REFRIGERATOR & FREEZER

VUR/VUF VWR/VWF CBR/CBF VPP VSP

(Under Counter, Work Top, Chef Base, Pizza Prep and Sandwich Prep Models)

Installation, Operation and Troubleshooting Manual

R290 VERSION

3779 CHAMPION BLVD, WINSTON-SALEM, NC 27105

Phone: (888) 845-9800 Fax: (800) 253-5168 Website: www.victoryrefrigeration.com

THANK YOU!

Thank you for purchasing a Victory Refrigeration cabinet. This series has passed our strict quality control inspection and meets the high standards set by Victory Refrigeration! You have made a quality investment that with proper maintenance will give you many years of reliable service!

Please read the following installation and maintenance instructions before installing or using your unit. If you have any questions, Please call our Technical Service Department at (800) 684-1195.

Important Information, Please Read

* PLEASE READ THESE INSTRUCTIONS CAREFULLY BEFORE INSTALLING OR USING, **IF RECCOMENDED PROCEDURES ARE NOT FOLLOWED, WARRANTY CLAIMS MAY BE DENIED.**

* Your warranty registration information is located on the next page of this manual. Please complete he card and submit it to Victory Refrigeration **within TEN days** of installation. Failure to properly register equipment may limit or void the warranty.

* Victory Refrigeration reserves the right to change specifications and product design without notice. Such revisions do not entitle the buyer to corresponding changes, improvements, additions, or replacements for previously purchased equipment.

REMEMBER, SAFETY FIRST. PLEASE BE SAFE AT ALL TIMES

When using electrical appliances, basic safety measures should always be taken. These include, but are NOT limited to:

-following manufacturers installation instructions
-not allowing children to climb on or around equipment
-having service done only by qualified technicians

IMPORTANT – HC MODELS

- **Please use care when moving or handling this equipment. It is equipped with flammable refrigerant and damage to refrigerant tubing will increase the risk of a leak.**
- **When service is required, seek factory authorized technicians trained to safely maintain and service systems that utilize flammable refrigerants, such as R290. RSES offers such training and certification.**
- **Use factory authorized replacement parts to minimize the risk of possible ignition.**

IMPORTANT
INFORMATION

This cooler has passed all Quality Control Inspections
and meets the high standards of Victory Refrigeration.
This inspection includes complete refrigeration system, cabinet construction, and finish

IMPORTANT
PLEASE RETAIN FOR YOUR RECORDS

You may mail this completed page to Victory Refrigeration or register on line at www.Victoryrefrigeration.com

NOTE: The mail-in form must be filled out and forwarded to Victory Refrigeration by the installer or customer within 10 days after start-up. Failure to do this may invalidate the warranties. Retain this information for your records.

	3779 Champion Blvd, Winston-Salem, NC 27105 TEL: (888) 845-9800 FAX: (800) 253-5168	Cabinet Model No._____ Cabinet Serial No._____

WARRANTIES NOT VALID UNLESS REGISTERED AT FACTORY WITHIN 10 DAYS AFTER START-UP DATE.

ORIGINAL DATE OF INSTALLATION_____

CUSTOMER NAME_____PHONE_____

STREET_____STATE_____ZIP CODE_____

DEALER'S NAME_____PHONE_____

STREET_____STATE_____ZIP CODE_____

LIMITED WARRANTY
(Continental US Only)

The Seller warrants to the original purchaser, equipment manufactured by the Seller shall be free from defects in material or workmanship for which it is responsible. The Seller's obligation under this warranty shall be limited to replacing or repairing at Seller's option, without charge, F.O.B. Seller's factory, any part found to be defective and any labor and material expense incurred by Seller in replacing or repairing such part, such warranty to be limited to a period of Thirty Six (36) months from the date of installation, provided, however, installation occurs within three (3) months of date of purchase and equipment is in normal use and service and is installed in accordance with manufacturer's recommendations and provided terms of payment have been fully met. All labor shall be performed during regular working hours. Overtime premium charges shall be at the Buyers expense.

Proof of purchase must be provided to the Seller to validate warranty. This warranty is valid only if equipment is properly installed, started-up, and inspected by the dealer or authorized Beverage-Air Service agent.

Removal or alteration of the serial/data plate from any equipment shall be deemed to release Seller from all warranty obligations, expressed or implied. This warranty does not cover Thermostat, Controller, Thermometer, or Defrost Timer calibration and/or adjustment, freight damage, normal maintenance items outlined in the Owner's Manual, adjustment of door mechanisms, or replacement or door gaskets, light bulbs, fuses, or batteries. The warranty does not cover installation, start-up, normal maintenance, food loss or other consequential damage.

Any repairs or replacement of defective parts shall be performed by Seller's authorized service personnel. Seller shall not be responsible for any costs if the work is performed by other than Seller's authorized personnel. Reimbursement claims for part(s) or labor service costs must be made in writing. Model, cabinet serial numbers and installation location must be shown on the claim. A receipted bill from the servicing agency must accompany the claim, together with full details of the service problems, diagnosis and work performed. Victory will determine at its sole discretion whether further documentation on a claim is to be submitted.

Seller shall not be liable for consequential damages of any kind which occur during the course of installation of equipment or which result from the use or misuse by Buyer, it's employees or others of the equipment supplied. Hereunder, and Buyers sole and exclusive remedy against seller for any breach of the foregoing warranty or otherwise shall be for the repair or replacement of the equipment or parts thereof affected by such breach.

The foregoing warranty shall be valid and binding upon Seller if, and only if, Buyer loads operates and maintains the equipment supplied hereunder in accordance with the instruction manual provided to Buyer. Seller does not guarantee the process of manufacture by Buyer or the quality of the product to be produced by the equipment supplied hereunder and Seller shall not be liable for any prospective lost products or profits of Buyer. THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS AND IMPLIED WARRANTIES WHATSOEVER. SPECIFICALLY THERE ARE NO IMPLIED WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE. The foregoing shall be sellers sole and exclusive obligation and Buyers sole and exclusive remedy for any action, whether in breach of contract or negligence. In no event shall Seller be liable for a sum in excess of the purchase price of the item.

TABLE of CONTENTS

INTRODUCTION

1.1 Description

Victory Refrigeration products, refrigerators and freezers, are distinctly designed to accommodate a wide variety of food service needs and situations. Victory products are designed to keep refrigerated products at 38° F, while frozen products are kept at 0° F for maximum safety and freshness.

1.2 Glossary of Terms

Compressor - The compressor is the heart of the system. The compressor does just what it's name states. It compresses the low pressure refrigerant vapor from the evaporator and compresses it into a high pressure vapor. The inlet to the compressor is called the "Suction Line". It brings the low pressure vapor into the compressor. After the compressor compresses the refrigerant into a high pressure Vapor, the vapor is pumped into the "Discharge Line".

Condenser Coil - The "Discharge Line" leaves the compressor and runs to the inlet of the condenser coil located on top of the cabinet. Because the refrigerant is compressed, it is a hot high pressure vapor (as pressure goes up – temperature goes up). The hot vapor enters the condenser coil and starts to flow through the tubes. Cool air is blown across the outside of the finned tubes of the condenser coil (usually by a fan or water with a pump)**.** Since air is cooler than the refrigerant, heat moves from the refrigerant to the cooler air (energy goes from hot to cold – "latent heat"). As the heat is removed from the refrigerant, it reaches its "saturated temperature" and starts to condense (change states), into a high pressure liquid. The high pressure liquid leaves the condenser coil through the "liquid line" and travels to the "metering device". Sometimes running through a filter dryer first, removes any dirt or foreign particles.

Defrost - The term is used to identify the function of a refrigerator or freezer to remove frost or ice from the internal evaporator coil.

Differential - An increment between where the compressor turns on and off.

Setpoint - This is the refrigerator or freezer cut out temperature set by the operator. Prior to shipping, refrigerators are factory preset at 35°F and freezers are factory preset at -4°F.

INSTALLATION

WARNING: If it is necessary to move the cooler after removal from the skid, remove all doors and carefully push the unit at a point of no more than 36" from the bottom to avoid damage. It is an NSF requirement that all rollin-in/roll-thru units be sealed to the floor upon installation.

2.1 Receiving and Inspecting

Prior to shipping, all Victory Refrigeration products are factory tested for performance and thoroughly inspected to ensure they are free of any defects. Upon receipt, carefully examine the unit for any damage that may have occurred during shipping and delivery. Any damage, discrepancies, overages, or shortages should be noted on the carrier's *Bill of Lading* and a freight claim must be immediately filed with the carrier. If damage is noted after receipt, contact the carrier's local terminal and file a freight claim. In either case, IT IS IMPORTANT THAT ALL ORIGINAL CARTONS, CRATES, AND INTERIOR PACKAGING MATERIAL ARE SAVED UNTIL INSPECTION HAS BEEN MADE BY THE DELIVERING CARRIER

NOTE: If the unit is laid down for any reason, the fluids in the compressor will drain out. To prevent damage to the unit it MUST be allowed to sit upright for a minimum of One (1) hour prior to starting up unit.

2.2 Uncrating

* Tools Needed**: ¾"** box wrench, adjustable wrench, level, flat head screw driver, and box cutter.

1. Remove the cardboard top capping, all clear tape, and all staples including those at the b bottom of the cardboard carton and skid.

2. Start from the top of the carton. Using the box cutter, carefully make one continuous cut to the bottom of the skid. Remove cardboard carton and discard.

***Note: additional clear plastic protective wrap is applied directly to any product with a glass door.**

3. Move unit as close to final position as possible before removing the skid.

WARNING: UNIT MUST BE BLOCKED AND SECURED WHEN REMOVING SKID

4. Tip the unit forward and remove the skid. Remove the shipping bolts using the ¾" box wrench while cabinet is held in one direction. Then repeat the process while the cabinet is held in the opposite direction.

2.3 Placement

Consider the following when selecting a location for your cooler:

1. Clearance:
2. Floor Load: the floor on which the cooler is located must be even and level, free from vibrations, and strong enough to support the combined weights of the unit and maximum product load.
3. Ventilation
4. Power Outlet: Dedicated power outlet is located within 8 feet of length of cord.

2.4 Cooler Set-up for Reach In units

With Legs or Casters

WARNING: unit must be blocked and secured prior to installing casters

1. Legs and casters must be screwed in by hand. Use the threaded holes located on the bottom of the cabinet. None of the threads on the leg or caster stem should be visible once screwed in. Once the caster cannot be turned any further, use the ¾' box wrench to tighten the nut in between the mounting plate and the wheel of the caster until snug.

2. Tilt the cabinet in one direction approximately 8" and block it securely with pieces of 2x4 lumbers or other suitable material.

3. Screw in the two accessible legs/casters

4. Repeat this procedure with unit secured in the opposite direction so as to access the remaining legs/casters

2.5 Leveling, Bumpers and Shelves

2.5.1 Leveling:

Cabinets must be leveled when installed. Level should be measured on the headrail. Failure to level your cabinet may result in door not sealing, closing correctly, or condensed water draining not draining properly.

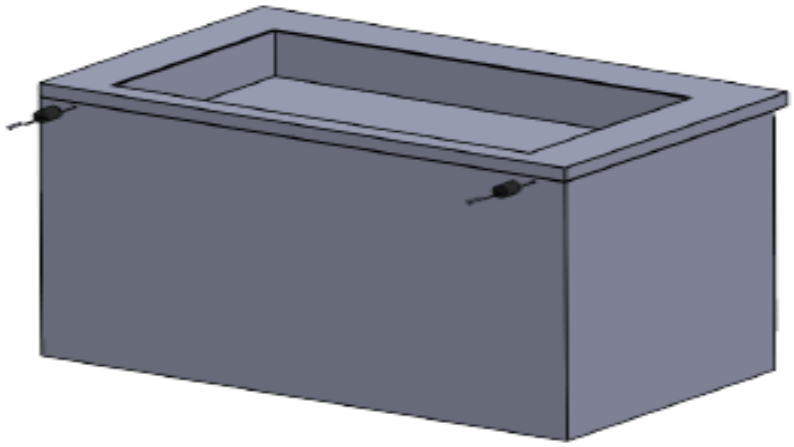
For cabinets with legs, rotate the foot of the leg with an adjustable wrench to achieve desired height for leveling.

For cabinets with casters, leveling can be achieved by placing large washers in between the ½' stud and the holes located on the bottom of the case.

2.5.2 Bumpers:

Bumpers and screws are included in the zip lock bag.

Remove one screw frome each end of the top rear and discard screws. Attach the bumpers in the same locations, using the longer screws provided.



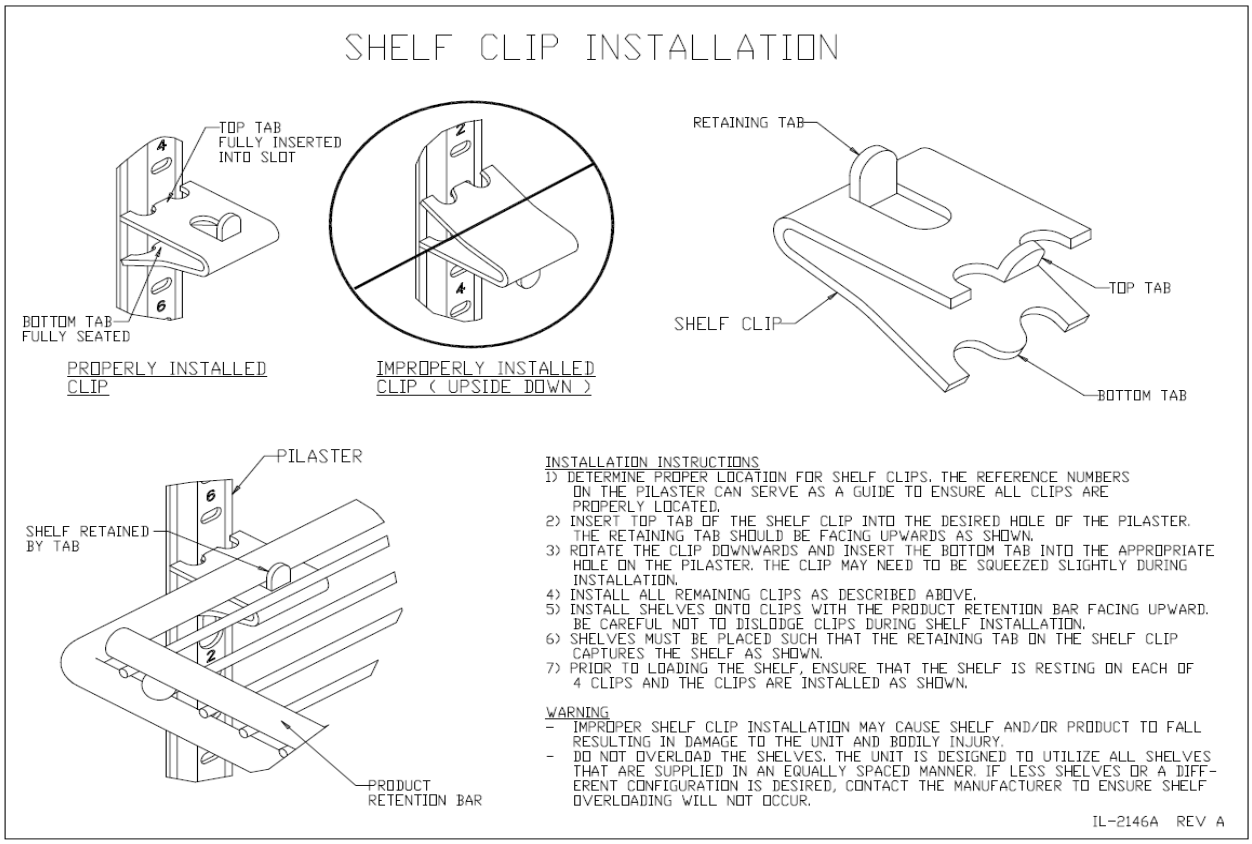
2.5 Leveling, Bumpers and Shelves

2.5.3 Shelves:

All cabinets with shelves are supplied with pilasters and shelf clip supports. Shelves are easily installed by inserting the shelf support clips into the pilasters so that they fit tightly.

Adjust the shelf so that the smaller fill wires run from front to rear and the shelf frame wire rest the shelf on the clips.

SHELVING ASEMBLY



2.6 Cabinet Cleaning

WARNING: DO NOT clean with any product containing bleach or ammonia. Rinse with clean water before drying with clean cloth.

Prior to use, the interior and exterior surfaces of the cabinet should be cleaned thoroughly with warm water, mild detergent, and a soft cloth. Apply with a dampened cloth and wipe in the direction of the metal grain. Then allow to air dry with the doors open. Only use a clean soft cloth. See detailed cleaning instructions in the Preventative Maintenance section below.

2.7 Electrical supply

115 volt self-contained units are provided with a 15 or 20 amp power chord with plug that is shipped coiled on top of the cabinet. The power cord is equipped with a three prong (grounding) plug which is to be used in an appropriately rated and dedicated three prong (grounding) receptacle.

NOTE: have a wall outlet checked by a qualified electrician for polarity and proper grounding prior to plugging in the power cord.

For units not provided with a power cord, the electrical connection should be made by a qualified electrician and in accordance with local electrical codes. The electrical requirements are located on the rating (or data plate) located on the left hand side of the interior of the cabinet. Use of a dedicated circuit with separate grounding wire is required.

2.8 Controller

The controls are designed for the refrigeration units to maintain a product temperature of 38° F and the freezers to maintain a product temperature of 0° F. See section 3.1 for control display information.

2.9 Installation Checklist

After the cabinet has been installed, leveled, and cleaned as described above, refer to the following check list:

Warning: Cabinet MUST NOT SHARE A RECEPTACLE with another piece of equipment

- Check for proper electrical hook-up.
- Check that all clearances are in line with the aforementioned guidelines.
- Check that cabinet is level.

* ***NOTE: Once the unit has been started and reaches proper storage temperatures, it may be loaded with product. For proper energy efficiency and airflow we recommend a minimum1" clearance between product and side walls, 4" clearance between product and ceiling, and 1" clearance from the bottom of the unit.***

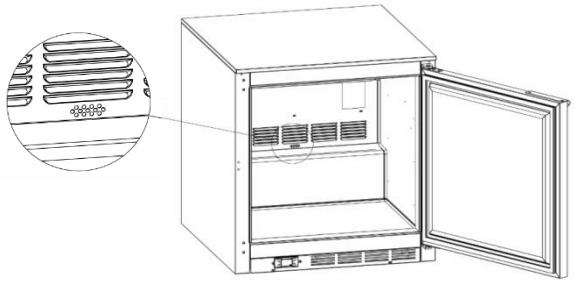
UNIT STARTUP

3.1 Sequence of Operations

3.1.1 Refrigerator

The refrigerator operates based on the air temperature measured by the probe located at the return air. Under counter model shown.

PROBE IS LOCATED BEHIND EVAPORATOR COVER

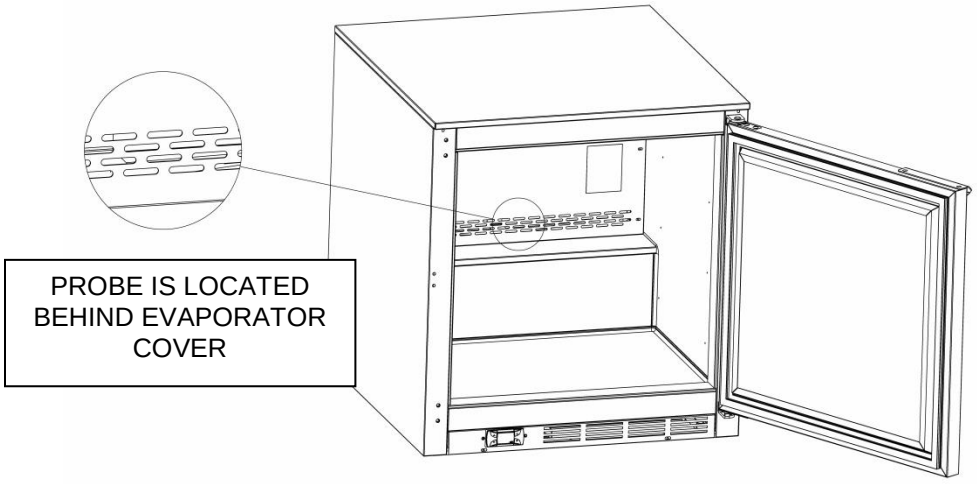


	ON		OFF	
COMPONENT	**OPERATION**	**CONTROLLER ACTION**	**OPERATION**	**CONTROLLER ACTION**
COMPRESSOR	Compressor turns on when the cabinet temperature is above the sum of the set point and the dead band	The Compressor Contact is energized RTN400 terminals 10, 11	Compressor turns off when the cabinet temperature is equal to or less than the set point	The Compressor Contact is de-energized (New974 - Terminal #4)
CONDENSER FAN	The Condenser Fan turns on when the Compressor is running	The Condenser Fan is wired to the light relay on control RTN400 terminals 10, 11	The Condenser Fan turns off when the Compressor is not running	The Condenser Fan is wired to the light relay on control RTN400 terminals 10, 11
EVAPORATOR FAN	The Evaporator Fan runs continuously. When the unit is plugged in and the evaporator has achieved it run set limit,	The Evaporator Fan is connected to control relay. RTN400 terminals 4, 5	The Evaporator Fan runs continuously. When the unit is plugged in and the evaporator has achieved it run set limit,.	The Evaporator Fan is connected to control relay. RTN400 terminals 4, 5
LIGHT	The light will turn on when the door is open or door button is pressed (LSR/F light switch behind bottom grill)	The Light Contact is energized RTN400 terminals 13,14	The light will turn off when the door is closed or the door button is pressed	The Light Contact is de-energized RTN400 terminals 13,14
FACE HEATER	Face heater is on when condensing unit is on	Heater is wired with condensing unit power	Face heater is off when condensing unit is off	Heater is wired with condensing unit power

Condition	Compressor	Condenser Fan	Evaporator Fan	Lights
Cabinet Temp > Setpoint + Deadband	**ON**	**ON**	**ON**	**ON or OFF**
Cabinet Temperature <= Sepoint	**OFF**	**OFF**	**ON**	**ON or OFF**
Defrost	**OFF**	**OFF**	**ON**	**ON or OFF**

3.1.2 Freezer

The freezer operates based on the air temperature measured by the probe located at the return air. Under Counter Freezer shown.



	ON		OFF	
COMPONENT	**OPERATION**	**CONTROLLER ACTION**	**OPERATION**	**CONTROLLER ACTION**
COMPRESSOR	Compressor turns on when the cabinet temperature is above the sum of the set point and the dead band	The Compressor Contact is energized	Compressor turns off when the cabinet temperature is equal to or less than the set point	The Compressor Contact is de-energized
		RTN400 terminals 10, 11		RTN400 terminals 10, 11
CONDENSER FAN	The Condenser Fan turns on when the Compressor is running	The Condenser Fan is wired to the Compressor Contact	The Condenser Fan turns off when the Compressor is not running	The Condenser Fan is wired to the Compressor Contact
		RTN400 terminals 10, 11		RTN400 terminals 10, 11
EVAPORATOR FAN	The Evaporator Fan turns on when the Compressor is running	The Evaporator Fan is wired to the fan relay on control	The Evaporator Fan turns off when the Compressor is not running, is in defrost or door is open	The Evaporator Fan is wired to the fan relay on control
		RTN400 terminals 4, 5		RTN400 terminals 4, 5
DEFROST HEATER	The Defrost Heater is on a timer; set at 3 equally spaced defrost periods each day	The Defrost Heater Contact is energized	When either the defrost is not scheduled or the coil has reached the defrost termination temperature.	The Defrost Heater Contact is de-energized
		RTN400 terminals 7, 9		RTN400 terminals 7, 9
FACE/DOOR HEATERS	The Face & Door Heaters run continuously	The Face Heater is wired directly to power	The Face & Door Heaters run continuously	The Face Heater is wired directly to power
LIGHT	The light will turn on when the door is open or door button is pressed(LSR/F light switch behind bottom grill) 	The Light Contact is energized	The light will turn off when the door is closed or the door button is pressed 	The Light Contact is de-energized
		RTN400 terminals 13,14		RTN400 terminals 13,14

Condition	Compressor	Condenser Fan	Evaporator Fan	Defrost Heater	Face/Door Heater	Drain Heater	Lights
Cabinet Temp > Setpoint + Deadband	**ON**	**ON**	**ON**	**OFF**	**ON**	**ON**	**ON or OFF**
Cabinet Temperature <= Sepoint	**OFF**	**OFF**	**OFF**	**OFF**	**OFF**	**ON**	**ON or OFF**
Defrost	**OFF**	**OFF**	**OFF**	**ON**	**OFF**	**ON**	**ON or OFF**

3.2 Electronic Controller

3.2.1 Control Panel Display

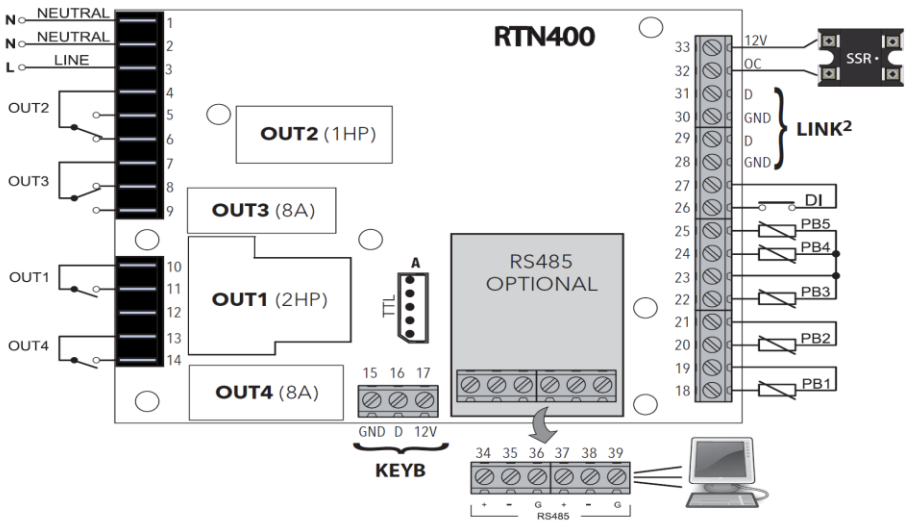
No	Icon	LED	Operation	Meaning
1		Compressor	Permanently on	compressor on
			Blinking	Delay, protection or start-up blocked
			OFF	otherwise
2		Defrost	Permanently on	Defrost active
			Blinking	Activated manually or from Digital Input
			OFF	otherwise
3		Fans	Permanently on	Fans active
			OFF	otherwise
4		Reduced SET / Economy	Permanently on	Energy Saving active
			Blinking	Reduced setpoint active
			OFF	otherwise
5		Alarm	Permanently on	alarm active
			Blinking	Alarm acknowledged
			OFF	otherwise
6	°F	°F readout	Permanently on	°F setting (dro =1)
			OFF	otherwise
7	AUX	AUX	Permanently on	Aux output active and/or light on
			Blinking	Deep cooling on
			OFF	otherwise
8	°C	°C readout	Permanently on	°C setting (dro = 0)
			OFF	otherwise

NOTE: When switched on, the instrument panel performs a lamp test and for a few seconds, the display and LEDs flash to verify their condition and proper operation.

3.2.2 Keyboard Functions

LIGHT	STANDBY	UP	DOWN	ESC	SET (ENTER)
Press and Hold • Long press (>5 sec) Toggles light on and off. If LED is on, light is activated	**Press and Hold** • Places unit in Standby Mode. If LED is on. Device is off.	**Press and release** • Scrolls the menu items • Increases the values • Long press (>5 sec) starts manual defrost	**Press and release** • Scrolls the menu items • Decreases the values • Long press (> 5 sec)Starts deep cooling cycle	**Press and release** • Returns up one level with respect to the current menu • Confirms the parameter value	**Press and release** • Accesses the machine status menu and displays any alarms (if present)

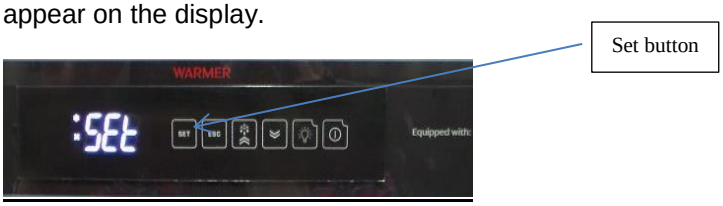
3.2.3 Control Panel Connections



Relay/Probe	Description	Terminal
Out 1	Compressor	10,11
Out 2	Evaporator Fan	4, 5
Out 3	Defrost Element	7, 9
Out 4	Light (or alarm relay if electronic Lock model)	13, 14
PB1 –	Air/control probe	18, 19
PB2	Evaporator/defrost probe	20, 21
PB3	Condenser probe	22, 23
PB4&5	not used	
DI	digital input/Door switch	26, 27
KEYB	Display connection	15, 16, 17

3.2.4 Changing the Setpoint

To change the operating set point, press and release the set button to enter the machine menu. “Set” will appear on the display.



Press and release the set button again to view the set point.

Use the up and down button to change the set point. When adjustment is finished, use the escape button to exit out of the machine status menu.

3.2.5 Setting the Real Time Clock

To set the real time clock, press and release the set button to enter the machine status menu. “set will appear on the menu.

Use the up and down button to scroll to the real time clock menu folder. “RTC” will appear on the display.

Press the set button to enter into the clock setup menu. “day” will appear on the display. Use the up and down buttons to scroll to the hour (h), minute (‘) or day (day) that needs to be changed.

Press the set button to display the value and use the up or down button to change the value. Once the value has been selected, use the escape button to confirm the new value and return the pervious menu level. Repeat the previous steps to change the remaining parameters.

3.2.6 Electronic Controller Alarms

Code Description	Description	LED	Relay	Reset	Parameters involved to Enable alarm
E1	Probe Pb1 failure	ON	Active	Automatic	Ont, Oft
E2	Probe Pb2 failure	ON	Active	Automatic	Ont, Oft
E3	Probe Pb3 failure	ON	Active	Automatic	Ont, Oft
E4	Probe Pb4 failure	ON	Active	Automatic	Ont, Oft
E5	Probe Pb5 failure	ON	Active	Automatic	Ont, Oft
EL	LINK2 probe failure	ON	Active	Automatic	Ont, Oft
Ei	Virtual probe failure	ON	Active	Automatic	Ont, Oft
AH1	HIGH temperature 1 alarm	ON	Active	Automatic	SP1, Att,Afd,HA1,PAO,dAO,OAO,tA1
AL1	LOW temperature 1 alarm	ON	Active	Automatic	SP1, Att,Afd,HA1,PAO,dAO,OAO,tA1
AH2	HIGH temperature 2 alarm	ON	Active	Automatic	SP2, Att,Afd,HA2,PAO,dAO,OAO,tA2
AL2	LOW temperature 2 alarm	ON	Active	Automatic	SP2, Att,Afd,HA2,PAO,dAO,OAO,tA2
EA	External alarm	ON	Active	Automatic	PEA, EAL
OPd	Door open alarm	ON	not active	Automatic	PEA, tdO
Ad2	End of defrost due to time-out	ON	not active	Automatic	dE1, dE2, dAt
Prr	Preheating alarm	ON	not active	Automatic	
E10	Clock alarm	ON	not active	Automatic	
HiP	HIGH voltage alarm	ON	not active	Automatic	SPH, SPL, dFL, SoU
LoP	LOW voltage alarm	ON	not active	Automatic	SPH, SPL, dFL, SoU
nPA	General pressure switch alarm	ON	not active	Automatic	PEn, PEi
LPA	High pressure switch alarm	ON	not active	Automatic	PEn, PEi
HPA	Low pressure switch alarm	ON	not active	Automatic	PEn, PEi
PA	General pressure switch alarm	ON	not active	Manual	PEn, PEi

3.2.7 How to View Alarms

To view the alarm codes, press the set button to enter the machine status menu. "Set" will appear on the display.

Use the up and down button to scroll the alarm folder in the menu. ALr will appear on the display.

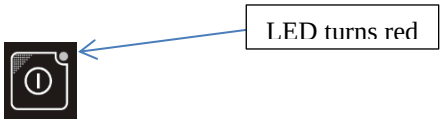
Press the set button to enter into the list of active alarms. Use the up and down button to scroll thru the alarms. Once alarm codes have been viewed, use the escape button to exit out the menu and view set point.

Note: The alarm can be acknowledged with any key, but the alarm Icon will remain illuminated until the alarm condition is corrected.

3.2.8 How to Enter the StandBy Mode

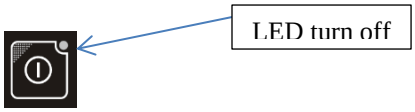
The Stand By Mode is used to remove power from the condensing unit (Compressor & Condensing Fan) so the coil can be cleaned or the unit defrosted without having to disconnect the power from the unit)

Press and hold the standby button for 5 seconds. The led will turn red on the button and the unit will shut down.



3.2.9 How to Exit the StandBy Mode

Press and release the standby button for 5 seconds and the led on the button will turn off and the unit will turn on.



PREVENTATIVE MAINTENANCE

4.1 Daily, Exterior

1 - Clean the surface with a sponge and dilute mild detergent. Use a non-abrasive cleaner that does NOT contain chlorine.
2 - Rinse with clean water before drying with clean soft cloth.
3 - Polish with a soft cloth, wiping with the grain of the metal.
4 - Once a week wipe with a film cutting agent or stainless steel polish to maintain finish.

4.2 Weekly, Interior

1 - Remove all food, food related items, and shelves.
2 - Disconnect power to the cabinet at the main power supply circuit breaker
3 - Remove loose food particles from interior floors, walls, and ceiling
4 - Scrub all interior surfaces and door gaskets with a warm (100°-120°F) detergent solution and a soft nylon bristle brush
5 - Rinse with clean water and allow to air dry
6 - Re-install the shelves
7 - Restore power to the cabinet by resetting main power supply circuit breaker
8 - Return food to the cabinet when temperature indicator displays safe food temperature

4.3 Monthly, Condenser

The condenser coil is located right behind the front grille on top of the cabinet. It should be inspected once a month and cleaned as required. Vacuum clean all surfaces of the condenser. Make sure no fins are bent or damaged in the process. If there are bent fins, carefully straighten them so that air can flow through the coils. Failure to keep the condenser coil clean will lead to poor performance, excessive power consumption and compressor failure and may result in loss of property. Failure to keep the condenser coil clean may void the limited warranty.

4.4 Periodic, Gaskets

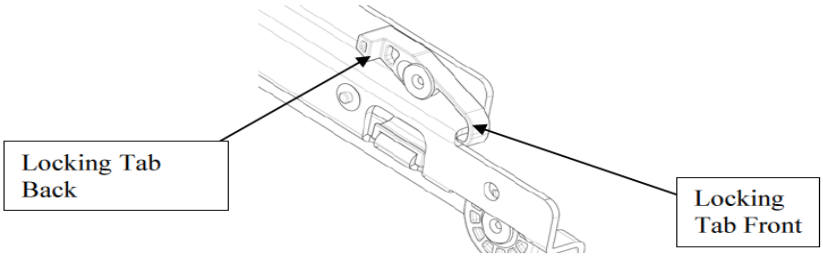
1 Visually inspect the door gaskets for a tight seal on all four sides. Inspect for any type of damage such as rips, tears, stiffness, or cracks.
2 If any such condition exists, the magnet will not seal and the gasket will need replaced.
3 Cleaning the gasket requires the use of mild dish detergent and warm water.
4 Next, thoroughly rinse and dry the gasket.

4.5 Drawer Maintenance

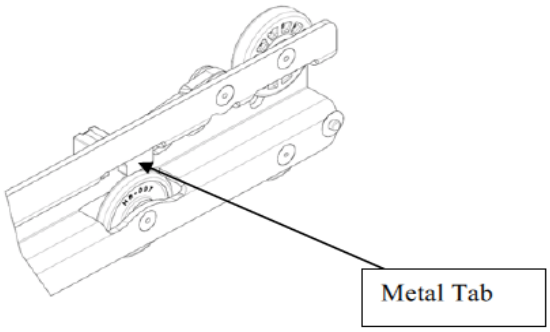
Drawer models are shipped with the drawers already installed in the cabinets. Drawers are designed with slides which have locking mechanisms to prevent drawers from coming off cabinets during normal opening and closing operations.
See Illustration below:

Drawers and slides can be removed from a cabinet for cleaning purposes. To remove a drawer from a cabinet follow these instructions:

1 - Open the drawer to full extension
2 - Push the white locking tabs forward on both sides of the drawer
3 - Press down the back of the tabs
4 - Slide the drawer out of the cabinet



5 - To remove the sliding member (Middle slide), press the metal tab up and slide it
6 - To reinstall the sliding member, press the metal tab up and slide it in



7 - To reinstall drawer, push the locking tab forward and press the back of the tab down
8 - Align the drawer slide members and moving slide members
9 - Slide the drawer in and lock the slide by pushing the front of the locking tab down and in

IL-2334A Rev. A

4.6 Effective Methods for Cleaning Stainless Steel

Type of Cleaning	Cleaning Agent	Method of Application	Effective Finish
Routine Cleaning	Soap or ammonia, or detergent and water.	Sponge with cloth, then rinse with clear water and wipe dry	Satisfactory for use on all finishes.
Smears and Fingerprints	Arcal 20, Lac-O-NU, Lumin Wash O'Cedar Cream Polish, Stainless Shine.	Rub with cloth as directed on the package.	Satisfactory for use on all finishes. Provides barrier film to minimize prints.
Stubborn Spots and Stains, Baked-On Splatter, and Other Light Discolorations	Allchem Concentrated Cleaner.	Apply with damp sponge or cloth	Satisfactory for use on all finishes.
	Samae, Twinkle or Cameo Copper Cleaner.	Rub with damp cloth.	Satisfactory for use on all finishes if rubbing is light.
	Grade FFF Italian pumice, whit- ing, or talc.	Rub with damp cloth.	Use in direction of polish lines on No. 4 (polished) finish. May scratch No. 2 (mill) and Nos. 7 and 8 (polished) finishes.
	Liquid NuSteal.	Rub with dry cloth. Use small amount of cleaner.	
	Paste NuSteal or DuBois Temp.	Rub with dry cloth using a small amount of cleaner.	
	Copper's Stainless Steel Cleaner Revere Stainless	Apply with damp sponge or cloth.	
	Household cleansers, such as Old Dutch, Lighthouse, Sun- brite, Wyandotte, Bab-O, Gold Dust, Sapolio, Bon Ami, Ajax, or Comet.	Rub with a damp cloth. May contain chlorine bleaches. Rinse thoroughly after use.	
	Grade F Italian pumice, Steel Bright, Lumin Cleaner, Zud, Restoro, Sta-Clean, or Highlite.	Rub with a damp cloth.	
	Penny-Brite or Copper-Brite.	Rub with a dry cloth using a small amount of cleaner.	

4.6 Effective Methods for Cleaning Stainless Steel

Type of Cleaning	Cleaning Agent	Method of Application	Effective Finish
Heat Tint or Heavy Discoloration	Penny-Brite or Copper-Brite.	Rub with a dry cloth.	Use in direction of polish lines on No. 4 (polished) finish. May scratch No. 2 (mill) and Nos. 7 and 8 (polished) finishes.
	Past NuSteel, DuBois Temp, or Tarnite.	Rub with a dry cloth or stainless steel wool.	
	Revere Stainless Steel Cleaner. Allen Polish, Steel Bright, Wyan- dotte, Bab-O, or Zud.	Rub with a damp cloth.	
	Revere Stainless Steel Cleaner.	Apply with damp sponge or cloth.	
Burnt-On Foods and grease Fatty Acids, Milkstone (where swabbing or rubbing is not practical)	Easy-Off, De-Grease-It, 4 to 6% hot solution of such agents as trisodium phosphate or sodium tripolyphosphate or 5 to 15% caustic soda solution.	Apply generous coating. Allow to stand for 10-15 minutes. Rinse. Repeated application may be necessary.	Excellent removal, satisfactory for use on all finishes.
Tenacious Deposits, Rusty Discolorations, Industrial Atmospheric Stains	Oakite No. 33, Dilac Texo 12, Texo N. Y., Flash-Klenz, Caddy Cleaner, Turco Scale 4368 or Permag 57.	Swab and soak with clean cloth. Let stand 15 minutes or more according to directions on package, then rinse and dry.	Satisfactory for use on all finishes.
Hard Water Spots and Scale	Vinegar.	Swab or wipe with cloth. Rinse with water and dry.	Satisfactory for all finishes.
	5% oxalic acid, 5% sulfamic acid, 5 to 10% phosphoric acid, or Dilac, Oakite No. 33, Texo 12, Texo N. Y.	Swab or soak with cloth. Let stand 10-15 minutes. Always follow with neutralizer rinse, and dry.	Satisfactory for all finishes. Effective on tenacious deposits or where scale has built up.

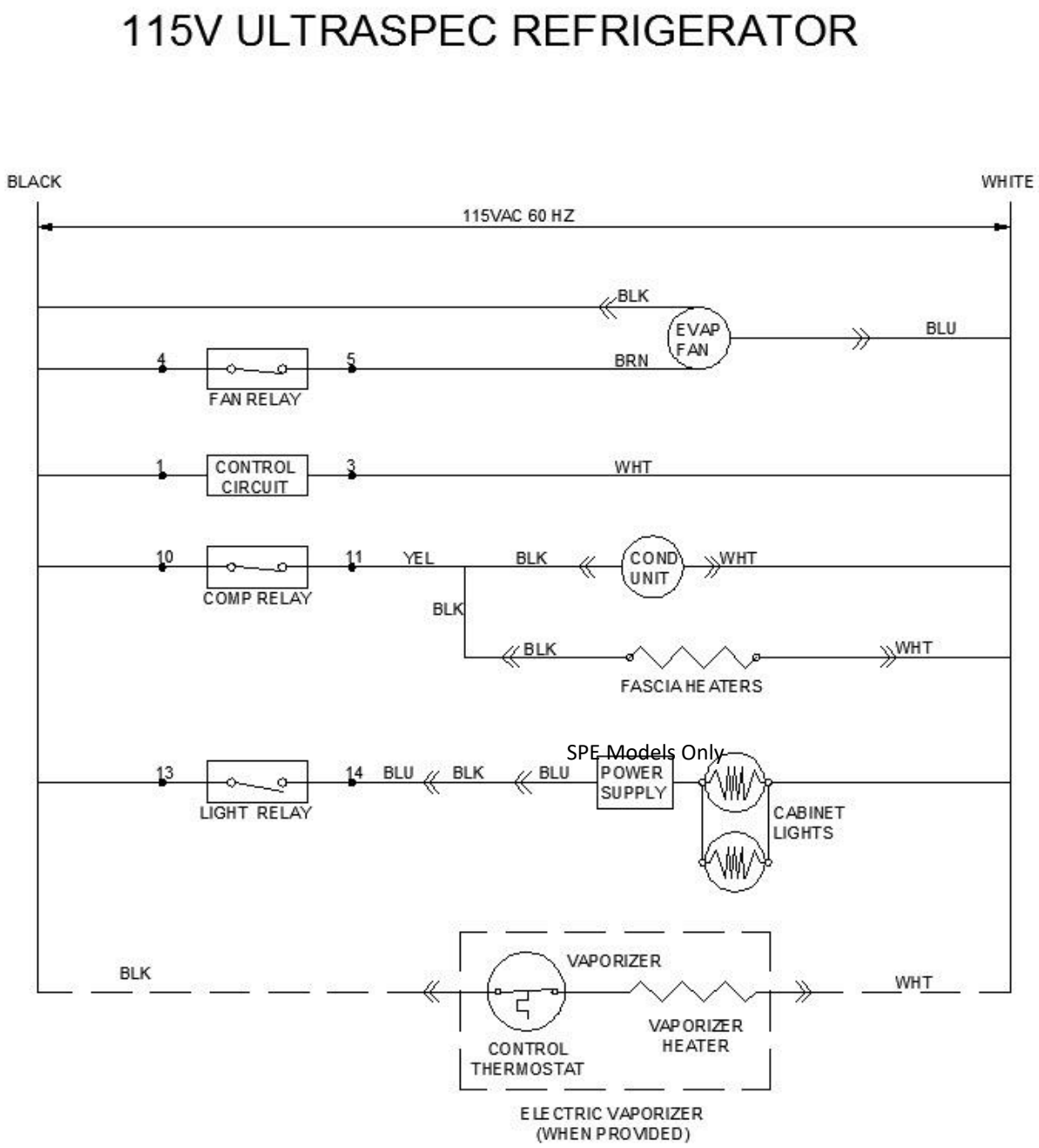
TROUBLE SHOOTING

5.1 General

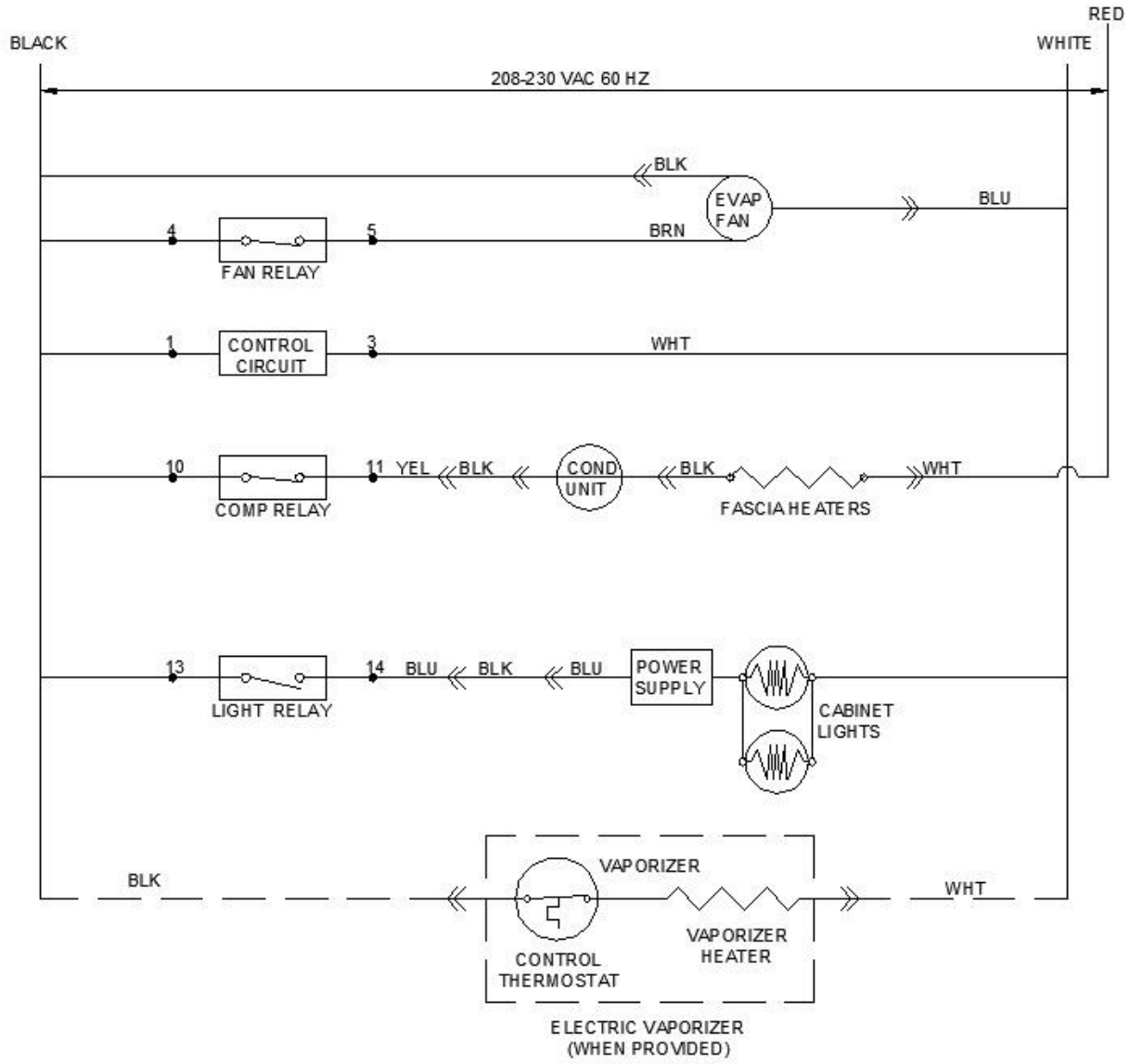
WARNING: ALL SERVICING MUST COMPLY WITH STATE AND FEDERAL EGULATIONS

SERVICE AND REFRIGERATION SYSTEM CHART ANALYSIS		
Malfunction	**Possible Cause**	**Solution**
Compressor will not start – no hum	Line cord not plugged in	Plug cord in
Compressor starts and runs but unit does not begin to cool on initial start-up (MT Bare Tube Condenser Models only)	Ambient is below 60°F	Warm unit to above 60°F prior to initial start-up.
Unit runs OK, but short cycles	Overload protector.	Check wiring diagram for correct wiring
	Cold control.	Differential set too close
	Overcharge.	Reduce refrigerant charge.
	Air in system.	Recover and recharge.
	Undercharge.	Fix leak and recharge with refrigerant.
Unit operates long or continuously	Dirty condenser	Clean condenser
	Shortage of refrigerant.	Fix leak, add charge, correct charge
	Temp control contacts stuck or frozen	Replace Temp control
	Evaporator coil iced.	Defrost
	Restriction in refrigeration system.	Determine location and remove.
Start capacitor open, shorted or blown.	Relay contacts not opening properly.	Replace relay
	Low voltage to unit.	Determine reason and correct.
	Improper relay.	Replace.
Run capacitor open, shorted or blown.	Improper capacitor.	Determine correct size and replace.
	Excessively high line voltage (110% of rated max).	Determine reason and correct.
Relay defective or burned out.	Line voltage too high or too low.	Determine reason and replace.
	Relay being influenced by loose vibrating mounting.	Remount rigidly.
Space temperature too high.	Control setting too high.	Reset control.
	Overcharged with refrigerant	Recover refrigerant and recharge with Proper charge specified on data plate
	Inadequate air circulation.	Improve air movement
Cooler freezing beverage	Temperature control	Reset control
Unit noisy	Loose parts or mountings	Find and tighten
	Tubing rattle	Reform to be free of contact
	Bent fan blade causing vibration	Replace blade
	Fan motor bearings worn	Replace motor

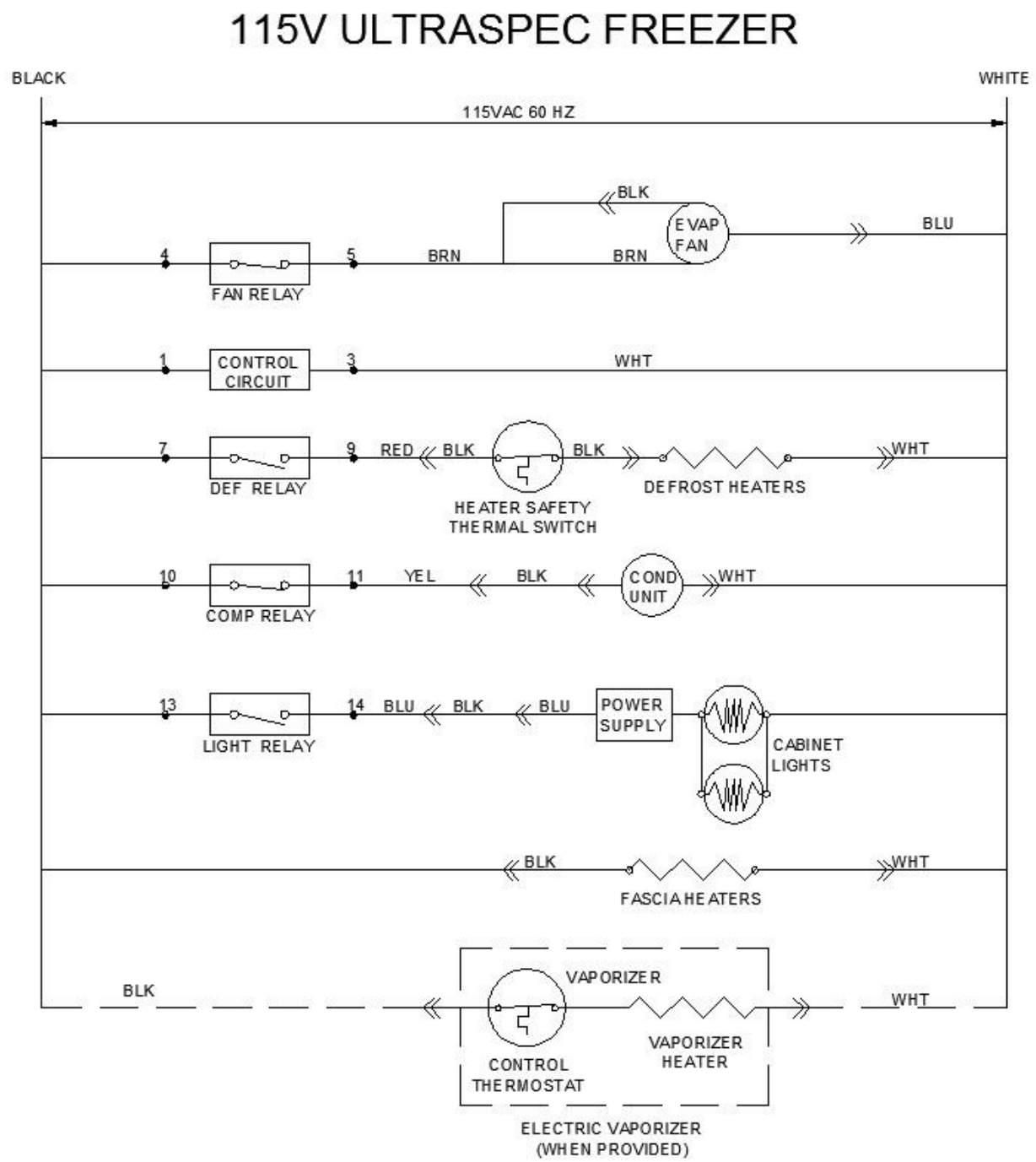
5.2 Refrigerator Ladder Diagram

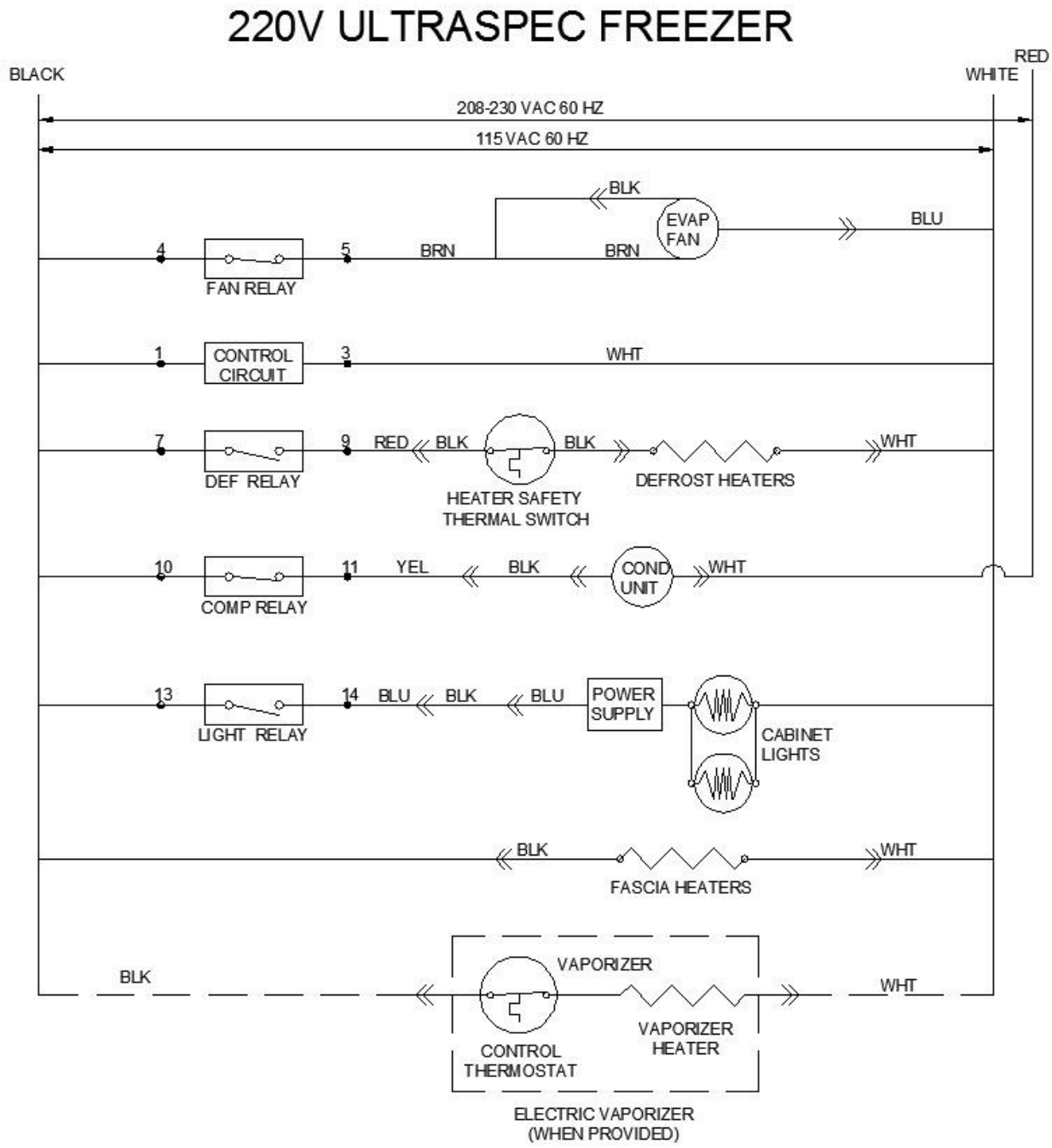


220V ULTRASPEC REFRIGERATOR



5.3 Freezer Ladder Diagram




220V ULTRASPEC FREEZER
BLACK
RED
WHITE
208-230 VAC 60 HZ
115 VAC 60 HZ
BLK
EVAP FAN
BLU
4
5
BRN
BRN
FAN RELAY
1
CONTROL CIRCUIT
3
WHT
7
9
RED
BLK
BLK
WHT
DEF RELAY
HEATER SAFETY THERMAL SWITCH
DEFROST HEATERS
10
11
YEL
BLK
COND UNIT
WHT
COMP RELAY
13
14
BLU
BLK
BLU
POWER SUPPLY
CABINET LIGHTS
LIGHT RELAY
BLK
WHT
FASCIA HEATERS
BLK
VAPORIZER
WHT
VAPORIZER HEATER
CONTROL THERMOSTAT
ELECTRIC VAPORIZER (WHEN PROVIDED)

APPENDIX

SERVICE RECORD