## Notes:

1. **Time Estimated for Installation of Unit Alone:** 3.0 Hrs

2. **The Trailer Structure Must Be Evaluated by the Trailer Manufacturer to Determine its Ability to Withstand the Loads Imposed by the Unit over Its Service Life.** Carrier Transicold Does Not Convey Any Endorsement or Warranty for the Trailer's Structural Integrity.

3. **Weight:** See Chart (Battery Included)

4. **Unit Mounting Surfaces of the Trailer That Contact the Unit Mounting Pads Must Be Uniplanar to Within 3mm [0.12] to Prevent Distortion of the Unit and/or Trailer.**

5. **Trailer Surfaces That Contact the Unit Mounting Gasket Should Not Protrude More Than 5mm [0.19] Above the Plane Defined by the Mounting Pad Surfaces to Ensure Proper Air Seal.**

6. **All Dimensions Shown Are Millimeters, with Imperial Conversions in [Inches].**

7. **Apply Service Decal (Item 125) to Unit in Location That Is Convenient for It to Be Seen and Read.**

8. **Evap Fan Grills Must Stay in Place Even When Air Duct Collectors Are Mounted by the Bodybuilder.**

9. **Warning About Remote Evaporator Connection. See Sheet 8.**

10. **Warning: Special Care is Required When Reclaiming R452A Prior to Brazing Work. Refer to Service Procedure.**

11. **See Sheet 9 for TXV Super Heat Adjustment Procedure If Required on 2 or 3 Compartment Remote Evaporators.**

### Attention Installer

Read All Notes Prior to Installation

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<td>5.6</td>
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<tr>
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<td>9</td>
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### Parts List

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>DESCRIPTION</th>
<th>WEIGHT</th>
<th>DIM A</th>
<th>DIM B</th>
<th>DIM C</th>
</tr>
</thead>
<tbody>
<tr>
<td>98-02439-00</td>
<td>VECTOR 1850-1950 M/D-TEMP</td>
<td>930 kg</td>
<td>832 [32.8]</td>
<td>962 [37.9]</td>
<td>172 [6.8]</td>
</tr>
<tr>
<td>98-02439-02</td>
<td>VECTOR 1850-1950 D/E/O</td>
<td>927 kg</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td>98-02439-03</td>
<td>VECTOR 1850-1950 S/B/O</td>
<td>631 kg</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
50 GALLON TANK

NOTES CONTINUED FROM PREVIOUS SHEET

FUEL TANK INSTALLATION:

9.0 Fuel tanks installed in accordance with these guidelines will provide adequate support in normal service environments including extreme environments.

9.1 Fuel tank support straps must attach to three cross members.

9.2 Fuel tank support straps will interface with three cross members if they are on 12-inch centers. Cross members on 15-inch centers will require a structural steel channel to span them. This channel is not supplied by Carrier Transicold.

9.3 Fuel tank should be centered between fuel tank straps.

9.4 For maximum mechanical or electrical fuel pump performance:

9.4.1 Minimize fuel line length.

9.4.2 Minimize number of connectors and unions.

9.4.3 Never use elbow fittings.

9.5 When installing fuel fuel into the tank, pass the tubes, with supply & return through the compression fittings and push tubes to the bottom of the tank. When the tubes reach the bottom of the tank, pull them back up approximately 25.4 [1.00] in order to reseat the compression nut.

10. Recommended torque values for furnished lock nuts are as follows:

<table>
<thead>
<tr>
<th>Bolt/Thread</th>
<th>Torque (Newton-Meter)</th>
<th>Torque (FT-LB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4-20</td>
<td>12.2</td>
<td>9.03</td>
</tr>
<tr>
<td>3/8-24</td>
<td>40.8</td>
<td>30.09</td>
</tr>
<tr>
<td>1/2-13</td>
<td>81.6</td>
<td>60.19</td>
</tr>
</tbody>
</table>

(Except as noted) (Except as noted)

11. Each installation kit contains sufficient clamps for fuel line routing and support. The installer may route fuel lines according to cost. (3) minimum (conduit not furnished as part of installation kit).

12. Use pipe sealant on all pipe connections and fuel level gauge (not furnished as part of installation kit).

AFTER INSTALLATION:

13. Perform pre-delivery inspection (new unit). Copy of completed checklist should be supplied to selling dealer & customer.

14. Operate unit in continuous run (manual mode) for a minimum of 12 hours. Perform final inspection on unit.

NOTE: SUPPLIED WITH BATTERY INSTALLED.

15. Connect battery cable to the positive (+) battery terminal. Connect the cable to the negative (-) battery terminal. Use of corrosion inhibitor is recommended.

17. Connect terminal covers supplied with cables over terminals.
STANDBY PLUG INSTALLATION

1.  Strip power cord insulation back 76.0 mm.
2.  Cut away any protection facing from wires.
3.  Strip insulation of wires approximately 12 mm.
4.  Tin ends of wire with rosin core electrical solder to prevent fraying and loosening of connection.
5.  Insert wire ends into the plug as shown in drawing. It is important that the green wire is connected to the safety ground connection marked as the top of the plug.

TECHNIC CONNNECTORS SECURELY AND ASSEMBLE THE PLUG.

6.  Standby plug will be secured in "up" position by factory. To rotate plug to "down" position loosen (2) #6 bolts securing stand-by plug and plate assembly. Plug will rotate approximately 35$ down. Re-tighten (2) #6 bolts to secure plate in "down" position. It is recommended the plug may also be permanently secured in a vertical orientation. Remove the (2) mounting plate and re-install the plate using the (2) additional holes directly above the plug.

7.  When testing the operation of the unit in standby mode, ensure that the rotation of the motors are correct. If the rotation is not correct, reverse the connection of any two of the three phase wires. DO NOT REVERSE ANY WIRE WITH THE GREEN SAFETY GROUND.

PLUG IN "UP" POSITION

PLUG IN "DOWN" POSITION

PLUG IN "UP" POSITION

PLUG IN VERTICAL POSITION

NOT TO SCALE

SHEET 7 OF 11

DRAWING NO. 98-02439

INSTALLATION INSTRUCTIONS
MULTI-TEMP UNITS ONLY (-01)

LIQUID CONNECTION
1/2" ORS
BEFORE MAKING THE EVAPORATOR CONNECTION
IT IS NECESSARY TO REPLACE THE O-RING SEAL BY
THE ONES FURNISHED WITH THE UNIT (SEE PLASTIC
BAG ATTACHED TO THE CONNECTION)

SUCTION CONNECTION
1-1/8 ORS
BEFORE MAKING THE EVAPORATOR CONNECTION
IT IS NECESSARY TO REPLACE THE O-RING SEAL BY
THE ONES FURNISHED WITH THE UNIT (SEE PLASTIC
BAG ATTACHED TO THE CONNECTION)

ELECTRICAL CABLE
2 AND 3 COMPARTMENT
(ELECTRICAL CABLE
3 COMPARTMENT ONLY)

IN SERVICE MODE CHECK EVAPORATOR PRESSURE ON DISPLAY BEFORE
OPENING THE SUCTION AND LIQUID CONNECTION.
THE PRESSURE MUST BE BELOW 0 BAR.
IF NOT PROCEED TO PUT THE REFRIGERANT IN THE RECEIVER.

MULTI-TEMP SYSTEM CONFIGURATIONS (-01)

DETAIL C
SCALE 0.200

ADDITIONAL BULKHEAD SUPPLY
WITH MLT° INST KIT

IN SERVICE MODE CHECK EVAPORATOR PRESSURE ON DISPLAY BEFORE
OPENING THE SUCTION AND LIQUID CONNECTION.
THE PRESSURE MUST BE BELOW 0 BAR.
IF NOT PROCEED TO PUT THE REFRIGERANT IN THE RECEIVER.
MULTI-TEMP REMOTE EVAPORATOR TXV SUPERHEAT ADJUSTMENT PROCEDURE

IMPORTANT BEFORE PERFORMING SUPERHEAT ADJUSTMENT CHECK THE FOLLOWING:

- ASSURE PROPER REFRIGERANT CHARGE LEVEL (SYSTEM)
- CHECK SUFFICIENT MINIMUM DISTANCE REQUIRED BETWEEN EVAPORATOR OUTLET AND THE SUPERHEAT 1000 mm FOR 700/1100 Evaporator Models and 1500 mm for 2000 Evaporator Models.

1. PLACE A THERMOCOUPLE AS CLOSE AS ONE CAN GET TO THE TXV SENSING BULB LOCATED ON THE SUCTION LINE TO DO THAT, ONE MUST REMOVE THE PRESTATE TAPE AROUND THE TXV SENSING BULB AREA TO ALLOW ACCURATE READING FROM THE THERMOCOUPLE. IT SHOULD BE INSTALLED ON THE COPPER TUBE NEXT TO THE SENSING BULB, AND IT SHOULD BE SECURED WITH A PIECE OF ELECTRICAL TAPE AROUND THE SIZE OF 1/4 IN DIAMETER. THE PRESTATE TAPE INSTALLATION MUST BE CLEANED AND COATED WITH A SEALANT.

2. CONNECT A SUCTION PRESSURE GAUGE TO THE FLARE FITTING WITH SCHRADE VALVE

3. TURN OFF THE HOST UNIT EVAPORATOR COIL AND IN CASE OF 3 COMPARTMENTS, TURN OFF THE EVAPORATOR THAT IS NOT TO BE ADJUSTED.

4. TAKE AT LEAST 10 READINGS OF THERMOCOUPLE DURING A 15 MINUTE PERIOD WHEN THE REMOTE EVAPORATOR COMPARTMENT TEMPERATURE IS AROUND 2°C. IT IS IMPORTANT TO ASK THE THERMOCOUPLE READING AS IT COULD BE DUE TO THE COMPARTMENT TEMPERATURE NOT CONTROLLING CONSISTENTLY AT 2°C. TO ACHIEVE THIS, ONE CAN ARRANGE THE BULKHEAD AND OPEN THE TRAILER DOORS SLIGHTLY IF IT IS NEEDED. THE TEMPERATURE OF THE TRAILER IS CRITICAL TO THE SUPERHEAT SETTING AS IT WILL ALLOW MOISTURE INSIDE THE TRAILER AND FROM THE EVAPORATOR COIL, WHICH WILL AFFECT THE SUPERHEAT INSTALLED.

5. USING A PRESSURE-TEMPERATURE (P/T) CHART FOR R404A/R452A REFRIGERANT, CONVERT THE SUCTION PRESSURE TO TEMPERATURE. THE AVERAGE BULB TEMPERATURE MINUS THE SUCTION TEMPERATURE EQUALS THE OPERATING SUPERHEAT. (IN CASE OF R-404A UNITS, READ TEMPERATURE ON MANIFOLD GAUGE).

6. THE ABOVE INSTRUCTED PROCEDURE SHOULD PRODUCE ABOUT 8°-9°C (15-17ºF) OF SUPERHEAT. IF NOT, ONE NEEDS TO ADJUST THE TXV.

7. ONE COMPLETE TURN OF 360 DEGREES WILL GENERATE APPROXIMATELY 7°C OF SUPERHEAT. TO DECREASE SUPERHEAT, TURN THE SCREW COUNTER-CLOCKWISE; TO INCREASE SUPERHEAT, TURN IT CLOCKWISE. AFTER ADJUSTMENT IS COMPLETED, PLEASE REPEAT STEP 5.


9. FOR FINAL VERIFICATION, CONTINUE TO PULL DOWN THE REMOTE EVAPORATOR COMPARTMENT TEMPERATURE TO -29°C (-20 ºF) AND TAKE ANOTHER 10 READINGS OF THERMOCOUPLE DURING A 15 MINUTE PERIOD. USE THE AVERAGE OF 10 READINGS AS THE TXV BULB TEMPERATURE.

10. THE REMOTE EVAPORATOR SUPERHEAT SHOULD BE ABOUT 4°-5°C (7-9ºF) WHEN THE COMPARTMENT TEMPERATURE IS AT -20°C (-4 ºF) TO PREVENT FLOODING THE HOST UNIT COMPRESSOR.

MULTI-TEMP REMOTE EVAPORATOR TXV SUPERHEAT ADJUSTMENT PROCEDURE
**CONNECTION OF ACCESSORIES TO THE BATTERY GUARD**

1. **Option #1**
   - As the temperature recorder, GPS tracking system, may discharge the battery when the unit is off and must be connected to the battery guard.
   - A) Under the control box, remove the heat shrink sleeve at the ends of the white and green wires (OPT1+ / OPT1-) to connect the first option.
   - B) Strip each wire of the option #1 and wires of the battery guard (OPT1+ & OPT1-) by 7mm.
   - C) Crimp the butt splice (included in the control box) with the + wire of the option 1 with the white (OPT1+) of the battery guard and the - wire of the option 1 with the green wire (OPT1-) of the battery guard.
   - D) Heat the heat shrink sleeve using a heat gun.
   - E) Using the original fuse delivered with the option #1 (accessory), install it into the battery guard PCB inside the control box as shown below.
   - F) Follow the same procedure when installing options #2 and #3.

2. **IMPORTANT: The max. allowable current for all the options is 2A.**
   - All options must be connected to the battery guard output to prevent any deep discharge of the battery.

---

**Options as temperature recorder, GPS tracking system, may discharge the battery when the unit is off and must be connected to the battery guard.**

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**CONNECTION OF ACCESSORIES TO THE BATTERY GUARD**

1. **Option #1**
   - As the temperature recorder, GPS tracking system, may discharge the battery when the unit is off and must be connected to the battery guard.
   - A) Under the control box, remove the heat shrink sleeve at the ends of the white and green wires (OPT1+ / OPT1-) to connect the first option.
   - B) Strip each wire of the option #1 and wires of the battery guard (OPT1+ & OPT1-) by 7mm.
   - C) Crimp the butt splice (included in the control box) with the + wire of the option 1 with the white (OPT1+) of the battery guard and the - wire of the option 1 with the green wire (OPT1-) of the battery guard.
   - D) Heat the heat shrink sleeve using a heat gun.
   - E) Using the original fuse delivered with the option #1 (accessory), install it into the battery guard PCB inside the control box as shown below.
   - F) Follow the same procedure when installing options #2 and #3.

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**Options as temperature recorder, GPS tracking system, may discharge the battery when the unit is off and must be connected to the battery guard.**

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   - D) Heat the heat shrink sleeve using a heat gun.
   - E) Using the original fuse delivered with the option #1 (accessory), install it into the battery guard PCB inside the control box as shown below.
   - F) Follow the same procedure when installing options #2 and #3.
Battery Guard Logic

LED On = Option is Connected
LED off = Option is disconnected
LED flashing = Option is going to be disconnected

If the Battery Guard is running out of range (if Ubat > 17V or Iout > 2A) when the refrigeration unit is off, the LED is quickly blinking for 1 minute and then it is off.

The LED is on when the load option is connected. Blinking before disconnection.

The options are disconnected and the LED is off. Back to normal operating mode if Ubat < 17V after 3 minutes, then the LED is quickly blinking when the battery guard is running out of range.

Electrical Characteristics:
- Max. Voltage for more than 1 minute: 17V
- Max. Current for more than 1 minute: 2A
- Max. Total Current for less than 1 minute: 14
- Max. Current per Option for less than 1 minute: 8A
- Max. Power Consumption of the Battery Guard when load is connected: 2W
- Max. Power Consumption of the Battery Guard when the load is disconnected: 20mA
- Max. LED Power Consumption: 30 µA

Maximum Current for less than 1 minute: 4A
Maximum Total Current for less than 1 minute: 9A
Maximum Voltage for more than 1 minute: 17V

Electrical Characteristics:
- The LED is quickly blinking when the battery guard is running out of range.
- The LED is on when the load option is connected. Blinking before disconnection.
- The options are disconnected and the LED is off. Back to normal operating mode if Ubat < 17V after 3 minutes, then the LED is quickly blinking when the battery guard is running out of range.

Input Conditions:
- Previous State
- Intermediate State
- Disconnected

Scale 1:000

Battery Guard LED for the Options