not idle the engine except as necessary.

For more information, go to www.P65warnings.ca.gov/diesel

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