Shipboard Modular Hatchable Thaw Cabinet

Technical Manual

Installation, Operation, and Maintenance Instructions

Models:

THR31-2M-SN-MLR

(S/N's 7211-01 to present)

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Chapter 1—General Information

1.1 Introduction

This technical manual provides information on the installation, operation, maintenance, and inspection of this unit manufactured by **Cospolich Inc.**, Destrehan, Louisiana. A complete parts breakdown is provided in Chapter 7.

1.2 Scope of the Manual

This technical manual provides information for installation, operating, preventative maintenance, and service instructions, including applicable drawings and figures of the equipment.

1.3 Equipment Description

The unit consists of the following parts:

A. *Storage Compartment* - The storage compartment is clear storage area. Included in this area are the product pans.

B. *Door(s)* – Access to the storage compartment is through hinge mounted door(s).

C. *Condensing Unit & Controls Compartment-* The condensing unit and controls compartment is located below the storage compartment of the cabinet. Access to this compartment is through an removable grill on the front left of the cabinet.

D. *Evaporator Coil Assembly–* The evaporator coil assembly is located in the storage compartment and is responsible for distributing the cold air associated with the refrigeration system.

E. *Cabinet -* The cabinet is the enclosure in which all of the above items are housed.

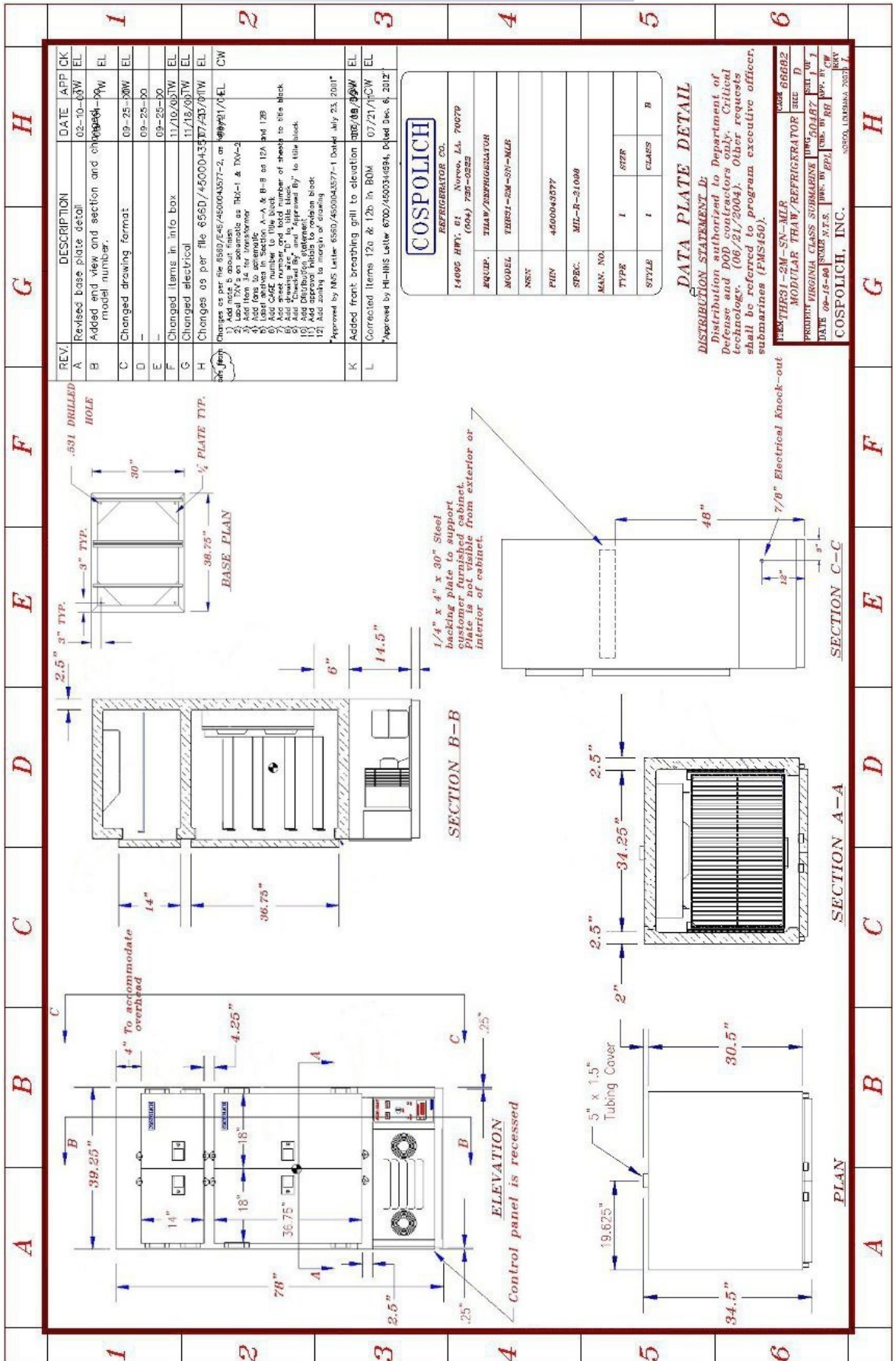
1.4 Equipment Supplied

The unit is shipped from the factory fully assembled, palletized and crated to minimize the possibility of damage in shipping and storage.

Table A—Leading Particulars

MANUFACTURER:	**Cospolich Inc.** **Destrehan, Louisiana 70047**
TYPE: **MODEL:**	**Marine Shipboard Modular Hatchable Thaw Cabinet** **THR31-2M-SN-MLR**
PURPOSE:	**Safe Thawing of Frozen Food Items/Perishables**
ELECTRICAL REQUIREMENTS:	**Power Supply - 115 Volt AC, 60 Hz, 1 Phase** **Amp draw - RLA: 8.9 Amps** **- Max Fuse: 20 Amps**
REFRIGERANT: **CHARGE:**	**134A** **2 lbs., 4 oz.**
DRAIN:	**Not Required**
DIMENSIONS:	**39.25" WIDE X 33.5" ACTUAL CABINET DEPTH X 78" HIGH**

Illustration 1.A—General Arrangement Drawing



Chapter 2—Operation

2.1 Introduction

This model is a heavy-duty piece of food service equipment designed for intermittent use. It incorporates electronic controls to regulate the cycling and temperature of the refrigeration system.

2.2 Table B—Controls and Indicators

Name	Type	Function
Power Switch	On/Off Switch	Power Control, terminates all electrical into and past the supply cord
Low Pressure Switch	Contact Points	Cycles the refrigeration system in instances of low refrigerant
Suction Valve	Manual Plunger Valve	Isolate suction at the compressor
Discharge Valve	Manual Plunger Valve	Isolate Discharge line at receiver

Note: *Normal operating pressures in 90ºF ambient environments for refrigerator applications (37ºF Cabinet temperature) should be 40-65 psi Suction Pressure and 300-375 psi Head Pressure.*

Note: *Operating pressures are affected by ambient conditions, product load, and the condition of the equipment.*

Illustrations 2.A, 2.B —
Control Panel & Condensing Unit Assemblies

Illustration 2.A
Control Panel &
Grill Assemblies

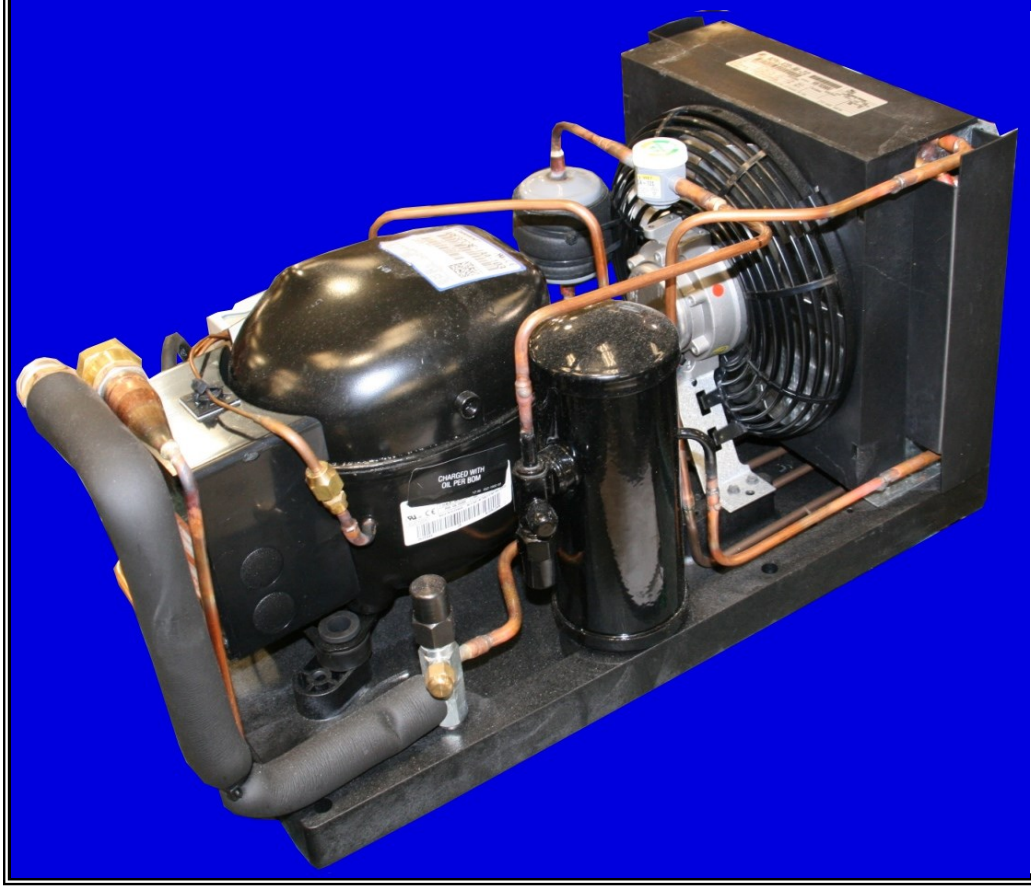


Illustration 2.B
RUT150-PM
Condensing
Unit Assembly

2.3 Start Up Procedure

The refrigeration system is completely factory assembled, pre-charged, and ready for operation. To energize the unit, it is only necessary to find the power supply cord and connect it to a proper 115V power source. Once the supply cord has been connected to a power source, the unit can be started by flipping the power control switch to the "ON" position.

NOTE: On modular units (MLR suffix in model number) the equipment will require dismantling.

Table C—Start-Up Procedure

	Operation	Results
1.	Activate system by connecting electrical service cord to power supply.	This brings power to the control. The compressor should immediately come on line along with the condenser fan and the evaporator fan(s)
2.	Place power switch to "Refrigeration" or "Thaw" position	This brings power to the controls.
3.	Locate liquid refrigerant indication glass mounted on the receiver	Once the system has been operating for two minutes, the glass should appear clear and full of liquid refrigerant.
4.	Wait 15 minutes	The temperature in the storage area should begin to drop.
5.	Wait 3 hours	Once the operating temperature has been reached, stocking of the cabinet are can begin.

2.4 Shut Down Procedure for Short Term

To shut down, switch the power control to the "OFF" position.

Table D—Shut-Down Procedure for Short Term

	Operation	Results
1.	De-energize the system by flipping the power control switch "OFF".	Once the system is de-energized the cabinet has no power.

WARNING: PRIOR TO CLEANING ANY OF THE UNIT, THE SYSTEM SHOULD BE DEACTIVATED BY DISCONNECTING THE POWER SUPPLY.

2.5 Cleaning Instructions

1. It is necessary that the power source be turned off.

2. Remove all shelves/product pans.

3. Wipe entire unit using a clean cloth or sponge with a mild detergent.

WARNING: DO NOT SPLASH OR POUR WATER ONTO THE EVAPORATOR ASSEMBLY, CONTROL PANEL, CONDENSING UNIT AND/OR WIRING.

CAUTION: POSSIBLE SHOCK HAZARD MAY RESULT AND UNIT MAY BE DAMAGED SHOULD ELECTRICAL COMPONENTS BECOME WET.

4. A plastic scouring pad may be used in the storage area to remove any hardened food particles.

5. When cleaning is finished, rinse the inside thoroughly with a solution of vinegar and water to neutralize all detergent/cleaner residue.

Important: *It is not recommended to use any strong or caustic cleaners on the Thaw Cabinet. Do not allow ammonia to stand in the interior of the unit. Make certain to rinse thoroughly to remove all residue. Failing to do so may cause damage or corrosion to the unit.*

2.6 Preparation for an Extended Period of Inactivity

This unit is designed for periodic use. For extended shut down the electrical should be disconnected and the interior cleaned.

Table E—Shut Down Procedure for Extended Period

	Operation	Results
1.	Fully close discharge valve at the receiver	Compressor will pump liquid refrigerant from system to receiver.
2.	Fully close suction valve at the compressor	This will isolate the refrigerant between the two valves.
3.	De-energize the system by flipping the power control switch to the "OFF" position and disconnecting the electrical supply cord.	De-energizes system. The condenser fan and evaporator fan(s) will cease operation.
4.	Clean and wipe dry the food storage compartment	This will reduce the odor buildup during shut down period.

Chapter 3—Functional Description

3.1 System Description

The unit is a self-contained, automatically controlled, continuous duty perishable food storage system. It is designed with the intent and purpose of storing perishable food items.

The operating temperature is automatically monitored by the electronic controls that are factory set to maintain a predetermined adequate storage condition.

The equipment is comprised of the following two basic compartment assemblies:

1. *Condensing Unit Compartment*—This area contains the condensing unit along with the control panel assembly.

2. *Storage Compartment*—The insulated food storage area is a temperature controlled refrigerated area. Included in this compartment are the product pans and evaporator coil assembly.

3.2 System Operation

The design of the thaw cabinet focuses primarily on the safe thawing of frozen food products requiring refrigeration. In engineering, considerable attention was placed on not only its functionality, but also serviceability.

The refrigeration system is a closed loop system. Barring a leak in the system, the addition of refrigerant will not be necessary. A periodic check of the refrigerant level, however, is recommended to insure that the system operates at the optimum level at which is was designed.

The chilled food compartment is designed for the storage of perishable food items that require a temperature range of 37 to 40ºF on refrigerators and –5 to 0ºF on freezers. It is a general rule that adequate spacing is allowed between the stored items to allow for proper air circulation.

Chapter 4—Scheduled Maintenance

4.1 Introduction

To insure the longest and most trouble free operation, a thorough periodic maintenance schedule is required. The maintenance system should be aimed at maximizing the efficient utilization of maintenance personnel, minimizing down time, and providing the orderly acquisition of spare parts support.

The Cospolich Thaw cabinet will generally be in operation in a facility or onboard a vessel where scheduled maintenance is performed according to Maintenance Index Plans. This unit requires regular maintenance. This chapter is intended as an alternative to any standard maintenance program that may pre-exist. The preventative maintenance schedule is based upon similar maintenance requirements for commercial refrigeration equipment.

4.2 Preventive Maintenance Action Index

If there is not a maintenance index plan, we have formulated our schedule for periodic maintenance in Table G.

4.3 Preparation for Maintenance

Since many areas affected in the maintenance schedule are electrically supplied, it may be necessary to de-energize the system when making these inspections.

4.4 Maintenance

A. Monthly Maintenance

1. The unit should first be de-energized by switching the toggle switch to the "OFF" position. The switch is found on the electronic control panel assembly on the lower front face of the unit.

2. Using a vacuum or soft brush/broom, brush the condenser fins in a vertical motion to remove dust or debris.

B. Bi-Monthly Maintenance

1. Check the drain line at both the inlet and outlet ends to make certain that there are no obstructions (forced air evaporator models only). It is not recommended to use any chemicals in clearing a clogged drain. The preferred method is to use compressed air, with approximately 60 psi being sufficient to free most clogs or obstructions. To do so, simply remove the drain line at the evaporator coil and attach an air line to it.

2. With the unit in a cooling cycle, use a flashlight and locate the refrigerant sight glass. If the compressor has been running for 3 or more minutes, there should be no visible bubbles.

   A. If bubbles are present:

   - Determine if there is a leak by using an electronic leak detector.
   - Repair any/all leak(s).

Warning: *The system should be de-energized when checking for leaks.*
Warning: *Do not apply a flame to lines containing refrigerant as dangerous and toxic phosgene gas my be created.*

   B. To repair leaks:

   1. Flared Fitting: Can often be repaired by simply tightening the brass flare nut 1/4 of a turn. If tightening does not repair the leak, it may be necessary to re-flare the tubing.
   2. Brazed Joint: It is necessary to pump down the system's refrigerant charge to remedy the problem. To pump the refrigerant into the receiver, you must first connect service gauges to the sys tem at the suction valve on the compressor and the liquid valve on the receiver. Purge the gauges before opening the systems valves to avoid contamination. Run the receiver (liquid or high pressure) valve all the way in to stop the refrigerant from exiting the receiver. The system must be pumped down to a vacuum prior to opening. Once pumped down, the necessary repairs can be made.

3. Using a mild non-abrasive detergent and soft cloth, wipe the interior lining beginning with the top and working down. Also, wipe the gasket and where it sits on the cabinet interior.

4. Remove the louvered air grill and unbolt the condensing unit, then slide it out. The unit is capable of being completely re moved due to the extra tubing coiled up behind/beside the unit. With the unit de-energized, check the condenser fan motor and make certain that it is secure and not loose. Inspect the fan blade for cracks and make sure it is tight on the motor.

5. To inspect the evaporator motor, de-energize the unit. Remove the drain line from the evaporator pan. Loosen the screws that hold the shroud. Lower the shroud and disconnect the polarized electrical connection. With the shroud out of the cabinet, proceed to inspect the motor mounting bolts and the fan for cracks or excessive play. ***NOTE:*** *In vertical style evaporators, lift/ remove the side cover to examine the evaporator fans, which should be clearly visible and accessible.*

6. Using a mild detergent and water, wipe the vinyl gasket. Make certain to clean under the gasket to remove any mildew or residue that may have accumulated.

7. Using a mild, non-abrasive detergent and water, wipe the cabinet exterior, paying careful attention to wipe the cabinet in the direction of the stainless steel grain texture.

C. Annual Maintenance

1. Slide the condensing unit out and check all refrigerant lines for leaks or fatigue, making sure no copper lines are in direct contact with any other metal surfaces. If contact exists, place an insulated material between the two surfaces.

2. Inspect electrical connections to make certain that there is a good contact and that wires are neither weakened or frayed.

3. Inspect the integrity of the cabinet.

4. Check all bolts and screws to make sure they are tight and secure.

D. 3-Year Frequency Maintenance

1. Replace all door gaskets. To do so, first remove all products from the refrigerated compartment. Using a Phillips screwdriver, remove the door from the cabinet and lay it on a flat surface, gasket facing up. Lift the flange off the gasket and remove all screws securing it to the door. Remove the original gasket and replace with a new one. Reinstall all screws and mount door back onto cabinet.
2. Inspect all motors and shafts for noise & wear, replace if necessary.
3. With the unit de-energized, remove the condensing unit from its compartment and inspect all wiring for signs of fatigue or wear.
4. Inspect the operation of the door latch assembly (when applicable). Check for signs of wear, loose screws, or mechanical failure.
5. Inspect the operation of the door hinges. To do so, open the door at a 90º angle to the cabinet and lift on the outer edge of the door. If there is upward movement of ½" or more, replace the hinges. On spring-mount hinges, when the doors no longer close properly, replace the hinges.

Table F—Preventive Maintenance Action Index

	Frequency	Description
1.	Monthly	A. Inspect condenser coil to make certain air flow is not obstructed and that it is clear of dust and debris.
2.	Bi-Monthly	A. Inspect and clear drain line. B. Check the liquid refrigerant sight glass for proper refrigerant charge C. Clean interior and exterior of cabinet with mild detergent and water, dry thoroughly D. Check both condenser fan motor and evaporator motor(s) for proper function and that they are mounted securely E. Clean door gaskets and breaker strips with a damp cloth
3.	Annually	A. Slide out condensing unit, check all joints and fittings for signs of wear, leaks, or fatigue B. Inspect electrical connections to make certain that there is a good contact and that wires are neither weakened or frayed. C. Check the integrity of the cabinet
4.	3-Year	A. Replace all door gaskets B. Inspect motor shafts for noise or wear C. Inspect electrical controls and wiring D. Inspect door latch (when applicable) and hinges.

Chapter 5—Troubleshooting

This chapter will assist in a systematic check of components in determining any cause of equipment failure.

It will be necessary that the individual involved in the troubleshooting operation be familiar with the function of the equipment as described in Chapter 3.

The following table lists the most common symptoms that may be experienced and the recommended corrective action. The tables are separated into electrical maintenance, mechanical maintenance, and operators' actions.

Table G—Mechanical and Electrical Troubleshooting Guide

Symptom	Possible Failure	Remedy
Unit does not operate	A. Control failure B. Incorrect voltage C. Failed compressor	A. Adjust control or replace B. Correct C. Replace
Unit runs continuously	A. Control failure B. Bad connection at TXV expansion valve C. Restricted air flow D. Bad condenser fan motor E. TXV valve stuck open F. Ineffective door seal G. Restricted air flow in storage compartment	A. Adjust control or replace B. Check and secure sensor bulb to suction line C. Clear obstruction and clean condenser D. Check and replace E. Replace F. Adjust door latch and hinges G. Redistribute food for even air flow
Low Head Pressure	A. Defective compressor B. Low refrigerant C. Ambient temp too low	A. Replace B. Leak check & recharge C. Raise room temperature
High Head Pressure	A. Dirty condenser B. System contains air C. Refrigerant overcharge D. Condenser fan bad	A. Clean condenser B. Evacuate, change filter dryer, recharge C. Reduce qty of refrigerant D. Replace
Short Cycling	A. Maladjusted control	A. Adjust control

Chapter 6—Corrective Maintenance

6.1 Introduction

This chapter focuses on the instruction needed in the removal and replacement of certain components. We will also address the repair of components not listed under the schedule maintenance index covered in Chapter 4.

The components that we address are considered acceptable for repair using standard procedures that we will detail. The level of skills required to perform the service or repair will vary. Some may require specific training. It is up to the individual and /or his supervisor to determine their capability to undertake the particular task of service or repair. It is also important to know that any procedure requiring the handling of electrical components and appliances. The service or repair items are limited to those listed in Chapter 7.

6.2 Repair Procedure

****WARNING****

PRIOR TO PERFORMING ANY WORK ON THE SYSTEM, IT IS REQUIRED THAT THE UNIT BE DE-ENERGIZED.

Note: *To access the electrical components the louvered grill on the front of the cabinet must be removed. To remove it, simply lift up and pull the bottom of the grill outward.*

6.2.1 Replacement of Compressor (Part #: RUT151)

1. Evacuate the refrigerant from the system using a recovery system in compliance with all Federal regulations.

2. Disconnect power supply to the unit.

3. Remove the exterior louvered grill to access the condensing unit compartment.

4. With the grill(s) removed, use a 3/8” wrench/socket to remove the mounting bolts that secure the condensing unit to the cabinet base. Slide entire unit out, paying attention to lift it over the angle mounting clips at the base.

5. Find electrical terminal box on side of compressor and remove cover. Disconnect the wires from the compressor. Remove the screws that attach terminal box to the compressor. The compressor is now electrically detached.

6. Using wrenches, remove the suction and discharge valve stem cover caps on each side of the compressor. Also remove the cap nut on the suction and discharge side as well.

7. Disconnect high-side line at the compressor. This is done by heating the brazed connection using an acetylene and oxygen torch set. ***Note:*** *Do not apply a flame to lines containing refrigerant as dangerous and toxic phosgene gas my be created.*

8. To remove the low pressure control capillary tube and service fitting, loosen the ¼" brass flare nut on the suction valve.

9. Disconnect the compressor from its mounting. Remove the wire clips on each of the four feet. Remove old compressor.

10. To install the new compressor, place it in position on the base and reinstall four wire clips.

11. Reattach the suction and discharge valve blocks to the appropriate sides of the compressor.

12. Reattach the low pressure control capillary tube and service fittings to the suction side of the compressor.

13. Reattach the suction line to the compressor.

14. Prepare the high pressure line's end by cleaning off residue using a fine sandpaper or emery cloth. Also clean the connection on the compressor. Apply flux to both ends and braze the connections into place.

15. Remove valve stem cap from suction block on side of the compressor. Run valve stem out all the way then in one turn clockwise.

16. Place refrigeration service gauge hoses on both suction and high side valves. Attach a bottle of refrigerant to the charging hose and charge the system with 10 psi of 134a, then using N^2, bring pressure up to 150 psi. Use an electronic leak detector to check system for leaks. Repair all leaks, if necessary.

17. If no leaks are present, recover the test charge using a vacuum recovery pump.

18. With the system pressure at 0 psi, connect the vacuum pump and evacuate the system. Run pump for 1 hour. Pump should pull system down to 29.72" Hg (NSTM 516 requires evac of 5000 microns, 29.72" Hg).

19. Reattach electrical terminal box and secure all wiring.

20. Check refrigeration tag on the unit for the number of ounces of refrigerant to place into the system for start up. Monitor the pressure on both the suction and discharge sides of the manifold gauges. As the temperature in the storage area begins to fall, check the refrigerant flow through the sight glass. The unit is fully charged when there are no bubbles in the sight glass. If after five minutes of operation, bubbles are still present, it may be necessary to add more refrigerant, which should be done in small amounts to keep from overcharging.

Warning: *Overcharging a refrigeration system can be dangerous. If assistance is required, call Cospolich (800) 423-7761 to speak to a service technician.*

6.2.2 Replacement of Low Pressure Control (Part #: RWPL01)

1. Disconnect the unit from electrical service.

2. Remove control cover and disconnect electrical terminals.

3. Disconnect capillary tube.

4. Remove mounting fasteners on control base and install new control.

5. To adjust the new control, hook up service gauges to the suction and discharge valves and crack them to allow the gauges to detect a reading.

6. Using a standard screwdriver, coarse adjust the control by turning the adjustment screws on the top of the control. Preset the cut-in and cut-out at 0 psi and 10 psi respectively for a refrigerator (and 0 psi and 10 psi respectively for a freezer, when applicable).

NOTE: *If your unit does not contain a thermostat, please contact Cospolich Customer Service at (800) 423-7761 for your cabinet's appropriate settings.*

7. Start the system and allow it to run for five minutes. Monitor the low side pressure. Fine adjustments may be necessary to achieve the proper cycling pressures.

6.2.3 Replacement of Expansion Valve (TXV)—(Part #s: RWEV24)

1. Close liquid valve and run compressor until it pumps refrigerant into the receiver (low side service gauge will read 1 psi). Close the suction line valve. It may be necessary to jump out the pressure switch in order to achieve the 1 psi reading.

2. Disconnect the sensor bulb connections at the suction line.

3. Disconnect the liquid line (¼") and suction line (3/8") then remove the TXV.

4. Install new TXV, reconnect lines, and re-install the sensor bulb.

5. Purge system and add refrigerant, if needed.

6.2.4 Replacement of Filter Dryer— (Part #: RWFD02)

1. Close liquid line valve and run compressor until the low side refrigeration gauge indicates 1 psi, then close suction. It may be necessary to jump out the pressure switch in order to achieve the 1 psi reading.

2. Remove the filter dryer from the system and replace with new dryer.

3. Purge system and add refrigerant, if needed.

6.2.5 Replacement of Condenser Fan Motor— (Part #: RWCM24)

1. Disconnect all electrical power to the unit.

2. Remove the condensing unit from its compartment.

3. Remove the protective wire shroud from around the motor.

4. Disconnect fan motor leads from the terminal box on the compressor.

5. Remove the mounting screws at the motor base.

6. Using an Allen wrench, remove the aluminum fan.

7. To install new motor, reverse the process.

6.2.6 Replacement of Condenser Fan Blade—(Part #: RWFB39)

1. Disconnect all electrical power to unit.

2. Remove the condensing unit from the its compartment.

3. Locate and remove the five mounting screws attaching the blower trim and frame.

4. Remove protective wire shroud from around the motor.

5. Using an Allen wrench, loosen the set screw on the blade hub and slide the blade from the shaft.

6. Replace the blade. Reverse the process to reassemble.

6.2.7 Replacement of the Anti-Condensate Heater(s)—(Part #s: L1HR141-Lower, L1HR95-Upper)

NOTE: *The anti-condensate heater wire is located behind the front edge of the vinyl breakers in the door opening.*

1. Disconnect all electrical power to the cabinet

2. Remove vinyl breaker strips by exerting pressure at the front edge toward the door.

3. Disconnect anti-condensate heater wiring connection.

4. Remove heater from recessed rail.

5. Replace new heater wire in rail and reconnect electrical.

6.2.8 Replacement of Door Handle/Latch—(Part #: HXLH10)

1. Please call Cospolich Customer Support (800) 423-7761 for assistance.

6.2.9 Replacement of Door Hinge(s)—(Part #: HXHE02)

NOTE: *This procedure is best accomplished with two people—one to hold the door while the other removes and the attachment screws.*

1. Using a screwdriver, remove the three screws that attach the butt section of the hinges to the cabinet.

2. With the door detached from the cabinet, remove the screws that attach the hinges to the door.

3. To install replacement hinges, reverse the process.

4. On spring-loaded hinges (when applicable), careful attention must be paid to the spring cartridge during the replacement process. Call Cospolich (800) 423-7761 for assistance.

6.2.10 Replacement of Door Gasket—(Part #: GTHR31MV1, Lower Section) (Part #: GTHR31MV2, Upper Section)

NOTE: *It is suggested that the door be removed from the cabinet and placed gasket side up on a table during the replacement process. Pay careful attention not to cut the new gasket when installing.*

1. Pull back gasket and remove all fasteners located below the gasket lip.

2. Clean the area under the gasket.

3. Place new gasket on door, replace all fasteners.

4. Reinstall door onto cabinet.

6.2.11 Replacement of Door Assembly—(Part #'s: TDA31SL, TDA31SR, TDA31SR-UPPER, TDA31SL-UPPER)

1. Remove screws securing door hinges to cabinet. Remove faulty door.

2. Install new door by screwing hinges into existing holes in the front face of the cabinet.

3. If the new door does not close or latch properly, adjust the door latch and/or strike until the desired seal is achieved.

6.2.12 Replacement of Door End Catch—(Part #: HXLH42)

1. For assistance with the door end catch, contact Cospolich Technical Support at 1-800-423-7761.

6.2.13 Replacement of Stainless Steel Product Pan—(Part #: FTW31S)

1. Open front doors of the unit.

2. Grasp front handle to faulty stainless steel product pan, slide out front of unit.

3. Remove stainless steel shelf from inside of faulty stainless steel product pan.

4. Reverse the process to install new stainless steel product pan.

6.2.14 Replacement of 1/2" Drain Line Tubing—(Part #: CVT12)

1. Open front door to the unit.

2. Remove faulty 1/2" drain line tubing from the drain of the evaporator coil assembly.

3. Reverse the process to install the new 1/2" drain line tubing.

6.2.15 Replacement of Control Panel Assembly—(Part #: RCTL31 (134A)

1. For assistance with the control panel assembly, contact Cospolich Technical Support at 1-800-423-7761.

6.2.16 Replacement of Overlay—(Part #: CXL040)

1. Shut off all electrical power to the unit.

2. Unscrew exterior fasteners securing the indicator lights and on/off toggle switch to the control panel assembly front door.

3. Peel off old damaged/faulty overlay from the face of the control panel assembly front door.

4. Reverse the process to install the new overlay.

6.2.17 Replacement of Transformer—(Part #: PCPT56)

1. Shut off all electrical power to the unit.

2. Unscrew fasteners securing front face of control panel assembly door closed.

3. Open front door of control panel assembly.

4. Disconnect electrical connections to faulty transformer. Remove fasteners securing faulty transformer in place.

5. Reverse the process to install new transformer.

6.2.18 Replacement of Indicator Light—(Part #: PCSW03)

1. Shut off all electrical power to the unit.

2. Unscrew fasteners securing front face of control panel assembly door closed.

3. Open front door of control panel assembly.

4. Disconnect electrical connections to rear of the faulty indicator light.

5. Remove fasteners securing faulty indicator light to exterior front face of the control panel assembly door.

6. Remove faulty indicator light.

7. Reverse the process to install new indicator light.

6.2.19 Replacement of Clear Lens—(Part #: PCSW10)

1. Shut off all electrical power to the unit.

2. Unscrew exterior fasteners securing the indicator light containing the faulty clear lens to the control panel assembly front door.

3. Remove faulty clear lens from indicator light.

4. Reverse the process to install new clear lens.

6.2.20 Replacement of Light Bulb—(Part #: PCSW11)

1. Shut off all electrical power to the unit.

2. Unscrew exterior fasteners securing the indicator light containing the faulty light bulb to the control panel assembly front door.

3. Remove clear lens from indicator light.

4. Remove faulty light bulb.

4. Reverse the process to install new clear lens.

6.2.21 Replacement of Thaw Switch—(Part #: PCSW90)

1. Shut off all electrical power to the unit.

2. Unscrew fasteners securing front face of control panel assembly door closed.

3. Open front door of control panel assembly.

4. Disconnect electrical connections to rear of the thaw switch.

5. Remove fasteners securing faulty thaw switch to exterior front face of the control panel assembly door.

6. Remove faulty thaw switch.

7. Reverse the process to install new thaw switch.

6.2.22 Replacement of Complete Terminal Block Assembly—(Part #: PCTB301)

1. For assistance with the complete terminal block assembly, contact Cospolich Technical Support at 1-800-423-7761.

6.2.23 Replacement of 120V Relay—(Part #: PCCR36)

1. Shut off all electrical power to the unit.

2. Unscrew fasteners securing front face of control panel assembly door closed.

3. Open front door of control panel assembly.

4. Remove faulty 120V relay from relay socket.

5. Reverse the process to install new 120V relay.

6.2.24 Replacement of Relay Socket—(Part #: PCRS22)

1. Shut off all electrical power to the unit.

2. Unscrew fasteners securing front face of control panel assembly door closed.

3. Open front door of control panel assembly.

4. Remove 120V relay from faulty relay socket.

5. Remove fault relay socket from the din rail.

6. Reverse the process to install the new relay socket.

6.2.25 Replacement of Terminal End Stop—(Part #: PCTES35)

1. Shut off all electrical power to the unit.

2. Unscrew fasteners securing front face of control panel assembly door closed.

3. Open front door of control panel assembly.

4. Using a small flathead screwdriver, unscrew and remove the faulty terminal end stop from the din rail.

5. Reverse the process to install the new terminal end stop.

6.2.26 Replacement of Din Rail—(Part #: PCTR001)

1. For assistance with the din rail, contact Cospolich Technical Support at 1-800 -423-7761.

6.2.27 Replacement of Terminal Divider/Section—(Part #: PCTTW2,5 -6, PCTWK6/U)

1. Shut off all electrical power to the unit.

2. Unscrew fasteners securing front face of control panel assembly door closed.

3. Open front door of control panel assembly.

4. Using a small flathead screwdriver, unscrew and remove the wiring to the faulty terminal divider/section. Remove from the din rail.

5. Reverse the process to install new terminal divider/section.

6.2.28 Replacement of LED Thermometer—(Part #: RWTM04)

1. Shut off all electrical power to the unit.

2. Unscrew fasteners securing front face of control panel assembly door closed.

3. Open front door of control panel assembly.

4. Disconnect electrical connections to rear of the LED Thermometer.

5. Remove fasteners securing faulty LED Thermometer to interior front face of the control panel assembly door.

6. Remove faulty LED Thermometer.

7. Reverse the process to install new LED Thermometer.

6.2.29 Replacement of Sensor Lead—(Part #: RWTS05)

1. For assistance with the sensor lead contact Cospolich Technical Support at 1-800-423-7761.

6.2.30 Replacement of Thermostat—(Part #: RWTT08)

1. Shut off all electrical power to the unit.

2. Unscrew fasteners securing front face of control panel assembly door closed.

3. Open front door of control panel assembly.

4. Disconnect electrical connections and sensor lead to rear of the faulty thermostat.

5. Reverse the process to install the new thermostat.

6.2.31 Replacement of Prepped Condensing Unit Assembly—(Part #: RUT150-PM)

1. Shut off all electrical power to the unit.

2. Remove front-breathing grill.

3. Unbolt and slide out the faulty prepped condensing unit assembly.

4. Disconnect polarized electrical connections to the faulty prepped condensing unit assembly.

5. Disconnect both sets of quick connect fittings to the faulty prepped condensing unit assembly.

6. Reverse the process to install the new prepped condensing unit assembly.

6.2.32 Replacement of Condenser—(Part #: Call for Assistance)

1. For assistance with the condenser contact Cospolich Technical Support at 1-800-423-7761.

6.2.33 Replacement of Receiver Tank—(Part #: RWRT41)

1. For assistance with the receiver tank contact Cospolich Technical Support at 1-800-423-7761.

6.2.34 Replacement of Start Capacitor—(Part #: RWCP79)

1. Shut off all electrical power to the unit.

2. Remove front-breathing grill.

3. Unbolt and slide out the condensing unit assembly.

4. Remove cover to the small black junction box on front of the prepped condensing unit assembly. Remove the faulty start capacitor from the small black junction box of the condensing unit assembly.

5. Reverse the process to install the new start capacitor.

6.2.35 Replacement of Condensing Unit Relay—(Part #: RWRLY91)

1. Shut off all electrical power to the unit.

2. Remove front-breathing grill.

3. Unbolt and slide out the condensing unit assembly.

4. Remove small black cover to the junction box on the side of the prepped condensing unit assembly.

5. Disconnect electrical connections to the faulty condensing unit relay. Remove the faulty condensing unit relay.

6. Reverse the process to install the new condensing unit relay.

6.2.36 Replacement of Condensing Unit Overload—(Part #: Call for Assistance)

1. Shut off all electrical power to the unit.

2. Remove front-breathing grill.

3. Unbolt and slide out the condensing unit assembly.

4. Remove small black cover to the junction box on the side of the prepped condensing unit assembly.

5. Disconnect electrical connections to the faulty condensing unit overload. Remove the faulty condensing unit overload.

6. Reverse the process to install the new condensing unit overload.

6.2.37 Replacement of Pressure Switch Mounting Bracket—(Part #: RWPLMB)

1. Shut off all electrical power to the unit.

2. Remove front-breathing grill.

3. Unbolt and slide out the condensing unit assembly.

4. Remove fasteners securing the faulty pressure switch mounting bracket to the condensing unit assembly base. Remove fasteners securing the pressure switch to the faulty pressure switch mounting bracket.

5. Reverse the process to install the new pressure switch mounting bracket.

6.2.38 Replacement of Sight Glass—(Part #: RWSG03)

1. For assistance with the sight glass, contact Cospolich Technical Support at 1-800-423-7761.

6.2.39 Replacement of Prepped Evaporator Coil Fan Assembly—(Part #: TECA31)

1. For assistance with the prepped evaporator coil fan assembly, contact Cospolich Technical Support at 1-800-423-7761.

6.2.40 Replacement of Prepped Evaporator Coil, Lower—(Part #: RWE020-PM(134A))

1. For assistance with the prepped evaporator coil, lower, contact Cospolich Technical Support at 1-800-423-7761.

6.2.41 Replacement of Wiring Harness with ML60 Terminator—(Part #: CR-P232-TERM)

1. For assistance with the wiring harness with ML60 terminator, contact Cospolich Technical Support at 1-800-423-7761.

6.2.42 Replacement of Evaporator Motor—(Part #: LWEM18)

1. Shut off all electrical power to the unit.

2. Open both lower front doors.

3. Remove fasteners securing front door to the evaporator coil fan assembly containing the faulty evaporator motor. Open front door to evaporator coil fan assembly.

4. Disconnect wiring harness to the faulty evaporator motor.

5. Remove fasteners securing evaporator fan motor bracket to the interior of the evaporator coil fan assembly.

6. Loosen the fastener tightening the evaporator motor bracket around the faulty evaporator fan motor. Remove the faulty evaporator motor from the evaporator fan motor bracket.

7. Loosen the set screw of the evaporator fan blade from the shaft of the faulty evaporator fan motor. Remove the evaporator fan blade.

8. Reverse the process to install the new evaporator fan motor.

6.2.43 Replacement of Evaporator Fan Blade—(Part #: RWFB02)

1. Shut off all electrical power to the unit.

2. Open both lower front doors.

3. Remove fasteners securing evaporator fan cover to the front of the prepped evaporator coil fan assembly. Remove the evaporator fan cover.

4. Loosen the set screw of the faulty evaporator fan blade from the shaft of the evaporator fan motor. Remove the faulty evaporator fan blade.

5. Reverse the process to install the new evaporator fan blade.

6.2.44 Replacement of Evaporator Fan Cover—(Part #: RFG20SSWC)

1. Shut off all electrical power to the unit.

2. Open both lower front doors.

3. Remove fasteners securing evaporator fan cover to the front of the prepped evaporator coil fan assembly. Remove the evaporator fan cover.

4. Reverse the process to install the new evaporator fan cover.

6.2.45 Replacement of Terminal Block—(Part #: RLTB01)

1. For assistance with the terminal block, contact Cospolich Technical Support at 1-800-423-7761.

6.2.46 Replacement of Continuous Hinge—(Part #: HXHE20)

1. The continuous hinge is not a field-serviceable part and it if becomes faulty, the entire subassembly it is a part of must be replaced.

6.2.47 Replacement of Fan Terminator Clip—(Part #: RWE057)

1. For assistance with the fan terminator clip, contact Cospolich Technical Support at 1-800-423-7761.

6.2.48 Replacement of Evaporator Heater, 115V—(Part #: RWE105)

1. For assistance with the evaporator heater, 115V, contact Cospolich Technical Support at 1-800-423-7761.

6.2.49 Replacement of Evaporator Air Grill—(Part #: RWEF01)

1. Shut off all electrical power to the unit.

2. Open both lower front doors.

3. Remove fasteners securing evaporator air grill to the front of the prepped evaporator coil fan assembly. Remove the evaporator air grill.

4. Reverse the process to install the new evaporator air grill.

6.2.50 Replacement of Motor Bracket—(Part #: RWMB01)

1. Shut off all electrical power to the unit.

2. Open both lower front doors.

3. Remove fasteners securing front door to the evaporator coil fan assembly containing the faulty motor bracket. Open front door to evaporator coil fan assembly.

4. Disconnect wiring harness to the evaporator motor.

5. Remove fasteners securing the faulty motor bracket to the interior of the evaporator coil fan assembly.

6. Loosen the fastener tightening the faulty motor bracket around the evaporator fan motor. Remove the faulty motor bracket from the evaporator fan motor.

7. Reverse the process to install new motor bracket.

6.2.51 Replacement of Front-Breathing Grill Assembly—(Part #: GRM1-FB(SUBTHR31)

1. Shut off all electrical power to the unit.

2. Remove front-breathing grill assembly from the grill channel.

3. Disconnect polarized wiring harness from the rear of the grill assembly.

4. Reverse the process to install the new front-breathing grill assembly.

6.2.52 Replacement of Latch Strike—(Part #: HXLH11)

1. Open front door(s) to the unit.

2. Remove fasteners securing the faulty latch strike to the front face of the unit. Remove the faulty latch strike.

3. Reverse the process to install the new latch strike.

6.2.53 Replacement of Stainless Steel Shelf—(Part #'s: SSW32AX18B, SSW33CX24)

1. Open front doors of the unit.

2. Grasp front handle to stainless steel product pan, slide out front of unit.

3. Remove faulty stainless steel shelf from inside of stainless steel product pan.

4. Reverse the process to install new stainless steel shelf.

6.2.54 Replacement of Copper Tubing Wheel Assembly—(Part #: RWCTW61M)

1. For assistance with the copper tubing wheel assembly, contact Cospolich Technical Support at 1-800-423-7761.

6.2.55 Replacement of Stainless Steel Secondary Breaker Strip(s)—Part #'s: BRTHW31, QED81S, QED82S, QED83S, QED84S)

1. Using a paint scraper or flathead screwdriver along the edge, pry off faulty stainless steel secondary breaker strip(s).

2. Install new stainless steel secondary breaker strip(s) by pressing into place.

6.2.56 Replacement of White Plastic Bumper—(Part #: HXDB01)

1. Open front doors of the unit.

2. Grasp front handle to stainless steel product pans, slide out front of unit.

3. Remove fasteners securing faulty white plastic bumper to interior wall of the unit.

4. Reverse the process to install new white plastic bumper.

6.2.57 Replacement of Quick Connect Fitting—(Part #s: RWQF0048, RWQF0068)

1. For assistance with the quick connect fittings, contact Cospolich Technical Support at 1-800-423-7761.

6.2.58 Replacement of Grill & Evaporator Fan Guard—(Part #: RWE5054D)

1. Shut off all electrical power to the unit.

2. Open front doors to the unit.

3. Remove the screws securing the faulty evaporator fan guard to the evaporator coil assembly. Remove the faulty evaporator fan guard.

4. Reverse the process to install the new evaporator fan guard.

6.2.59 Replacement of Grill Fan Blade—(Part #: RWE5109E)

1. Shut off all electrical power to the unit.

2. Remove fasteners securing grill & evaporator fan guard protecting faulty grill fan blade.

3. Loosen set screw securing faulty grill fan blade to shaft of grill fan motor. Remove faulty grill fan blade.

4. Reverse the process to install new grill fan blade.

6.2.60 Replacement of Grill Fan Motor—(Part #: RWEM03)

1. Shut off all electrical power to the unit.

2. Remove front-breathing grill assembly from the grill channel.

3. Disconnect polarized wiring harness from the rear of the grill assembly.

4. Remove grill fan motor mount containing faulty grill fan motor from the rear interior of the front-breathing grill assembly. Remove faulty grill fan motor from the grill fan motor mount.

5. Remove fan blade from faulty grill fan motor.

6. Reverse the process to install new grill fan motor.

6.2.61 Replacement of Grill Fan Motor Mount—(Part #: RWEM03M)

1. Shut off all electrical power to the unit.

2. Remove front-breathing grill assembly from the grill channel.

3. Disconnect polarized wiring harness from the rear of the grill assembly.

4. Remove grill fan motor mount containing grill fan motor from the rear interior of the front-breathing grill assembly.

5. Remove grill fan motor from grill fan motor mount.

6. Reverse the process to install new grill fan motor mount.

6.2.62 Replacement of Evaporator Fan Blade—(Part #: RWE5101B)

1. Shut off all electrical power to the unit.

2. Open front doors to the upper compartment of the unit.

3. Remove the screws securing the evaporator fan cover to the evaporator coil assembly. Remove the evaporator fan cover.

4. Using a permanent marker, mark on the shaft of the evaporator fan motor where the evaporator fan blade is installed. Remove the faulty evaporator fan blade by sliding it off the shaft of the evaporator fan motor.

5. Reverse the process to install the new evaporator fan blade. Install in the same location on the shaft of the evaporator fan motor as the previous fan blade.

6.2.63 Replacement of Prepped Evaporator Coil Assembly-Upper—(Part #: RWE010-PM(134A))

1. For assistance with the prepped evaporator coil assembly-upper, contact Cospolich Technical Support at 1-800-423-7761.

6.2.64 Replacement of Evaporator Thermostat—(Part #: RWTT03)

1. For assistance with the prepped evaporator thermostat, contact Cospolich Technical Support at 1-800-423-7761.

6.2.65 Replacement of Solenoid Coil—(Part #: RWSC01)

1. For assistance with the Solenoid Coil, contact Cospolich Technical Support at 1-800-423-7761.

6.2.66 Replacement of Solenoid Valve—(Part #: RWSV20)

1. For assistance with the Solenoid Valve, contact Cospolich Technical Support at 1-800-423-7761.

Cospolich Inc. urges that all individuals responsible for training, teaching or advising, installation mechanics and service personnel emphasize proper techniques and strict adherence to recommended practices for electrical maintenance.

Chapter 7—Parts List

7.1 Introduction

This section of the manual contains lists of replaceable parts. Each of the tables contain a list of removable parts associated with an assembly of the cabinet .
No parts identification has been provided for details of permanently assembled items or those items that are not suitable for field repair.

7.2 Source Codes

The sources for some items are shown in the part tabulation. Where no individual source code is listed, the part is available through Cospolich Inc. , PO Box 1206, Destrehan, LA 70047 (Fed. Mfg. Code #66682).

Table H—Source Codes

Code Number	Name	Address
14852	Bohn Heat Transfer	Danville, IL 61834
32761	Kason Industries	Newnan, GA 30265
50992	Ranco Controls	Plain City, OH 43064
78462	Sporlan Valve	Washington, MO 63090
14569	Copeland Corporation	Sidney, OH 45365
17529	Oasis	Vacaville, CA 95687
59431	Tecumseh Products	Ann Arbor, MI 48108
49048	Miljoco Corporation	Mt. Clemens, MI 48043
42020	Nashville Wire Products	White Bluff, TN 37187
79264	Jean's Extrusions, Inc.	Salem, IN 47167
2K223	Refrigeration Hardware	Grand Junction, CO 81505
09966	Instrument Systems Corp.	Jericho, NY 11753
60886	Idec Corporation	Sunnyvale, CA 94089
19220	Eberhard, Inc.	Strongsville, OH 44149
66682	Cospolich, Inc.	Destrehan, LA 70047
15999	Heatcraft Inc.	Wilmington, NC 28401

Table I—Parts List for THR31-2M-SN-MLR

	ITEM	COSP#	MFG#	Vendor	QTY	U/M
1	LEFT LOWER DOOR ASSEMBLY WITH ASTRIGAL	TDA31SL	TDA31SL	COSPOLICH	1	EA
2	LOWER DOOR GASKET	GTHR31MV1	02-070	RHS	2	EA
3	DOOR HINGE (ALL DOORS)	HXHE02	0217000008	KASON	8	EA
4	DOOR LATCH (ALL DOORS)	HXLH10***	172BC	KASON	4	EA
5	END CATCH (ALL DOORS)	HXLH42***	EMC4974-52U-ZN	AUSTIN HARDWARE	8	EA
6	S/S PRODUCT PAN	FTW31S	FTW31S	COSPOLICH	4	EA
7	1/2" DRAIN LINE TUBING	CVT12*	CVT12	SASCO	10	FT
8	CONTROL PANEL ASSEMBLY	RCTL31(134A)	RCTL31(134A)	COSPOLICH	1	EA
9	OVERLAY	CXL040	CXL040	AD GRAPHICS	1	EA
10	115V-25.2V TRANSFORMER	PCPT56	273-1366	RADIO SHACK	1	EA
11	INDICATOR LIGHT	PCSW03	APD199	MG AUTOMATION	2	EA
12	CLEAR LENS	PCSW10	APD-106LN-C	MG AUTOMATION	2	EA
13	LIGHT BULB	PCSW11	APD199N-120V	MG AUTOMATION	2	EA
14	THAW SWITCH	PCSW90	ASD311N-202	MG AUTOMATION	1	EA
15	COMPLETE TERMINAL BLOCK ASSEMBLY	PCTB301	PCTB301	COSPOLICH	1	EA
16	120V RELAY	PCCR36	RH2B-UL120	MG AUTOMATION	2	EA
17	RELAY SOCKET	PCRS22	SH2B-05	MG AUTOMATION	2	EA
18	TERMINAL END STOP	PCTES35	ES35	MG AUTOMATION	4	EA
19	DIN RAIL	PCTR001	MBDN1000	MG AUTOMATION	1	FT
20	TERMINAL DIVIDER	PCTTW2,5-6	07.311.1255.0	MG AUTOMATION	1	EA
21	TERMINAL SECTION	PCTWK6/U	WK6/U	MG AUTOMATION	12	EA
22	LED THERMOMETER	RWTM04	ED175-9603	MILJOCO	2	EA
23	SENSOR LEAD	RWTS05	TE-6300-610	JOHNSON CONTROLS	2	EA
24	THERMOSTAT	RWTT08	A319ABC-24-01	JOHNSON CONTROLS	2	EA
25	PREPPED CONDENSING UNIT ASSEMBLY, 134A, 115V	RUT150-PM	RUT150-PM	COSPOLICH	1	EA
26	CONDENSING UNIT ONLY, 134A	RUT150	FTEF-A032-IAA-201	EMERSON	1	EA
27	COMPRESSOR	RUT151	ARE37C3E-IAA-103	EMERSON	1	EA
28	CONDENSER	CALL FOR ASSISTANCE	CALL FOR ASSISTANCE	EMERSON	1	EA
29	CONDENSER FAN BLADE	RWFB39	083-0142-00	EMERSON	1	EA

Table I—Parts List for THR31-2M-SN-MLR

	ITEM	COSP#	MFG#	Vendor	QTY	U/M
30	CONDENSER FAN MOTOR, 115V	RWCM24	050-0259-00	EMERSON	1	EA
31	RECEIVER TANK	RWRT41	577-0461-01	EMERSON	1	EA
32	START CAPACITOR	RWCP79	914-0038-04	EMERSON	1	EA
33	CONDENSING UNIT RELAY	RWRLY91	940-C411-82	EMERSON	1	EA
34	C.U. OVERLOAD	CALL FOR ASSISTANCE	CALL FOR ASSISTANCE	EMERSON	1	EA
35	PRESSURE SWITCH MOUNTING BRACKET	RWPLMB	31696-001	ROBERT SHAW	1	EA
36	FILTER DRYER	RWFD02	C-O52-S	SPORLAN	1	EA
37	PRESSURE SWITCH	RWPL01	O10-1402-000	ROBERT SHAW	1	EA
38	SIGHT GLASS	RWSG03	SA-12S	SPORLAN	1	EA
39	PREPPED EVAPORATOR COIL FAN ASSEMBLY, 134A	TECA31	TECA31	COSPOLICH	1	EA
40	PREPPED EVAPORATOR COIL, LOWER, 134A	RWE020-PM(134A)	RWE020-PM(134A)	COSPOLICH	1	EA
41	EVAPORATOR COIL ONLY, LOWER	RWE020	TA13AG	HEATCRAFT	1	EA
42	WIRING HARNESS WITH ML60 TERMINATOR	CR-P232-TERM	CR-P232-TERM	EMF	1	EA
43	EVAPORATOR MOTOR, 115V	LWEM18	JA2N256N	ESSEX-BROWNELL	1	EA
44	EVAPORATOR FAN BLADE	RWFB02	6-4610	ESSEX-BROWNELL	1	EA
45	EVAPORATOR FAN COVER	RFG20SSWC	RFG20SSWC	COSPOLICH	1	EA
46	EXPANSION VALVE (TOP & BOTTOM)	RWEV24	FJ-1/4-C	SPORLAN	2	EA
47	TERMINAL BLOCK	RLTB01	4145W	HEATCRAFT	1	EA
48	CONTINUOUS HINGE***	HXHE20	M48-0132	AUSTIN HDW	1	EA
49	FAN TERMINATOR CLIP*	RWE057	SL243	SUPCO	1	EA
50	EVAPORATOR HEATER, 115V	RWE105	77056	TRUHEAT	1	EA
51	EVAPORATOR AIR GRILL	RWEF01	RWEF01	NASHVILLE WIRE	1	EA
52	MOTOR BRACKET	RWMB01	RWMB01	CUSTOM FAB	1	EA
53	HEATER WIRE, LOWER, 141”	L1HR141*	64-200	RHS	1	EA
54	FRONT –BREATHING GRILL ASSEMBLY	GRM1-FB (SUBTHR31)	GRM1-FB(SUBTHR31)	COSPOLICH	1	EA

Table I—Parts List for THR31-2M-SN-MLR

	ITEM	COSP#	MFG#	Vendor	QTY	U/M
55	LATCH STRIKE	HXLH11	930C	KASON	8	EA
56	STAINLESS STEEL SHELF, LOWER	SSW32AX18B	SSW32AX18B	NASHVILLE	4	EA
57	COPPER TUBING WHEEL ASSEMBLY	RWCTW61M	RWCTW61M	COSPOLICH	1	EA
58	COMPLETE S/S BREAKER STRIP KIT	BRTHW31**	BRTHW31	COSPOLICH	1	SET
59	HORIZONTAL S/S BREAKER STRIP-LOWER SECTION	QED81S	QED81S	COSPOLICH	2	EA
60	VERTICAL S/S BREAKER STRIP-LOWER SECTION	QED82S	QED82S	COSPOLICH	2	EA
61	WHITE PLASTIC BUMPER	HXDB01	HDPENAT0.500	PIEDMONT	10	EA
62	QUICK DISCONNECT FITTING-1/4”	RWQF0048	5500-04-08	PARKER	3	EA
63	QUICK DISCONNECT FITTING-3/8”	RWQF0068	5500-06-08	PARKER	3	EA
64	RIGHT LOWER DOOR ASSEMBLY (NO ASTRIGAL)	TDA31SR	TDA31SR	COSPOLICH	1	EA
65	RIGHT UPPER DOOR ASSEMBLY-(NO ASTRIGAL)	TDA31SR-UPPER	TDA31SR-UPPER	COSPOLICH	1	EA
66	LEFT UPPER DOOR ASSEMBLY-(WITH ASTRIGAL)	TDA31SL-UPPER	TDA31SL-UPPER	COSPOLICH	1	EA
67	GRILL & EVAPORATOR FAN GUARD	RWE5054D	5054D	HEATCRAFT	3	EA
69	GRILL FAN BLADE	RWE5109E	5109E	HEATCRAFT	2	EA
70	HORIZONTAL S/S BREAKER STRIP-UPPER SECTION	QED83S	QED83S	COSPOLICH	2	EA
71	VERTICAL S/S BREAKER STRIP-UPPER SECTION	QED84S	QED84S	COSPOLICH	2	EA
72	UPPER DOOR GASKET	GTHR31MV2	02-070	RHS	2	EA
73	HEATER WIRE, UPPER, 95”	L1HR95*	64-200	RHS	1	EA
74	GRILL & EVAPORATOR FAN MOTOR	RWEM03	25300701	HEATCRAFT	3	EA
75	GRILL FAN MOTOR MOUNT	RWEM03M	91179001	HEATCRAFT	2	EA
76	EVAPORATOR FAN BLADE	RWE5101B	5101B	HEATCRAFT	1	EA
77	PREPPED EVAPORATOR COIL ASSEMBLY-UPPER, 134A	RWE010-PM(134A)	RWE010-PM(134A)	COSPOLICH	1	EA
78	EVAPORATOR COIL ONLY-UPPER	RWE010	TA10SG	HEATCRAFT	1	EA
79	EVAPORATOR THERMOSTAT	RWTT03	A12-700-003	INVENSYS	1	EA
80	STAINLESS STEEL SHELF-UPPER*	SSW33CX24	SSW33CX24	NASHVILLE	1	EA

Table I—Parts List for THR31-2M-SN-MLR

	ITEM	COSP#	MFG#	Vendor	QTY	U/M
81	SOLENOID VALVE	RWSV20	E3S120	SPORLAN	2	EA
82	SOLENOID COIL, 115V	RWSC01	MKC-1	SPORLAN	2	EA

*Not shown in illustrations

** 58 is comprised of 2 ea 59 and 2 ea 60

***Not field-serviceable parts, please call Cospolich (800) 423-7761 for assistance.

Illustrations 7.A, 7.B—RUT150-PM, Condensing Unit Assembly(25)

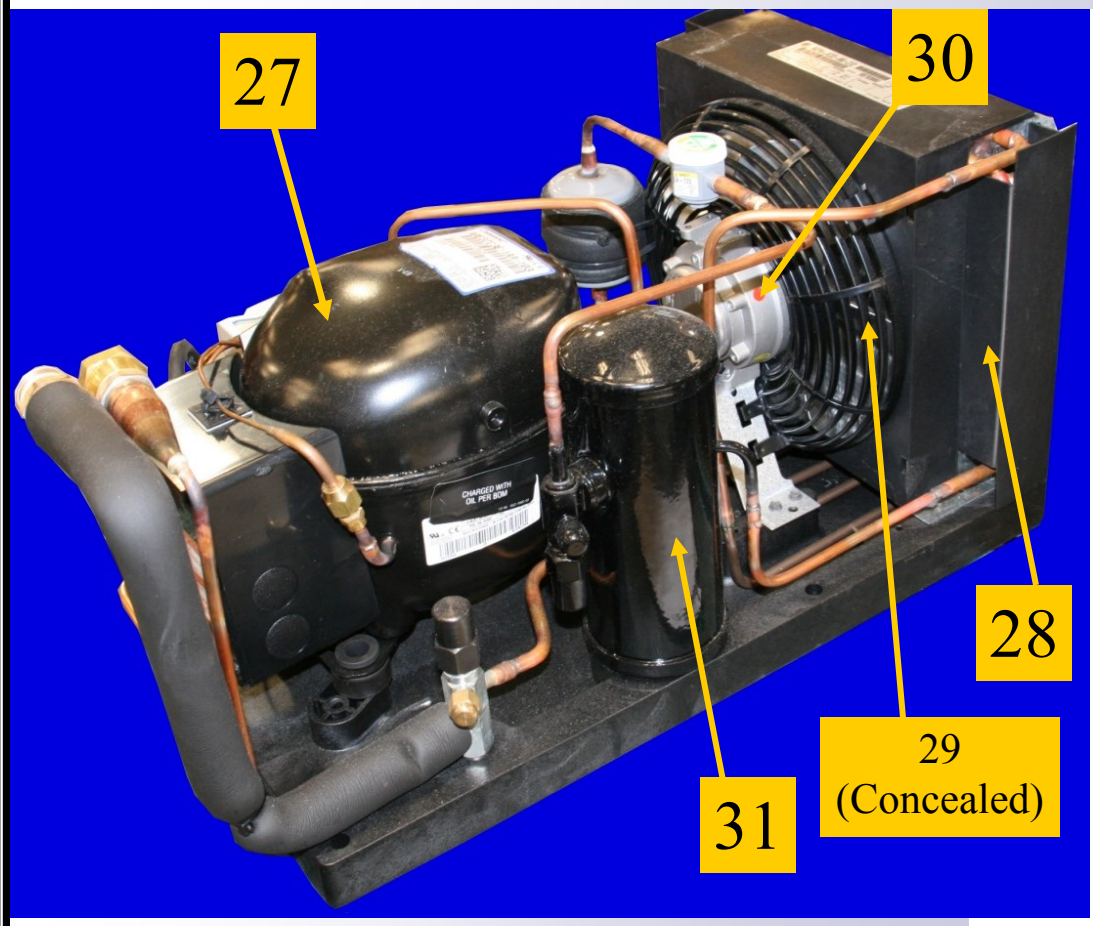


Illustration 7.A

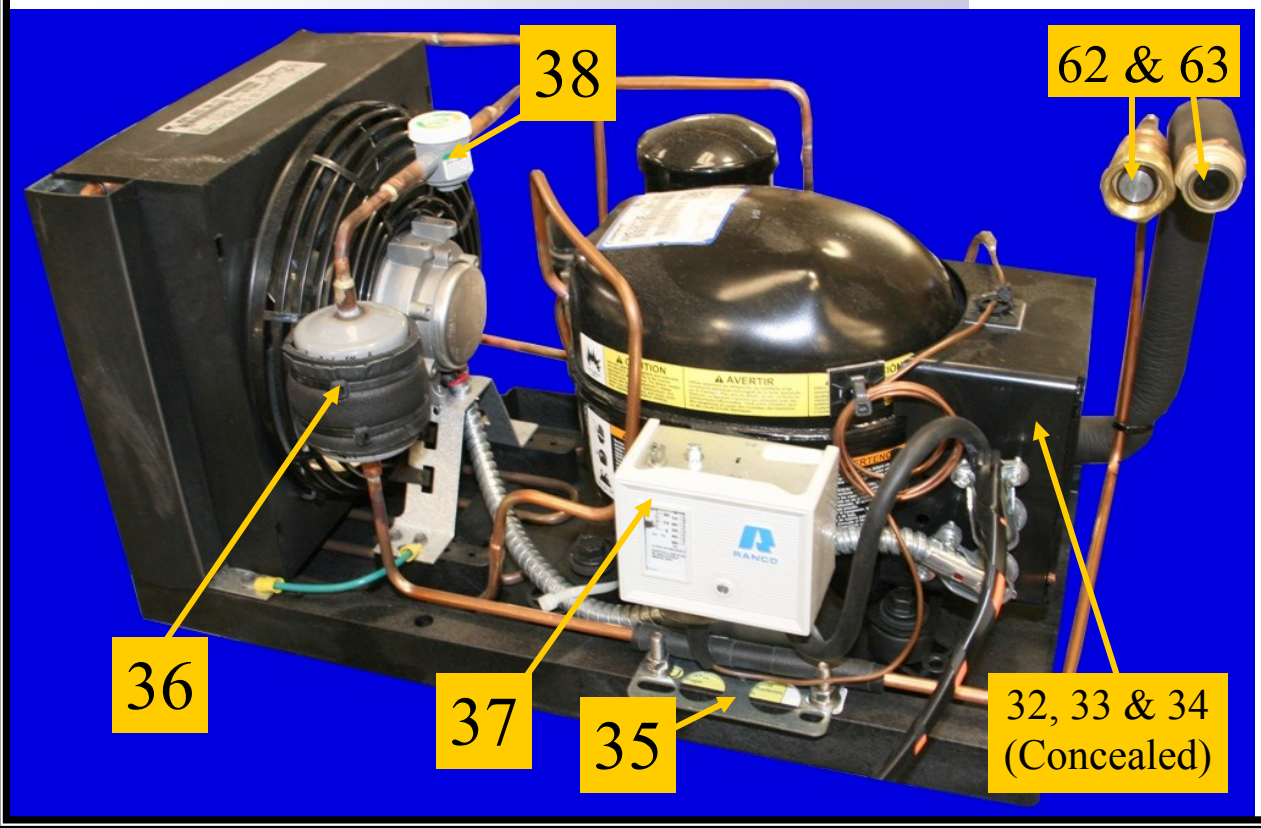


Illustration 7.B

Illustrations 7.C, 7.D, 7.E—TECA31, Evaporator Coil Assembly (39)

Illustration 7.C

Illustration 7.D

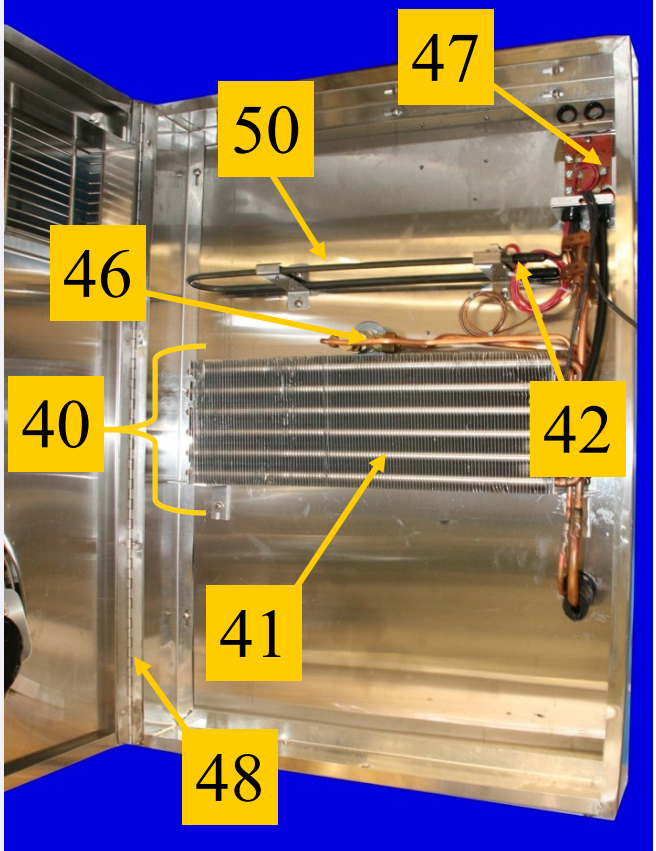


Illustration 7.E

Illustrations 7.F, 7.G, 7.H—RWE010-PM(134A)(THR31) Evaporator Coil Assembly (77)

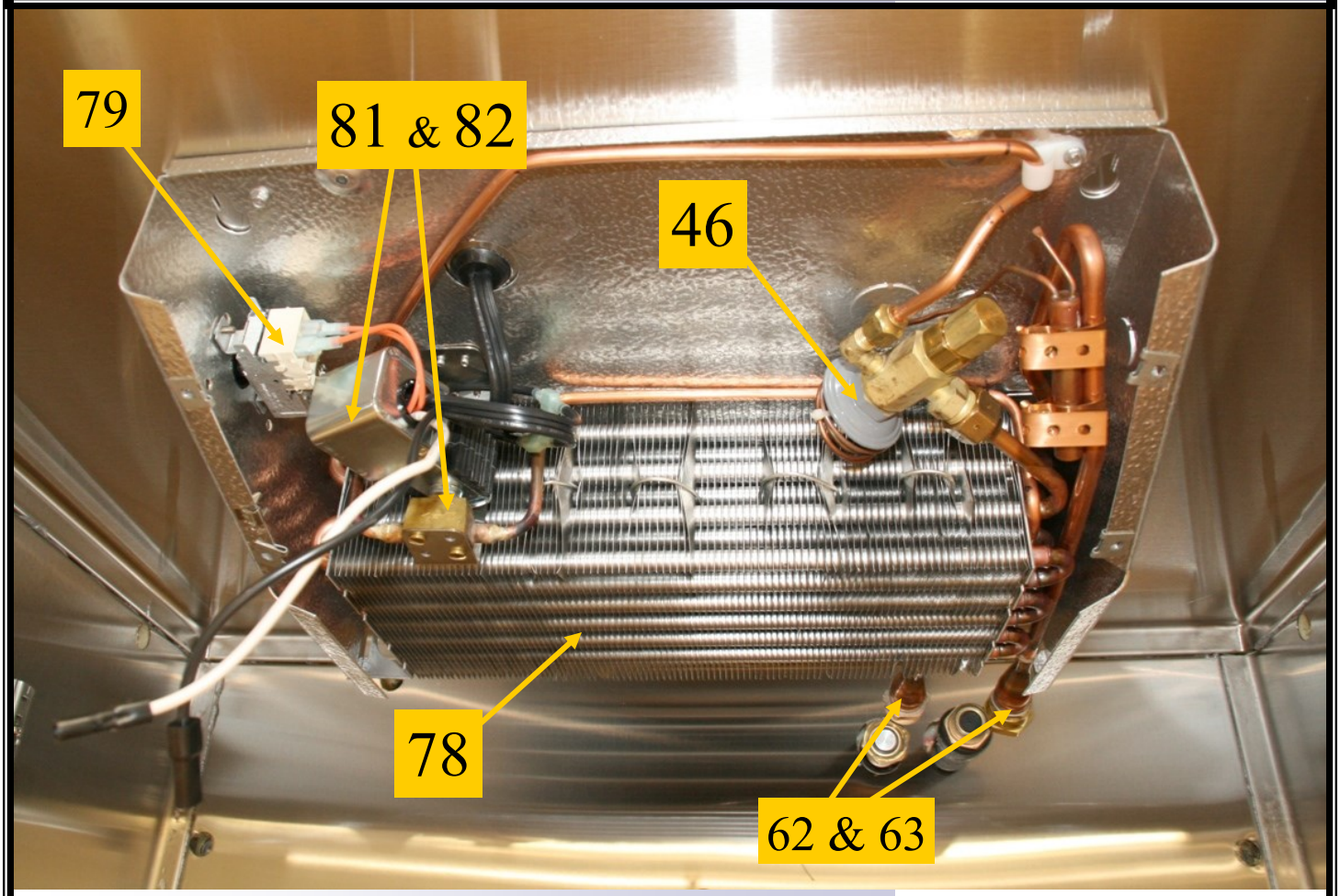
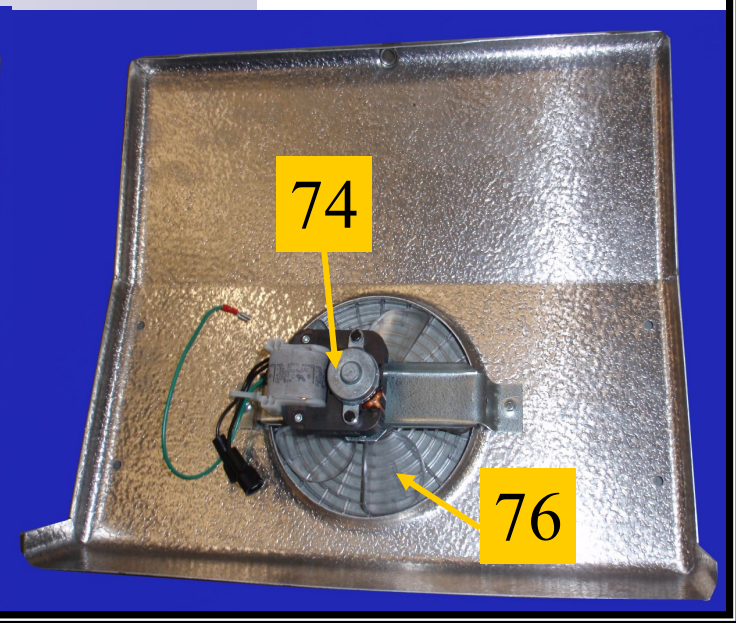


Illustration 7.F

Illustration 7.G

Illustration 7.H



Illustrations 7.I & 7.J— GRM1-FB(SUBTHR31), Grill Assembly (54) & RCTL31(134A), Control Panel Assembly (8)

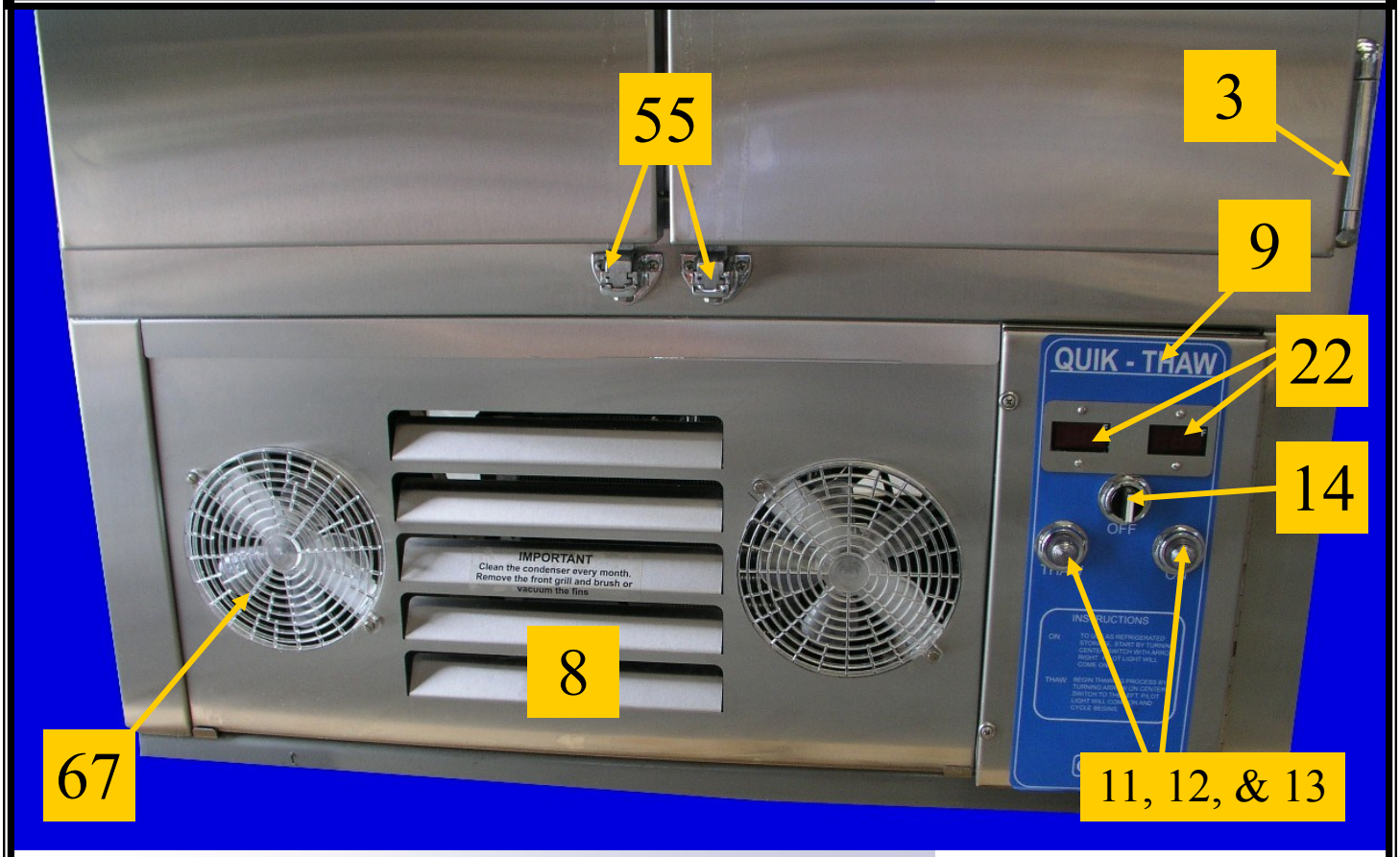


Illustration 7.J

Illustration 7.I

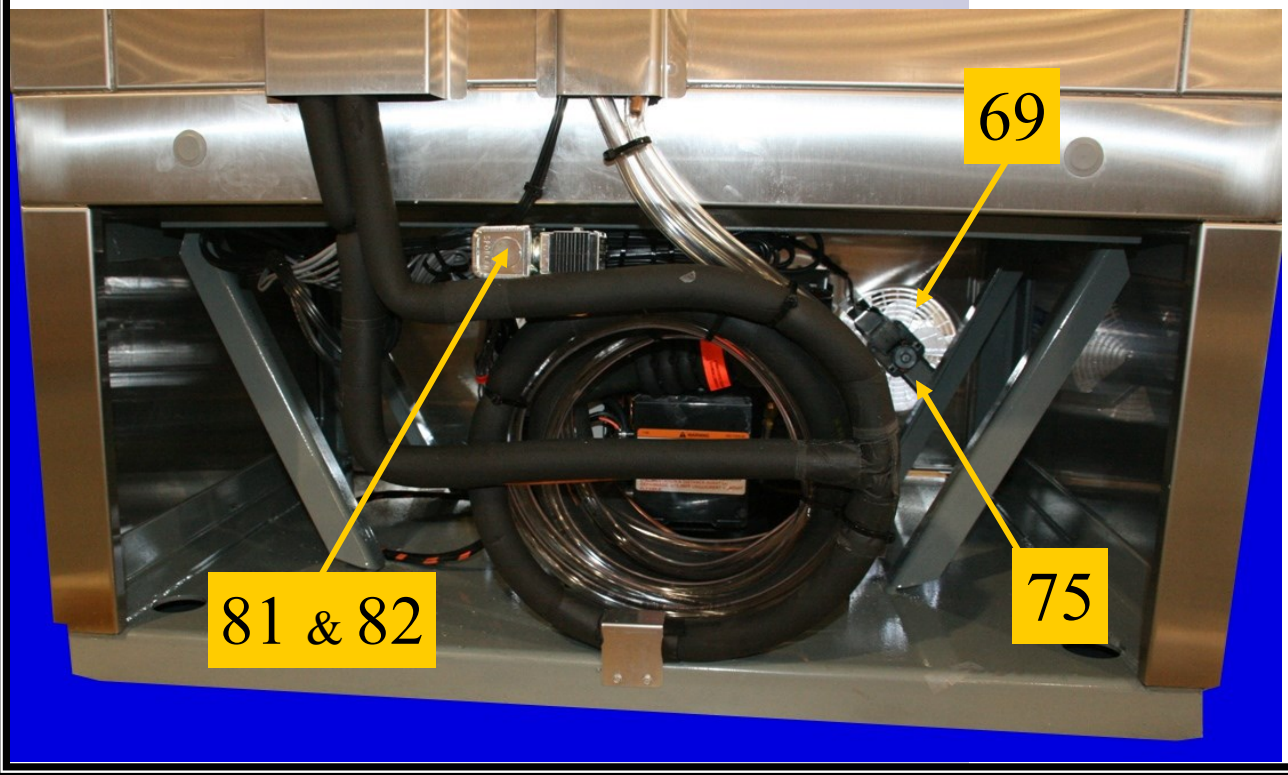


Illustration 7.K— RCTL31(134A) Control Panel Assembly (8)

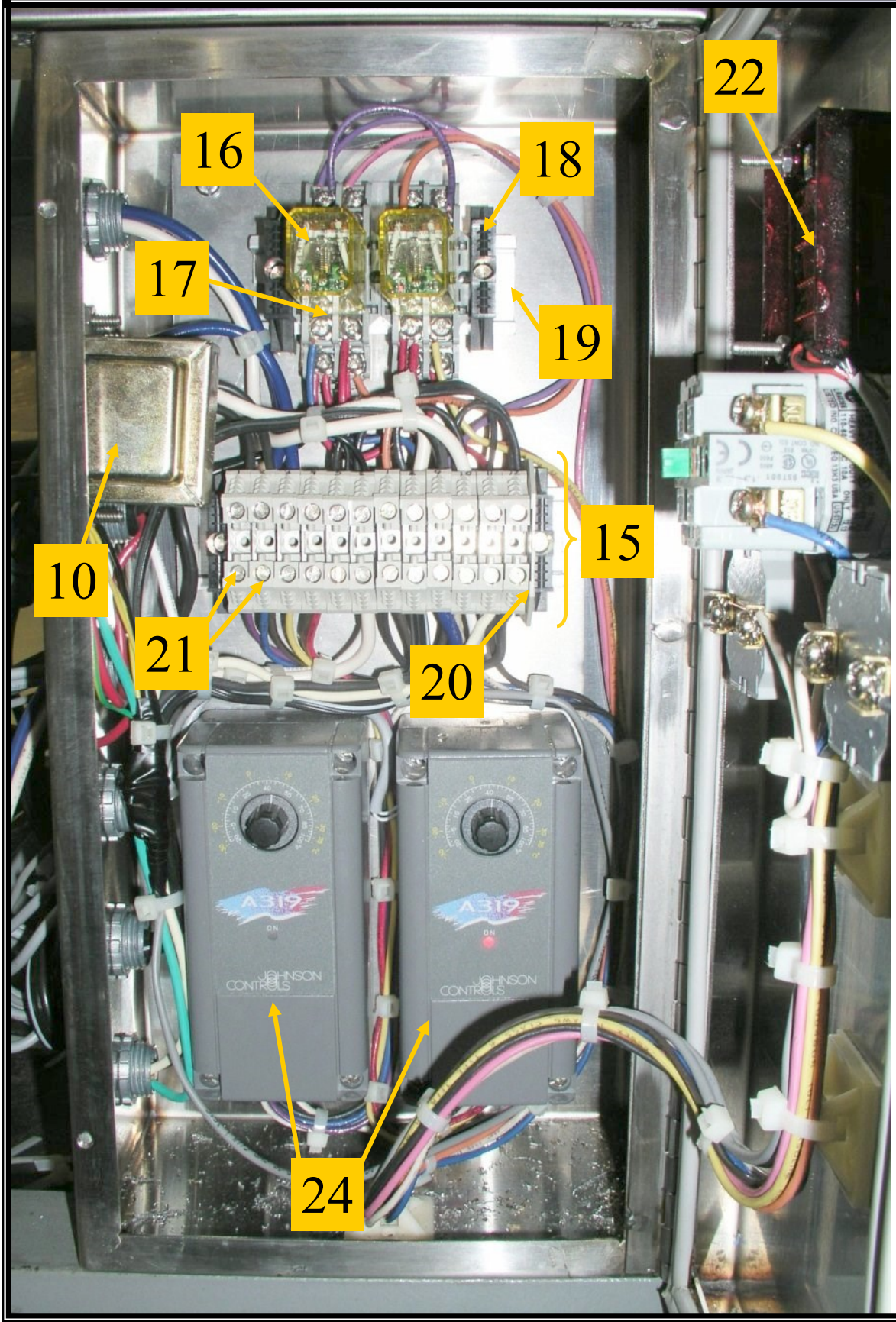


Illustration 7.K

Illustration 7.L— RCTL31(134A), Control Panel Assembly (8)

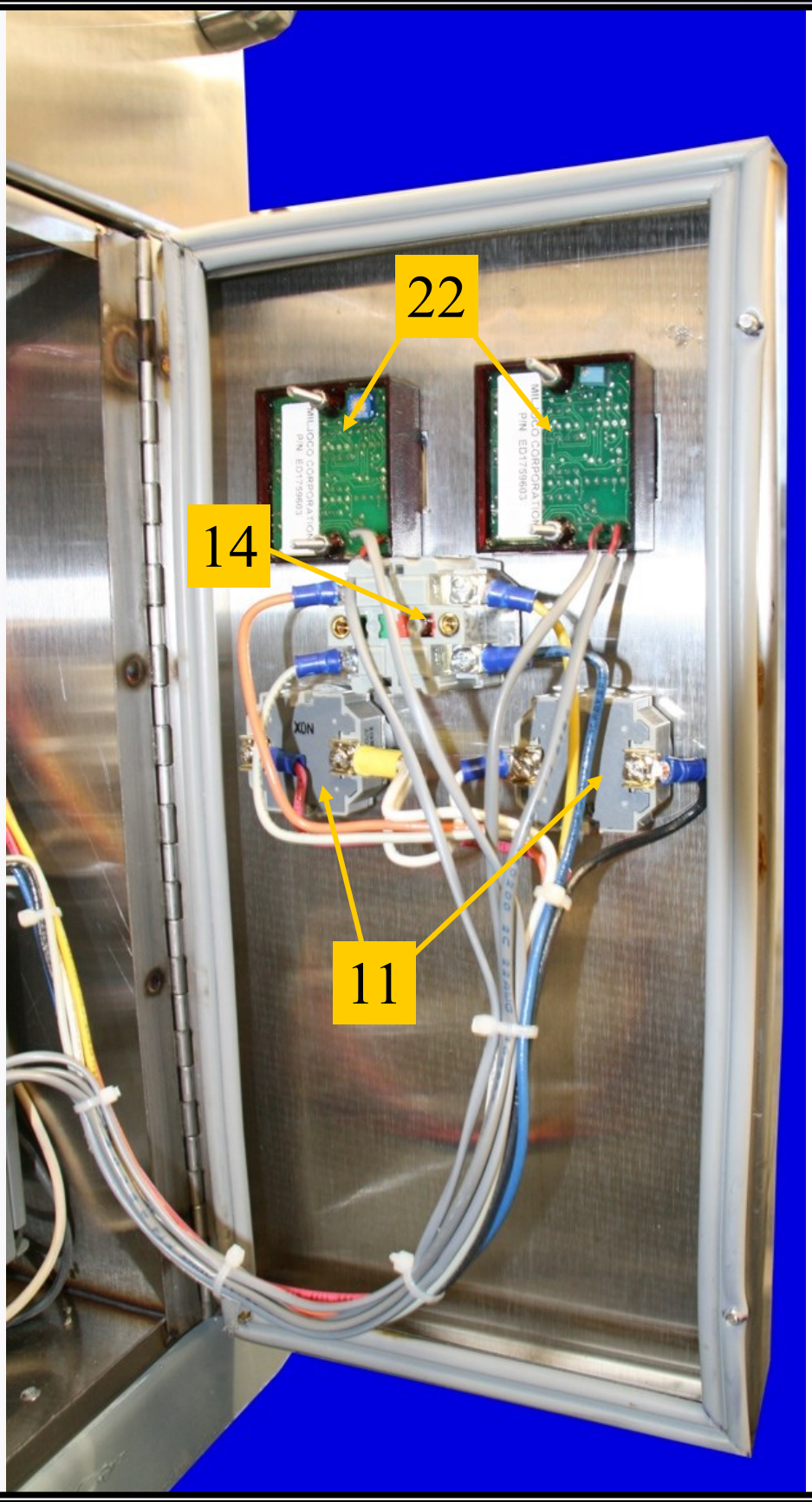


Illustration 7.L

Illustrations 7.M, 7.N, 7.O, 7.P—Door Detail

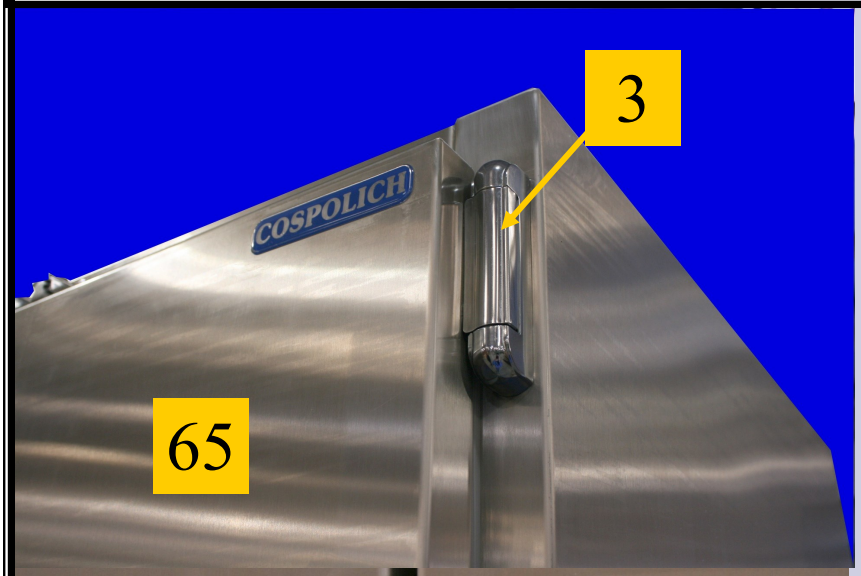


Illustration 7.M

Illustration 7.N

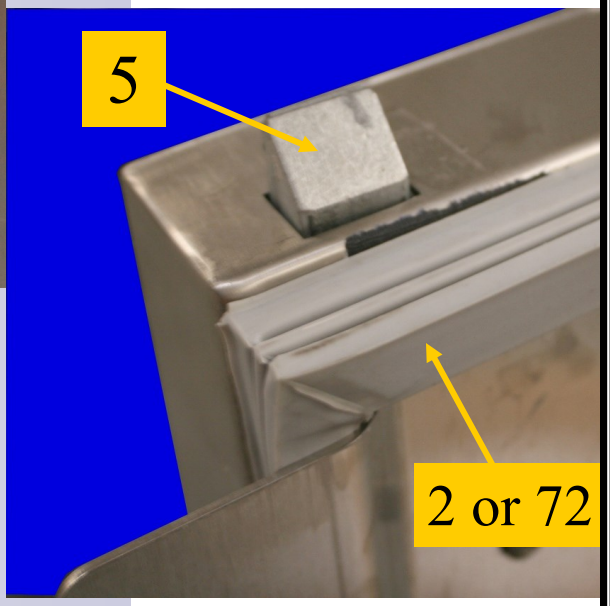


Illustration 7.P

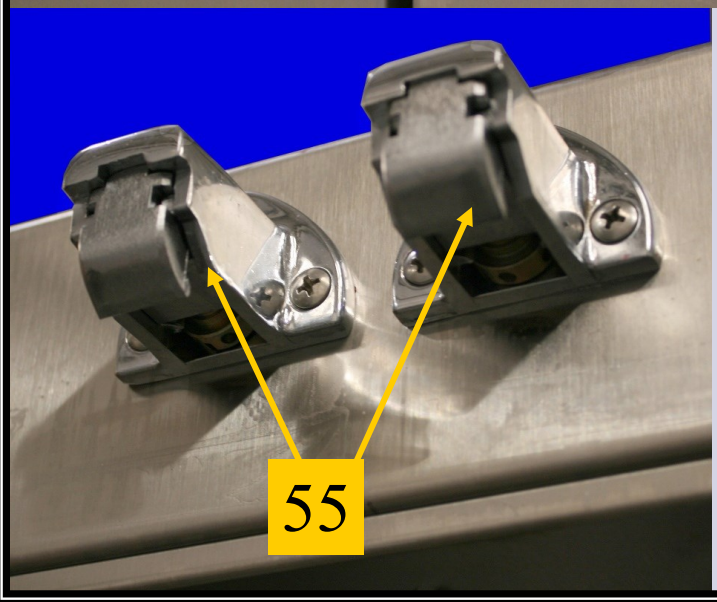


Illustration 7.O

Illustration 7.Q—Interior Detail

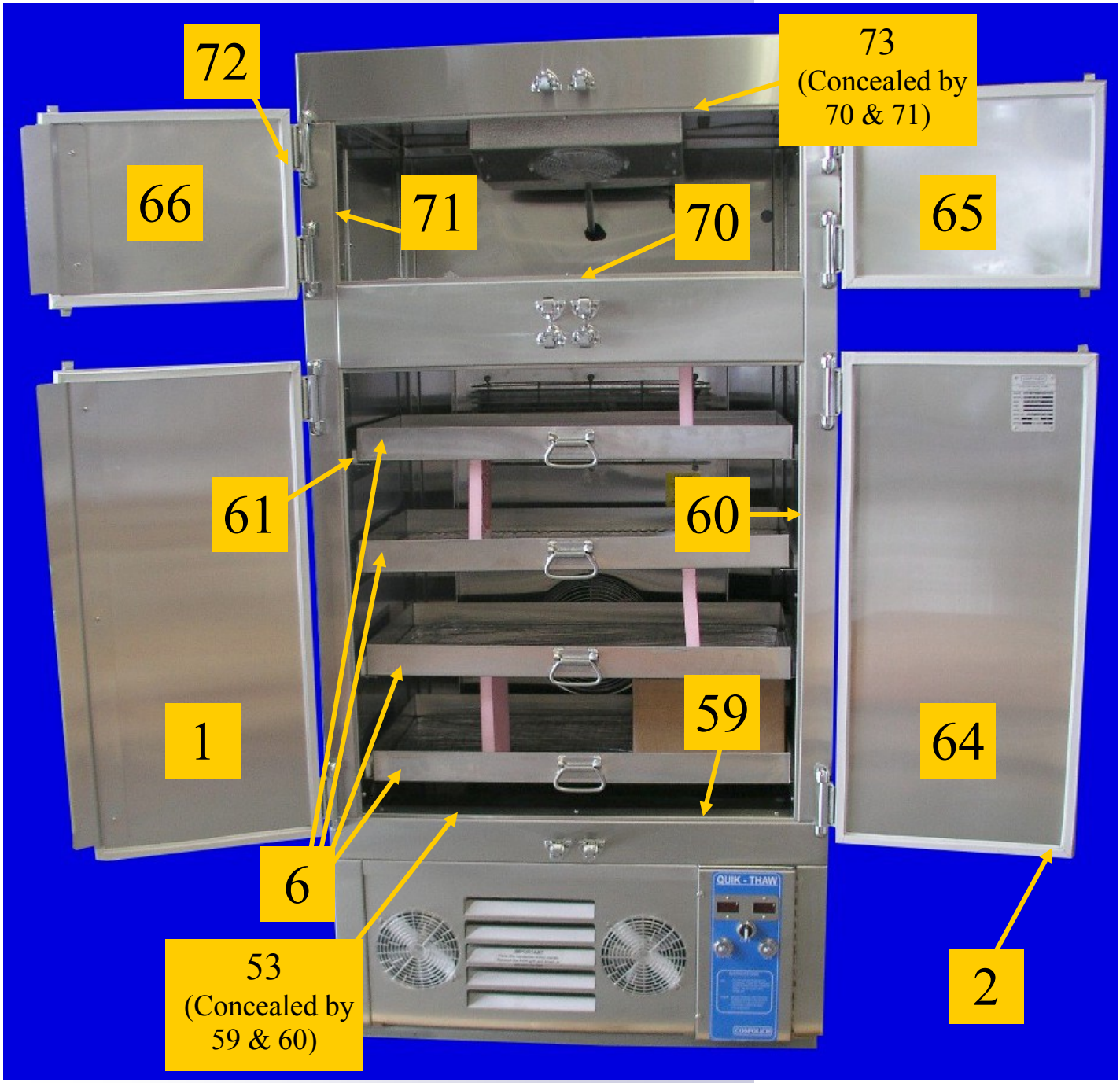


Illustration 7.Q

Illustrations 7.R, 7.S, 7.T—Main Unit Front/Rear Detail & Accessories

Illustration 7.R

Illustration 7.S

Illustration 7.T

Chapter 8—Installation

8.1 Unpacking

Note: *Before unpacking unit, note any crating markings and check for damage to crating and notify the carrier if there should appear to be damage to the equipment.*

The unit is shipped from the factory securely fastened to a single shipping pallet protected by an external wrapping.

1. Carefully remove all external wrappings and other protective coverings.

2. Review the installation section of the manual completely prior to installing.

3. Discard crating materials.

8.2 Installation

1. Before moving the unit to the installation site, double-check passageways to make certain that it will move through without modifications.

Note: *In certain instances, it may be necessary to remove the doors and hardware to negotiate tight spaces.*

2. On most shipboard applications, a permanent base is fabricated by the ship builder to accommodate the base frame of the unit. If required Cospolich can furnish a foundation which can be attached to the deck. ***Note:*** *Not required on units with legs.*

3. Once the cabinet has been attached to the ship's foundation, it is necessary to apply a silicone sealant around the complete perimeter at the point that the cabinet base contacts the foundation. ***Note:*** *Not required on units with legs.*

4. Position the unit to allow sufficient ventilation, usually leave a 3" clearance from adjacent bulkheads and other equipment.

5. Level the cabinet from front to back and from side to side. This is important so that when securing to the deck base, the cabinet will not be pulled out of square.

6. Before applying electrical power to the unit, you should first check the electrical characteristics of the appliance and make certain that they agree with those of the electrical supply source. ***CAUTION:*** *LOW OR EXCESSIVE VOLTAGE CAN SEVERELY DAMAGE THE ELECTRICAL SYSTEM.*

Chapter 9—Modular Installation

9.1 Introduction

By design the modular version of the THR31-2M-SN-MLR Thaw Cabinet has been engineered and manufactured to be disassembled and reassembled aboard ship. By following these instructions you can be guaranteed a successful installation. Should questions arise or assistance be needed contact Cospolich customer service at (800)423-7761 or (985) 725-0222. Email Cospolich@cospolich.com

9.2 Installation Skill Level

In general the skill level of the installer should be of a journeyman class in the area of mechanic. The primary process will require the following written instructions, use of common tools, and the proper fitting and alignment of the components. The electrical portion of the installation will be minimal, only requiring the unit to be plugged in and all electrical voltages verified.

9.3 Tools

A special wrench was furnished with the cabinet which is needed to operate the camlocks used in the assembly of the equipment. Other common tools required are standard/Phillips screwdrivers and wrenches. If the equipment is to be attached to a foundation, it may be necessary to drill holes.

9.4 Primary Components

Top, bottom, left end, right end, 4 ea Front Doors, 1 ea back panels, condensing unit compartment housing, 1 ea condensing unit assemblies, 2 ea evaporator/ fan blower assemblies, center partition, 4 ea product pans with shelves.

9.5 Disassembly

NOTE: *Prior to disassembly, the unit should be energized and run for 24 hours to check for proper function and that proper cabinet temperature is maintained. If any issues arise, call Cospolich Service Dept. at (800) 423-7761 immediately.*

1. Label and remove all 4 ea doors. Remove all interior product pans & shelves.

2. Remove front louvered grill and rear tubing cover(s).

3. Inside the condensing unit compartment, disconnect electrical and refrigeration lines, unbolt condensing unit from base. Remove condensing unit.

4. Control panels should be left installed within the condensing unit compartment.

5. Inside the cabinet, the evaporator coil/blower assembly must be disconnected and removed. Disconnect all refrigeration lines connecting the evaporator coil assembly. Disconnect and remove the steering wheel assembly by pulling through the refrigeration holes in the rear of the cabinet. All electrical must be disconnected from both evaporator coil assemblies and at the control panel down in the condensing unit compartment. Disconnect both drain lines from the evaporator coil assemblies. Unscrew and remove all fasteners holding the evaporator coil assemblies to the interior rear panel of the cabinet. Remove the evaporator coil/blower assembly.

6. Disconnect and remove top evaporator coil assembly.

7. Using the special camlock wrench provided, loosen all perimeter camlocks to the top panel. Remove top panel.

8. The temperature sensing bulbs must be unfastened from the rear interior panel of the cabinet and removed by carefully pulling them through the refrigeration holes in the rear of the cabinet.

9. Loosen all perimeter camlocks to both the left and right end panels and the center partition. Remove left end panel, then the center partition, and finally the right end panel.

10. Loosen all perimeter camlocks to the rear panel. Remove rear panel.

11. Remaining base & bottom panel assembly can be moved in one piece.

12. Reverse steps to install/reassembly cabinet.

NOTE: *During reassembly, all mullion heater wires must be placed around perimeter of each door opening. Must be installed in between stainless steel surface and gray plastic strip attached to perimeter of door opening. Stainless steel secondary breaker strips (provided loose in cabinet) must then be installed corresponding with numbers/alphabet labels around inside perimeter of door openings.*

NOTE: *When reassembling the unit on site, all panels must be sealed with beads of gray food-grade silicone (provided) in all female joints. This ensures a proper seal between panels and prevents air, heat, and liquid infiltration. Gray plugs must also be place in all camlock holes when sealing unit prior to initial use. A squirt of silicone in each camlock hole is also recommended for a proper seal. After all panels are assembled, silicone all interior and exterior seams for a final seal.*

Chapter 10—Electrical and Mechanical

10.1 Introduction

This section of the manual contains drawings and schematics of the electrical and piping systems.

Illustration 10.A—Mechanical Piping Diagram

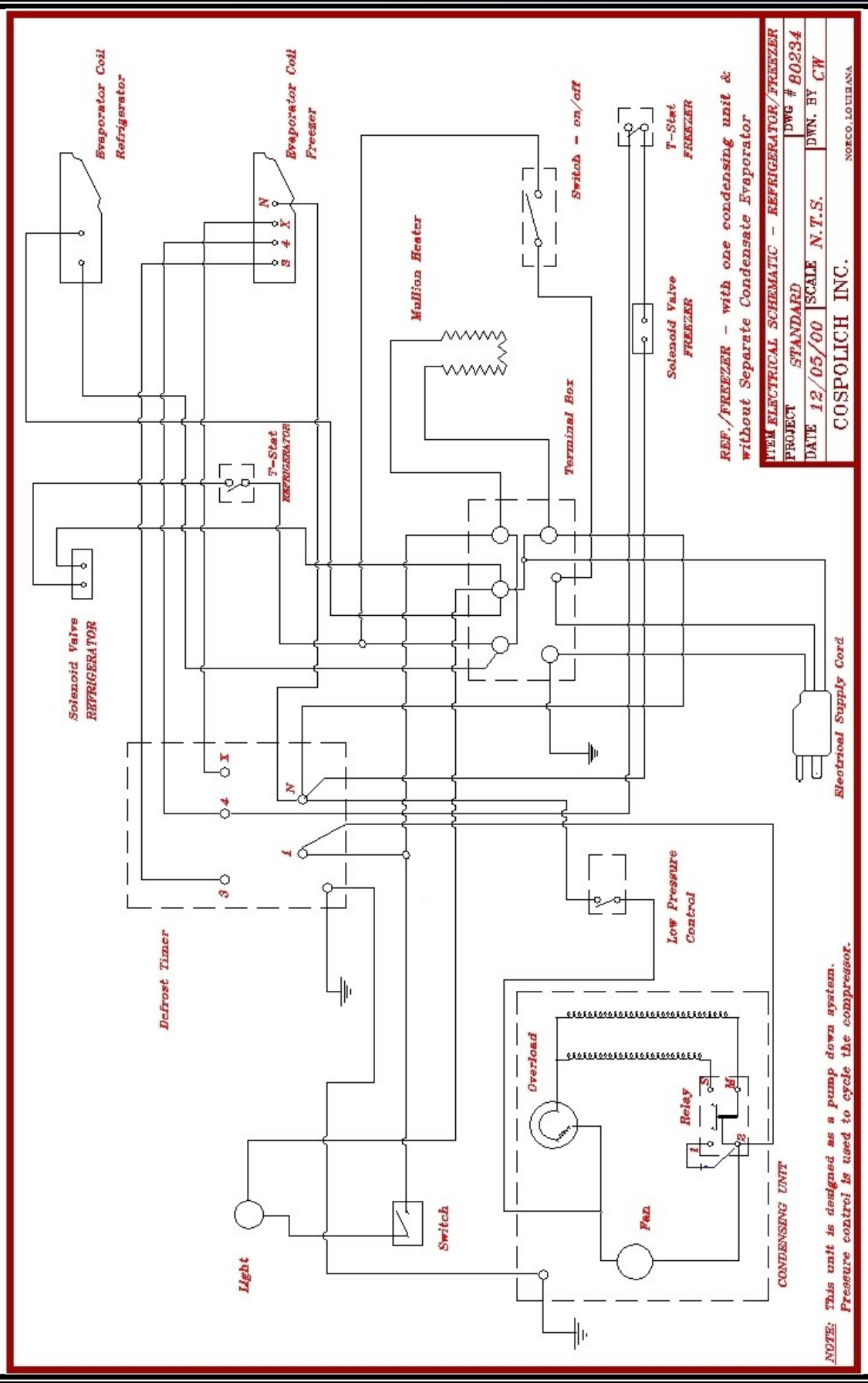
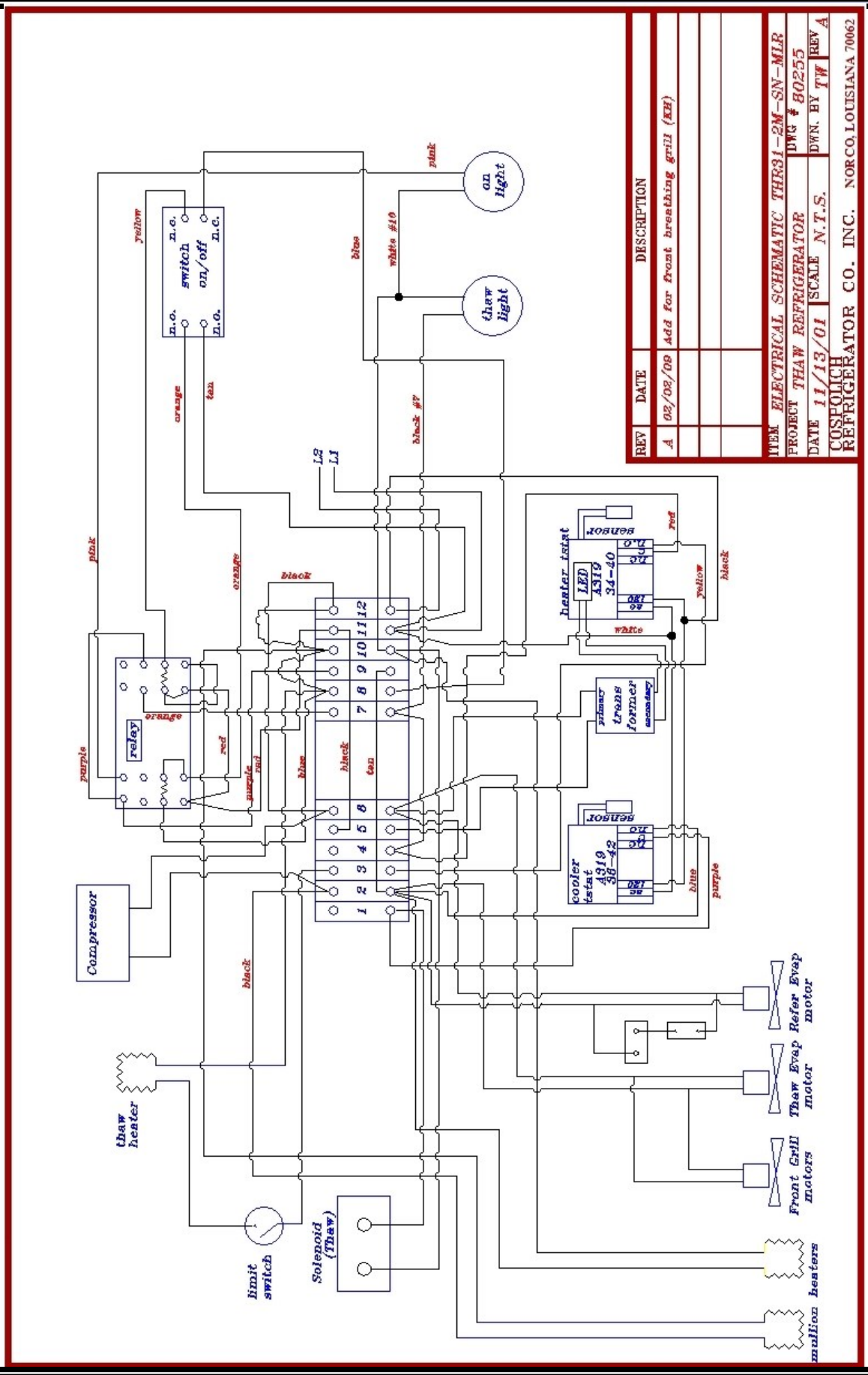


Illustration 10.B—Electrical Schematic (Standard Controls)



Chapter 11—Limited Warranty

Cospolich Inc. warrants their cabinets to consumers against defects in material or workmanship under normal use and service for a period of one year from the date of the shipment. We will repair or replace at our option, any part, assembly or portion thereof which Cospolich's examination discloses to be defective. Cospolich will pay the labor costs for the repair up to twelve (12) months from date of shipment.

In instances where the purchaser is not the owner in possession and the acceptance of Cospolich equipment is closely tied to the completion and delivery of the project, our warranty will begin on the acceptance date and will extend for one year.

Terms

Exclusions

Cospolich's obligations under this warranty shall not extend to any malfunction or other problem caused by unreasonable use, such as but not limited to, improper setting of controls, improper installation, improper voltage supply, loose electrical connections or blown fuses, and damage not attributable to a defect in workmanship. This warranty shall not apply to any cabinet or component part that has been suspect to any accident, alteration , abuse, misuse to any damage caused in fire, flood, or other acts of God and to any product that has been serviced by an unauthorized service person or company.

To secure Warranty Service

If you claim a defect under this warranty, direct your claim to whom you purchased the product, giving model, serial and code numbers with a description of the problem. Telephone calls should be directed to the service department at (800) 423-7761 or (985)725-0222 with fax request going to (985) 725-1564.

If the above procedure fails to satisfy your claim, you may write directly to the following address including the above identifying information.

DIRECTOR of CUSTOMER RELATIONS
COSPOLICH INC.
P.O. BOX 1206
DESTREHAN, LA 70047

There is not other express warranty on the Cospolich units except the terms stated herein. Any implied warrants of fitness and merchantability are limited in duration to the duration of this Warranty. The liabilities of Cospolich are limited solely and exclusively to replacement as stated herein and do not include any liability for any incidental, consequential or other damages of any kind whatsoever, whether any claim is based upon theories of contract negligence or tort. Some states do not allow limitations on how long an implied warranty lasts, or the exclusion of limitations of incidental or consequential damages. So the above limitations and exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights that vary from state to state.

Revision History

CHG NO.	DATE	DESCRIPTION OF CHANGE	CHG. BY	APP BY