Truck Refrigeration

OPERATOR'S MANUAL
For
Supra 950MT
Truck Refrigeration Units

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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 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 insure 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 as an introduction to your unit and to provide general assistance when needed. More comprehensive information can be found in the Operation and Service Manual for your unit. This manual can be obtained 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.

UNIT IDENTIFICATION

Each Supra 950MT unit is identified by a nameplate attached to the frame near the accumulator. 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 or Carrier Transicold Service Engineer so that he or she may properly assist you.

NAMEPLATE

SAFETY

The Supra 950MT 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 (I) 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 inspection/servicing by properly trained personnel only.

⚠️ **WARNING**

Under no circumstances should ether or any other starting aids be used to start the engine.

AUTO-START/STOP

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, ensure that the main power switch is in the OFF (O) position.

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.

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 your unit requires service of the refrigeration system, you contact your nearest Carrier Transicold authorized repair facility for service.

BATTERY

This unit utilizes a lead-acid type battery. The 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.

PRE-TRIP INSPECTION

BEFORE STARTING ENGINE

1. Drain water and sediment from fuel tank sump and then fill tank with diesel fuel.

2. Check radiator coolant level. Add pre-mixed 50/50 permanent antifreeze-water as required.

3. Check evaporator and condenser coil for cleanliness.

4. Check engine oil level, lubrication and fuel filter, oil lines, and connections for leaks. Tighten connections and/or replace gaskets.

5. Check compressor and receiver service valve position (backseat position).

6. Check unit compartment and remove any foreign material.

7. Check V-belts for proper tension, fraying or cracks. Adjust belt or replace.

⚠ **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.
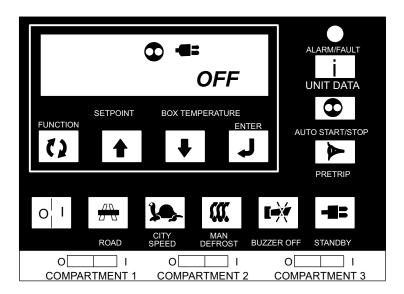
AFTER STARTING REFRIGERATION UNIT

1. Check engine speed and listen for abnormal noises.

2. Check compressor oil level.

3. Observe any signs of lube or fuel oil leaks.

4. Check radiator hoses for leaks.

5. Check refrigerant level.

6. Feel filter drier. Excessive temperature drop across drier indicates restriction.

7. Check water temperature. It should be between 150 to 180°F (65 to 82°C).
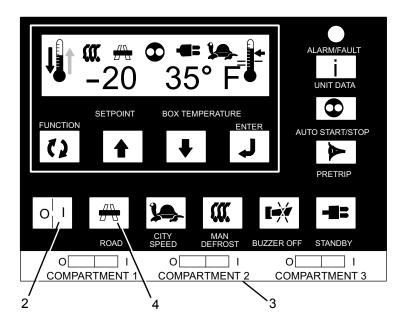
UNIT OPERATION

> ⚠️ **WARNING**
>
> **Under no circumstances should ether or any other starting aids be used to start the engine.**

Place the RSS in "RUN" position, the ON/OFF switch in "ON" position and all COMPARTMENT switches in the "OFF" position.

The microprocessor will power up and go through a self test. It will then show "OFF" in the display.

STARTING UNIT - ENGINE/ROAD OPERATION

1. Place the unit RUN/STOP switch in the "RUN" position.

2. Place the I/O switch in the "I" position.

3. Place the desired compartment switch(es) in the "ON (I)" position.

4. If the unit was previously used in Standby, press the ROAD key.

Under normal circumstances this is all that is required to start the unit. The unit will then perform a complete diagnostic check on the microprocessor controller, pre-heat for the required amount of time based on the engine temperature and start automatically.

Complete the Pre-Trip Inspection as described in a previous section.

STARTING UNIT - STANDBY OPERATION

> ## ⚠ WARNING
>
> **Make sure the power plug is clean and dry before connecting to any power source.**

> ## ⚠ WARNING
>
> **Do not attempt to connect or remove power plug or perform service and/or maintenance before ensuring the unit RUN/STOP Switch is in the STOP position, the I/O switch is in the "O" position and the external power circuit breaker is OFF.**

STANDBY GUIDELINES

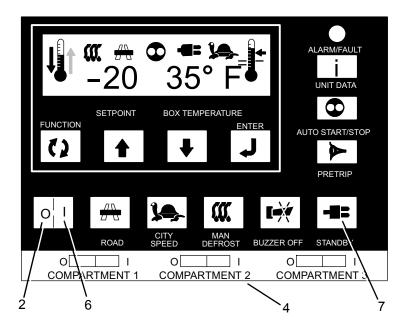For safe, reliable operation in standby mode, it is important to consider the following guidelines:

- NEVER connect the unit to a power source with the RUN/STOP switch in the "RUN" position.

- The power supply cable and circuit breaker must comply with the following:

Operating Voltage	FLA Rating	Circuit Breaker Capacity	Cable Requirement
230 V 60 Hz 3 phase	35 A	50 A	8/3 with ground (up to 50 ft)

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

- When preparing a circuit for operation of the refrigeration unit, a licensed electrician should be contracted. 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.

> **TIP**
>
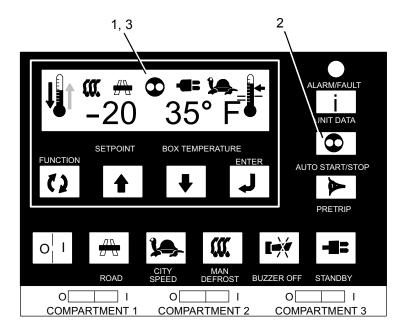> If unit is switched to Standby and the power plug is not plugged in, "NO POWER" is displayed.

1. Place the unit RUN/STOP switch in the "STOP" position.

2. Place the I/O switch in the "O" position.

3. Connect the standby cable to the unit and then turn the external power circuit breaker on. (See table in **Standby Guidelines** section.)

4. Place the desired compartment switch(es) in the "ON (I)" position.

5. Place the unit RUN/STOP switch in the "RUN" position.

6. Place the I/O switch in the "I" position.

7. Press the STANDBY key.

Under normal circumstances this is all that is required to run the unit in standby power. The unit will then perform a complete diagnostic check on the microprocessor controller and start automatically.

Complete the Pre-Trip Inspection as described in a previous section.

START/STOP OPERATION

1. Check if the AUTO-START/STOP indicator is illuminated.

2. If not, press the AUTO-START/STOP toggle key to place the unit in Start/Stop mode.

3. The AUTO-START/STOP indicator will then be illuminated.

The AUTO-START/STOP key is used to change the operating mode from "Continuous Run" to "Auto-Start/Stop." Each push of the key will alternate the operating modes. The Auto-Start/Stop indicator on the display will illuminate when Auto-Stop/Start is enabled. If the indicator is not illuminated, the unit is in the Continuous Run Mode.

Auto-Start/Stop is provided to permit starting or restarting of the diesel-driven compressor as required. This gives the microprocessor automatic control of starting and stopping the diesel engine. The main function of Auto-Start/Stop is to turn off the refrigeration system near the setpoint to provide a fuel efficient temperature control system and then restart the engine when needed. Refer to **Recommended Transport Temperatures** for guidelines for Auto-Start/Stop and Continuous Run Operation.

Whenever the unit starts in Auto-Start/Stop, it will run until:

- It has run for the predetermined minimum run time.
- The engine coolant temperature is above 122°F (50°C)
- The box temperature is at setpoint.

The controller will not shut off the engine if the battery voltage is not sufficient to restart it. Battery voltage above approximately 13.4 volts is required for shutdown. This varies depending on ambient. Look at battery voltage in data list to find out whether shutdown voltage has been reached. If there is a "+" in front of the number, the voltage is enough to shutdown and restart. If only the number appears, the voltage is still too low for shutdown.

The controller will restart the engine if any of the following criteria have been met:

- Box temperature has changed by ± 11°F (± 6.1°C) for setpoints in the perishable range and +11°F (+6.1°C) for setpoints in the frozen range **DURING** minimum off time.
- Box temperature has moved away from setpoint by ± 3.6°F (2.0°C) **AFTER** minimum off time for setpoints in the perishable range or +0.5°F (0.3°C) for setpoints in the frozen range.
- The battery voltage drops below 12.2 VDC. (Refer to **Unit Data** section).
- The engine coolant temperature drops below 34°F (1°C).

To start the unit in manual start mode, the unit must be in Continuous Run mode and the Auto/Manual Start Operation function parameter set to "MAN OP" (FN10 OFF).

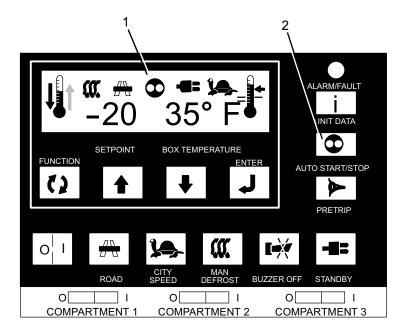**NOTE**

When configuration CNF11 is "ON" and setpoint is 32 to 42°F (0 to 5.5°C) the unit is locked into Continuous Run. The AUTO-START/STOP key is disabled.

NOTE

Auto Start-Stop operation may be tied to the setpoint ranges for frozen and perishable loads and the AUTO-START/STOP key may be locked out.
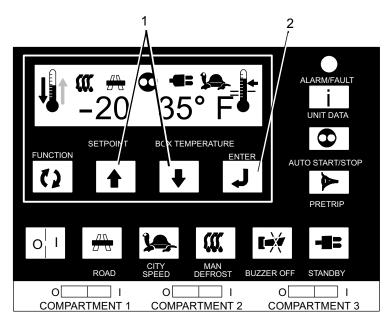
CONTINUOUS RUN OPERATION

1. Check if the AUTO-START/STOP indicator is illuminated.

2. If it is, press the AUTO-START/STOP toggle key to place the unit in Continuous Run mode.

3. The AUTO-START/STOP indicator will not be illuminated.

In the Continuous Run mode, the diesel engine will run continuously providing constant air flow and temperature control to the product. Refer to **Recommended Transport Temperatures** for guidelines for Auto-Start/Stop and Continuous Run Operation.

Continuous operation may be tied to the setpoint ranges for frozen and perishable loads and the AUTO-START/STOP key may be locked out.

CHANGING SETPOINT

Settings for C1 and C2 will alternate every 5 seconds. Wait until the desired compartment is displayed and then perform the following:
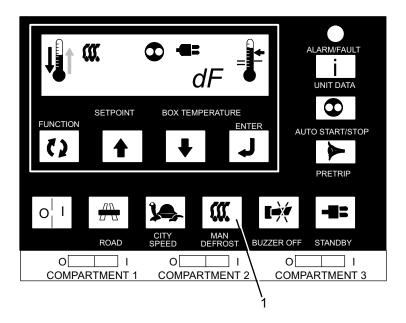

1. Press the UP or DOWN arrow keys to increase or decrease the displayed setpoint.

2. Press the ENTER key when the desired setpoint is displayed to lock in the new setpoint.

3. A new setpoint will flash and then return to the original setpoint if the ENTER key is not pressed within 5 seconds.

Setpoints of -22°F to +89°F (-30°C to +32°C) may be entered via the keypad. The controller always retains the last entered setpoint in memory. If no setpoint is in memory (i.e. on initial startup), the controller will lock out the run relay and flash "SP" on the left hand display until a valid setpoint is entered. The setpoint may be changed up or down in 1° increments by pressing and releasing either the UP ARROW or DOWN ARROW key.

You cannot change setpoint when unit is in Pretrip or when viewing Unit Data or Functional Parameters.

MANUAL DEFROST

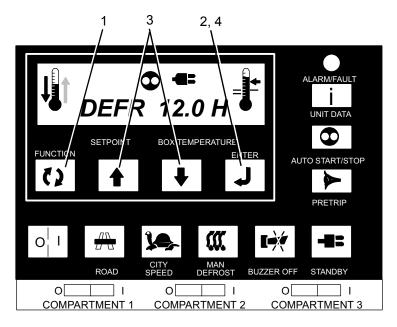1. Press the MANUAL DEFROST key to initiate a defrost.

The defrost mode may be initiated in three different ways if the evaporator coil is below 45°F (7.2°C):

1. Defrost is initiated automatically at preset intervals by the defrost timer in the microprocessor.

2. Defrost is initiated by the defrost air switch.

3. Defrost may be manually initiated by pressing the MANUAL DEFROST key.

The defrost mode terminates when the evaporator temperature is higher than 55°F (12.8°C). Should the defrost cycle not complete within 45 minutes, the defrost cycle is terminated automatically by the microprocessor.

After the 45 minute termination, the controller will wait 1.5 hours before attempting another defrost cycle. Pressing the MANUAL DEFROST key will override this mode and start a defrost cycle. If a shutdown alarm occurs, defrost will be terminated.

FUNCTION CHANGE

1. Press the FUNCTION key.
2. Press the ENTER key to select the desired function to change.
3. Press either the UP or DOWN arrow key until the desired Function setting is displayed.

NOTE

Function changes will change the operation of the unit.

4. Press the ENTER key to select.

NOTE

Functional Parameters may be locked depending on your fleet requirements.

The Function Parameters control selected operating features of the unit. When multiple choices are available, the display will show the function description on the left side with the corresponding function choice on the right side.

When a function parameter is displayed, the data choice can be changed by pressing the ENTER key and then pressing either the UP or DOWN arrow keys. The displayed choice will then flash to indicate that the choice has not been entered. Depress the ENTER key to activate the new choice. The display will stop flashing to indicate that the choice has been entered.
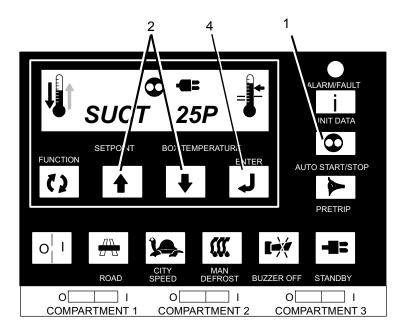
FUNCTION CHANGE (CONTINUED)

The following table has columns for Code and English displays. English is the default setting. Change Functional Parameter to Code to see Code display format.

Table 1–1 Functional Parameters

CODE	ENGLISH	DATA
FN0	DEFR	Defrost Interval
*FN1 ON	CITY SPD	Low Speed
*FN1 OFF	HIGH SPD	High Speed
FN2	OFF T	Minimum Off-time
FN3	ON T	On-time
FN4	Degrees F or C	Temperature Unit °C or °F
FN5 ON	TIME STRT	Maximum Off-time 30 Min.
FN5 OFF	TEMP STRT	Temperature Based Restarting
FN6	MOP STD	
FN7 ON	AUTO OP	Auto Start Operation
FN7 OFF	MAN OP	Manual Start Operation
FN8	T RANGE	Out-of-Range Tolerance
Code vs English = Code or English display format		
Manual Glow Override = Normal or Add 30 sec		
Alarm RST = Alarm Reset Required Alarm CLR = No Alarm Active		
* FN1 is NOT APPLICABLE for 950MT		

UNIT DATA

1. Press the UNIT DATA key to scroll through the data list one item at a time.

2. To scroll through the list faster, use the UP or DOWN arrow keys.

3. The data will display for 5 seconds.

4. Press the ENTER key to display data for 30 seconds.

5. The display will revert back to the default display if no keys are pressed for 5 seconds.

The UNIT DATA key can be used to display the microprocessor input data values. The display will show the description of the input on the left side with the actual data on the right side.

The following table has columns for Code and English displays. English is the default setting. Change Functional Parameter to Code to see Code display format.

Table 1–2 Unit Data

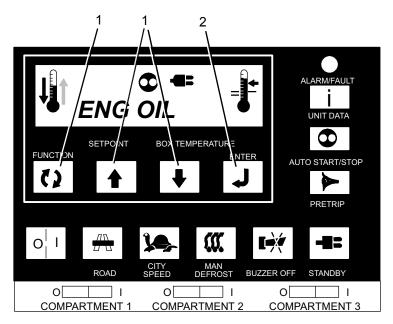| CODE	ENGLISH	DATA
CD1	SUCT	Suction Pressure
CD2	ENG	Engine Hours
CD3	WT	Coolant Temperature
CD4	1RA	C1 Return Air Temperature
CD6	2DT	C2 Defrost Temperature
CD7	3DT	N/A
CD8	1DT	C1 Defrost Temperature
CD9	CDT	Discharge Temperature
CD10	BATT	Battery Voltage
CD11	SBY	Standby Hours
CD13	REV	Software Revision
CD14	SERL	Serial Number Low
CD15	SERU	Serial Number Upper
CD16	2RA	C2 Return Air Temperature
CD17	3RA	N/A
CD18	MHR1	Maintenance Hour Meter 1
CD19	MHR2	Maintenance Hour Meter 2
CD20	SON	Switch On Hour Meter

ALARM DISPLAY & RESET

Alarm Display

When the fault light is on, the buzzer is activated and normal display of the Setpoint / Box temperature alternates with this message.

Alarm Reset

1. Press the FUNCTION key and then the UP or DOWN arrow key until ALARM RST is displayed.

2. Press the ENTER key to clear the alarm. ALARM CLR will be displayed. The unit will restart if the alarm condition has been corrected and the unit is in Start/Stop or Auto OP.

TIP

The buzzer can be disabled at any time by pressing and holding the ALARM key for 3 seconds.

Alternate Alarm Reset

Place the I/O switch in the "O" position. The unit can now be restarted after the alarm condition has been corrected.

The following table has columns for Code and English displays. English is the default setting. Change Functional Parameter to Code to see Code display format.

Table notes:

- **+** = Unit Shutdown
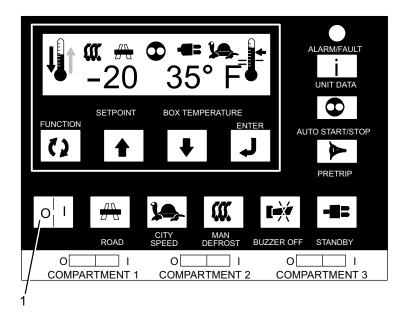- ✳ = Can Be Configured To Shut Down
- ✔ = Fault Light On

CODE	ENGLISH	✔	DESCRIPTION
AL0	ENG OIL	**+** ✔	Low Oil Pressure
AL1	ENG HOT	**+** ✔	High Coolant Temperature
AL2	HI PRESS	**+** ✔	High Pressure
AL3	STARTFAIL	**+** ✔	Auto Start Failure
AL4	LOW BATT	**+** ✔	Low Battery Voltage
AL5	HI BATT	**+** ✔	High Battery Voltage
AL6	DEFR FAIL	✔	Defrost Override
AL7	ALT AUX	✳ ✔	No Alternator Auxiliary Output
AL8	STARTER	✔	Starter Motor Fault
AL9	RA SENSOR	✔	Return Air Sensor Fault
AL10	SA SENSOR	✔	Supply Air Sensor Fault
AL11	WT SENSOR	✳ ✔	Coolant Temperature Sensor Fault
AL12	HIGH CDT	**+** When temp exceeds 350° ✔	High Discharge Temperature
AL13	CD SENSOR		Discharge Temp Sensor Fault

CODE	ENGLISH	✓	DESCRIPTION
AL14	SBY MOTOR	+ ✓	Standby Motor Fault
AL15	FUSE BAD	✓	Fuse Open
AL17	DISPLAY		Display
AL18	SERVICE 1		Maintenance Hour Meter 1
AL19	SERVICE 2		Maintenance Hour Meter 2
AL20	1RA OUT	✳ ✓	Main Comp Out-of-Range
AL21	2RA OUT	✳ ✓	N/A
AL23	NO POWER	+ ✓	No AC Power When Unit Is In Standby
AL26	SYSTEM CHK	+ ✓	Low Refrigerant - When CNF13 is configured ON

STOPPING UNIT

> ### ⚠ WARNING
>
> **Always place the RSS in the OFF position and turn off the power supply before disconnecting the power plug from the unit.**

1. To stop the unit, place the I/O switch in the "O" position or place the unit RUN/STOP switch in the "STOP" position.

   The diesel engine/electric motor will stop and the microprocessor display will turn off.

NOTE

If both compartments are stopped and the unit Run/Stop switch is still in the RUN position, the unit will stop but the microprocessor will stay energized.

PRODUCT LOADING

BEFORE LOADING

- Pre-cool the body. This will remove much of the heat from the inside of the body and give the product better protection when it is loaded.

- Place the unit in a defrost cycle immediately before loading. This will remove moisture accumulated on the evaporator coil.

DURING LOADING

- Turn the unit off.

- Check product temperature during loading.

- Ensure that the air return and supply opening remain unobstructed.

- Leave approximately 4 to 5 inches between the load and the front wall for air return to the unit.

- Leave at least 10 to 12 inches between the top of the load and the ceiling to ensure that there is nothing to prevent airflow to the rear of the body.

- Load product on pallets to provide free air return to unit and improve product protection.

Proper air circulation in the truck body is a critical element in maintaining product quality during transport. If air cannot circulate completely around the load, hot spots or top-freeze can occur.

The use of pallets is highly recommended. When pallets are loaded so air can flow freely through them to return to the evaporator, the product is more protected from heat passing through the floor of the trailer. When using pallets, it is important to refrain from stacking extra boxes on the floor at the rear of the trailer as this will cut off the airflow.

Product stacking is another important factor in protecting the product. Products that generate heat - fruits and vegetables, for example - should be stacked so the air can flow through the product to remove the heat; this is called "air stacking" the product. Products that do not create heat - meats and frozen products - should be stacked tightly in the center of the trailer. All products should be kept away from the sidewalls of the body, to allow air flow between the body and the load; this prevents heat filtering through the walls from affecting the product.

It is important to check the temperature of the product being loaded to ensure that it is at the correct temperature for transport. The refrigeration unit is designed to maintain the temperature of the product at the temperature at which it was loaded; it was not designed to cool warm product.

RECOMMENDED TRANSPORT TEMPERATURES

Below are some general recommendations on product transport temperatures and operating modes for the unit. These are included for reference only and should not be considered preemptive of the setpoint required by the shipper or receiver.

More detailed information can be obtained from your Carrier Transicold dealer.

Product	Setpoint Range		Operating Mode*
	°F	°C	
Bananas	56 to 58	13 to 14	Continuous
Fresh fruits and veg-etables	33 to 38	0.5 to 3	Continuous
Fresh meats and seafood	28 to 32	-2 to 0	Auto-Start/Stop or Continuous
Dairy Products	33 to 38	0.5 to 3	Auto-Start/Stop or Continuous
Ice	15 to 20	-10 to -7	Auto-Start/Stop
Frozen fruits and vegetables	-10 to 0	-23 to -18	Auto-Start/Stop
Frozen meats and seafood	-10 to 0	-23 to -18	Auto-Start/Stop
Ice Cream	-20 to -15	-29 to -26	Auto-Start/Stop

* During delivery cycles that include frequent stops and door openings, it is recommended that the unit always be operated in the continuous run mode to help ensure product quality. If it is possible, the unit should be turned off during the time the body doors are open to help conserve the product temperature.

TROUBLESHOOTING TIPS

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

If you do not find the trouble that you have experienced listed, please call your Carrier Transicold dealer for assistance.

TROUBLESHOOTING	
Engine Will Not Start	
Starter motor will not crank or low cranking speed.	Battery insufficiently charged
	Battery terminal post dirty or defective
	Bad electrical connections on 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
	Fuel control operation erratic
	Glow plug(s) defective
	Run solenoid defective
	Fuel pump (FP) malfunction
Starter cranks and engages, but dies after a few seconds	Engine lube oil too heavy
	Voltage drop in starter cable(s)

TROUBLESHOOTING	
Engine Starts Then Stops	
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
	Open wiring circuit to run solenoid
	Fuel pump (FP) malfunction
Starter Motor Malfunction	
Starter motor will not crank or turns slowly	Battery insufficiently charged
	Battery cable connections loose or oxidized
	Battery cables defective
	Starter brushes shorted out
	Starter brushes hung up or have no contact
	Starter solenoid damaged
	Start/Run--Off switch defective
	Engine lube oil too heavy

CONTROL BOX COMPONENTS

The fuses that protect the Microprocessor circuits are located in the control box on the Relay Board and the Multi-Temp Sub Panel.
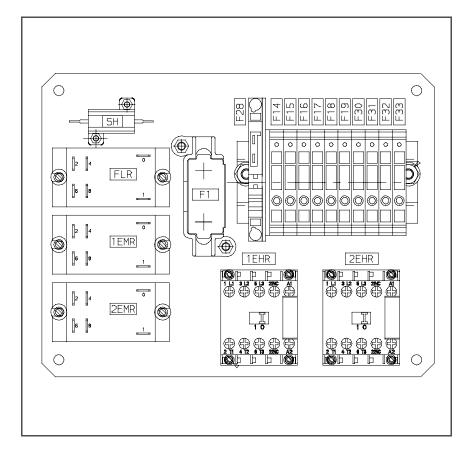
Fuse Identification

Rep.	Item	Amps
F1	Main Fuse	80 A
F2	RCR Fuse	5 A
F3	Run Relay Fuse	15 A
F5	Main Heater Relay Fuse	5 A
F6	Unloader Fuse	3 A
F7	1 Liquid Solenoid Valve Fuse	3 A
F8	2 Liquid Solenoid Valve Fuse	3 A
F10	Fuel Pump Fuse	5 A
F11	1 Hot Gas Valve Fuse	7.5 A
F12	2 Hot Gas Valve Fuse	7.5 A
F27	Fuel Heater Fuse (Option)	25 A
F28	Flashing Relay Fuse	5 A
F30	2 Electric Motor Relay	8 A
F31	1 and 2 Electric Motor Relay	8 A
F32	1 Electric Motor Relay	8 A
F33	Flashing Relay Fuse	5 A

Relay Identification
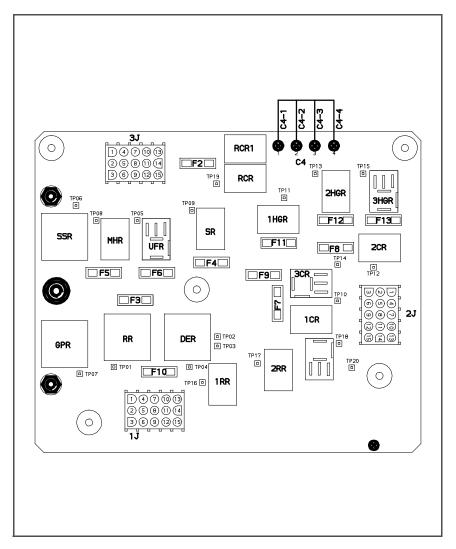
Desig.	Item
SSR	Starter Solenoid Relay
1CR, 2CR	Cool Relay (1st and 2nd compartments)
1EHR, 2EHR	Electrical Heat Relay (1st and 2nd compartments)
FLR	Flashing Relay
UFR	Unloader Front Relay
FHR	Fuel Heater Relay (option)
1HGR, 2HGR	Hot Gas Relay (1st and 2nd compartments)
DER	Diesel Electric Relay
RR, 1RR, 2RR	Run Relay (1st and 2nd compartments)
GPR	Glow Plug Relay
RCR	Run Control Relay
MHR	Main Heat Relay
1EMR, 2EMR	Electric Motor Relay (1st and 2nd compartments)
GPR	Glow Plug Relay
RCR	Run Control Relay
MHR	Main Heat Relay

MULTI-TEMP SUB PANEL

RELAY BOARD

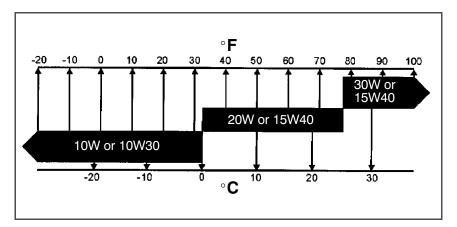Measure relay output voltage at pin connections (TP0 to TP17).

UNIT MAINTENANCE

ENGINE OIL

The oils recommended for use in your refrigeration unit must comply with the American Petroleum Institute's (API) SG/CD rating. The use of any oil that does not meet this rating may affect the warranty on the engine in the unit. 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:

The following oils are approved for use in the Supra range of units:

In the US, Canada, Mexico, Central and South America, any oil that meets the above API specification is suitable for use in the Supra range of units.

UNIT MAINTENANCE SCHEDULE

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 replacement.

The following maintenance schedules are based on the use of approved oils 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.

- Conventional engine oils should be changed at least once per year, even if the engine has not run the necessary number of hours.

- Delvac 1 synthetic oil should be changed at least once every two years, even if the engine has not run the necessary number of hours.

- The coolant (antifreeze) should be replaced or recycled every two years.

Maintenance should be performed on the following schedule:

Every 250 hours:
- Check engine cooling system

- Check all belts

- Check and clean air filter

- Check all belts

- Replace fuel filter

- Check all hardware and unit mounting bolts for tightness and tighten as required.

Every 1,000 hours (2,000 hours when using synthetic oil):
- Change lube oil and filter(s)

- Check engine cooling system

- Check and clean air filter

- Check all belts

Every 1,500 hours:

- Check fuel pump filter
- Replace air filter cartridge
- Check battery terminals and fluid level
- Check compressor oil level
- Check alternator brushes. Check in accordance with diesel hours PLUS standby hours
- Check engine thermostat for proper operation
- Check defrost:
    - Check timer setting and function
    - Check refrigerant control valves for proper operation
    - Check that fans stop
    - Check that defrost ends automatically
    - Check water drainage from evaporator
- Check fan motor brushes
- Check and adjust rocker arms
- Replace belts as necessary

Every 2,000 hours:

- Change lube oil and filter(s)
- Check engine cooling system
- Check and clean air filter
- Check all belts
- Replace oil filter
- Clean radiator and condenser
- Check refrigerant level

Every 3,000 hours (Petroleum Oil)

- Change lube oil and filter(s)
- Check engine cooling system
- Check and clean air filter
- Check all belts
- Change fan motor brush
- Check and rebuild alternator
- Check engine speed (High: 2200-2250; Low: 1800-1850)

Every 3,000 hours (Synthetic Oil):

- Change fan motor brush

- Check and rebuild alternator

- Check engine speed (High: 2200-2250; Low: 1800-1850)

Every 3,750 hours:

- Check all belt tension pulleys

- Change antifreeze

- Check bearings in clutch(es) and electric motors

Every 6,000 and 12,000 hours:

- Change lube oil and filter(s)

- Check engine cooling system

- Check and clean air filter

- Check all belts

- Change antifreeze and flush cooling system

- Check bearings in clutch and electric motor

- Clean and adjust fuel injectors

A more detailed description of service requirements and procedures can be found in the Operation and Service Manual for the Supra 950MT. This manual may be obtained from any Carrier Transicold dealer.

EMERGENCY ROAD SERVICE

At Carrier Transicold we are working hard to give you complete service when and where you need it. That means a worldwide 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 you of prompt repair.

Should you experience a problem with your unit during transit, follow your company's emergency procedure or contact the nearest Carrier Transicold service center. Consult the Shortstop Service Centers directory or visit www.trucktrailer.carrier.com and click on "Dealer Locator" to locate the service center nearest you. The Shortstop directory may be obtained from your Carrier Transicold dealer.

You can also download the Carrier Transicold North America Truck/Trailer Dealer Locator App to your smart phone. The Dealer Locator App provides:

- Location information for every Carrier Transicold dealer in North America
- The nearest dealer from your present location
- Dealer look-up capability
- Dealer services (Trailer, Truck, APU, Mobile Support, etc.)
- Addresses
- Maps to easily find dealers
- Directions and navigation to the dealerships
- Phone number and 24-hour emergency hotlines where available
- Auto dialing
- Hours of operation
- Link to dealer website
- Ability to add dealers to Contacts

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.

CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.