

COSPOLICH

Shipboard Thaw Cabinet Technical Manual

Installation, Operation, and Maintenance Instructions
Serial Numbers: 1151-20 to present

THW30 Series

THW30-2M-S-MLR
THW30-2M-SN-MLR
THW30-2M-SNL-MLR
*THW30-2M-SN



THW50 Series

THW50-2M-S-MLR
THW50-2M-SN-MLR
THW50-2M-SNL-MLR
*THW50-2M-SN



THW60 Series

THW60-2M-S-MLR
THW60-2M-SN-MLR
THW60-2M-SNL-MLR
*THW60-2M-SN



Table of Contents

List of Illustrations	3	6.2.28 LED Light	30
List of Tables	4	6.2.29 LED Light Driver	30
Glossary	4	6.2.30 LED Light Bracket	30
Chapter 1 General Information	5	6.2.31 Shelves	31
1.1 Introduction	5	6.2.32 Door Latch	31
1.2 Scope of the Manual	5	6.2.33 Door Latch	31
1.3 Equipment Description	5	6.2.34 Door Strike	31
1.4 Equipment Supplied	5	6.2.35 Magnetic Door Gasket	32
Table A Leading Particulars	6	6.2.36 Male/Female Twist Lock Disconnects	32
Illustration General Arrangement Drawing	7	6.2.37 Drawer Slides	32
Chapter 2 Operation	10	6.2.38 Front Louvered Grill w/ Fans	32
2.1 Introduction	10	6.2.39 Electronic Controller Digital Display	32
2.2 Controls and Indicators	10	Chapter 7 Parts List	33
Table B Controls and Indicators	10	7.1 Introduction	33
Illustration Prepped Electronic Controller Assembly & Prepped Condensing Unit	11	7.2 Source Codes	33
2.3 Start Up Procedure	12	Table H Source Codes	33
Table C Start Up Procedure	12	Table I Parts List THW30 Series	34
2.4 Shut Down Procedure for Short Term	13	Table J Parts List THW50 Series	35
Table D Shut Down Procedure for Short Term	13	Table K Parts List THW60 Series	36
2.5 Cleaning Instructions	13	Illustrations 7.1 Prepped Condensing Unit Assembly	37
2.6 Preparation for an Extended Period of Inactivity	14	Illustrations 7.2 Prepped Evaporator Coil Assembly	38
Table E Shut Down for Extended Period	14	Illustrations 7.3 Prepped Evaporator Coil Assembly	39
Chapter 3 Functional Description	15	Illustrations 7.4 Electrical Control Panel	40
3.1 System Description	15	Illustrations 7.5 Prepped Electronic Controller Assembly	41
3.2 System Operation	15	Illustrations 7.6 Prepped Electronic Controller Assembly	42
Chapter 4 Scheduled Maintenance	16	Illustrations 7.7 Door Detail	43
4.1 Introduction	16	Illustrations 7.8 Interior Detail	44
4.2 Preventive Maintenance Action Index	16	Illustrations 7.9 Main Unit Detail	45
4.3 Preparation for Maintenance	16	Chapter 8 Installation	46
4.4 Maintenance Procedures	16	8.1 Unpacking	46
A. Monthly Maintenance Requirements	16	8.2 Installation	46
B. Bi-Monthly Maintenance Requirements	17	Chapter 9 Modular Installation	47
C. Annual Maintenance Requirements	18	9.1 Introduction	47
D. 3-Year Maintenance Requirements	19	9.2 Installation Skill Level	47
Table F Preventive Maintenance Action Index	19	9.3 Tools	47
Chapter 5 Troubleshooting	20	9.4 Primary Components	47
Table G Mechanical & Electrical Troubleshooting Guide	20	9.5 Disassembly	47
Chapter 6 Corrective Maintenance	21	Chapter 10 Electrical & Mechanical	49
6.1 Introduction	21	10.1 Introduction	49
6.2 Repair & Replacement Procedures	21	Illustration 10.1 Mechanical Piping Diagram	50
6.2.1 Compressor	21	Illustration 10.2 Electrical Schematic (Electronic Controls/Refrigerator)	51
6.2.2 Low Pressure Control	23	Chapter 11 Warranty	53
6.2.3 Thermal Expansion Valve (TXV)	23	Appendix 1 Revision History	54
6.2.4 Filter Dryer	23		
6.2.5 Condenser Fan Motor	24		
6.2.6 Condenser Fan Blade	24		
6.2.7 Axial Fan Motor	24		
6.2.8 Anti-Condensate Mullion Heater(s) Wire	25		
6.2.9 Condenser, Cabinet, & Defrost Sensors	25		
6.2.10 Condenser	25		
6.2.11 Start Capacitor Kit	25		
6.2.12 Condensing Unit Overload	26		
6.2.13 Condensing Unit Relay	26		
6.2.14 Condensing Unit Assembly	26		
6.2.15 Condensing Unit Drawer Slide Assembly	27		
6.2.16 Prepped Evaporator Coil Assembly	27		
6.2.17 Evaporator Fan Cover	27		
6.2.18 Evaporator Fan Blade	27		
6.2.19 Evaporator Fan Motor	28		
6.2.20 Copper Tubing Wheel Assembly	28		
6.2.21 1/2" Vinyl Drain Line Tubing	28		
6.2.22 Sight Glass	28		
6.2.23 Receiver Tank	28		
6.2.24 On/Off Toggle Switch	29		
6.2.25 Door Assembly	29		
6.2.26 Breaker Strip	29		
6.2.27 Breaker Strip Kit	29		

List of Illustrations

THW30, THW50 & THW60 Series


	THW30 SERIES		THW50 SERIES		THW60 SERIES	
	Il.	Pg.	Il.	Pg.	Il.	Pg.
GENERAL ARRANGEMENT DWG	1.1	7	1.2	8	1.3	9
CONDENSING UNIT ASSEMBLIES INCLUDING LEFT & RIGHT SIDE VIEW	2.1	11	2.1	11	2.2	11
PREPPED CONDENSING UNIT ASSEMBLY	7.1	37	7.1	37	7.1	37
PREPPED EVAPORATOR COIL ASSEMBLY INTERIOR VIEW	7.2	38	7.2	38	7.2	38
PREPPED EVAPORATOR COIL ASSEMBLY INCLUDING LOWER, DRAIN LINE & INTERIOR VIEW, FAN COVER & MOTOR DETAIL	7.3	39	7.3	39	7.3	39
PREPPED ELECTRONIC CONTROL PANEL	7.4	40	7.4	40	7.4	40
PREPPED ELECTRONIC CONTROLLER ASSEMBLY INCLUDING FRONT & REAR VIEW	7.5	41	7.5	41	7.5	41
ELECTRONIC CONTROL PANEL ASSEMBLY	7.6	42	7.6	42	7.6	42
DOOR DETAIL INCLUDING LATCH, HINGE, STRIKE	7.7	43	7.7	43	7.7	43
INTERIOR DETAIL	7.8	44	7.8	44	7.8	44
MAIN UNIT DETAIL FRONT & REAR VIEW	7.9	45	7.9	45	7.9	45
MECHANICAL PIPING DIAGRAM	10.1	51	10.1	51	10.1	51
ELECTRICAL SCHEMATIC (Electronic Controls) ELECTRONIC CONTROLS THAW	10.21	52	10.21	52	10.21	52
ELECTRICAL SCHEMATIC (Electronic Controls) ELECTRONIC CONTROLS THAW	10.22	53	10.22	53	10.22	53

Il.—Illustration number
Pg.—Page Number

List of Tables

Table	Title	Page
A.	Leading Particulars	6
B.	Controls and Indicators	10
C.	Start-Up Procedure	12
D.	Shut Down Procedure for Short Term	13
E.	Shut Down Procedure for Extended Period	14
F.	Preventive Maintenance Action Index	19
G.	Mechanical and Electrical Troubleshooting Guide	20
H.	Source Codes	33
I.	Parts List - THW30 Series	34
J.	Parts List - THW50 Series	35
K.	Parts List - THW60 Series	36

Glossary

	Indicates to the end user instructions or preventative measures that should be taken to avoid damage to equipment or injury to personnel. This is meant to draw attention to the notation for the benefit of the end user.
<i>Note:</i>	A notation to the end user that indicates additional instructions that may be useful during servicing or operation of the equipment.
<i>Caution:</i>	A notation to the end user advising them to exercise additional caution while performing the specific task.
<i>Warning:</i>	A notation to the end user advising of potential dangerous or harmful consequences and/or conditions.

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 adjustable shelves.
- B. Door— Access to the storage compartment is through a hinge-mounted door.
- 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:	Marine Shipboard Modular Refrigerator Unit		
MODEL:	THW30-2M-S-MLR	THW30-2M-SN-MLR	THW30-2M-SNL-MLR
	REV. 004		
PURPOSE:	Storage of Refrigerated Items/Perishables		
ELECTRICAL REQUIREMENTS:	Power Supply	115 Volt AC, 60 Hz, 1 Phase	
	Amp draw	RLA: 7.8 Amps Max Fuse: 15 Amps	
REFRIGERANT:	404A		
CHARGE:	2 lbs.		
DRAIN:	Not Required		
DIMENSIONS:	39.25" WIDE X 35.5" ACTUAL CABINET DEPTH X 78" HIGH Shipping Weight: 1200 lbs. Operating Weight: 1110 lbs.		

MODEL:	THW50-2M-S-MLR	THW50-2M-SN-MLR	THW50-2M-SNL-MLR	THW50-2M-SNGD-MLR
	REV. 004			
PURPOSE:	Storage of Refrigerated Items/Perishables			
ELECTRICAL REQUIREMENTS:	Power Supply	115 Volt AC, 60 Hz, 1 Phase		
	Amp draw	RLA: 7.8 Amps Max Fuse: 15 Amps		
REFRIGERANT:	404A			
CHARGE:	2 lbs.			
DRAIN:	Not Required			
DIMENSIONS:	51" WIDE X 35.5" ACTUAL CABINET DEPTH X 78" HIGH Shipping Weight: 1300lbs. Operating Weight: 1200 lbs.			

MODEL:	THW60-2M-S-MLR	THW60-2M-SN-MLR	THW60-2M-SNL-MLR
	REV. 004		
PURPOSE:	Storage of Refrigerated Items/Perishables		
ELECTRICAL REQUIREMENTS:	Power Supply	115 Volt AC, 60 Hz, 1 Phase	
	Amp draw	RLA: 7.8 Amps Max Fuse: 15 Amps	
REFRIGERANT:	404A		
CHARGE:	2 lbs.		
DRAIN:	Not Required		
DIMENSIONS:	78" WIDE X 34.5" ACTUAL CABINET DEPTH X 78" HIGH Shipping Weight: 1490 lbs. Operating Weight: 1300 lbs.		

Refrigeration & Drain Line Cover

2"

33 1/2"

39.25"

LED Interior Light

Rack

MODELS: THW30-2M-S THW30-2M-S-MLR
THW30-2M-SN THW30-2M-SN-MLR

SPECIFICATION

DIMENSIONS: Width 39.25" Depth 35.5" Height 78"

FINISH: Stainless (Request) 304 S.S. Interior 304 S.S.

ELECTRICAL: 115VAC, 60 HZ, 1 PHASE

REFRIGERANT: 404A

NOTES:

ELECTRONIC CONTROLS
FRONT-BREATHING GRILL INCLUDED: (GR60-FB)(REV. 001)
LED INTERIOR LIGHTS: (LEDLITE33)
ADJUSTABLE LEGS OPTIONAL: (HLEG63), (HLEG82)
STAINLESS STEEL FOUNDATION OPTIONAL (FFSTHW30)
INCLUDES CONDENSING UNIT SIDE ASSEMBLY: (HWCLASST07)

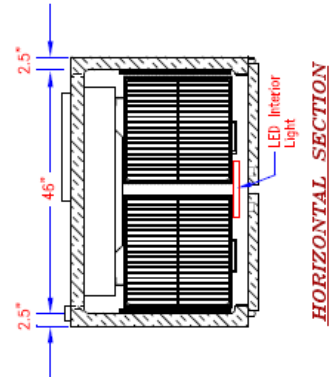
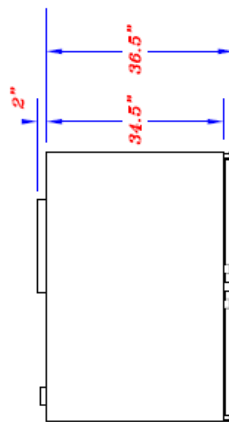
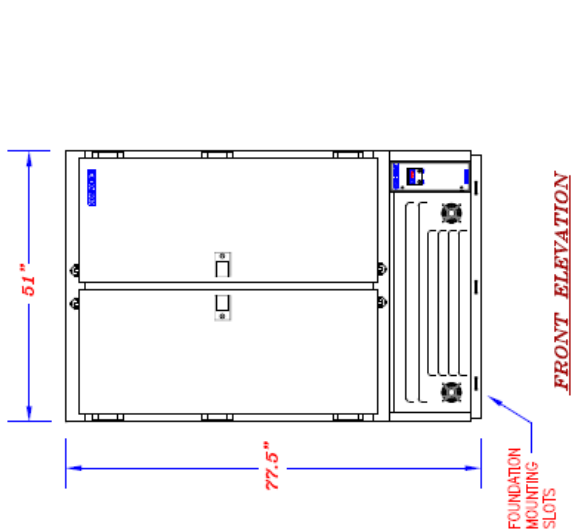
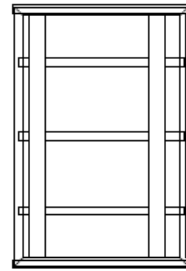
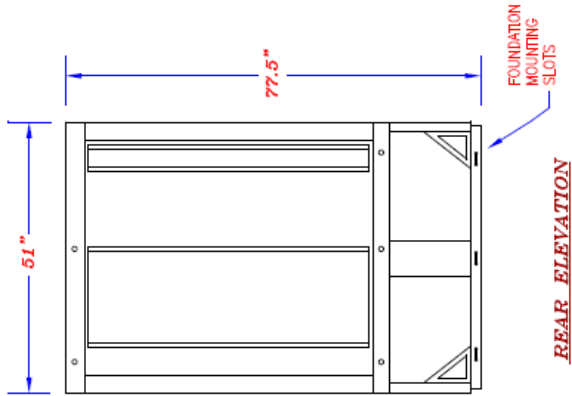
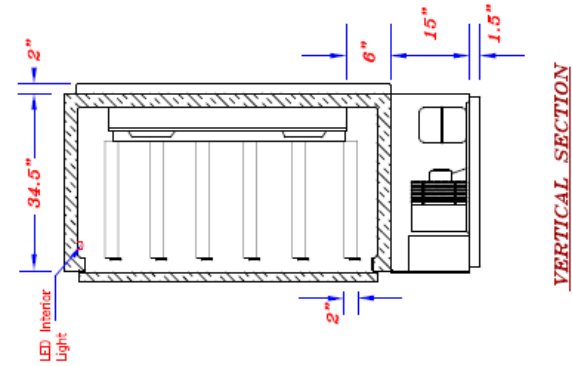
REVISIONS:

REV	DESCRIPTION	DATE
1	MOVED CONTROLS FROM LEFT SIDE TO RIGHT SIDE, JLA, 04/26/2012	
2	ADDED FRONT BREATHING GRILL, BMW	
3	ADDED ELECTRONIC CONTROLS, CLH	
4	ADDED LED INTERIOR LIGHTS, CLH	
5	ADDED LED INTERIOR LIGHTS, ADJUSTED GRILL PANS, CLH, 03/23/2012	

ITEM	30 CU. FT. THAW CABINET, MODULAR
PROJECT	PRESENTATION SALES DWG DWG # 50617-1C
DATE	03/23/20 SCALE N.T.S. DWN. BY CLH
COSPOLICH, INC DRETEHAN, LOUISIANA	

 Depicts Center of Gravity
 $(x, y, z) = (19.5'', 30'', 22'')$

Illustration 1.2 – General Arrangement Drawing – THW50 Series **THW50-2M-S-MLR, THW50-2M-SN-MLR, THW50-2M-SNL-MLR**

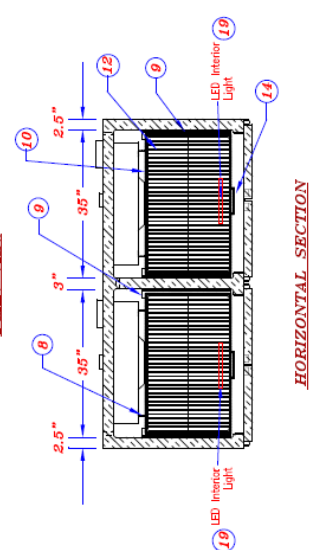
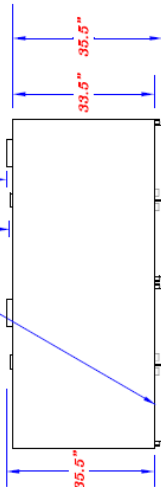
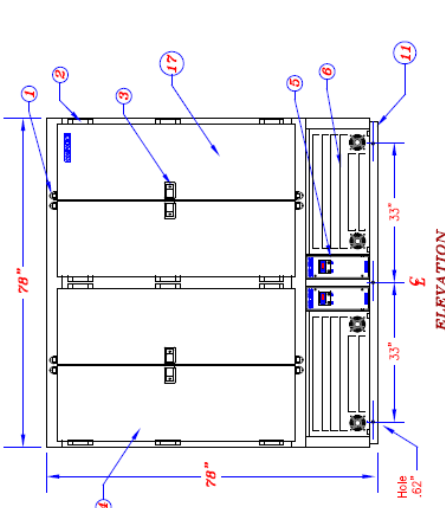
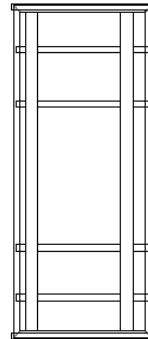
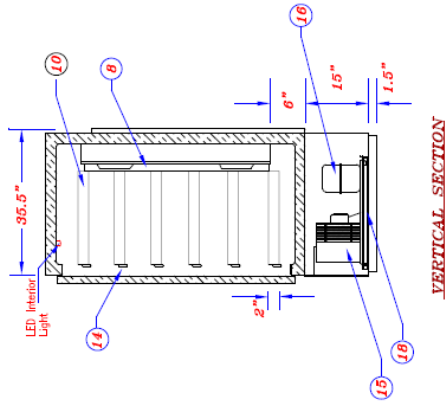


MODEL: THW50-2M-SN-MLR
SPECIFICATION:
DIMENSIONS: Width 51" Depth 36.5" Height 77.5"
FINISH: Inside (Optional) S.S. Outside S.S.
INSULATION: POLYURETHANE, FOAMED-IN-PLACE
REFRIGERATION:
ELECTRICAL: 115VAC, 60 HZ, 1 PHASE
NOTES:
ELECTRONIC CONTROLS
ADJUSTABLE LEGS OPTIONAL (HLEG05, HLEG06)
12 EA PRODUCT FANS (PTF005) INCLUDED (REFCLAS007)
12 EA PRODUCT FANS (PTF005) INCLUDED (REFCLAS007)
12 EA 1/2" LED INTERIOR LIGHT INCLUDED (LEDL005)
1 EA 1" 304 STAINLESS STEEL REAR TIEING COTTER INCLUDED
REVISIONS:
"N" - REV. 001, ELECTRONIC CONTROLS, CLE 09/09/19
"N" - REV. 002, CHANGED FROM 36.5" TO 36.5" CLE 10/04/19
"G" - CHANGED FRONT-BEARING GRILL ASSEMBLY, LED EXTERIOR LIGHTS, 11/14/19, CLE
"N" - ADJUSTED HEIGHT FROM 78" TO 77.5", ADDED SLOTS FOR FOUNDATION CLIPS, ADJUSTED BASE FRAME HEIGHT FROM 2" TO 1.5", CLE 04/10/20

ITEM SHIPBOARD MODULAR THAW CABINET	DWG # 50640
PROJECT PRESENTATION SALES DRAWING	REV # H
DATE 04/10/20	SCALE NTS
OWN. BY CTH	DESIGNED BY DESTREHAN, LOUISIANA

Illustration 1.3— General Arrangement Drawing— THW60 Series **THW60-2M-S-MLR, THW60-2M-SN-MLR, THW60-2M-SNL-MLR**

ITEM #	DESCRIPTION	COSPOLICH P/N
1	STROKE	HX12111
2	HINGE	HX12109
3	DOOR LATCH	HX12110
4	LEFT DOOR	TD4605
5	CONTROL PANEL (RHT. 002)	RCT4601, RCT4608
6	LOUTERED FRONT-BREATHING GRILL	GR60-PB-EC
7	DOOR GASKET	TD4608Y
8	STOP ANGLE	PTW045
9	PAN SUPPORT ANGLE	PTW025
10	2" S/S PRODUCT PAN	PTW015
11	BASERFRAME	TR4414M
12	SHIRT NO RAIL	SSN324X20H
13	TRIFLON SEACHER	HXD001
14	PAN HANDLE	HXD008
15	PREPARED CONDENSING UNIT	RUT390-PA/THW
16	COMPRESSOR	RUT391
17	RIGHT DOOR	TD4605R
18	CONDENSING UNIT SLIDE ASSY	RCT46AS107
19	12" LED INTERIOR LIGHT	LA012ES5



MODELS: THW60-2M-S THW60-2M-S-MLR
 THW60-2M-SN THW60-2M-SN-MLR

SPECIFICATION
 DIMENSIONS: Width 78" Depth 36.5" Height 79"

FINISH: Stainless Steel (S.S.)
 INSULATION: POLYURETHANE, FOAMED-IN-PLACE
 REFRIGERATION: 404A

ELECTRICAL: 115VAC, 60 HZ, 1 PHASE

NOTES:
 4" FOUNDATION OPTIONAL (FSTH60)
 ADJUSTABLE LEGS OPTIONAL (HLEG63)
 2 EA LOUTERED FRONT GRILL(S) INCLUDED: (GR60-PB-EC)
 LEFT FRONT DOORS (TD4605) INCLUDE S/S ASTRIGAL
 DANTOSS ELECTRONIC CONTROLS
 CONDENSING UNIT SLIDE ASSEMBLY (RHT46AS107)
 12" LED LIGHT IN BOTH COMPARTMENTS (LA012ES5)

REVISIONS:
 "A" (04-01-04) Add rear tubing cover and 2" base,
 add foundation mounting holes, and change
 height dimension from 79" to 78.5" (BL)
 "C" (01-02-19) Change to Danfoss Electronic Controls,
 add Condensing Unit Slide Assembly
 "D" (01-06-20) Change Rear Tubing Cover to 1",
 add LED Interior Lights & Front-Breathing
 Grill Assembly, Change Tubing Covers back to
 2" (05/09/20), CLH

THW60 60 CU FT TRAIL CABINET MODEL	REV # 01413
PROJECT PRESENTATION SALES DWG	REV # 01
DATE 01/06/20 SCALE N.T.S.	DRN. BY CLH

COSPOLICH, INC.
 DESTREHAN, LOUISIANA

Chapter 2—Operation

2.1 Introduction

These model are heavy-duty pieces of equipment designed for intermittent use. They incorporate electronic controls to regulate the cycling and temperature of the refrigeration system.

2.2 Table B—Controls and Indicators

Name	Type	Function
Power Switch	Toggle Switch	Power Control, terminates all electrical into and past the supply cord
Electronic Controller	Push Button Electronic, Digital Display	Cycles Refrigeration System (Automatic)
Low Pressure Control	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 90°F ambient environments for refrigerator applications (37°F 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 2.1, Electronic Control Panels & Condensing Unit Assemblies
THW30, THW50 & THW60 Series



Illustration 2.1A: Electronic Control Panel
**Electronic Control Panel Assembly varies within each series.



Illustration 2.1B:
RUT390-PM (THW)
Prepped Condensing Unit Assembly

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 "ON" 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.

2.3 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. Instructions for installation, assembly, and disassembly are provided in Chapter 8 & 9

2.4 Shut Down Procedure for Short Term

To shut down, switch the power control to the off position.



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

2.5 Cleaning Instructions

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.

1. It is necessary that the power source be turned off.
2. Remove all shelves.
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 particulate.

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

Note: *It is not recommended to use any strong or caustic cleaners on the refrigerator. 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 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 storage system. It is designed with the intent and purpose of storing refrigerated perishable 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 basic compartment assemblies
(when included):

1. Condensing Unit Compartment—This area contains the condensing unit along with the electronic control assembly both installed on a slide out assembly.
2. Storage Compartment—The insulated storage area is a temperature controlled refrigerated area. Included in this compartment are the adjustable shelving and evaporator coil assembly.

3.2 System Operation

The design of the thaw cabinet focuses primarily on the safe thawing of frozen perishable 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 it was designed.

The chilled perishable compartment is designed for the storage of perishable items that require a temperature range of 34 to 40°F for refrigerators. The thaw cabinet is designed to hold product at 36°F. The unit will sense the interior compartment temperature and automatically go into either chill or warm mode in order to reach the holding temperature of 36°F. It is a general rule that adequate spacing is allowed between the stored items to allow for proper air circulation. The unit is designed to automatically defrost every 6 hours.

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 refrigerator 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 in the condensing unit compartment.

Note: *It is necessary to first remove the louvered grill to the condensing unit compartment. This is done by lifting it straight up, then pulling the bottom out and down.*

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 may 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 system at the 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 removed 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 door 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 90° angle to the cabinet and lift on the outer edge of the door. If there is upward movement of 1/2" 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 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 load for even air flow.
Low Head Pressure	A. Defective compressor. B. Low refrigerant.	A. Remove and replace. B. Leak check & recharge.
High Head Pressure	A. Dirty condenser. B. System contains air. C. Refrigerant overcharge. D. Condenser fan bad.	A. Clean condenser fins. B. Evacuate, change filter dryer, recharge. C. Reduce quantity of refrigerant. D. Remove and replace.
Short Cycling	A. Maladjusted control. B. Low refrigerant.	A. Adjust control. B. Leak check and recharge.

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.

Note: *The service or repair items are limited to those listed as field-replaceable, which are indicated and illustrated in Chapter 7.*

6.2 Repair & Replacement Procedures

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



6.2.1 Replacement of Compressor—(Part #: RUT391)

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

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. With the grill 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.

Note: *Wires should be labeled for later identification prior to disconnecting for service.*

4. Find electrical terminal box on side of compressor and remove cover. Disconnect the wires from the compressor. Remove the screws attaching the terminal box to the compressor.
5. 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.
6. Disconnect high-side line at the compressor. This is done by heating the brazed connection using an acetylene and oxygen torch set.



Warning: Do not apply a flame to lines containing refrigerant as dangerous and toxic phosgene gas may be created.

7. To remove the low pressure control capillary tube and service fitting, loosen the 1/4" brass flare nut on the suction valve.
8. Disconnect the compressor from its mounting. Remove the wire clips on each of the four feet. Remove old compressor.
9. To install the new compressor, place it in position on the base and reinstall four wire clips.
10. Reattach the suction and discharge valve blocks to the appropriate sides of the compressor.
11. Reattach the low pressure control capillary tube and service fittings to the suction side of the compressor.
12. Reattach the suction line to the compressor.
13. 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.
14. Remove valve stem cap from suction block on side of the compressor. Run valve stem out all the way then in one turn clockwise.
15. 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 404a, then using N₂, bring pressure up to 150 psi. Use an electronic leak detector to check system for leaks. Repair all leaks, if necessary.
16. If no leaks are present, recover the test charge using a vacuum recovery pump.
17. 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).
18. Reattach electrical terminal box and secure all wiring.
19. 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 #: RWPL02)

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.

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 Replacing Expansion Valve (TXV)—(Part #: RWEV27)

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 (1/4") 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 Replacing 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 Replacing Condenser Fan Motor—(Part #: RWCM06)

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.

Note: *Wires should be labeled for later identification prior to disconnecting for service.*

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 Replacing Condenser Fan Blade—(Part #: RWFB05)

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 Axial Fan Motor—(Part #: RWEM26) *NOT FOUND ON EVERY UNIT*

1. To remove front grill, lift up then outward.
2. Disconnect polarized electrical harness.
3. Disconnect fasteners and remove faulty axial fan motor.
4. Reverse the process to install new axial fan motor.

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.*

6.2.8 Replacing the Anti-Condensate Mullion Heater(s)

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.

ANTI-CONDENSATE MULLION HTR.	
MODEL	PART #
THW30 Series	L1HR184
THW50 Series	L1HR152
THW60 Series	L1HR184

6.2.9 Replacement of Condenser, Cabinet, & Defrost Sensors

1. For assistance with the condenser, cabinet, & defrost sensors, contact Cospolich Technical Support at 1-800-423-7761.

CONDENSER, CABINET & DEFROST SENSORS	
MODEL	PART #
THW30, THW50, THW60 Series	RWTS13 RWTS14 RWTS15

6.2.10 Replacement of Condenser —(Part #: RWCD14)

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

6.2.11 Replacement of Start Capacitor Kit—(Part #: RWCP47)

1. Shut off all electrical power to the unit.
2. Remove front louvered grill.
3. Unbolt and slide out the condensing unit assembly.
4. Remove the faulty start capacitor from the side of the condensing unit assembly.
5. Reverse the process to install the new start capacitor.

6.2.12 Replacement of Condensing Unit Overload—(Part #: RWOVL38)

1. Shut off all electrical power to the unit.
2. Remove front louvered grill.
3. Unbolt and slide out the condensing unit assembly.
4. Remove small black metal cover to the electrical box on the side of the condensing unit assembly.

Note: Wires should be labeled for later identification prior to disconnecting for service.

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.

6.2.13 Replacement of Condensing Unit Relay —(Part #: RWRLY07)

1. Shut off all electrical power to the unit.
2. Remove front louvered grill.
3. Unbolt and slide out the condensing unit assembly.
4. Remove small black metal cover to the electrical box on the side of the condensing unit assembly.

Note: Wires should be labeled for later identification prior to disconnecting for service.

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.

6.2.14 Replacement of Prepped Condensing Unit Assembly—(Part #: RUT390THW)

1. For assistance with the prepped condensing unit assembly contact Cospolich Technical Support at 1-800-423-7761.

**6.2.15 Replacement of Condensing Unit Drawer Slide Assembly
—(Part #: RWCUASSY07)**

1. For assistance with the condensing unit slide assembly contact Cospolich Technical Support at 1-800-423-7761.

6.2.16 Replacement of Prepped Evaporator Coil Assembly—(Part #: TECA01)

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

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

1. Shut off all electrical power to the unit.
2. Open front door to the unit.
3. Remove the screws securing the faulty evaporator fan cover to the evaporator coil assembly. Remove the faulty evaporator fan cover.
4. Reverse the process to install the new evaporator fan cover.

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

1. Shut off all electrical power to the unit.
2. Open front door to 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.

6.2.19 Replacement of Evaporator Fan Motor—(Part #: LWEM18)

1. Shut off all electrical power to the unit.
2. Open front door to the unit.
3. Remove fasteners securing aluminum evaporator coil assembly cover. Disconnect polarized electrical connections to the evaporator coil assembly cover. Remove the aluminum evaporator coil assembly cover.
4. Remove fasteners securing the faulty evaporator fan motor to the evaporator coil assembly cover. Remove the faulty evaporator fan motor.
5. Using a permanent marker, mark on the shaft of the evaporator fan motor where the evaporator fan blade is installed. Remove the evaporator fan blade from the faulty evaporator fan motor.
6. Reverse the process to install the new evaporator fan motor. Install the evaporator fan blade in the same location on the shaft of the new evaporator fan motor as the previous fan motor.

6.2.20 Replacement of Copper Tubing Wheel Assembly

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

COPPER TUBING WHEEL ASSEMBLY

MODEL	PART #
THW30 Series	RWCTW06
THW50 Series	RWCTW61M
THW60 Series	RWCTW60M

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

- unit.
1. Remove rear drain line cover, then open front door to the
 2. Remove drain line tubing from evaporator drain line.
 3. Pull drain line tubing through refrigeration access holes in rear wall of unit.
 4. Reverse the process to install new drain line tubing.

6.2.22 Replacement of Sight Glass—(Part #: RWSG09)

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

6.2.23 Replacement of Receiver Tank—(Part #: RWRT03)

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

6.2.24 Replacement of On/Off Toggle Switch—(Part #: LWTS01)

1. Shut off all electrical power to the unit.
2. Remove front louvered grill.
3. Remove junction box cover containing faulty On/Off toggle switch.
4. Disconnect electrical connections to faulty On/Off toggle switch. Remove faulty On/Off toggle switch from junction box cover.
5. Reverse the process to install new On/Off toggle switch.

6.2.25 Replacement of Door Assembly

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.

DOOR ASSEMBLY	
MODEL	PART #
THW30 Series (LEFT/RIGHT)	TDA60S / TDA60SR
THW50 Series (LEFT/RIGHT)	TDA50S / TDA50SR
THW60 Series (LEFT/RIGHT)	TDA60S / TDA60SR

6.2.26 Replacement of Breaker Strip

1. Using a paint scraper or flathead screwdriver along the edge, pry off faulty secondary breaker strip.
2. Install new secondary breaker strip by pressing into place.
3. Install new breaker strip corner by pressing into place.
Re-install secondary breaker strips.

HORIZONTAL BREAKER STRIP	
MODEL	PART #
THW30, THW50 & THW60 Series	QED91S

6.2.27 Replacement of Breaker Strip Kit

1. Using a paint scraper or flathead screwdriver along the edge, pry off faulty secondary breaker strip.

VERTICAL BREAKER STRIP	
MODEL	PART #
THW30, THW50 & THW60 Series	QED90S

BREAKER STRIP KIT	
MODEL	PART #
THW30 Series	BRTHW30
THW50 Series	BRTHW50
THW60 Series	BRTHW30

6.2.28 Replacement of LED LIGHT—(Part #: LEDLITE35)

1. Shut off all electrical power to the unit.
2. Open the door to the unit and disconnect two pin electrical connection at the end of the LED Light.
3. Remove faulty LED Light from the two metal clips holding it in place.
4. Reverse the process to install the new LED Light.
5. Note: LED Light is polarity sensitive. If light doesn't work, reverse two pin electrical connection at the end of the LED Light and retry.

6.2.29 Replacement of Led Light Driver—(Part #: LEDLITE15HARN)

1. Shut off all electrical power to the unit.
2. Remove louvered stainless steel grill at bottom of cabinet.
3. Locate electrical box with toggle switch and remove the two screws holding the cover on.
4. Locate Light Driver inside electrical box.
5. Light Driver is mounted with double stick tape. Using a flat screwdriver, pry the light driver from its mounted location.
6. Cut the primary (black & brown) wires and secondary (blue & red) wires on the old light driver. These will be used to reconnect to the new LED Light Driver. Note: Leave wiring connected to the main wire harness. ONLY cut the wires on the LED Driver.
7. Utilizing the wires from the old LED Light Driver, reconnect the new driver.
Note: Primary—black & brown and secondary—blue & red
8. Reconnecting wires can be accomplished by wire nuts or soldered as original.
9. After reconnecting wires, install new LED Light Driver in place with new double stick tape.
10. For assistance in replacing the LED Light Driver, contact Cospolich Technical Support at 1-800-423-7761.

6.2.30 Replacing LED BRACKET—(Part #: LEDLITE13)

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

6.2.31 Replacement of Shelves

1. Open front door to the unit.
2. Lift old shelf to remove. Tilt to remove from unit interior.
3. Reverse the process to install the new shelf.

REPLACEMENT SHELVES

MODEL	PART #
THW30 Series	SSN32AX20B
THW50 Series	SSN18AX21C
THW60 Series	SSN32AX20B

6.2.32 Replacing Door Latch —(Part #: HXLH10)

1. Remove three side mounting screws in the latch.
2. Remove two screws in the strike.
3. Replace both latch and strike.
4. Replace in reverse order.

6.2.33 Replacing 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.

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

1. Open front door 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.

6.2.35 Replacing Magnetic Door Gasket

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.

MAGNETIC DOOR GASKET	
MODEL	PART #
THW30 Series	TGA60MV
THW50 Series	G22X55DMV
THW60 Series	TGA60MV

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.

6.2.36 Replacement of Male/Female Twist Lock Disconnects—(Part #: LEP019, LEP020)

1. For assistance with male/female twist lock disconnects, contact Cospolich Technical Support at 1-800-423-7761.

6.2.37 Replacement of Drawer Slides—(Part #: HXDS09)

1. For assistance with replacement drawer slides, contact Cospolich Technical Support at 1-800-423-7761.

6.2.38 Replacement Front Grill with Fans

1. To remove faulty front grill, lift up then outward.

2. Disconnect polarized electrical harness.

3. Reverse the process to install new front grill.

FRONT GRILL W/ FANS	
MODEL	PART #
THW30 Series	GR60-FB
THW50 Series	GR61-FB
THW60 Series	GR60-FB

6.2.39 Replacement of Electronic Controller Digital Display—(Part #: RWTT66)

1. For assistance with the electronic controller digital display, contact Cospolich Technical Support at 1-800-423-7761.

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	Abbreviation	Address
32761	Kason Industries	(KASON)	Newnan, GA 30265
50992	Ranco Controls	(RANCO)	Plain City, OH 43064
78462	Sporlan Valve	(SPORLAN)	Washington, MO 63090
59431	Tecumseh Products	(TECUMSEH)	Ann Arbor, MI 48108
49048	Miljoco Corporation	(MILJOCO)	Mt. Clemens, MI 48043
42020	Nashville Wire Products	(NWP)	White Bluff, TN 37187
79264	Jean's Extrusions, Inc.	(JEANS)	Salem, IN 47167
2K223	Refrigeration Hardware	(RHS)	Grand Junction, CO 81505
66682	Cospolich, Inc.	(COSPOLICH)	Destrehan, LA 70047

Table I—Parts List for THW30 Series

ITEM	COSP#	MFG#	Vendor	QTY	U/M
1	RUT391	AK174AT-038-J7	TECUMSEH	1	EA
2	RWPL02	RWPL02	COSPOLICH	1	EA
3	RWFD02	C-052-S	SPORLAN	1	EA
4	RWCM06	810M009C09	TECUMSEH	1	EA
5	RWFB05	RWFB05	COSPOLICH	1	EA
6	RWC390-PM(THW)	RWC390-PM(THW)	COSPOLICH	1	EA
7	RWCD14	50840-1	TECUMSEH	1	EA
8	RWCP47	85PS165A53	TECUMSEH	1	EA
9	RWOVL38	8300CRAN21	TECUMSEH	1	EA
10	RWRLY07	8200EMB398	TECUMSEH	1	EA
11	RWCUASSY07	RWCUASSY07	COSPOLICH	1	EA
12	RWCTW06	RWCTW06	COSPOLICH	1	EA
13	RWSG09	SA-K142	SPORLAN	1	EA
14	RWRT03	51080-1	TECUMSEH	1	EA
15	HXDS09	HXDS09	COSPOLICH	1	PR
16	RWQF0406F / RWQF0406M	5505-04B-06 F / 5502-04B-06 M	SPORLAN	1 / 1	EA
17	RWQF0606F / RWQF0606M	5505-06B-06 F / 5502-06B-06 M	SPORLAN	1 / 1	EA
18	RWEV27	FS-1/4-C	SPORLAN	1	EA
19	TECA01	TECA01	COSPOLICH	1	EA
20	RFG20SSWC	RFG20SSWC	COSPOLICH	1	EA
21	RWFB02	RWFB02	COSPOLICH	2	EA
22	LWEM18	LWEM18	COSPOLICH	2	EA
23	CVT12	CVT12	COSPOLICH	10	FT
24	GR60-FB	GR60-FB	COSPOLICH	1	EA
25	L1HR184	64-200	RHS	1	EA
26	QED91S	QED91S	COSPOLICH	2	EA
27	QED90S	QED90S	COSPOLICH	2	EA
28	BRTHW30	BRTHW30	COSPOLICH	1	SET
29	LEDLITE35	LEDLITE35	CHG	1	EA
30	LEDLITE15HARN	LEDLITE15HARN	COSPOLICH	1	EA
31	LEDLITE13	LEDLITE13	COSPOLICH	1	EA
32	SSN32AX20B	SSN32AX20B	COSPOLICH	6	EA
33	HXDB01	HDPENAT0.500	PIEDMONT	12	EA
34	RCTL80	RCTL80	COSPOLICH	1	EA
35	HLEG63	1-1752F260T50S	KASON	4	EA
36	RCTL30 REV 002	RCTL30 REV 002	COSPOLICH	1	EA
37	CXL040	CXL040	COSPOLICH	1	EA
38	RWTS13	RWTS13	COSPOLICH	1	EA
39	RWTS14	RWTS14	COSPOLICH	1	EA
40	RWTS15	RWTS15	COSPOLICH	1	EA
41	RLTB01	4145W	HEATCRAFT	1	EA
42	HXHE20	M48-0132	CHG	1	EA
43	RWE057	SL243	JS	1	EA
44	LWTS01	70155633	AE	1	EA
45	RWTT66	RWTT66	COSPOLICH	1	EA
46	LEP019/LEP020	LEP019/LEP020	COSPOLICH	1	EA
47	TDA60S / TDA60SR	TDA60S / TDA60SR	COSPOLICH	2 / 2	EA
48	HXLH10	172BC	KASON	2	EA
49	HXHE02	0217000008	KASON	6	EA
50	HXLH11	930C	KASON	4	EA
51	TGA60MV	02-070	RHS	2	EA
52	RWE105	RWE105	COSPOLICH	1	EA
53	RWEF01	COS-RWEF01	NWP	1	EA
54	RWMB01	RWMB01	COSPOLICH	2	EA
55	CR-P232-TERM	CR-P232-TERM	COSPOLICH	1	EA
56	HXLH42	HXLH42	COSPOLICH	4	EA
57	FTW33S	FTW33S	COSPOLICH	12	EA
58	PCTB301	PCTB301	COSPOLICH	1	EA
59	PCCC60	70470455	AE	2	EA
60	PWCORD08	PWCORD08	COSPOLICH	1	EA
61	RWPL57 / RWPL58	RWPL57 / RWPL58	COSPOLICH	1	EA
62	LEP011	080G3365	DAN	1	EA
63	RWE5054D	RWE5054D	COSPOLICH	2	EA
64	RWEM26	RWEM26	COSPOLICH	2	EA
65	RWE5101B	5101B	HEATCRAFT	2	EA
66	GR60	GR60	COSPOLICH	1	EA
67	G7CX14GV	G7CX14GV	COSPOLICH	1	EA
68	LLTC10	LLTC10	AE	1	EA
69	RWSV17	31579-1	TECUMSEH	1	EA
70	FTW01S	FTW01S	COSPOLICH	6	EA

Note: **Optional Accessory

Table J—Parts List for THW50 Series

	ITEM	COSP#	MFG#	Vendor	QTY	U/M
1	COMPRESSOR	RUT391	AK174AT-038-J7	TECUMSEH	1	EA
2	LOW PRESSURE CONTROL	RWPL02	RWPL02	COSPOLICH	1	EA
3	FILTER DRYER	RWFD02	C-052-S	SPORLAN	1	EA
4	CONDENSER FAN MOTOR, 115V	RWCM06	810M009C09	TECUMSEH	1	EA
5	CONDENSER FAN BLADE	RWFB05	RWFB05	COSPOLICH	1	EA
6	PREPPED CONDENSING UNIT ASSEMBLY	RUT390-PM(THW)	RWC390-PM(THW)	COSPOLICH	1	EA
7	CONDENSER	RWCD14	50840-1	TECUMSEH	1	EA
8	START CAPACITOR	RWCP47	85PS165A53	TECUMSEH	1	EA
9	CONDENSING UNIT OVERLOAD KIT	RWOVL38	8300CRAN21	TECUMSEH	1	EA
10	CONDENSING UNIT RELAY	RWRLY07	8200EMB98	TECUMSEH	1	EA
11	CONDENSING UNIT DRAWER SLIDE ASSEMBLY	RWCUASSY07	RWCUASSY07	COSPOLICH	1	EA
12	COPPER TUBING WHEEL	RWCTW61M	RWCTW61M	COSPOLICH	1	EA
13	SIGHT GLASS	RWSG09	SA-K142	SPORLAN	1	EA
14	RECEIVER TANK	RWRT03	51080-1	TECUMSEH	1	EA
15	DRAWER SLIDES, 20"	HXDS09	HXDS09	COSPOLICH	1	PR
16	QUICK CONNECT FITTING, 1/4"	RWQF0406F / RWQF0406M	5505-04B-06 F / 5502-04B-06 M	SPORLAN	1 / 1	EA
17	QUICK CONNECT FITTING, 3/8"	RWQF0606F / RWQF0606M	5505-06B-06 F / 5502-06B-06 M	SPORLAN	1 / 1	EA
18	EXPANSION VALVE	RWEV27	FS-1/4-C	SPORLAN	1	EA
19	PREPPED EVAPORATOR COIL ASSEMBLY, 404A, 115V	TECA01	TECA01	COSPOLICH	1	EA
20	EVAPORATOR FAN COVER	RFG20SSWC	RFG20SSWC	COSPOLICH	1	EA
21	EVAPORATOR FAN BLADE	RWFB02	RWFB02	COSPOLICH	2	EA
22	EVAPORATOR FAN MOTOR, 115V	LWEM18	LWEM18	COSPOLICH	2	EA
23	1/2" VINYL DRAIN LINE TUBING	CVT12	CVT12	COSPOLICH	10	FT
24	FRONT GRILL WITH FANS	GR61-FB	GR61-FB	COSPOLICH	1	EA
25	ANTI-CONDENSATE MULLION HEATER WIRE, 152" 115V, 32 DEGREE	L1HR152	64-200	RHS	1	EA
26	HORIZONTAL S/S BREAKER STRIP	QED91S	QED91S	COSPOLICH	2	EA
27	VERTICAL S/S BREAKER STRIP	QED90S	QED90S	COSPOLICH	2	EA
28	BREAKER STRIP KIT	BRTHW50	BRTHW50	COSPOLICH	1	SET
29	LED LIGHT	LEDLITE35	LEDLITE35	CHG	1	EA
30	LED LIGHT DRIVER—12 WATT	LEDLITE15HARN	LEDLITE15HARN	COSPOLICH	1	EA
31	LED, SNAP-IN BRACKET, METAL	LEDLITE13	LEDLITE13	COSPOLICH	1	EA
32	STAINLESS STEEL SHELF WITH TRUSS	SSN18AX21C	SSN18AX21C	COSPOLICH	12	EA
33	PLASTIC BUMPER	HXDB01	HDPENAT0.500	PIEDMONT	12	EA
34	ELECTRICAL DISCONNECT JUNCTION BOX	RCTL80	RCTL80	COSPOLICH	1	EA
35	ADJUSTABLE LEG**	HLEG63	1-1752F260T50S	KASON	4	EA
36	ELECTRONIC CONTROL PANEL ASSEMBLY	RCTL291 REV 000	RCTL291 REV 000	COSPOLICH	1	EA
37	CONTROL OVERLAY	CXL040	CXL040	COSPOLICH	1	EA
38	CONDENSER SENSOR, 59"	RWTS13	RWTS13	COSPOLICH	1	EA
39	CABINET SENSOR, 118"	RWTS14	RWTS14	COSPOLICH	1	EA
40	DEFROST SENSOR, 118"	RWTS15	RWTS15	COSPOLICH	1	EA
41	TERMINAL BLOCK	RLTB01	4145W	HEATCRAFT	1	EA
42	CONTINUOUS HINGE	HXHE20	M48-0132	CHG	1	EA
43	FAN TERMINATOR CLIP	RWE057	SL243	JS	1	EA
44	ON/OFF TOGGLE SWITCH	LWTS01	70155633 (XTD1A1A2)	AE	1	EA
45	ELECTRONIC CONTROLLER DIGITAL DISPLAY	RWTT66	RWTT66	COSPOLICH	1	EA
46	TWIST LOCK DISCONNECT MALE/FEMALE	LEP019/LEP020	LEP019/LEP020	COSPOLICH	1	EA
47	DOOR ASSEMBLY (LEFT / RIGHT)	TDA50S / TDA50SR	TDA50S / TDA50SR	COSPOLICH	2 / 2	EA
48	DOOR LATCH	HXLH10	172BC	KASON	2	EA
49	DOOR HINGE	HXHE02	0217000008	KASON	6	EA
50	LATCH STRIKE	HXLH11	930C	KASON	4	EA
51	MAGNETIC DOOR GASKET	G22X55DMV	02-070	RHS	2	EA
52	DEFROST HEATER	RWE105	RWE105	COSPOLICH	1	EA
53	EVAPORATOR AIR GRILL	RWEF01	COS-RWEF01	NWP	1	EA
54	MOTOR BRACKET	RWMB01	RWMB01	COSPOLICH	2	EA
55	WIRING HARNESS W/ ML60 TERMINATOR	CR-P232-TERM	RWE031-P(THW) (MOD)	COSPOLICH	1	EA
56	DOOR END CATCH	HXLH42	HXLH42	COSPOLICH	4	EA
57	STAINLESS STEEL PRODUCT PAN	FTW33S	FTW33S	COSPOLICH	6	EA
58	TERMINAL BLOCK, 8 POLE, 20 AMP	PCTB301	PCTB301	COSPOLICH	1	EA
59	CONTACTOR, 2 POLE, 120 V	PCCC60	70470455	AE	2	EA
60	POWER CORD, 8 FT, MALE	PWCORD08	PWCORD08	COSPOLICH	1	EA
61	INDICATOR LIGHT (RED / BLUE) 125V	RWPL57 / RWPL58	RWPL57 / RWPL58	COSPOLICH	1	EA
62	POLARIZED 6-POSITION PLUG	LEP011	080G3365	DAN	1	EA
63	INTENTIONALLY LEFT BLANK	—	—	—	—	—
64	AXIAL FAN MOTOR, 115V	RWEM26	RWEM26	COSPOLICH	2	EA
65	INTENTIONALLY LEFT BLANK	—	—	—	—	—
66	INTENTIONALLY LEFT BLANK	—	—	—	—	—
67	CONTROL PANEL DOOR GASKET	G7CX14GV	G7CX14GV	COSPOLICH	1	EA
68	LIQUID-TITE CONNECTOR	LLTC10	70123693(S2112)	AE	1	EA
69	SUCTION VALVE	RWSV17	31579-1	TECUMSEH	1	EA
70	STAINLESS STEEL PRODUCT PAN	FTW33S	FTW33S	COSPOLICH	12	EA

Note: **Optional Accessory

Table K—Parts List for THW60 Series

	ITEM	COSP#	MFG#	Vendor	QTY	U/M
1	COMPRESSOR	RUT391	AK174AT-038-J7	TECUMSEH	1	EA
2	LOW PRESSURE CONTROL	RWPL02	RWPL02	COSPOLICH	1	EA
3	FILTER DRYER	RWFD02	C-052-S	SPORLAN	1	EA
4	CONDENSER FAN MOTOR, 115V	RWCM06	810M009C09	TECUMSEH	1	EA
5	CONDENSER FAN BLADE	RWFB05	RWFB05	COSPOLICH	1	EA
6	PREPPED CONDENSING UNIT ASSEMBLY	RUT390-PM(THW)	RWC390-PM(THW)	COSPOLICH	1	EA
7	CONDENSER	RWCD14	50840-1	TECUMSEH	1	EA
8	START CAPACITOR	RWCP47	85PS165A53	TECUMSEH	1	EA
9	CONDENSING UNIT OVERLOAD KIT	RWOVL38	8300CRAN21	TECUMSEH	1	EA
10	CONDENSING UNIT RELAY	RWRLY07	8200EMB398	TECUMSEH	1	EA
11	CONDENSING UNIT DRAWER SLIDE ASSEMBLY	RWCUASSY07	RWCUASSY07	COSPOLICH	1	EA
12	COPPER TUBING WHEEL	RWCTW60M	RWCTW60M	COSPOLICH	1	EA
13	SIGHT GLASS	RWSG09	SA-K142	SPORLAN	1	EA
14	RECEIVER TANK	RWRT03	51080-1	TECUMSEH	1	EA
15	DRAWER SLIDES, 20"	HXDS09	HXDS09	COSPOLICH	1	PR
16	QUICK CONNECT FITTING, 1/4"	RWQF0406F / RWQF0406M	5505-04B-06 F / 5502-04B-06 M	SPORLAN	1 / 1	EA
17	QUICK CONNECT FITTING, 3/8"	RWQF0606F / RWQF0606M	5505-06B-06 F / 5502-06B-06 M	SPORLAN	1 / 1	EA
18	EXPANSION VALVE	RWEV27	FS-1/4-C	SPORLAN	1	EA
19	PREPPED EVAPORATOR COIL ASSEMBLY, 404A, 115V	TECA01	TECA01	COSPOLICH	1	EA
20	EVAPORATOR FAN COVER	RFG20SSWC	RFG20SSWC	COSPOLICH	1	EA
21	EVAPORATOR FAN BLADE	RWFB02	RWFB02	COSPOLICH	2	EA
22	EVAPORATOR FAN MOTOR, 115V	LWEM18	LWEM18	COSPOLICH	2	EA
23	1/2" VINYL DRAIN LINE TUBING	CVT12	CVT12	COSPOLICH	10	FT
24	FRONT GRILL WITH FANS	GR60-FB	GR60-FB	COSPOLICH	2	EA
25	ANTI-CONDENSATE MULLION HEATER WIRE, 184" 115V, 32 DEGREE	L1HR184	64-200	RHS	2	EA
26	HORIZONTAL S/S BREAKER STRIP	QED91S	QED91S	COSPOLICH	2	EA
27	VERTICAL S/S BREAKER STRIP	QED90S	QED90S	COSPOLICH	2	EA
28	BREAKER STRIP KIT	BRTHW30	BRTHW50	COSPOLICH	1	SET
29	LED LIGHT	LEDLITE35	LEDLITE35	CHG	1	EA
30	LED LIGHT DRIVER—12 WATT	LEDLITE15HARN	LEDLITE15HARN	COSPOLICH	1	EA
31	LED, SNAP-IN BRACKET, METAL	LEDLITE13	LEDLITE13	COSPOLICH	1	EA
32	STAINLESS STEEL SHELF WITH TRUSS	SSN32AX20B	SSN32AX20B	COSPOLICH	12	EA
33	PLASTIC BUMPER	HDXB01	HDPENAT0.500	PIEDMONT	12	EA
34	ELECTRICAL DISCONNECT JUNCTION BOX	RCTL80	RCTL80	COSPOLICH	1	EA
35	ADJUSTABLE LEG**	HLEG63	1-1752F260T50S	KASON	4	EA
36	ELECTRONIC CONTROL PANEL ASSEMBLY (LEFT / RIGHT)	RCTL60L REV 002 / RCTL60R REV 002	RCTL60L REV 002 / RCTL60R REV 002	COSPOLICH	1	EA
37	CONTROL OVERLAY	CXL040	CXL040	COSPOLICH	1	EA
38	CONDENSER SENSOR, 59"	RWTS13	RWTS13	COSPOLICH	1	EA
39	CABINET SENSOR, 118"	RWTS14	RWTS14	COSPOLICH	1	EA
40	DEFROST SENSOR, 118"	RWTS15	RWTS15	COSPOLICH	1	EA
41	TERMINAL BLOCK	RLTB01	4145W	HEATCRAFT	1	EA
42	CONTINUOUS HINGE	HXHE20	M48-0132	CHG	1	EA
43	FAN TERMINATOR CLIP	RWE057	SL243	JS	1	EA
44	ON/OFF TOGGLE SWITCH	LWTS01	70155633 (XTD1A1A2)	AE	1	EA
45	ELECTRONIC CONTROLLER DIGITAL DISPLAY	RWTT66	RWTT66	COSPOLICH	1	EA
46	TWIST LOCK DISCONNECT MALE/FEMALE	LEP019 / LEP020	LEP019/LEP020	COSPOLICH	1	EA
47	DOOR ASSEMBLY (LEFT / RIGHT)	TDA60S / TDA60SR	TDA50S / TDA50SR	COSPOLICH	2 / 2	EA
48	DOOR LATCH	HXLH10	172BC	KASON	2	EA
49	DOOR HINGE	HXHE02	0217000008	KASON	6	EA
50	LATCH STRIKE	HXLH11	930C	KASON	4	EA
51	MAGNETIC DOOR GASKET	TGA60MV	12-3140	JEANS	4	EA
52	DEFROST HEATER	RWE105	RWE105	COSPOLICH	1	EA
53	EVAPORATOR AIR GRILL	RWEF01	COS-RWEF01	NWP	1	EA
54	MOTOR BRACKET	RWMB01	RWMB01	COSPOLICH	2	EA
55	WIRING HARNESS W/ ML60 TERMINATOR	CR-P232-TERM	RWE031-P(THW) (MOD)	COSPOLICH	1	EA
56	DOOR END CATCH	HXLH42	HXLH42	COSPOLICH	4	EA
57	STAINLESS STEEL PRODUCT PAN	FTW01S	FTW01S	COSPOLICH	6	EA
58	TERMINAL BLOCK, 8 POLE, 20 AMP	PCBS03	PCBS03	COSPOLICH	1	EA
59	CONTACTOR, 2 POLE, 120 V	PCCC60	70470455	AE	4	EA
60	POWER CORD, 8 FT, MALE	PWCORD08	PWCORD08	COSPOLICH	1	EA
61	INDICATOR LIGHT (RED / BLUE) 125V	RWPL57 / RWPL58	RWPL57 / RWPL58	COSPOLICH	1	EA
62	POLARIZED 6-POSITION PLUG	LEP011	080G3365	DAN	1	EA
63	INTENTIONALLY LEFT BLANK	—	—	—	—	—
64	AXIAL FAN MOTOR, 115V	RWEM26	RWEM26	COSPOLICH	2	EA
65	INTENTIONALLY LEFT BLANK	—	—	—	—	—
66	INTENTIONALLY LEFT BLANK	—	—	—	—	—
67	CONTROL PANEL DOOR GASKET	G7CX14GV	G7CX14GV	COSPOLICH	1	EA
68	LIQUID-TITE CONNECTOR	LLTC10	70123693)S2112)	AE	1	EA
69	SUCTION VALVE	RWSV17	31579-1	TECUMSEH	1	EA
70	STAINLESS STEEL PRODUCT PAN	FTW01S	FTW01S	COSPOLICH	12	EA

Note: **Optional Accessory

THW30, THW50 & THW60 Series

Illustrations 7.1—RUT390-PM(THW), Prepped Condensing Unit Assembly (6)

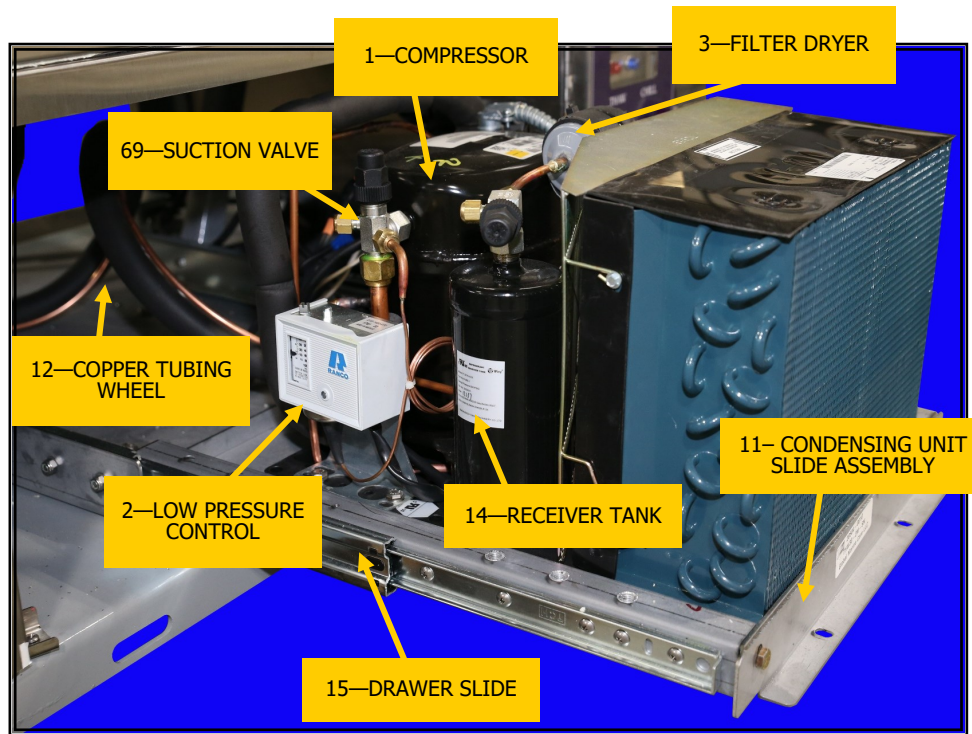


Illustration 7.1A

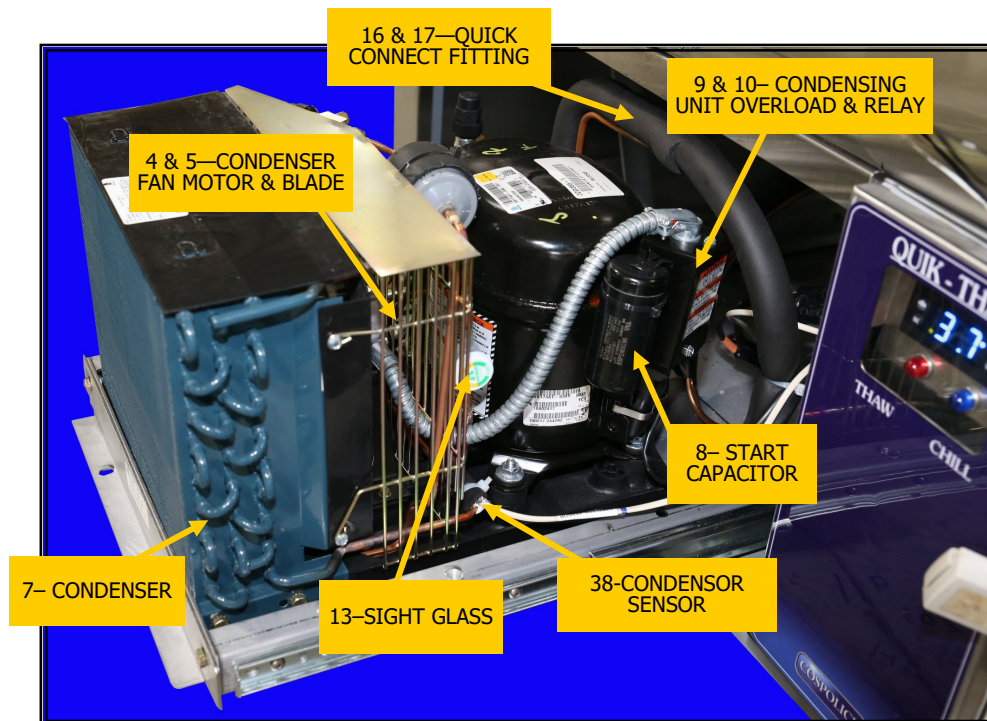


Illustration 7.1B

*Referenced numbers correspond with numbers from Part's List found on page 34 - 36.

THW30, THW50 & THW60 Series
Illustrations 7.2 – TECA01, Prepped Evaporator Coil Assembly (19)

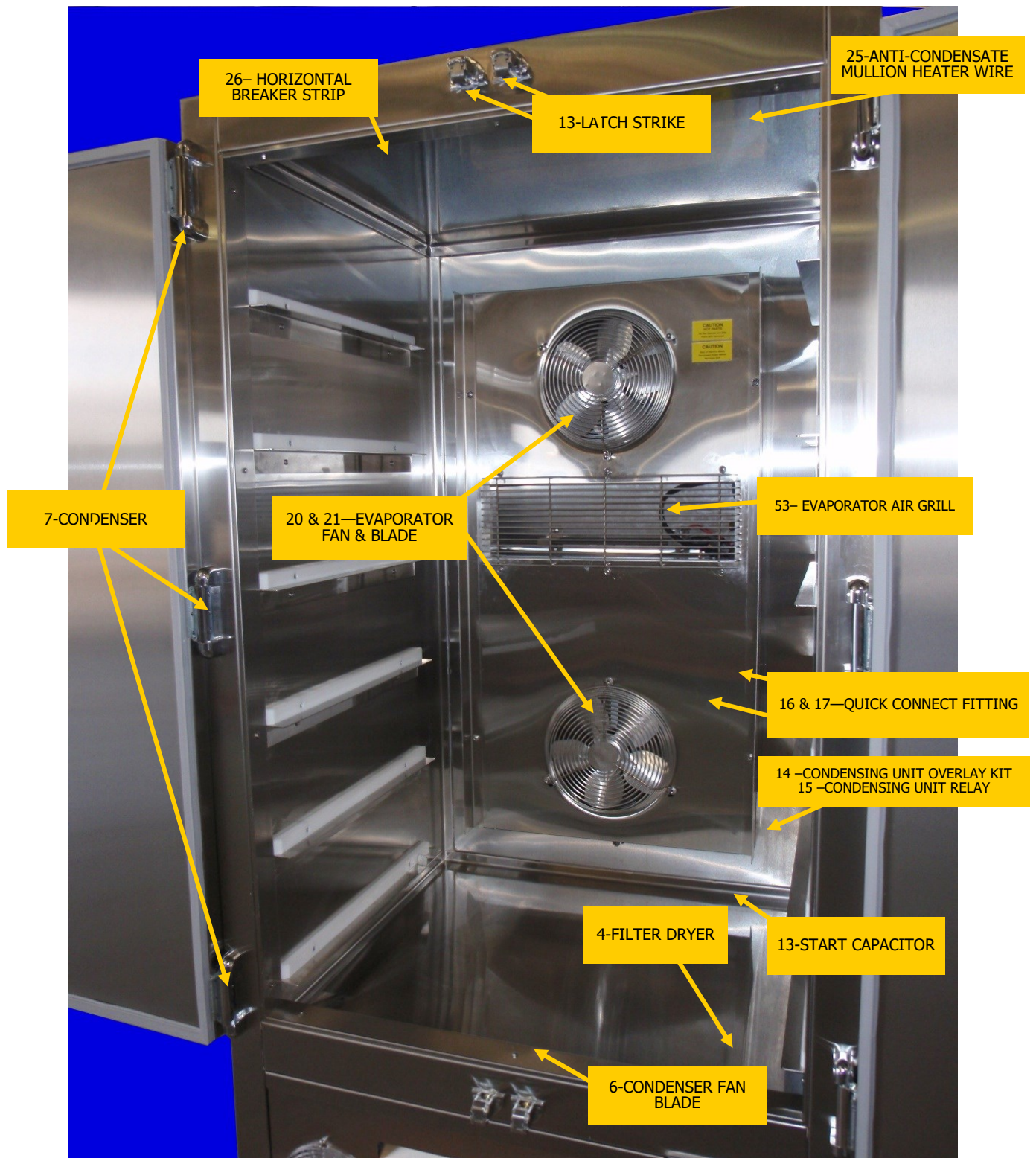


Illustration 7.2

*Referenced numbers correspond with numbers from Part's List found on page 34 - 36.

THW30, THW50 & THW60 Series

Illustrations 7.3—TEACA01 Prepped Evaporator Coil Assembly (19)

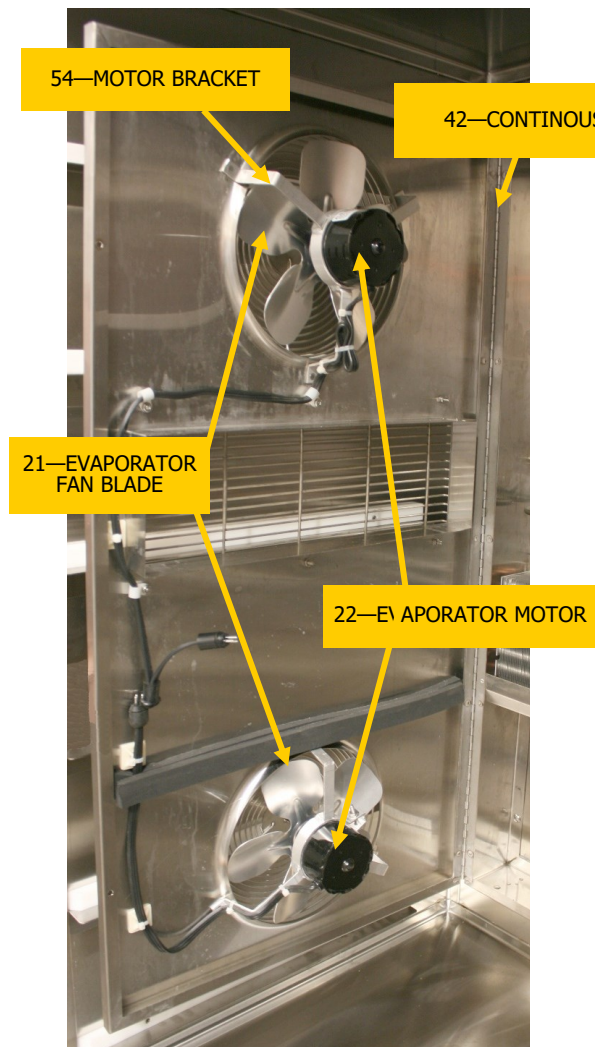


Illustration 7.3A

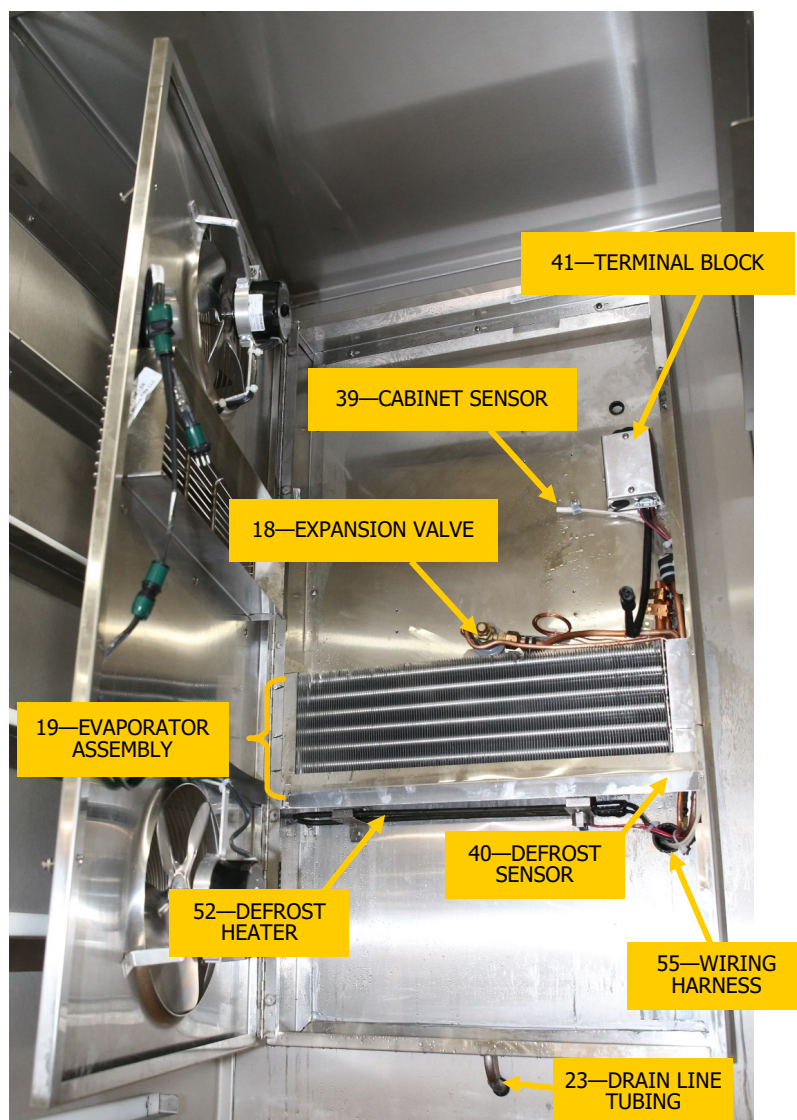


Illustration 7.3B

*Referenced numbers correspond with numbers from Part's List found on page 34-36.

*Prepped Evaporator Coil Assembly varies within each series.

THW30, THW50 & THW60 Series
Illustrations 7.4 – Electronic Control Panel (36)



Illustration 7.4

*Referenced numbers correspond with numbers from Part's List found on page 34 - 36.
*Electronic Control Panel varies within each series.

THW30, THW50 & THW60 Series
Illustrations 7.5— Electronic Control Panel Assembly (36)

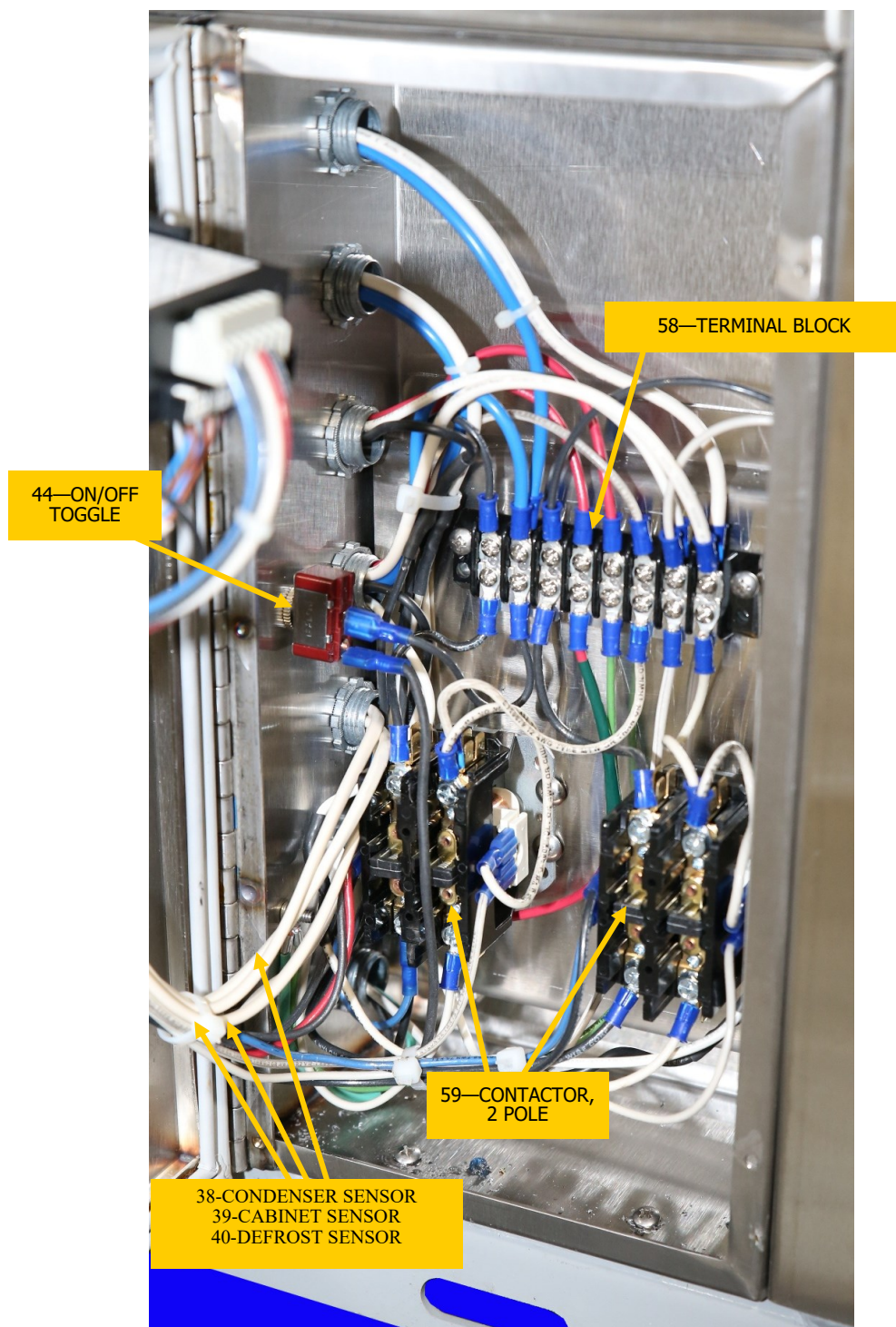


Illustration 7.5

*Referenced numbers correspond with numbers from Part's List found on page 34, 35 & 36.

THW30, THW50 & THW60 Series
Illustrations 7.6— Electronic Control Panel Assembly (36)

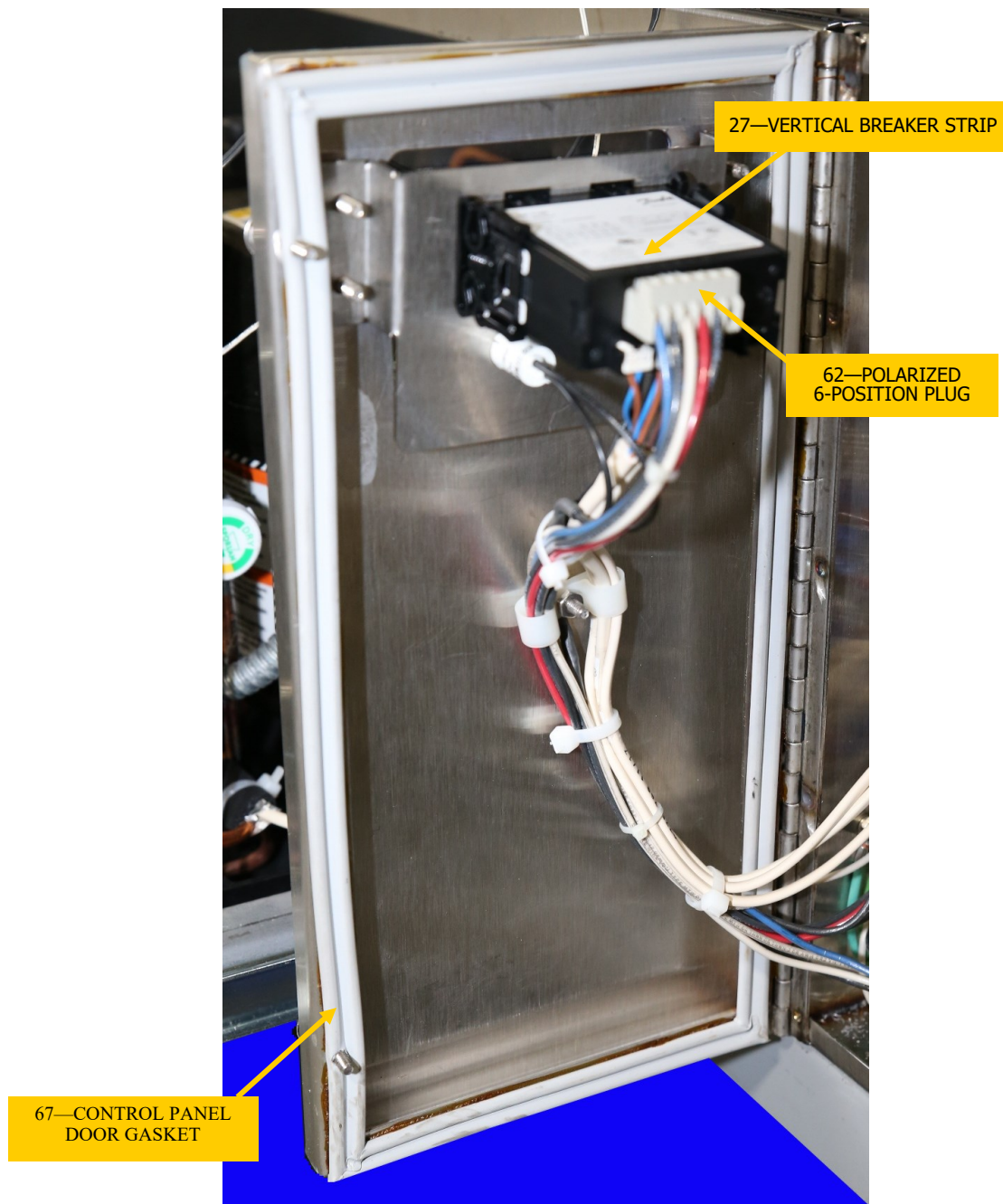


Illustration 7.6

*Referenced numbers correspond with numbers from Part's List found on page 34, 35 & 36.

THW30, THW50 & THW60 Series
Illustrations 7.7— Door Detail(47)



Illustration 7.7A



Illustration 7.7B

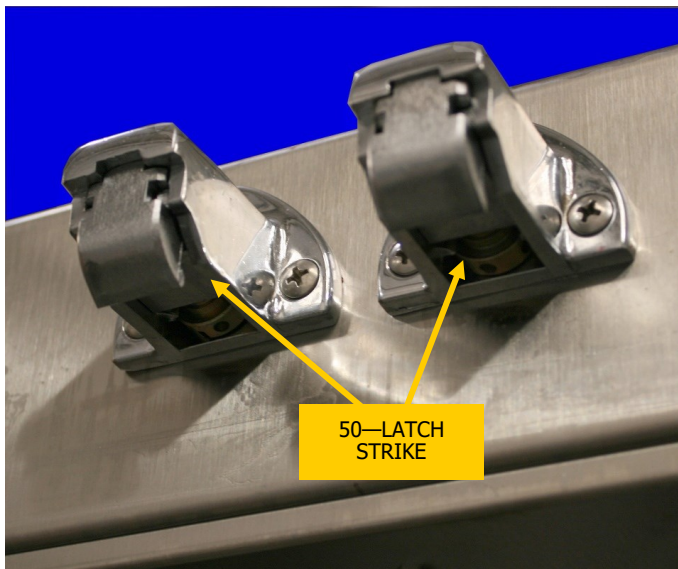


Illustration 7.7C

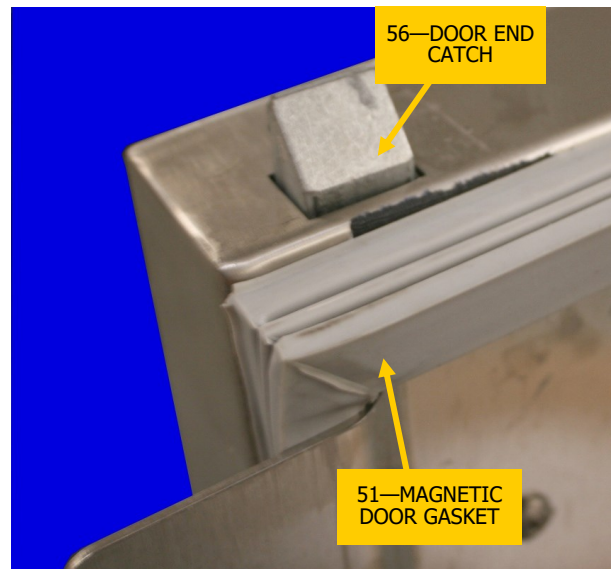


Illustration 7.7D

*Referenced numbers correspond with numbers from Part's List found on page 34—36.

THW30, THW50 & THW60 Series
Illustrations 7.8— Interior Detail



Illustration 7.8

*Referenced numbers correspond with numbers from Part's List found on page 34—36.

*Door Assembly varies within each series.

THW30, THW50 & THW60 Series
Illustrations 7.9—Main Unit Front/Rear Detail



Illustration 7.9A-THW30



Illustration 7.9B-THW50



Illustration 7.9C-THW60

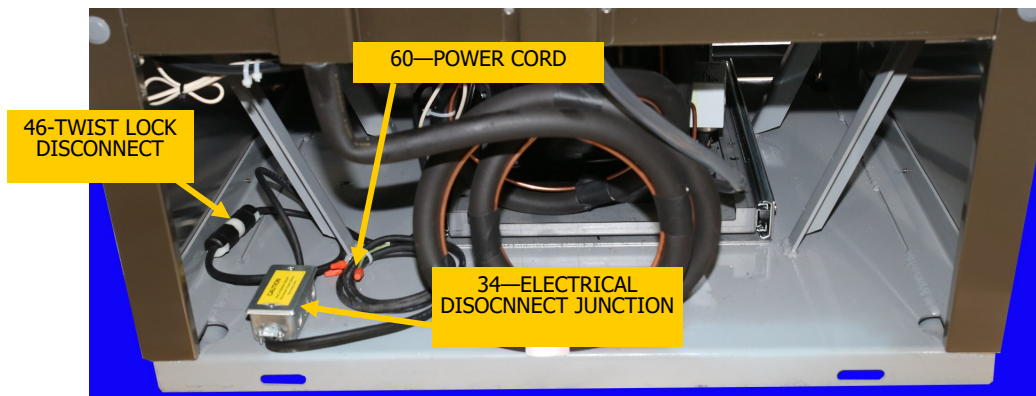


Illustration 7.9D

*Referenced numbers correspond with numbers from Part's List found on page 34—36.

*Main Unit varies within each series.

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

Note: Clean the deck and immediate area prior to any installation. Allow the area to dry prior to beginning the installation process.

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.

Caution: If cabinet does not have adequate clearance or ventilation, overheating of components may occur, resulting in damage to the equipment.

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



4. 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.

Note: Not required on units with legs.

5. 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.

Caution: LOW OR EXCESSIVE VOLTAGE CAN SEVERELY DAMAGE THE ELECTRICAL SYSTEM.

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.



Chapter 9 – Modular Installation

9.1 Introduction

By design the modular version of the THW30, THW50 & THW60 Cabinets have 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 become necessary, please call Cospolich customer service at (800) 423-7761. Email at 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. Units must be disassembled and reassembled using provided silicone unless special arrangements have been made with the Cospolich prior to shipping the order.

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

Bottom with Condensing Unit/Controls Compartment/Base, Left End, Right End, Back, Top, Prepped Evaporator Coil Assembly, Prepped Condensing Unit Assembly, Electronic Controller Assembly & Condensing Unit Slide Assembly, Front Door

9.5 Disassembly

1. Remove 6 ea screws holding the 2 ea hinges onto the cabinet. Remove the door.
2. On the interior of the unit, remove the screws holding the evaporator coil drain line cover in place, then remove the stainless steel drain line cover.
3. Remove the 4 ea screws holding the exterior housing cover in place on the evaporator coil assembly. Remove the outer evaporator coil housing cover.
4. Remove the cabinet sensor bulb from the rear wall/back of the unit.
5. Disconnect the modular quick connect refrigeration fittings to the evaporator coil assembly.

6. Loosen/remove the 2 ea screws holding the rear of the evaporator coil assembly to the top of the unit. Loosen/remove the 3 ea zip screws holding the front of the evaporator coil assembly to the top of the unit. Remove the evaporator coil assembly.
7. Remove the 2 ea. rear tubing covers on the exterior back of the cabinet.
8. Pull/remove the cabinet sensor bulb and cover through the refrigeration holes to the exterior back of the cabinet.
9. Remove the front louvered grill.
10. Unbolt the 2 ea bolts to the condensing unit slide assembly using a 3/8" nut driver. Slide out the condensing unit slide assembly. Disconnect both the electrical and refrigeration quick connect fittings. Remove the condensing unit, electronic controller, and slide assembly.
11. Disconnect all polarized connections at the electronic controller assembly adjacent to the condensing unit assembly.

Note: *It is not necessary to remove the electronic controller assembly.*

12. Using the camlock wrench provided, loosen all perimeter camlocks around the top panel. Lift and remove the top panel.
13. Loosen all perimeter camlocks securing the left end panel. Remove the left end panel.
14. Loosen all perimeter camlocks securing the back/rear panel. Remove the back/rear panel.
15. Loosen all perimeter camlocks securing the right end panel. Remove the right end panel.
16. Reverse the process to properly assemble and install the unit.

Note: *When reassembling the unit on site, all panels must be sealed with beads of gray NSF 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 in place in all camlock holes when sealing the 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.*

17. During installation, prior to installation of the door, the anti-condensate perimeter mullion heater must be installed around the door perimeter adjacent to the primary breaker strips. The secondary breaker strips must then be installed over the primary breaker strips.

Chapter 10—Electrical and Mechanical Schematics

10.1 Introduction

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

Illustration 10.1 – Mechanical Piping Diagram for Refrigerator

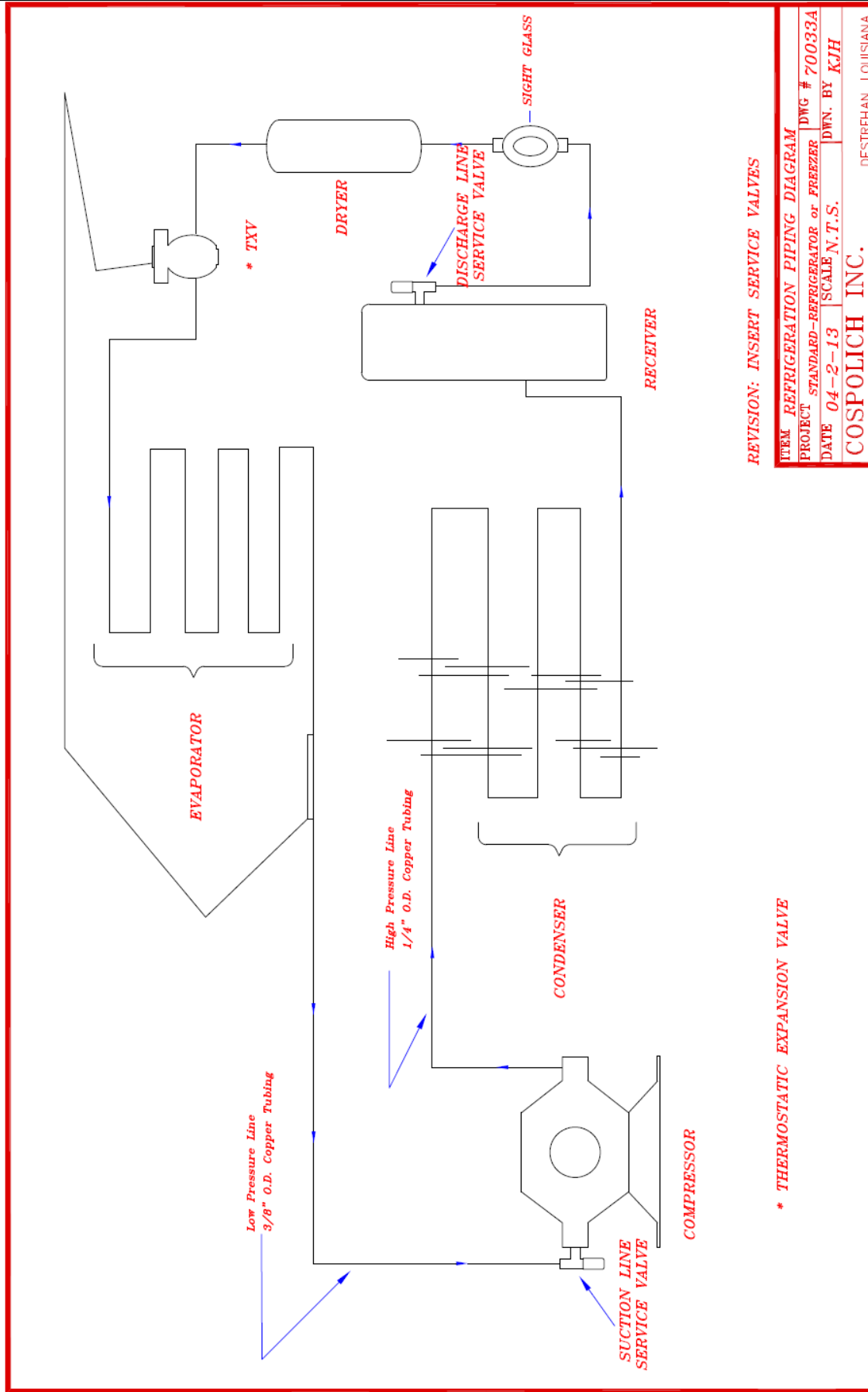
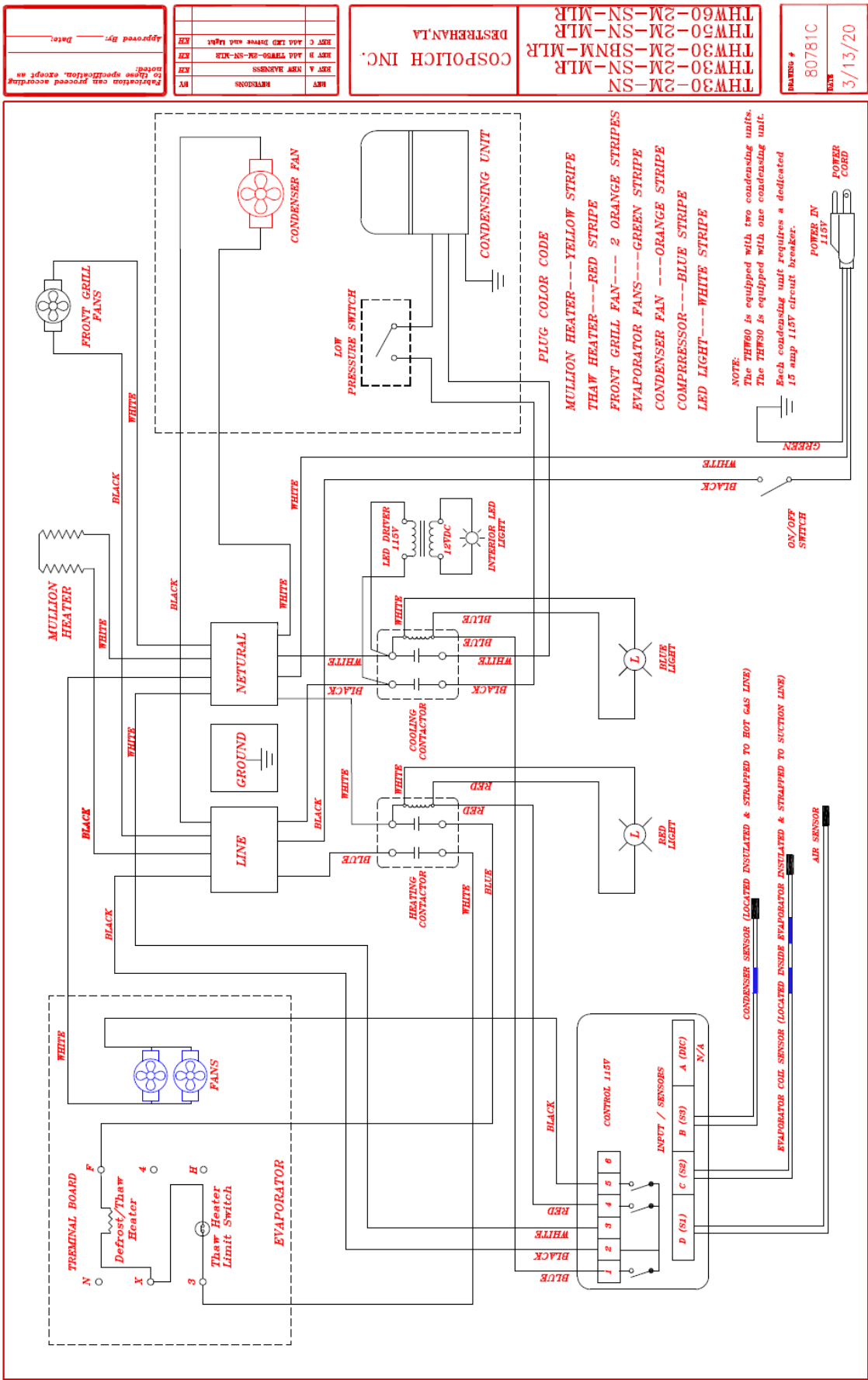


Illustration 10.21 – Electrical Schematic (Thaw Electronic Controls)



POWER SUPPLY

PLUG COLOR CODE

MULTION HEATER-YELLOW STRIPE
THAW HEATER-RED STRIPE
FRONT GRILL FAN-2 ORANGE STRIPES
EVAPORATOR FANS-GREEN STRIPE
CONDENSER FAN-ORANGE STRIPE
COMPRESSOR-BLUE STRIPE

WIRE COLOR CODE

PURPLE
RED
BK
WH
BU
YL
BROWN

NOTE:
EACH CONDENSER MUST HAVE A DEDICATED BREAKER.
FOR CONDENSING UNIT WIRING, REFER TO WIRE DIAGRAM PROVIDED AND LOCATED INSIDE ELECTRICAL BOX OF THE UNIT.

Chapter 11—Limited Warranty

Rev. E 1/3/2014

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 installation, or if not immediately installed upon receipt, eighteen (18) months from the date of shipment from the manufacturer, whichever is earlier. Cospolich, at its sole and absolute discretion, will repair or replace any part, assembly, or portion thereof which Cospolich's examination determines to be defective. Cospolich reserves the right to request the customer to provide additional information, perform minor tasks to fully understand the issue, or perform simple part changing, when applicable. Cospolich will pay the labor costs of one technician for the repair up to twelve (12) months from date of shipment. Labor includes reasonable straight time labor charges to correct defective parts. Customer is responsible for any expedited and/or overtime services as well as any special security, safety or location requirements (i.e. TWIC cards, BOSIET certificate, etc).

Terms

Limitations and 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 start-up procedures, improper setting of controls, improper installation, incorrect voltage supply, loose electrical connections or blown fuses, and/or 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. Normal wear and tear or gradual deterioration and depreciation is excluded from this warranty. On units where Cospolich did not provide a sealed system with all components or equipment (i.e. remote units), Cospolich will only warranty the parts of its respective equipment for twelve (12) months.

To Secure Warranty Service

If you claim a defect under this warranty, direct your claim to whom you purchased the product, giving model and serial numbers with a description of the problem. *NOTE: Lack of model and serial numbers may delay processing of the warranty claim.* 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 and email requests sent to service@cospolich.com.

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 no other express warranty on the Cospolich units except the terms stated herein. Any implied warrants of fitness and merchantability are limited in time 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. Cospolich reserves the right to invoice and collect from the customer for actual and replacement costs in the event the warranty claim is deemed to be a nuisance claim, negligence and/or not associated with a defective product or part. 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.

Appendix 1-Revision History

[illegible]