SUB-ZERO®

Technical Service/Training Manual

400 Series Wine Storage

JOB AID #3756394 (REVISION D -August, 2003

SECTION 1

GENERAL INFORMATION

INTRODUCTION:

This 400 Series Technical Service/Training Manual, Part #3756394, has been compiled to provide the most recent information on safety, installation, set-up, design, operation, features, troubleshooting, wiring diagrams, and repair procedures of the 400 Series units. This information will enable the service technician to troubleshoot and diagnose malfunctions, perform necessary repairs, and return a 400 Series unit to proper operational status.
The service technician should read the complete instructions contained in this training/service manual before initiating any repairs on a 400 Series unit.

IMPORTANT SAFETY INFORMATION:

Below are the Product Safety Labels used in this manual. The "Signal Words" used are **WARNING** or **CAUTION**.

When reviewing this manual, please note these different safety labels placed in areas where awareness of personal safety and product safety should be taken.

Below each Product Safety Label is a description of the precautions to be taken when the signal word is observed.

⚠ WARNING

INDICATES THAT HAZARDOUS OR UNSAFE PRACTICES COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH

⚠ CAUTION

Indicates that hazardous or unsafe practices could result in minor personal injury or product and/or property damage

In addition, please pay attention to the signal word ***"NOTE:"*,** which highlights information that is especially important for the section it is in.

TECHNICAL ASSISTANCE:

If you should have any questions regarding this equipment, please contact:

Sub-Zero Freezer Co., Inc.
Attn: Service Department
P.O.Box 44988
Madison, WI 53744-4988

Customer Service & Parts Warranty Claims
Phone (800) 222-7820

Technical Assistance
Phone (800) 919-8324

Customer Service & Technical Assistance
Facsimile (608) 441-5887

Parts Warranty Claims
Facsimile (608) 441-5886

Service Department E-Mail Address
customerservice@subzero.com

Office Hours
7:00 AM to 7:00 PM Central Time
Monday - Friday

PART ORDERING:

Service parts must be ordered through an Authorized Sub-Zero Parts Distributor. Please note that the serial number of the unit being repaired is often important when ordering service replacement parts. Always refer to the Parts Price List for any parts that may have substitutions determined by serial number.

This manual is designed to be used by Authorized Service Personnel only. Sub-Zero Freezer Co., Inc. assumes no responsibility for any repairs made on Sub-Zero refrigeration units by anyone other than Authorized Service Technicians.

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WARRANTY INFORMATION:

This page contains a summary of the *2, 5 & 12 Year Warranty* that is supplied with every 400 Series unit. This is followed by a summary of the two special warranties: The *Non-Residential Warranty* which applies to units installed in non-residential applications, and the *Display/Model Home Warranty* which applies to distributor or dealers display units and units in model homes, sold three years after date of manufacture. The last entries on this page are details and notes about the warranties.

TWO, FIVE & TWELVE YEAR Warranty Summary

- Two year TOTAL PRODUCT warranty, *parts and labor.
- Five Year SEALED SYSTEM warranty, **parts and labor.
- Sixth through Twelfth year LIMITED SEALED SYSTEM warranty, sealed system **parts only.

ONE & FIVE YEAR Non-Residential Warranty Summary (Example: Office, Boat, etc.)

- One Year TOTAL PRODUCT warranty, *parts and labor.
- Five year LIMITED SEALED SYSTEM warranty, sealed system **parts only.

ONE & FIVE YEAR Display/Model Home Warranty Summary (Display units sold three years after date of manufacture)

- One Year TOTAL PRODUCT warranty, *parts and labor.
- Five year LIMITED SEALED SYSTEM warranty, sealed system **parts only.

Warranty Details:

- ** Total Product Parts includes, but is not limited to the following:*

  Electronic Control System Components, Fan & Light Switches, Fan Motors & Blades, Defrost & Drain Heaters, Defrost Terminators, Drain Pans, Drain Tubes, Wiring, Light sockets & bulbs, Door hinges, Door closers & Cams, Compressor Electricals, etc. . .

- *** Sealed System Parts include the following:*

  Compressors, Condensers, Evaporators, Filter-Driers, Heat-exchangers, All Tubing That Carries the Freon.

  ***NOTE:** Condenser Fan Motors, Freon, Solder and compressor electricals are NOT considered sealed system parts.*

Warranty Notes:

- *All warranties begin at the time of the unit's initial installation.*
- *All Warranty and Service information collected by Sub-Zero is arranged and stored under the unit serial number. This information is now also stored under the customer's last name.*

***NOTE:** Sub-Zero still requests that you have the model and serial number available whenever contacting the factory or parts distributor.*

- *The serial number tag for models 427, 427R, and 430 is located on the bottom side of the compartment divider, directly behind the control panel.* (See Figures 1-1, 1-2) For model 424 it is on the upper compartment ceiling (not shown)

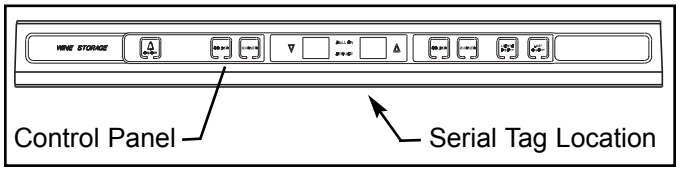


Figure 1-1. Serial Tag Location

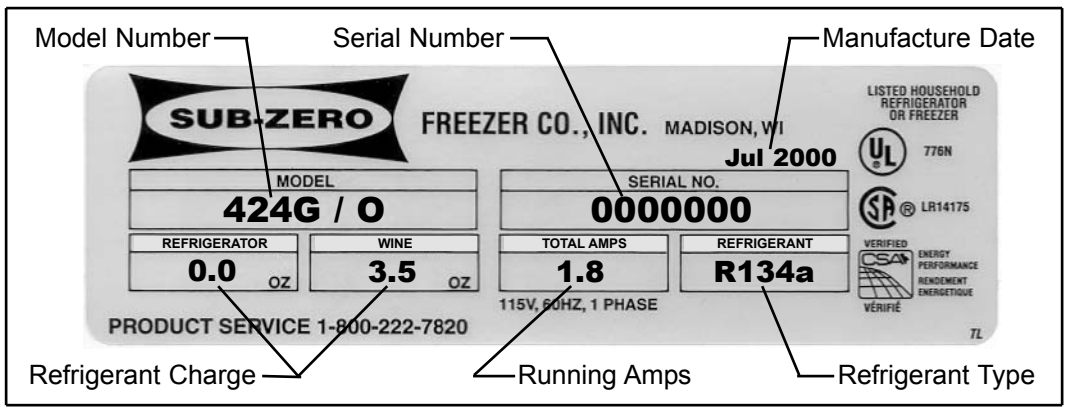


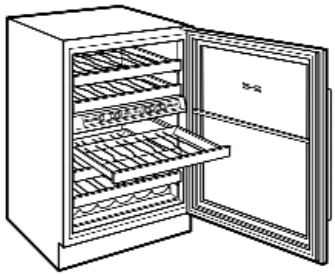
Figure 1-2. Serial Tag Layout

MODEL DESCRIPTIONS:

This section briefly describes the models covered in this 400 Series Technical Service/Training Manual. There are four basic model configurations *(Models 424, 427, 427R, and 430),* with esthetic variations of the exterior cosmetic components. This manual will address the four basic configurations in most cases.

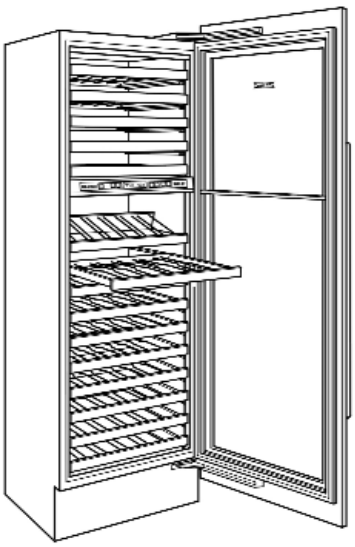
The following diagrams (Figures 1-3 to 1-6) explain the 400 Series model numbering system.

Figure 1-3. Model 424



424G/B • **4**00 Series - **24**" Wide - **G**lass/Car**B**on (or **B**lack) Steel Wrapped Door
424HAG/B • **4**00 Series - **24**" Wide - **H**igh **A**ltitude **G**lass/Car**B**on (or **B**lack) Steel Wrapped Door
424G/O • **4**00 Series - **24**" Wide - **G**lass/**O**verlay Panel Application Door
424HAG/O • **4**00 Series - **24**" Wide - **H**igh **A**ltitude **G**lass/**O**verlay Panel Application Door
424G/P • **4**00 Series - **24**" Wide - **G**lass/**P**latinum Steel Wrapped Door
424HAG/P • **4**00 Series - **24**" Wide - **H**igh **A**ltitude **G**lass/**P**latinum Steel Wrapped Door
424G/S • **4**00 Series - **24**" Wide - **G**lass/**S**tainless Steel Wrapped Door
424HAG/S • **4**00 Series - **24**" Wide - **H**igh **A**ltitude **G**lass/**S**tainless Steel Wrapped Door
424S/B • **4**00 Series - **24**" Wide - **S**olid/Car**B**on (or **B**lack) Steel Wrapped Door
424S/O • **4**00 Series - **24**" Wide - **S**olid/**O**verlay Panel Application Door
424S/P • **4**00 Series - **24**" Wide - **S**olid/**P**latinum Steel Wrapped Door
424S/S • **4**00 Series - **24**" Wide - **S**olid/**S**tainless Steel Wrapped Door
424FS/G • **4**00 Series - **24**" Wide - **F**ree **S**tanding - **S**tainless Steel Wrapped Unit - **G**lass Door
424FS/HAG • **4**00 Series - **24**" Wide - **F**ree **S**tanding - **S**tainless Steel Wrapped Unit - **H**igh **A**ltitude **G**lass Door
424FS/S • **4**00 Series - **24**" Wide - **F**ree **S**tanding - **S**tainless Steel Wrapped Unit - **S**olid Door

Figure 1-4. Model 427



NOTE: *Door panels for this model sold separately.*

427G • **4**00 Series - **27**" Wide - **G**lass Door
427HAG • **4**00 Series - **27**" Wide - **H**igh **A**ltitude **G**lass Door
427S • **4**00 Series - **27**" Wide - **S**olid Door

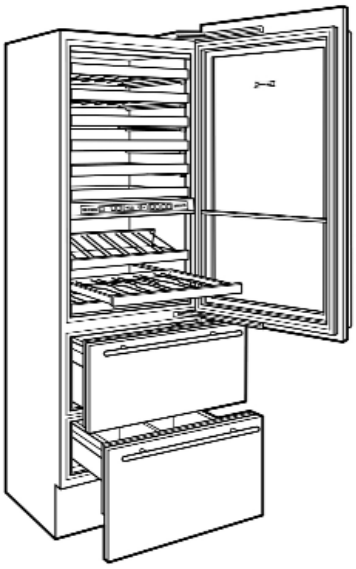


Figure 1-5. Model 427R

NOTE: *Door panels for this model sold separately.*

427RG • **4**00 Series - **27**" Wide - **R**efrigerated Drawers - **G**lass Door on Wine Storage Section
427RHAG • **4**00 Series - **27**" Wide - **R**efrigerated Drawers - **H**igh **A**ltitude **G**lass Door on Wine Storage Section
427RS • **4**00 Series - **27**" Wide - **R**efrigerated Drawers - **S**olid Door on Wine Storage Section

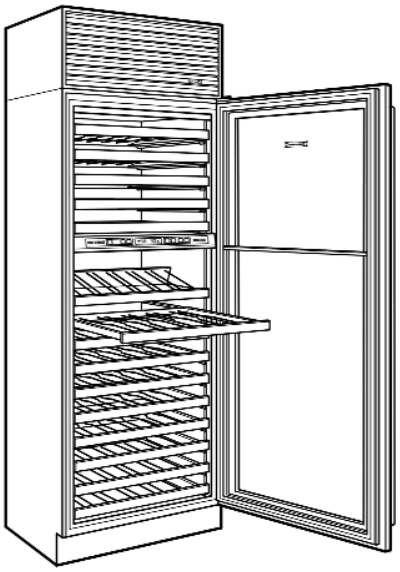


Figure 1-6. Model 430

430G/B • **4**00 Series - **30**" Wide - **G**lass/Car**B**on (or **B**lack) Steel Wrapped Door
430HAG/B • **4**00 Series - **30**" Wide - **H**igh **A**ltitude **G**lass/Car**B**on (or **B**lack) Steel Wrapped Door
430G/F • **4**00 Series - **30**" Wide - **G**lass/**F**ramed Panel Application Door
430HAG/F • **4**00 Series - **30**" Wide - **H**igh **A**ltitude **G**lass/**F**ramed Panel Application Door
430G/O • **4**00 Series - **30**" Wide - **G**lass/**O**verlay Panel Application Door
430HAG/O • **4**00 Series - **30**" Wide - **H**igh **A**ltitude **G**lass/**O**verlay Panel Application Door
430G/P • **4**00 Series - **30**" Wide - **G**lass/**P**latinum Steel Wrapped Door
430HAG/P • **4**00 Series - **30**" Wide - **H**igh **A**ltitude **G**lass/**P**latinum Steel Wrapped Door
430G/S • **4**00 Series - **30**" Wide - **G**lass/**S**tainless Steel Wrapped Door
430HAG/S • **4**00 Series - **30**" Wide - **H**igh **A**ltitude **G**lass/**S**tainless Steel Wrapped Door
430S/B • **4**00 Series - **30**" Wide - **S**olid/Car**B**on (or **B**lack) Steel Wrapped Door
430S/F • **4**00 Series - **30**" Wide - **S**olid/**F**ramed Panel Application Door
430S/O • **4**00 Series - **30**" Wide - **S**olid/**O**verlay Panel Application Door
430S/P • **4**00 Series - **30**" Wide - **S**olid/**P**latinum Steel Wrapped Door
430S/S • **4**00 Series - **30**" Wide - **S**olid/**S**tainless Steel Wrapped Door

Sub-Zero Wine Storage Temperature Range, Recommended Wine Storage Temperatures and Recommended Wine Serving Temperatures:

The table below shows the temperature range of the Sub-Zero Wine Storage Units. This table also shows the recommended temperatures for *"serving"* wines. Serving wines at the recommended temperatures will insure that white wines maintain their lively and interesting taste, and red wines will maintain their scent and flavor.

NOTE: *For "long term storage" of all wines, the ideal temperature is 55°F / 13°C.*

NOTE: *The temperature range in the refrigerator drawer area of the 427R is 34°F / 1°C to 45°F / 7°C.*

		Fahrenheit	*Celsius*
Wine Storage Unit Maximum Temperature		65°	18°
Recommended Wine Serving Temperatures	*Bordeaux*	63°	17°
	Red Burgundy	61°	16°
	Beaujolais	54°	12°
	Sherry	52°	11°
	Rosés	48°	9°
	Dry White Wines	48°	9°
	Champagne	46°	8°
	Sweet White Wines	43°	6°
	Sparkling Wines	41°	5°
Wine Storage Unit Minimum Temperature		38°	3°

SECTION 2

INSTALLATION INFORMATION

INSTALLATION CONSIDERATIONS:

This section covers some of the more common installation issues seen by a service technician. An improper installation, though not a valid service issue, has the potential to lead to a customer placing a call for service. Installation related customer complaints could include, but are not limited to: Unit leveling, unit movement, door misalignment, doors and drawers not sealing, internal frost or condensation, warm compartment temperatures, exterior condensation, etc.

⚠ WARNING

UNIT COULD TIP FORWARD UNDER CERTAIN LOAD CONDITIONS. FAILURE TO INSTALL ANTI-TIP COMPONENTS AND EXTEND FRONT LEVELERS TO FLOOR ACCORDING TO INSTALLATION MANUAL CAN RESULT IN SERIOUS INJURY OR DEATH.

NOTE: *Always refer to the Installation Manual whenever installation related concerns arise, or contact the Sub-Zero Customer Service Department.*

Unit Leveling (Model 424)

Unlike the other 400 Series units, the model 424 must be leveled before it is installed into the rough-in opening. (See WARNING above). To level the model 424, place it in front of the rough-in opening. Then, turn each of the four leveling legs clockwise to raise the unit, counterclockwise to lower the unit. (See Figure 2-1) An adjustable wrench or pliers may be needed.

NOTE: *If removing a 424 from its installation, an anti-tip bracket and a countertop bracket may have been used to make a solid installation. (See Figures 2-2) If the brackets were not used, shims may have been wedged along the sides and top.*

Unit Leveling (Models 427 & 427R)

NOTE: *The unit must be in the correct installation position before leveling. (See WARNING above). The kickplate/grille must be removed before leveling. (See Figure 2-3) If the unit has already been anchored to the cabinets, the side molding strips must be removed and the anchor screws must be extracted from the unit to cabinet brackets before leveling. (See Figure 2-4) These components must be reinstalled after leveling.*

To level the unit, turn the front leveling legs counterclockwise to raise the front or clockwise to lower it. To assist in turning the front leveling legs up or down, use

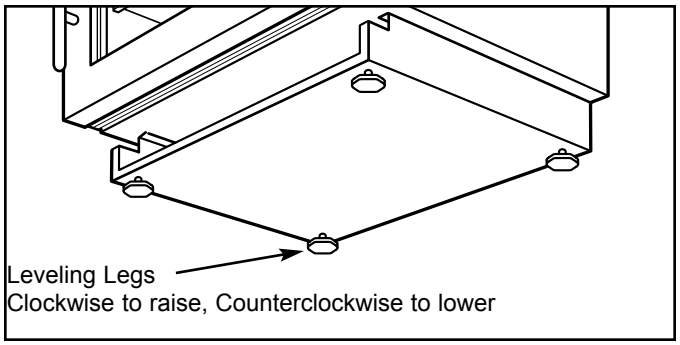


Figure 2-1. Model 424 Leveling Legs

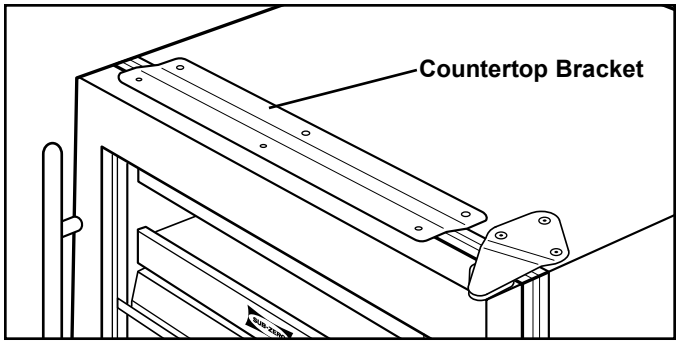


Figure 2-2. Model 424 Countertop Bracket

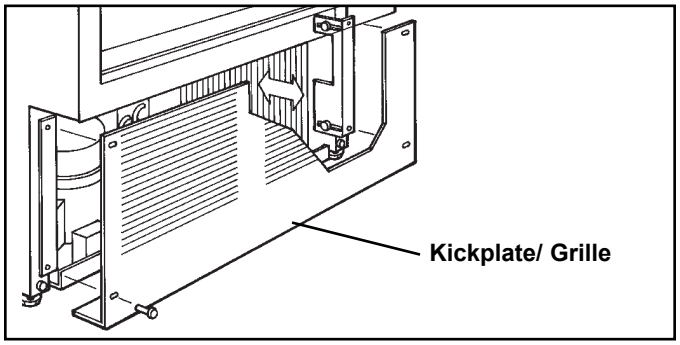


Figure 2-3. Model 427, 427R Kickplate/Grille Removal

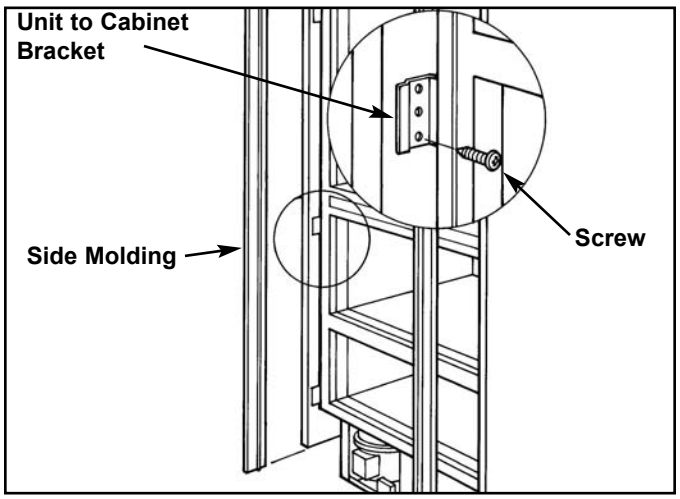


Figure 2-4. Model 427, 427R Molding Strip & Bracket

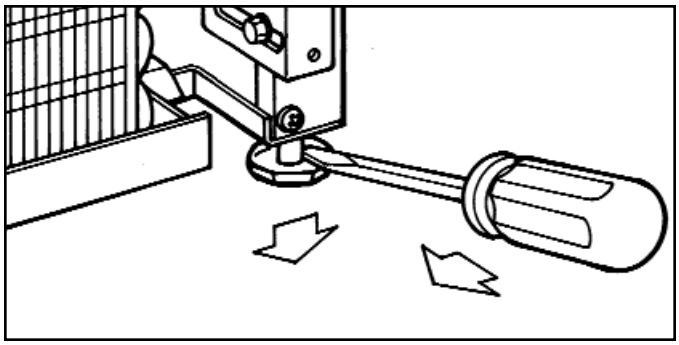


Figure 2-5. Model 427, 427R, 430 Adjusting Front Leveling Legs (427 Shown)

a standard screwdriver blade and place it in the foot of the front leg. (See Figure 2-5)

The rear levelers are adjusted from the front of the base by turning the Phillips head adjusting screw. Turn the screw clockwise to raise the rear or counterclockwise to lower it. (See Figure 2-6) The long adjusting screw reaches all the way to the rear leveler assembly.

NOTE: *The rear leveling legs will only move 1/16" for every 18 revolutions on the Phillips head screw. Do not over torque. Use the lowest torque setting on any power screwdriver. Do not turn rear leveling legs by hand. Damage will occur if you turn these legs by hand.*

Unit Leveling (Model 430)

NOTE: *The unit must be in the correct installation position before leveling (See WARNING on previous page). The kickplate must be removed before leveling. (See Figure 2-7) If the unit has been anchored to the cabinets, the anchor screws must be extracted before leveling, then reinstalled after leveling.*

To level the unit, turn the front leveling legs counterclockwise to raise the front or clockwise to lower it. To assist in turning the front leveling legs up or down, use a standard screwdriver blade and place it in the foot of the front leg. (See Figure 2-5 & 2-8)
The rear levelers are adjusted from the front of the base, using a 5/16" socket wrench. (The long adjusting screw just above the front leveler leg reaches all the way to the rear leveler/roller assembly.) Turn the adjusting screw clockwise to raise the rear or counterclockwise to lower it. (See Figure 2-8)

NOTE: *Level is best checked at the top and side mainframe extrusion(s).*

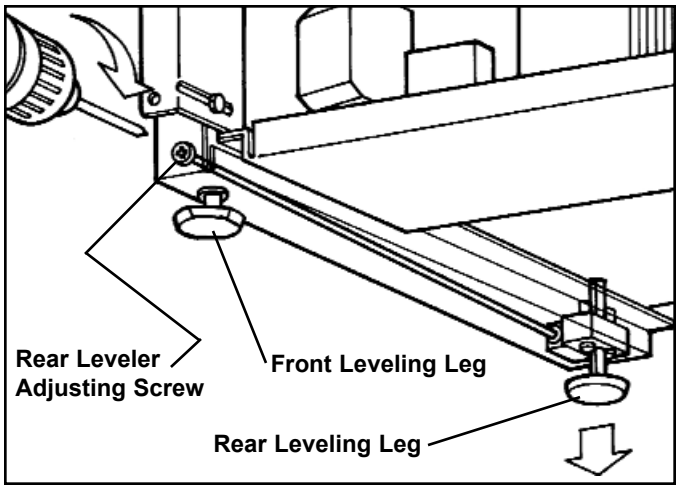


Figure 2-6. Model 427, 427R Adjusting Rear Leveling Leg

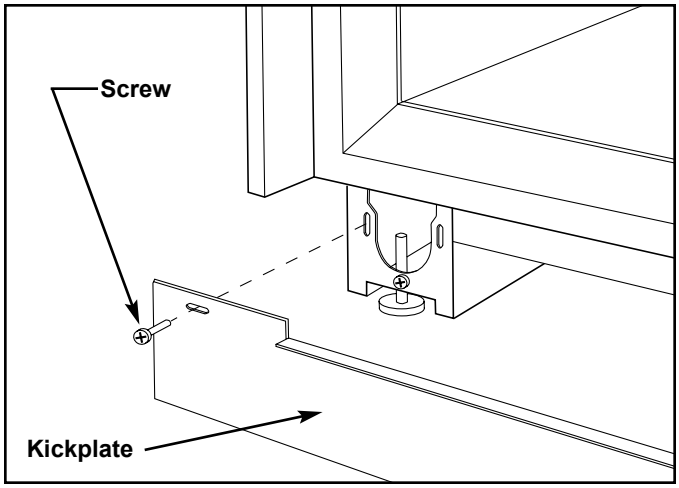


Figure 2-7. Model 430 Kickplate Removal

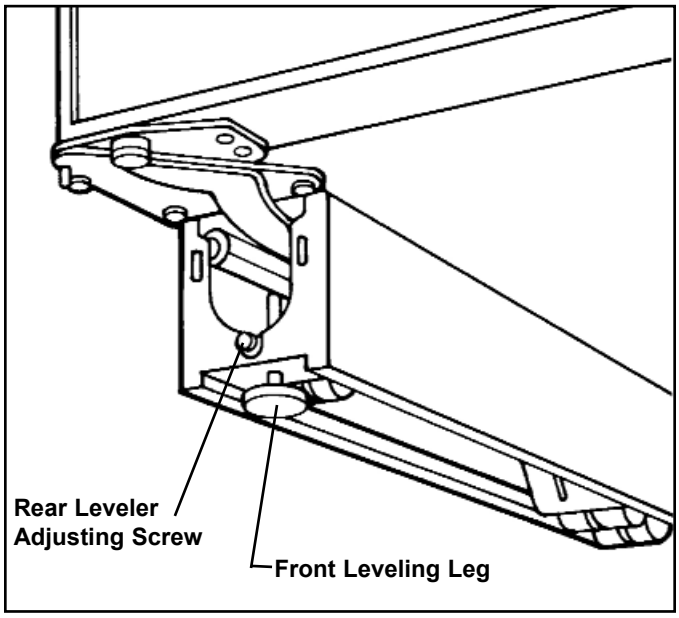


Figure 2-8. Model 430 Adjusting Rear Levelers

Door Adjustment (Model 424)

NOTE: *The unit must be level before adjusting the door.*

If the unit is properly installed, blocked and leveled, it may still be necessary to adjust the door(s) from left to right and/or in & out. Adjustments are performed at the top and/or bottom cabinet hinge(s).

NOTE: *The door hinges on the 424 are non-adjustable.*

To access and adjust the cabinet hinge(s), it will be necessary to pull the unit out approximately 6" from the rough-in opening. (See ***NOTE*** below.) Working on only one hinge at a time and using a 1/8" Allen wrench, loosen the three cabinet hinge screws, then "snug" them back down. (See Figure 2-9) Adjust door left to right, or in and out. After adjusting the door, re-tighten the screws and check for proper gasket seating.

NOTE: *If removing a model 424 from its installation, an anti-tip bracket and a countertop bracket may have been used to make a solid installation. (See Figures 2-2) If the brackets were not used, shims may have been wedged along the sides and top.*

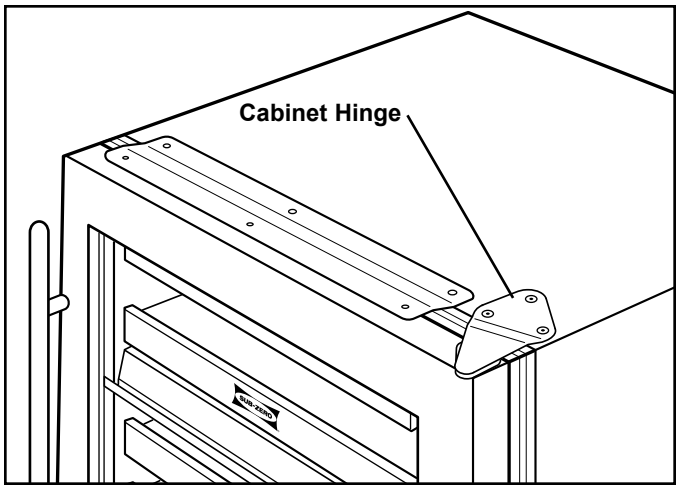


Figure 2-9. Model 424 Door / Cabinet Hinge Adjustment

Door and Drawer Adjustment (Models 427 & 427R)

NOTE*: The door on models 427 and 427R, as well as the drawers on the 427R are non-adjustable. Instead, the door and/or drawer <u>panels</u> must be adjusted if there is an alignment problem. Refer to the Installation Manual.*

NOTE: *The unit must be level before attempting to adjust the door and drawer panels.*

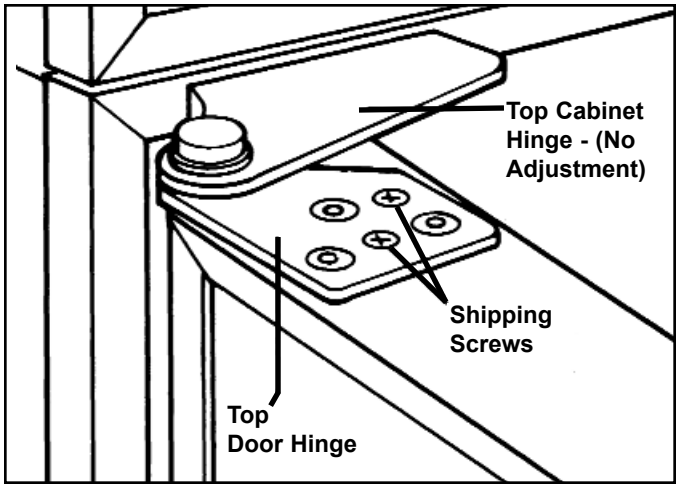


Figure 2-10. Model 430 Top Door Hinge

Door Adjustment (Model 430)

NOTE: *The unit must be level before adjusting the door.*

If the unit is properly installed, blocked and leveled, it may still be necessary to adjust the door from left to right and/or in and out. Adjustments are performed at the top and/or bottom door hinge(s). Working on only one hinge at a time, remove the two small Phillips head shipping screws and discard them. Then loosen and "snug" the remaining Allen head screws. (See Figure 2-10 & 2-11) Adjust door left to right, or in and out. After adjusting the door, re-tighten the screws and check for proper gasket seating.

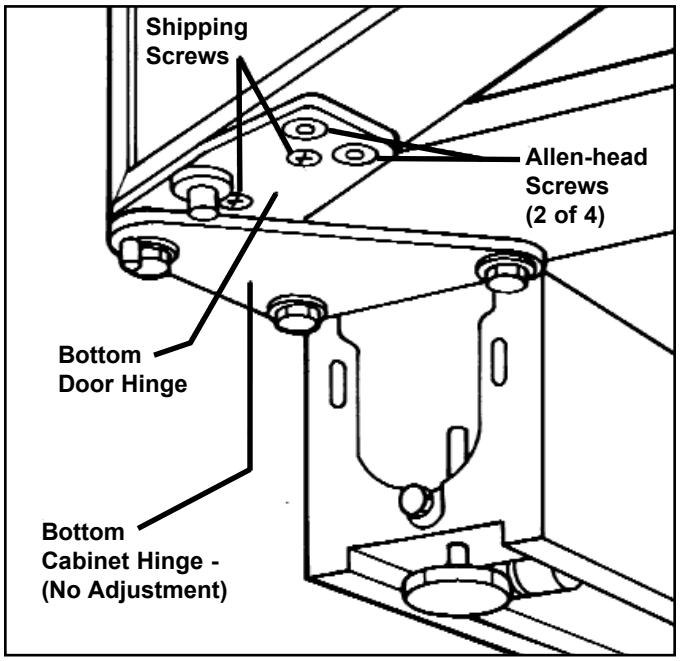


Figure 2-11. Model 430 Bottom Door Hinge

Door Stop Adjustment (Models 427 & 427R)

The models 427 and 427R have a 90° door stop cam built into the hinge system. The 90° door stop cam is located in the center portion of the hinge. To adjust it, use a standard straight-blade screwdriver to rotate the cam until you reach the stop point. (See Figure 2-12)

NOTE: *You must make this adjustment at both bottom and top hinge.*

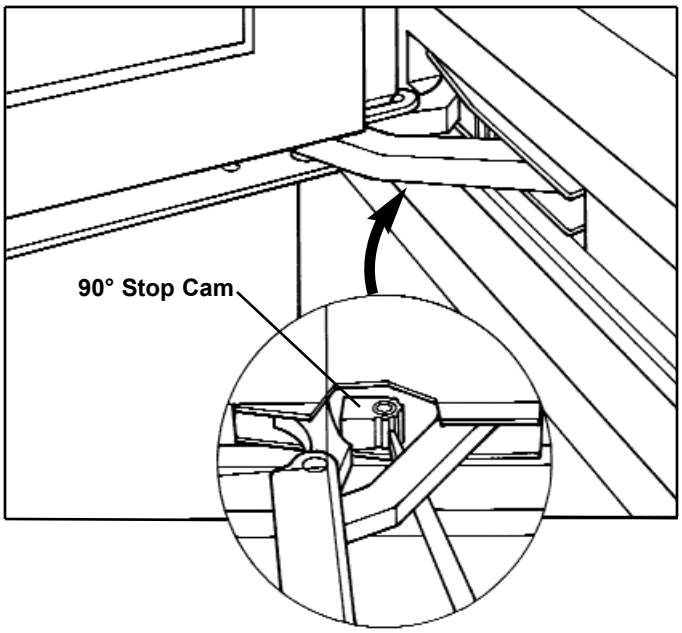


Figure 2-12. Model 427, 427R Door Stop Adjustment

Door Stop Installation (Model 430)

For the model 430, optional 90° and 105° door stops are available, free of charge from Parts Distributors and/or Product Distributors. The part number for the 90° stop is #DS90, and the part number for the 105° stop is #DS105.

To install a door stop on a model 430, the door must be closed. Slide the door stop cam up onto bottom hinge pin. The stub on the door stop fits into the hole on the cabinet hinge. Retain door stop by pushing the E-Ring into the groove at the end of the bottom hinge pin, making sure that the E-ring is clipped securely into the groove. (See Figure 2-13)

NOTE: *Complete instructions accompany the part when ordered.*

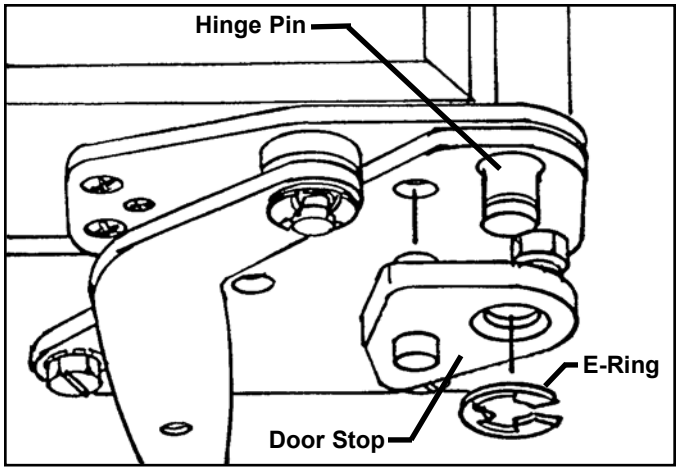


Figure 2-13. Model 430 Door Stop Installation

Door Panel Removal and Installation (All Models)

⚠ WARNING

METAL DOOR PANELS MAY HAVE SHARP EDGES WHICH COULD INFLICT SERIOUS PERSONAL INJURY. PROTECTIVE GLOVES SHOULD BE WORN WHEN HANDLING PANELS.

DOOR PANELS MAY BE HEAVY OR UNSTABLE. IF THEY WERE TO FALL, THEY COULD CAUSE SERIOUS PERSONAL INJURY. CARE SHOULD BE TAKEN WHEN HANDLING.

Carbon, Platinum and Stainless Steel Door Panel Removal and Installation (Model 424)

NOTE: *Models 424G/B, 424HAG/B, 424S/B, 424G/P, 424HAG/P, 424S/P, 424G/S, 424HAG/S, 424S/S, 424FS/G, 424FS/HAG and 424FS/S are are shipped from the factory with decorative steel panels and handles in place.*

In order to remove the door panel, the door will need to be removed from the unit. To do this, you will need to pull the unit out approximately 6” from the rough-in opening to gain access to the door closer.

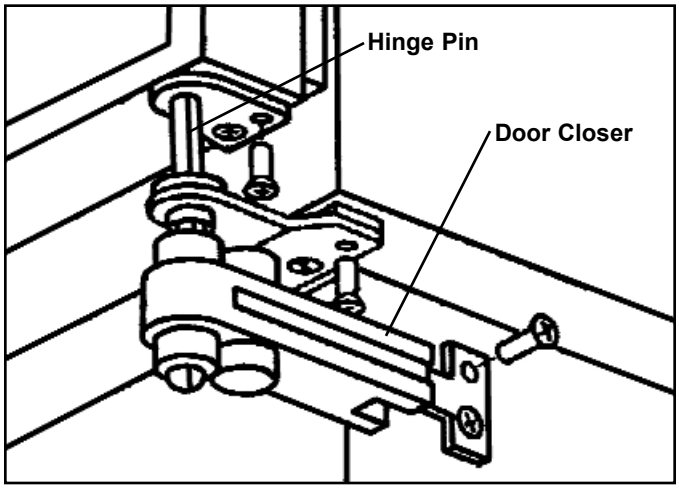


Figure 2-14. Model 424 Door Closer

NOTE: *If removing a model 424 from its installation, an anti-tip bracket and a countertop bracket may have been used to make a solid installation. (See Figures 2-2) If the brackets were not used, shims may have been wedged along the sides and top.*

Remove the two mounting screws securing the door closer to the side of unit base. Slide the door closer down off of the bottom door hinge pin. (See Figure 2-14)

NOTE: *It may be necessary to lean the unit back slightly to create enough clearance between the hinge pin and the floor.*

Open the door and extract the two screws from the top door hinge. Lean the door away from the unit slightly and lift the door out of the bottom cabinet hinge. Lay the door down and remove the bottom door hinge and switch depressor. (If a lock and/or screws are present on the bottom handle side, remove them also.) Locate the Poly-tape under the gasket on the handle side which covers the handle mounting screw holes. (See Figure 2-15) Remove the tape, then extract the handle mounting screws and pull the handle from the front of the door. Now, lift the stainless steel panel from the door. (See Figure 2-16)

To install a stainless steel panel, reverse the steps above.

Overlay Door Panel Removal and Installation (Model 424)

NOTE: *Overlay panels are attached to the door of a 424G/O, 424HAG/O and 424S/O, using screws passing through the door frame from the rear, into the panel. The handle may also be attached through the door frame or just through the panel.*

To remove an overlay panel, open the door and locate the Poly-tape under the gasket which covers the panel mounting screw holes, and possibly the handle mounting screw holes. (See Figure 2-15) Remove the tape, then extract the panel mounting screws, and possibly the handle mounting screws. (See Figure 2-17) Now, pull the overlay panel from the door.

To install a new overlay panel, refer to the Installation Manual. If reinstalling the existing panel, reverse the steps above.

Door Panel Removal and Installation (Models 427 & 427R)

NOTE: *The models 427 and 427R are NOT supplied with panels from the factory. Panels are purchased separately. Door panels are attached to the door of a*

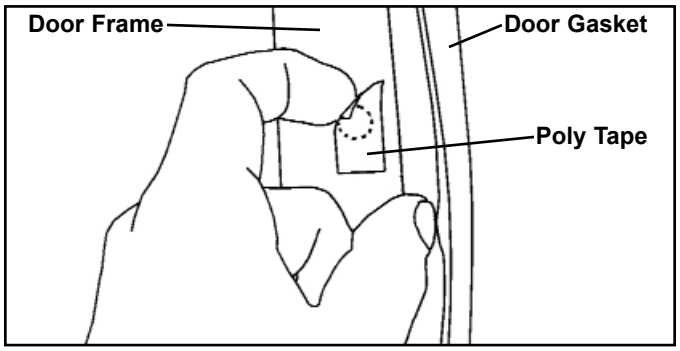


Figure 2-15. All Models Poly Tape Over Handle Mounting Screws

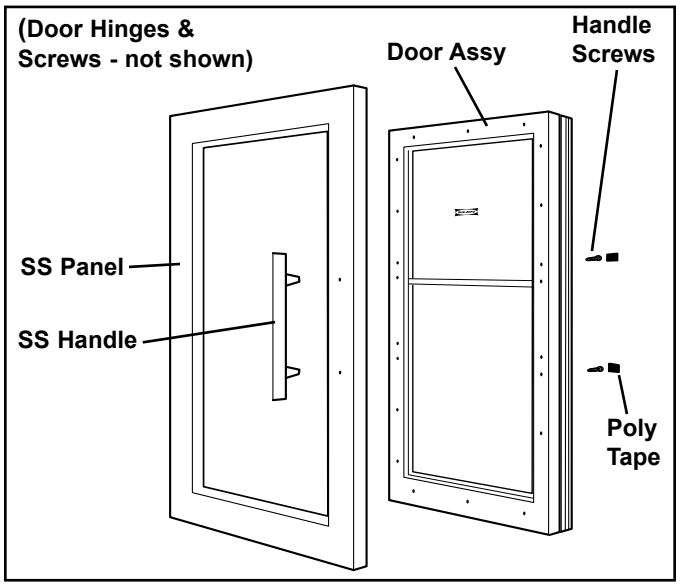


Figure 2-16. Model 424 Stainless Steel Door Panel Removal

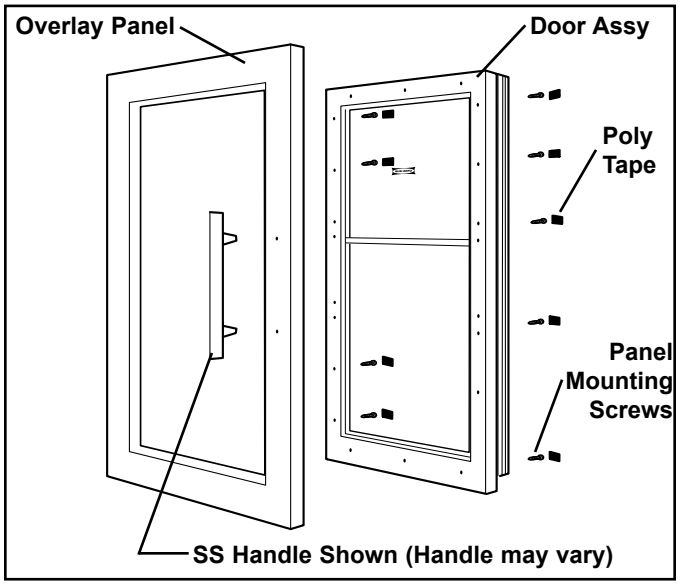


Figure 2-17. Model 424 Overlay Door Panel Removal

427 and 427R using screws passing through the door frame from the rear, into the panel. The handle is attached to the panel.

To remove a door panel, open the door and locate the Poly-tape under the gasket which covers the panel mounting screw holes. (See Figure 2-15.) Remove the tape, then extract the panel mounting screws. Now, pull the panel from the door. (See Figure 2-18.)

To install a new door panel on a 427 or 427R, refer to the Installation Manual. If reinstalling the existing panel, reverse the steps above.

Drawer Panel Removal and Installation (Model 427R)

NOTE: *The model 427R is NOT supplied with panels from the factory. Panels are purchased separately. Drawer panels are attached to the drawers of a 427R using screws passing through mounting brackets at the bottom of each drawer, and a dog-eared bracket on the back of the panel fitting into slots in the face of the drawers.* (See Figure 2-19.) *Handles are attached to the panels.*

To remove a drawer panel, open the drawer and locate the six screws at the bottom. Remove the screws, then pull the bottom of the drawer panel out slightly while pulling downward.

To install a new drawer panel on a 427R, refer to the Installation Manual. If reinstalling the existing panel, reverse the steps above.

Carbon, Platinum and Stainless Steel Door Panel Removal and Installation (Model 430)

NOTE: *The models 430G/B, 430HAG/B, 430S/B, 430G/P, 430HAG/P, 430S/P, 430G/S, 430HAG/S, and 430S/S are shipped from the factory with decorative steel panels and handles in place.*

To remove the stainless steel panel you will need to remove the door from the unit. If a door stop has been installed, it must also be removed at this time. (See the "DOOR STOP INSTALLATION, (Model 430)" section in this manual.) First, detach the door closer assembly from the bottom door hinge by opening the door until the hole in door closer arm aligns with the hole in bottom cabinet hinge, then insert a stubby screwdriver (1/4" diameter or less) up into the two holes. With a small straight-blade screwdriver, remove the E-ring which holds the door closer arm to the stud on the bottom door hinge. Then, pry the door closer arm down off of the door hinge stud. (See Figure 2-20, and CAUTION on next page)

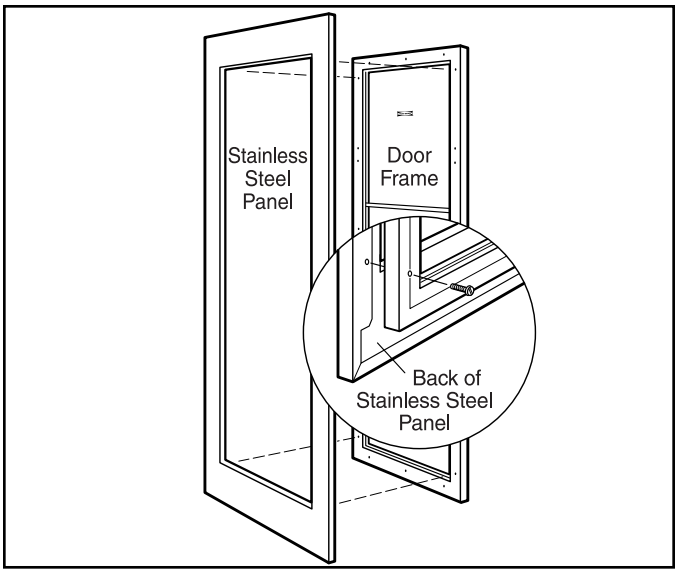


Figure 2-18. Model 427, 427R Door Panel Removal

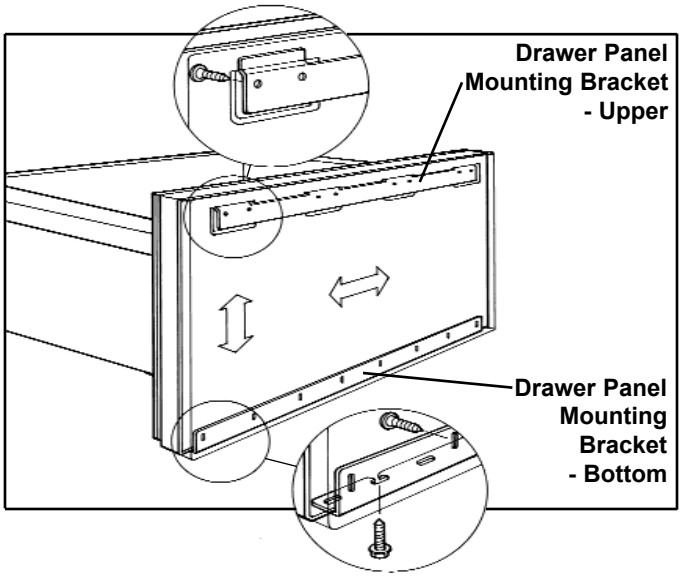


Figure 2-19. Model 427R Drawer Panel Removal

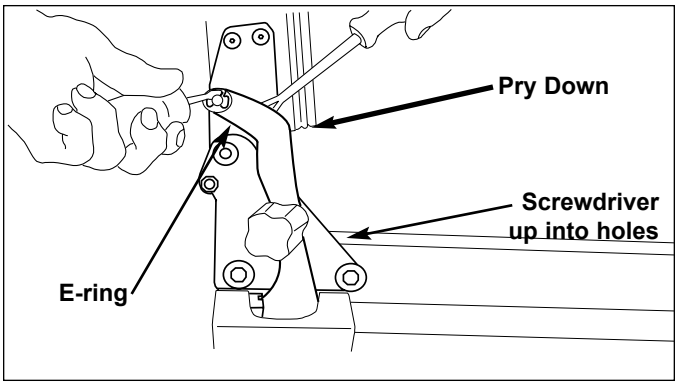


Figure 2-20. Model 430 Detaching Door Closer

⚠ CAUTION

Door closer is spring loaded and may recoil quickly when detached.

NOTE: *The screwdriver inserted in the holes of the door closer arm and the bottom cabinet hinge will be used to pry the door closer arm back into position when reattaching the door closer to the bottom door hinge.*

Open the door fully and extract the hinge-side trim mounting screws located just behind the vertical rib of the hinge-side trim, then remove the hinge-side trim. (See Figure 2-21) Extract the screws from the top door hinge. Lean the door away from the unit slightly and lift the door out of the bottom cabinet hinge. Lay the door down and remove the bottom door hinge. (If a lock and/or screws are present on the bottom handle side, remove them.) Remove the panel mounting screws from the hinge side of the door. Locate the Poly-tape under the gasket on the handle side which covers the handle mounting screw holes. (See figure 2-15) Remove the tape, then extract the handle mounting screws and pull the handle from the front of the door. Now, lift the stainless steel panel from the hinge side first, pivoting it off of the handle side of the door. (See Figure 2-22)

To install a stainless steel panel, reverse the steps above.

Framed & Overlay Door Panel Removal and Installation (Model 430)

NOTE: *Framed and overlay panels are attached to the door of a 430G/F, 430HAG/F, 430G/O, 430HAG/O, 430S/F and 430S/O by sliding the 1/4" thick edge of the panel under the door trim. On the handle side of models 430G/O and 430S/O, additional screws passing through the door frame from the rear, into the panel may have been used for increased support. On the 430G/O, 430HAG/O, and 430S/O, the handle may also be attached through the door frame, or just through the panel.*

To remove a framed or overlay panel, you must first remove the handle, or trim on handle side if overlay application. Using a piece of tape stuck to the center of the magnetic trim molding, pull the trim molding out at the midpoint to expose the handle mounting screws (See Figure 2-23). Remove the mounting screws and pull the handle, or trim on handle side, from the door. You should be able to slide the panel towards the handle side, and out from under the door trim at this time. If the panel will not slide from under the door trim, panel mounting screws and/or handle mounting screws may have been used. Open the door and locate the Poly-tape under the gasket. This tape covers the panel

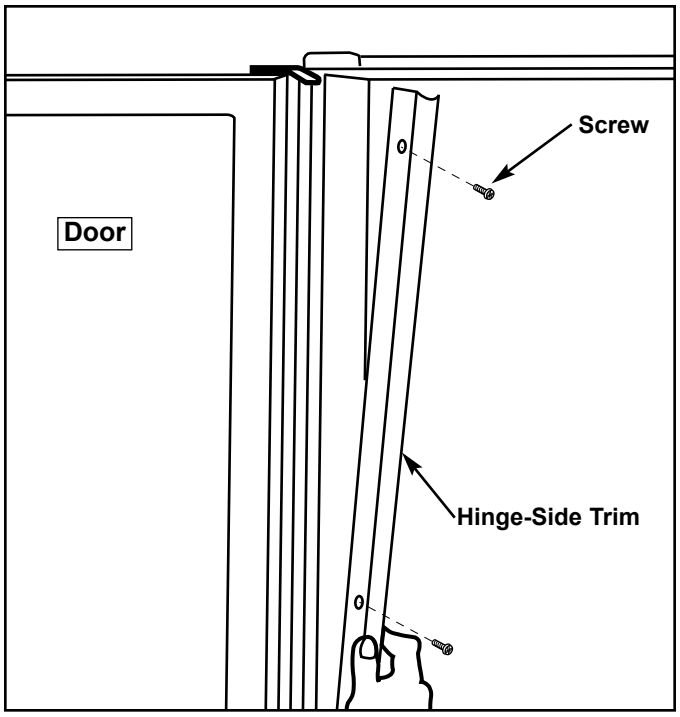


Figure 2-21. Model 430 Hinge-Side Trim Removal

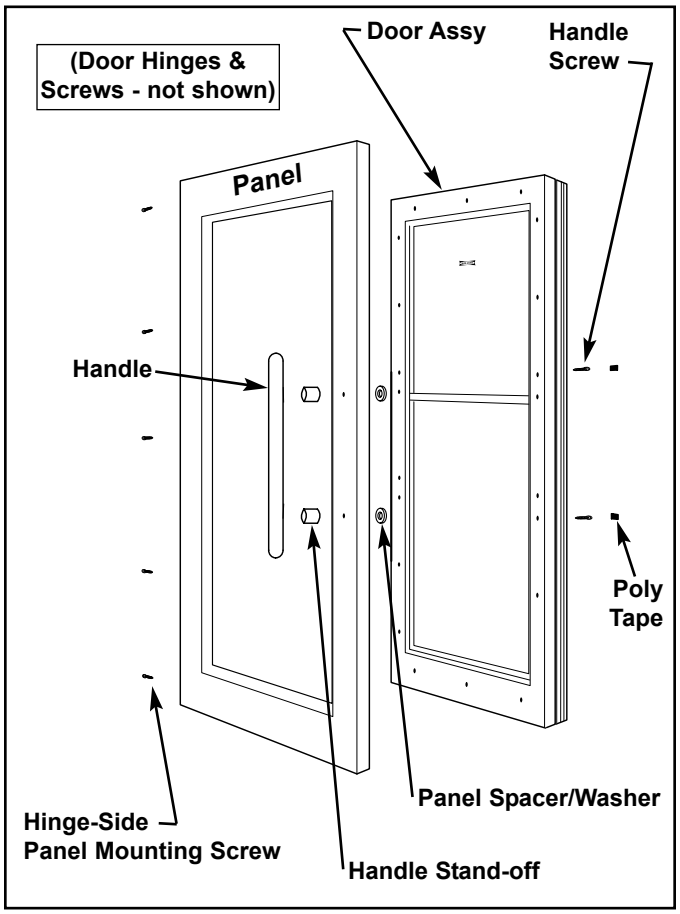


Figure 2-22. Model 430 Stainless Steel Door Panel Removal

mounting screw holes, and possibly the handle mounting screw holes. Remove the tape, then extract the panel mounting screws, and possibly the handle mounting screws. Now, you should be able to slide the panel towards the handle side, and out from under the door trim. (See Figure 2-24)

To install a new framed or overlay panel, refer to the Installation Manual. If reinstalling the existing panel, reverse the steps above.

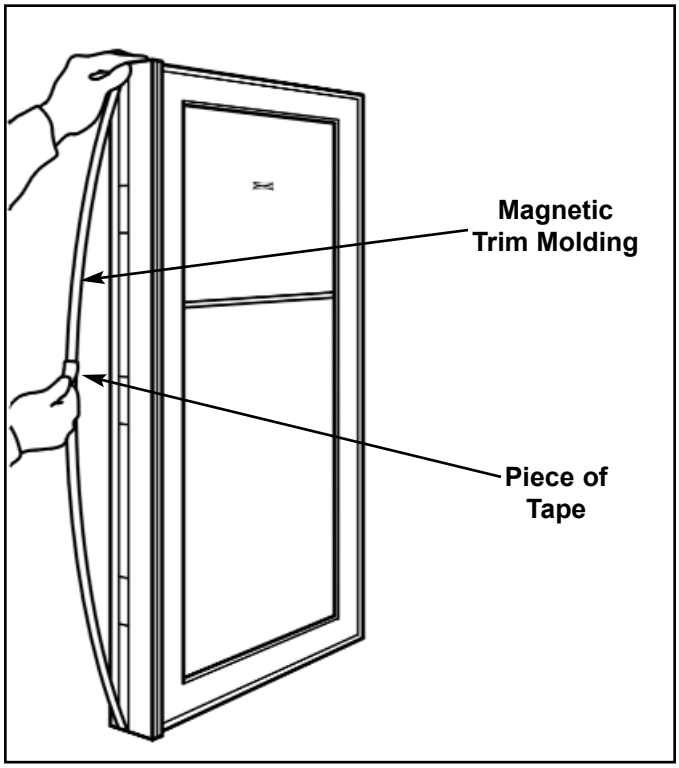


Figure 2-23. Model 430 Trim Molding Removal

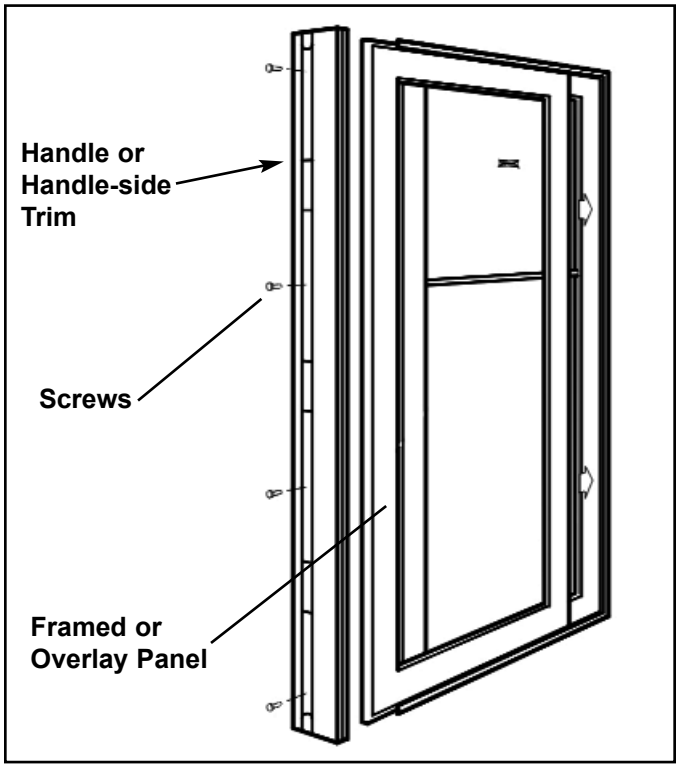


Figure 2-24. Model 430 Framed and Overlay Handle / Handle Side Trim & Door Panel Removal

SECTION 3

ELECTRONIC CONTROL SYSTEM INFORMATION

WINE STORAGE ELECTRONIC CONTROL TERMINOLOGY & COMPONENT DESCRIPTIONS:

All 400 Series units utilize an electronic control system. The electronic control system monitors, regulates and controls a variety of functions. This system also displays temperatures, possible problems with the unit and the bell status. The table below defines some basic electronic control system terminology and describes some of the electronic control components. An understanding of the following information is needed in order to comprehend the electronic control system.

NOTE: The refrigerator section of the model 427R uses a separate and unique electronic control system. See 427R REFRIGERATOR ELECTRONIC CONTROL TERMINOLOGY & COMPONENT DESCRIPTIONS.

Term/Component	**Definition / Description**
Control Board ……..	The printed-circuit board (PC Board) contains the microprocessor, relays and electrical connections which control and monitor all functions and operations of the unit.
Microprocessor ……...	An electrical component on the control board which receives electrical signals from other components, processes that information, then sends an electrical signal to the relays on the board to open or close, and other electronic components in the unit to switch on or off.
Relay ……	The electrical components on the control board which close or open to either allow power to the appropriate component(s), or interrupts power from reaching appropriate component(s).
LED (Light Emitting Diode) ……...	For our purposes, this is a small electronic “tube” that lights-up when power is supplied to it. In the control panel assembly, LED’s are arranged to show temperature values (numbers). LED’s are also used in the control panel assembly as back-lighting for the compartment indicator arrows and the “BELL” and “SERVICE” annunciators.
Control Panel Assembly ……	The information input and read-out area of the electronic control system, located between the two wine storage compartments. ***NOTE:*** *The 427R has two control panel assemblies, the second is located inside the top drawer assembly, at top front.*
Membrane Switch ……..	An integral part of the control panel assembly, which consists of the function keys used for all input functions to the electronic control system.
Keys (Function Keys) ……	The buttons on the Membrane switch used for input functions. (The keys are: UNIT ON/OFF, LIGHTS ON/OFF, ALARM ON/OFF, COLDER, WARMER)
Annunciators ……...	The words and numbers that are displayed/lighted on the control panel assembly. (Example: Temperature readings, BELL indicator and SERVICE indicator)
Set-Point ……..	The desired compartment temperature. This is the approximate average of the high offset and the low offset.
High Offset (Cut-in)…….....	During normal operation of a wine storage unit, this is the maximum evaporator temperature that the electronic control system will allow before calling for cooling.
Low Offset (Cut-out)……...	During normal operation of a wine storage unit, this is the minimum compartment air temperature that the electronic control system will allow before interrupting cooling.
Offset Temperature Range ……...	The difference between the low offset and the high offset.
Thermistor (Temperature Sensor) …..	A resistor with which resistance changes as the temperature around it changes. For electronic control system purposes, the microprocessor deciphers this resistance as temperature.

BASIC WINE STORAGE ELECTRONIC CONTROL SYSTEM:

Input operations for the Wine Storage electronic control system are performed at the control panel, with monitoring, regulating and controlling functions taking place at the control board. Temperatures and possible problems with the unit are illuminated at the control panel with LED's. The diagrams on this page illustrate the wine storage electronic control system. (See Figure 3-1 for units prior to serial #1944319, see Figure 3-2 for units starting with serial #1944319.) The entire electronic control system is described in greater detail following in this page.

NOTE: *The refrigerator section of the model 427R uses a separate and unique electronic control system. See MODEL 427R REFRIGERATOR BASIC ELECTRONIC CONTROL SYSTEM.*

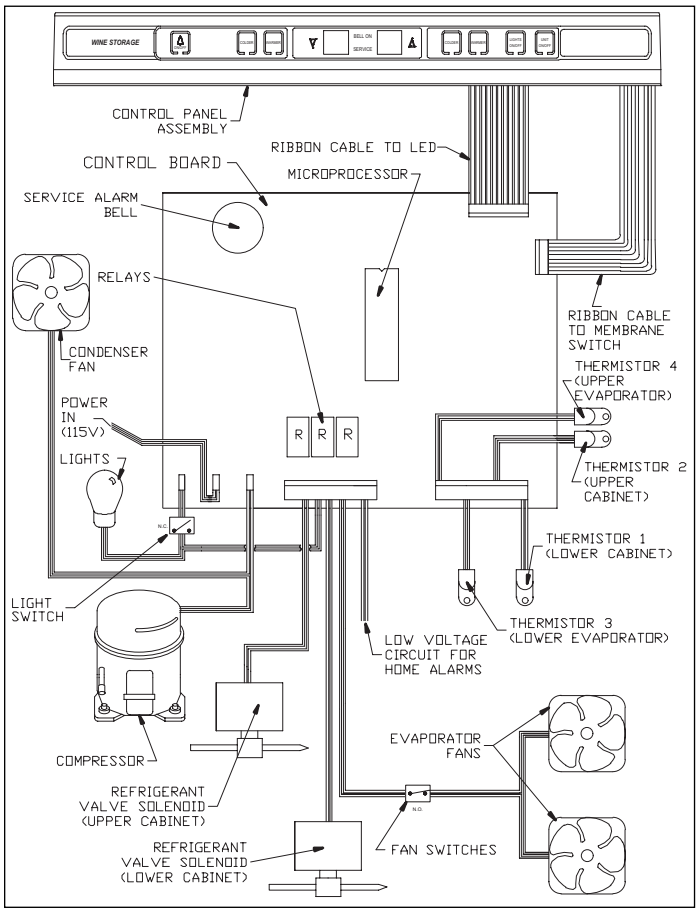


Figure 3-1. Basic Wine Storage Electronic Control System, Prior to Serial #1944319

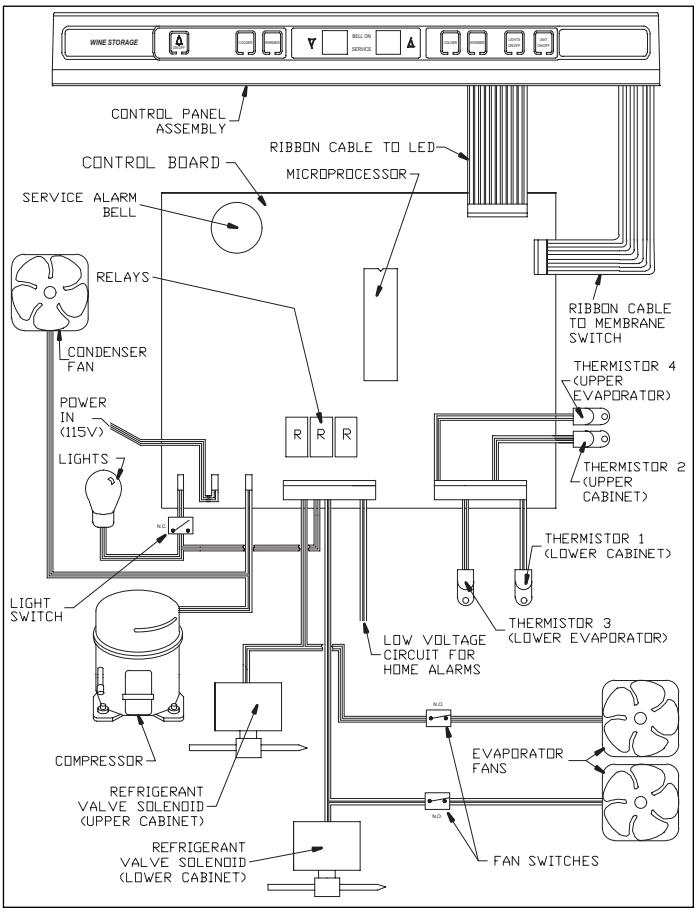


Figure 3-2. Basic Wine Storage Electronic Control System, Starting w/Serial #1944319

WINE STORAGE CONTROL BOARD LAYOUT AND SUMMARY TABLE:

The electrical connection points on the wine storage control board are labeled Alphanumerically. These labels correspond with the alphanumeric control board summary table, located on all 400 Series wiring diagram. By referencing the summary table, it is possible to identify which components are connected at which connection points on the control board. Below is a layout diagram of the control board, followed by a copy of a summary table. (See Figures 3-3 and 3-4)

NOTE: *All components on the control board are non-replaceable. If a problem with the control board is identified, the complete control board must be replaced.*

NOTE: *The refrigerator section of the model 427R uses a separate and unique electronic control system. See MODEL 427R REFRIGERATOR CONTROL BOARD LAYOUT / SUMMARY TABLE.*

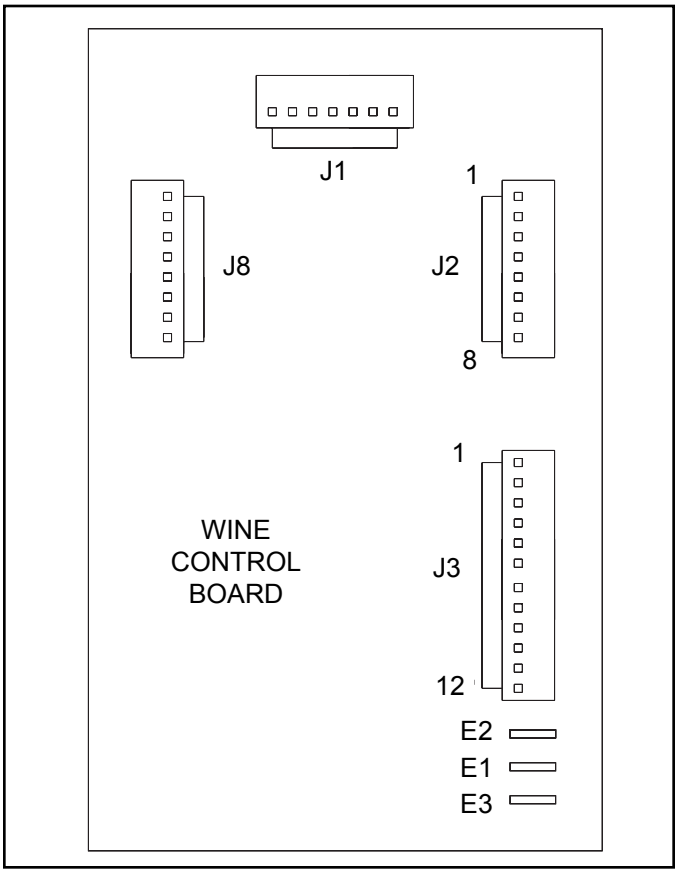


Figure 3-3. Wine Storage Control Board Layout

400 SERIES CONTROL BOARD SUMMARY/ LAYOUT

CIRCUIT	DESCRIPTION	FUNCTION	COLOR
	120 VOLT CIRCUITS		
E1	POWER IN	POWER INTO BOARD	BLACK
E2	COMPRESSOR	POWERS COMPRESSOR	GRAY
E3	LIGHTS	POWERS LIGHTS	BROWN
J3			
P12	GROUND	EARTH GROUND	GREEN
P11	EMPTY		
P10	NEUTRAL	NEUTRAL INTO BOARD	WHITE
P9	EMPTY		
P8	UPPER SOLENOID VALVE	COOLS UPPER COMPARTMENT	PINK
P7	LIGHTS OVERRIDE	ON WHEN LIGHTS ON 100%	ORANGE
P6	LOWER SOLENOID VALVE	COOLS LOWER COMPARTMENT	BLUE
P5	EVAPORATOR FANS	POWERS EVAPORATOR FANS	YELLOW
P4	EMPTY		

CIRCUIT	DESCRIPTION	FUNCTION	COLOR
	LOW VOLTAGE CIRCUITS		
J3	ALARM CIRCUIT		
P1	ALARM CIRCUIT-COMMON	FOR HOME ALARMS	WHT/RED
P2	ALARM CIRCUIT-NORMALLY CLOSED	FOR HOME ALARMS	WHT/BLUE
P3	ALARM CIRCUIT-NORMALLY OPEN	FOR HOME ALARMS	GRAY/WHT
J2	THERMISTER CIRCUITS		
P1	LOWER CABINET	SENSES TEMPERATURE	BLUE/WHITE
P2	LOWER CABINET	SENSES TEMPERATURE	BLUE/WHITE
P3	UPPER CABINET	SENSES TEMPERATURE	BLUE/BLACK
P4	UPPER CABINET	SENSES TEMPERATURE	BLUE/BLACK
P5	LOWER EVAPORATOR	SENSES TEMPERATURE	BLUE/RED
P6	UPPER EVAPORATOR	SENSES TEMPERATURE	ORANGE/RED
P7	LOWER EVAPORATOR	SENSES TEMPERATURE	BLUE/YELLOW
P8	UPPER EVAPORATOR	SENSES TEMPERATURE	ORANGE/YELL

Figure 3-4. Wine Storage Control Board Summary Table

WINE STORAGE CONTROL PANEL LAYOUT:

NOTE: *The refrigerator section of the model 427R uses a separate and unique electronic control system, which includes the control panel See MODEL 427R REFRIGERATOR CONTROL PANEL LAYOUT.*

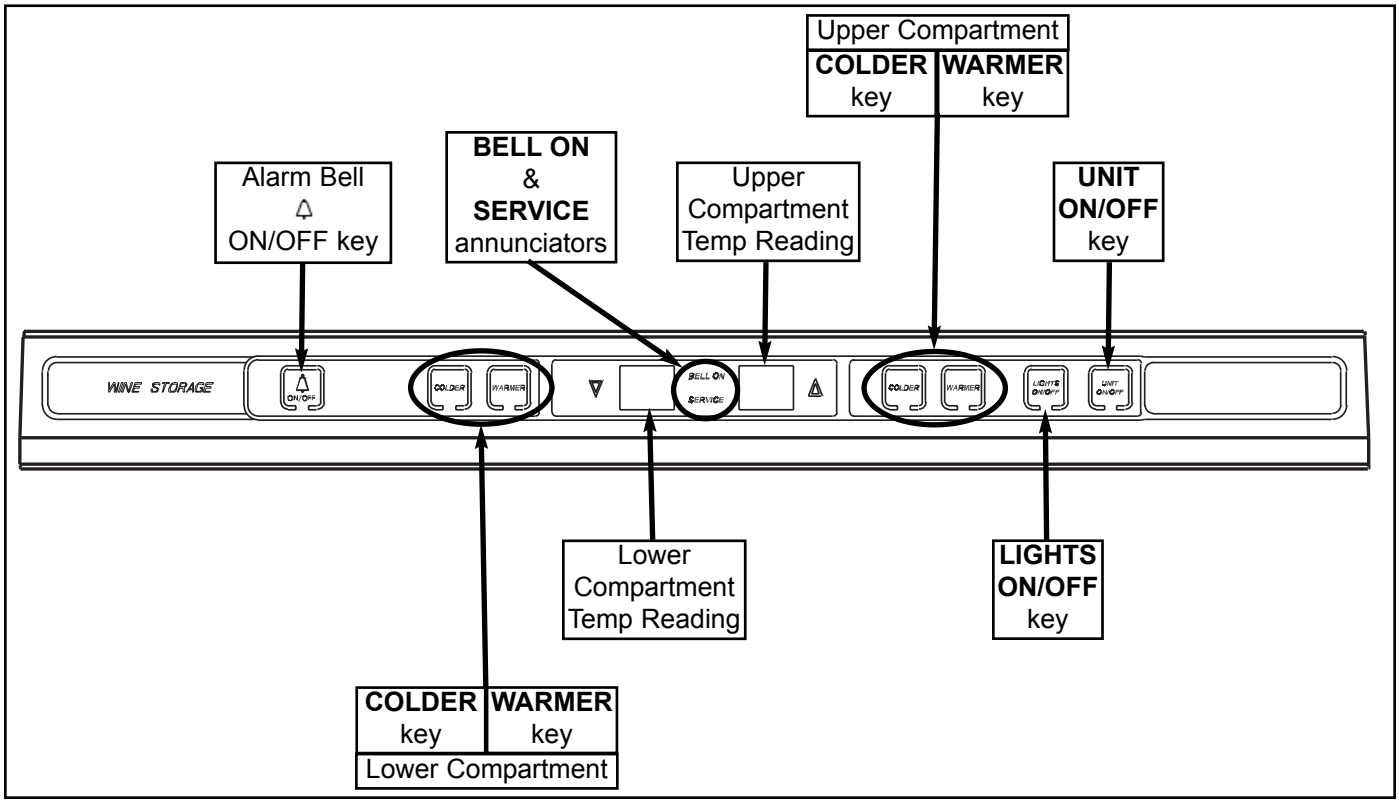


Figure 3-5. Wine Storage Control Panel Layout

BASIC WINE STORAGE ELECTRONIC CONTROL INPUT OPERATIONS:

This section illustrates the basic input operations performed at the wine storage control panel. Switching the unit ON and OFF, adjusting the set-point (temperature adjustments), switching the lighting system ON and OFF, and enabling and disabling the alarm BELL will be explained.

NOTE: *The refrigerator section of the model 427R uses a separate and unique electronic control system. See 427R REFRIGERATOR BASIC ELECTRONIC CONTROL INPUT OPERATIONS.*

Unit ON/OFF

All 400 Series units are shipped in the Off Mode. By pressing and releasing the UNIT ON/OFF key, (See Figure 3-6) power is allowed past the control board to the rest of the unit. This will be indicated by the unit lights and LED's in the display energizing.

⚠ WARNING

WHEN IN OFF MODE, 115 VOLTS AC IS STILL PRESENT AT CONTROL BOARD.

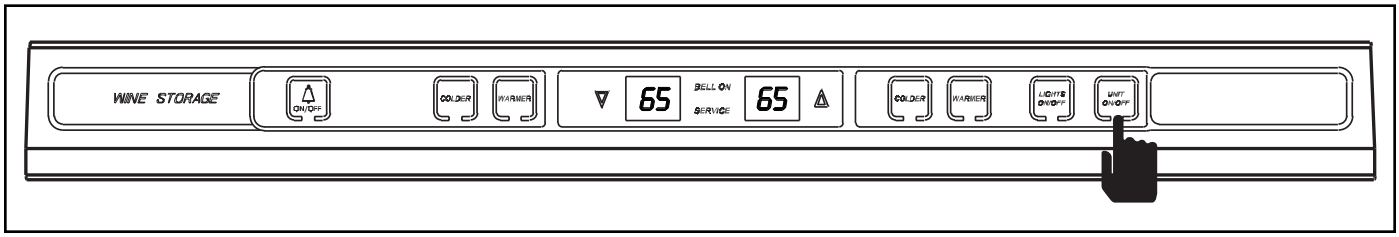


Figure 3-6. Unit ON/OFF, Press UNIT ON/OFF Key

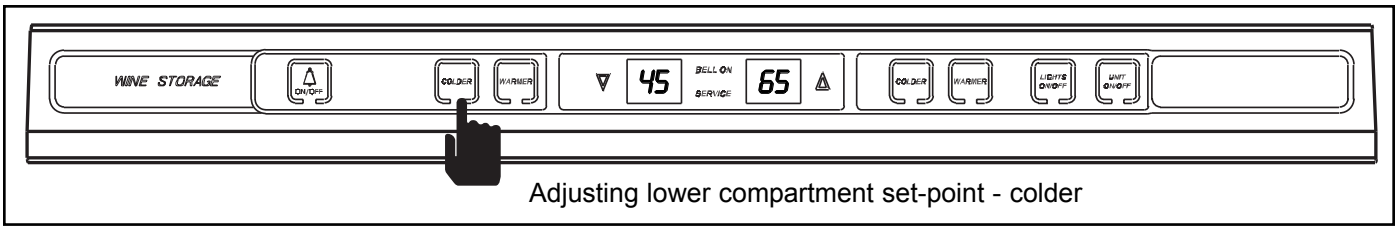
Adjusting Wine Storage Set-Points (Temperature Adjustments)

To adjust set-points, press the WARMER or COLDER keys for the appropriate compartment in multiple key strokes until the desired temperature is achieved. (See Figure 3-7)

***NOTE**: To check what the set point is, press either the WARMER or COLDER key, keeping in mind that the initial key stroke will change the previous set-point by a one degree increment or decrement depending on your key stroke choice.*

***NOTE:** The set-point will be displayed for 10 seconds after the last WARMER or COLDER key stroke. After the 10 second delay, the compartment temperature will be displayed. As the compartment temperature changes, the temperature displayed will change by no more than 1° per minute.*

***NOTE:** The temperature range in a wine storage compartment is 38°F / 3°C to 65°F / 18°C. The temperature range in the refrigerator drawer section of a 427R is 34°F / 1°C to 45°F / 7°C.*



Adjusting lower compartment set-point - colder

Figure 3-7. Adjusting Set-Point, Press COLDER or WARMER Keys

Wine Storage Lighting System ON/OFF

For the purpose of displaying a wine supply in a 400 Series unit, it is possible to energize the lights to stay ON 100% of the time, even if the door is closed. To do this, press and release the LIGHTS ON/OFF key. (See Figure 3-8) To disable this feature so that the lights are energized only when the door is open, simply press and release the LIGHTS ON/OFF key again.

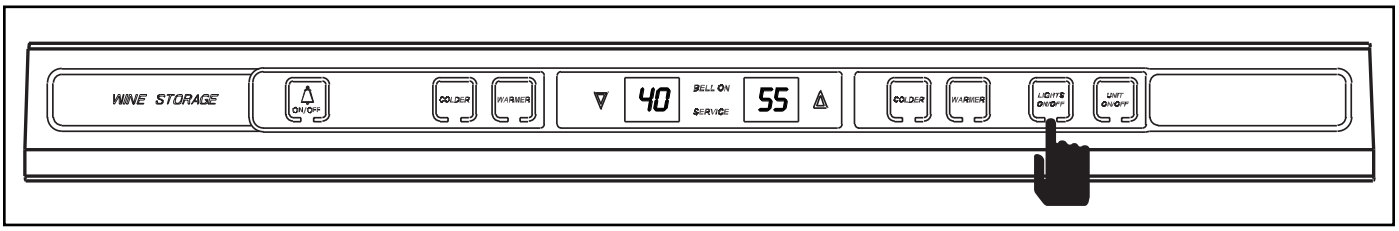


Figure 3-8. Light System ON/OFF, Press LIGHTS ON/OFF Key

Wine Storage Alarm "BELL" ON/OFF (Temperature alarm)

The 400 series has an audio/visual temperature alarm that can be enabled to warn the customer if the unit is experiencing excessive warm or excessive cold temperatures. To enable the alarm, press and release the key with the bell on it. (See Figure 3-9) If the alarm is enabled, the BELL ON annunciator will illuminate. To disable the alarm, simply press and release the key with the bell on it again, and the BELL ON annunciator will de-energize.

***NOTE:** If the alarm bell is enabled and there is a temperature problem, the BELL ON annunciator will flash and the audible alarm will beep.* The alarm feature can also be tied in with a home security alarm system. This will be explained later in this manual.

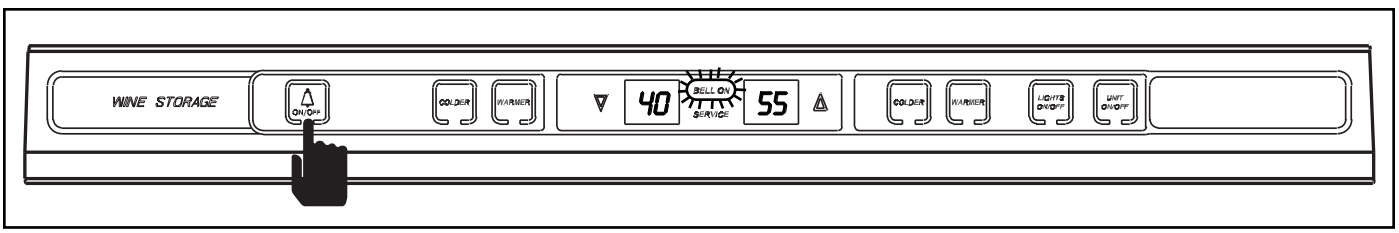


Figure 3-9. Alarm Bell ON/OFF, Press (Alarm Bell) ON/OFF Key

FUNCTION OF THE WINE STORAGE ELECTRONIC CONTROL SYSTEM:

This section explains the monitoring, regulating and controlling functions of the wine storage electronic control system. The electronic control system in the refrigerator section of the model 427R will be explained later in this manual.

NOTE: *All electronic control functions described in this section are normal operation only. For possible malfunctions, see WINE STORAGE TEMPERATURE ALARM FEATURE AND POSSIBLE ERROR INDICATORS : section, the WINE STORAGE DIAGNOSTIC MODE and the TROUBLESHOOTING GUIDE.*

NOTE: *The refrigerator section of the model 427R uses a separate and unique electronic control system. See FUNCTIONS OF THE 427R REFRIGERATOR ELECTRONIC CONTROL SYSTEM.*

⚠ WARNING

TO AVOID ELECTRIC SHOCK, POWER TO THE UNIT MUST BE DISCONNECTED WHENEVER ACCESSING AND/OR REMOVING COMPONENTS POWERED BY ELECTRICITY OR COMPONENTS NEAR OTHER ELECTRICAL COMPONENTS.

EVEN WHEN UNIT IS SWITCHED OFF, 115 VOLTS AC IS STILL PRESENT AT THE CONTROL BOARD.

Sense and Display Average Compartment Temperatures

The temperature signal from the thermistor in each compartment is monitored by the microprocessor, and displayed on the LED's in the control panel assembly. Though the compartment air temperature may fluctuate slightly, the LED's in the control panel will display the average temperature. (See Figure 3-10)

NOTE: *The temperature range in a wine storage compartment is 38°F / 3°C to 65°F / 18°C. The temperature range in the refrigerator drawer section of a 427R is 34°F / 1°C to 45°F / 7°C.*

NOTE: *If a compartment temperature should ever exceed either the high offset or low offset (for example: when a door is left open), the temperature displayed at the control panel will change by 1° per minute.*

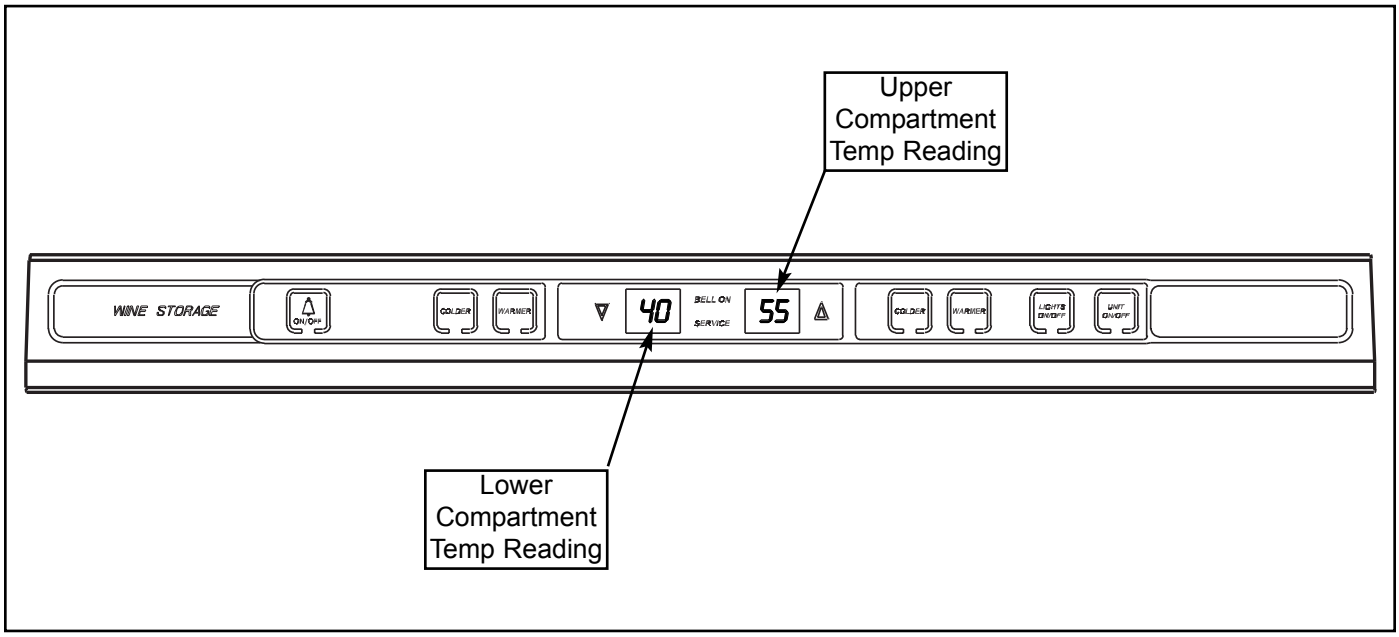


Figure 3-10. Temperature Display (Shown in degrees Fahrenheit)

Supply Power to the Lighting System

A continuous 115 Volts AC is supplied to the lighting system, so it is possible to energize the lights to stay "ON" 100% of the time, even if the door is closed. (See Wine Storage Lighting System ON/OFF). The lighting system can also be disabled for the observance of certain religious days. (See Sabbath Mode) The illustration below shows normal operation, with 115 Volts AC supplied to the lighting system. (See Figure 3-11)

⚠ WARNING

ELECTRIC SHOCK HAZARD. 115 VOLTS IS STILL PRESENT AT THE CONTROL BOARD AND LIGHT SWITCH WHEN LIGHTS ARE DISABLED.

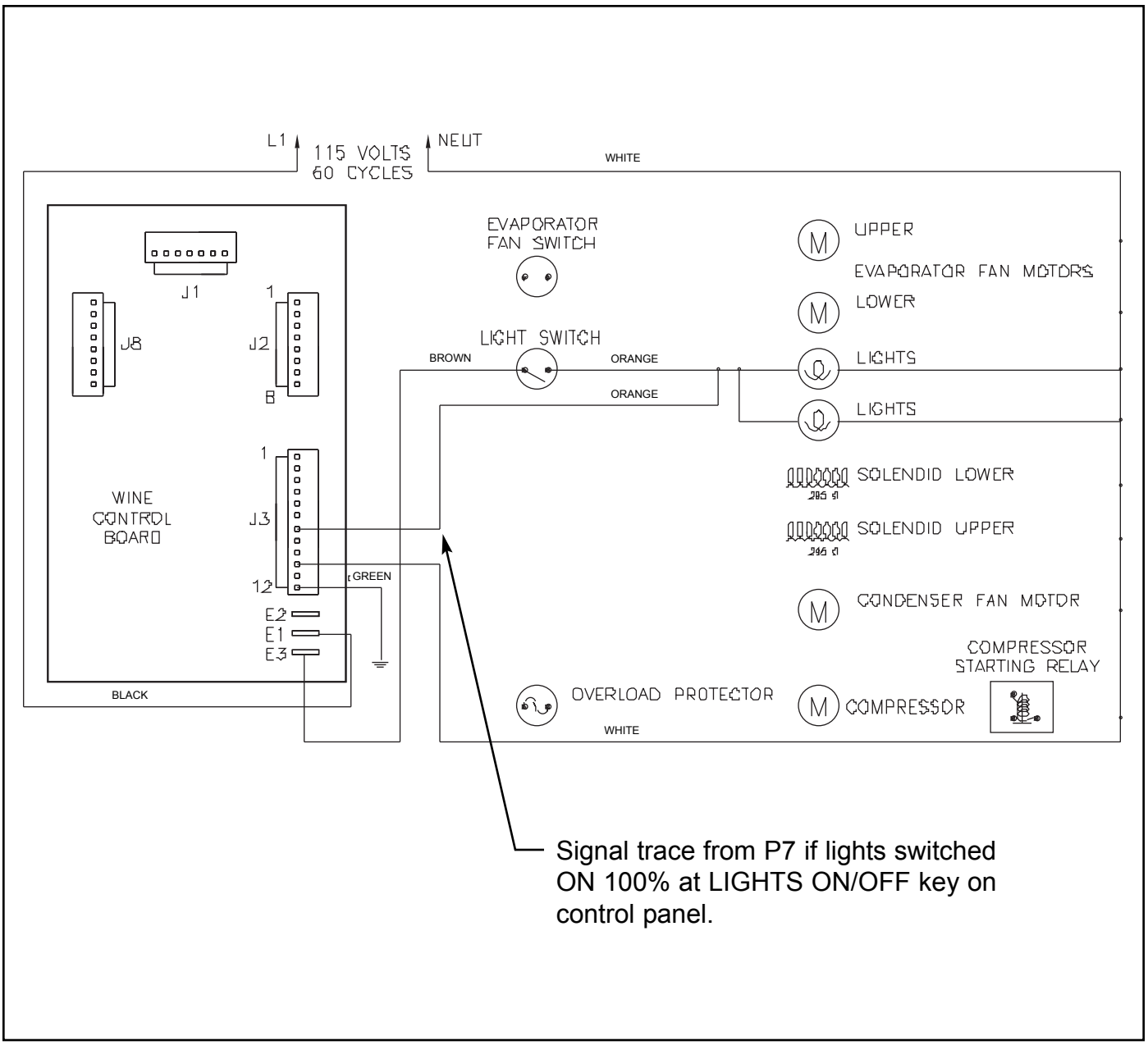


Figure 3-11. Lighting System Signal Trace

Supply Power to the Evaporator Fans

Prior to serial #1944319, a continuous 115 Volts AC is supplied to the evaporator fan switch, so the evaporator fans run 100% unless the door is open, or the unit is in Showroom Mode. (See Figure 3-12)

Starting with serial #1944319, a second fan switch was added to 400 series units. Both fan switches are in parallel circuits with the corresponding refrigerant valve solenoid. When a solenoid is energized, the corresponding evaporator fan switch is energized, cycling the fans on and off with the solenoids. The evaporator fans will also be switched off when the door is open, or the unit is in Showroom Mode. (See Figure 3-13)

NOTE: *Prior to serial #1517005, the evaporator fans will run 100%, even while unit is in Showroom Mode.*

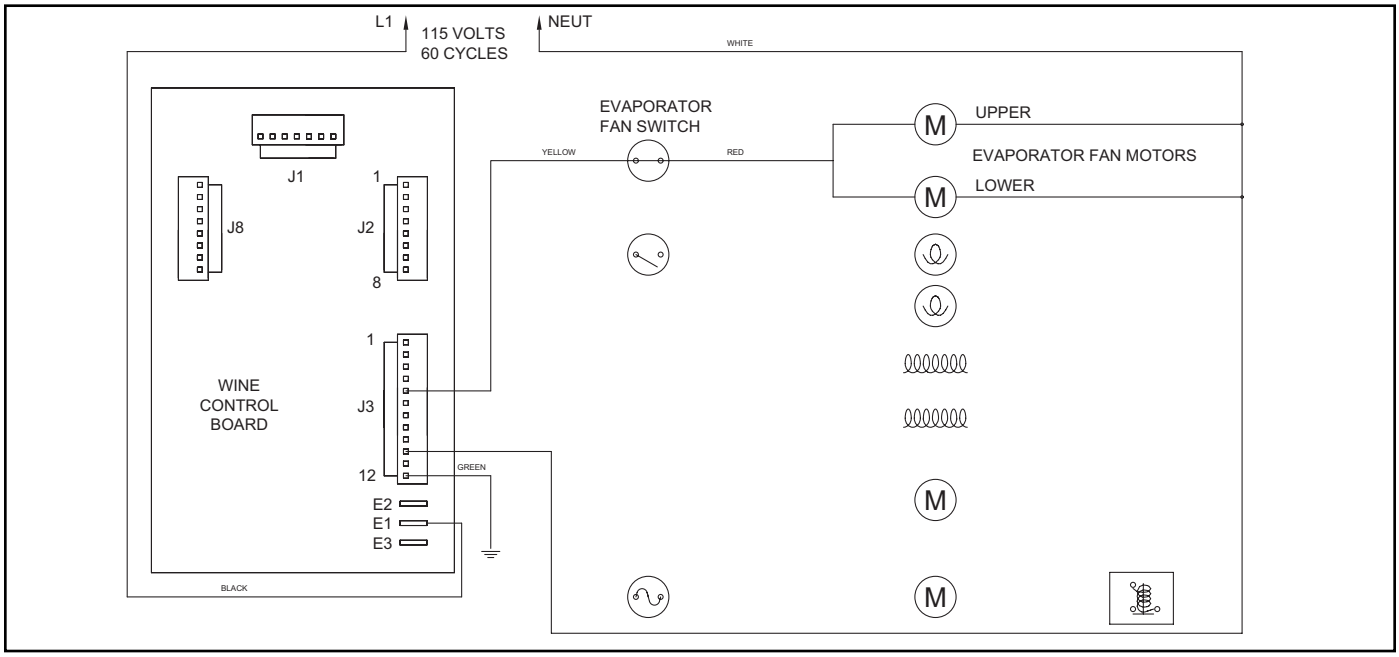


Figure 3-12. Evaporator Fan Power Signal Trace, Prior to Serial #1944319

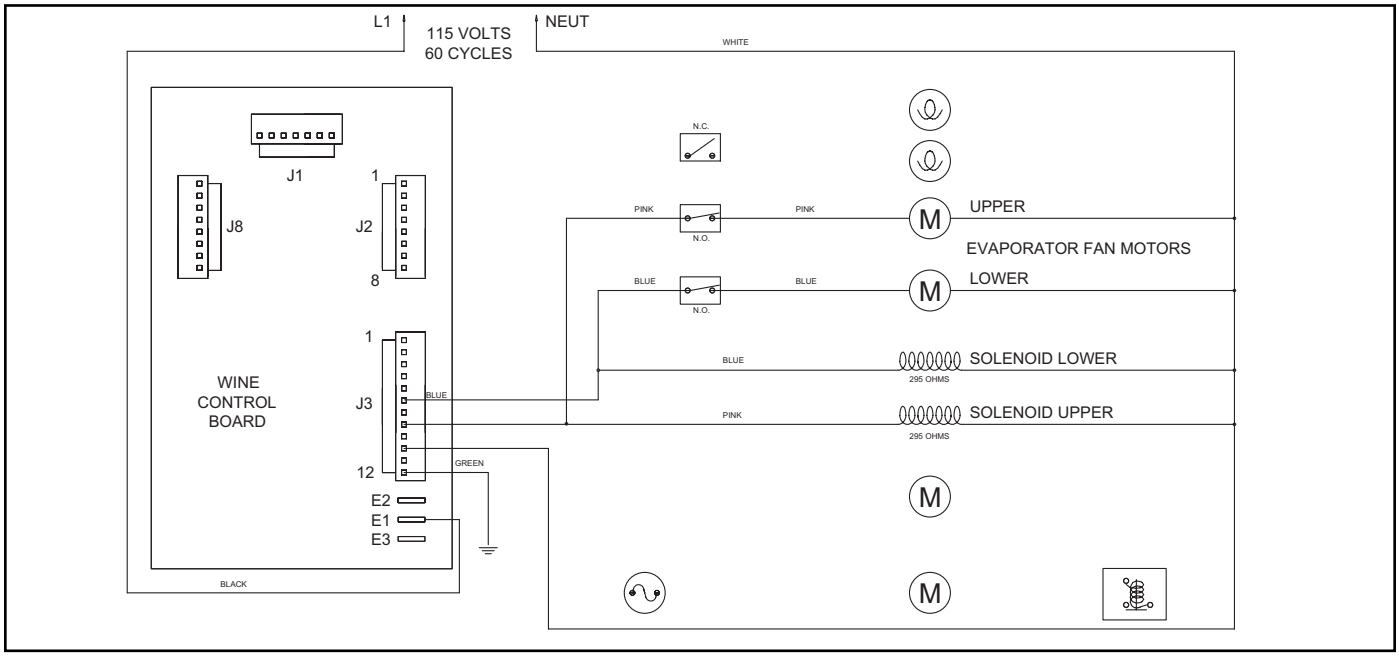


Figure 3-13. Evaporator Fan Power Signal Trace, Starting with Serial #1944319

Senses Evaporator and Compartment Temperatures to Regulate Refrigerant Valve Activity and Control Compressor and Condenser Fan Cycling (Prior to Serial #1944319)

The wine storage electronic control senses evaporator and compartment temperatures via thermistors, one on each evaporator and one in each compartment. The "cut-in" is governed by the temperature of the evaporators and the "cut-out" is governed by the temperature in each compartment. The cut-in temperature and cut-out temperature are based on the compartment set-point. If a compartment calls for cooling (evaporator at cut-in temperature), the corresponding refrigerant solenoid valve is energized/opened, allowing refrigerant to flow to the evaporator, but the electronic control will allow power to only one valve solenoid at a time. When one refrigerant solenoid valve is energized/open, the other is de-energized/closed. If neither compartment is calling for cooling, the compressor and condenser fan are switched off. The illustration below shows normal operation with the upper compartment calling for cooling. (See Figure 3-14)

NOTE: *Prior to serial #1944319, the condenser fan in the model 427R runs 100%. (Not shown in this illustration.)*

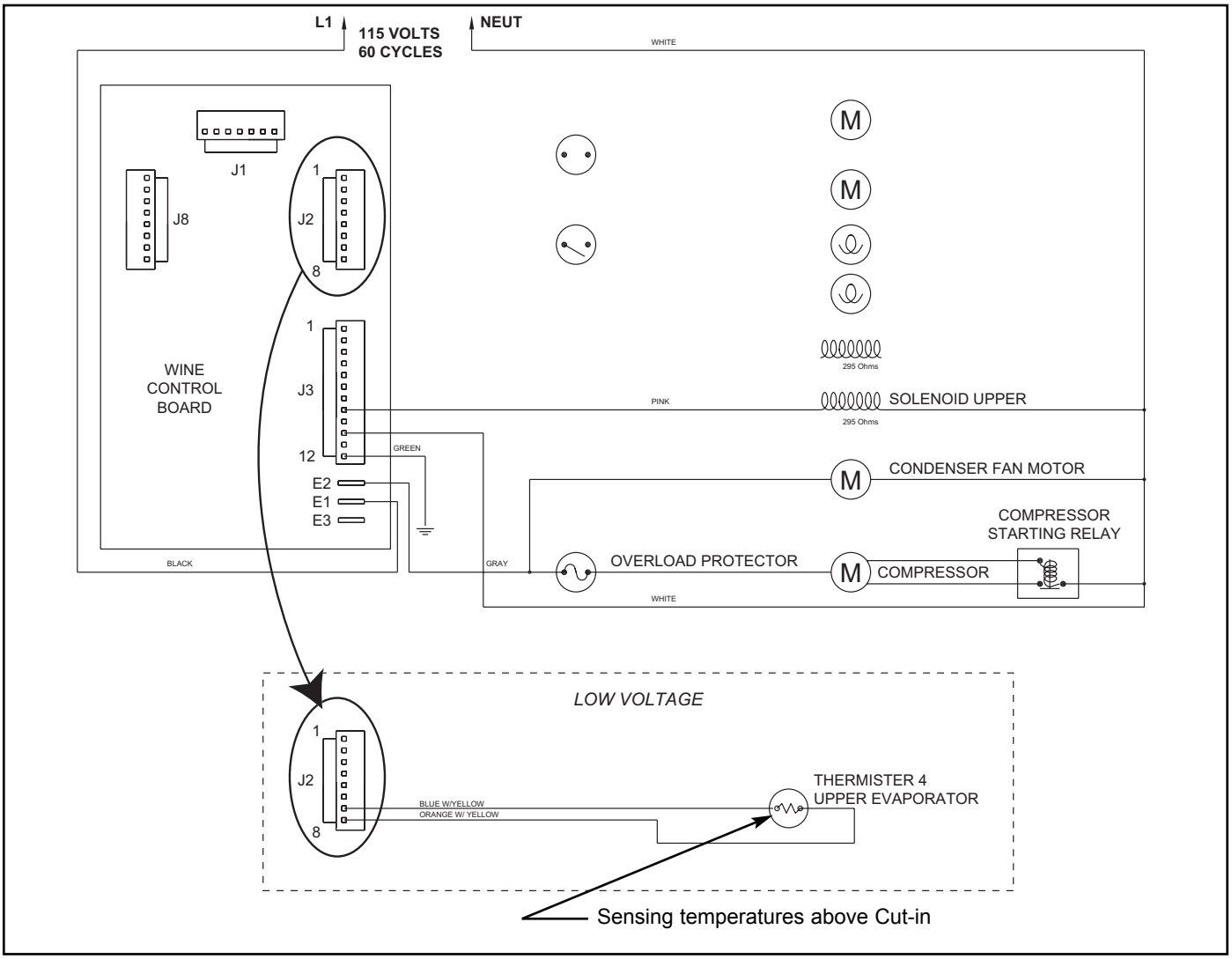


Figure 3-14. Compressor, Condenser Fan & Refrigerant Valve Solenoid Signal Trace, Upper Wine Storage Compartment Calling for Cooling (Prior to Serial #1944319)

Senses Evaporator and Compartment Temperatures to Regulate Refrigerant Valve and Evaporator Fan Motor Activity and Control Compressor and Condenser Fan Cycling (Starting with Serial #1944319)

The wine storage electronic control senses evaporator and compartment temperatures via thermistors, one on each evaporator and one in each compartment. The "cut-in" is governed by the temperature of the evaporators and the "cut-out" is governed by the temperature in each compartment. The cut-in temperature and cut-out temperature are based on the compartment set-point. If a compartment calls for cooling (evaporator at cut-in temperature), the corresponding refrigerant solenoid valve is energized/opened, allowing refrigerant to flow to the evaporator, but the electronic control will allow power to only one valve solenoid at a time. When one refrigerant solenoid valve is energized/open, the other is de-energized/closed.

Starting with serial #1944319, a second fan switch was added to 400 series units. Both fan switches are in parallel circuits with the corresponding refrigerant valve solenoid. When a solenoid is energized, the corresponding evaporator fan switch is energized, cycling the fans on and off with the solenoids.

If neither compartment is calling for cooling, the compressor and condenser fan are switched off. The illustration below shows normal operation with the upper compartment calling for cooling. (See Figure 3-15)

NOTE: *Starting with serial #1944319, a condenser fan relay was added to the model 427R, so that the the condenser fan will only run when one or both of the compressors are energized. (Not shown in this illustration.)*

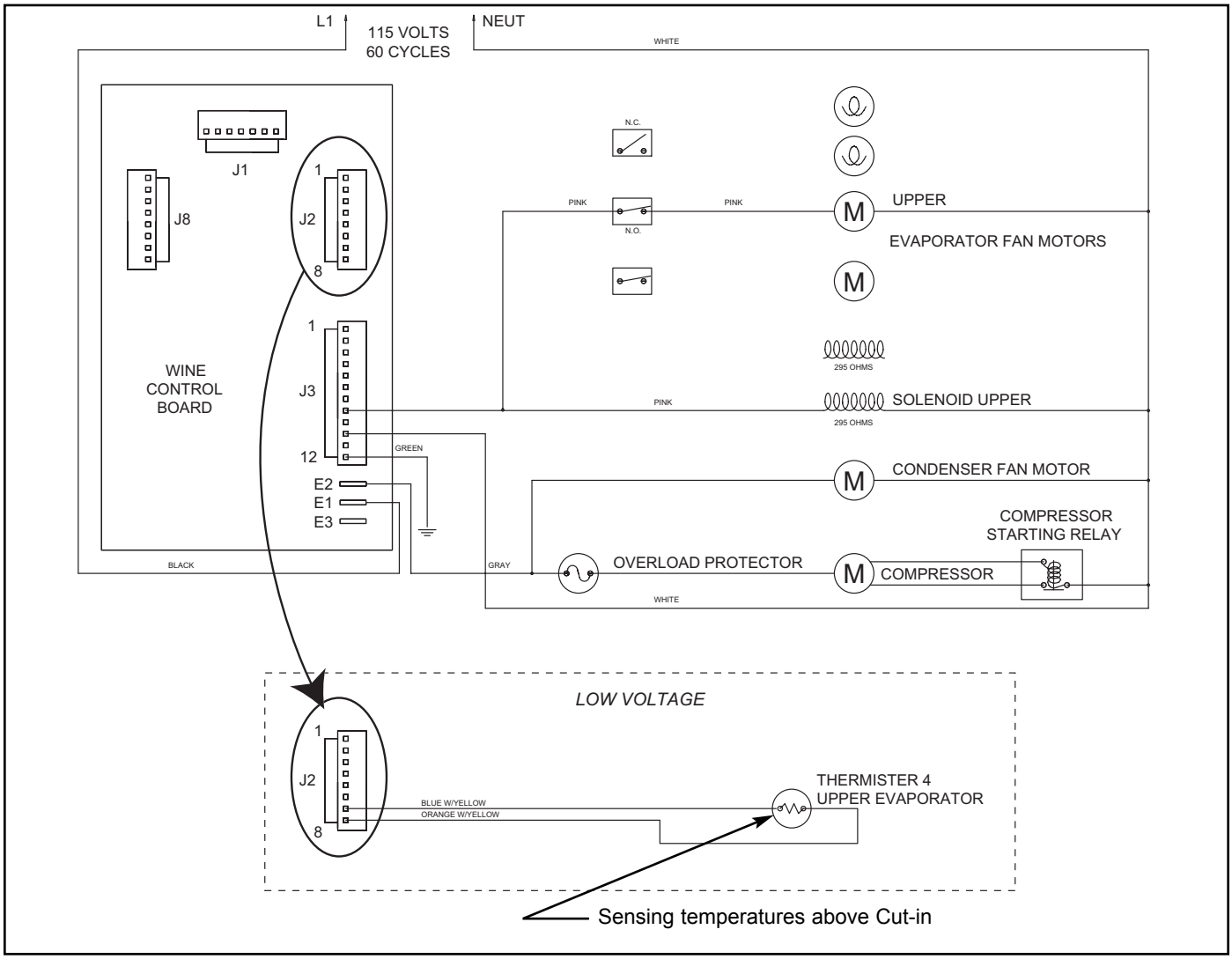


Figure 3-15. Compressor, Condenser Fan, Refrigerant Valve Solenoid & Evaporator Fan Motor Signal Trace, Upper Wine Storage Compartment Calling for Cooling (Starting with Serial #1944319)

Monitor and Control Wine Storage Off-cycle Defrost

The temperature signals from the compartment thermistor and evaporator thermistor are monitored by the electronic control. Since the evaporator thermistor governs the cut-in, the evaporator will fully defrost, rising above cut-in temperature, before calling for cooling. (See Figure 3-16)

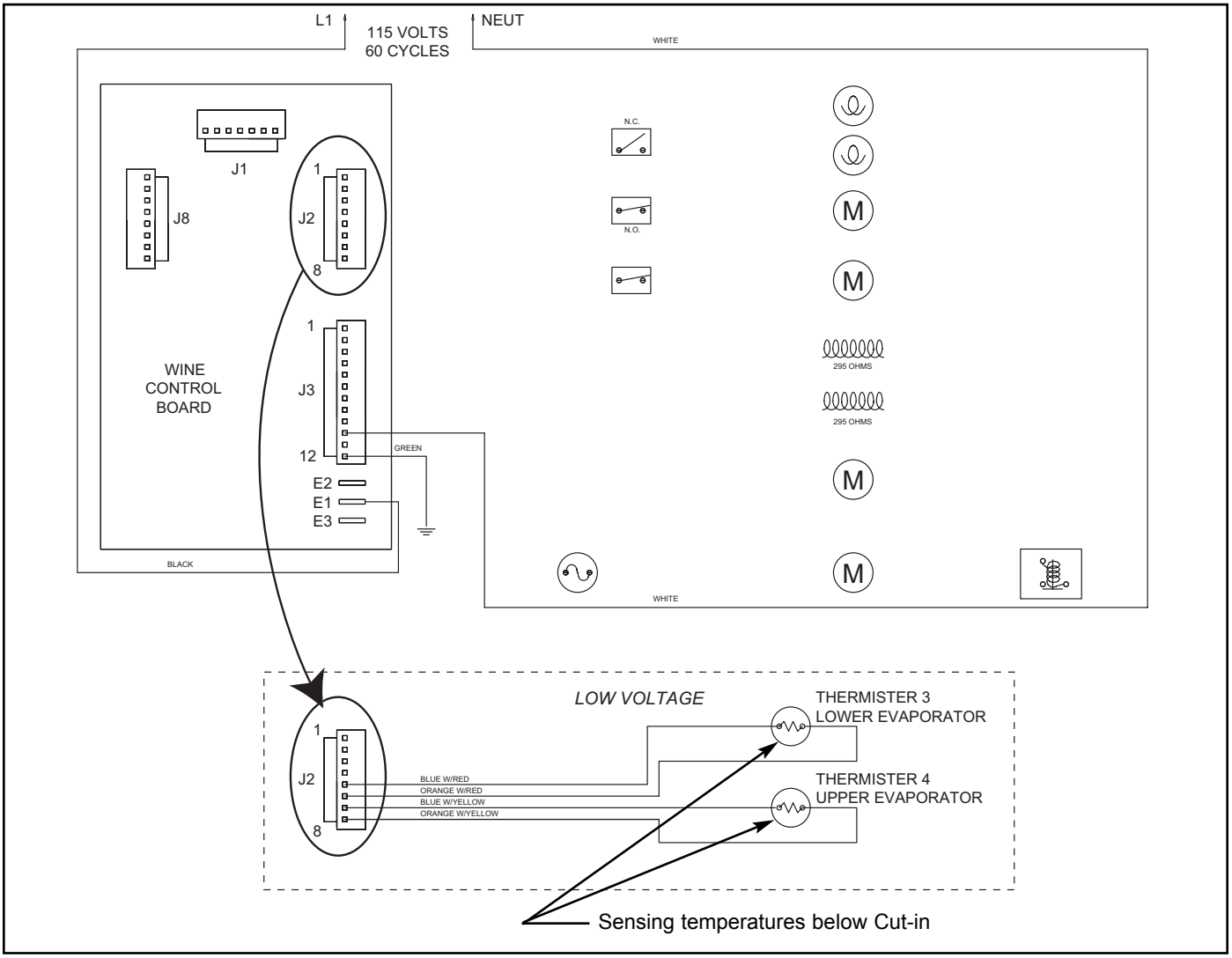


Figure 3-16. Temperature Sensed at Evaporators is Below Cut-in, No Cooling is Called For - Evaporators Defrost

UNIQUE WINE STORAGE ELECTRONIC CONTROL INPUT OPERATIONS:

This section illustrates unique wine storage electronic control input operations performed at the control panel, that you would not expect a customer to perform every day. This section explains the Temperature Units Selection Mode, Sabbath Mode and Showroom Mode.

NOTE: *The refrigerator section of the model 427R uses a separate and unique electronic control system. See 427R REFRIGERATOR SECTION, UNIQUE ELECTRONIC CONTROL INPUT OPERATIONS.*

Temperature Units Selection Mode (Selecting °Fahrenheit or °Celsius Display)

The wine storage electronic control is initially set to display temperature in Fahrenheit (°F) units of measure. But, the temperature units displayed can be converted from °F to °C (Celsius), and/or back again. This operation is called Temperature Units Selection.

NOTE: *Temperature Units Selection must be performed within the first minute after switching the wine storage appliance ON.*

To convert the temperature units of measure from a Fahrenheit (°F) reading to a Celsius (°C) reading, press and hold the alarm bell key and the UNIT ON/OFF key simultaneously for five seconds. (See Figure 3-17) You are now in Temperature Units Selection Mode. A temperature is now shown in the left display window, and the right display window indicates the units of measure as °F or °C. In this case, a temperature will be displayed in Celsius (°C) units of measure. (See Figure 3-18)

NOTE: *Do not press and hold the UNIT ON/OFF key first, as this will simply switch the unit OFF.*

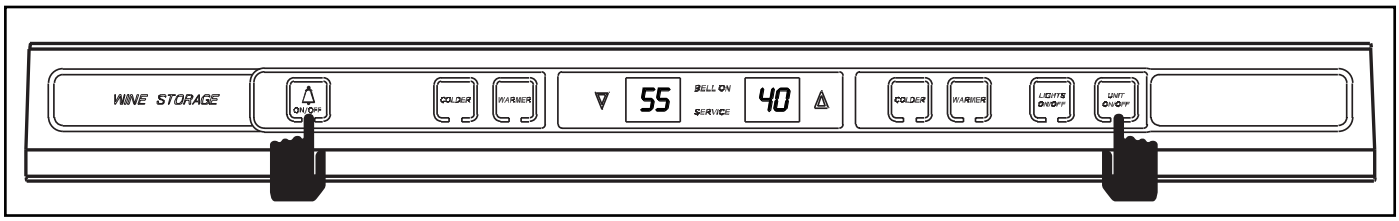


Figure 3-17. Initiating Temperature Units Selection Mode, Press and Hold Bell ON/OFF Key and Unit ON/OFF Key Simultaneously for Five Seconds

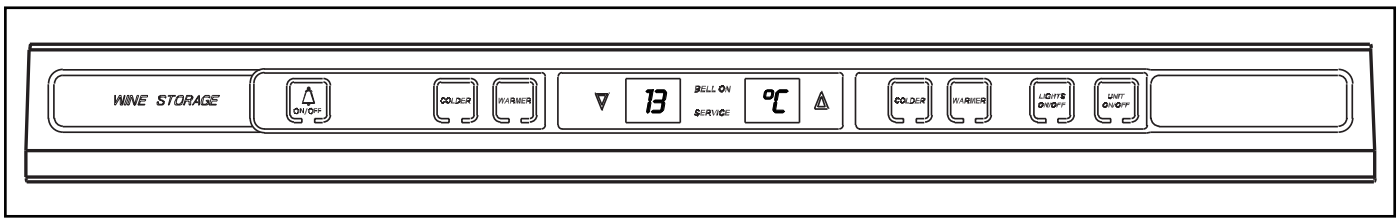


Figure 3-18. Temperature Units Selection Mode Initiated, Celsius (C°) Displayed

To convert back to °F from °C, repeat the steps of pressing and holding the alarm bell ON/OFF key and the UNIT ON/OFF key simultaneously, keeping in mind that you can toggle between °F and °C for one minute. (See Figure 3-19)

NOTE: *The control will exit Temperature Units Selection Mode ten seconds after the last key stroke. To reinitiate Temperature Units Selection Mode, press the UNIT ON/OFF key to switch the unit OFF, then press it again to switch the unit back ON. Now, within one minute follow the steps above.*

NOTE: *Temperature Units Selection Mode must be initiated separately in the refrigerator section of model 427R.*

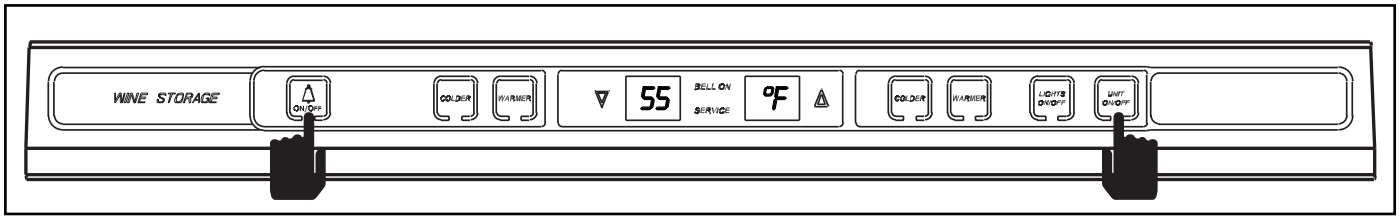


Figure 3-19. Toggle back to Fahrenheit (°F) Units of Measure, Press Bell ON/OFF Key and Unit ON/OFF Key Simultaneously

Sabbath Mode

A Sabbath Mode was incorporated into the wine storage electronic control system for the observance of certain religious days. Initiating Sabbath Mode disables the lighting circuit so that the lights will not function when the door is open or closed. Also while in Sabbath Mode, the LIGHTS ON/OFF key is disabled.

To initiate Sabbath Mode, the unit must be switched OFF. (See Figure 3-20) With the unit switched OFF, press and hold the UNIT ON/OFF key for ten seconds. (See Figure 3-21)

To return to normal lighting operation, press and release the UNIT ON/OFF key. (See Figure 3-22)

NOTE: *Sabbath Mode must be initiated separately in the refrigerator section of model 427R.*

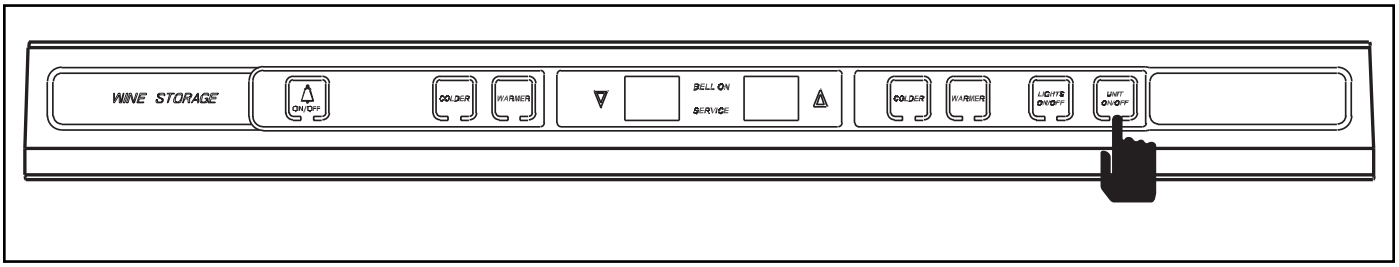


Figure 3-20. Switch Unit OFF First

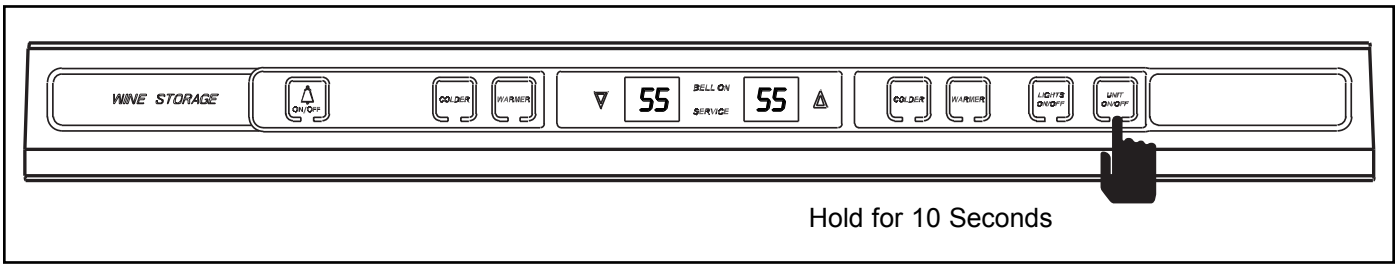


Figure 3-21. Initiate Sabbath Mode, Press and Hold UNIT ON/OFF Key for Ten Seconds

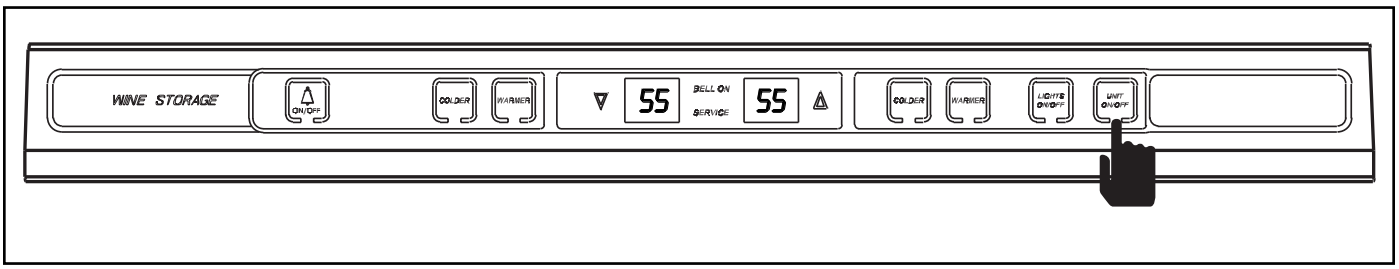


Figure 3-22. Exit Sabbath Mode, Press and Release UNIT ON/OFF Key

Showroom Mode

Showroom Mode was incorporated into the electronic control of the wine storage units to allow product distributors and dealers to display a 400 Series unit without actually having it cooling. To initiate Showroom Mode, the unit must be switched OFF. (See Figure 3-23) With the unit switched off, press and hold the upper compartment COLDER and WARMER keys and press the UNIT ON/OFF key, then release all three keys. (See Figure 3-24) The unit is now in Showroom Mode. All cooling functions are disabled, but the lighting system remains energized. This allows the lights to be switched ON and OFF, either by the door light switch or the LIGHTS ON/OFF key on the control panel. This also allows the LED's for the temperature displays to illuminate, the BELL ON annunciator can be illuminated by pressing the bell key, the COLDER and WARMER keys will function to simulate adjusting the set-point, and the unit can seemingly be switched ON and OFF by pressing the UNIT ON/OFF key. (See Figure 3-25)

To exit Showroom Mode, press the UNIT ON/OFF key to switch all functions OFF. (See Figure 3-23) With all functions switched off, press and hold the upper compartment COLDER and WARMER keys and press the UNIT ON/OFF key, then release all three keys. (See Figure 3-24) All unit functions are now restored. This can be verified by checked for evaporator fan operation, and/or compressor operation.

NOTE: *The evaporator fan in units prior to serial #1517005, will run 100%, even while unit is in Showroom Mode.*

NOTE: *On the model 427R, the condenser fan will run 100% of the time after the unit is energized, including while in Showroom Mode.*

NOTE: *Showroom Mode must be initiated separately in the refrigerator section of model 427R.*

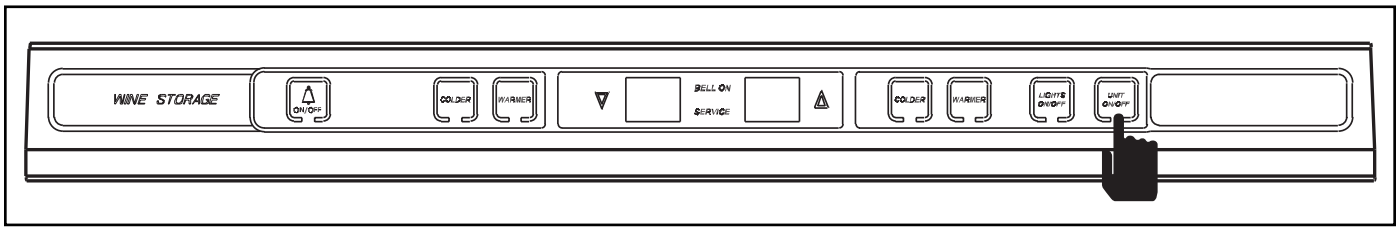


Figure 3-23. Switch Unit to OFF

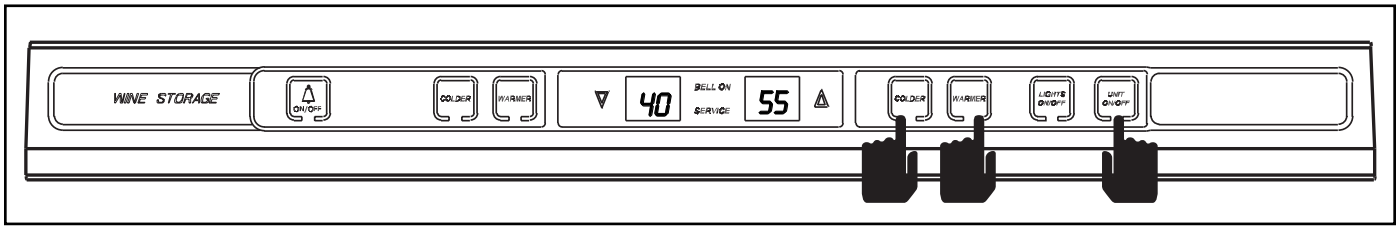


Figure 3-24. Initiate Showroom Mode, Press and Release Upper COLDER and WARMER Keys and UNIT ON/OFF Key (Same for Exiting Showroom Mode)

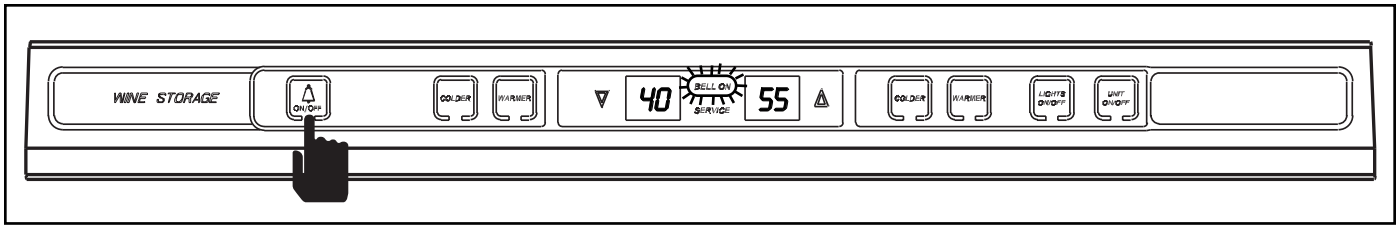


Figure 3-25. Illuminating BELL ON Annunciator while in Showroom Mode

WINE STORAGE TEMPERATURE ALARM FEATURE AND POSSIBLE ERROR INDICATORS:

All wine storage units are equipped with an audio-visual temperature alarm feature. Low voltage wiring provisions on all 400 Series units also makes it possible to tie the temperature alarm feature into a home security alarm system. This section explains the temperature alarm feature and the audio and/or visual error indicators that may alert a customer of a malfunction.

NOTE: *If the temperature alarm feature is tied into a home security system, the connections are made using the security system's logic. If problems occur between the wine storage unit and the security system, then a home security system technician should be contacted.*

NOTE: *The refrigerator section of the model 427R uses a separate and unique electronic control system. See 427R REFRIGERATOR SECTION, POSSIBLE ERROR INDICATORS.*

Warm Temperature Alarm

A warm temperature alarm occurs if either wine storage compartment temperature remains excessively warm for too long, causing several consecutive maximum run-time cycles. During a warm temperature alarm, you will notice warm temperature readings displayed at the control panel and the SERVICE annunciator will flash. (See Figure 3-26) A warm temperature alarm will also cut power to the compressor, condenser fan, both refrigerant valves, the lights and the evaporator fans via the relays on the control board. If the BELL ON feature has been enabled by pressing the bell key on the control panel, the BELL ON annunciator will also flash, and the audible alarm will beep. (See Figure 3-27)

NOTE: *To clear the warm temperature alarm, press the UNIT ON/OFF key to switch the unit Off, then press it again to switch the unit back ON. (See Figure 3-28)*

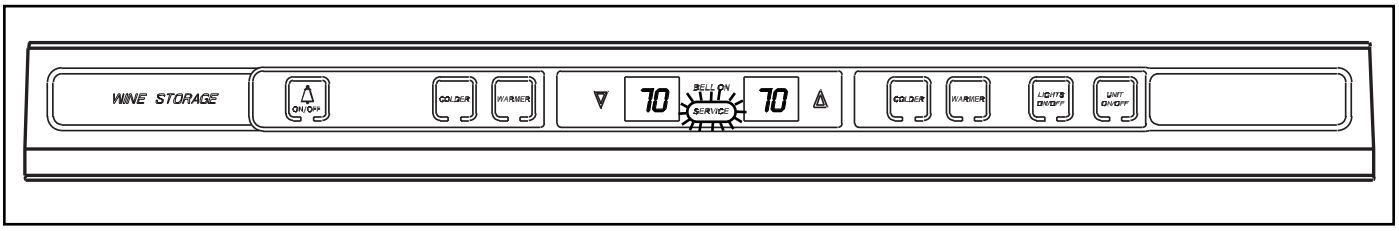


Figure 3-26. Warm Temperature Alarm, "SERVICE" Flashing

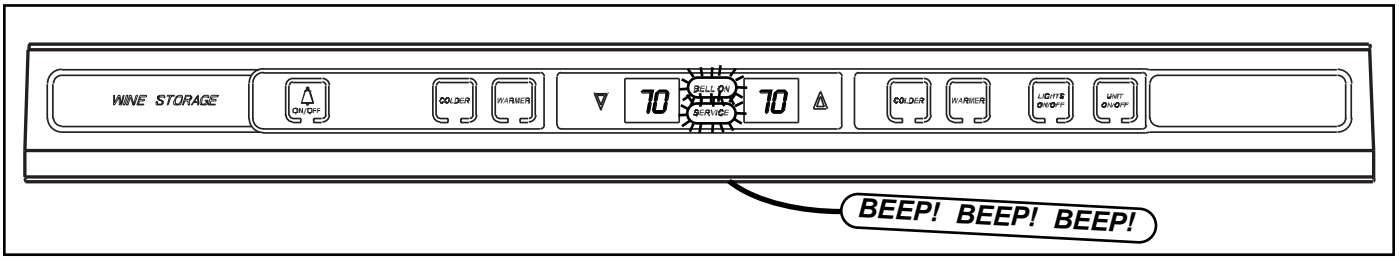


Figure 3-27. Warm Temperature Alarm with BELL ON Feature Enabled, "SERVICE" and "BELL ON" Flashing with Audible Alarm Beeping

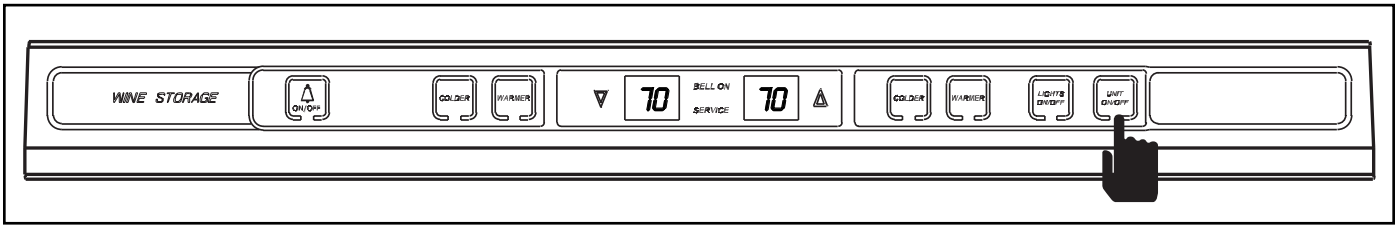


Figure 3-28. Clear Warm Temperature Alarm, Press UNIT ON/OFF Key to Off, Then ON.

Cold Temperature Alarm

A cold temperature alarm occurs if either wine storage compartment goes below 38°F / 3°C and remains below 38°F / 3°C for too long. During a cold temperature alarm, you may notice cold temperature readings displayed at the control panel (if recently initiated) and the SERVICE annunciator will flash. (See Figure 3-29) A cold temperature alarm will also cut power to the compressor, condenser fan, both refrigerant valves, the lights and the evaporator fans via the relays on the control board. If the BELL ON feature has been enabled by pressing the bell key on the control panel, the BELL ON annunciator will also flash, and the audible alarm will beep. (See Figure 3-30)

NOTE: *To clear the cold temperature alarm, press the UNIT ON/OFF key to switch the unit Off, then press it again to switch the unit back ON. (See Figure 3-31)*

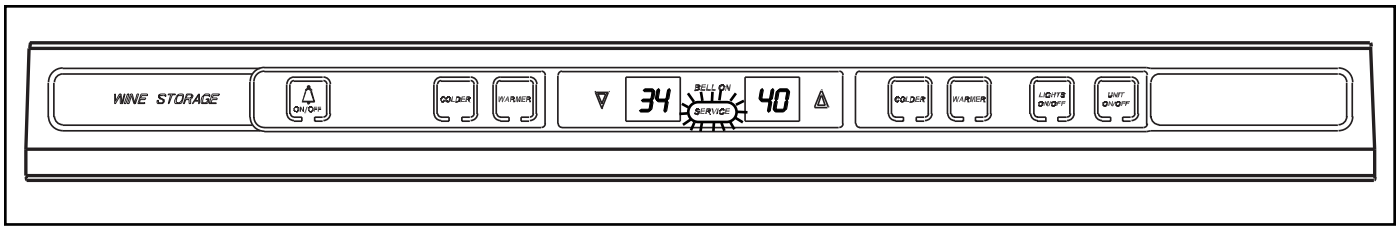


Figure 3-29. Cold Temperature Alarm, "SERVICE" Flashing

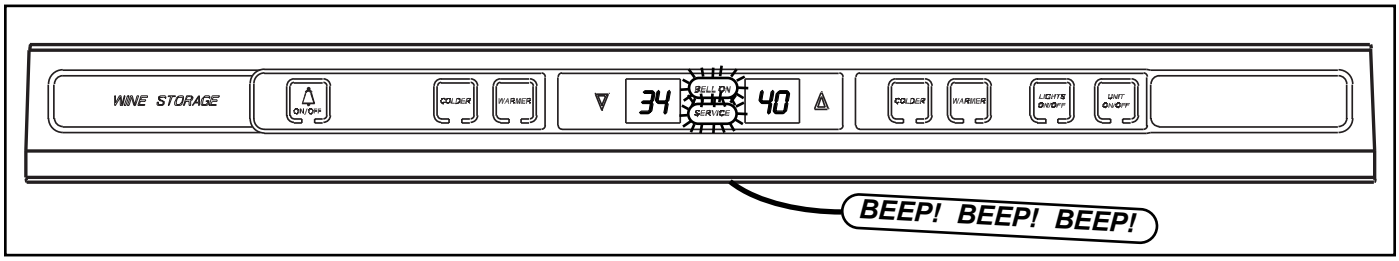


Figure 3-30. Cold Temperature Alarm with BELL ON Feature Enabled, "SERVICE" and "BELL ON" Flashing with Audible Alarm Beeping

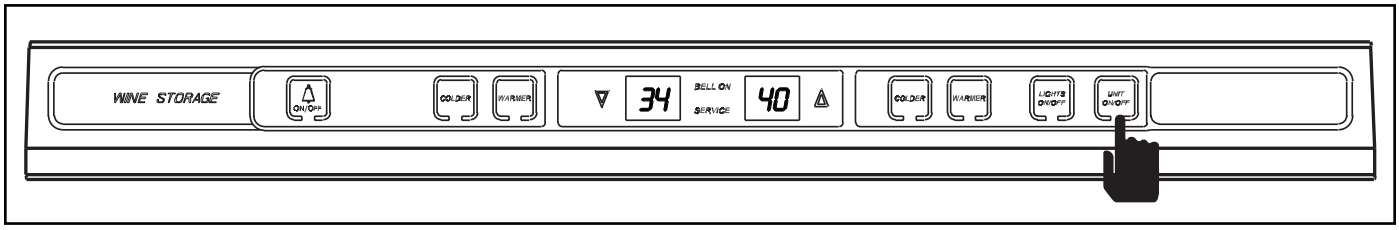


Figure 3-31. Clear Cold Temperature Alarm, Press UNIT ON/OFF Key to Off, Then ON.

Thermistor Malfunction Error Indicators

A wine storage thermistor fault, such as a short or open condition, will be displayed at the control panel. If there is a problem with either of the compartment thermistors, the temperature display window for that compartment will be flashing the letters "EE" and the SERVICE annunciator will be flashing too. A compartment thermistor fault will also cut power to the compressor, condenser fan, both refrigerant valves, the lights and the evaporator fans via the relays on the control board. If the BELL ON feature has been enabled, the BELL ON annunciator will also flash, and the audible alarm will beep. (See Figures 3-32 to 3-35)

If there is a problem with either of the evaporator thermistors, the SERVICE annunciator will flash. An evaporator thermistor fault will also cut power to the compressor, condenser fan, both refrigerant valves, the lights and the evaporator fans via the relays on the control board. If the BELL ON feature has been enabled, the BELL ON annunciator will also flash, and the audible alarm will beep. (See Figures 3-36 and 3-37)

NOTE: *Correcting/repairing the thermistor problem will clear the Thermistor Malfunction Error Indicator.*

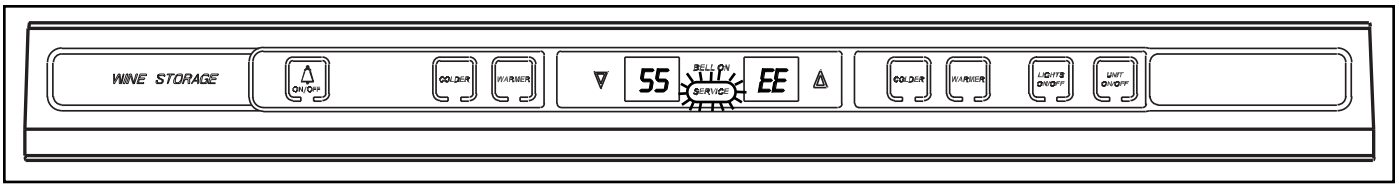


Figure 3-32. Upper Compartment Thermistor Fault

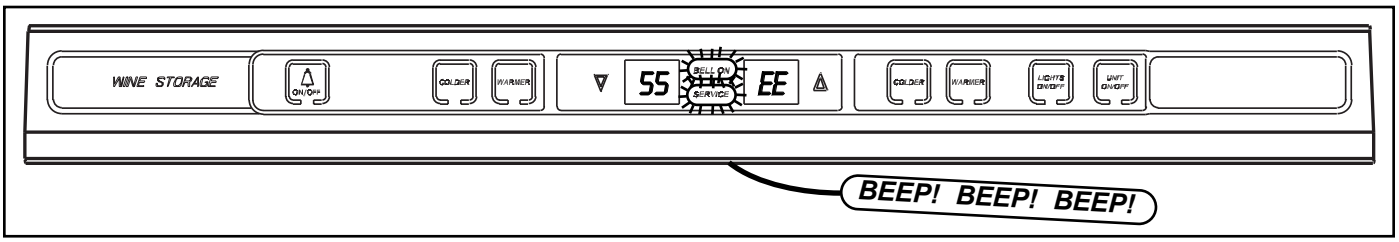


Figure 3-33. Upper Compartment Thermistor Fault with BELL ON Feature Enabled and Flashing

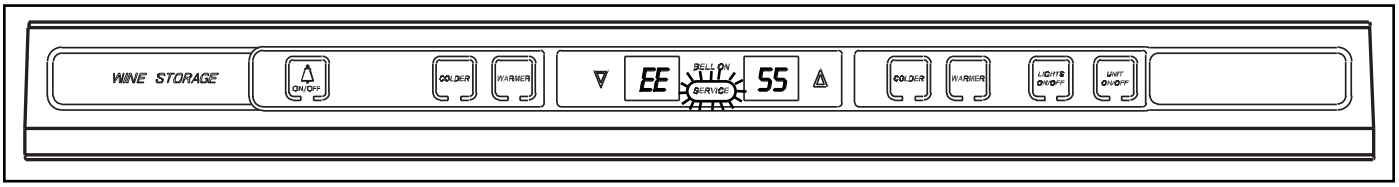


Figure 3-34. Lower Compartment Thermistor Fault

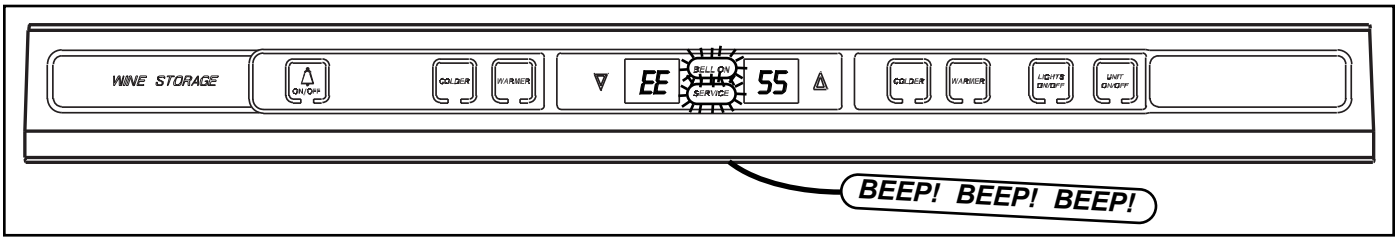


Figure 3-35. Lower Compartment Thermistor Fault with BELL ON Feature Enabled and Flashing

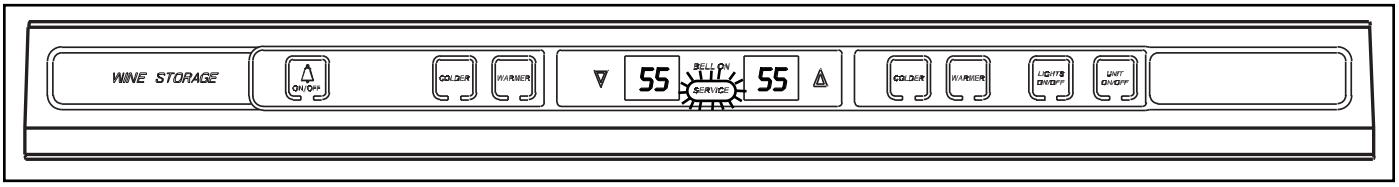


Figure 3-36. Either Evaporator Thermistor Fault

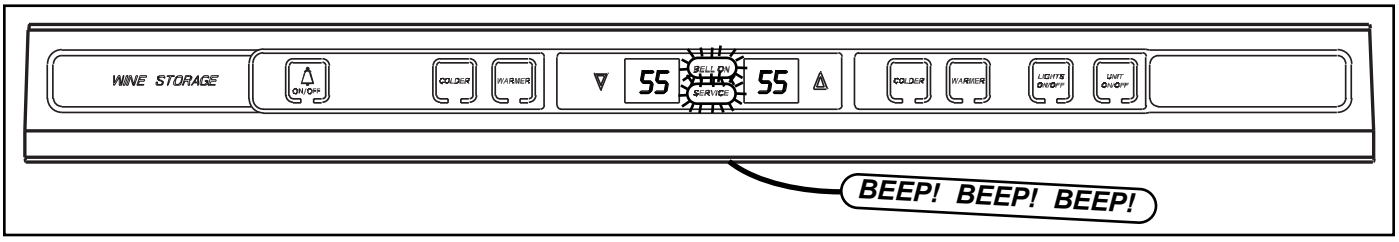


Figure 3-37. Either Evaporator Thermistor Fault with BELL ON Feature Enabled and Flashing

WINE STORAGE DIAGNOSTIC MODE:

The Diagnostic Mode was incorporated into the wine storage electronic control system to assist in diagnosing problems in a wine storage unit. When in Diagnostic Mode, the real-time thermistor temperatures are shown in the left display window of the control panel, without off-set adjustments. The right display window indicates the location of the thermistor being read.

NOTE: *The refrigerator section of the model 427R uses a separate and unique electronic control system. See 427R REFRIGERATOR SECTION, DIAGNOSTIC MODE.*

To initiate Diagnostic Mode, the unit must be ON. Now, press and hold either compartment COLDER key, and press the UNIT ON/OFF key, then release both keys. (See Figure 3-38)

NOTE: *Pressing and holding both keys for ten seconds or more will activate Manual Valve Activation Mode, which lasts for five minutes. This will be explained next in this manual.*

You are now in Diagnostic Mode. The SERVICE annunciator is illuminated and a temperature is shown in the left display window, while the right display window indicates the location of the thermistor being read. Since the first thermistor location is the **U**pper **E**vaporator, "UE" is displayed in the right window. (See Figure 3-38)

Pressing the COLDER key at this time will toggle the reading to the next thermistor location and "LE" will be displayed in the right window, indicating **L**ower **E**vaporator temperature. (See Figure 3-39)

Again press the COLDER key to toggle to the next reading which is "UP" for **UP**per compartment temperature. (See Figure 3-40)

The fourth key stroke of the COLDER key will toggle to "LO" indicating the **LO**wer compartment temperature. (See figure 3-41)

NOTE: *Diagnostic Mode will end ten seconds after the last key stroke. To observe an individual location temperature reading for more than ten seconds, press and hold the UNIT ON/OFF key while in Diagnostic Mode. (See Figure 3-42)*

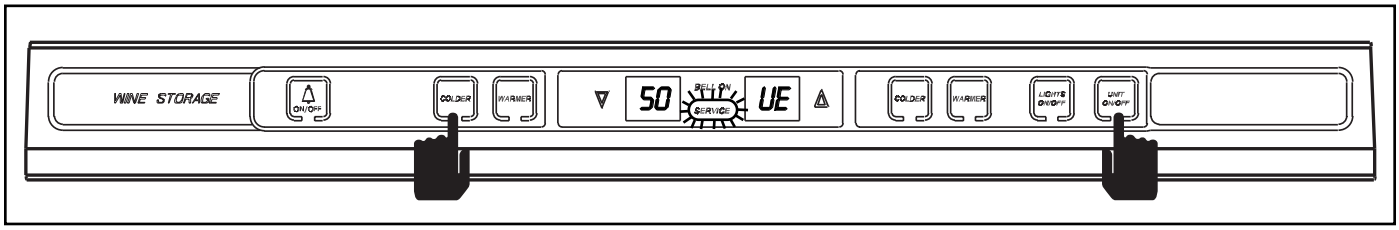


Figure 3-38. Initiating Diagnostic Mode, Press COLDER Key and UNIT ON/OFF key. First Reading is Upper Evaporator

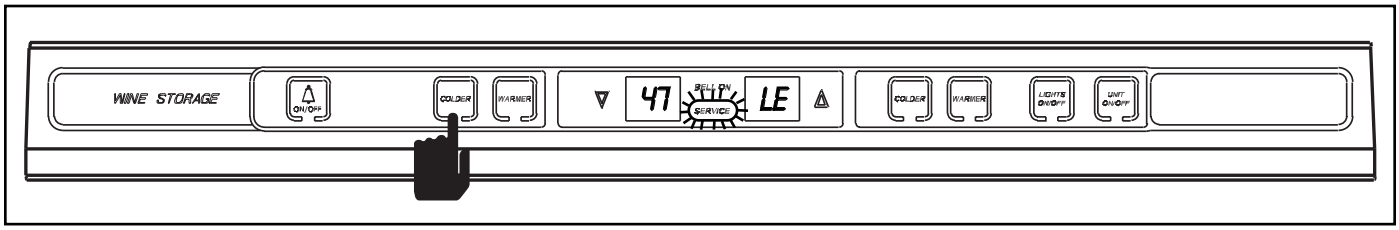


Figure 3-39. Press COLDER Key. Second Reading is Lower Evaporator

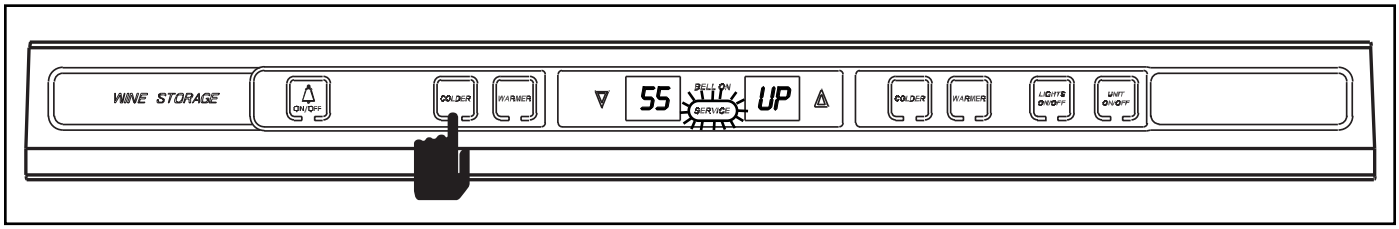


Figure 3-40. Press COLDER Key. Third Reading is Upper Compartment

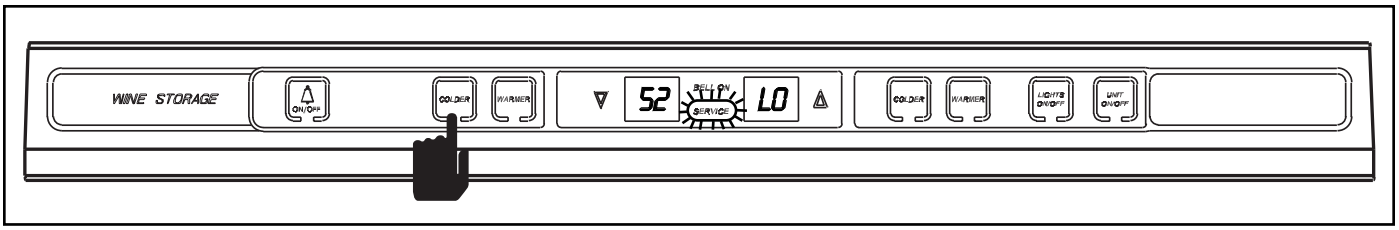


Figure 3-41. Press COLDER Key. Fourth Reading is Lower Compartment

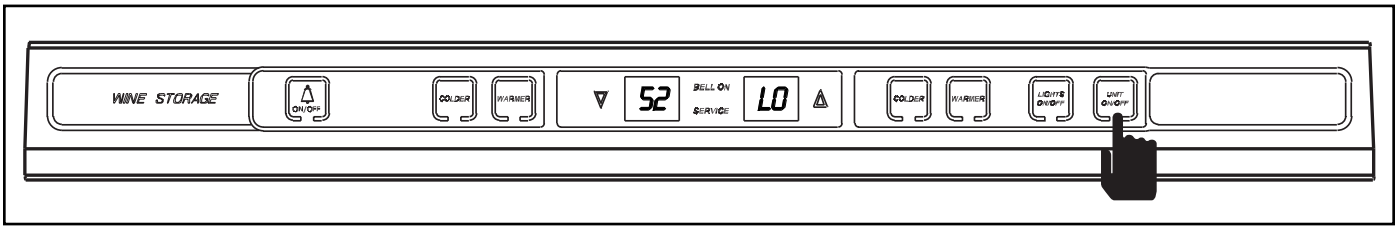


Figure 3-42. Observing Individual Location Temperature Reading for More than Ten Seconds, Press and Hold UNIT ON/OFF Key While in Diagnostic Mode

MANUAL WINE STORAGE REFRIGERANT VALVE ACTIVATION MODE:

To further assist with diagnostics in a wine storage unit, Refrigerant Valve Activation Mode was incorporated into the electronic control system. Refrigerant Valve Activation Mode allows you to energize either of the two valve solenoids for five minutes and observe the evaporator temperatures in the corresponding compartment. When in Refrigerant Valve Activation Mode, the real-time thermistor temperatures are shown in the left display window of the control panel, without off-set adjustments. The right display window will indicate which evaporator temperature you are observing.

To initiate Refrigerant Valve Activation Mode, the unit must be ON. Now, press and hold the desired compartment COLDER key, and the UNIT ON/OFF key for ten seconds (See Figure 3-43). You are now in Refrigerant Valve Activation Mode. The SERVICE annunciator is illuminated and you will now see the corresponding evaporator temperature in the left display window, and the right display window indicates which evaporator temperature you're observing, in the example below, we chose to observe the lower evaporator temperatures. (See Figure 3-43)

NOTE: *It is recommended to press either COLDER key while in Manual Valve Activation Mode, in order to toggle to the other evaporator temperature reading to verify that the corresponding valve is not open.*

NOTE: *Refrigerant Valve Activation Mode will end after five minutes. To exit before the full five minutes, press the UNIT ON/OFF key to switch the unit OFF, then again to switch the unit back ON. (See Figure 3-44)*

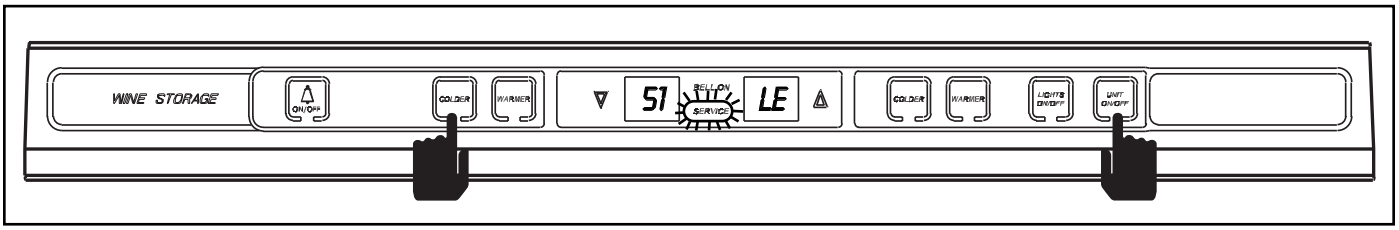


Figure 3-43. Initiating Refrigerant Valve Activation Mode, Press and Hold Desired COLDER Key and UNIT ON/OFF Key for Ten Seconds

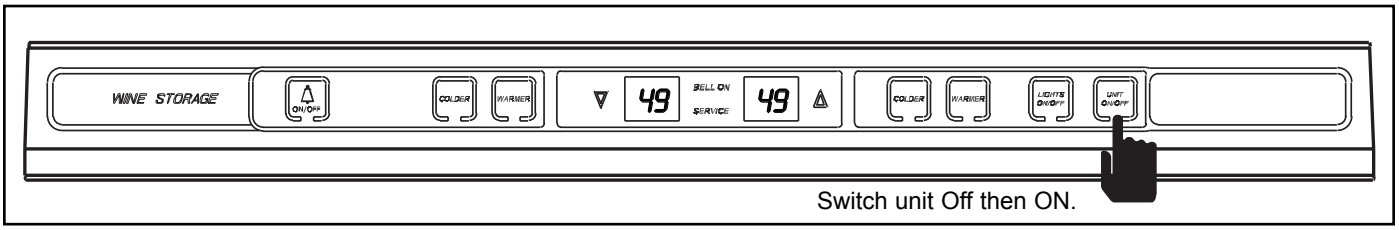


Figure 3-44. Exit Refrigerant Valve Activation Mode Before Full Five Minutes, Press UNIT ON/OFF Key to OFF, Then again to ON

WINE STORAGE TEMPERATURE LOG RECALL MODE:

For service purposes, the wine storage electronic control is equipped with a temperature data storage system. This system logs/stores the average temperature of each wine compartment every four hours, along with any error indicator codes that may have occurred. This information is stored in memory so that even if there is a power interruption, the data is not lost. These four hour periods of data (referred to as "indexes") are logged a maximum of sixty-four times. What this means is that the average temperatures for the previous ten days and sixteen hours can be recalled and displayed at the control panel. (4 hour periods x 64 indexes = 10 days, 16 hours) Once sixty-four indexes are stored, each new index replaces the oldest index.

To initiate the Temperature Log Recall Mode, the unit must be running. Now, press and hold the desired compartment WARMER key, and press the UNIT ON/OFF key, then release both keys. (See Figure 3-45)

When initiated, a temperature will be displayed in one window and an index number will be displayed in the other, the order of which will depend on the WARMER key chosen. For the example , we chose the lower compartment WARMER key. (See Figure 3-46) The SERVICE annunciator and compartment indicator arrow will illuminate, and the first temperature displayed will be for the most recent four hour period, indicated by index number "1".

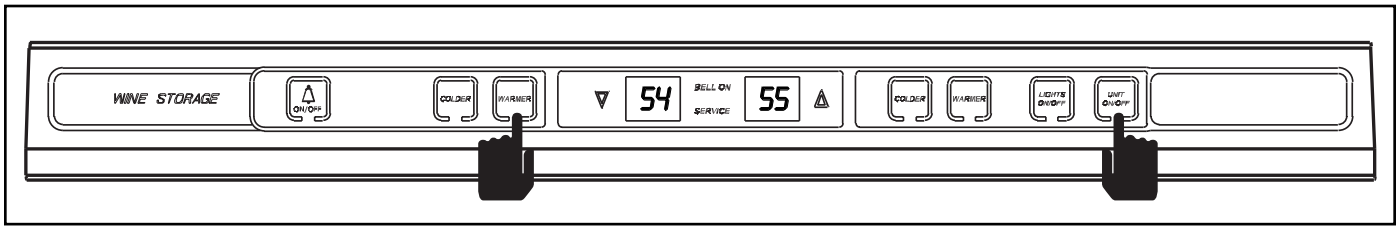


Figure 3-45. Initiating Wine Storage Temperature Recall Mode, Press WARMER Key and UNIT ON/OFF Key

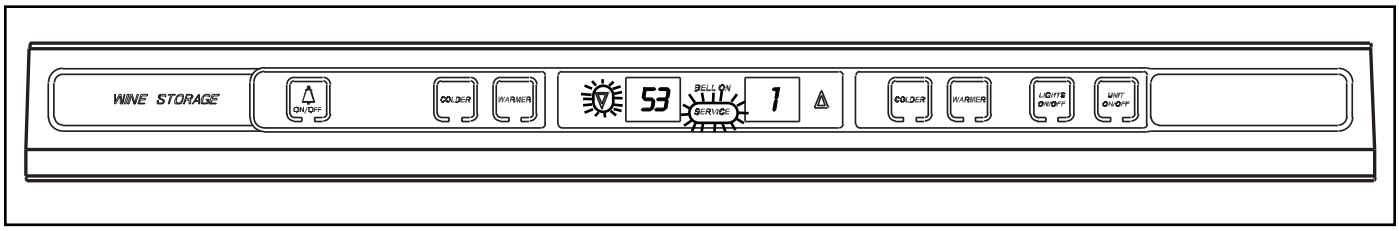


Figure 3-46. First Reading is Latest Average Temperature with Index # 1 Displayed

Pressing the WARMER key now will toggle to the second four hour temperature average period, indicated by index number "2". (See Figure 3-47) Toggling through the index can be done by pressing the WARMER key in multiple key strokes, a maximum of sixty-four times. (See Figure 3-48)

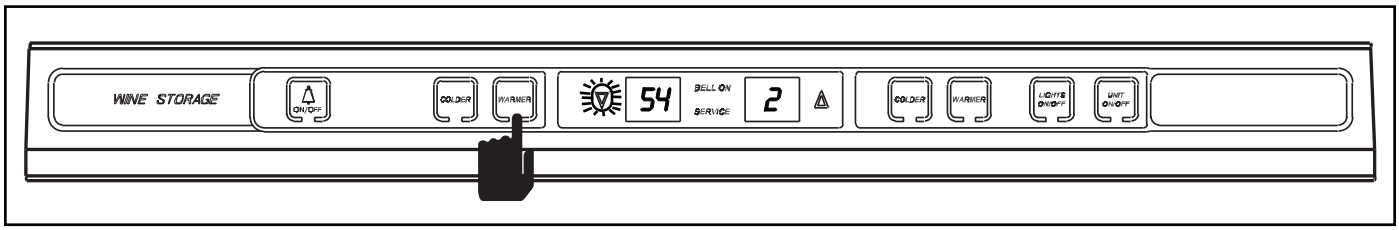


Figure 3-47. Toggle to 2nd Index and Average Temperature Reading, Press WARMER Key

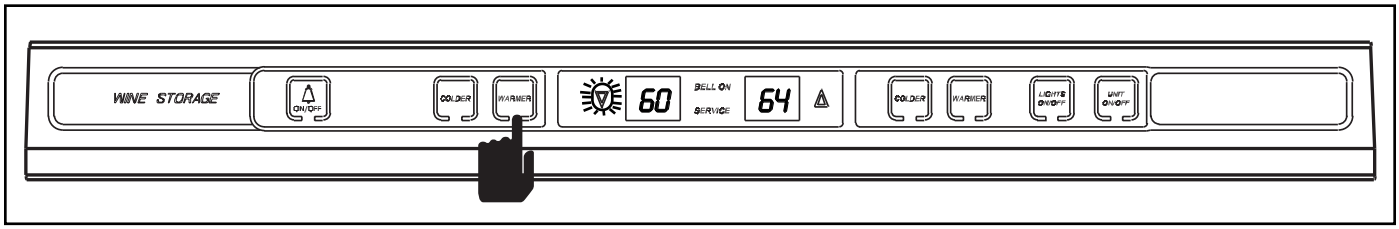


Figure 3-48. Toggle to 64th Index and Average Temperature Reading, Press WARMER Key in Multiple Key Strokes

You can also toggle backwards from index "64" to "1" , or anywhere in the index sequence, by pressing the COLDER key in multiple key strokes. (See Figure 3-49)

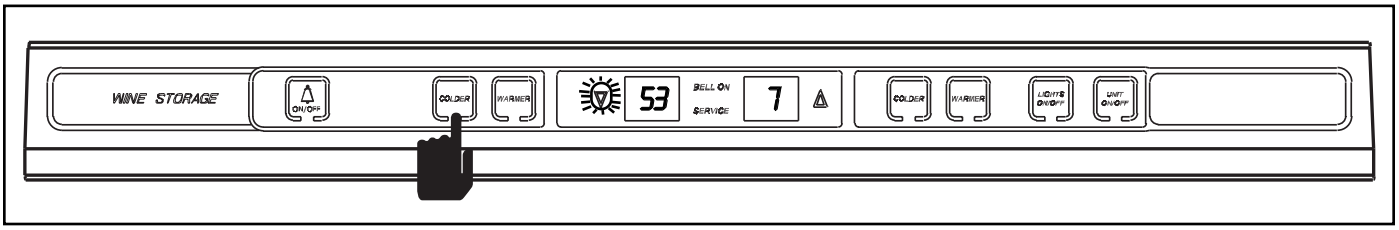


Figure 3-49. Toggle backwards through all Indexes and Average Temperature Readings, Press COLDER Key in Multiple Key Strokes

If the BELL ON annunciator illuminates during Temperature Log Recall Mode, this indicates that power to the electronic control was interrupted during the currently displayed four hour period. (See Figure 3-50)

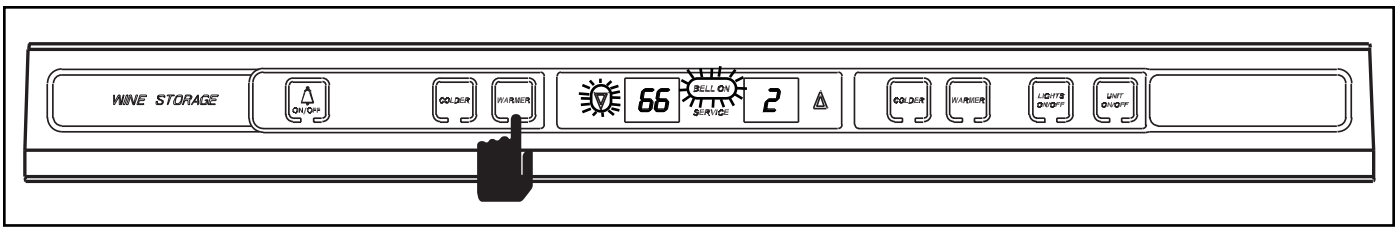


Figure 3-50. BELL ON Illuminated Indicates Power Failure / Interruption

If the SERVICE annunciator illuminates during Temperature Log Recall Mode, this indicates that the UNIT ON/OFF key was depressed, switching the unit OFF during the currently displayed four hour period. (See Figure 3-51)

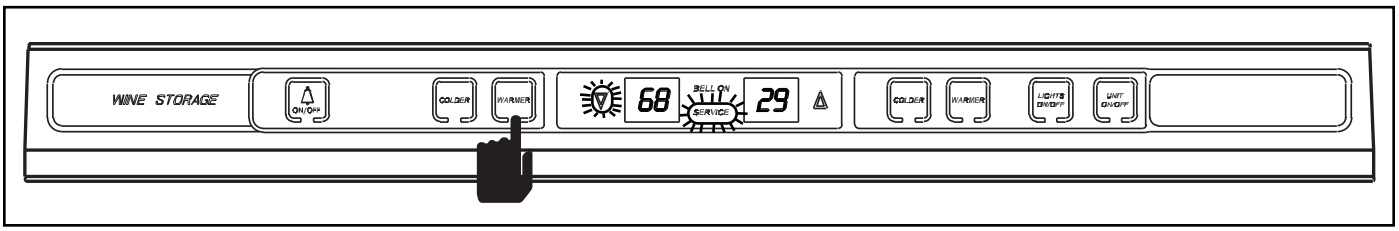


Figure 3-51. SERVICE Illuminated indicates Unit was Switched OFF

If double dashes (**- -**) are displayed instead of the temperature and index number, this indicates an electrical error on the electronic control board and that the board is bad. (See Figure 3-52)

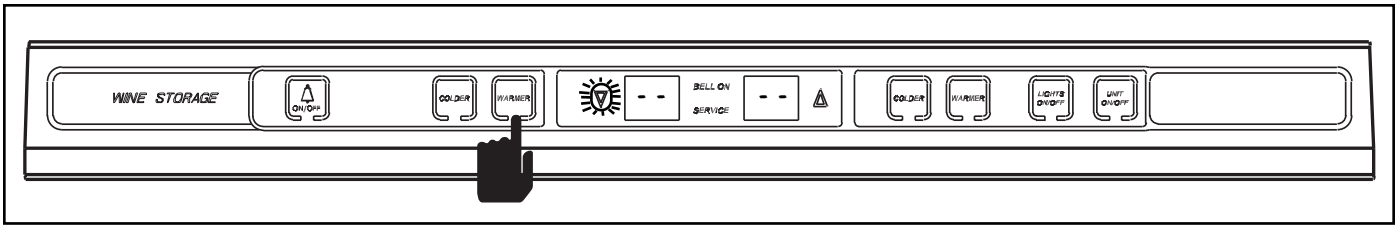


Figure 3-52. Double Dashes (- -) Displayed in Both Windows Indicates Electronic Control Board is Bad. Control Board must be Replaced.

NOTE: *The electronic control will exit Temperature Log Recall Mode ten seconds after the last key stroke.*

WINE STORAGE TEMPERATURE LOG INDEX CHART

Index #	Previous Hours Time Frame	Index #	Previous Hours Time Frame	Index #	Previous Hours Time Frame
1	4 Hours	23	92 Hours	45	180 Hours
2	8 Hours	24	96 Hours (4 Days)	46	184 Hours
3	12 Hours	25	100 Hours	47	188 Hours
4	16 Hours	26	104 Hours	48	192 Hours (8 Days)
5	20 Hours	27	108 Hours	49	196 Hours
6	24 Hours (1 Day)	28	112 Hours	50	200 Hours
7	28 Hours	29	116 Hours	51	204 Hours
8	32 Hours	30	120 Hours (5 Days)	52	208 Hours
9	36 Hours	31	124 Hours	53	212 Hours
10	40 Hours	32	128 Hours	54	216 Hours (9 Days)
11	44 Hours	33	132 Hours	55	220 Hours
12	48 Hours (2 Days)	34	136 Hours	56	224 Hours
13	52 Hours	35	140 Hours	57	228 Hours
14	56 Hours	36	144 Hours (6 Days)	58	232 Hours
15	60 Hours	37	148 Hours	59	236 Hours
16	64 Hours	38	152 Hours	60	240 Hours (10 Days)
17	68 Hours	39	156 Hours	61	244 Hours
18	72 Hours (3 Days)	40	160 Hours	62	248 Hours
19	76 Hours	41	164 Hours	63	252 Hours
20	80 Hours	42	168 Hours (7 Days)	64	256 Hours (10 Days, 16 Hours)
21	84 Hours	43	172 Hours		
22	88 Hours	44	176 Hours		

NOTE: *The chart above applies to the hours in which the control has power. Temperature history data will only be stored when the control has 115V AC supplied to it. If power to the unit is interrupted, the average temperatures for that time period are stored with the event indicator. The temperature history data is stored in a non-volatile memory, so the data is not erased by a power failure, but actual time passage during the power failure will not be shown.*

NOTE: *Temperature Log Recall Mode is not available for the refrigerator section of the 427R.*

MODEL 427R REFRIGERATOR ELECTRONIC CONTROL TERMINOLOGY & COMPONENT DESCRIPTIONS:

The refrigerator section and the wine storage section of the model 427R use separate and unique electronic control systems. Like the wine storage control, the refrigerator electronic control monitors, regulates and controls a variety of functions, to include display of temperatures and possible problems with the unit. But, there is not a temperature alarm associated with the refrigerator electronic control. Instead, a "drawer ajar alarm" is provided. Another difference lies in the display area where an LCD (Liquid Crystal Display) is used, instead of LCD's.

The table below defines some basic 427R refrigerator electronic control system terminology and describes some of the electronic control components. An understanding of the following information is needed in order to comprehend this control system.

Term/Component	Definition / Description
Control Board	The printed-circuit board (PC Board) contains the microprocessor, relays and electrical connections which control and monitor all functions and operations of the unit.
Microprocessor	An electrical component on the control board which receives electrical signals from other components, processes that information, then sends an electrical signal to the relays on the board to open or close, and other electronic components in the unit to switch on or off.
Relay	The electrical components on the control board which close or open to either allow power to the appropriate component(s), or interrupts power from reaching appropriate component(s).
LCD (Liquid Crystal Display)	For our purposes, this is the part of the control panel which electronically displays temperature values and possible error signals.
Control Panel Assembly	The information input and read-out area of the electronic control system, located inside the top drawer assembly, at top front.
Membrane Switch	An integral part of the control panel assembly, which consists of the function keys used for all input functions to the electronic control system.
Keys (Function Keys)	The buttons on the Membrane switch used for input functions. The keys are: UNIT ON/OFF, ALARM (drawer ajar alarm ON/OFF) COLDER, WARMER.
Annunciators	The words and numbers that are displayed at the control panel assembly. (Example: Temperature readings, drawer indicator, drawer ajar bell)
Set-Point	The desired compartment temperature. This is the approximate average of the high offset and the low offset.
High Offset (Cut-in)	During normal operation, this is the maximum compartment air temperature that the electronic control system will allow before calling for cooling.
Low Offset (Cut-out)	During normal operation, this is the minimum compartment air temperature that the electronic control system will allow before interrupting cooling.
Offset Temperature Range	The difference between the low offset and the high offset.
Thermistor (Temperature Sensor)	A resistor with which resistance changes as the temperature around it changes. For electronic control system purposes, the microprocessor deciphers this resistance as temperature.

MODEL 427R BASIC REFRIGERATOR ELECTRONIC CONTROL SYSTEM:

Input operations for the refrigerator electronic control system are performed at the control panel, with monitoring, regulating and controlling functions taking place at the control board. Temperatures and possible problems with the unit are displayed at the control panel LCD. The diagrams on this page illustrate the refrigerator electronic control system. (See Figure 3-53 for units prior to serial #1944319, see Figure 3-54 for units starting with serial #1944319.) The entire 427R refrigerator electronic control system is described in greater detail following in this page.

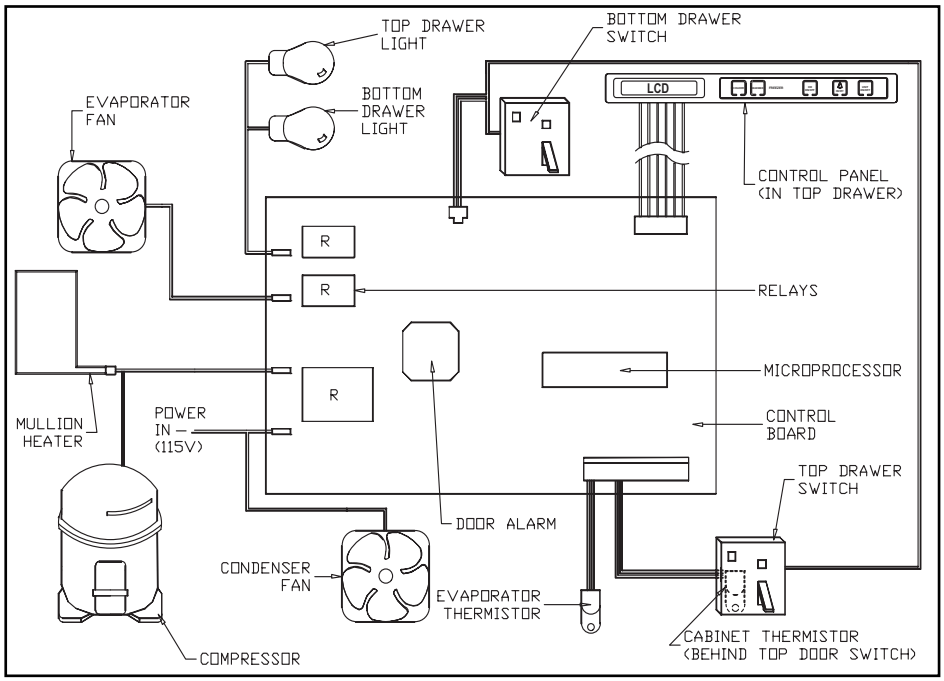


Figure 3-53. Model 427R Refrigerator Electronic Control System, prior to serial #1944319

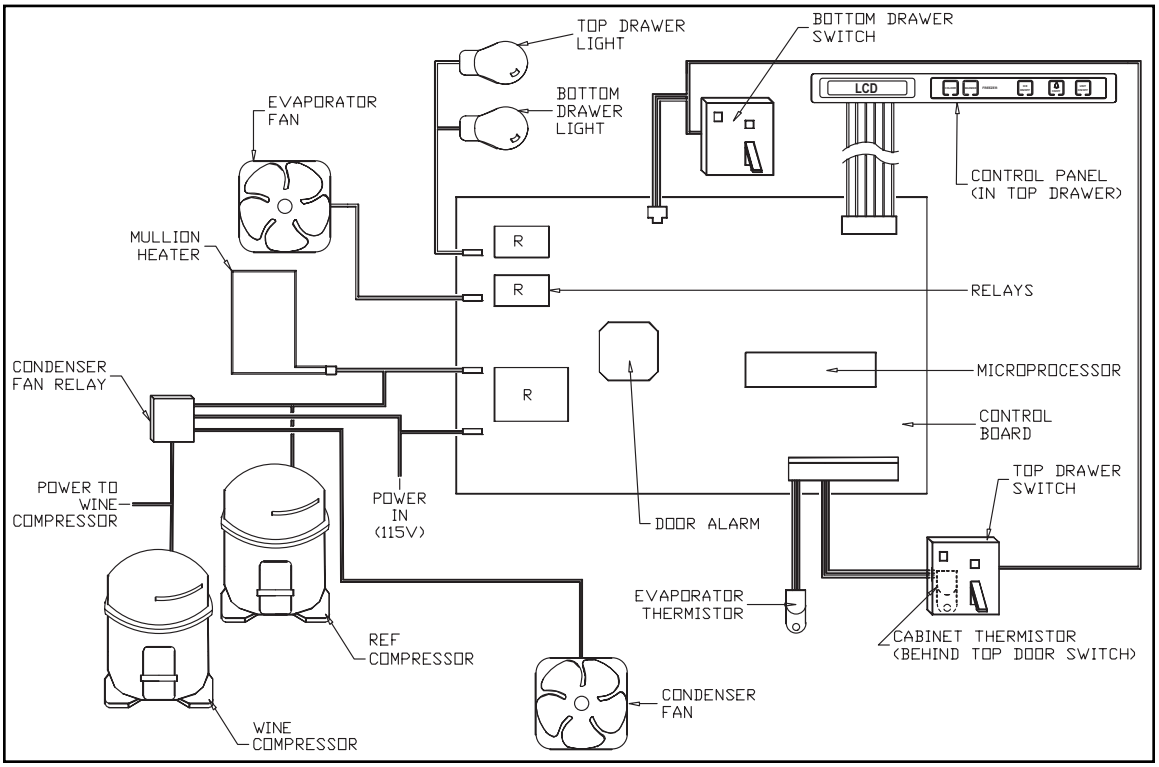


Figure 3-54. Model 427R Refrigerator Electronic Control System, Starting with serial #1944319

MODEL 427R REFRIGERATOR CONTROL BOARD LAYOUT / SUMMARY TABLE:

The electrical connection points on the 427R refrigerator control board are labeled Alphanumerically. These labels correspond with the alphanumeric control board summary table, located on the 427R wiring diagram. By referencing the summary table, it is possible to identify which components are connected at which connection points on the control board. Below is a layout diagram of the control board, followed by a copy of a summary table. (See Figures 3-55 and 3-56)

NOTE: *All components on the control board are non-replaceable. If a problem with the control board is identified, the complete control board must be replaced.*

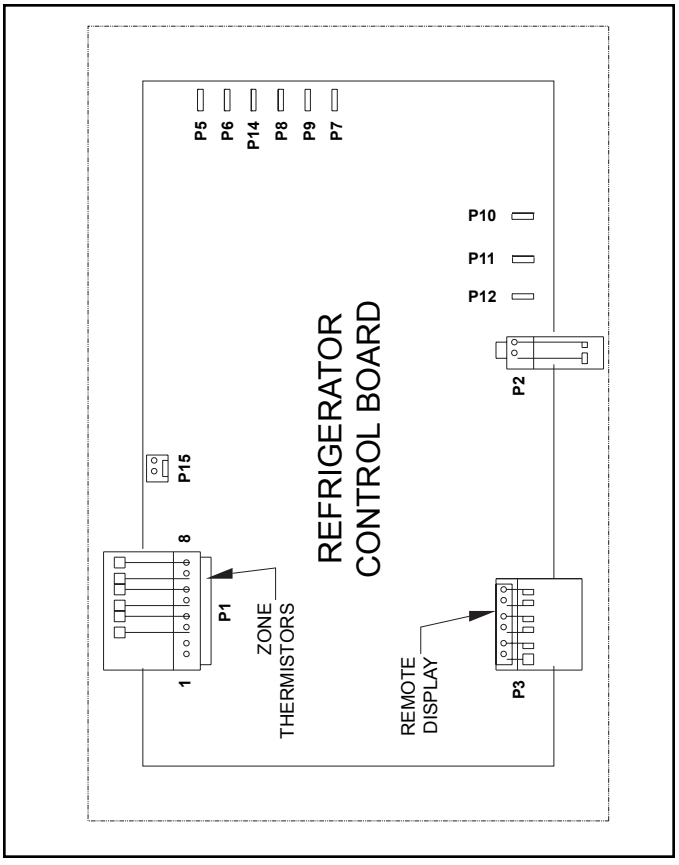


Figure 3-55. Model 427R Refrigerator Control Board Layout

TERM.	DESCRIPTION	FUNCTION	COLOR
P1	THERMISTORS	SENSES TEMPERATURES	SEE AUX. CHART
P2	LIGHT SWITCH	CONTROLS LIGHTS	WHITE/RED
P3	REMOTE DISPLAY	CONNECTS TO DISPLAY	SEE AUX. CHART
P5	L2-NEUTRAL 115	NEUTRAL INTO THE BOARD	WHITE
P6	L1-HOT 115	POWER INTO BOARD	BLACK
P7	LIGHTS-120V OUT	POWERS LIGHTS	ORANGE
P8	EVAPORATOR FAN	POWERS FANS	RED
P14	COMPRESSOR	POWERS COMPRESSOR	PURPLE

AUXILIARY CHART

TERM.	NO#	DESCRIPTION	FUNCTION	COLOR
P1	1	THERMISTER CIRCUITS	EMPTY	EMPTY
	2	EMPTY	EMPTY	EMPTY
	3	EMPTY	EMPTY	EMPTY
	4	EMPTY	EMPTY	EMPTY
	5	DRAWER	SENSES TEMPERATURE	LT. BLUE W/BLACK
	6	DRAWER	SENSES TEMPERATURE	LT. BLUE W/BLACK
	7	EVAPORATOR	SENSES TEMPERATURE	LT. BLUE W/YELLOW
	8	EVAPORATOR	SENSES TEMPERATURE	LT. BLUE W/YELLOW
P3	1	DISPLAY BOARD	DISPLAY BOARD	BLACK
	2	" "	" "	WHITE
	3	" "	" "	RED
	4	" "	" "	YELLOW
	5	" "	" "	ORANGE
	6	" "	" "	BLUE

Figure 3-56. Model 427R Refrigerator Control Board Summary Table

427R REFRIGERATOR CONTROL PANEL LAYOUT:

Starting with serial #1728753, the control panel assembly was upgraded with a membrane switch. The diagrams below show the two different control panel assemblies found in the 427R refrigerator section. (See Figure 3-57 for units prior to serial #1728753. See Figure 3-58 for units starting with serial #1728753.)

NOTE: *All model 427R refrigerator control panel diagrams following this page will be that of units starting with serial #1728753.*

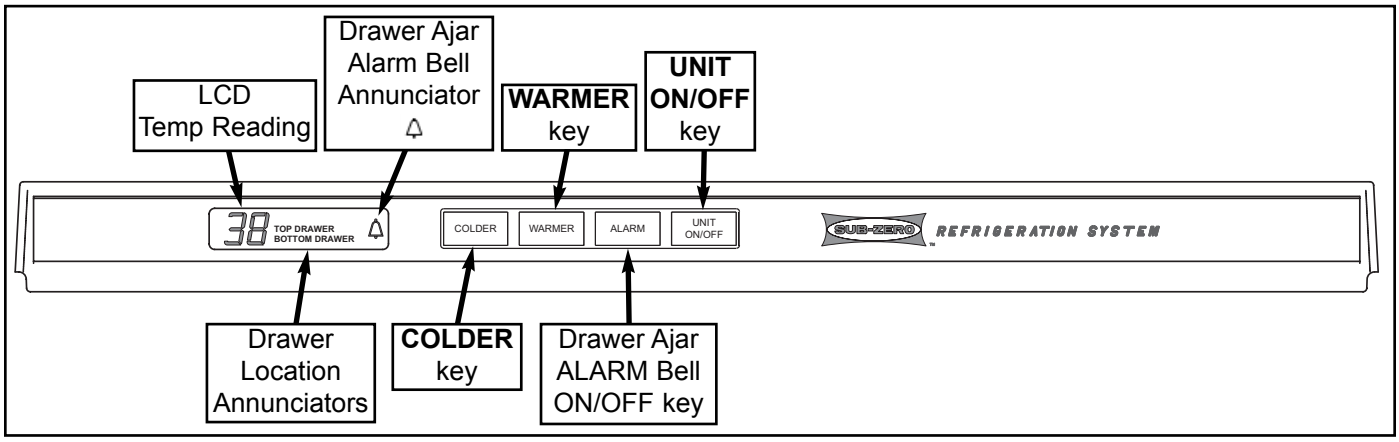


Figure 3-57. Model 427R Refrigerator Control Panel Layout, Prior to Serial #1728753

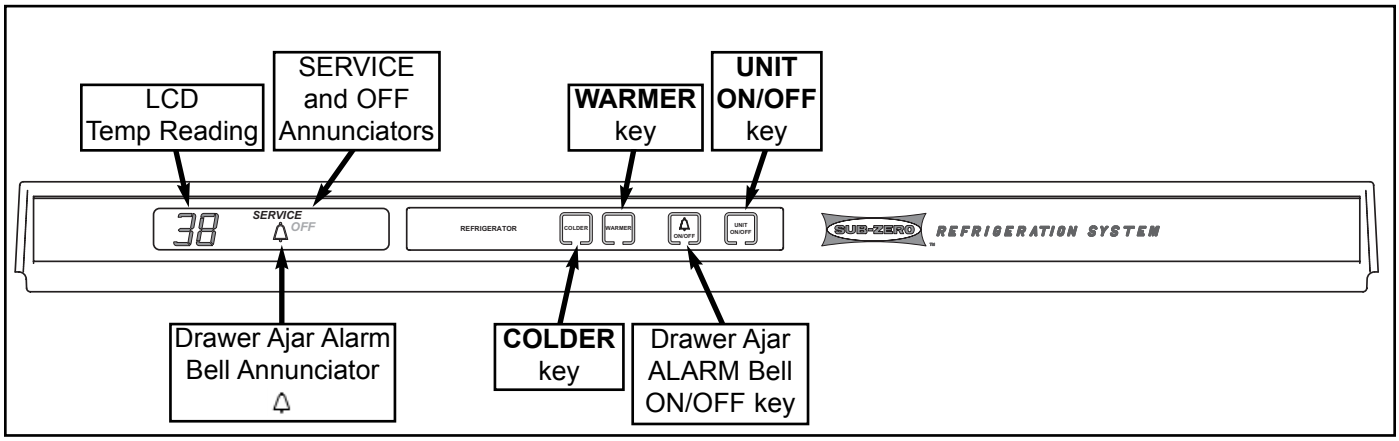


Figure 3-58. Model 427R Refrigerator Control Panel Layout, Starting with Serial #1728753

427R REFRIGERATOR BASIC ELECTRONIC CONTROL INPUT OPERATIONS:

This section illustrates the basic input operations performed at the 427R refrigerator control panel. Switching the refrigerator section ON and OFF, adjusting the refrigerator set-point (temperature adjustments), and enabling / disabling the drawer ajar alarm will be explained.

Model 427R Refrigerator Section ON/OFF

When shipped from the factory, the refrigerator section of the model 427R is in the Off Mode. By pressing and releasing the UNIT ON/OFF key in the refrigerator section (See Figure 3-59), power is allowed past the control board to the rest of the refrigerator section. This will be indicated by the unit lights and LCD energizing.

⚠ WARNING

WHEN IN OFF MODE, 115 VOLTS AC IS STILL PRESENT AT CONTROL BOARD.

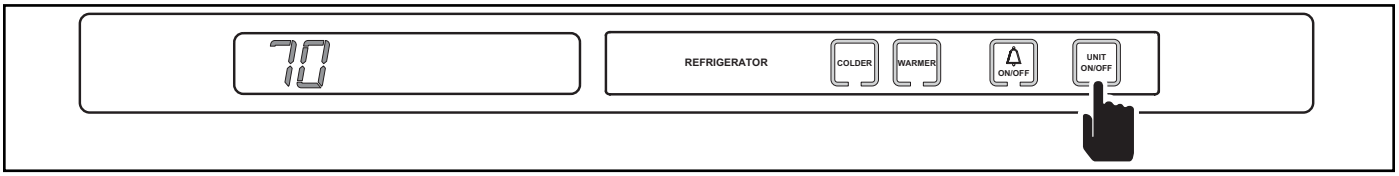


Figure 3-59. Refrigerator Section ON/OFF, Press UNIT ON/OFF Key on Refrigerator Control Panel

Adjusting Model 427R Refrigerator Section Set-Points (Temperature Adjustments)

To adjust set-point, press the WARMER or COLDER key in multiple key strokes until the desired temperature is achieved (See Figure 3-60).

NOTE: *The temperature range in the refrigerator drawer section is 34°F / 1°C to 45°F / 7°C.*

NOTE: *The initial key stroke of the WARMER or COLDER keys will change the previous set-point.*

NOTE: *The set-point will be displayed for 10 seconds after the last WARMER or COLDER key stroke. After the 10 second delay, the compartment temperature will be displayed. As the compartment temperature changes, the temperature displayed will change by no more than 1° per minute.*

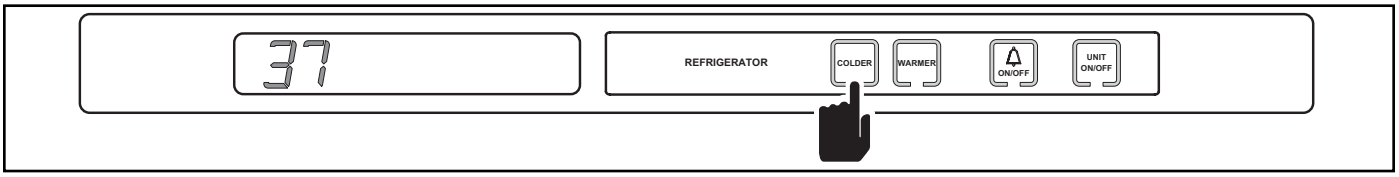


Figure 3-60. Adjusting Set-Point, Press COLDER or WARMER Key

Model 427R Refrigerator Drawer Ajar Alarm ON/OFF

The 427R has an audio/visual drawer ajar alarm that can be enabled to warn the customer if a drawer is left open. When enabled, the alarm will beep if a drawer is open for more than 15 seconds.

To enable the alarm, press and release the Bell ON/OFF key (See Figure 3-61). Prior to serial #1728753, press the "ALARM" key. When enabled, the drawer ajar alarm (bell) annunciator will illuminate. To disable the drawer ajar alarm, simply press and release the ALARM or Bell ON/OFF key again, and the annunciator will de-energize.

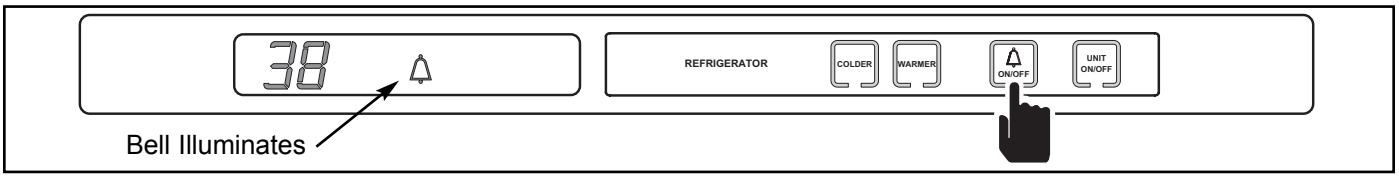


Figure 3-61. Drawer Ajar Alarm ON/OFF, Press Bell ON/OFF key
(Prior to Serial #1728753, press the "ALARM" key)

FUNCTION OF THE 427R REFRIGERATOR ELECTRONIC CONTROL SYSTEM:

This section explains the monitoring, regulating and controlling functions of the 427R refrigerator electronic control system.

NOTE: *All 427R refrigerator electronic control functions described in this section are for normal operation only. For possible malfunctions, see MODEL 427R REFRIGERATOR ERROR INDICATORS, 427R DIAGNOSTIC MODE and the TROUBLESHOOTING GUIDE.*

⚠ WARNING

TO AVOID ELECTRIC SHOCK, POWER TO THE UNIT MUST BE DISCONNECTED WHENEVER ACCESSING AND/OR REMOVING COMPONENTS POWERED BY ELECTRICITY OR COMPONENTS NEAR OTHER ELECTRICAL COMPONENTS.

EVEN WHEN UNIT IS SWITCHED OFF, 115 VOLTS AC IS STILL PRESENT AT THE CONTROL BOARD.

Sense and Display Average Compartment Temperatures

The temperature signal from the thermistor in the top drawer area (inside the top Reed switch) is monitored by the microprocessor, and displayed on the LCD in the control panel assembly. Though the compartment air temperature may fluctuate slightly, the LCD in the control panel will display the average temperature (See Figure 3-62).

NOTE: *The temperature range in refrigerator drawer section of a 427R is 34°F / 1°C to 45°F / 7°C.*

NOTE: *If a compartment temperature should ever exceed either the high offset or low offset (for example: when a door is left open), the temperature displayed at the control panel will change by 1° per minute.*

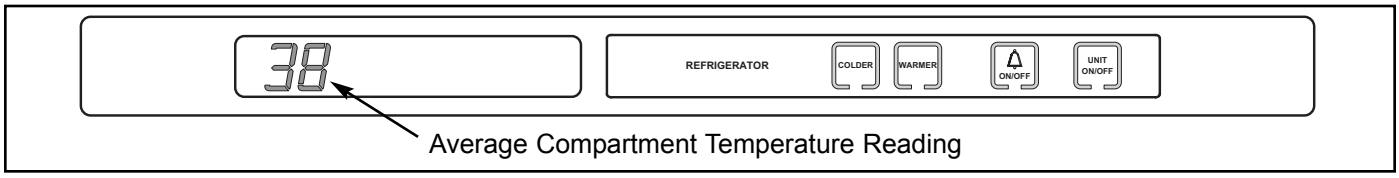


Figure 3-62. Temperature Display (Shown in degrees Fahrenheit)

Supply Power to the Lighting System

115 Volts is supplied to the lighting system through the control board. The lighting system can be disabled for the observance of certain religious days. (See SABBATH MODE.) The illustration below shows normal operation, with 115 Volts AC supplied to the lighting system. (See Figure 3-63)

⚠ WARNING

ELECTRIC SHOCK HAZARD. 115 VOLTS IS STILL PRESENT AT THE CONTROL BOARD WHEN LIGHTS ARE DISABLED.

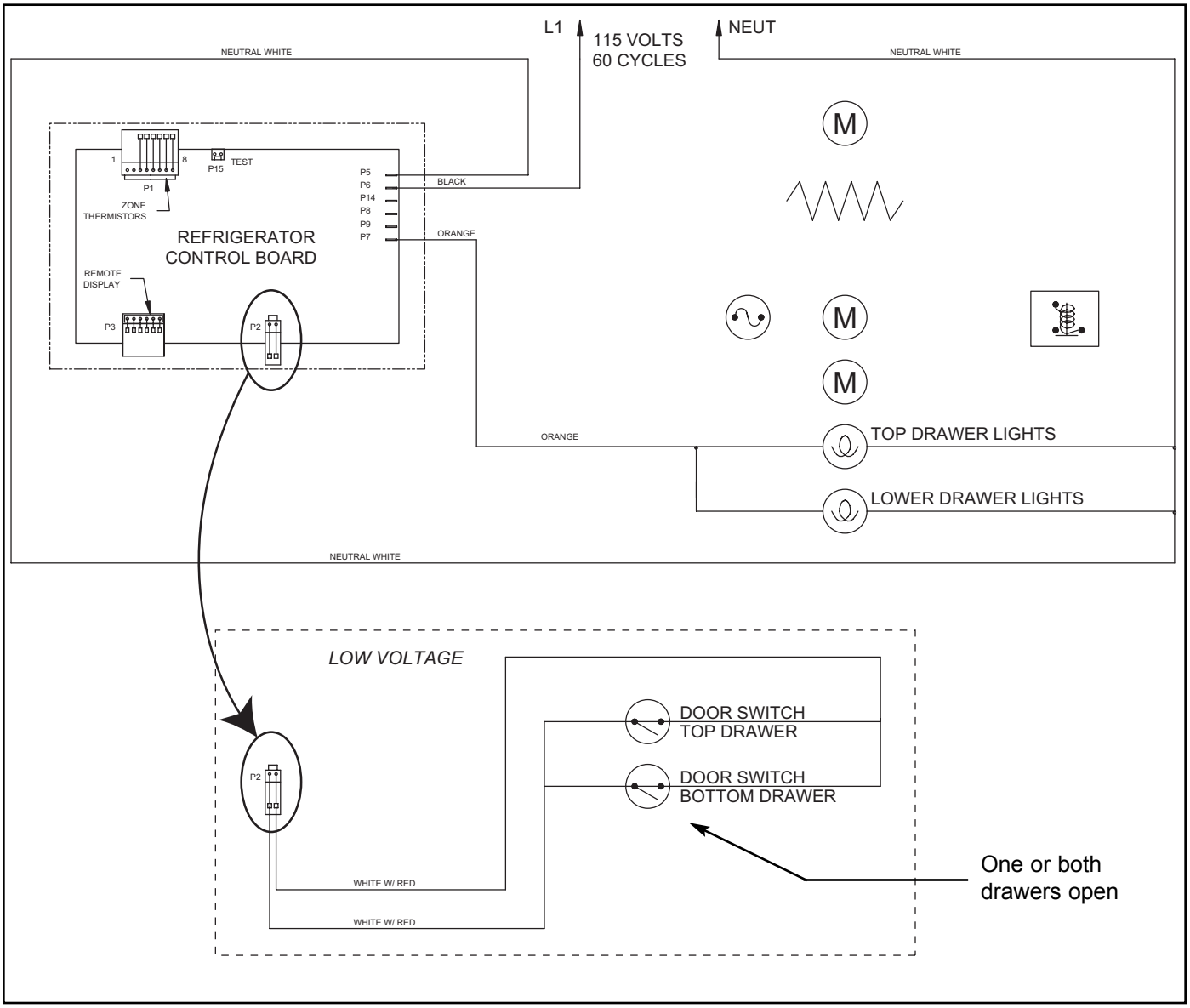


Figure 3-63. Model 427R Refrigerator Lighting System Signal Trace

Supply Power to the Evaporator Fan

Whenever cooling is called for, 115 Volts AC is supplied to the evaporator fan switches. When both drawers are closed, the fan switches will be in normally-closed position, allowing power to the evaporator fan. Please note that although the fan may be energized when cooling is called for, the compressor will not run unless the evaporator is above 40°F / 4°C. The illustration below shows normal operation with the door closed and the evaporator below 40°F / 4°C. (See Figure 3-64)

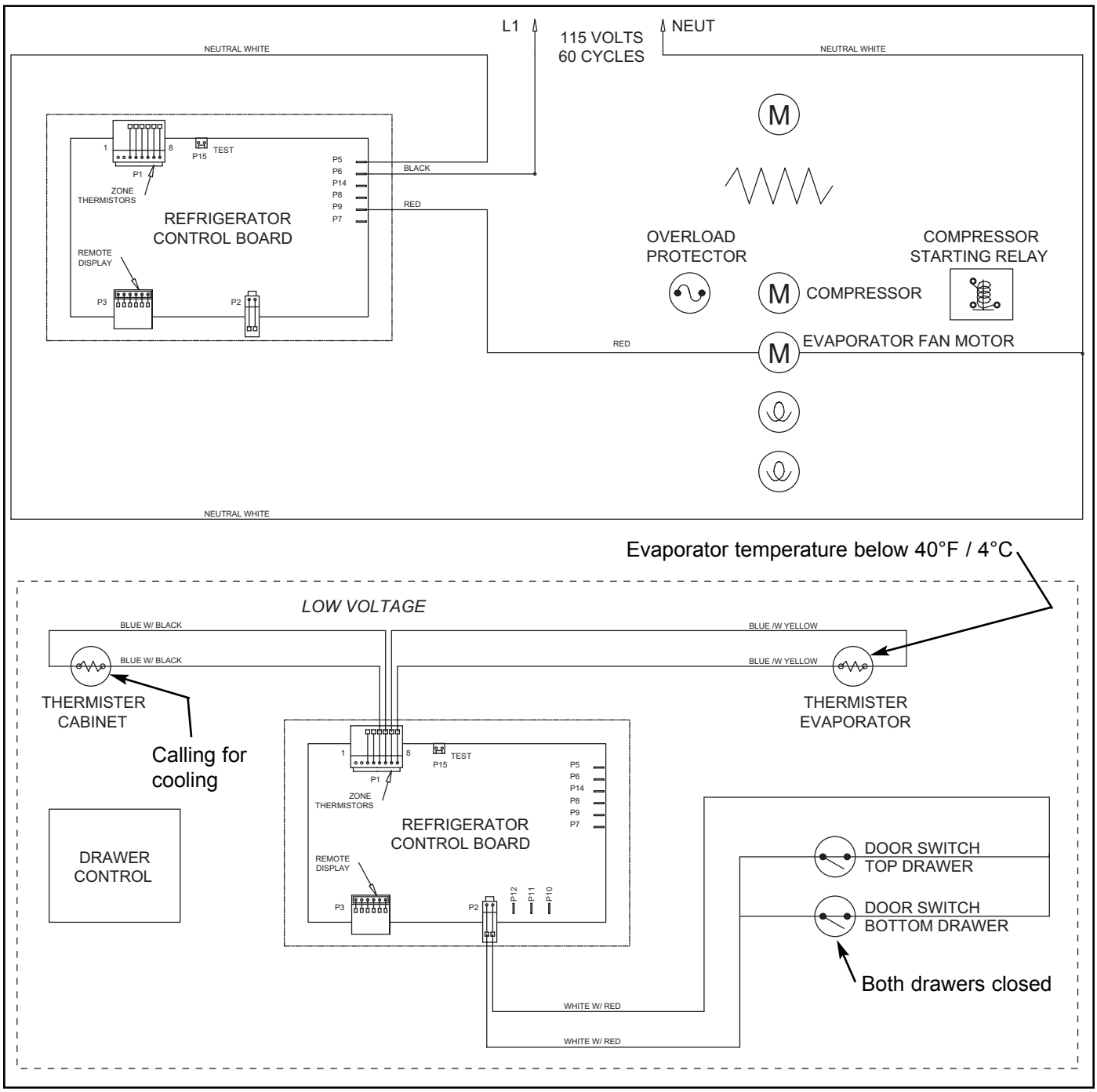


Figure 3-64. Evaporator Fan Power Signal Trace

Senses Refrigerator Evaporator and Compartment Temperatures to Regulate Compressor Cycling (Prior to Serial #1944319)

The 427R refrigerator electronic control senses temperatures via thermistors, one on the evaporator and one in the top drawer area (inside the Reed switch). The "cut-in" and “cut-out” are governed by the compartment temperature and are based on the set-point. If the compartment calls for cooling (compartment at cut-in temperature), the evaporator fan circuit is energized, but the compressor is allowed ON only if the evaporator is above 40°F / 4°C. The illustration below shows normal operation with evaporator above 40°F / 4°C (See Figure 3-65).

NOTE: *The electric mullion heater around the drawer section cycles with the compressor. Prior to serial #1944319, the condenser fan runs 100%. (See Figure 3-65)*

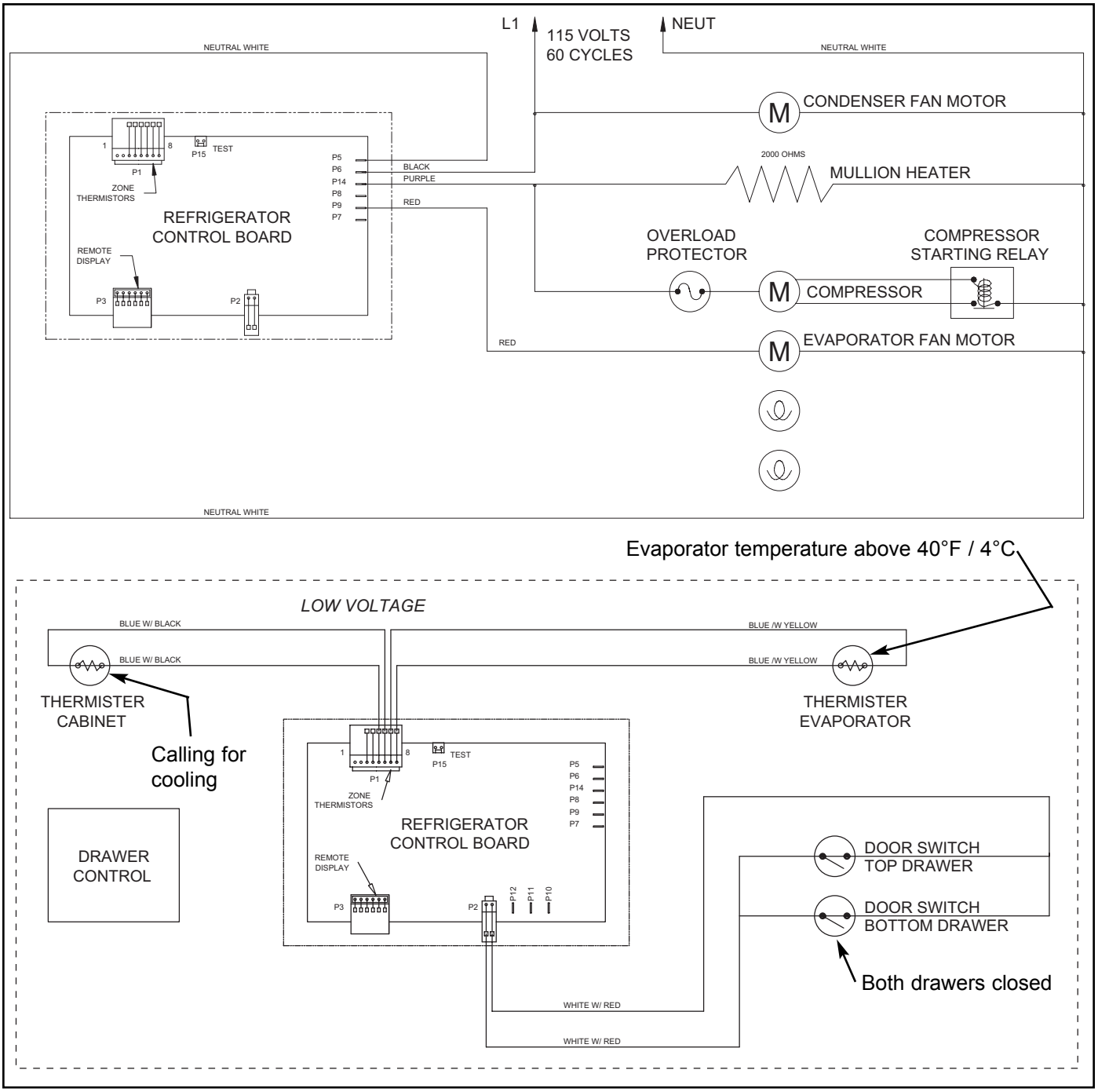


Figure 3-65. Compressor, Evap Fan, Mullion Heater & Condenser Fan Signal Trace, Refrigerator Section Calling for Cooling w/ Evaporator temperatures above 40°F / 4°C

Senses Refrigerator Evaporator and Compartment Temperatures to Regulate Compressor Cycling (Starting with Serial #1944319)

The 427R refrigerator electronic control senses temperatures via thermistors, one on the evaporator and one in the top drawer area (inside the Reed switch). The "cut-in" and “cut-out” are governed by the compartment temperature and are based on the set-point. If the compartment calls for cooling (compartment at cut-in temperature), the evaporator fan circuit is energized, but the compressor is allowed ON only if the evaporator is above 40°F / 4°C. The illustration below shows normal operation with evaporator above 40°F / 4°C (See Figure 3-66).

NOTE: *The electric mullion heater around the drawer section cycles with the compressor. Starting with serial #1944319, the condenser fan cycles with the compressors via a condenser fan relay. (See Figure 3-66)*

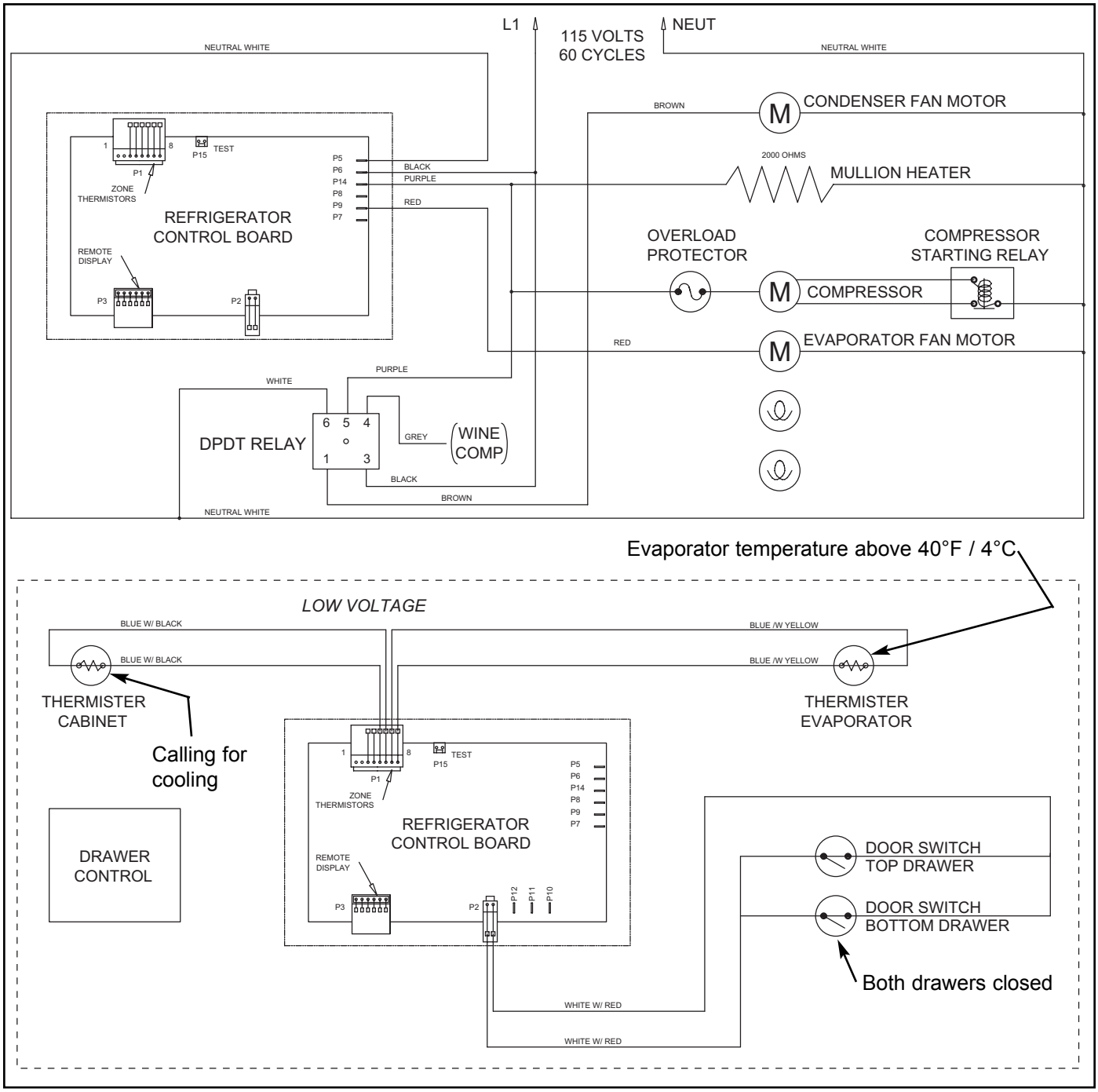


Figure 3-66. Compressor, Evap Fan, Mullion Heater & Condenser Fan Signal Trace, Refrigerator Section Calling for Cooling w/ Evaporator temperatures above 40°F / 4°C

Monitor and Control Refrigerator Off-cycle Defrost

The temperature signals from the compartment thermistor and evaporator thermistor are monitored by the electronic control. The compartment thermistor governs cut-in and cut-out. If the compartment calls for cooling, the evaporator fan will run, but the compressor will not run until the evaporator is above 40°F / 4°C. The air circulated by the evaporator fan assists in raising the temperature of the evaporator, aiding in the defrost process. (See Figure 3-67)

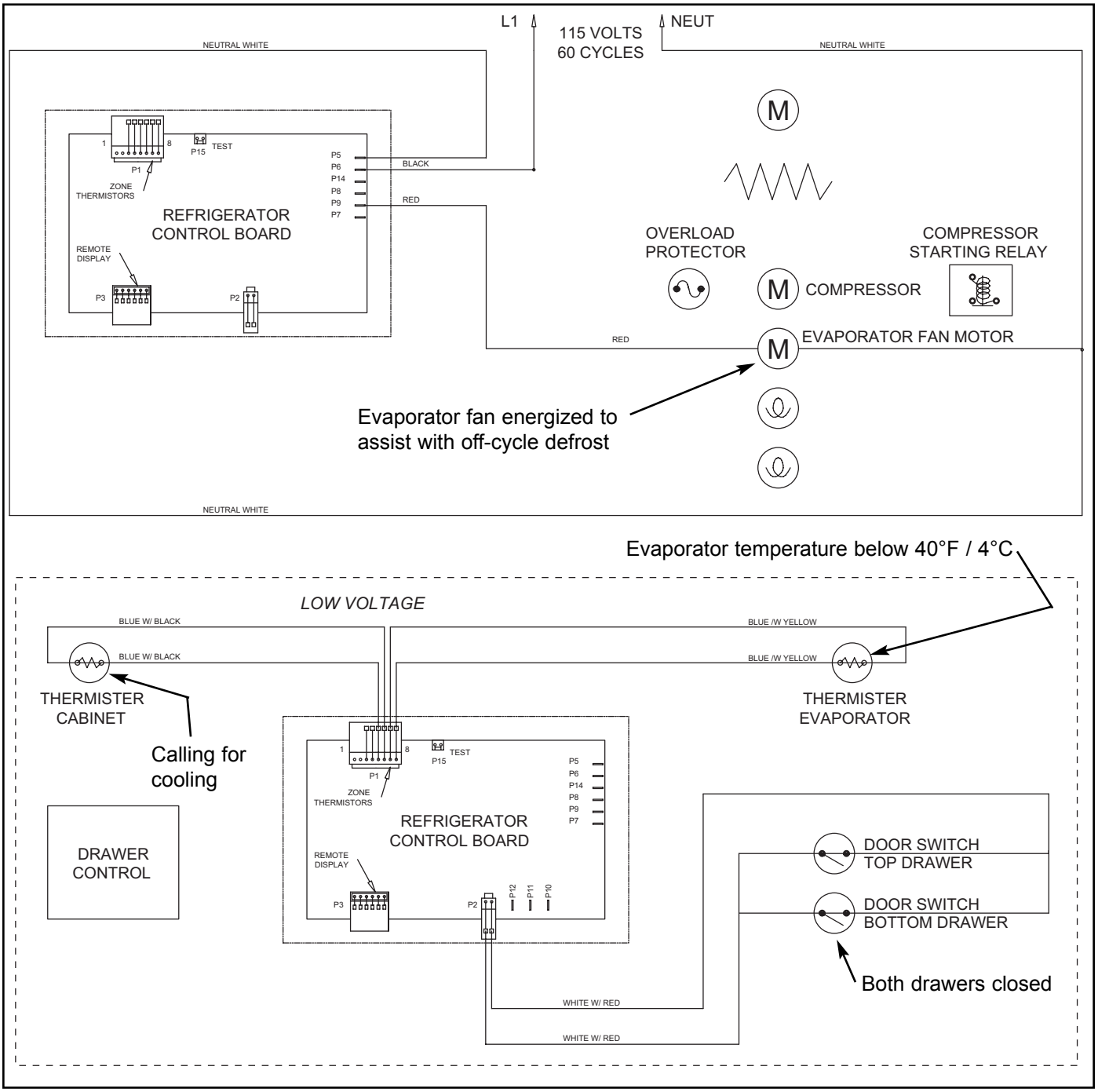


Figure 3-67. Cooling is Called for, but Evaporator Temperature is Below 40°F / 4°C, Compressor Waits for Evaporator to Fully Defrost

UNIQUE 427R REFRIGERATOR ELECTRONIC CONTROL INPUT OPERATIONS:

This section illustrates unique 427R refrigerator electronic control input operations performed at the control panel, which you would not expect a customer to perform everyday. This section explains the Temperature Units Selection Mode, Sabbath Mode and Showroom Mode.

Temperature Units Selection Mode (Selecting °Fahrenheit or °Celsius Display)

Like the 427R wine storage control, the refrigerator electronic control is initially set to display temperature in Fahrenheit (°F) units of measure. But, the temperature units displayed can be converted from °F to °C (Celsius), and/or back again. This operation is called Temperature Units Selection.

NOTE: *Temperature Units Selection must be performed within the first minute after switching the appliance ON.*

To convert units of measure from Fahrenheit (°F) to a Celsius (°C), press and hold the Bell ON/OFF key and the UNIT ON/OFF key simultaneously for five seconds (See Figure 3-68). Prior to serial #1728753, press and hold the "ALARM" key and UNIT ON/OFF key for five seconds.

You are now in Temperature Units Selection Mode and the display window indicates the units of measure as °F or °C. In this case, °C (Celsius) is displayed. (See Figure 3-69)

NOTE: *Do not press and hold the UNIT ON/OFF key first, as this will simply switch the unit OFF.*

To convert back to °F from °C, repeat the steps listed above, keeping in mind that you can toggle between °F and °C within the first minute after powering up.

NOTE: *The 427R refrigerator control will exit Temperature Units Selection Mode ten seconds after the last key stroke. To reinitiate Temperature Units Selection Mode, press the UNIT ON/OFF key to switch the unit OFF, then press it again to switch the unit back ON. Now, within one minute, follow the steps above.*

NOTE: *Temperature Units Selection Mode must be initiated separately in the wine storage section of model 427R.*

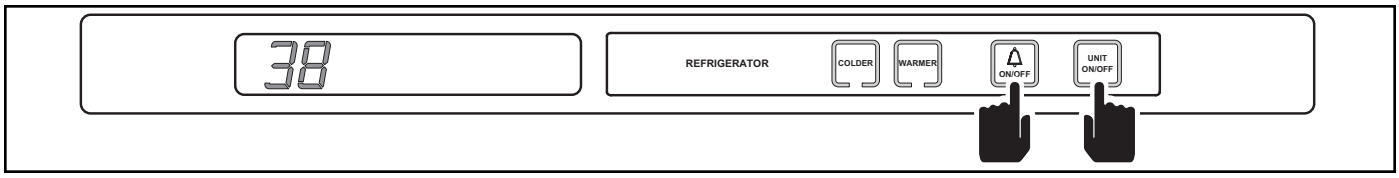


Figure 3-68. Initiating Temperature Units Selection Mode, Press and Hold THE Bell ON/OFF Key and Unit ON/OFF Key for 5 Seconds
(Prior to Serial #1728753, Press and Hold THE "ALARM" Key and Unit ON/OFF Key for 5 Seconds)

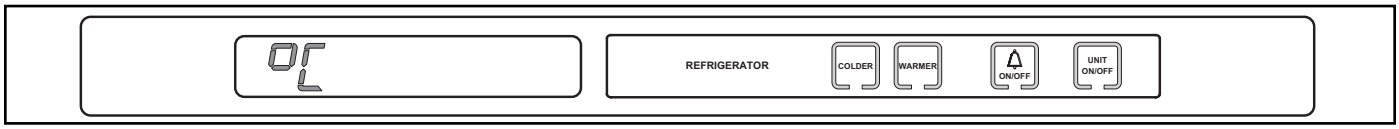


Figure 3-69. Temperature Units Selection Mode Initiated, °C (Celsius) Displayed

Sabbath Mode

Sabbath Mode was incorporated into the 427R refrigerator electronic control system for the observance of certain religious days. Sabbath Mode disables the lighting circuit so the lights will not function when drawers are opened.

To initiate Sabbath Mode, the refrigerator section must be switched OFF (See Figure 3-70). With the refrigerator section OFF, press and hold the UNIT ON/OFF key for five seconds (See Figure 3-71). To return to normal lighting operation, press and release the UNIT ON/OFF key (See Figure 3-72).

NOTE: *Sabbath Mode must be initiated separately in the wine storage section of model 427R.*

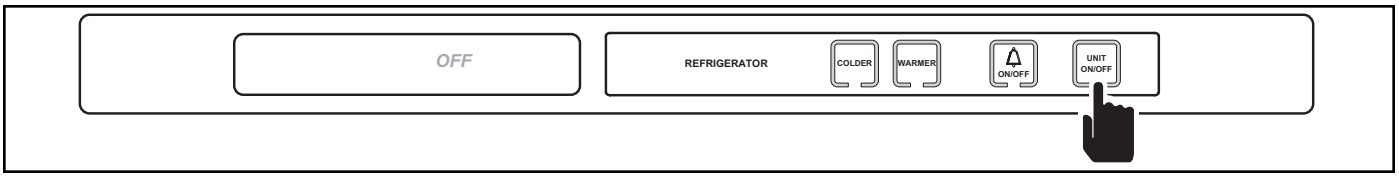


Figure 3-70. Switch Refrigerator Section OFF First

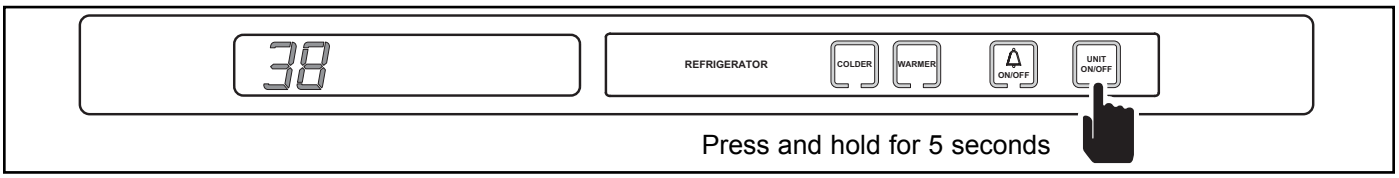


Figure 3-71. Initiate Sabbath Mode, Press and Hold UNIT ON/OFF Key for 5 Seconds

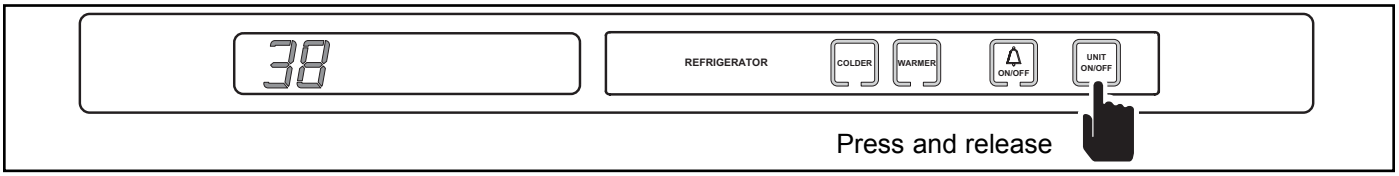


Figure 3-72. Exit Sabbath Mode, Press and Release UNIT ON/OFF Key

Showroom Mode

Showroom Mode was incorporated into the electronic control of the 427R refrigerator control to allow product distributors and dealers to display a model 427R without actually having it cooling. To initiate Showroom Mode, the unit must be switched OFF (See Figure 3-73). With the unit switched off, press and hold the COLDER and WARMER keys and press the UNIT ON/OFF key, then release all three keys (See Figure 3-74). The unit is now in Showroom Mode. All cooling functions are disabled, but the lights, LCD and door ajar alarm are not.

To exit Showroom Mode, repeat the steps above. Confirm unit is out of Showroom Mode by checked for evaporator fan operation, and/or compressor operation.

NOTE: *Showroom Mode must be initiated separately in the wine storage section of model 427R.*

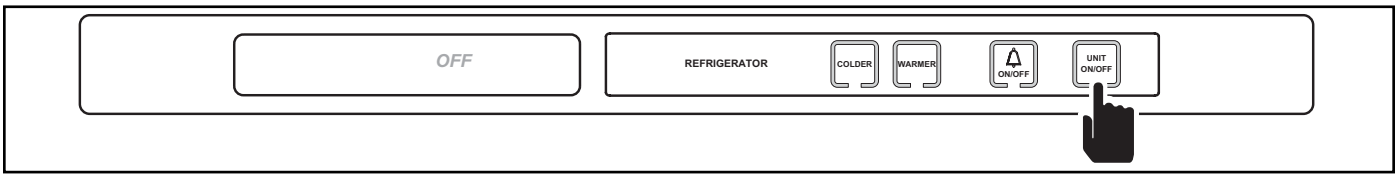


Figure 3-73. Switch Refrigerator Section OFF First

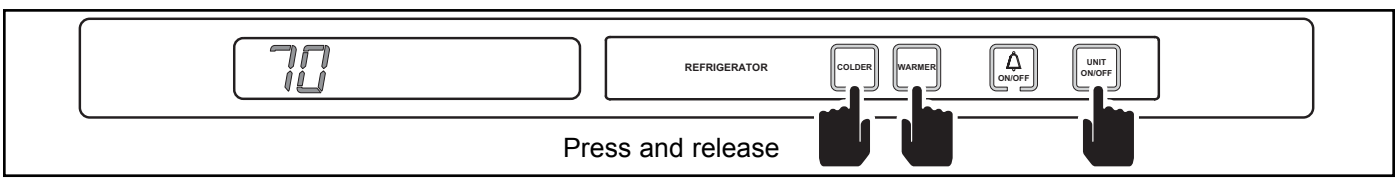


Figure 3-74. Initiate (or Exit) Showroom Mode, Press COLDER, WARMER and UNIT ON/OFF Keys

MODEL 427R REFRIGERATOR THERMISTOR MALFUNCTION ERROR INDICATORS:

A 427R refrigerator thermistor fault (short or open), will be displayed at the control panel. If the problem is with the compartment thermistor, the the letters "EE" and the “SERVICE” annunciator will flash on the LCD (See Figure 3-75). Prior to serial #1728753, the letters "EE" and the drawer location annunciators will flash on the LCD.

If there is a problem with the evaporator thermistor, the “SERVICE” annunciator alone will flash on the LCD (See Figures 3-76). Prior to serial #1728753, the drawer location annunciators alone will flash on the LCD.

NOTE: *Correcting/repairing the thermistor problem will clear the Thermistor Malfunction Error Indicator.*

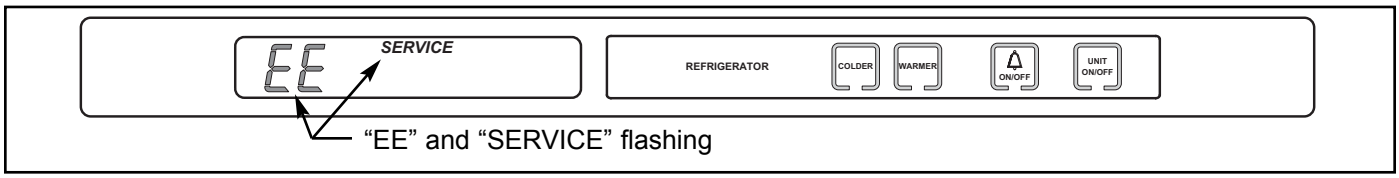


Figure 3-75. 427R Refrigerator Compartment Thermistor Fault, “EE” & “SERVICE” Flashing
(Prior to Serial #1728753, "EE" and the Drawer Location Annunciators Will Flash)

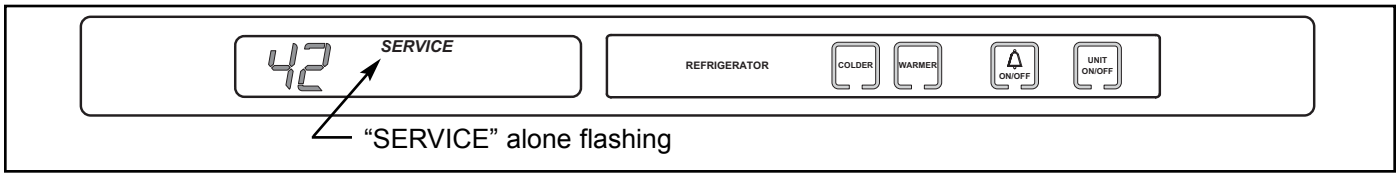


Figure 3-76. 427R Refrigerator Evaporator Thermistor Fault, “SERVICE” alone Flashing
(Prior to Serial #1728753, the Drawer Location Annunciators Alone Will Flash)

MODEL 427R REFRIGERATOR ELECTRONIC COMMUNICATION ERROR INDICATORS:

If a communication error between the 427R refrigerator control panel and the refrigerator control board occurs, the LCD will display either “EO” or “E3” (See Figures 3-77 and 3-78).

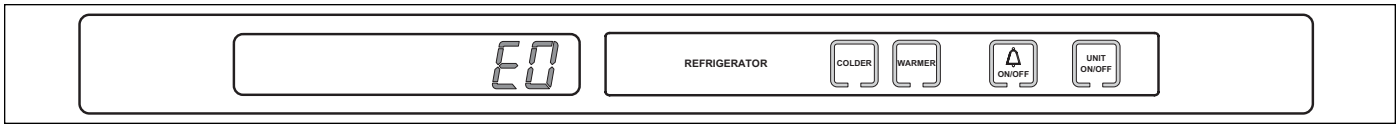


Figure 3-77. Communication Error Between 427R Refrigerator Control Board and Control Panel, “EO” Displayed

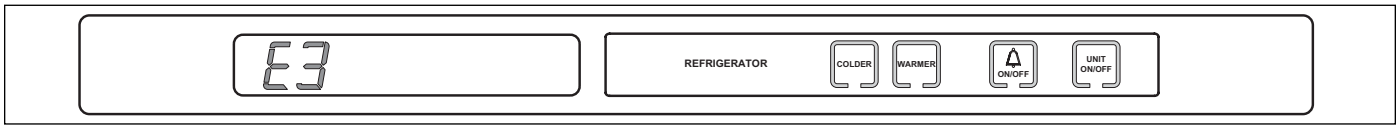


Figure 3-78. Communication Error Between 427R Refrigerator Control Board and Control Panel, “E3” Displayed

MODEL 427R REFRIGERATOR DIAGNOSTIC MODE:

The Diagnostic Mode was incorporated into the 427R refrigerator electronic control system to assist in diagnosing problems in the 427R refrigerator section. When in Diagnostic Mode, the real-time thermistor temperatures are shown in the display window of the control panel, without off-set adjustments.

To initiate Diagnostic Mode in the 427R refrigerator section, the refrigerator section must be ON. Now, press and hold the COLDER key, and press the UNIT ON/OFF key, then release both keys. The unit is now in Diagnostic Mode and the left temperature display area shows the real-time temperature of the first thermistor being read. The left temperature display area shows a code which indicates the location of the thermistor, in this case the letter "**r**" indicates the refrigerator compartment temperature is being observed. (See Figure 3-79) Prior to serial #1728753, press UNIT ON/OFF key now to Identify thermistor location.

Pressing the COLDER key will toggle to the evaporator temperature reading, this too is shown in the left temperature display area, with "**E**" at right indicating the evaporator temperature is being observed. (See Figure 3-80) Prior to serial #1728753, press UNIT ON/OFF key now to Identify thermistor location.

NOTE: *During Diagnostic Mode, if "EE" is displayed in place of a temperature reading, the thermistor in that location, or its connections, is faulty (See Figure 3-81).*

NOTE: *Prior to serial #1728753, Diagnostic Mode will end ten seconds after the last key stroke. Starting with serial #1728753, Diagnostic Mode will end twenty seconds after the last key stroke.*

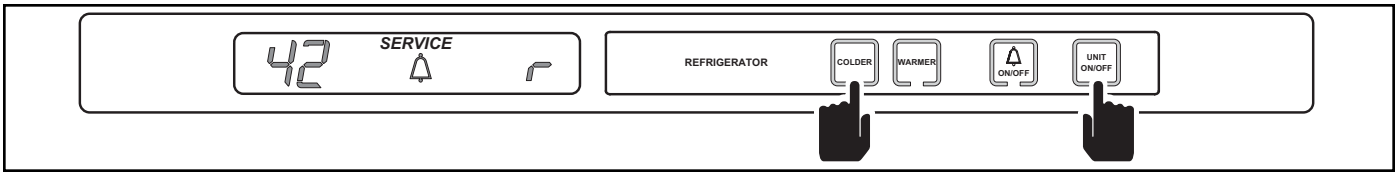


Figure 3-79. Initiating Diagnostic Mode, Press COLDER Key and UNIT ON/OFF key. First Reading is Refrigerator Compartment Temperature, Indicated by "r"
(Prior to Serial #1728753, press UNIT ON/OFF Key Now to Identify Thermistor Location)

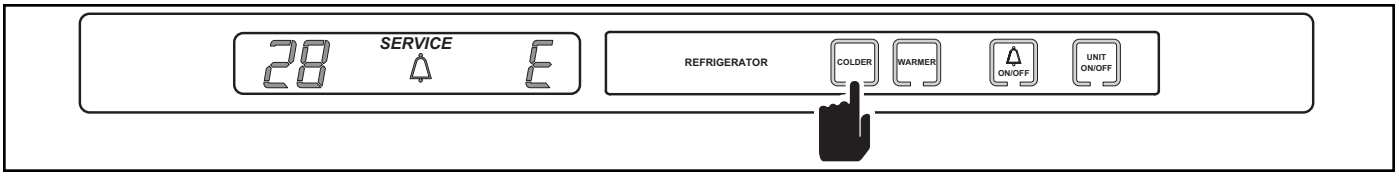


Figure 3-80. Toggle to Next Reading, Press COLDER Key. Second Reading is Refrigerator Evaporator Temperature, Indicated by "E"
(Prior to Serial #1728753, press UNIT ON/OFF Key Now to Identify Thermistor Location)

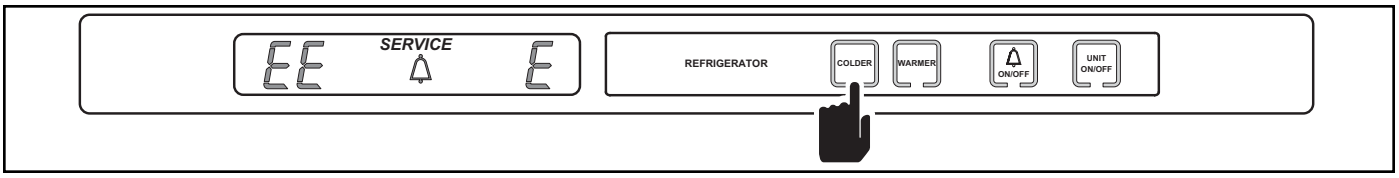


Figure 3-80. If "EE" is Displayed, Thermistor in that Location is Faulty
(Prior to Serial #1728753, press UNIT ON/OFF Key Now to Identify Thermistor Location)

SECTION 4

SEALED SYSTEM INFORMATION

HFC-134a REFRIGERANT SERVICE INFORMATION:

The 400 Series sealed system contains HFC-134a refrigerant. This section gives some general rules for working with 134a, and explains procedures to be followed while servicing the sealed system.

⚠ CAUTION

134a refrigerant requires synthetic Ester oil in the compressor, and does not tolerate contamination from other refrigerants, moisture, petroleum-based lubricants, silicone lubricants, cleaning compounds, rust inhibitors, leak detection dyes, or any other type of additive.

General Rules for Working with 134a Refrigerant

- Use equipment dedicated to 134a sealed system service only.

- Use only 134a refrigerant for back-flushing and sweep charging.
- Always replace the filter-drier when servicing the sealed system.

- The filter-drier must be cut from the sealed system. Never un-braze the drier as the heat will drive moisture back into the sealed system.

- Do not leave sealed system nor replacement compressor open to the atmosphere for more than 10 minutes.

- When the rubber plugs are pulled from the service compressor, a release of pressure should be heard. If no release of pressure is heard, do not use the compressor.

- Use ONLY virgin 134a refrigerant when recharging the sealed system.

NOTE: *The 427R Refrigerator Sealed System Service Procedures for 134a are the same as those in the table at right, except for the "NOTE" in the second column of the table.*

WINE STORAGE SEALED SYSTEM REPAIR PROCEDURES

Problem	Service Procedures
Non-Operating, Inefficient, Noisy Compressor *(**NOTE**: To check for a non-operating compressor, a hard start kit can be used)*	a. Capture refrigerant b. Replace Compressor c. Replace filter-drier d. Evacuate or sweep charge system ***NOTE:** If evacuating the sealed system, you must evacuate from both the low & high sides, due to the refrigerant valves. If sweep charging the sealed system, you must energize each refrigerant valves during the sweeping procedure. (See Manual Valve Activation Mode in Section 3)* e. Recharge system with Virgin 134a refrigerant.
High Side leak	a. Capture refrigerant. b. Repair leak. c. Replace filter-drier. d. Evacuate or sweep charge system. ***NOTE:** If evacuating the sealed system, you must evacuate from both the low & high sides, due to the refrigerant valves. If sweep charging the sealed system, you must energize each refrigerant valves during the sweeping procedure. (See Manual Valve Activation Mode in Section 3)* e. Recharge system with Virgin 134a refrigerant.
Low Side Leak	a. Capture refrigerant. b. Repair leak (if at solder joint) or replace part. c. Back flush high side of sealed system. d. Replace compressor. e. Replace filter-drier. f. Evacuate or sweep charge system. ***NOTE:** If evacuating the sealed system, you must evacuate from both the low & high sides, due to the refrigerant valves. If sweep charging the sealed system, you must energize each refrigerant valves during the sweeping procedure. (See Manual Valve Activation Mode in Section 3)* g. Recharge system with Virgin 134a refrigerant.
Contaminated Sealed System *Examples:* > *Burned out compressor* > *Excessive moisture from leak in condensate loop or in low side* > *Plugged capillary tube*	a. Capture refrigerant. b. Repair leak (if at solder joint) or replace part. c. Back flush high side of sealed system. d. Replace compressor. e. Replace filter-drier. f. Replace heat exchanger if cap tube is clogged. g. Install a low side drier on suction line. h. Evacuate or sweep charge sealed system. ***NOTE:** If evacuating the sealed system, you must evacuate from both the low & high sides, due to the refrigerant valves. If sweep charging the sealed system, you must energize each refrigerant valves during the sweeping procedure. (See Manual Valve Activation Mode in Section 3)* i. Recharge with Virgin 134a refrigerant.
Restriction *(**NOTE**: If restriction is due to sealed system being contaminated, see Contaminated Sealed System above.)*	a. Capture refrigerant. b. Locate and remove restriction or locate and replace part. c. Back flush high side of sealed system. d. Replace filter-drier. e. Evacuate or sweep charge system. ***NOTE:** If evacuating the sealed system, you must evacuate from both the low & high sides, due to the refrigerant valves. If sweep charging the sealed system, you must energize each refrigerant valves during the sweeping procedure. (See Manual Valve Activation Mode in Section 3)* f Recharge system with Virgin 134a refrigerant.
Overcharge	a. Capture refrigerant. b. Replace filter-drier. c. Evacuate or sweep charge system. ***NOTE:** If evacuating the sealed system, you must evacuate from both the low & high sides, due to the refrigerant valves. If sweep charging the sealed system, you must energize each refrigerant valves during the sweeping procedure. (See Manual Valve Activation Mode in Section 3)* d. Recharge system with Virgin 134a refrigerant.

SEALED SYSTEM OPERATION:

This section begins with the basic wine storage sealed system components listed in order of refrigerant flow, with an explanation of their fundamental role as part of this sealed system. This is followed by the 427R refrigerator sealed system, then refrigerant flow diagrams of the four Sub-Zero wine storage units.

The Sub-Zero Wine storage Sealed System Components and Their Role:

Compressor (Figure 4-1)
The compressor creates a high side and low side pressure difference in the sealed system by compressing the refrigerant gas, thus raising the pressure and temperature. This high-pressure/high-heat gas exits the discharge line and is routed around the door gasket seat *(except on the refrigerator section of the 427R)* to prevent sweating. *(On the models 424 and 430, this gas is also routed through a drain pan loop to help evaporate water in the drain pan.)* The high-pressure/high-heat gas is then routed to the condenser.

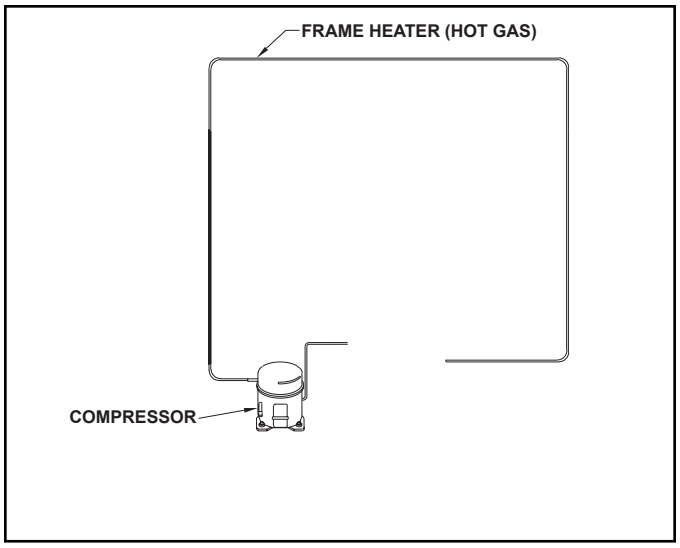


Figure 4-1. Compressor

Condenser (Figure 4-2)
The high-pressure/high-heat gas travels through the condenser, where the heat is dissipated by cooler air being drawn over the condenser tubing. This changes the gas into a high-pressure warm liquid before it enters the high-side filter-drier.

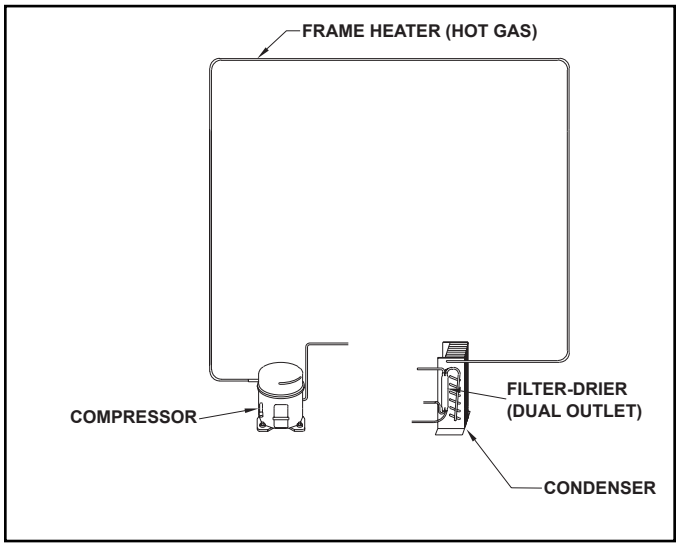


Figure 4-2. Condenser & Filter-Drier

Filter-Drier (Figure 4-2)
The high-pressure warm liquid travels through the high-side filter-drier, where moisture is removed from the refrigerant before it enters the refrigerant valve.

NOTE: *The refrigerator section of the 427R does not utilize refrigerant valves. The high-pressure warm liquid travels directly from the filter-drier to the capillary tube.*

Refrigerant Valve(s) (Figure 4-3)
The refrigerant valves open or close depending on the wine storage compartment calling for cooling. When one refrigerant valve is energized/open, the other is de-energized/closed. When open, the refrigerant valve allows the high-pressure warm liquid to enter the appropriate capillary tube.

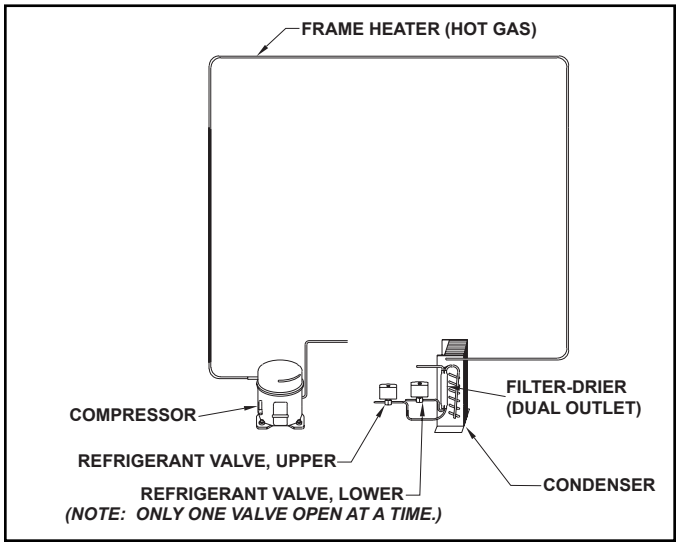


Figure 4-3. Refrigerant Valve(s)

Capillary Tube(s) (Figure 4-4)
As the warm liquid refrigerant travels through the capillary tube the pressure drops, cooling the liquid before it enters the evaporator.

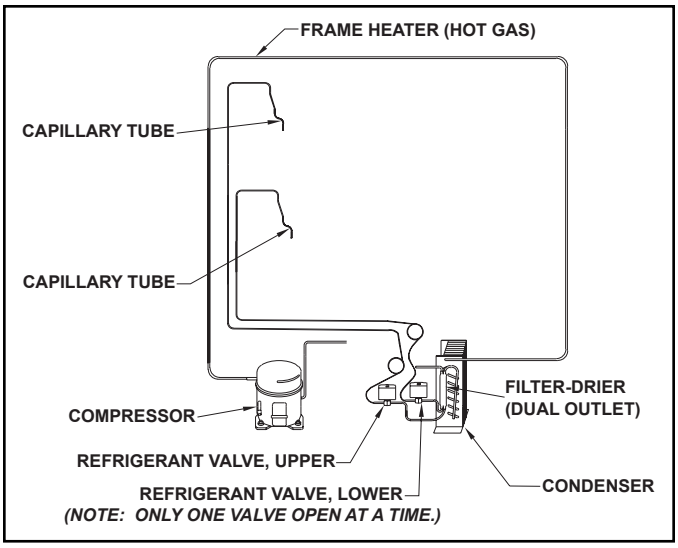


Figure 4-4. Capillary Tube(s)

Evaporator(s) (Figure 4-5)
The low pressure/cooled liquid refrigerant travels through the evaporator absorbing heat from the compartment, gradually converting it to a cool gas. This cool gas then enters the suction line.

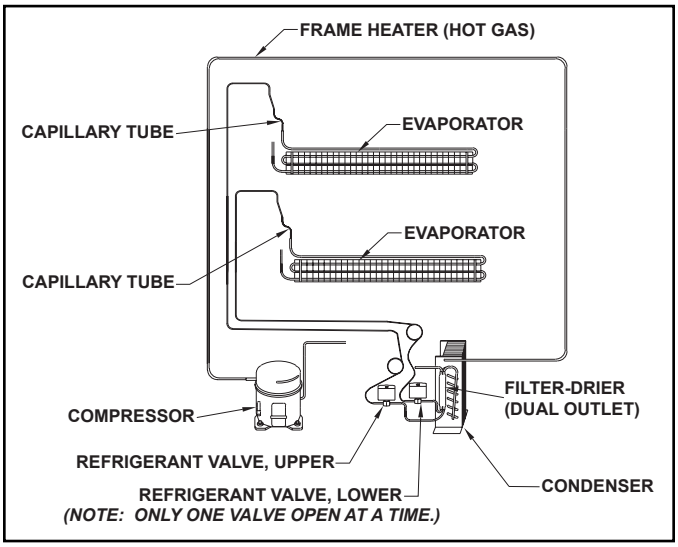


Figure 4-5. Evaporator(s)

Suction Line(s) & Heat Exchanger(s) (Figure 4-6)
The cool gas travels through the suction line which is soldered to the capillary tube. (These two tubes soldered together create the heat exchanger.) As this cool refrigerant gas travels through the suction line it absorbs heat from the warm liquid refrigerant traveling through the capillary tube. The lukewarm refrigerant gas then returns to the compressor where the process begins again.

NOTE: *There is a suction line "T" connection in the wine storage sealed system that diverts the two separate suction lines from the evaporators to one suction line that enters the compressor.*

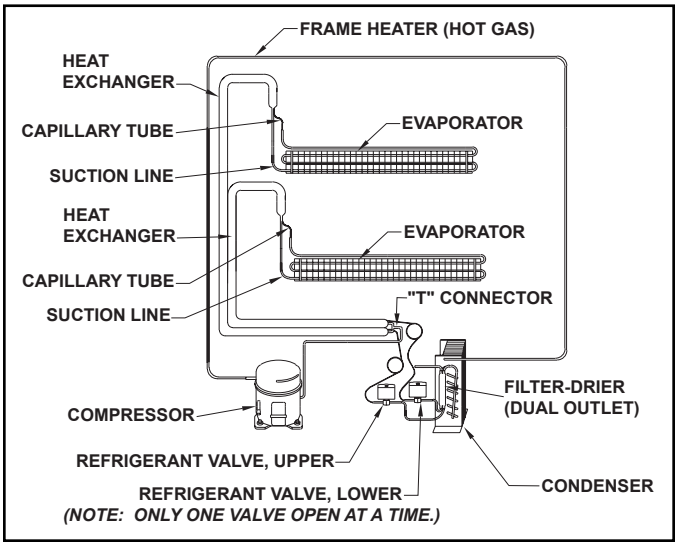


Figure 4-6. Suction Line(s) & Heat Exchanger(s)

The Sub-Zero Model 427R Refrigerator Sealed System Components and Their Role:

Compressor (Figure 4-7)
The compressor creates a high side and low side pressure difference in the sealed system by compressing the refrigerant gas, thus raising the pressure and temperature. This high-pressure/high-heat gas exits the discharge line and is routed to the condenser.

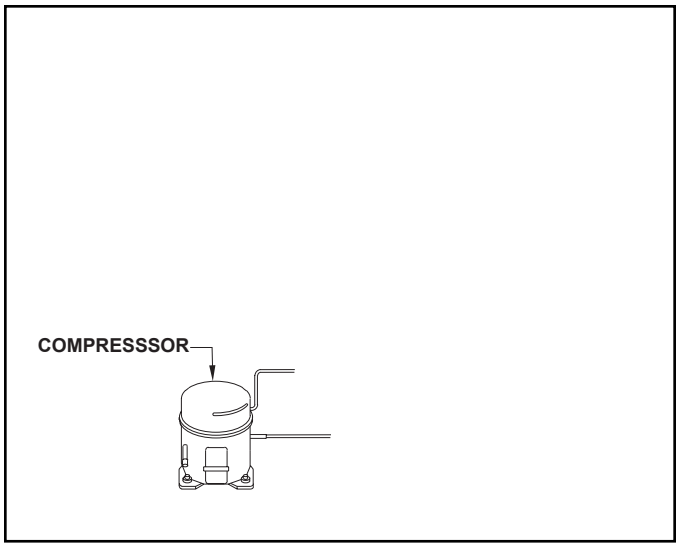


Figure 4-7. Compressor

Condenser (Figure 4-8)
The high-pressure/high-heat gas travels through the condenser, where the heat is dissipated by cooler air being drawn over the condenser tubing. This changes the gas into a high-pressure warm liquid before it enters the high-side filter-drier.

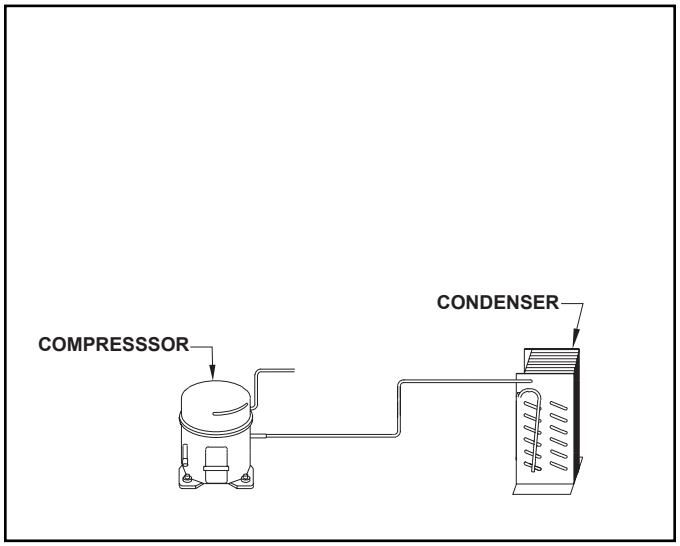


Figure 4-8. Condenser

Filter-Drier (Figure 4-9)
The high-pressure warm liquid travels through the high-side filter-drier, where moisture is removed from the refrigerant before it enters the capillary tube.

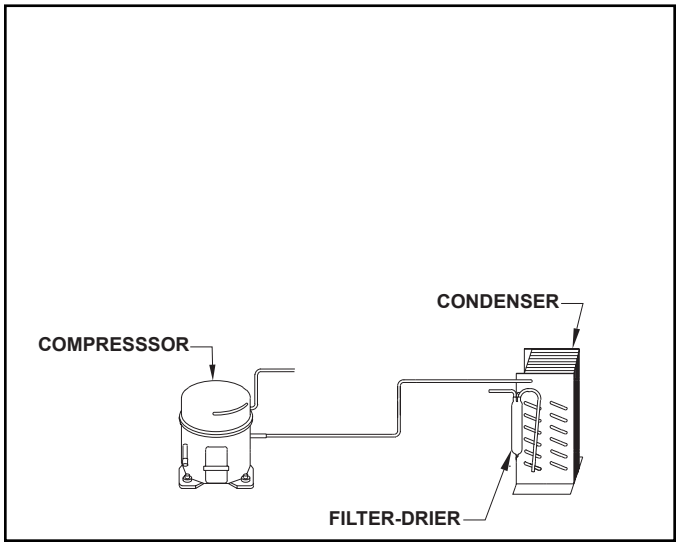


Figure 4-9. Filter-Drier

Capillary Tube (Figure 4-10)
As the warm liquid refrigerant travels through the capillary tube the pressure drops, cooling the liquid before it enters the evaporator.

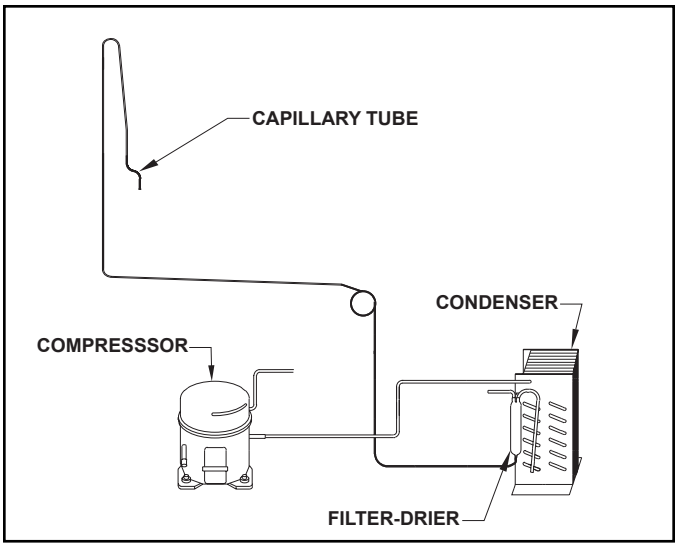


Figure 4-10. Capillary Tube

Evaporator (Figure 4-11)
The low pressure/cooled liquid refrigerant travels through the evaporator absorbing heat from the compartment, gradually converting it to a cool gas. This cool gas then enters the suction line.

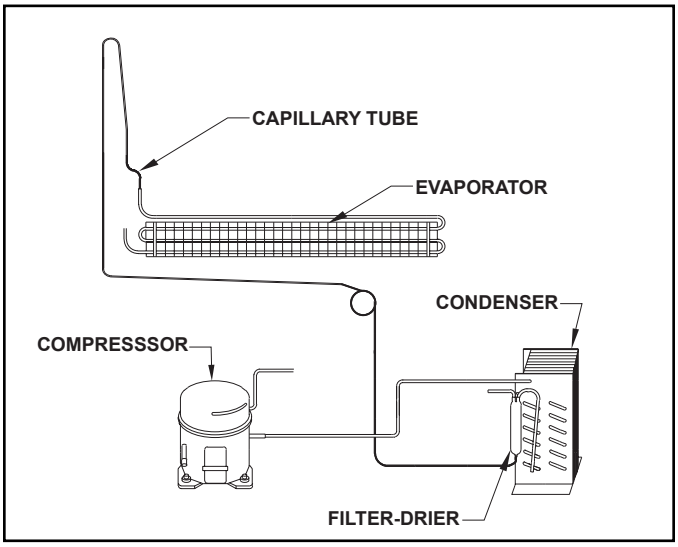


Figure 4-11. Evaporator

Suction Line & Heat Exchanger (Figure 4-12)
The cool gas travels through the suction line which is soldered to the capillary tube. (These two tubes soldered together create the heat exchanger.) As this cool refrigerant gas travels through the suction line it absorbs heat from the warm liquid refrigerant traveling through the capillary tube. The lukewarm refrigerant gas then returns to the compressor where the process begins again.

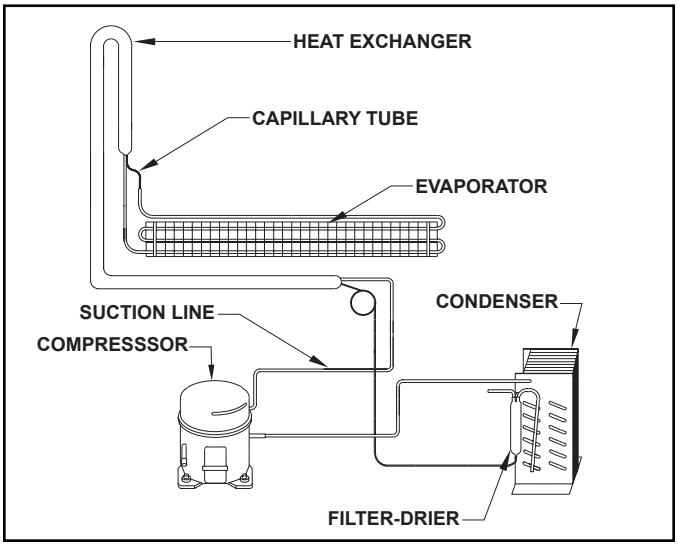


Figure 4-12. Suction Line & Heat Exchanger

SEALED SYSTEM REFRIGERANT FLOW DIAGRAMS:

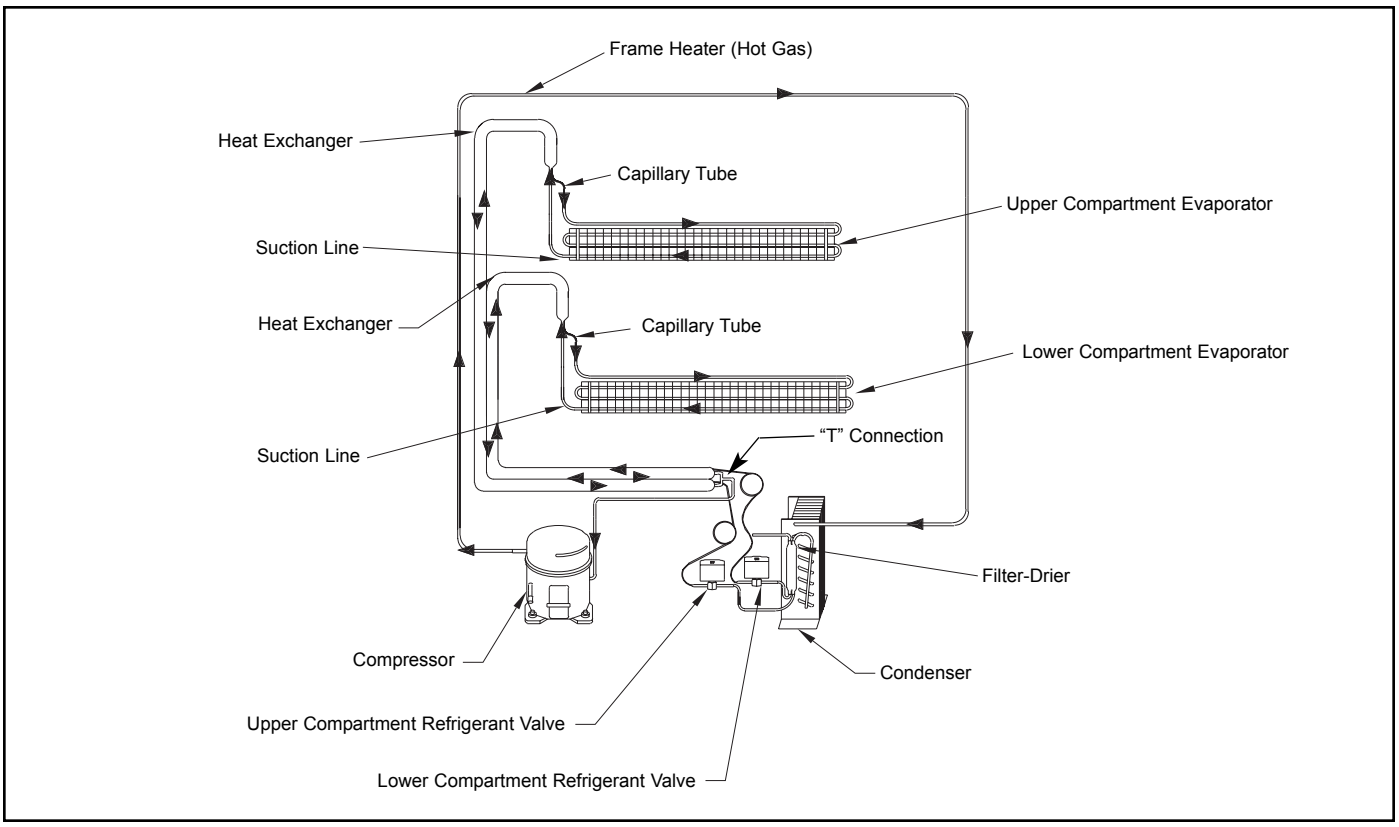


Figure 4-13. Model 424 Refrigerant Flow

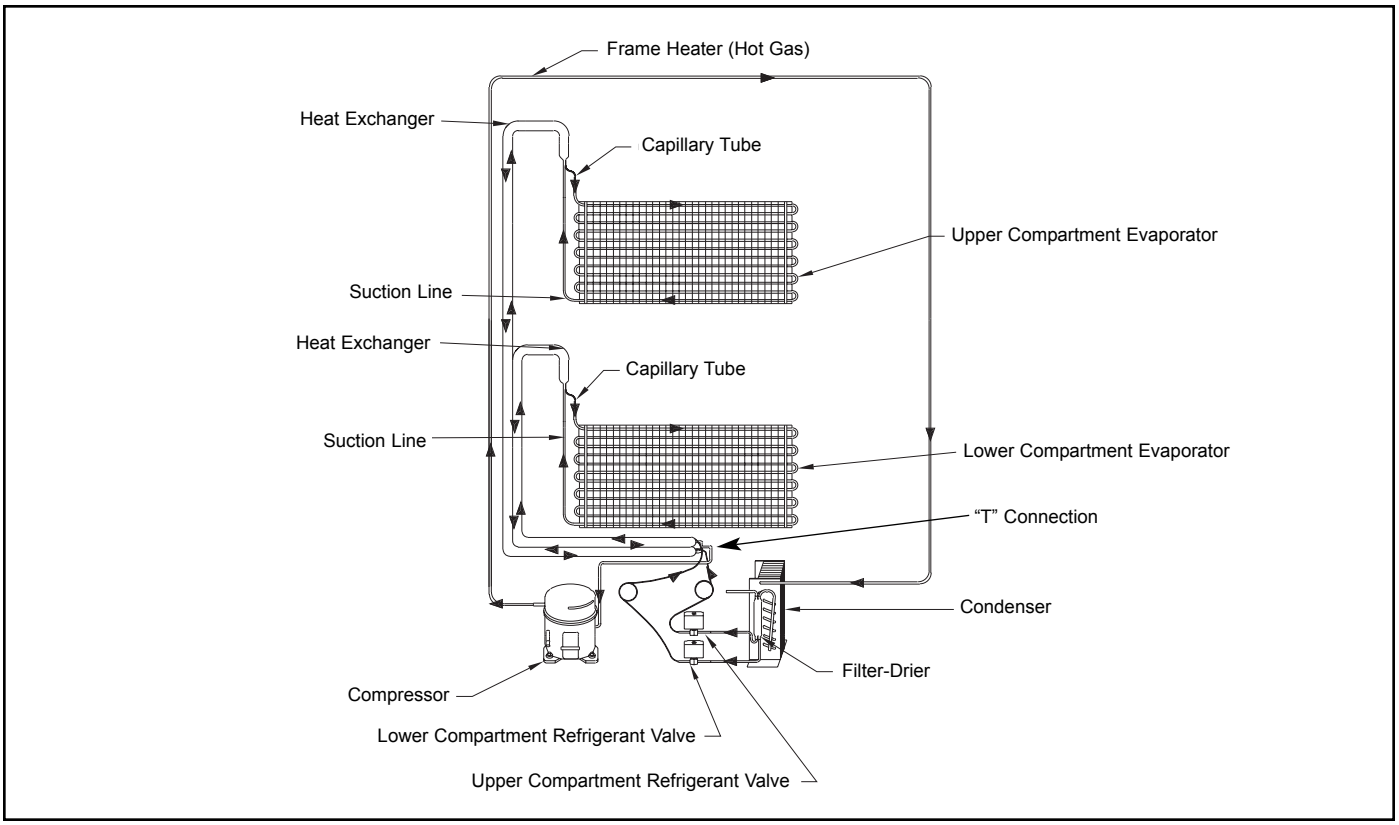


Figure 4-14. Model 427 Refrigerant Flow

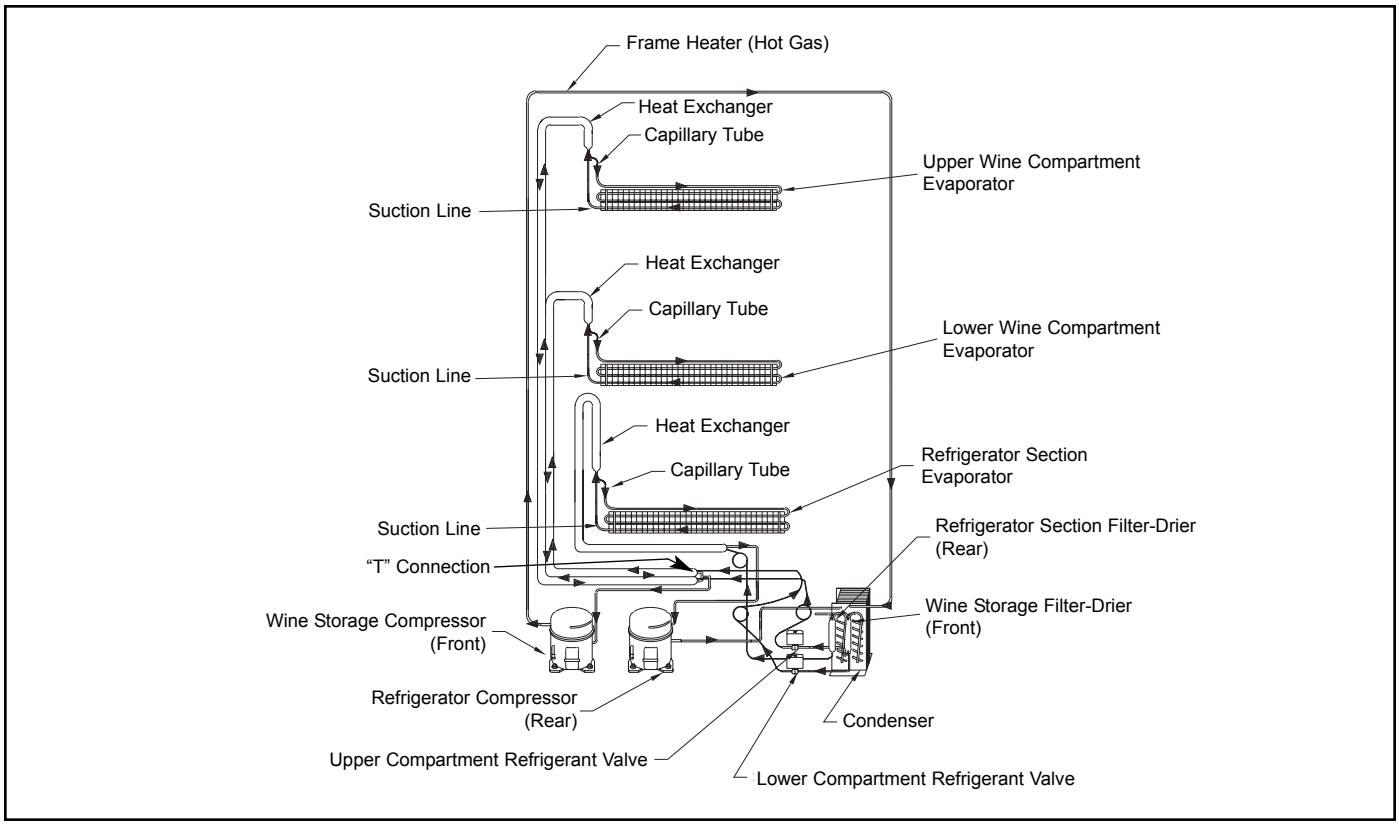


Figure 4-15. Model 427R Refrigerant Flow

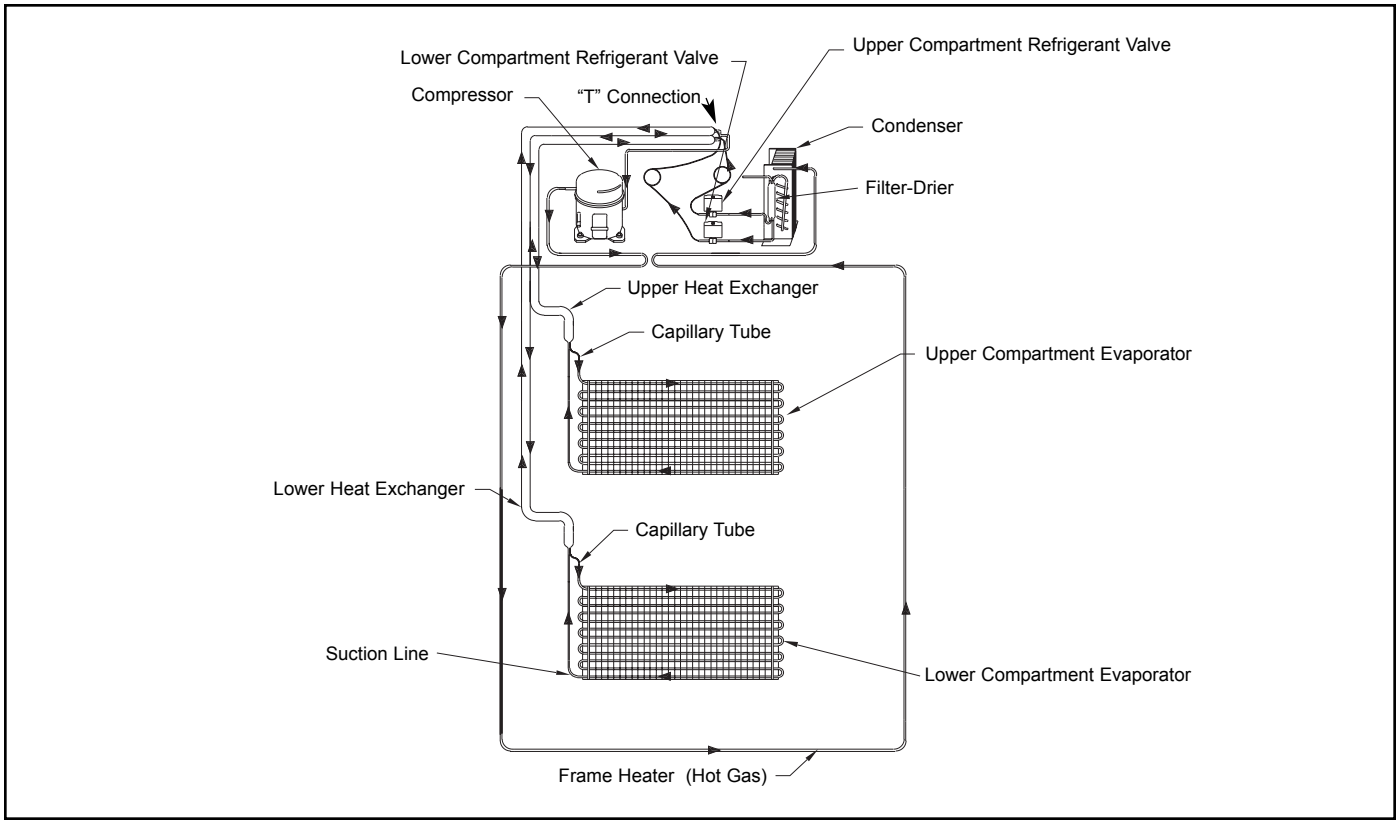


Figure 4-16. Model 430 Refrigerant Flow

SECTION 5

AIR FLOW & FAN BLADE SPACING

AIR FLOW DIAGRAMS & EVAPORATOR FAN-BLADE SPACING:

This section illustrates air flow direction through compartments, and proper evaporator fan blade spacing.

NOTE: *Prior to serial #1944319, evaporator fans in wine storage compartments run 100% unless the door is open. Starting with serial #1944319, evaporator fans in wine storage compartments cycle with the refrigerant valves.*

NOTE: *The evaporator fan in refrigerator compartment of model 427R cycles with refrigerator compressor.*

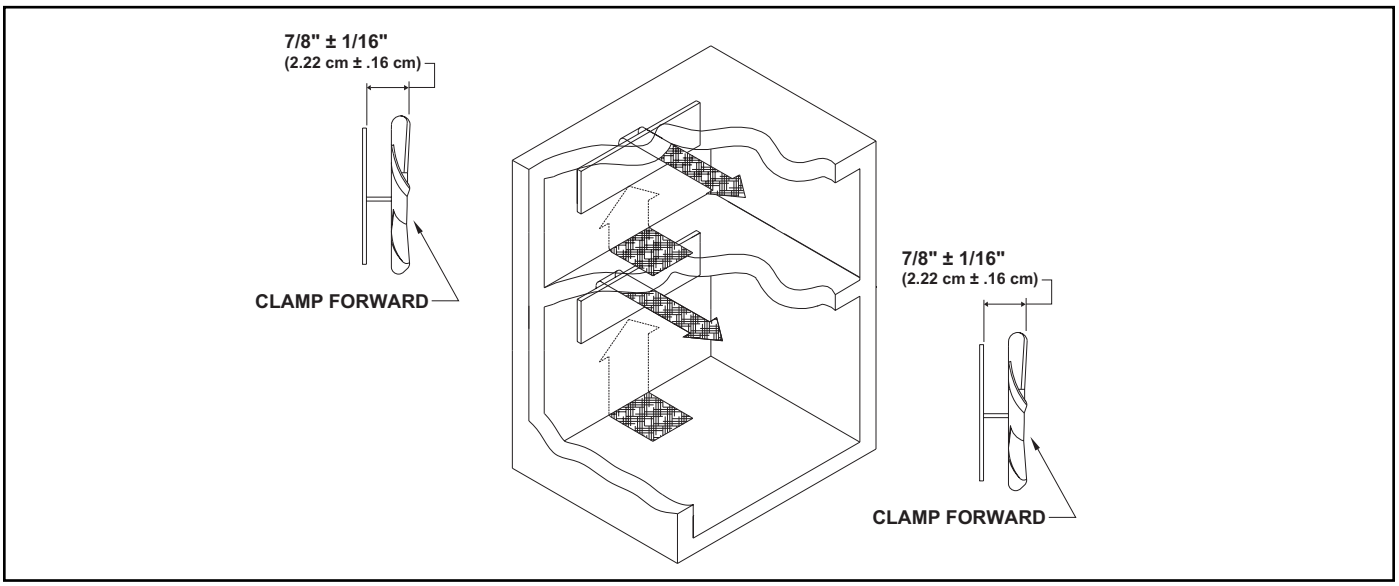


Figure 5-1. Air Flow & Fan Blade Spacing - Model 424

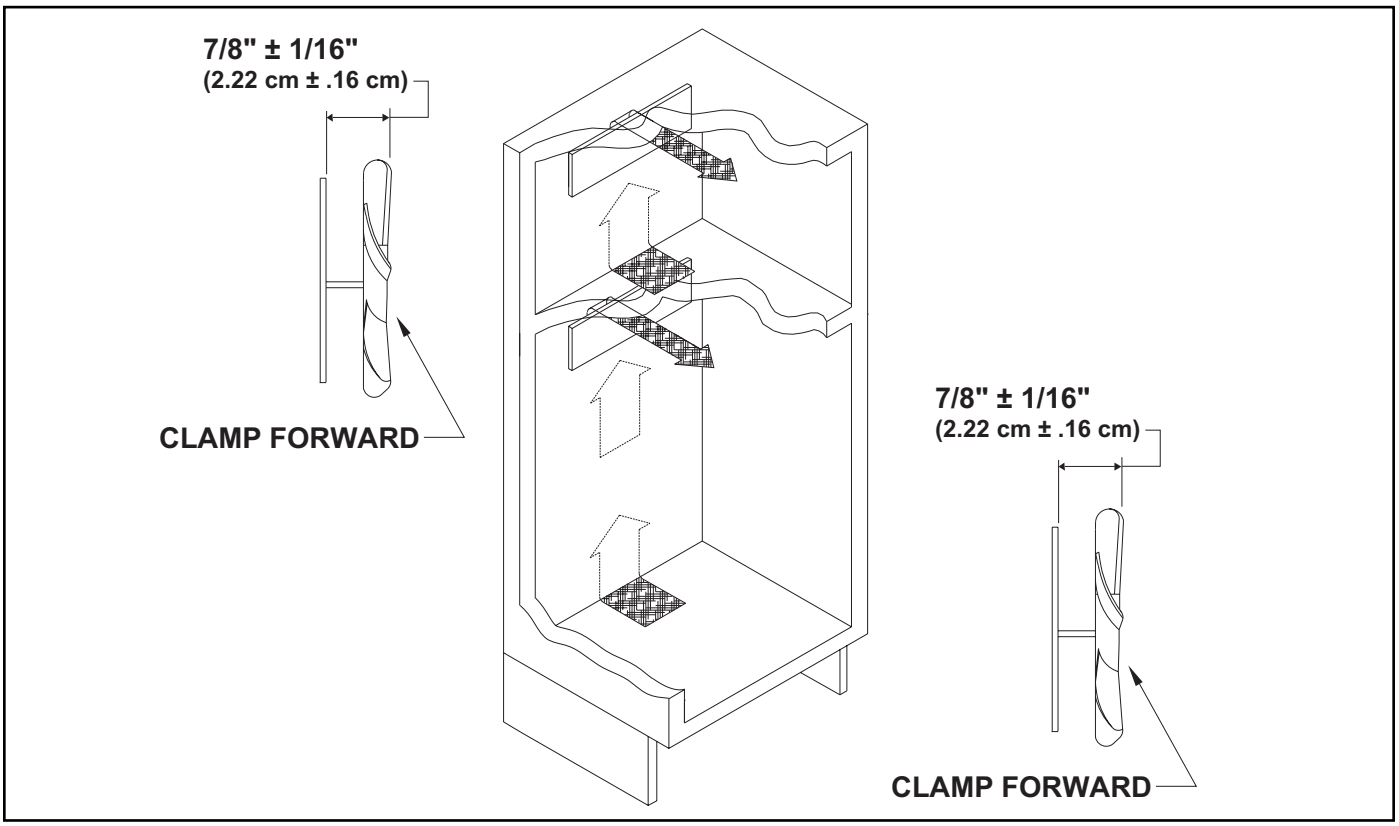


Figure 5-2. Air Flow & Fan Blade Spacing - Model 427

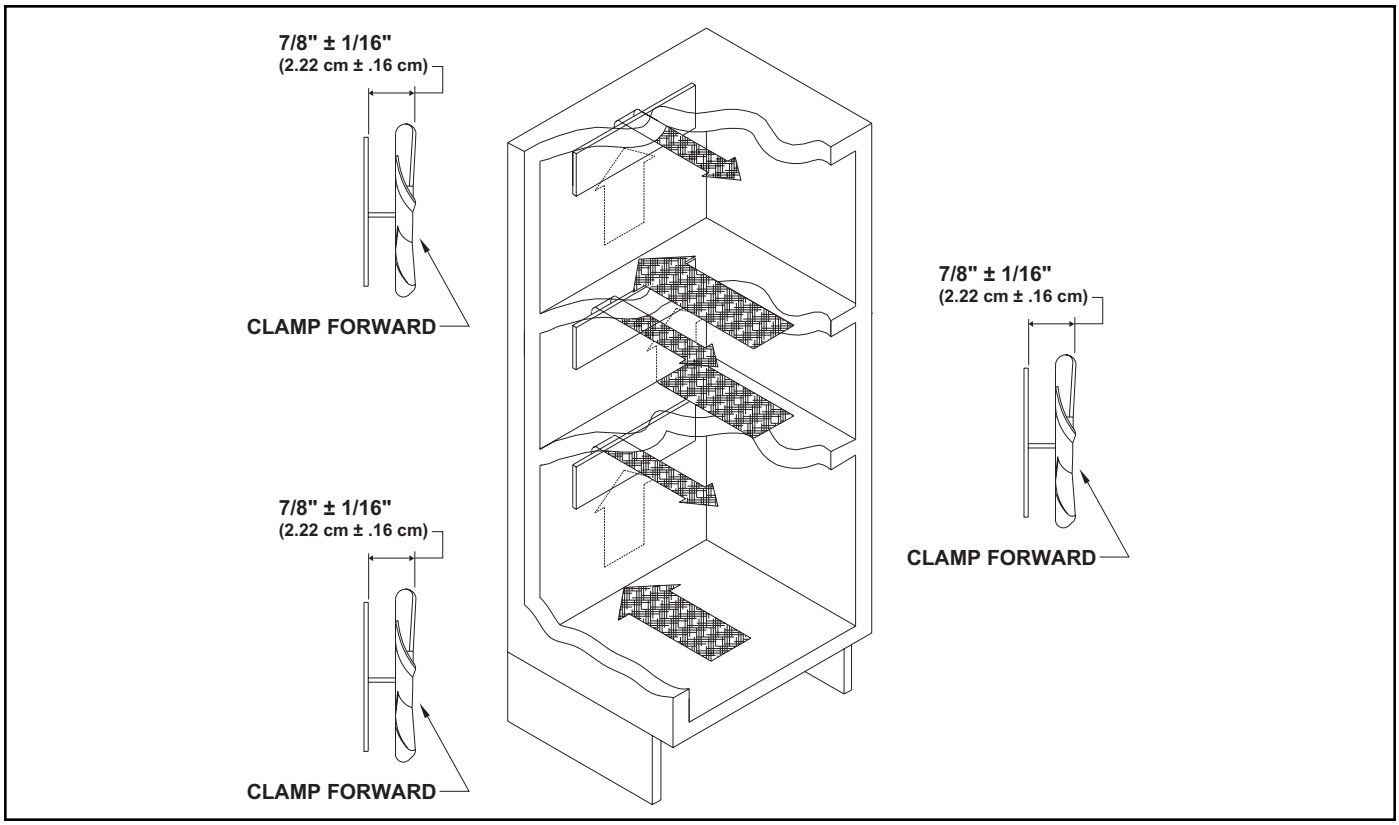


Figure 5-3. Air Flow & Fan Blade Spacing - Model 427R

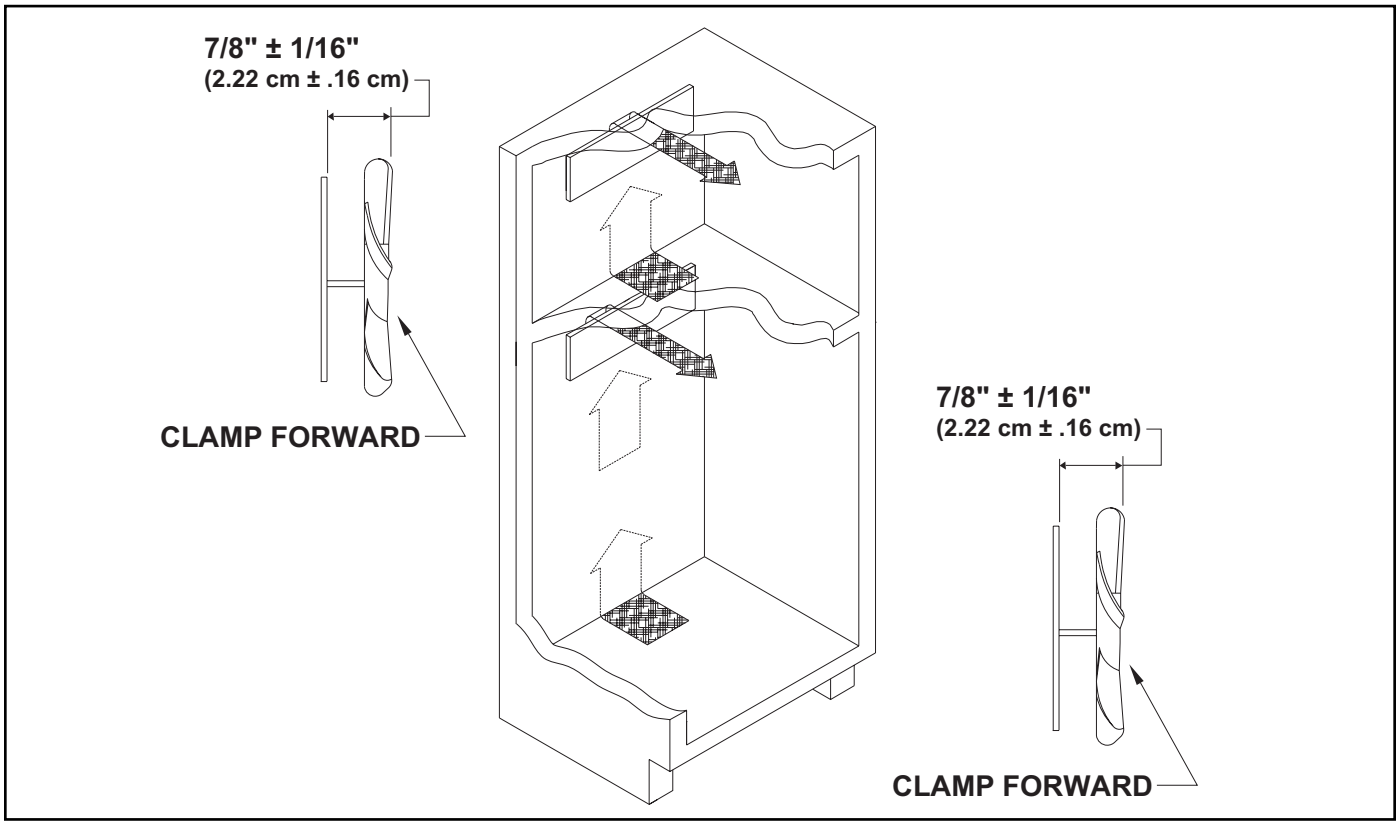


Figure 5-4. Air Flow & Fan Blade Spacing - Model 430

SECTION 6

COMPONENT REMOVAL

COMPONENT ACCESS AND REMOVAL:

This section explains how to access and remove components on / in a 400 Series unit. Due to the diversity of the 400 Series, this section is divided into three sub-sections with the model 424 being covered first, followed by the models 427 and 427R, and the third sub-section covers the model 430. In each of the three sub-sections you will find access and removal instructions for the external cosmetic and mechanical components, followed by the interior cosmetic components, the interior mechanical components and the sealed system components.

Before continuing, please take note of the WARNINGS and CAUTIONS below.

⚠ WARNING

IF IT IS NECESSARY TO REMOVE A UNIT FROM ITS INSTALLATION, REMEMBER THAT THE UNIT COULD TIP FORWARD WHEN PULLED FORWARD, BEYOND THE ANTI-TIP COMPONENTS, RESULTING IN SERIOUS INJURY OR DEATH. PULLING A UNIT FROM ITS INSTALLATION SHOULD ONLY BE PERFORMED BY AN AUTHORIZED SERVICE TECHNICIAN OR INSTALLER.

⚠ WARNING

TO AVOID ELECTRIC SHOCK, POWER TO THE UNIT MUST BE DISCONNECTED WHENEVER ACCESSING AND/OR REMOVING COMPONENTS POWERED BY ELECTRICITY OR COMPONENTS NEAR OTHER ELECTRICAL COMPONENTS.

⚠ WARNING

WHEN REMOVING A DOOR FROM A UNIT, REMEMBER THAT DOORS ARE HEAVY. IF A DOOR WERE TO FALL , IT COULD CAUSE SERIOUS PERSONAL INJURY.

⚠ CAUTION

When removing or disconnecting door closers and/or hInge assemblies, remember they are spring loaded and may recoil quickly when released.

⚠ CAUTION

To avoid static electric damage to the control board, always handle the board by the edges.

⚠ CAUTION

When working in the compressor area, remember that compressor and tubing could be hot.

⚠ CAUTION

When working on or around evaporator or condenser, remember evaporator and condenser fins are sharp.

MODEL 424

MODEL 424 EXTERIOR COSMETIC AND MECHANICAL COMPONENT REMOVAL:

An attempt has been made to arrange these instructions in such a way as to simulate which components would need to be removed first in order to gain access to other components. When following a component removal procedure, it may be necessary to reference another removal procedure towards the front of this section.

Kickplate Removal (Model 424)

To remove the kickplate, extract the mounting screws located at each end of the kickplate and pull the kickplate forward. (See Figure 6-1)

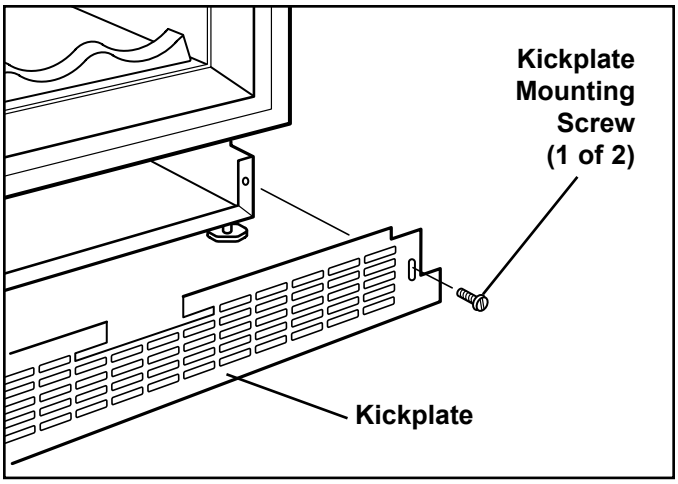


Figure 6-1. Kickplate Removal

Door Closer Removal (Model 424)

NOTE: *See DOOR CLOSER CAUTION at beginning of this section.*

To remove the door closer you will need to pull the unit approximately 6" out of the rough-in opening. (See TIPPING WARNING at beginning of this section)

NOTE: *If removing a model 424 from its installation, an anti-tip bracket and a countertop bracket may have been used to make a solid installation. (See Figures 2-2 is section 2) If the brackets were not used, shims may have been wedged along the sides and top.*

After pulling the unit from its installation, extract the two mounting screws securing the door closer to the side of unit base. Then, slide the door closer down off of the bottom door hinge pin. (See Figure 6-2)

NOTE: *It may be necessary to lean the unit back slightly to create enough clearance between the hinge pin and the floor.*

NOTE: *When reinstalling a door closer on a model 424 keep in mind that there are slots in the cam of the door closer that must line-up with the ribs on the hinge pin. Also, the cams may be in "full-closed position" or "full - open position." It is easiest to install a door closer onto the hinge pin with the door closed and the cams in the "full-open position." Then, after the closer is on the hinge pin, rotate the closer to the closed position and install the screws.*

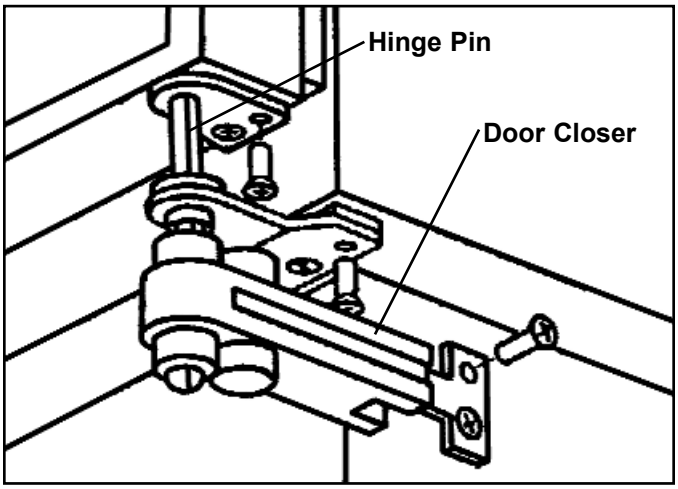


Figure 6-2. Door Closer Removal

Door Removal (Model 424)

To remove the door you will need to pull the unit approximately 6" out of the rough-in opening and remove the door closer first. (See TIPPING WARNING at beginning of this section)

NOTE: *If removing a model 424 from its installation, an anti-tip bracket and a countertop bracket may have been used to make a solid installation. (See Figures 2-2) If the brackets were not used, shims may have been wedged along the sides and top.*

After removing the door closer, open the door and extract the two screws from the top door hinge. (See figure 6-3) Lean the door away from the unit slightly and lift the door out of the bottom cabinet hinge.

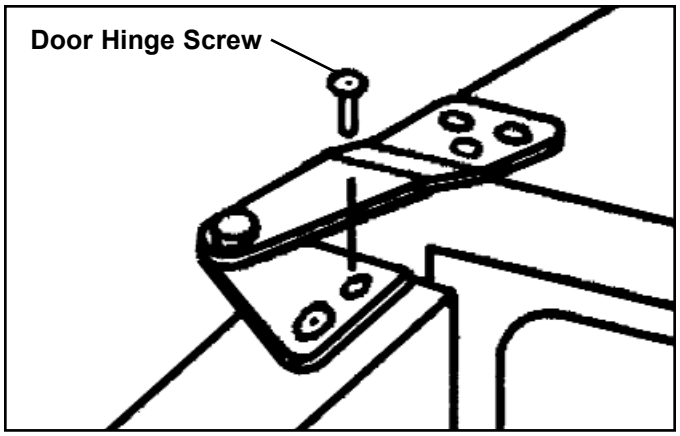


Figure 6-3. Top Door Hinge

Light and Fan Switch access and Removal (Model 424)

The light and fan switches are attached to a switch bracket, and covered by a switch guard. The switch bracket and guard are held in place by two Phillips head screws that pass up through holes in the switch bracket and slots in the switch guard on the backside.

NOTE: *See ELECTRIC SHOCK WARNING at beginning of this section.*

To access and remove a fan or light switch, extract the two phillips head screws on the backside of the switch bracket, using an offset Phillips screwdriver. (See Figure 6-4) Pull the switch guard and bracket forward. Disconnect the electrical leads from the switch being removed. Depress the tabs on the side of the switch being removed and push the switch out of the bracket.

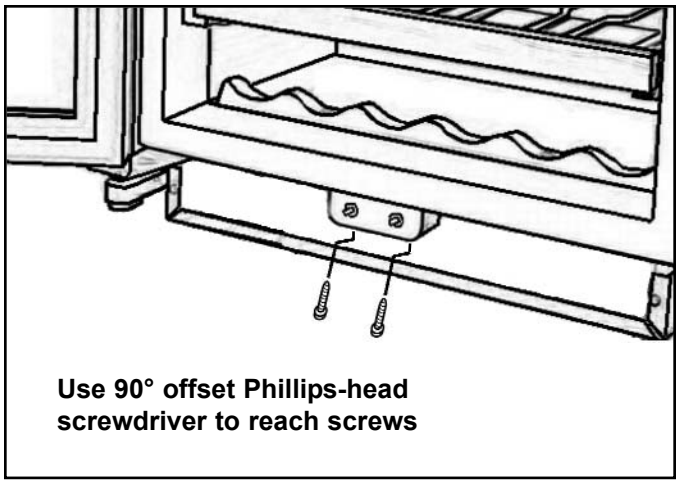


Figure 6-4. Light and Fan Switch

Exterior Wrap Components (Model 424FS ONLY)

Stainless Steel Base Cover Assemblies - The base cover assemblies are stuck to the sides of the unit base with double-stick tape. Screws passing through the ends of the kickplate and the base cover front flanges secure the kickplate and covers to the unit base. On the hinge side of the unit, screws pass through the door closer bracket and the base cover into the door closer mounting holes in then unit base.

To remove the base cover assemblies, first remove the kickplate. If a door closer is mounted on the side of the base cover being removed, remove the door closer too. Then, at the back of the unit, insert a flat-blade screwdriver between the base cover and unit base and pry the base cover off. (See Figure 6-5)

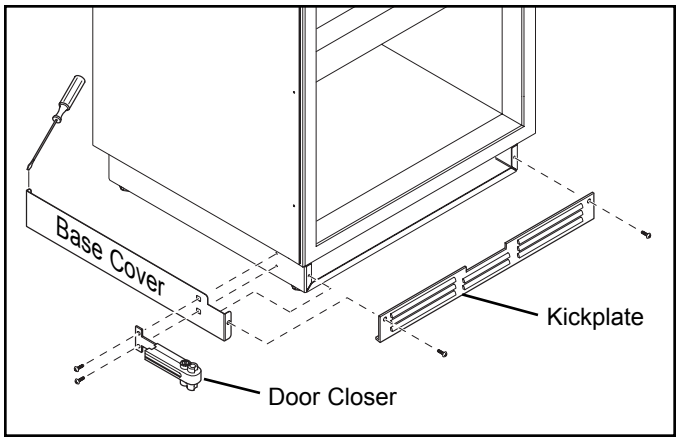


Figure 6-5. Base Cover Removal

Stainless Steel Overlay Unit Wrap - There are brackets riveted at the front of the top and sides of the unit. Flanges at the front of the unit wrap hook over these brackets. Brackets at the back of the unit hook under the back flanges of the unit wrap. When the mounting screws are tightened down on the back brackets, the brackets pull the wrap backward, which holds the wrap tight between the front and back brackets.

To remove the unit wrap, extract the back bracket mounting screws and remove the back brackets, then shide the wrap forward to disengage the front brackets and lift the wrap up and off of the unit. (See Figure 6-6)

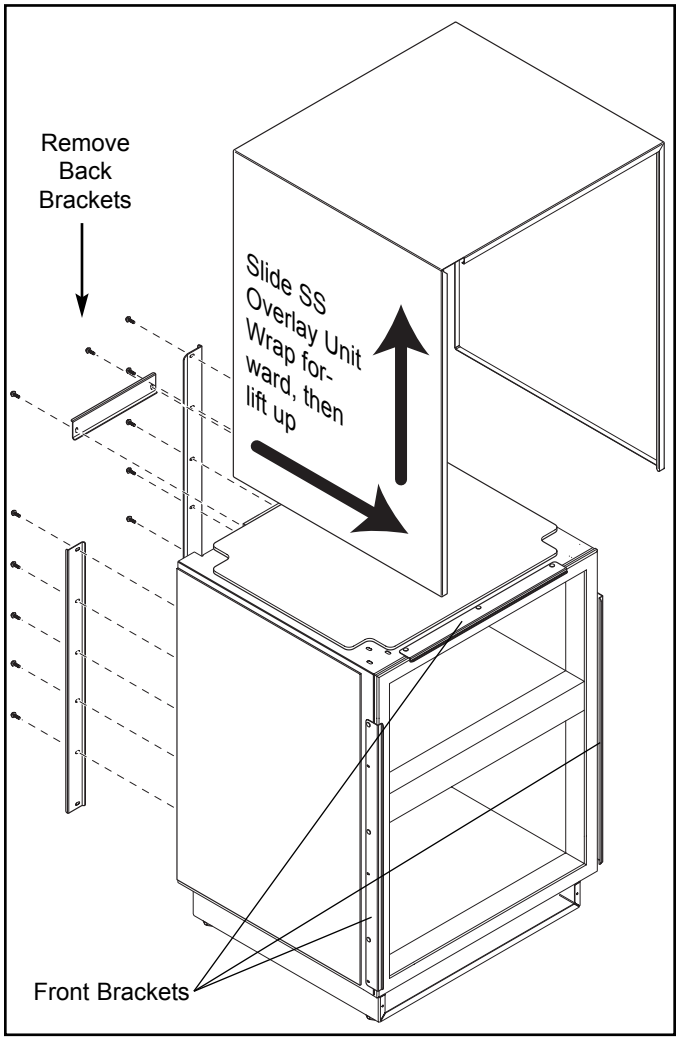


Figure 6-6. SS Unit Wrap Removal

Condenser Fan Assembly Access and Removal (Model 424)

To access the condenser fan, the unit will need to be pulled from its installation. (See TIPPING WARNING at beginning of this section.)

NOTE: If removing a model 424 from its installation, an anti-tip bracket and a countertop bracket may have been used to make a solid installation. (See Figures 2-2) If the brackets were not used, shims may have been wedged along the sides and top.

Remove the access panel from the bottom back of the unit, disconnect the fan electrical leads, and extract the grounding screw from the ground wire.

The condenser fan bracket is secured to the unit tray by screws passing up from under the unit tray into threaded stand-offs. (See figure 6-7) Lean the unit to the front or side and extract the bracket mounting screws and lift fan assembly from the unit tray.

The fan motor can now be removed from the fan bracket by extracting the fan mounting screws. The fan blade can be removed from the fan motor by turning the flat-nut on the fan motor shaft counterclockwise, then pull the blade from the shaft.

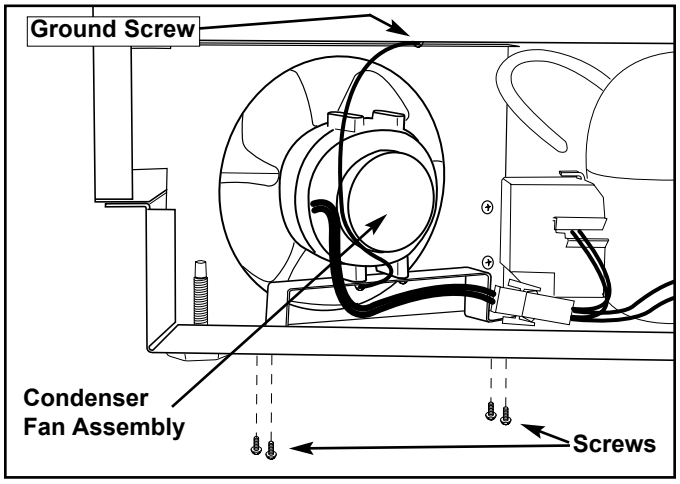


Figure 6-7. Condenser Fan Assembly

Refrigerant Valve Solenoid Access and Removal (Model 424)

To access the refrigerant valve solenoids, the unit will need to be pulled from its installation. (See TIPPING WARNING at beginning of this section.)

NOTE: *If removing a model 424 from its installation, an anti-tip bracket and a countertop bracket may have been used to make a solid installation. (See Figures 2-2) If the brackets were not used, shims may have been wedged along the sides and top.*

Remove the access panel from the bottom back of the unit. Remove the door closer (See DOOR CLOSER WARNING at beginning of this section.) Extract the four screws securing the unit tray to the cabinet on the left side, and loosen the four screws on the right side. Separate the unit tray from the cabinet by leaning the cabinet to the right, then insert a spacer between the cabinet and unit tray. *(A small piece of 2x4 lumber works well.)* (See Figure 6-8) Disconnect the electrical leads to the solenoid being removed. (See ELECTRICAL SHOCK WARNING at beginning of this section.) The solenoid is secured to the refrigerant valve with a screw at the top. Remove the screw and lift the solenoid up off the valve.

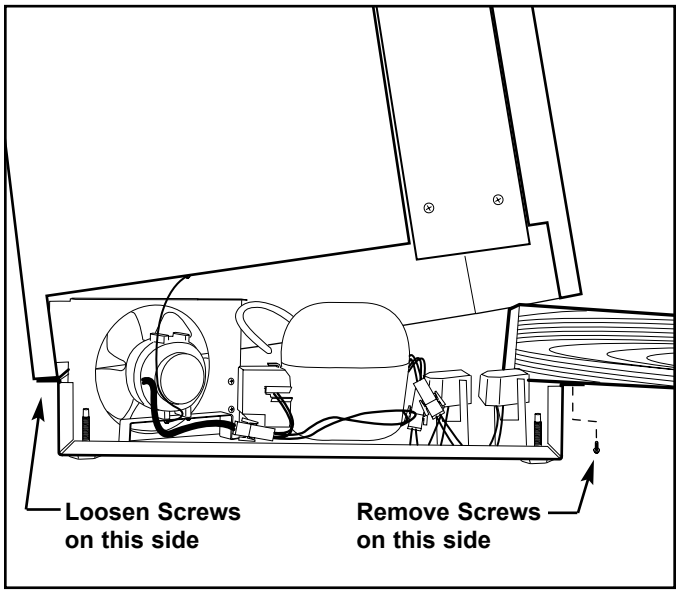


Figure 6-8. Unit Tray Component Access

MODEL 424 INTERIOR COSMETIC COMPONENT ACCESS AND REMOVAL

An attempt has been made to arrange these instructions in such a way as to simulate which components would need to be removed first in order to gain access to other components. When following a component removal procedure, it may be necessary to reference another removal procedure towards the front of this section.

Wine Rack Assembly Removal (Model 424)

To remove a wine rack assembly, pull the rack forward until it stops. Remove any wine bottles on the rack. Now, lift the front of the rack up while pulling forward. After the indentations on the wine rack clear the rollers on the cabinet slides, lower the front of the wine rack while continuing to pull forward, then lift the rear of the rack up and out. (See Figure 6-9)

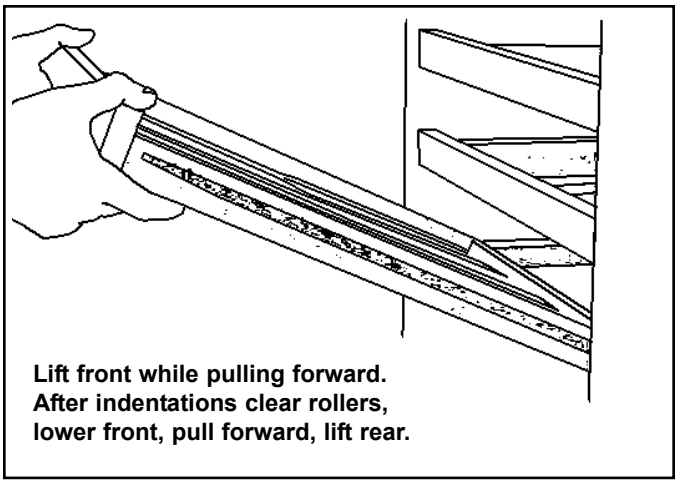


Figure 6-9. Wine Rack Assembly Removal

Cabinet Slide, Slide Spacer and Slide Support Spacer Removal (Model 424)

Cabinet slides are attached to the side walls of the wine compartments with screws. If the cabinet slide is attached to the handle side of the compartment, a small plastic slide spacer is placed between the front of the slide and the side wall. If the cabinet slide is attached to the handle side, a wide plastic slide support spacer is placed between the slide and the wall.

To remove a cabinet slide, you must first remove the wine rack. Then, extract the Phillips head cabinet slide mounting screws and pull the cabinet slide and slide spacer or slide support spacer from the wall. (See Figure 6-10)

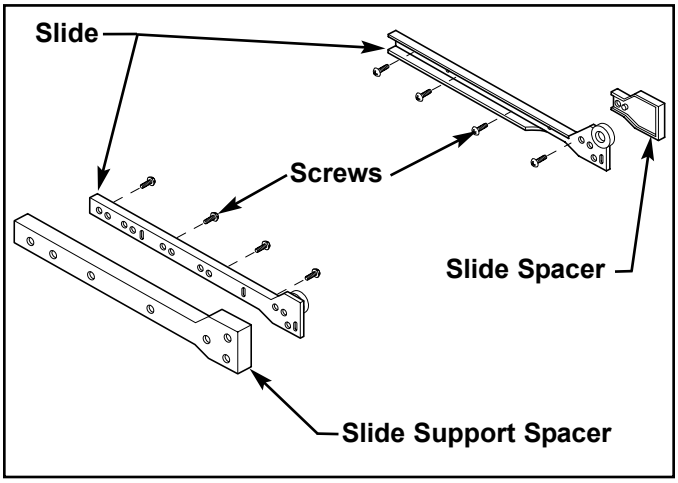


Figure 6-10. Cabinet Slide, Slide Support Spacer & Slide Spacer Removal

Upper Light Strip Access and Removal (Model 424)

NOTE: *See ELECTRIC SHOCK WARNING at beginning of this section.*

The light strip is held in the channel of the light strip housing. To remove the upper light strip, remove the top wine rack assembly first. Then, extract the two light strip housing mounting screws securing the housing to the ceiling. Lower the light strip housing down, disconnect the light strip electrical leads and extract the screw securing the ground wire to the housing. Now, slide the light strip out the end of the channel. (See Figure 6-11)

NOTE: *When reinstalling the light strip housing, care must be taken to ensure that all wire leads are tucked back behind the light strip housing before resecuring it to the ceiling.*

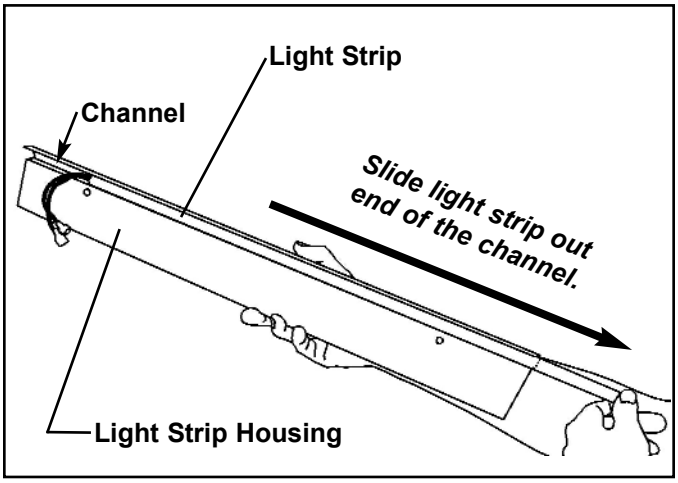


Figure 6-11. Upper Light Strip Removal

Upper and Lower Evaporator Fan Cover Access and Removal (Model 424)

There are two access holes in the front of the evaporator fan cover. The back flanges of the evaporator fan cover have slots that line up with the access holes. Screws inside these access holes pass through slots in the back flanges and through holes in the evaporator cover into screw grommets, securing the fan cover.

To remove the evaporator fan cover, extract the two mounting screws from the access holes and pull the fan cover forward. (See Figure 6-12)

NOTE: *When reinstalling the fan cover, first insert one of the two mounting screws through the evaporator cover, into the screw grommet, but do not fully tighten. Then, slide the corresponding slot in the rear flange of the fan cover over the screw and rotate the fan cover up until the other access hole lines up with the other mounting hole. Insert the second screw and tighten both screws.*

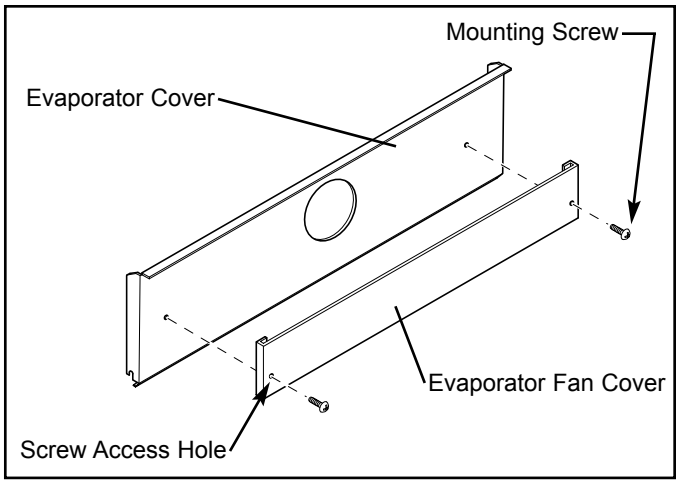


Figure 6-12. Evap Fan Cover Removal

Upper Evaporator Cover Removal (Model 424)

To remove the upper evaporator cover, first remove the two wine racks and all cabinet slides, cabinet slide spacers and cabinet slide support spacers in the upper compartment. Then, remove the evaporator fan cover mounting screws and the evaporator fan cover. Pull the evaporator cover forward slightly. Push the thermistor leads and grommet out of the slot on the left-hand side of the evaporator cover. There is a ground wire riveted to the back of the evaporator cover, and the other end of the ground wire has a screw securing it to the rear wall. Extract the ground screw and pull the evaporator cover out. (See Figures 6-12 & 6-13)

NOTE: *When reinstalling the evaporator cover, the ground wire must be reattached to the rear wall with the ground screw .*

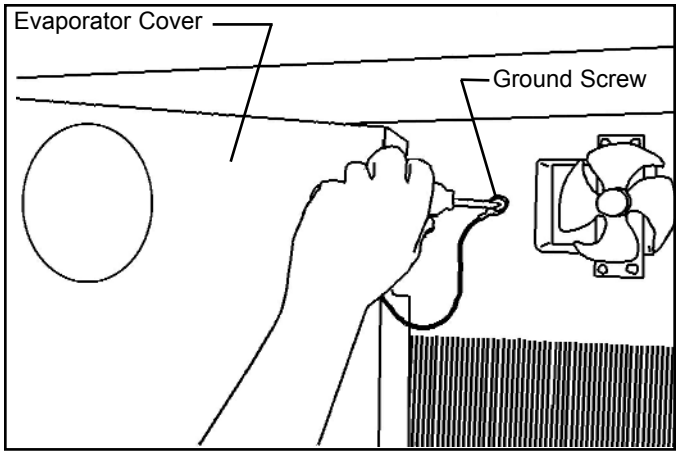


Figure 6-13.
Ground Screw Wire & Screw

Lower Evaporator Cover Removal (Model 424)

To remove the lower evaporator cover, first remove the three wine racks in the lower compartment. Then, remove the evaporator fan cover mounting screws and the evaporator fan cover. Pull the top of the evaporator cover forward and lift off of pegs at bottom. You'll find a ground wire riveted to the back of the evaporator cover, and the other end has a screw securing it to the rear wall. Extract the ground screw and pull the evaporator cover out. (See Figures 6-12, 6-13 & 6-14)

NOTE: *When reinstalling the evaporator cover, the ground wire must be reattached to the rear wall with the ground screw .*

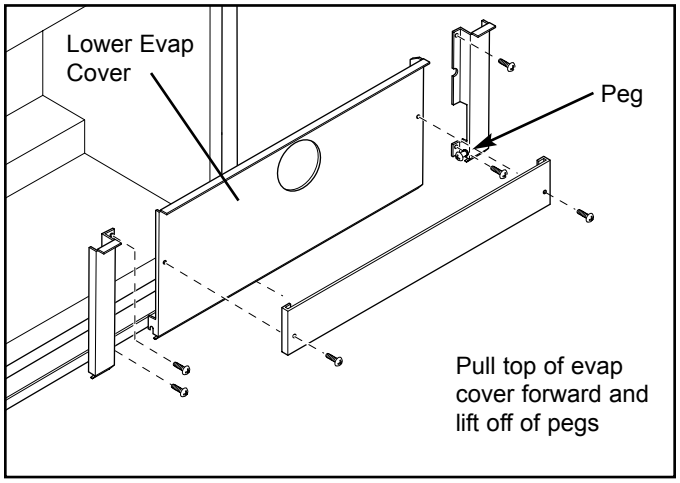


Figure 6-14.
Lower Evaporator Cover Removal

Evaporator Support Cover Access and Removal (Model 424)

The evaporator support covers are narrow covers to the left and right of the lower evaporator cover. The left cover hides the upper compartment drain line and the right cover is over the evaporator thermistor. These covers are held in place by screws under the lower evaporator cover.

To remove the evaporator support covers, you must first remove the three wine racks, all cabinet slides, cabinet slide spacers and cabinet slide support spacers in the lower compartment. Then, remove the evaporator fan cover mounting screws, the evaporator fan cover and the lower evaporator cover. Extract the evaporator support cover mounting screws and pull the evaporator support cover out. (See Figure 6-15)

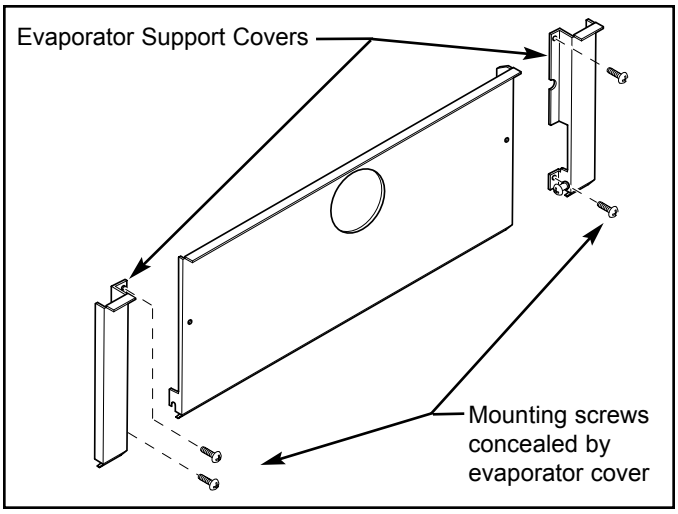


Figure 6-15. Evaporator Support Cover Removal

MODEL 424 INTERIOR MECHANICAL COMPONENT ACCESS AND REMOVAL:

An attempt has been made to arrange these instructions in such a way as to simulate which components would need to be removed first in order to gain access to other components. When following a component removal procedure, it may be necessary to reference another removal procedure towards the front of this section.

Control Board Access and Removal (Model 424)

NOTE: *See ELECTRIC SHOCK WARNING at beginning of this section. Also see STATIC ELECTRICITY CAUTION at beginning of this section.*

The control board is located on the bottom side of the compartment divider, directly behind the control panel, and is concealed by an access panel. The control board is held in place by four tabs, one at each corner of the board.

To get to the control board you will need to extract the two screws at the back of the access panel, then lower the back of the access panel and pull it towards the rear of the unit. (See Figure 6-16)

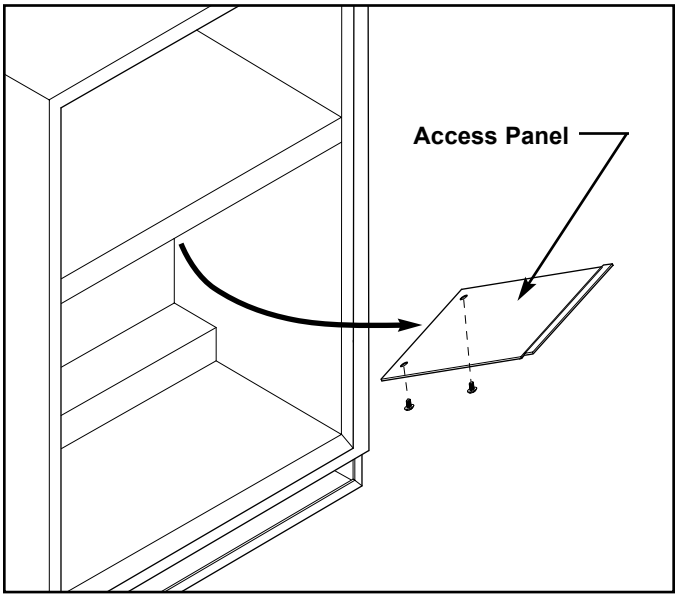


Figure 6-16. Control Board Access Panel

To remove the control board, disconnect the LED ribbon cable, the membrane switch ribbon cable, and all other electrical leads attached to the control board. Expand the tabs to release the control board, then pull down and out. (See Figure 6-17)

NOTE: *When re-connecting electrical leads to the control board, be sure the the silver area on the membrane switch ribbon cable terminal is facing <u>away from</u> the control board.*

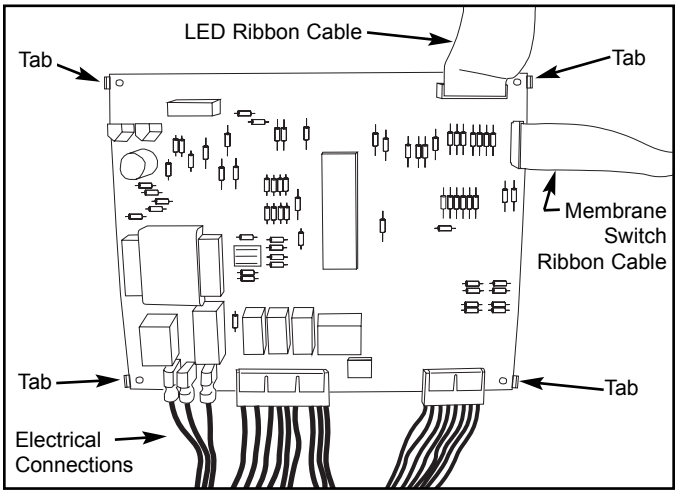


Figure 6-17. Control Board

Control Panel Assembly Removal (Model 424)

NOTE: *See ELECTRIC SHOCK WARNING at beginning of this section.*

The control panel assembly is set at the front of the compartment divider and is secured by six screws at the bottom, and a silicone seal under the top flange. Tabs at the bottom and a concealed tab at the top center of the control panel housing help to position the control panel assembly.

To remove the control panel assembly, first access the control board and disconnect the LED ribbon cable and the membrane switch ribbon cable. Then, extract the six screws at the bottom of the control panel. Now, slide the blade of a putty knife under and along the top flange of the control panel housing to break loose the silicone seal. (See Figure 6-18)

NOTE: *Do not lift the top flange of the control panel housing too vigorously. Doing so will break the concealed tab at the top center.*

After breaking the silicone seal loose, pull the control panel assembly forward and out.

NOTE: *When reinstalling the control panel assembly, you must reapply a bead of silicone along the inside of the top flange.*

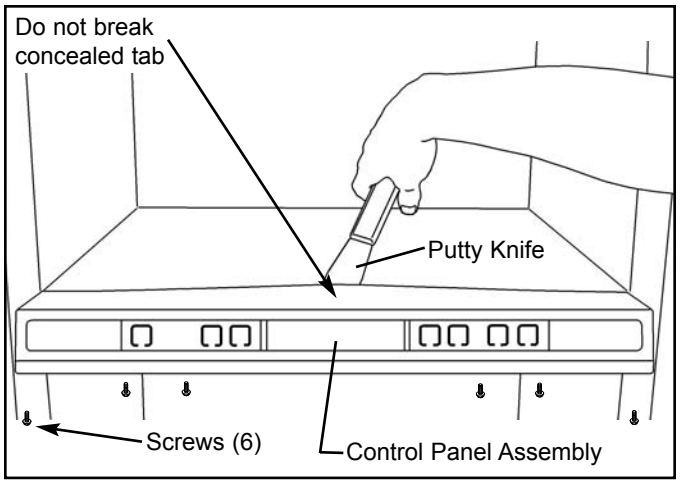


Figure 6-18.
Control Panel Assembly Removal

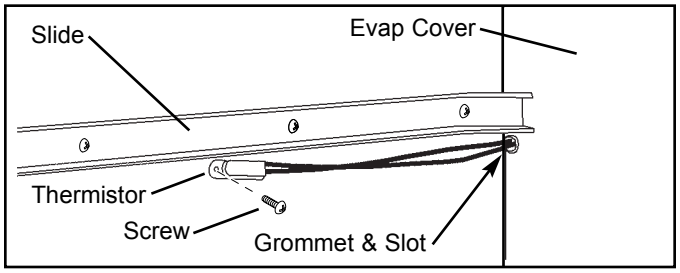


Figure 6-19.
Upper Compartment Thermistor

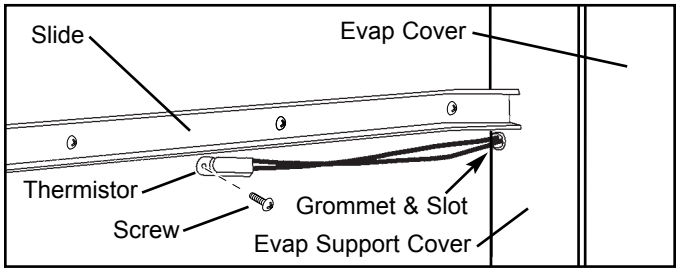


Figure 6-20.
Lower Compartment Thermistor

Upper Compartment Thermistor Access and Removal (Model 424)

NOTE: *See ELECTRIC SHOCK WARNING at beginning of this section.*

The upper compartment thermistor is attached to the left side wall with a Phillips-head screw. The electrical leads of the thermistor are routed through a notch in the left-hand side of the evaporator cover and guarded by a wire grommet.

To remove the upper compartment thermistor, first remove the two wine racks, all cabinet slides, cabinet slide spacers and cabinet slide support spacers in the upper compartment. Then, remove the evaporator fan cover mounting screws and the evaporator fan cover. Pull the evaporator cover out while pushing the thermistor leads and grommet out of the slot on the left-hand side of the evaporator cover. Then disconnect the thermistor electrical leads and extract the thermistor mounting screw. (See Figure 6-19)

Lower Compartment Thermistor Access and Removal (Model 424)

NOTE: *See ELECTRIC SHOCK WARNING at beginning of this section.*

The lower compartment thermistor is attached to the left side wall with a Phillips-head screw. The electrical leads of the thermistor are routed through a notch in the left-hand evaporator support cover and guarded by a grommet. (See Figure 6-20)

To remove the lower compartment thermistor, first remove the three wine racks, all cabinet slides, cabinet slide spacers and cabinet slide support spacers in the lower compartment. Then, remove the evaporator fan cover mounting screws, the evaporator fan cover and the lower evaporator cover. Extract the evaporator support cover mounting screws and pull the evaporator support cover out while pushing the thermistor leads and grommet out of the slot on the left-hand side. Extract thermistor mounting screw and disconnect the thermistor electrical leads.

Upper Evaporator Thermistor Access and Removal (Model 424)

NOTE: *See ELECTRIC SHOCK WARNING at beginning of this section.*

The upper evaporator thermistor is attached to the right side evaporator bracket with a Phillips-head screw.

To remove the upper evaporator thermistor, first remove the two wine racks, all cabinet slides, cabinet slide spacers and cabinet slide support spacers in the upper compartment. Then, remove the evaporator fan cover mounting screws, the evaporator fan cover and the evaporator cover. Extract the screw from the thermistor, and the screw from the P-clamp holding the thermistor electrical leads. Now, disconnect the thermistor electrical leads. (See Figure 6-21)

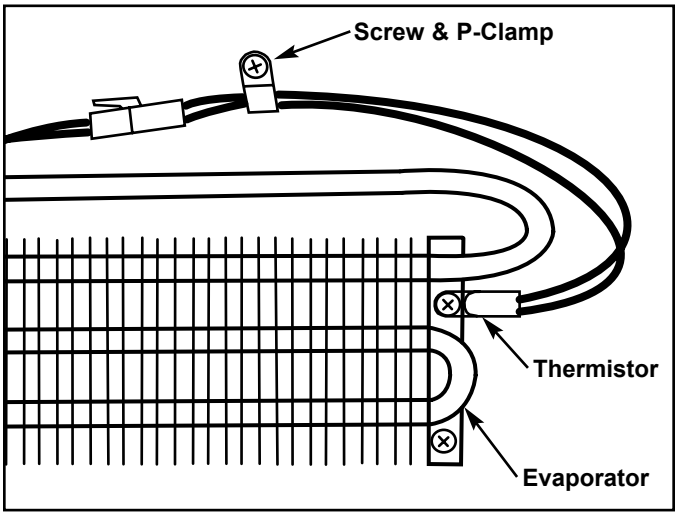


Figure 6-21. Evaporator Thermistor

Lower Evaporator Thermistor Access and Removal (Model 424)

NOTE: See ELECTRIC SHOCK WARNING at beginning of this section.

The lower evaporator thermistor is attached to the right side evaporator bracket with a Phillips-head screw.

To remove the lower evaporator thermistor, first remove the three wine racks in the lower compartment. Then, remove the evaporator fan cover mounting screws, the evaporator fan cover and the lower evaporator cover. Extract the mounting screws from the right side evaporator support cover and pull the evaporator support cover out. Extract the screw from the thermistor, and the screw from the P-clamp holding the thermistor electrical leads. Now, disconnect the thermistor electrical leads. (See Figure 6-22)

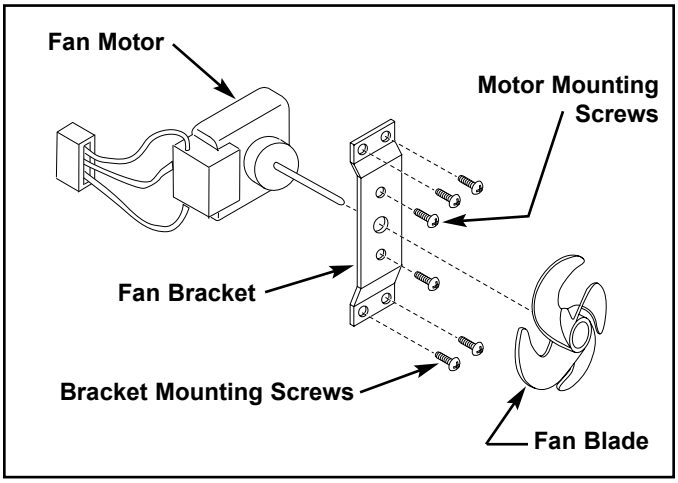


Figure 6-22. Evaporator Fan Assembly

Upper Evaporator Fan Assembly Access and Removal (Model 424)

NOTE: *See ELECTRIC SHOCK WARNING at beginning of this section.*

The upper evaporator fan assembly is attached to the rear wall by four Phillips-head screws.

To remove the upper evaporator fan assembly, first remove the two wine racks, all cabinet slides, cabinet slide spacers and cabinet slide support spacers in the upper compartment. Then, remove the evaporator fan cover mounting screws, the evaporator fan cover and the evaporator cover. Pull the fan blade from the fan motor shaft. Extract the screw from the P-clamp holding the fan wires. Then remove the four screws from the fan bracket and disconnect the fan motor electrical leads. (See Figure 6-22)

Lower Evaporator Fan Assembly Access and Removal (Model 424)

NOTE: *See ELECTRIC SHOCK WARNING at beginning of this section.*

The lower evaporator fan assembly is attached to the rear wall by four Phillips-head screws.

To remove the lower evaporator fan assembly, first remove the three wine racks, all cabinet slides, cabinet slide spacers and cabinet slide support spacers in the lower compartment. Then, remove the evaporator fan cover mounting screws, the evaporator fan cover and the lower evaporator cover. Pull the fan blade from the fan motor shaft. Extract the screw from the P-clamp holding the fan wires. Then remove the four screws from the fan bracket and disconnect the fan motor electrical leads. (See Figure 6-22)

MODEL 424 SEALED SYSTEM COMPONENT ACCESS AND REMOVAL:

An attempt has been made to arrange these instructions in such a way as to simulate which components would need to be removed first in order to gain access to other components. When following a component removal procedure, it may be necessary to reference another removal procedure towards the front of this section.

NOTE: *To access and remove any sealed system component on a Model 424, the unit will need to be pulled from its installation. See TIPPING WARNING at beginning of this section. If removing a model 424 from its installation, an anti-tip bracket and a countertop bracket may have been used to make a solid installation. (See Figures 2-2) If the brackets were not used, shims may have been wedged along the sides and top. Also see HOT COMPRESSOR & TUBING CAUTION and SHARP FINS CAUTION at beginning of this section.*

NOTE: Always replace the filter-drier when servicing the sealed system.

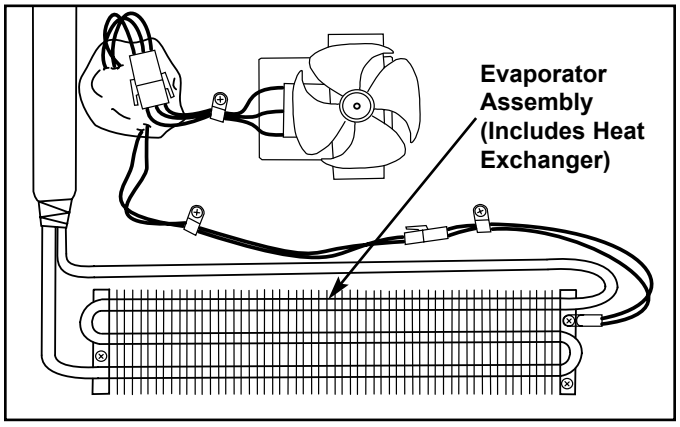


Figure 6-23. Evaporator

Upper Evaporator Assembly Access and Removal (Model 424)

The evaporator assembly consists of the evaporator and heat exchanger. The evaporator is mounted to the rear wall with Phillips-head screws, and the heat exchanger is routed out the back wall down to the unit tray where the capillary tube is attached to the refrigerant valve, and the suction line is attached to a "T" connection that runs to the compressor suction port. (See Figures 6-23, 6-24, 6-25)

After evacuating the refrigerant from the sealed system, begin the access and removal procedure inside the unit by removing the two wine racks, all cabinet slides, cabinet slide spacers and cabinet slide support spacers in the upper compartment. Then, remove the evaporator fan cover mounting screws, the evaporator fan cover and the evaporator cover. Extract the evaporator mounting screws. Now, remove the access panel from the bottom back of the unit and the heat exchanger duct cover. Remove the door closer (See DOOR CLOSER WARNING at beginning of this section.) Extract the four screws securing the unit tray to the cabinet on the left side, and loosen the four screws on the right side. Separate the unit tray from the cabinet by leaning the cabinet to the right, then insert a spacer between the cabinet and unit tray. *(A small piece of 2x4 lumber works well.)* (See Figure 6-8) Cut the cap tube from the outlet port of the refrigerant valve and cut the suction line from the "T" connector. Then, pull the evaporator assembly from the front of the unit.

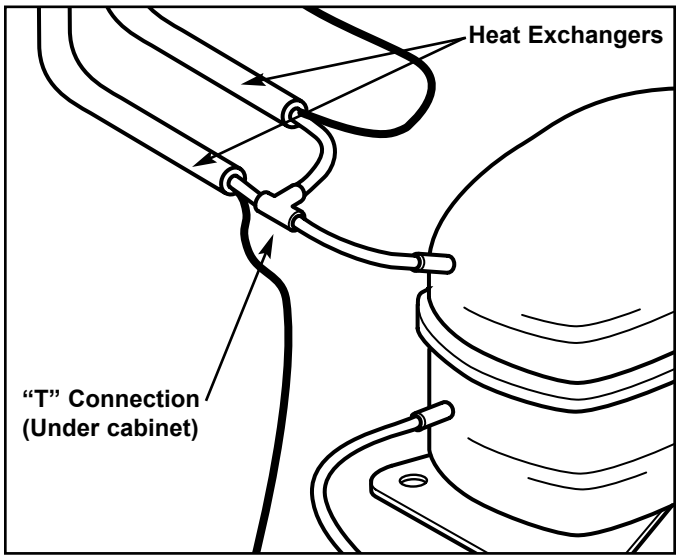


Figure 6-24. Suction "T" Connection

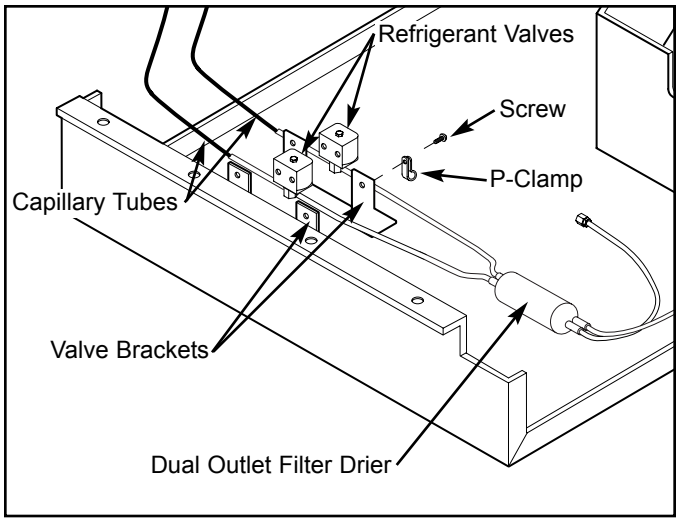


Figure 6-25. Capillary Tube, Refrigerant Valve, Filter-Drier

Lower Evaporator Assembly Access and Removal (Model 424)

The evaporator assembly consists of the evaporator and heat exchanger. The evaporator is mounted to the rear wall with Phillips-head screws, and the heat exchanger is routed out the back wall down to the unit tray where the capillary tube is attached to the refrigerant valve, and the suction line is attached to a "T" connection that runs to the compressor suction port. (See Figures 6-23, 6-24, 6-25)

After evacuating the refrigerant from the sealed system, begin the access and removal procedure inside the unit by removing the three wine racks, all cabinet slides, cabinet slide spacers and cabinet slide support spacers in the lower compartment. Then, remove the evaporator fan cover mounting screws, the evaporator fan cover, the evaporator cover and the evaporator support covers. Extract the evaporator mounting screws. Now, remove the access panel from the bottom back of the unit. Remove the door closer (See DOOR CLOSER WARNING at beginning of this section.) Extract the four screws securing the unit tray to the cabinet on the left side, and loosen the four screws on the right side. Separate the unit tray from the cabinet by leaning the cabinet to the right, then insert a spacer between the cabinet and unit tray. *(A small piece of 2x4 lumber works well.)* (See Figure 6-8) Cut the cap tube from the outlet port of the refrigerant valve and cut the suction line from the "T" connector. Then, pull the evaporator assembly from the front of the unit.

Refrigerant valve access and removal (Model 424)

The refrigerant valves are attached to the valve brackets with screws and tube clamps, at the back left of the unit tray. (See Figure 6-25) The upper compartment valve is the farthest left.

After evacuating the refrigerant from the sealed system, begin the access and removal procedure by removing the access panel from the bottom back of the unit. Remove the door closer (See DOOR CLOSER WARNING at beginning of this section.) Extract the four screws securing the unit tray to the cabinet on the left side, and loosen the four screws on the right side. Separate the unit tray from the cabinet by leaning the cabinet to the right, then insert a spacer between the cabinet and unit tray. *(A small piece of 2x4 lumber works well.)* (See Figure 6-8) Remove the screws securing the valve to the valve bracket and pull the valve upward slightly. Cut the cap tube from the outlet port of the refrigerant valve and cut the filter-drier stub from the inlet port of the valve.

Filter-Drier Access and Removal (Model 424)

The filter-drier is located on the left-hand side of the unit tray. The filter-drier used on the 400 Series has dual outlet ports that connect to both refrigerant valves. (See Figure 6-25)

After evacuating the refrigerant from the sealed system, begin the access and removal procedure by removing the access panel from the bottom back of the unit. Remove the door closer (See DOOR CLOSER WARNING at beginning of this section.) Extract the four screws securing the unit tray to the cabinet on the left side, and loosen the four screws on the right side. Separate the unit tray from the cabinet by leaning the cabinet to the right, then insert a spacer between the cabinet and unit tray. *(A small piece of 2x4 lumber works well.)* (See Figure 6-8) Cut the filter-drier outlet ports leading to both refrigerant valves and the filter-drier inlet tube coming from the condenser.

Compressor Access and Removal (Model 424)

The compressor is located at the back of the unit tray. (See Figure 6-26)

After evacuating the refrigerant from the sealed system, begin the access and removal procedure by removing the access panel from the bottom back of the unit. Remove the door closer (See DOOR CLOSER WARNING at beginning of this section.) Extract the four screws securing the unit tray to the cabinet on the left side, and loosen the four screws on the right side. Separate the unit tray from the cabinet by leaning the cabinet to the right, then insert a spacer between the cabinet and unit tray. *(A small piece of 2x4 lumber works well.)* (See Figure 6-8) Disconnect the compressor electricals from the compressor. Remove the four nuts from the compressor mounting studs. Cut the suction tube and discharge tube approximately 1-1/2" from the compressor and lift the compressor off of the mounting studs.

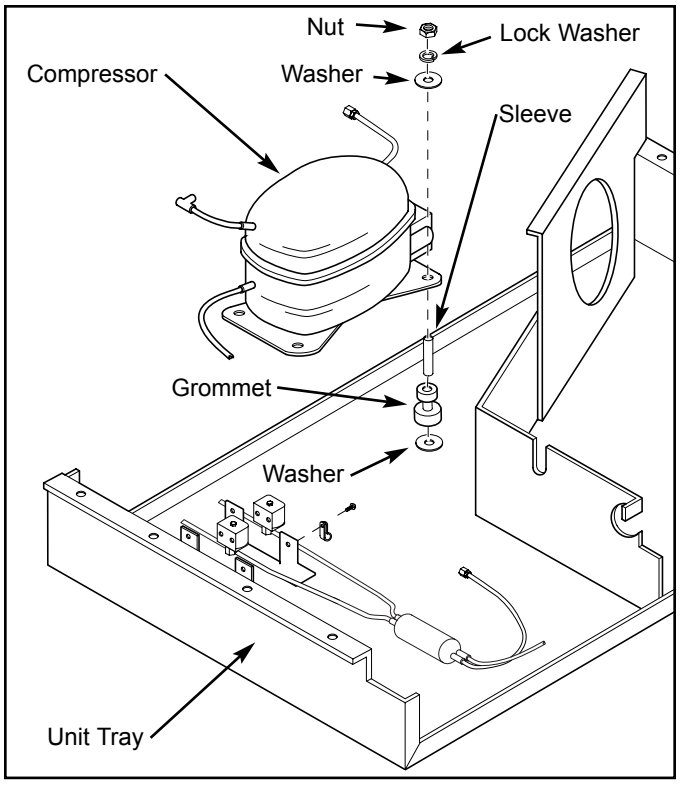


Figure 6-26. Compressor

Condenser Access and Removal (Model 424)

The condenser is located at the front right of the unit tray, and is held in place with screws passing up from under the unit tray into the condenser brackets. (See Figure 6-27)

After evacuating the refrigerant from the sealed system, begin the access and removal procedure by removing the access panel from the bottom back of the unit. Remove the door closer (See DOOR CLOSER WARNING at beginning of this section.) Extract the four screws securing the unit tray to the cabinet on the right side, and loosen the four screws on the left side. Separate the unit tray from the cabinet by leaning the cabinet to the left, then insert a spacer between the cabinet and unit tray. *(A small piece of 2x4 lumber works well.)* (See Figure 6-8) Remove the condenser mounting screws. Cut the inlet tube and outlet tube approximately 3" from the condenser and lift the condenser up and out.

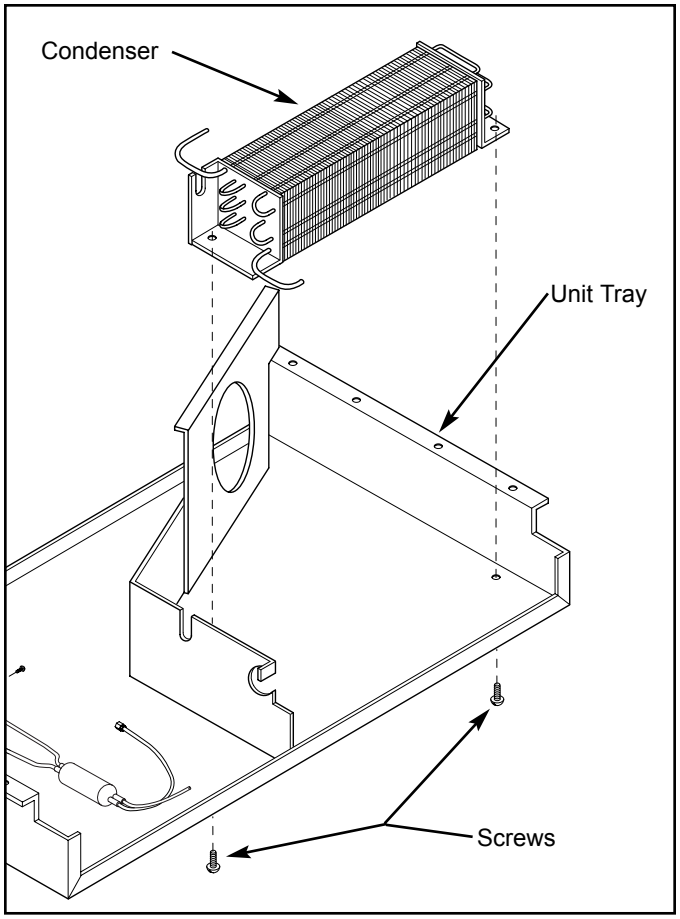


Figure 6-27. Condenser

MODELS 427 & 427R

NOTE: *Since the models 427 and 427R are similar, the access and removal section for these models has been grouped together. The model(s) covered will be listed between brackets after the heading.*

MODEL 427 & 427R EXTERIOR COSMETIC AND MECHANICAL COMPONENT REMOVAL:

An attempt has been made to arrange these instructions in such a way as to simulate which components would need to be removed first in order to gain access to other components. When following a component removal procedure, it may be necessary to reference another removal procedure towards the front of this section.

Kickplate/Grille Removal (Models 427 & 427R)

The kickplate/grille is held in place by four screws passing through it into adjustable kickplate brackets. To remove the kickplate/grille, extract the four screws, two on each side, and pull the kickplate grille forward. (See Figure 6-28)

NOTE: *For the 427R, it may be necessary to remove the bottom drawer to gain access to the kickplate/grille.*

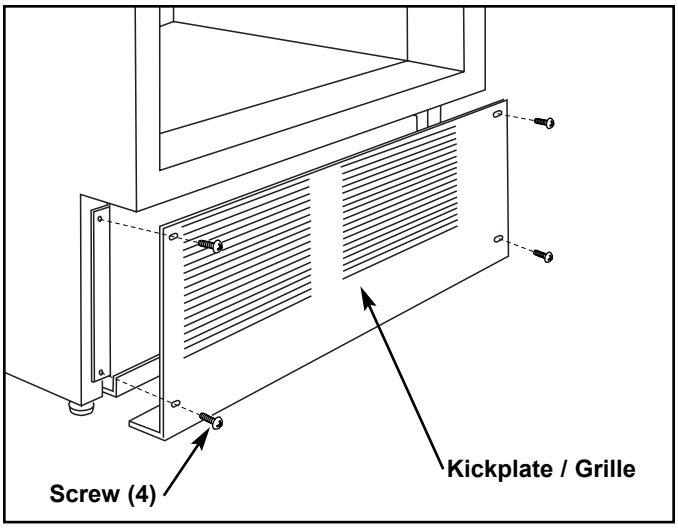


Figure 6-28. Kickplate/Grille Removal

Wine Compartment Light and Fan Switches Access and Removal (Models 427 & 427R)

The wine compartment light and fan switches protrude through the top trim molding, just above the door. Tabs on the switches hold the switches in a switch bracket. And, the bracket is attached to the switch enclosure with two screws.

NOTE: *See ELECTRIC SHOCK WARNING at beginning of this section.*

To access and remove a light and/or fan switch, you will need to remove the side molding strips. Now, remove the top molding by pulling the top of the molding forward, then lift up. Remove the two screws from the switch bracket and pull the bracket forward. (See Figure 6-29) Disconnect the electrical leads from the switch being removed. Depress the tabs on the side of the switch being removed and push the switch out of the bracket.

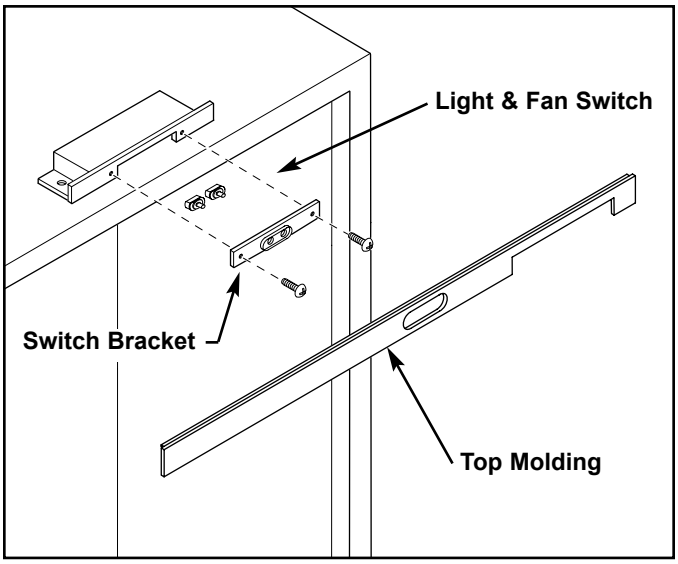


Figure 6-29.
Light Switch & Fan Switch Access

Door Assembly Removal (Models 427 & 427R)

The door is held in place with Allen-head screws that pass down through the arm of the top hinge assembly and up through the arm of the bottom hinge assembly into the door frame. These mounting screws are concealed by a hinge cover on each hinge arm. The hinge covers are held in place by tabs that fit into notches in the hinge arms.

NOTE: *See HEAVY DOOR WARNING at beginning of this section.*

To remove a door, begin by opening the door and removing both hinge covers. With an Allen-head wrench, extract the two inner-most door mounting screws from the top and bottom hinge arms, leaving the two outer-most screws in place. Now, close the door and remove the outer-most door mounting screws from the bottom hinge arm, then remove the two outer-most door mounting screws from the top hinge arm, and lift the door from the unit. (See Figure 6-30)

NOTE: *On the model 427R you will need to remove the top drawer to access the door mounting screws at the bottom hinge when the door is closed. (See Drawer Assembly Removal (427R ONLY) below.)*

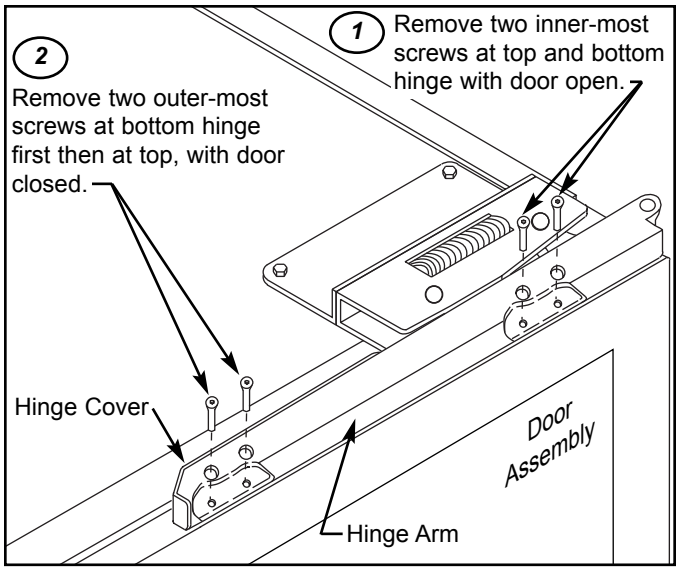


Figure 6-30. Door Assembly Removal

Drawer Assembly Removal (Model 427R ONLY)

There are channels on both sides of a drawer tub in a 427R that rest on telescoping drawer slide assemblies. A pin at the front of each drawer slide fits into a hole in the drawer tub to hold the drawer assembly in place. (See Figure 6-31)

NOTE: *See HEAVY DOOR WARNING and ELECTRIC SHOCK WARNING at beginning of this section.*

The top drawer has a control cable that must be disconnected before drawer removal. To remove the top drawer assembly, pull top drawer forward 6" to 10", lift it up off of the pins at front and push the slides in. Carefully place the drawer assembly face down directly in front of unit. Then, disconnect the display cable at interior left rear of the unit by turning the collar counterclockwise and unplugging the pins from the socket. (See Figure 6-32)

To remove the bottom drawer assembly, open the drawer and lift the front of the drawer up off of the pins at the end of the drawer slides. Then, pull the drawer assembly forward and out.

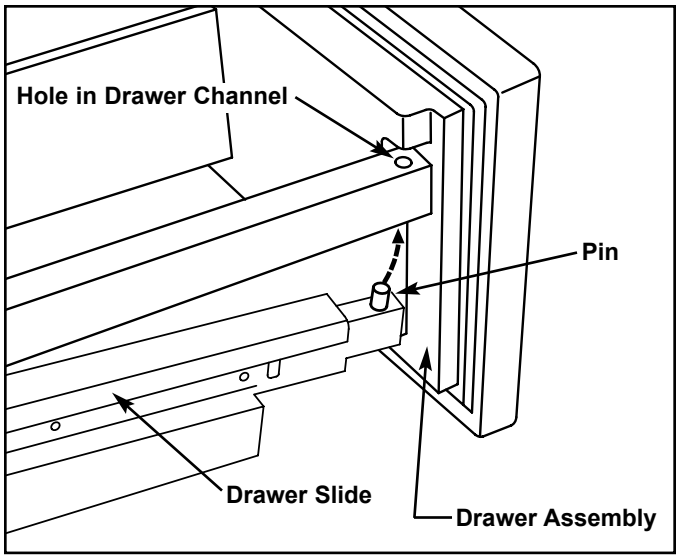


Figure 6-31. 427R Drawer Removal

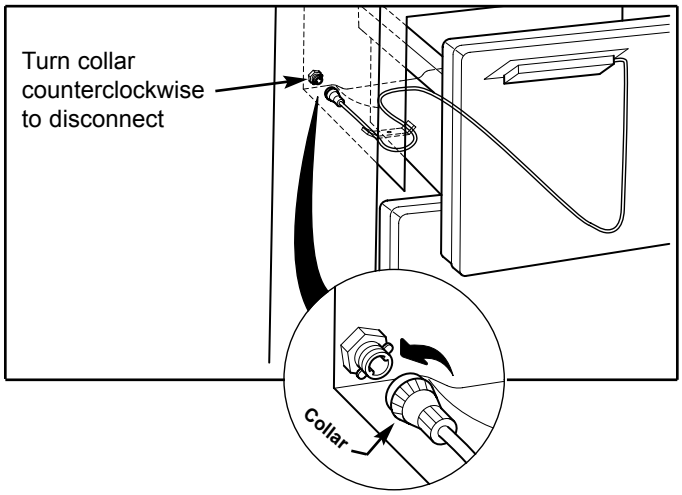


Figure 6-32. 427R Ref. Control Cable

Upper and Lower Hinge Assembly Removal (Models 427 & 427R)

The hinge assemblies are attached to the door with Allen-head screws, and to a hinge mounting bracket with Allen-head bolts. (See Figure 6-33)

NOTE: *See HEAVY DOOR WARNING and DOOR CLOSER CAUTION at beginning of this section.*

To remove a hinge assembly, you will need to remove the door first. Begin by opening the door and removing both hinge covers. Then, with an Allen-head wrench, remove the four door mounting screws from the top hinge. Now, close the door and remove the four door mounting screws from the bottom hinge, and lift the door from the unit. (See Figure 6-30)

NOTE: *On the model 427R you will need to remove the top drawer to access the door mounting screws at the bottom hinge. (See Drawer Assembly Removal - 427R ONLY, on previous page.)*

Now, extract the Allen-head bolts from the appropriate hinge mounting bracket and pull the hinge from the unit. (See Figure 6-33)

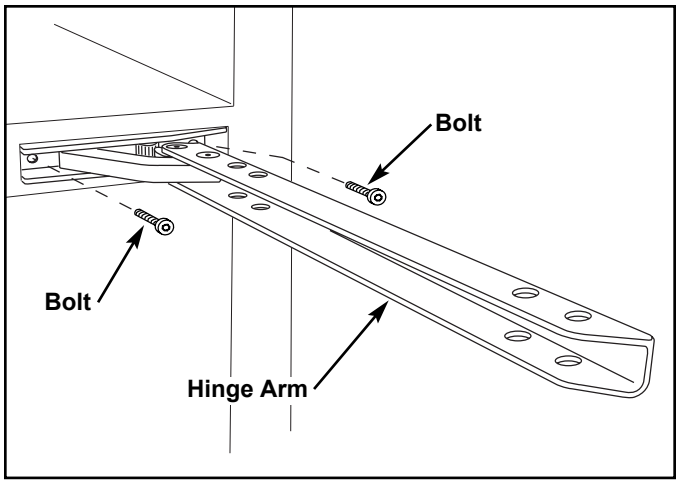


Figure 6-33. Hinge Assembly Removal

Condenser Fan Assembly Access and Removal (Models 427 & 427R)

The condenser fan motor is attached to a three legged condenser fan bracket by screws. The right leg of the fan bracket hooks over a spacer on the fan shroud. The two left legs of the fan bracket are secured to the fan shroud by screws into wellnuts.

NOTE: *See ELECTRIC SHOCK WARNING at beginning of this section.*

To access and remove the condenser fan assembly, you will need to remove the kickplate/grille and slide the unit tray out. To slide the unit tray out, extract the two screws that secure the tray to the cabinet, located at the bottom left and right of the cabinet. Slide the unit tray out half way and disconnect the compressor, condenser fan, solenoid and ground wire electrical leads. Continue sliding the tray out while pivoting it to the right. (See Figure 6-34)

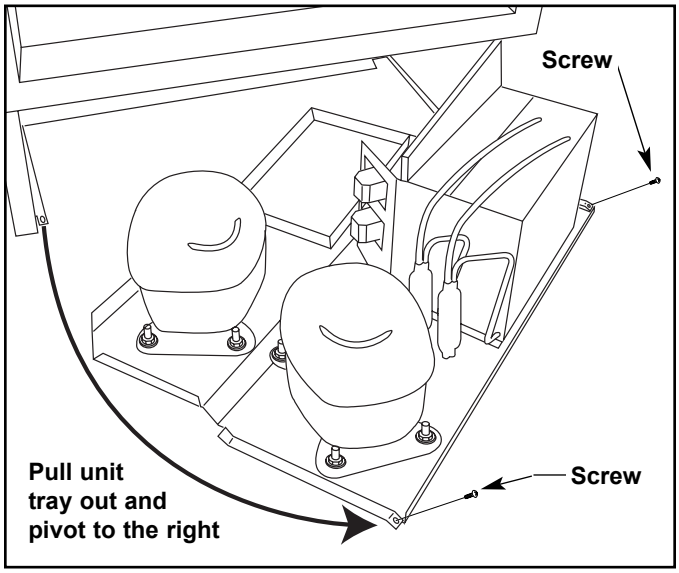


Figure 6-34. Unit Tray Removal

NOTE: *Move tray slowly and observe the sealed system tubing. Care must be taken to not kink any of the tubing.*

Now, extract the screws from the left legs of the condenser fan bracket.

NOTE: *You will need to loosen the screws securing the refrigerant valve bracket and push the bracket back slightly and lift up slightly to gain access to the bottom left leg of the condenser fan bracket.*

Then, unhook the right condenser fan bracket leg by pushing the assembly to the right, then lift up and out. (See Figure 6-35) The condenser fan motor can now be removed from the bracket by extracting the screws in the back side of the fan motor. The fan blade can be removed from the fan motor by turning the flat-nut on the fan motor shaft counterclockwise, then pull the nut and blade from the shaft.

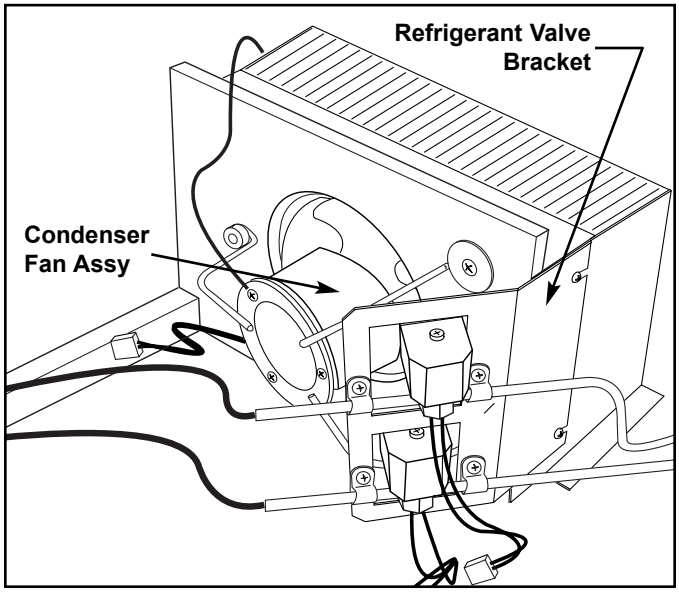


Figure 6-35. Condenser Fan Assembly

Refrigerant Valve Solenoid Access and Removal (Models 427 & 427R)

The refrigerant valve solenoids are attached to the tops of the refrigerant valves with screws. The refrigerant valves are located to the right of the compressor(s) on the unit tray, and are held to the valve bracket with P-clamps and screws. The top valve is for the upper wine storage compartment and the bottom valve is for the lower wine storage compartment.. (See Figure 6-36)

NOTE: *See ELECTRIC SHOCK WARNING and HOT TUBING CAUTION at beginning of this section.*

To access and remove the condenser fan assembly, you will need to remove the kickplate/grille and slide the unit tray out. To slide the unit tray out, extract the two screws that secure the tray to the cabinet, located at the bottom left and right of the cabinet. Slide the unit tray out half way and disconnect the compressor, condenser fan, solenoid and ground wire electrical leads. Continue sliding tray out while pivoting it to the right. (See Figure 6-34)

NOTE: *Move tray slowly and observe the sealed system tubing. Care must be taken to not kink any of the tubing.*

Now, disconnect the electrical leads of the valve solenoid being removed. Remove the screw at the top of the solenoid and lift the solenoid up off the valve.

NOTE: *You may need to twist the refrigerant valve in the P-clamps slightly to allow the solenoid to be removed.*

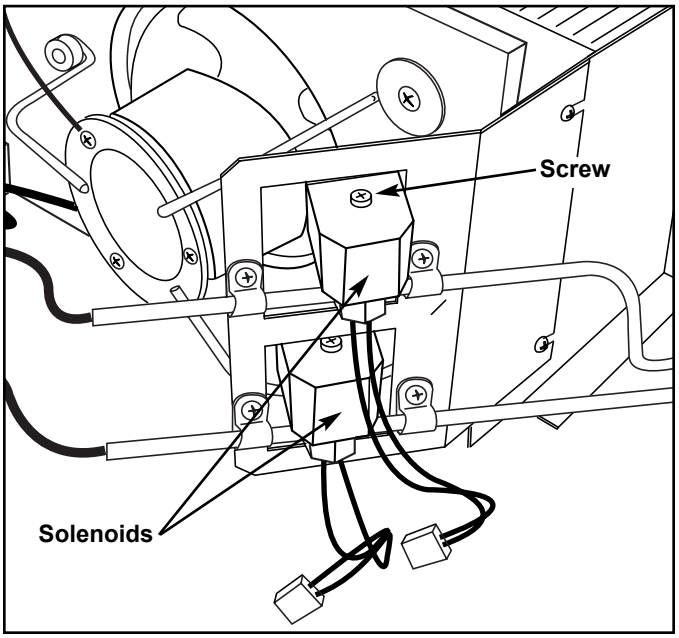


Figure 6-36.
Refrigerant Valve Solenoid

MODEL 427 & 427R INTERIOR COSMETIC COMPONENT ACCESS AND REMOVAL:

An attempt has been made to arrange these instructions in such a way as to simulate which components would need to be removed first in order to gain access to other components. When following a component removal procedure, it may be necessary to reference another removal procedure towards the front of this section.

Wine Rack Assembly removal (Models 427 & 427R)

To remove a wine rack assembly, pull the rack forward until it stops. Remove any wine bottles on the rack. Lift the front of the wine rack up while pulling forward. After the indentations on the wine rack clear the rollers on the cabinet slides, lower the front of the wine rack while continuing to pull forward, then lift the rear of the rack up and out. (See Figure 6-37)

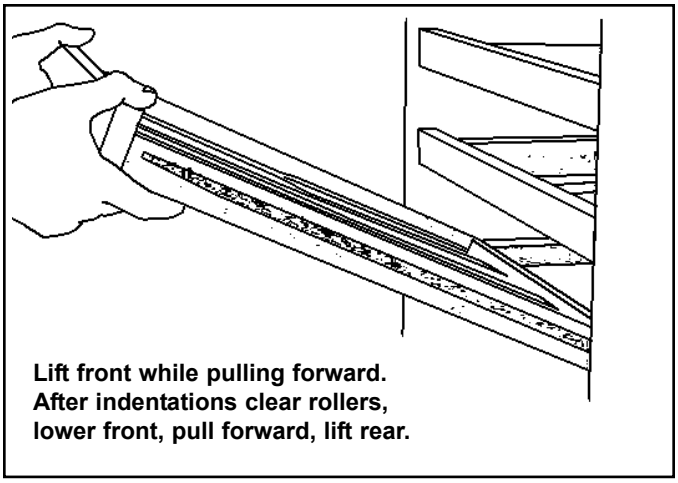


Figure 6-37. Wine Rack Assembly Removal

Wine Storage Cabinet Slide and Slide Spacer Removal (Models 427 & 427R)

Cabinet slides in the wine storage compartments are attached to the side wall and false wall of the wine compartments with screws. If the cabinet slide is attached to the handle side of the compartment, a small plastic slide spacer is placed between the front of the slide and the side wall. If the cabinet slide is on the hinge side, it is attached directly to the false wall.

To remove a cabinet slide from a wine storage compartment, you must first remove the wine rack. Then, extract the mounting screws and pull the cabinet slide (and slide spacer if on handle side) from the wall. (See Figure 6-38)

Refrigerator Section Drawer Slide Assembly Removal (Model 427R ONLY)

The drawer slide assemblies in the refrigerator section of the 427R are attached to the side walls with Allen-head screws passing through the drawer slide bracket, and into blind threaded inserts.

To remove a refrigerator section drawer slide assembly, remove the drawer first.

NOTE: *The top drawer has a control cable that must be disconnected before drawer removal. To remove the top drawer assembly, pull top drawer forward 6" to 10", lift it up off of the pins at front and push the slides in. Carefully place the drawer assembly face down directly in front of unit. Then, disconnect the display cable at interior left rear of the unit by turning the collar counter-clockwise and unplugging the pins from the socket. (See Figure 6-32)*

To remove the bottom drawer assembly, open the drawer and lift the front of the drawer up off of the pins at the end of the drawer slides. Then, pull the drawer assembly forward and out.

Now, extract the drawer slide mounting screws with a 5/32" Allen-head wrench, and pull the drawer slide assembly out. (See Figure 6-39)

Drawer Closer Removal (Model 427R ONLY)

The drawer closer assemblies are attached to the right side of the refrigerator compartment with two screws.

To remove a drawer closer assembly, remove the drawer first.

NOTE: *The top drawer has a control cable that must be disconnected before drawer removal. To remove the top drawer assembly, pull top drawer forward 6" to 10", lift it up off of the pins at front and push the slides in. Carefully place the drawer assembly face down directly in front of unit. Then, disconnect the display cable at interior left rear of the unit by turning the collar counter-clockwise and unplugging the pins from the socket. (See Figure 6-32)*

To remove the bottom drawer assembly, open the drawer and lift the front of the drawer up off of the pins at the end of the drawer slides. Then, pull the drawer assembly forward and out.

Now, extract the two screws that secure the drawer closer to the wall, and pull the drawer closer assembly out. (See Figure 6-40)

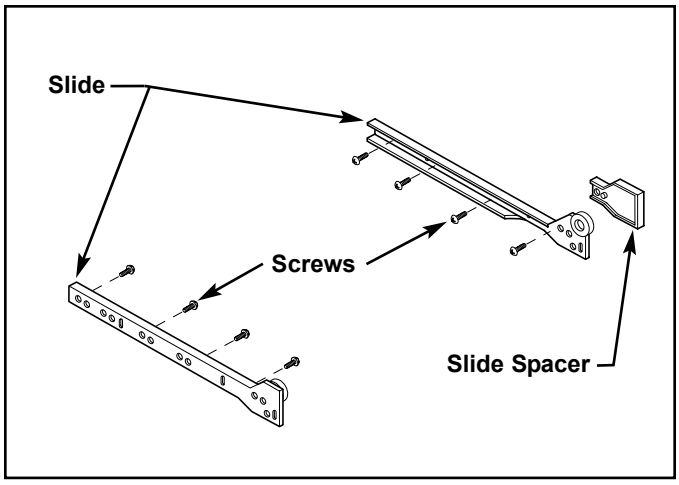


Figure 6-38. Wine Compartment Cabinet Slide & Slide Spacer

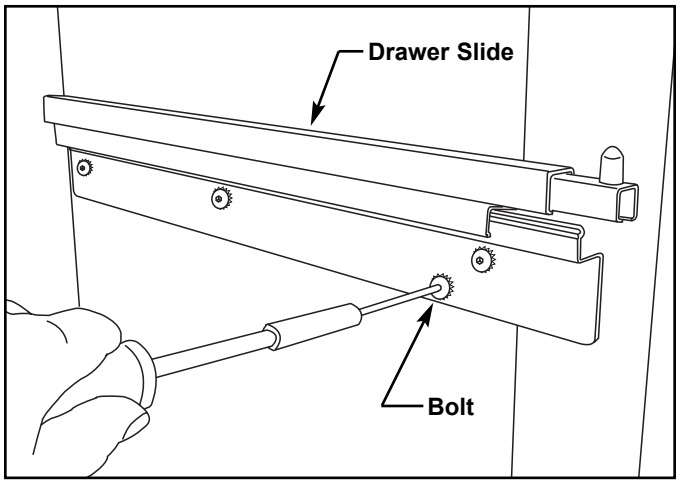


Figure 6-39. Model 427R Drawer Slide

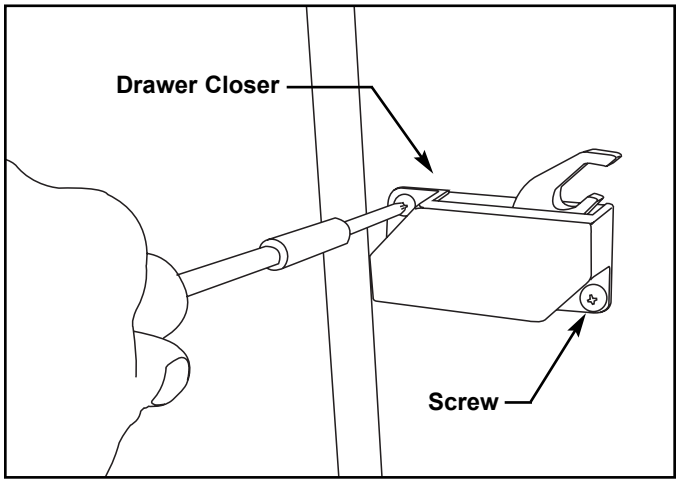


Figure 6-40. Model 427R Drawer Closer

Upper Light Strip Access and Removal (Models 427 & 427R)

NOTE: *See ELECTRIC SHOCK WARNING at beginning of this section.*

The upper light strip is held in the channel of the light strip housing at the top of the upper wine storage compartment. To remove the upper light strip, you will need to remove the top wine rack assembly first. Then, extract the two light strip housing mounting screws. Lower the end of the light strip housing opposite the false wall down while pulling forward, and disconnect the light strip electrical leads. Now, slide the light strip out the end of the channel. (See Figure 6-41)

NOTE: *When reinstalling the light strip housing, care must be taken to ensure that all wire leads are tucked behind the light strip housing before re-securing it.*

NOTE: *Since the lower light strip housing is attached to the control panel assembly in the models 427 and 427R, the complete control panel assembly must be removed in order to gain access to the lower light strip. See Lower Light Strip Access and Removal instructions in the MODELS 427 & 427R INTERIOR MECHANICAL COMPONENT ACCESS AND REMOVAL section of this manual.*

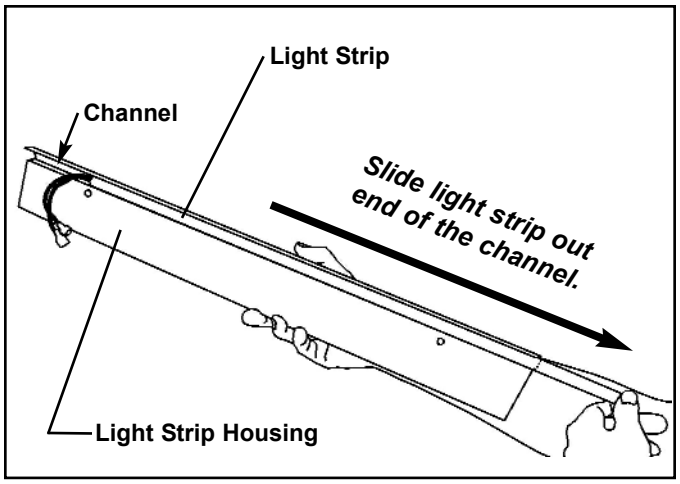


Figure 6-41. Upper Light Strip Removal

Refrigerator Section Lighting Access and removal (Model 427R ONLY)

NOTE: *See ELECTRIC SHOCK WARNING at beginning of this section.*

The refrigerator section has two light bulbs, one in the ceiling of the refrigerator section, and one at the bottom of the divider between the two drawers. To remove these light bulbs, simply unscrew them from the socket. (See Figure 6-42)

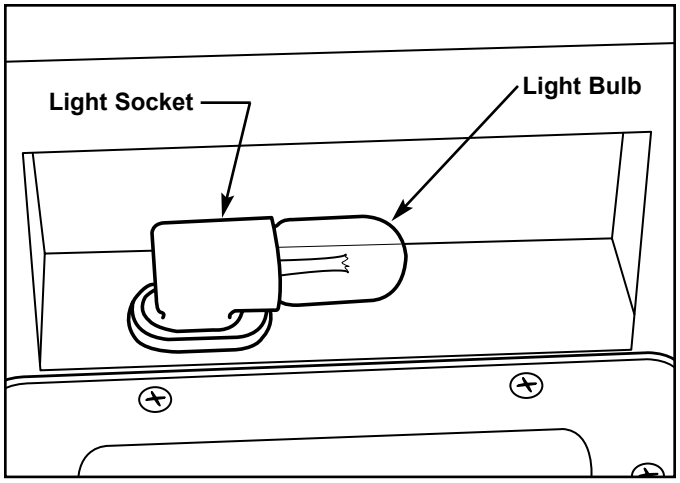


Figure 6-42. 427R Refrigerator Lighting

Reed Switch Removal (Model 427R ONLY)

NOTE: *See ELECTRIC SHOCK WARNING at beginning of this section.*

The Reed switches in the refrigerator section control the refrigerator compartment lighting and evaporator fan.

NOTE: *The upper Reed switch also contains the refrigerator compartment thermistor.*

The Reed switches are attached the evaporator cover with a screw. (See Figure 6-43) To remove a Reed switch, extract the screw. Lean the top of the Reed switch forward, disconnect the electrical leads from the back side, and pull the Reed switch out.

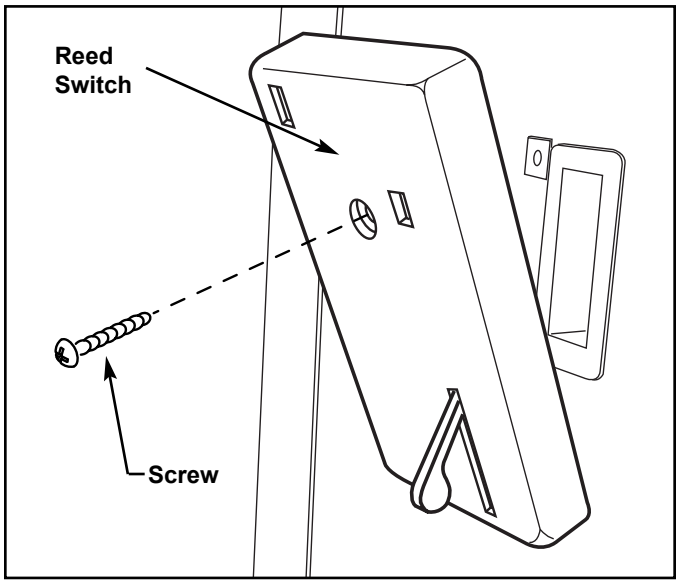


Figure 6-43. 427R Reed Switches

Evaporator Fan Cover Removal (Models 427 & 427R)

There are two access holes in the front of the evaporator fan covers. The back flanges of the evaporator fan cover have slots that line up with the access holes. Screws inside these access holes pass through slots in the back flanges and through holes in the evaporator cover into screw grommets, securing the fan cover.

To remove the evaporator fan cover, extract the two mounting screws from the access holes and pull the fan cover forward. (See Figure 6-44)

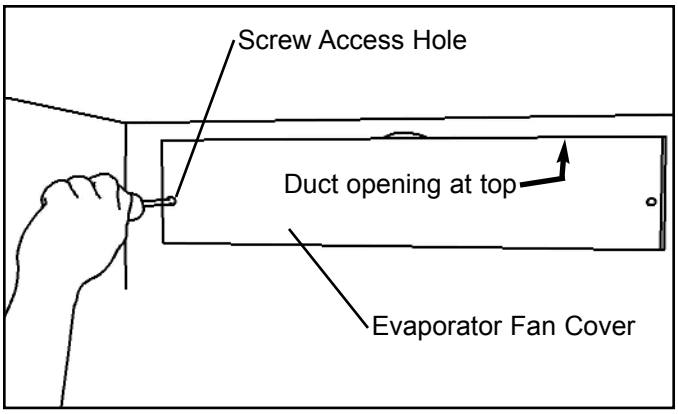


Figure 6-44. Evap Fan Cover Removal

Upper and Lower Wine Storage Evaporator Cover Access and Removal (Model 427 & 427R)

The wine storage evaporator covers are held in place with four screws, two at the evaporator fan covers and two towards the bottom of the evaporator covers. A flange on the side of the evaporator covers hooks behind the false wall in each compartment.

To remove the wine storage evaporator covers, you must first remove the evaporator fan cover mounting screws and the evaporator fan cover. Remove the screws towards the bottom of the evaporator cover. Rotate the side of the evaporator cover farthest from the false wall out slightly. Push the thermistor electrical leads and rubber grommet from the slot in the evaporator cover. Locate the ground wire riveted to the back of the evaporator cover. Extract the ground at the other end of the ground wire.Continue rotating the side of the evaporator cover farthest from the false wall out until the flange clears the false wall. (See Figure 6-45)

NOTE: *When reinstalling the evaporator cover, the ground wire must be reattached with the ground screw to the rear wall.*

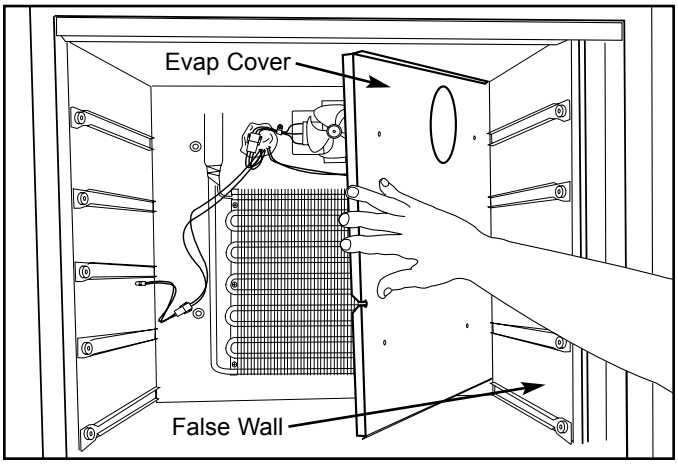


Figure 6-45.
Wine Storage Evaporator Cover Removal

Refrigerator Section Evaporator Cover Access and Removal (Model 427R ONLY)

The refrigerator section evaporator cover is held in place with three screws, two at the evaporator fan cover and one that secures it to a grounding bracket.

NOTE: *See ELECTRIC SHOCK WARNING at beginning of this section.*

To remove the refrigerator evaporator cover, you must first remove the evaporator fan cover mounting screws and the evaporator fan cover. Then, extract the grounding screw towards the top right, and remove both Reed switches. Pull the top of the evaporator cover forward and lift off of pegs at bottom. (See Figure 6-46)

NOTE: *When reinstalling the evaporator cover, the ground wire must be reinserted.*

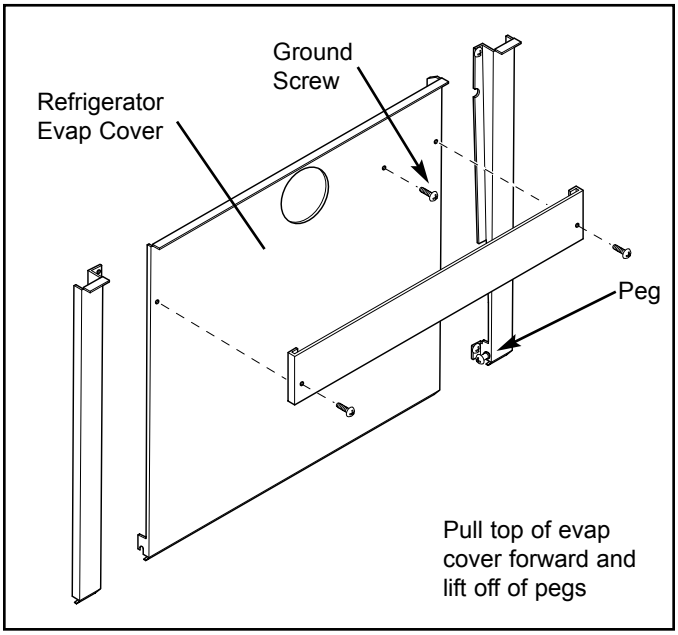


Figure 6-46.
Refrigerator Evaporator Cover Removal

Refrigerator Section Evaporator Support Cover Access and Removal (Model 427R ONLY)

The evaporator support covers are narrow covers to the left and right of the refrigerator evaporator cover. The left cover holds the control cable connector. These covers are held in place by screws under the refrigerator evaporator cover.

To remove the evaporator support covers, you must first remove the drawer slides and both drawer closers. Then, remove the evaporator fan cover mounting screws, the evaporator fan cover and the refrigerator evaporator cover. Extract the evaporator support cover mounting screws and pull the evaporator support cover out. (See Figure 6-47)

NOTE: *If removing the left evaporator support cover, the control cable connector must be disconnected as you remove the cover.*

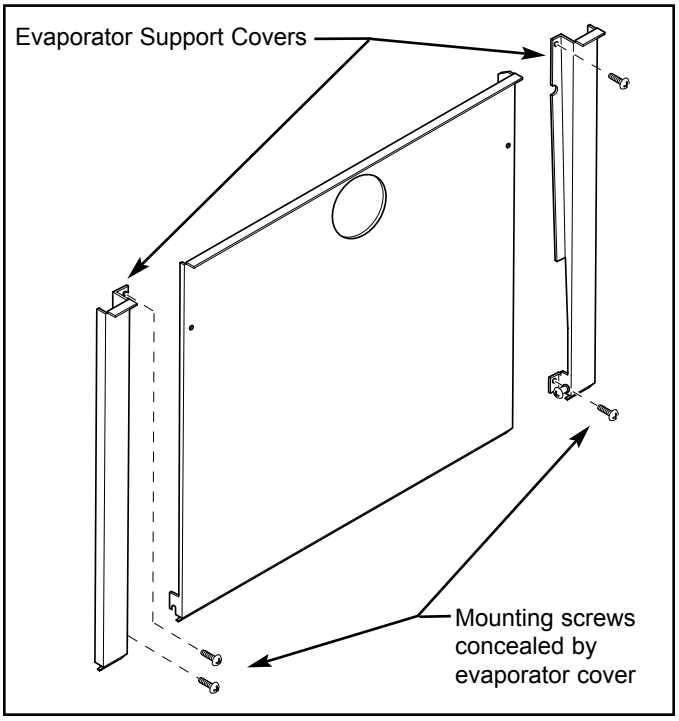


Figure 6-47. Refrigerator Evaporator Support Cover Removal

MODELS 427 & 427R INTERIOR MECHANICAL COMPONENT ACCESS AND REMOVAL:

An attempt has been made to arrange these instructions in such a way as to simulate which components would need to be removed first in order to gain access to other components. When following a component removal procedure, it may be necessary to reference another removal procedure towards the front of this sub-section.

Wine Storage Control Board Access and Removal (Models 427 & 427R)

The control board is located at the bottom of the compartment divider, behind the control panel, and is concealed by an access panel. The control board is held in place by four tabs, one at each corner of the board.

NOTE: *See ELECTRIC SHOCK WARNING and STATIC ELECTRICITY CAUTION at beginning of this section.*

To get to the control board you will need to extract the two screws at the back of the access panel, then lower the back of the access panel and pull it towards the rear of the unit. (See Figure 6-48)

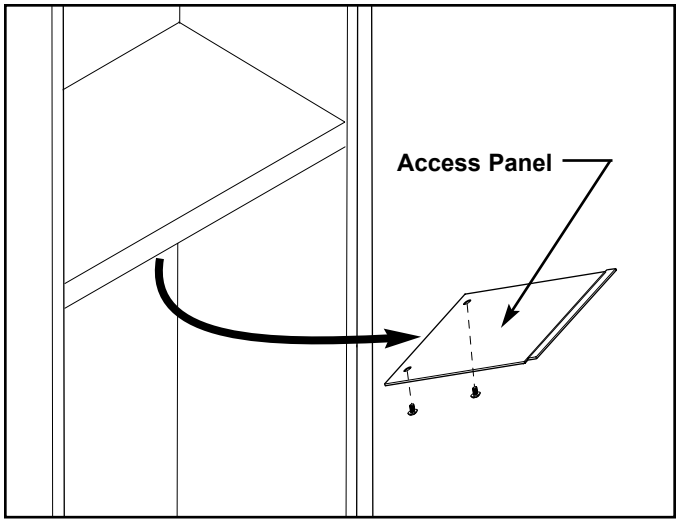


Figure 6-48. Wine Storage Control Board Access Panel

To remove the control board, disconnect the LED ribbon cable, the membrane switch ribbon cable, and all other electrical leads attached to the control board. Expand the tabs to release the control board, then pull down and out. (See Figure 6-49)

NOTE: *When re-connecting electrical leads to the control board, be sure the silver area on the membrane switch ribbon cable terminal is facing away from the control board.*

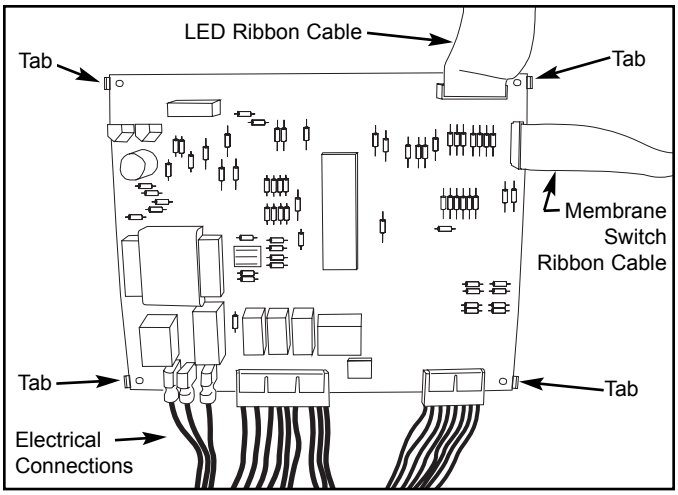


Figure 6-49.
Wine Storage Control Board

Refrigerator Section Control Board Access and Removal (Model 427R ONLY)

The refrigerator section control board is attached to a control board cover, located in the ceiling of the refrigerator section. The control board cover is held in place with seven screws.

NOTE: *The eighth hole in the control board cover is in line with the wire channel. DO NOT insert a screw in this hole. Doing so could short out the unit and/or cause electrical shock. See ELECTRIC SHOCK WARNING and STATIC ELECTRICITY CAUTION at beginning of this section.*

To access and remove the refrigerator control board, remove the top drawer first.

NOTE: *The top drawer has a control cable that must be disconnected before drawer removal. To remove the top drawer assembly, pull top drawer forward 6" to 10", lift it up off of the pins at front and push the slides in. Carefully place the drawer assembly face down directly in front of unit. Then, disconnect the display cable at interior left rear of the unit by turning the collar counterclockwise and unplugging the pins from the socket. (See Figure 6-32)*

Now, extract the screws that secure the control board cover to the ceiling and let the cover drop down. Disconnect all electrical lead attached to the control board and pull the control board and cover out. (See Figure 6-50)

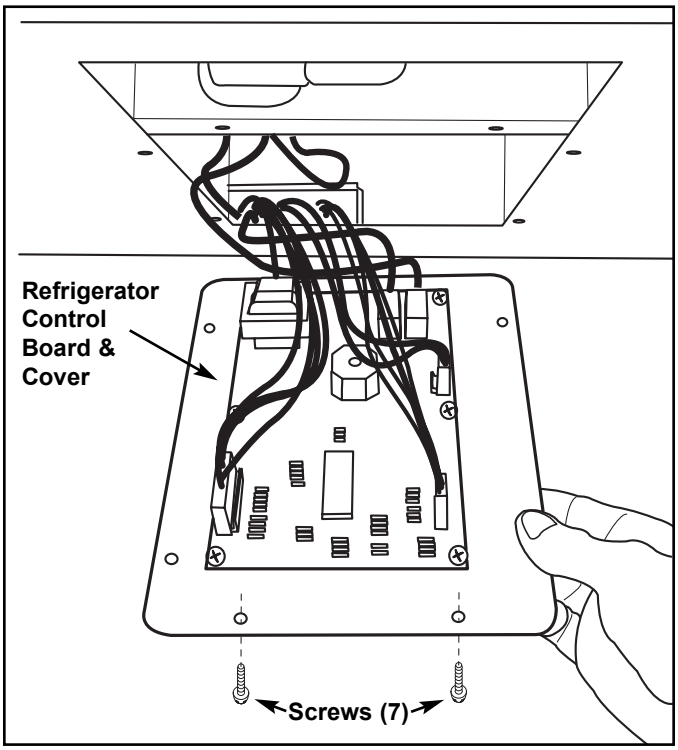


Figure 6-50.
Refrigerator Section Control Board

Wine Storage Control Panel Assembly Removal (Models 427 & 427R)

The control panel assembly is set at the front of the wine compartment divider and is secured by six screws at the bottom, and a silicone seal under the top flange. Tabs at the bottom and a concealed tab at the top center of the control panel housing help to position the control panel assembly.

NOTE: *See ELECTRIC SHOCK WARNING at beginning of this section.*

To remove the control panel assembly, first access the control board and disconnect the lower light strip electrical leads, LED ribbon cable and the membrane switch ribbon cable. Then, extract the six screws at the bottom of the control panel. Now, slide the blade of a putty knife under and along the top flange of the control panel housing to break the silicone seal. (See Figure 6-51)

NOTE: *Do not lift the top flange of the control panel housing too vigorously. Doing so will break the concealed tab at the top center.*

After breaking the silicone seal, pull the control panel assembly forward and disconnect the ground wire.

NOTE: *When reinstalling the control panel assembly, you must reapply a bead of silicone along the inside of the top flange.*

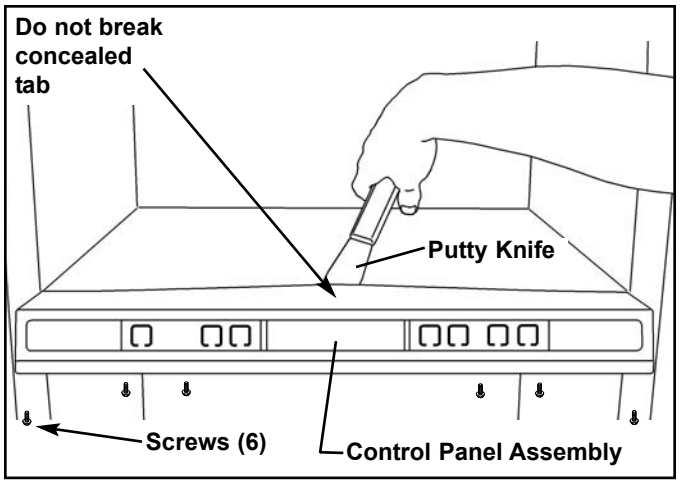


Figure 6-51.
Wine Storage Control Panel Assembly

Lower Light Strip Access and Removal (Models 427 & 427R)

NOTE: *See ELECTRIC SHOCK WARNING at beginning of this section.*

The lower light strip is held in the channel of the light strip housing, which attached to the control panel assembly. To remove the lower light strip, you will first need to remove the control panel assembly. Now, slide the light strip housing off of the control panel assembly. Then, slide the light strip out the end of the channel in the housing. (See Figure 6-52)

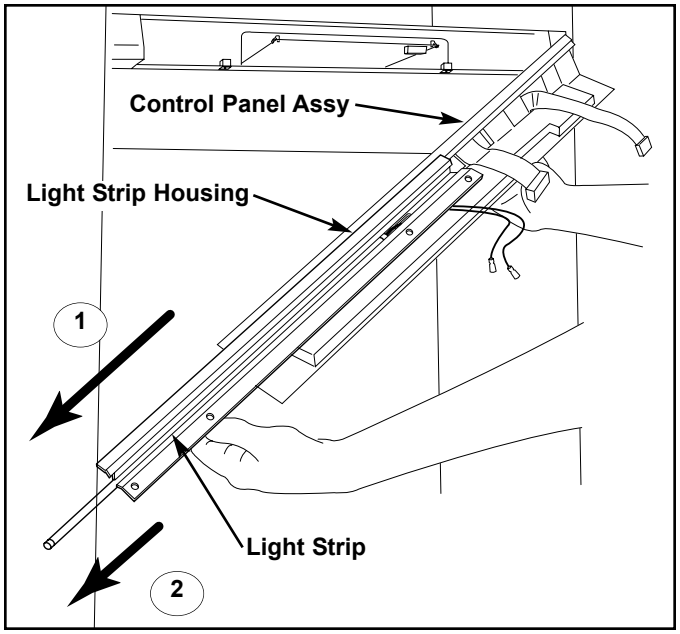


Figure 6-52. Lower Light Strip

Refrigerator Section Control Panel Assembly Removal (Model 427R ONLY)

The refrigerator control panel assembly is attached to the inside of the top drawer with three screws.

NOTE: *See ELECTRIC SHOCK WARNING at beginning of this section.*

To remove the refrigerator control panel assembly, extract the three screws and tilt the control panel back towards the drawer tub. (See Figure 6-53) Now, disconnect the power supply to the control panel assembly and lift the control panel assembly up and out.

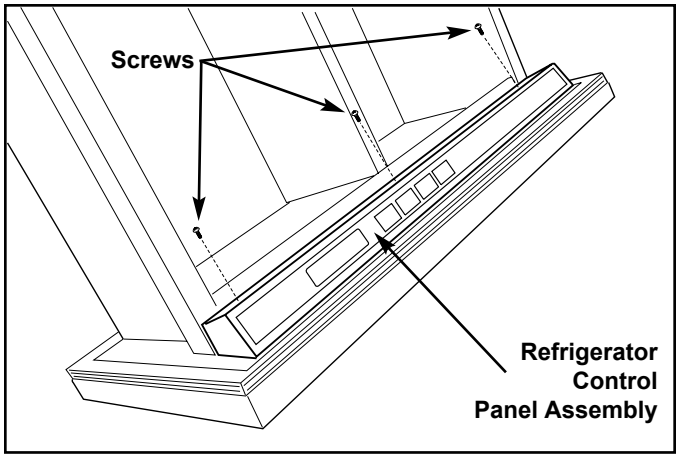


Figure 6-53.
Refrigerator Control Panel Assembly

Wine Storage Compartment Thermistors Access and Removal (Models 427 & 427R)

The upper and lower wine compartment thermistors are attached to the wall of both compartments with Phillips-head screws, and the electrical leads of the thermistors are routed through notches in the side of the evaporator covers and guarded by a wire grommets. (See Figure 6-54)

NOTE: *See ELECTRIC SHOCK WARNING at beginning of this section.*

To remove a compartment thermistor, you must first remove the wine racks in the appropriate compartment. Then, remove the screw from the compartment thermistor. Remove the evaporator fan cover mounting screws and the evaporator fan cover. Remove the mounting screws towards the bottom of the evaporator cover. Rotate the side of the evaporator cover farthest from the false wall out slightly and push the thermistor electrical leads and rubber grommet from the slot in the evaporator cover. Now, reach behind the evaporator cover and disconnect the thermistor electrical leads and remove the thermistor mounting screw. (See Figure 6-54)

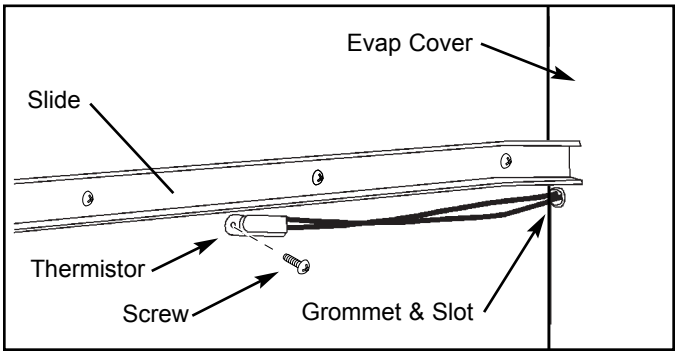


Figure 6-54.
Wine Storage Compartment Thermistors

Wine Storage Evaporator Thermistors Access and Removal (Models 427 & 427R)

The upper and lower wine storage evaporator thermistors are attached to the right side evaporator brackets of both evaporators with Phillips-head screws. (See Figure 6-55)

NOTE: *See ELECTRIC SHOCK WARNING at beginning of this section.*

To access and remove a wine storage evaporator thermistor, you must first remove the wine racks in the appropriate compartment. Then, remove the evaporator fan cover mounting screws and the evaporator fan cover. Remove the evaporator cover mounting screws towards the bottom of the evaporator cover. Rotate the side of the evaporator cover farthest from the false wall out slightly and push the compartment thermistor electrical leads and grommet from the slot in the evaporator cover. You'll find a ground wire riveted to the back of the evaporator cover, and the other end of the ground wire has a screw securing it to the rear wall. Extract the ground screw and continue rotate the side of the evaporator cover farthest from the false wall out until the flange clears the false wall. Pull the evaporator cover out. Remove the screw from the evaporator thermistor, disconnect the thermistor electrical leads and pull the evaporator thermistor out. (See Figure 6-55)

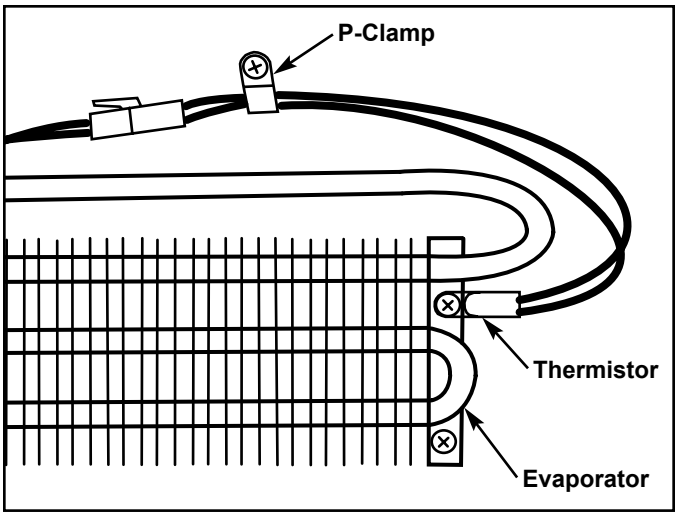


Figure 6-55.
Wine Storage Evaporator Thermistors

Refrigerator Compartment Thermistor Access and Removal (Model 427R ONLY)

The compartment thermistor in the refrigerator section is located behind the upper drawer, inside the top Reed switch assembly, and is considered part of the top Reed switch assembly. To replace the compartment thermistor, the complete top Reed switch must be replaced (See Figure 6-56)

NOTE: *See ELECTRIC SHOCK WARNING at beginning of this section.*

To access and remove the top Reed switch assembly, extract the Reed switch mounting screw. Lean the top of the Reed switch forward, disconnect the electrical leads from the back side, and pull the Reed switch out.

NOTE: *When reinstalling a Reed switch, plug in the electrical leads. Place the bottom flange of the switch housing into the opening in the evaporator cover. Then, rotate the top back and insert the screw.*

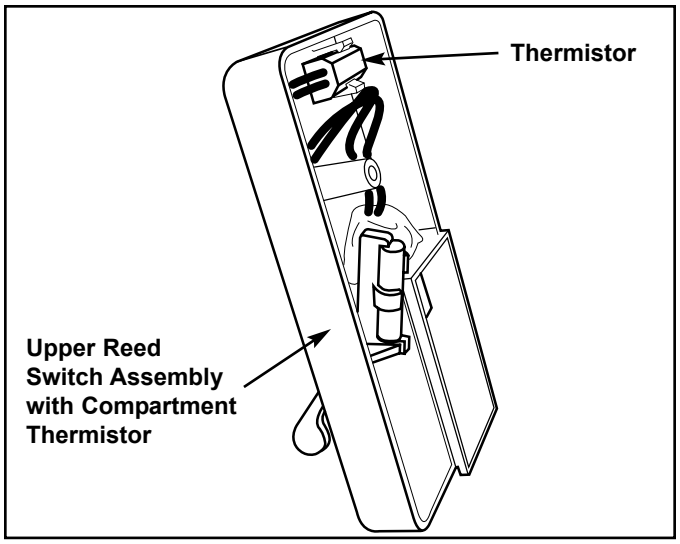


Figure 6-56. 427R Refrigerator Compartment Thermistor / Reed Switch

Refrigerator Evaporator Thermistor Access and Removal (Model 427R ONLY)

The refrigerator section evaporator thermistor is attached to the right side evaporator brackets with a Phillips-head screw. (See Figure 6-57)

NOTE: *See ELECTRIC SHOCK WARNING at beginning of this section.*

To access the refrigerator evaporator thermistor, you must first remove the evaporator fan cover mounting screws and the evaporator fan cover. Extract the grounding screw towards the top right, and remove both Reed switches. Pull the top of the evaporator cover forward and down and lift off of pegs at bottom. Remove the screw from the evaporator thermistor and disconnect the evaporator thermistor electrical leads.

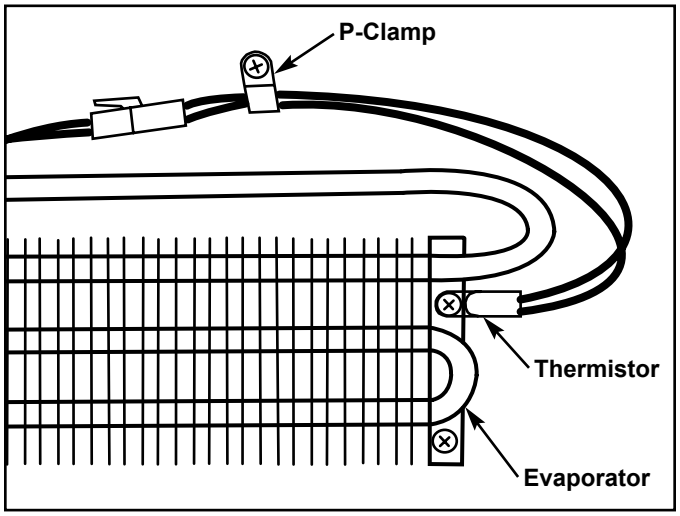


Figure 6-57. 427R Refrigerator Evaporator Thermistor

Upper and Lower Wine Storage Evaporator Fan Assembly Access and Removal (Model 427 & 427R)

The wine storage evaporator fan assemblies are attached to the rear wall of each wine compartment with four Phillips-head screws. (See Figure 6-58)

NOTE: *See ELECTRIC SHOCK WARNING at beginning of this section.*

To access and remove a wine storage evaporator fan assembly, you must first remove the wine racks in the appropriate compartment. Then, remove the evaporator fan cover mounting screws and the evaporator fan cover. Remove the evaporator cover mounting screws towards the bottom of the evaporator cover. Rotate the side of the evaporator cover farthest from the false wall out slightly and push the compartment thermistor electrical leads and rubber grommet from the slot in the evaporator cover. You will find a ground wire riveted to the back of the evaporator cover. The other end of the ground wire has a screw securing it to the rear wall. Extract the ground screw and continue rotate the side of the evaporator cover farthest from the false wall out until the flange behind the false wall clears the false wall. Pull the evaporator cover out. Pull the fan blade from the fan motor shaft. Extract the screw from the P-clamp holding the fan wires. Then remove the four screws from the fan bracket and disconnect the fan motor electrical leads.

Refrigerator Section Evaporator Fan Assembly Access and Removal (Model 427R ONLY)

The refrigerator evaporator fan assembly is attached to the rear wall of the compartment with four Phillips-head screws. (See Figure 6-58)

NOTE: *See ELECTRIC SHOCK WARNING at beginning of this section.*

To access and remove the refrigerator evaporator fan assembly, you must first remove the evaporator fan cover mounting screws and the evaporator fan cover. Extract the grounding screw towards the top right, and remove both Reed switches. Pull the top of the evaporator cover forward and down and lift off of pegs at bottom. Pull the fan blade from the fan motor shaft. Extract the screw from the P-clamp holding the fan wires. Then remove the four screws from the fan bracket and disconnect the fan motor electrical leads. (See Figure 6-58)

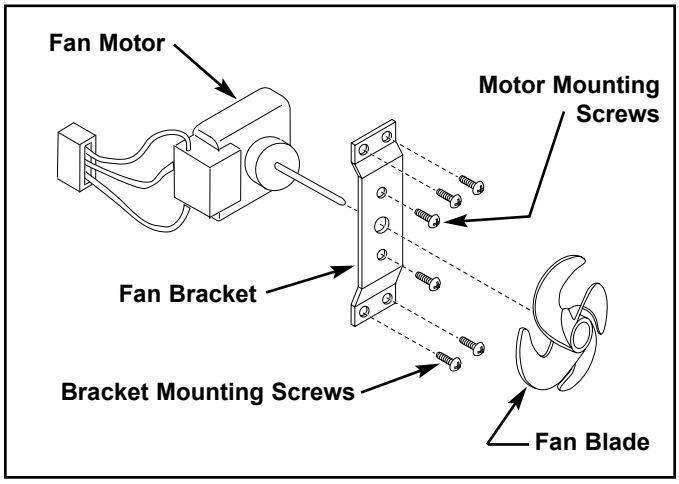


Figure 6-58. Evaporator Fan Assembly

MODELS 427 AND 427R SEALED SYSTEM COMPONENT ACCESS AND REMOVAL:

An attempt has been made to arrange these instructions in such a way as to simulate which components would need to be removed first in order to gain access to other components. When following a component removal procedure, it may be necessary to reference another removal procedure towards the front of this section.

NOTE: *Always replace the filter-drier when servicing the sealed system.*

Upper and Lower Wine Storage Evaporator Access and Removal (Models 427 & 427R)

The wine storage evaporators are mounted to the rear wall in each wine storage compartment with Phillips-head screws. (See Figures 6-59)

NOTE: *See SHARP EVAPORATOR FINS CAUTION at beginning of this section.*

Before accessing and removing a wine storage evaporator, evacuate the refrigerant from the sealed system. Then, remove the wine racks. Remove the evaporator fan cover mounting screws and the evaporator fan cover. Remove the evaporator cover mounting screws towards the bottom of the evaporator cover. Rotate the side of the evaporator cover farthest from the false wall out slightly and push the compartment thermistor electrical leads and rubber grommet from the slot in the evaporator cover. Locate the ground wire riveted to the back of the evaporator cover with a screw securing it to the rear wall. Extract the ground screw and continue rotating the side of the evaporator cover farthest from the false wall out until the flange behind the false wall clears the false wall. Pull the evaporator cover out, and extract the evaporator mounting screws. Now, cut the evaporator inlet and outlet tubing and pull the evaporator out.

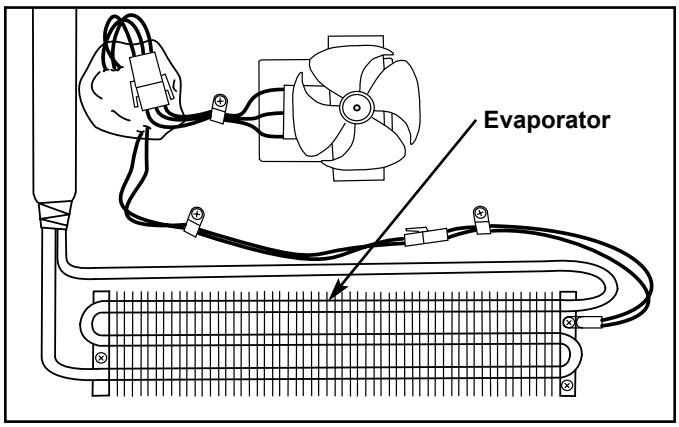


Figure 6-59. Evaporator

Refrigerator Section Evaporator Access and Removal (Model 427R ONLY)

The refrigerator evaporator is mounted to the rear wall of the refrigerator section with Phillips-head screws. (See Figures 6-60)

NOTE: *See SHARP EVAPORATOR FINS CAUTION at beginning of this section.*

Before accessing and removing the refrigerator evaporator, evacuate the refrigerant from the sealed system. Then, remove the four drawer slides and both drawer closers. Remove the evaporator fan cover mounting screws and the evaporator fan cover. Remove both Reed switches and remove the mounting screws towards the bottom of the evaporator cover. Rotate the top of the evaporator cover forward and pull it out. Remove both evaporator support covers. Extract the evaporator mounting screws. Now, cut the evaporator inlet and outlet tubing and pull the evaporator out.

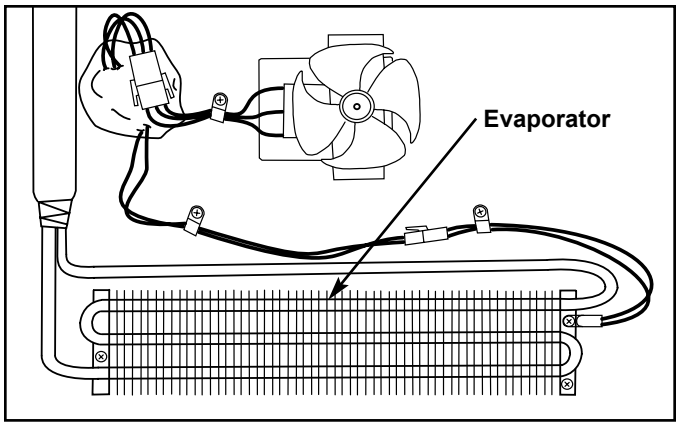


Figure 6-60. Evaporator

Wine Storage Refrigerant Valve Access and Removal (Models 427 & 427R)

The refrigerant valves are located to the right of the compressor(s) on the unit tray, and are held to the valve bracket with P-clamps and screws. The top valve is for the upper wine storage compartment and the bottom valve is for the lower wine storage compartment. (See Figure 6-61)

NOTE: *See HOT COMPRESSOR & TUBING CAUTION at beginning of this section.*

After evacuating the refrigerant from the sealed system, you will need to slide the unit tray out. (See Figure 6-34)

NOTE: *Move tray slowly and observe the sealed system tubing. Care must be taken to not kink any of the tubing.*

Now, cut the capillary tube approximately 1" from the refrigerant valve, and cut the valve inlet tube approximately 3" from the refrigerant valve. (See Figure 6-61)

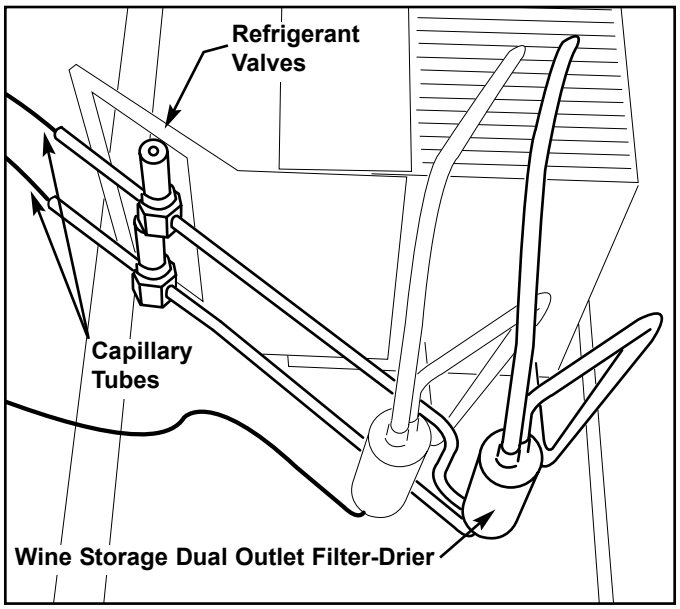


Figure 6-61. Capillary Tubes, Refrigerant Valves, Dual Outlet Filter-Drier

Wine Storage Filter-Drier Access and Removal (Models 427 & 427R)

The wine storage filter-drier, which has two outlet tubes, is located to the left of the condenser on the unit tray. One outlet tube runs to the top refrigerant valve, and the other tube runs to the bottom refrigerant valve. (See Figure 6-61)

NOTE: *See HOT COMPRESSOR & TUBING CAUTION at beginning of this section.*

After evacuating the refrigerant from the sealed system, you'll need to slide the unit tray out. (See Figure 6-34)

NOTE: *Move tray slowly and observe the sealed system tubing. Care must be taken to not kink any of the tubing.*

Now, cut both outlet tubes approximately 1" from the filter-drier, and cut the drier inlet tube approximately 1" from the filter-drier. (See Figure 6-61)

Refrigerator Section Filter-Drier Access and Removal (Model 427R ONLY)

The refrigerator section filter-drier is located to the left of the condenser on the unit tray. (See Figure 6-62)

NOTE: *See HOT COMPRESSOR & TUBING CAUTION at beginning of this section.*

After evacuating the sealed system, you will need to slide the unit tray out. (See Figure 6-34)

NOTE: *Move tray slowly and observe the sealed system tubing. Care must be taken to not kink any of the tubing.*

Now, cut the capillary tubes approximately 1" from the filter-drier, and cut the drier inlet tube approximately 1" from the filter-drier. (See Figure 6-62)

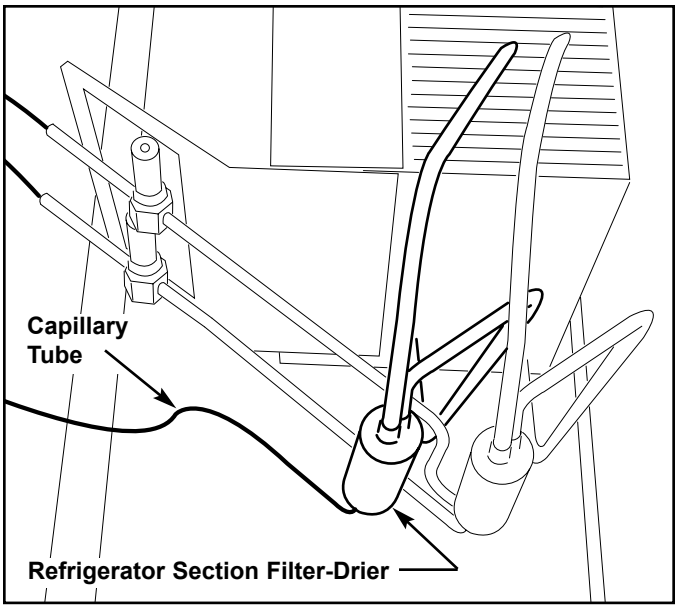


Figure 6-62. 427R Refrigerator Filter-Drier

Compressor Access and Removal (Models 427 & 427R)

The compressor(s) are attached to the unit tray with bolts. On the model 427R, the front compressor is the wine storage compressor and the back compressor is the refrigerator section compressor. (See Figure 6-63)

NOTE: *See HOT COMPRESSOR & TUBING CAUTION at beginning of this section.*

After evacuating the refrigerant from the sealed system, you will need to slide the unit tray out. (See Figure 6-34)

NOTE: *Move tray slowly and observe the sealed system tubing. Care must be taken to not kink any of the tubing.*

Now, cut the suction port and discharge port approximately 1" from the compressor. Disconnect the compressor electricals. Extract the four bolts from the compressor base and lift the compressor up and out.

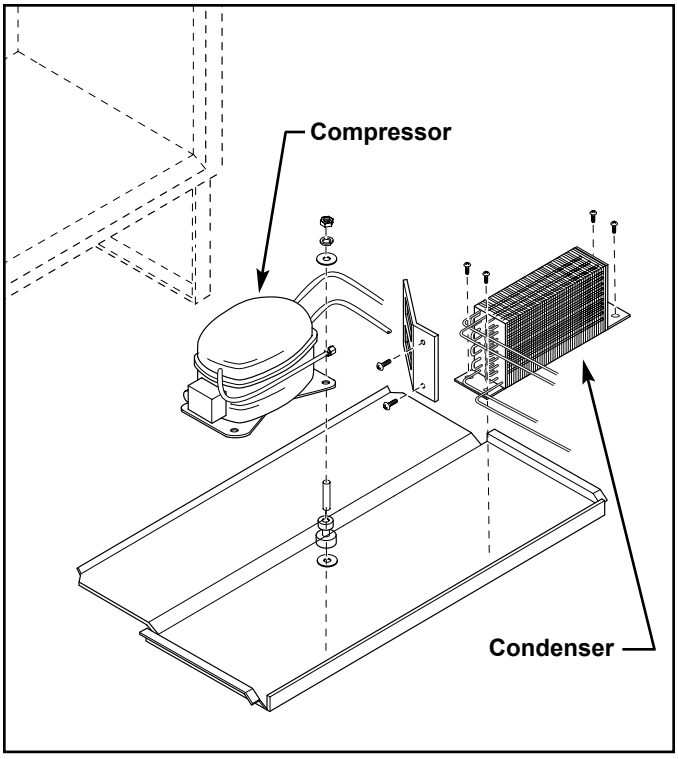


Figure 6-63. Compressor(s) & Condenser

Condenser Access and Removal (Models 427 & 427R)

To condenser is located at the front right of the unit tray, and is held in place with screws passing up from under the unit tray into the condenser brackets. The 427R has a dual condenser with the front of the condenser being part of the wine storage sealed system and the back of the condenser being part of the refrigerator sealed system. (See Figure 6-63)

NOTE: *See HOT COMPRESSOR & TUBING CAUTION and SHARP FINS CAUTION at beginning of this section.*

After evacuating the refrigerant from the sealed system, you will need to slide the unit tray out slightly. (See Figure 6-34)

NOTE: *Move tray slowly and observe the sealed system tubing. Care must be taken to not kink any of the tubing.*

Now, remove the condenser mounting screws. Cut the inlet tube(s) and outlet tube(s) approximately 2" from the condenser and lift the condenser up and out. (See Figure 6-63)

MODEL 430

MODEL 430 EXTERIOR COSMETIC AND MECHANICAL COMPONENT REMOVAL:

An attempt has been made to arrange these instructions in such a way as to simulate which components would need to be removed first in order to gain access to other components. When following a component removal procedure, it may be necessary to reference another removal procedure towards the front of this section.

Kickplate Removal (Model 430)

To remove the kickplate, extract the mounting screws located at each end of the kickplate and pull the kickplate forward. (See Figure 6-64)

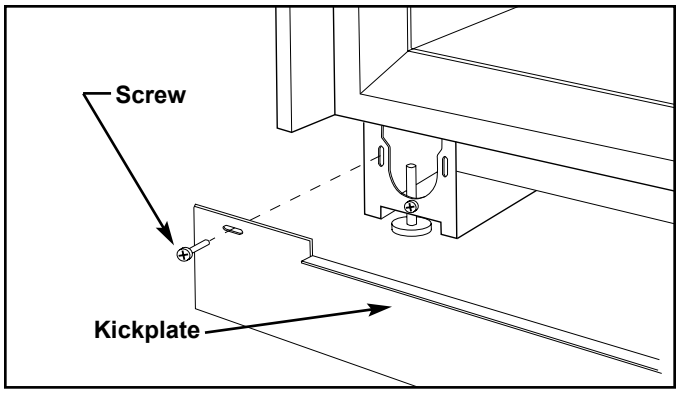


Figure 6-64. Kickplate Removal

Drain Pan Removal (Model 430)

To access and remove the drain pan, the kickplate must first be removed. Now push the front of the drain pan back and down. (This flexes the drain pan slightly, releasing the top flange from the tab in the kickplate support.) Then, pull the drain pan forward. (See Figure 6-65)

NOTE: *When reinstalling, the tapered end of drain pan must be inserted on top of the drain pan holder at rear. Then push the front of the drain pan up until the front flange engages the tab in the kickplate support. Also, make sure the drain hoses are over the drain pan, and the foam air seals which direct air over drain pan are in position and in good shape.*

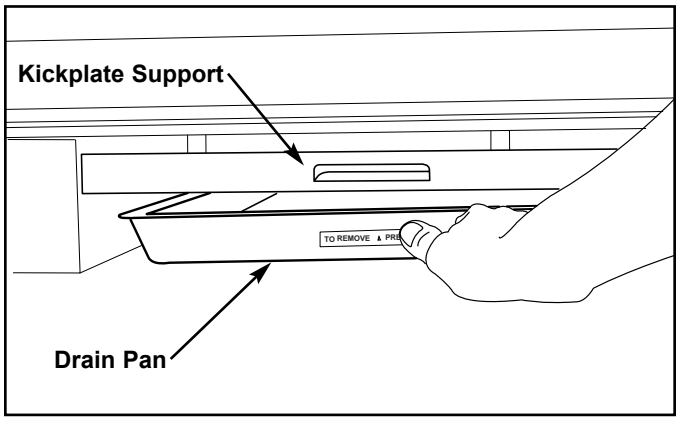


Figure 6-65. Drain Pan Removal

Door Closer Removal (Model 430)

The door closer assembly sets inside of the unit base and the door closer arm is held on the bottom door hinge stud with an E-ring.

NOTE: *The procedure for "disconnecting" the door closer when removing a door is different than the door closer "removal" procedure listed below. (See DOOR CLOSER CAUTION at beginning of this section.)*

With door closed, use a small straight-blade screwdriver to remove the E-ring which holds the door closer arm to the stud on the bottom door hinge. Then, pry the door closer arm down off of the door hinge stud and pull the door closer assembly from the front of the unit base. (See Figure 6-66)

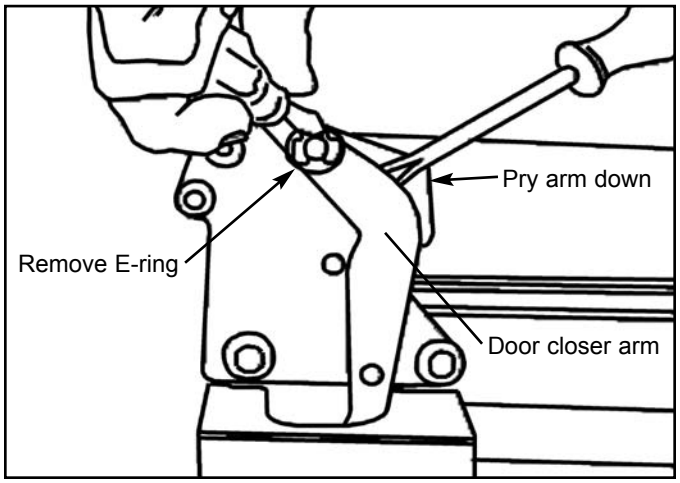


Figure 6-66. Door Closer Removal

Door Assembly Removal (Model 430)

NOTE: *See DOOR CLOSER CAUTION at beginning of this section.*

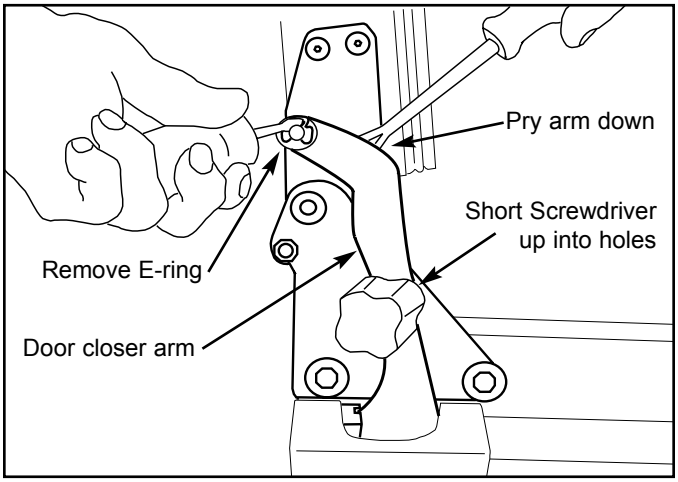
The door closer must be disconnected from the bottom door hinge in order to remove the door. Disconnect the door closer from the bottom door hinge by opening the door until the hole in the door closer arm aligns with hole in bottom cabinet hinge, then insert a stubby screwdriver (1/4" diameter or less) up into the two holes. With a small straight-blade screwdriver, remove the E-ring which holds the door closer arm to the stud on the bottom door hinge. (See Figure 6-67) Then, pry the door closer arm down off of the door hinge stud.

NOTE: *The screwdriver inserted in the holes of the door closer arm and the bottom cabinet hinge will be used to pry the door closer arm back into position when reattaching the door closer to the bottom door hinge.*

With the door closer disconnected, remove the hinge-side door trim and extract all screws from the top door hinge, then lift door assembly off of bottom cabinet hinge. (See Figures 6-68)

Louvered Grille Removal (Model 430)

To remove the louvered grille assembly, open unit door and extract the grille screws which pass up through the top mainframe extrusion into brackets at bottom rear of grille assembly. Now, tilt the top of grille forward and release the grille springs from the grille hooks at the back side of the grille. Then lift grille assembly off. (See Figure 6-69)



igure 6-67. Disconnecting the Door Closer

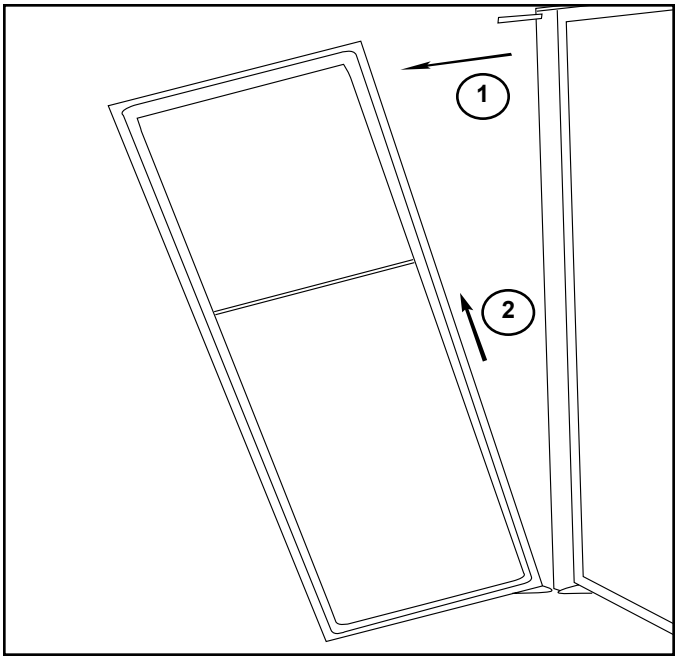


Figure 6-68. Door Assembly Removal

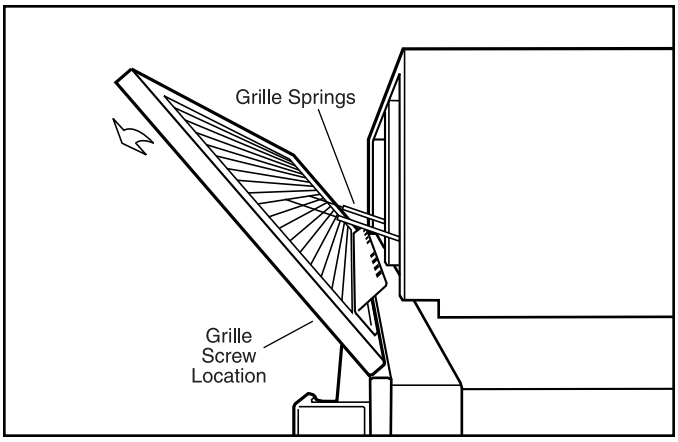


Figure 6-69. Louvered Grille Removal

Panel Grille Assembly Removal (Model 430)

The panel grille assembly consists of an outer and an inner grille frame. The outer grille frame attaches to the unit, while the inner grille frame(which accepts a decorative panel) is easily removable for condenser cleaning purposes. There are pegs on the back side of the inner grille frame which fit in key-hole slots in the outer grille frame.

To remove the inner grille frame, lift assembly up (1) and pull out of key-hole slots at the bottom (2). Then, pull down and out of key-hole slots at the top (3). (See Figure 6-70)

To remove the outer grille frame, remove the inner grille frame first. Now, opening unit door(s) and extract the grille screws which pass up through the top mainframe extrusion into bottom extrusion of outer grille frame. Now, extract the screws at the top front of outer grille frame and lift frame off. (See Figure 6-71)

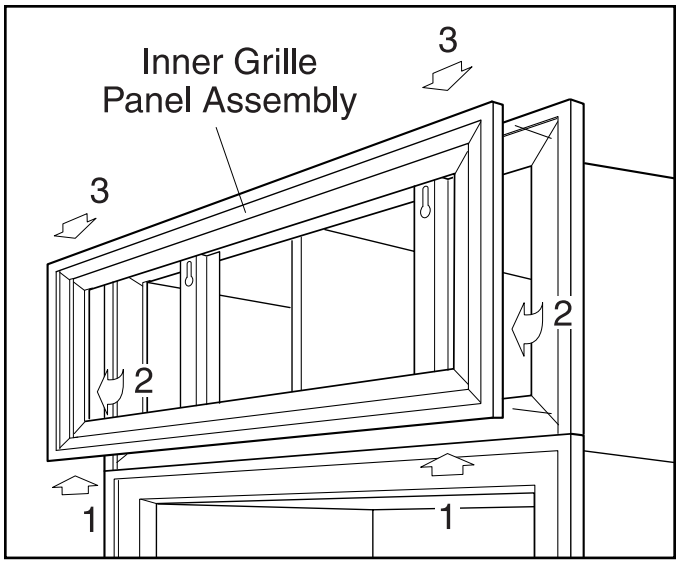


Figure 6-70. Inner Panel Grille Removal

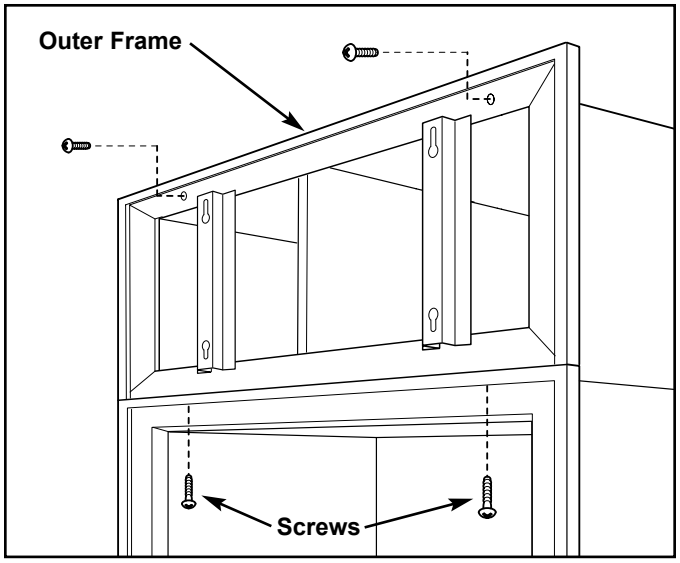


Figure 6-71. Outer Panel Grille Removal

Light Switch and Fan Switch Access and Removal (Model 430)

The light and fan switches are mounted to the top mainframe and held in place by tabs on the sides of the switches. A switch cover over the top of the switches is held in place with a screw.

NOTE: *See ELECTRIC SHOCK WARNING at beginning of this section.*

To access and remove the light and/or fan switch(es), the unit grille will need to be removed first. Now, remove the switch enclosure directly behind the top mainframe extrusion by extracting the retaining screw. Tilt the back of the switch enclosure forward and lift up. Now unplug the wires from the switch being removed. Open the door. Depress the tab on the side of the switch while pushing the switch down and out of the opening in the mainframe extrusion. (See Figure 6-72)

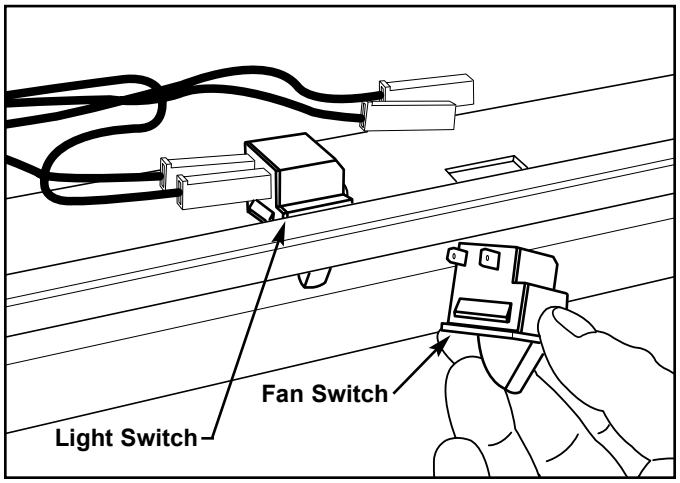


Figure 6-72. Light Switch and Fan Switch

Condenser Fan Assembly Access and Removal (Model 430)

The condenser fan motor is attached to a three legged condenser fan bracket by screws. The back leg of the condenser fan bracket hooks over a spacer toward the rear of the fan shroud. The two front legs of the bracket are secured to the fan shroud by screws into wellnuts. (See Figure 6-73)

NOTE: *See ELECTRIC SHOCK WARNING at beginning of this section.*

To access and remove the condenser fan assembly, the unit grille will need to be removed first. Then, remove compressor baffle which is secured with screws. Disconnect the fan motor electrical leads. Extract the screws from the two front legs of the fan bracket. Then, unhook the back leg by pushing the condenser fan assembly slightly to the rear, then lift up and pull it forward. The condenser fan motor can now be removed from the bracket by extracting the screws in the back side of the fan motor, and the fan blade can be removed from the fan motor by turning the flat-nut on the fan motor shaft counterclockwise, then pull the nut and blade from the shaft. (See Figure 6-73)

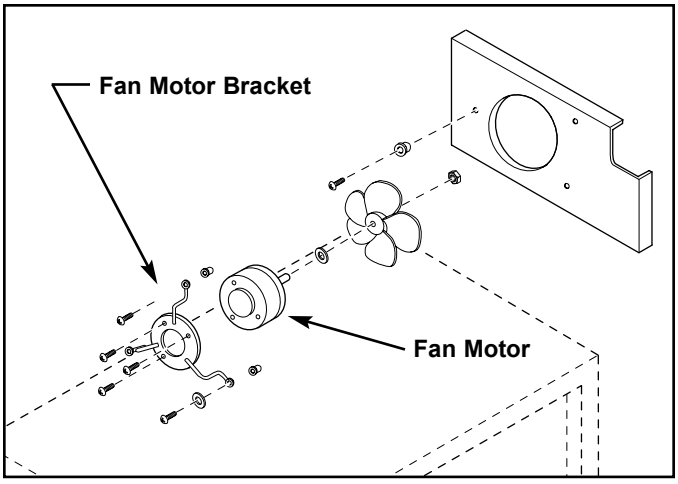


Figure 6-73. Condenser Fan Assembly

Refrigerant Valve Solenoid Access and Removal (Model 430)

The refrigerant valve solenoids are attached to the tops of the refrigerant valves with screws. The refrigerant valves are located to the right of the compressor, and are held to the valve bracket with P-clamps and screws. The top valve is for the upper wine storage compartment and the bottom valve is for the lower wine storage compartment. (See Figure 6-74)

NOTE: *See ELECTRIC SHOCK WARNING and HOT TUBING CAUTION at beginning of this section.*

To access and remove the refrigerant valve solenoid, the unit grille will need to be removed first. Then, remove compressor baffle which is secured with screws. Disconnect the electrical leads of the solenoid being removed. Now, remove the screw at the top of the solenoid and lift the solenoid up off the valve. (See Figure 6-74)

NOTE: *You may need to twist the refrigerant valve in the P-clamps slightly to allow the solenoid to be removed.*

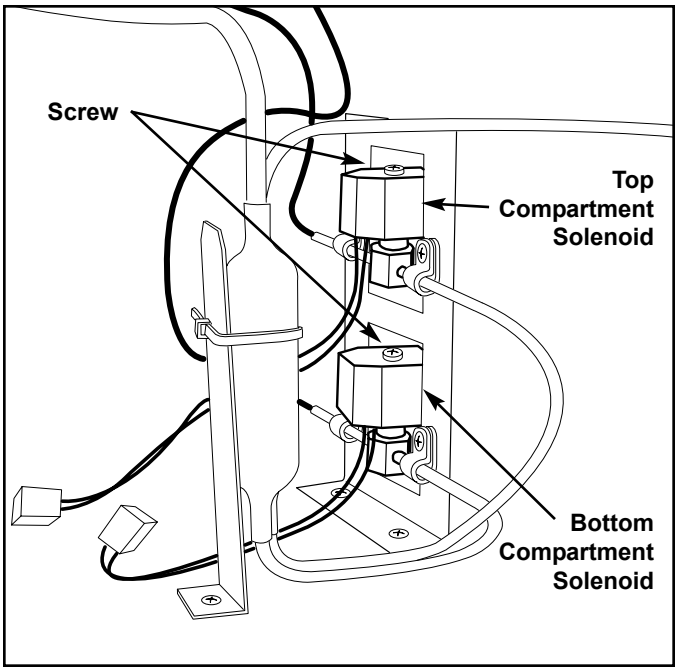


Figure 6-74. Refrigerant Solenoid Valves

MODEL 430 INTERIOR COSMETIC COMPONENT REMOVAL:

An attempt has been made to arrange these instructions in such a way as to simulate which components would need to be removed first in order to gain access to other components. When following a component removal procedure, it may be necessary to reference another removal procedure towards the front of this section.

Wine Rack Assembly Removal (Model 430)

To remove a wine rack assembly, pull the rack forward until it stops. Remove any wine bottles on the rack. Lift the front of the wine rack up while pulling forward. After the indentations on the wine rack clear the rollers on the cabinet slides, lower the front of the wine rack while continuing to pull forward, then lift the rear of the rack up and out. (See Figure 6-75)

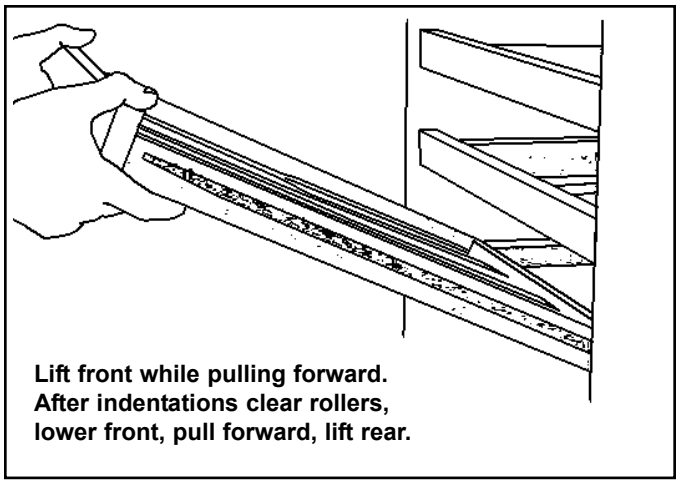


Figure 6-75. Wine Rack Assembly Removal

Upper Light Strip Access and Removal (Model 430)

NOTE: *See ELECTRIC SHOCK WARNING at beginning of this section.*

The light strip is held in the channel of the light strip housing. To access the upper light strip, extract the two light strip housing mounting screws. Lower the light strip housing down and disconnect the electrical leads. Now, slide the light strip out the end of the channel. (See Figure 6-76)

NOTE: *When reinstalling the light strip housing, care must be taken to ensure that all wire leads are tucked behind the light strip housing before resecuring it.*

NOTE: *Since the lower light strip housing is attached to the control panel assembly in the model 430, the complete control panel assembly must be removed in order to gain access to the light strip. See Lower Light Strip Access and Removal instructions in the MODEL 430 INTERIOR MECHANICAL COMPONENT ACCESS AND REMOVAL section of this manual.*

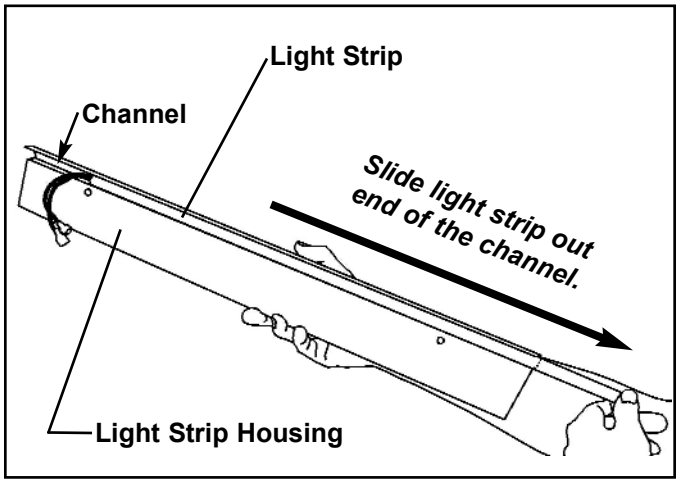


Figure 6-76. Upper Light Strip Removal

Cabinet Slide, Slide Spacer and Slide Support Spacer Removal (Model 430)

Cabinet slides are attached to the side walls of the wine compartments with screws. If the cabinet slide is attached to the handle side of the compartment, a small plastic slide spacer is placed between the front of the slide and the side wall. If the cabinet slide is attached to the handle side, a wide plastic slide support spacer is placed between the slide and the wall.

To remove a cabinet slide, first remove the wine rack. Then, extract the Phillips head cabinet slide mounting screws and pull the cabinet slide and slide spacer or slide support spacer from the wall. (See Figure 6-77)

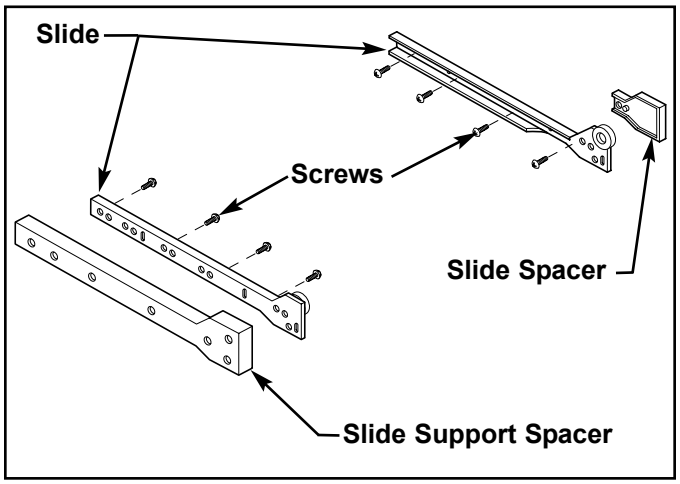


Figure 6-77. Cabinet Slide, Slide Support Spacer & Slide Spacer Removal

Upper and Lower Evaporator Fan Cover Removal (Model 430)

There are two access holes in the front of the evaporator fan cover. The back flanges of the evaporator fan cover have slots that line up with the access holes. Screws inside these access holes pass through slots in the back flanges and through holes in the evaporator cover into screw grommets, securing the fan cover.

To remove the evaporator fan cover, extract the two mounting screws from the access holes and pull the fan cover forward. (See Figure 6-78)

NOTE: *When reinstalling the fan cover, first insert one of the two mounting screws through the evaporator cover, into the screw grommet, but do not fully tighten. Then, slide the corresponding slot in the rear flange of the fan cover over the screw and rotate the fan cover up until the other access hole lines up with the other mounting hole. Insert the second screw and tighten both screws.*

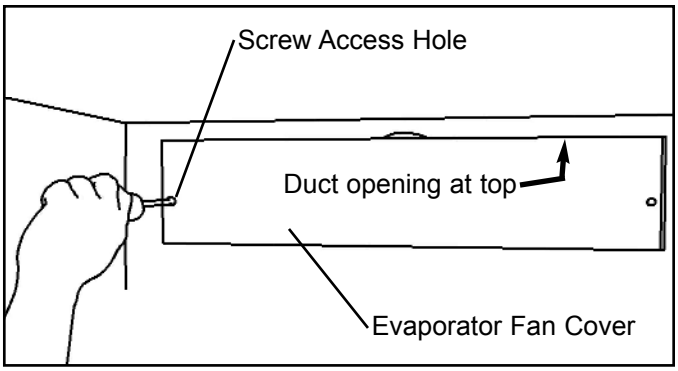


Figure 6-78. Evap Fan Cover Removal

Upper and Lower Evaporator Cover Removal (Model 430)

To remove the upper and lower evaporator covers, you must first remove the wine racks in the compartment. Then, remove the evaporator fan cover mounting screws and the evaporator fan cover. Pull the top of the evaporator cover forward and down and lift off of pegs at bottom. You'll find a ground wire riveted to the back of the evaporator cover, and the other end has a screw securing it to the rear wall. Extract the ground screw and pull the evaporator cover out.. (See Figure 6-79)

NOTE: *When reinstalling the evaporator cover, the ground wire must be reattached with the ground screw to the rear wall.*

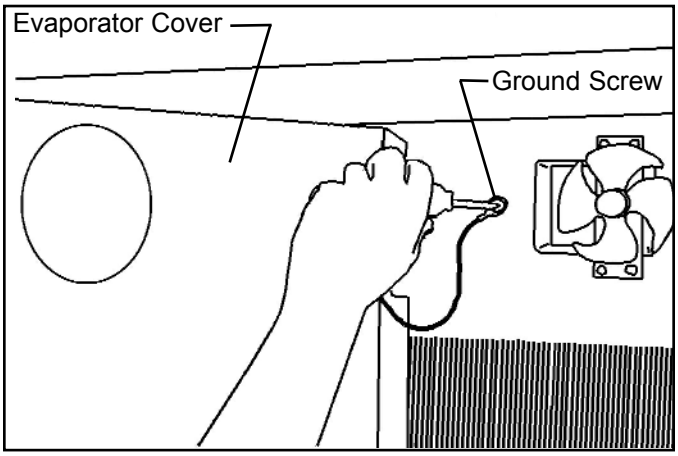


Figure 6-79.
Evaporator Cover Removal

Evaporator Support Cover Removal (Model 430)

The evaporator support covers are narrow covers to the left and right of the evaporator covers. These covers are held in place by screws under the lower evaporator cover.

To remove the evaporator support covers, you must first remove the wine racks, all cabinet slides, cabinet slide spacers and cabinet slide support spacers in the compartment. Then, remove the evaporator fan cover mounting screws, the evaporator fan cover and the evaporator cover. Extract the evaporator support cover mounting screws and pull the evaporator support cover out. (See Figure 6-80)

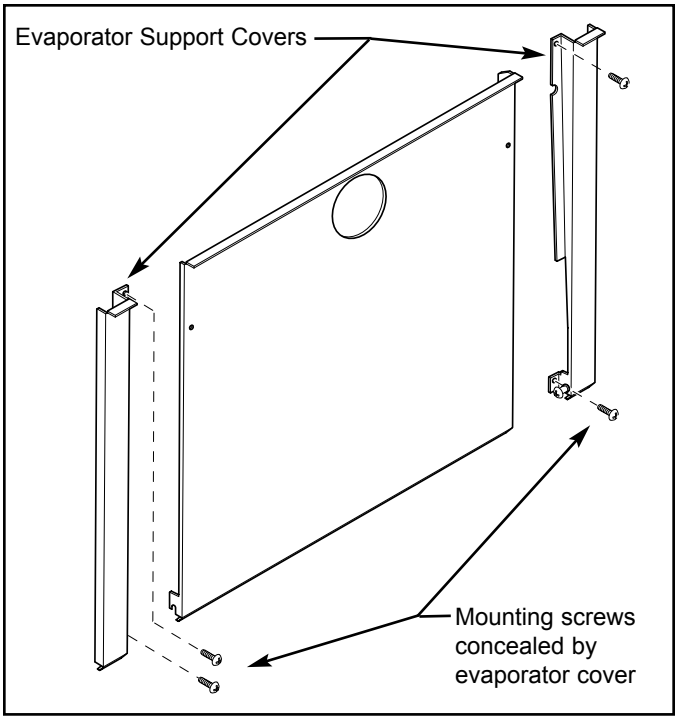


Figure 6-80.
Evaporator Support Cover Removal

MODEL 430 INTERIOR MECHANICAL COMPONENT REMOVAL:

An attempt has been made to arrange these instructions in such a way as to simulate which components would need to be removed first in order to gain access to other components. When following a component removal procedure, it may be necessary to reference another removal procedure towards the front of this section.

Control Board Access and Removal (Model 430)

The control board is located at the bottom of the compartment divider, behind the control panel, and is concealed by an access panel. The control board is held in place by four tabs, one at each corner of the board.

NOTE: *See ELECTRIC SHOCK WARNING and STATIC ELECTRICITY CAUTION at beginning of this section.*

To get to the control board you will need to extract the two screws at the back of the access panel, then lower the back of the access panel and pull it towards the rear of the unit. (See Figure 6-81)

To remove the control board, disconnect the LED ribbon cable, the membrane switch ribbon cable, and all other electrical lead attached to the control board. Expand the tabs to release the control board, then pull down and out. (See Figure 6-82)

NOTE: *When re-connecting electrical leads to the control board, make sure the silver area on the membrane switch ribbon cable terminal is facing <u>away from</u> the control board.*

Control Panel Assembly Removal (Model 430)

The control panel assembly is set at the front of the compartment divider and is secured by six screws at the bottom, and a silicone seal under the top flange. Tabs at the bottom and a concealed tab at the top center of the control panel housing help to position the control panel assembly.

NOTE: *See ELECTRIC SHOCK WARNING at beginning of this section.*

To remove the control panel assembly, first access the control board and disconnect the lower light strip wire leads, LED ribbon cable and the membrane switch ribbon cable. Then, extract the six screws at the bottom of the control panel. Now, slide the blade of a putty knife under and along the top flange of the control panel housing to break loose the silicone seal. (See Figure 6-83)

NOTE: *Do not lift the top flange of the control panel housing too vigorously. Doing so will break the concealed tab at the top center.*

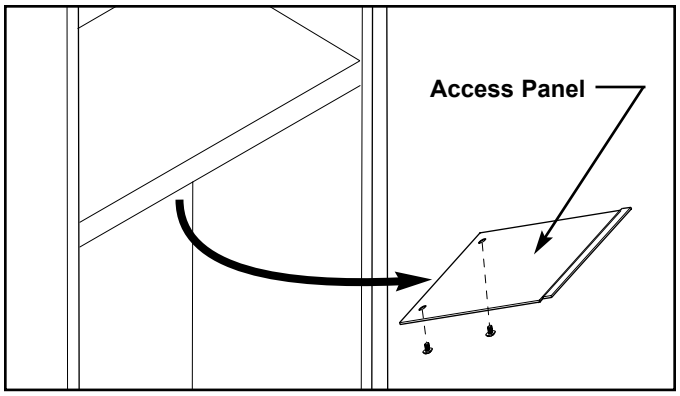


Figure 6-81. Control Board Access Panel

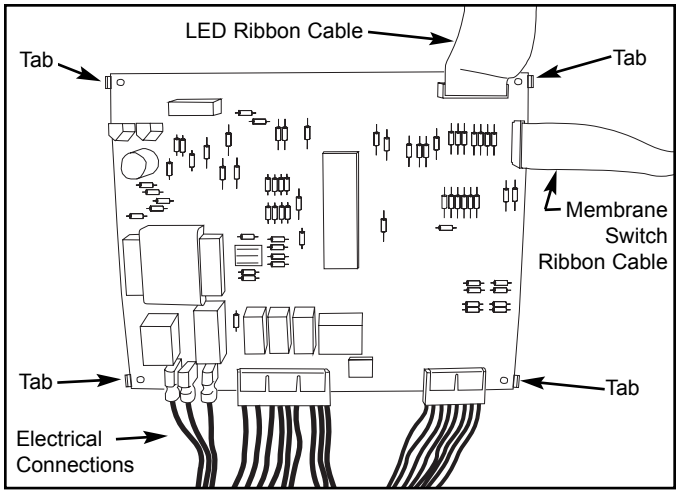


Figure 6-82. Control Board

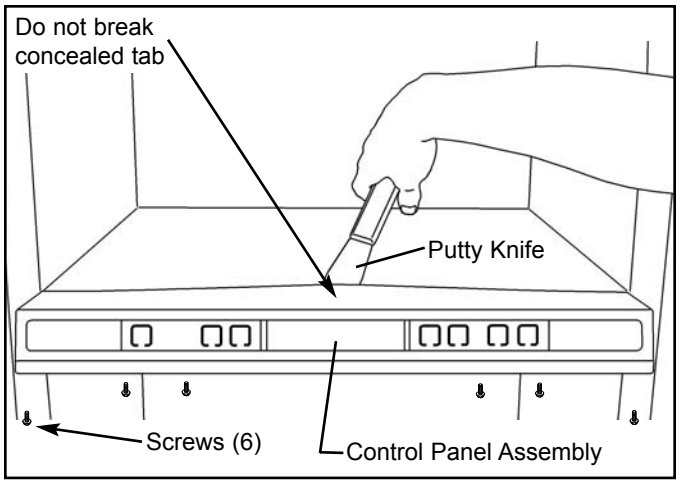


Figure 6-83.
Control Panel Assembly Removal

After breaking the silicone seal loose, pull the control panel assembly forward and disconnect the ground wire.

NOTE: *When reinstalling the control panel assembly, you must reapply a bead of silicone along the inside of the top flange.*

Lower Light Strip Access and Removal (Model 430)

NOTE: *See ELECTRIC SHOCK WARNING at beginning of this section.*

The lower light strip is held in the channel of the light strip housing, which attached to the control panel assembly. To remove the lower light strip, you will first need to remove the control panel assembly. Now, slide the light strip out the end of the channel in the light strip housing. (See Figure 6-84)

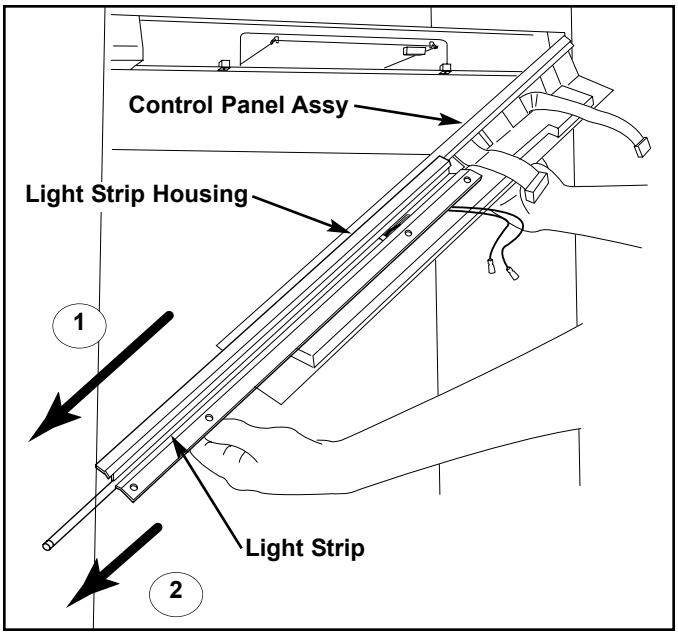


Figure 6-84. Lower Light Strip

Upper and Lower Compartment Thermistor Access and Removal (Model 430)

The compartment thermistors are attached to the left side wall with a Phillips-head screw, and the electrical leads of the thermistors are routed through a notch in the left-hand evaporator support cover and guarded by a small rubber grommet. (See Figure 6-85)

NOTE: *See ELECTRIC SHOCK WARNING at beginning of this section.*

To remove a compartment thermistor, first remove the wine racks, all cabinet slides, cabinet slide spacers and cabinet slide support spacers in the compartment. Then, remove the evaporator fan cover mounting screws, the evaporator fan cover and the lower evaporator cover. Extract the evaporator support cover mounting screws and pull the evaporator support cover out while pushing the thermistor leads and grommet out of the slot on the left-hand side. Then disconnect the thermistor electrical leads.

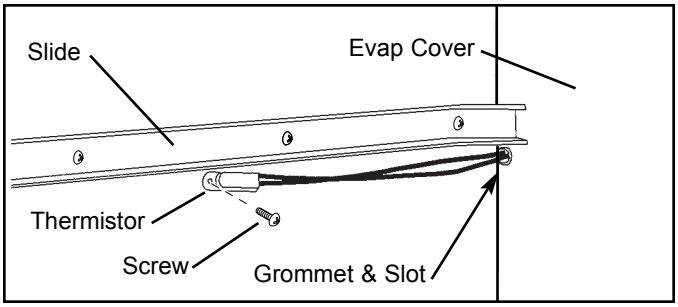


Figure 6-85. Compartment Thermistor

Upper and Lower Evaporator Thermistor Access and Removal (Model 430)

The evaporator thermistors are attached to the right side evaporator brackets with a Phillips-head screw.

NOTE: *See ELECTRIC SHOCK WARNING at beginning of this section.*

To access an evaporator thermistor, first remove the wine racks from the compartment. Then, remove the evaporator fan cover mounting screws, the evaporator fan cover and the evaporator cover. Extract the evaporator support cover mounting screws from the right side evaporator support cover and pull the evaporator support cover out. Extract the screw from the thermistor and disconnect the thermistor electrical leads. (See Figure 6-86)

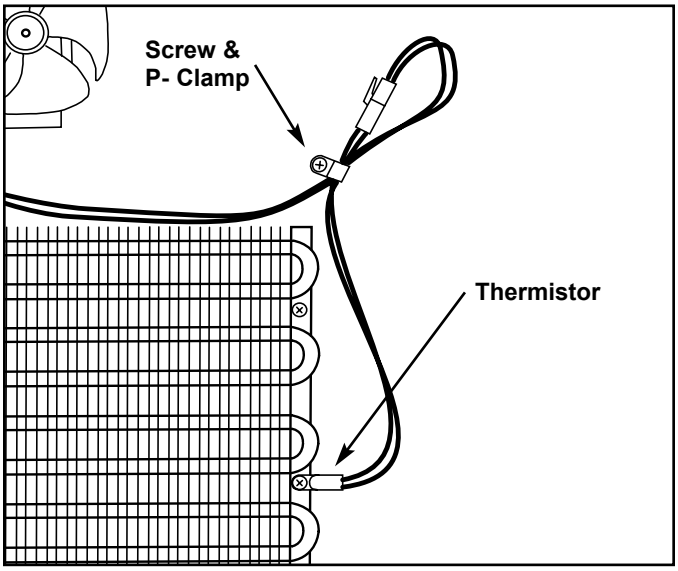


Figure 6-86.
Evaporator Thermistor

Evaporator Fan Assembly Access and Removal (Model 430)

The evaporator fan assemblies are attached to the rear wall by four Phillips-head screws.

NOTE: *See ELECTRIC SHOCK WARNING at beginning of this section.*

To remove an evaporator fan assembly, first remove the wine racks in the compartment. Then, remove the evaporator fan cover mounting screws, the evaporator fan cover and the evaporator cover. Pull the fan blade from the fan motor shaft. Extract the screw from the P-clamp holding the fan wires. Then remove the four screws from the fan bracket and disconnect the fan motor electrical leads. (See Figure 6-87)

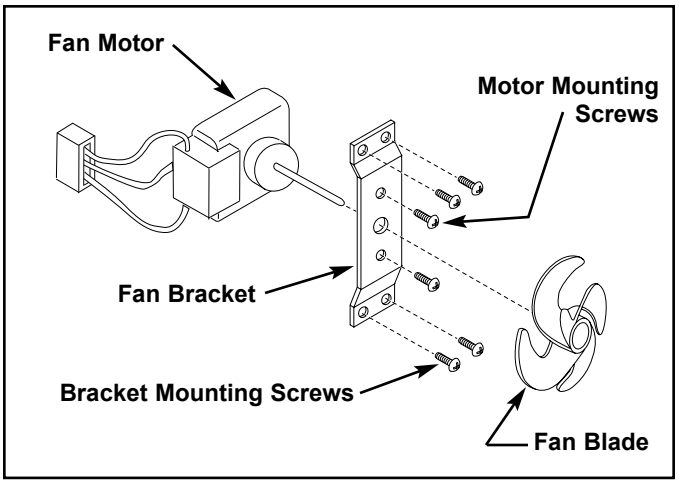


Figure 6-87. Evaporator Fan Assembly

MODEL 430 SEALED SYSTEM COMPONENT ACCESS AND REMOVAL:

An attempt has been made to arrange these instructions in such a way as to simulate which components would need to be removed first in order to gain access to other components. When following a component removal procedure, it may be necessary to reference another removal procedure towards the front of this section.

NOTE: Always replace the filter-drier when servicing the sealed system.

Upper and Lower Evaporator Assembly Access and Removal (Model 430)

The wine storage evaporators are mounted to the rear wall in each wine storage compartment with Phillips-head screws.. (See Figures 6-88)

NOTE: *See SHARP EVAPORATOR FINS CAUTION at beginning of this section.*

Before accessing and removing a wine storage evaporator, evacuate the refrigerant from the sealed system. Then, remove the wine racks. Then, remove the evaporator fan cover mounting screws and the evaporator fan cover. Pull the top of the evaporator cover forward and lift off of the pegs at the bottom. Locate the ground wire riveted to the back of the evaporator cover with a screw securing it to the rear wall. Extract the ground screw, and remove the evaporator cover. Extract the evaporator mounting screws. Now, cut the evaporator inlet and outlet tubing and pull the evaporator out.

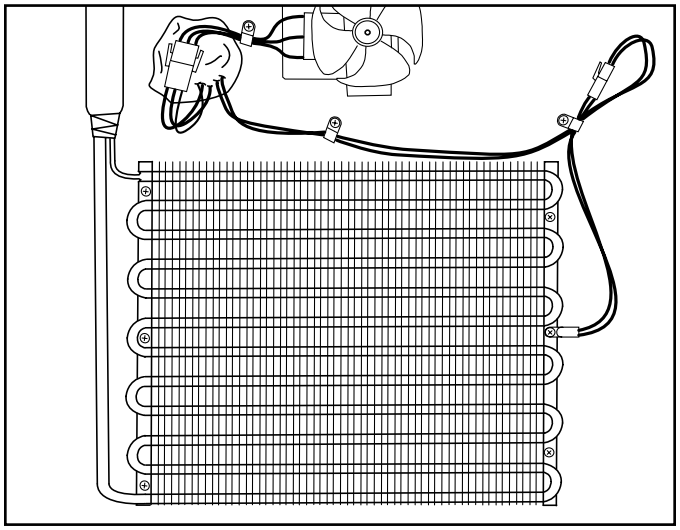


Figure 6-88. Evaporator

Refrigerant Valve Access and Removal (Model 430)

The refrigerant valves are located to the right of the compressor, and are held to the valve bracket with P-clamps and screws. The top valve is for the upper wine storage compartment and the bottom valve is for the lower wine storage compartment. (See Figure 6-89)

NOTE: *See HOT COMPRESSOR & TUBING CAUTION at beginning of this section.*

After evacuating the refrigerant from the sealed system, cut the capillary tube approximately 1" from the refrigerant valve, and cut the valve inlet tube approximately 3" from the refrigerant valve. Then, lift the valve out.

Filter-Drier Access and Removal (Model 430)

The filter-drier, which has two outlet tubes, is located to the left of the condenser. One outlet tube runs to the top refrigerant valve, and the other tube runs to the bottom refrigerant valve. (See Figure 6-89)

NOTE: *See HOT COMPRESSOR & TUBING CAUTION at beginning of this section.*

After evacuating the refrigerant from the sealed system, cut both outlet tubes approximately 1" from the filter-drier, and cut the drier inlet tube approximately 1" from the filter-drier.

NOTE: *Always replace the filter-drier when servicing the sealed system.*

Compressor Access and Removal (Model 430)

The compressor sets on top of four threaded studs and is secured with nuts over the studs. (See Figure 6-90)

NOTE: *See HOT COMPRESSOR & TUBING CAUTION at beginning of this section.*

After evacuating the refrigerant from the sealed system, Disconnect the compressor electricals. Extract the four nuts from the threaded studs. Lift the compressor until it clears the threaded studs and pull it forward to gain better access to the suction and discharge tubes. Cut the suction tube and discharge tube approximately 1" from the compressor, and pull the compressor out.

Condenser Access and Removal (Model 430)

The condenser is attached to the top of the unit with screws at the front and the back. There are also screws at the front and back that secure the condenser fan shroud to the condenser. (See Figure 6-90)

NOTE: *To access and remove the condenser, the unit will need to be pulled from its installation. See TIPPING WARNING, HOT COMPRESSOR & TUBING CAUTION and SHARP FINS CAUTION at beginning of this section.*

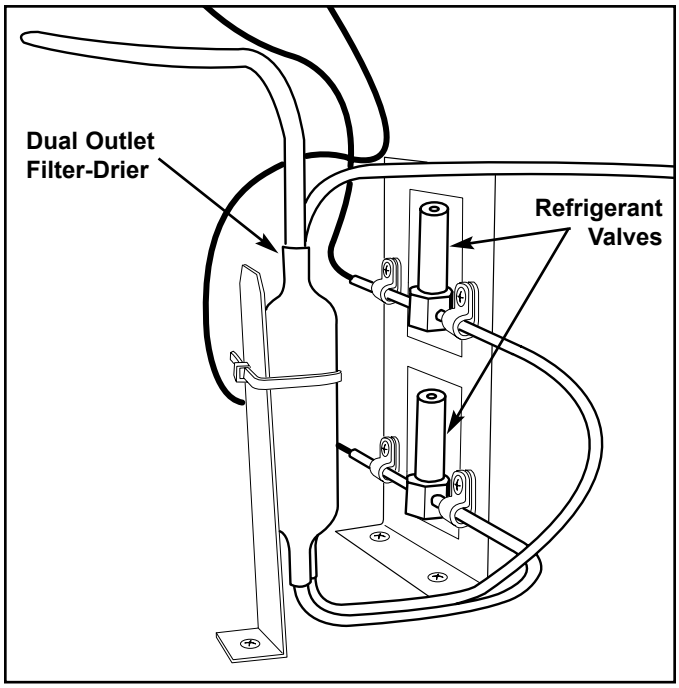


Figure 6-89. Capillary Tubes, Refrigerant Valves, Dual Outlet Filter-Drier

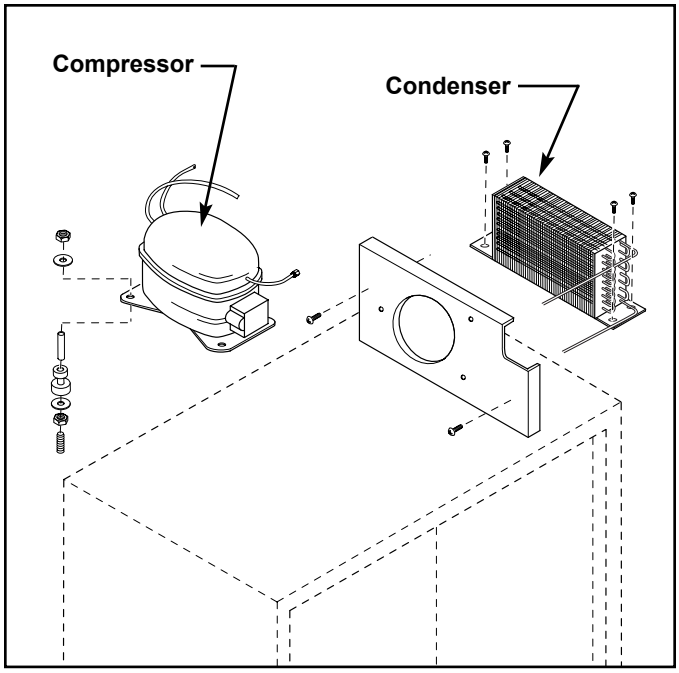


Figure 6-90. Compressor and Condenser

Pull the unit from its installation and remove the unit shroud. Then, after evacuating the refrigerant from the sealed system, cut the inlet and outlet tubes approximately 2" from the condenser. Extract the condenser fan shroud mounting screws and the condenser mounting screws. Now, lift the condenser up and off the unit top.

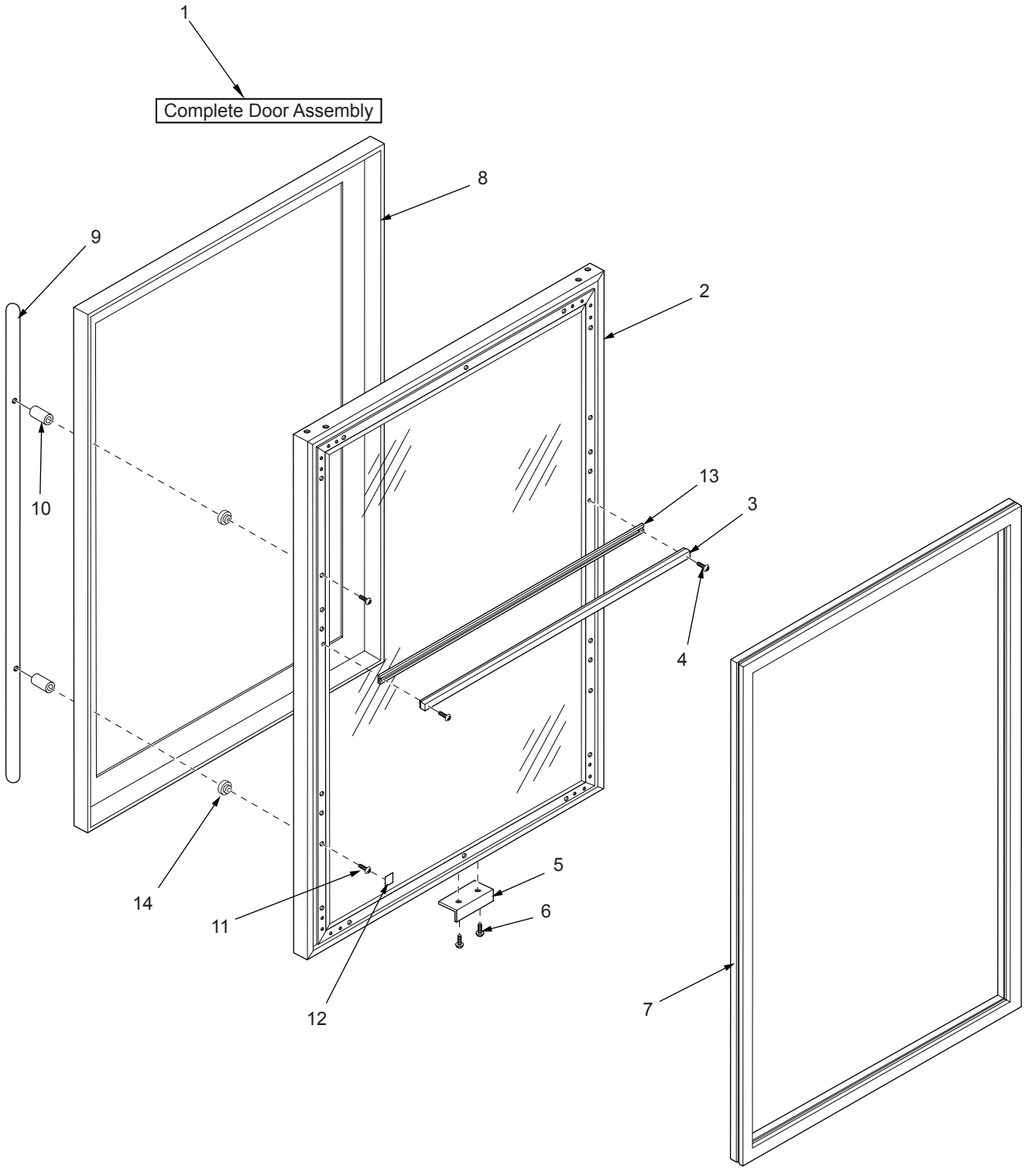
SECTION 7

PARTS LISTS & EXPLODED VIEWS

424 DOOR VIEW PARTS LIST

1.	4134180	Door Assy, SRVC - 424G/O (Does not include hinges)
	4134361	Door Assy, (High Altitude) -424HAG/O (Does not include hinges)
	4134190	Door Assy, SRVC - 424G/S RH (Does not include hinges)
	4134200	Door Assy, SRVC - 424G/S LH (Does not include hinges)
	4134371	Door Assy, (High Altitude) -424HAG/S RH (Does not include hinges)
	4134372	Door Assy, (High Altitude) -424HAG/S LH (Does not include hinges)
	4135045	Door Assy,SRVC-424G/B-RH (Does not include hinges)
	4135046	Door Assy,SRVC-424G/B-LH (Does not include hinges)
	4135047	Door Assy,SRVC-424HAG/B-RH (High Altitude) (Does not include hinges)
	4135048	Door Assy,SRVC-424HAG/B-LH (High Altitude) (Does not include hinges)
	4135055	Door Assy,SRVC-424G/P-RH (Does not include hinges)
	4135056	Door Assy,SRVC-424G/P-LH (Does not include hinges)
	4135057	Door Assy,SRVC-424HAG/P-RH (High Altitude) (Does not include hinges)
	4135058	Door Assy,SRVC-424HAG/P-LH (High Altitude) (Does not include hinges)
	4134210	Door Assy, SRVC - 424S/O (Does not include hinges)
	4134220	Door Assy, SRVC - 424S/S RH (Does not include hinges)
	4134230	Door Assy, SRVC - 424S/S LH (Does not include hinges)
	4135063	Door Assy,SRVC-424S/B-RH (Does not include hinges)
	4135064	Door Assy,SRVC-424S/B-LH (Does not include hinges)
	4135073	Door Assy,SRVC-424S/P-RH (Does not include hinges)
	4135074	Door Assy,SRVC-424S/P-LH (Does not include hinges)
2.	4132720	Door Assy, 424Glass/O (424G/O)
	4134360	Door Glass Assy, (High Altitude) -(424HAG/O)
	4132730	Door Assy. 424Glass/S (424G/B, 424G/P, 424G/S)
	4134370	Door Glass Assy, (High Altitude) -(424HAG/B, 424HAG/P, 424HAG/S)
	4132980	Door Assy, 424Solid/O (424S/O)
	4132990	Door Assy. 424Solid/S (424S/B, 424S/P, 424S/S)
3.	3212020	Seal, Center
4.	6201360	Screw, #4 x 3/4” Ph Pan Hd Type A
5.	3450990	Switch Depressor, Black
	3450991	Switch Depressor, Silver
6.	6200050	Screw, #10-12 x 1/2” Pan HD
7.	3211950	Gasket, Door
8.	4203150	SS Door Panel Pkg, Glass-424RH (424G/S-RH)
	4203160	SS Door Panel Pkg, Glass-424LH (424G/S-LH)
	4135141	Door Skin Assy,SRVC-424G/B-RH (424G/B, 424HAG/B)
	4135142	Door Skin Assy,SRVC-424G/B-LH (424G/B, 424HAG/B)
	4135151	Door Skin Assy,SRVC-424G/P-RH (424G/P, 424HAG/P)
	4135152	Door Skin Assy,SRVC-424G/P-LH (424G/P, 424HAG/P)
	4203190	SS Door Panel Pkg, Solid-424RH (424S/S-RH)
	4203200	SS Door Panel Pkg, Solid-424RH (424S/S-RH)
	4135161	Door Skin Assy,SRVC-424S/B-RH (424S/B)
	4135162	Door Skin Assy,SRVC-424S/B-LH (424S/B)
	4135171	Door Skin Assy,SRVC-424S/P-RH (424S/P)
	4135172	Door Skin Assy,SRVC-424S/P-LH (424S/P)
9.	3511060	SS Drawer / Door Handle, 3/4”Dia x 24-3/16” (424G/S, 424S/S) - (See SN Breaks)
	3512030	Handle, Door SS 3/4 X 24.188 (424G/S, 424S/S) - (See SN Breaks)
	3512031	Handle, Door 3/4 X 24-3/16, B (424G/B, 424S/B)
	3512032	Handle, Door 3/4 X 24-3/16, P (424G/P, 424S/P)
10.	3511150	SS Handle Standoff, 3/4”Dia (424G/S, 424S/S) - (See SN Breaks)
	3512190	Standoff, SS Oval (424G/S, 424S/S) - (See SN Breaks)
	3512191	Standoff, Oval Carbon (424G/B, 424S/B)
	3512192	Standoff, Oval Platinum (424G/P, 424S/P)
11.	6110650	Machine Screw, #10-24x2 TRHDSS (424G/B, 424G/P, 424G/S, 424S/B, 424S/P, 424S/S)
12.	6230970	Poly Tape
13.	2813001	Holder, Compression Gasket - 21.5 (424G/O, 424S/O)
	2813101	Holder, Compression Gasket - 21.5 (424G/B, 424G/P, 424G/S, 424S/B, 424S/P, 424S/S)
14.	6160250	Spacer - Door Handle (424G/B, 424G/P, 424G/S, 424S/B, 424S/P, 424S/S)

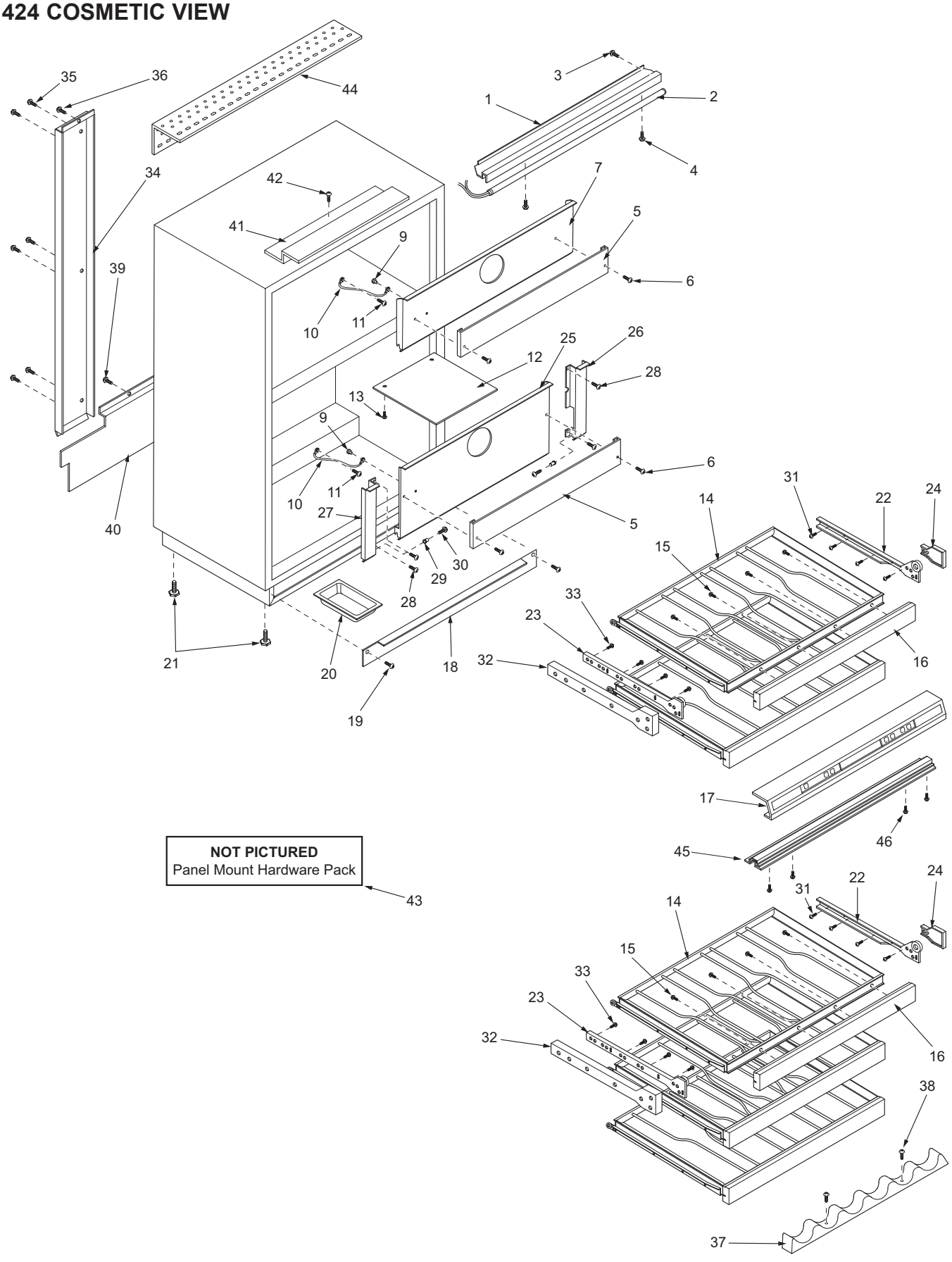
424 DOOR VIEW



424 COSMETIC VIEW PARTS LIST

1.	3511670	Light Strip Housing, Upper
2.	3030150	Light Strip, 15 WATT
3.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
4.	6201310	Screw, #8 x 1-3/4” Flat PH HD
5.	0212320	Evaporator Fan cover
6.	6201010	Screw, #8-15 x 2” Pan Head
7.	0200920	Evaporator Cover, Upper
8.	N/A	
9.	6180010	Pop Rivet, 1/8”
10.	4323860	Ground Wire Assy
11.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
12.	0184410	Panel, Srvc/Access (See SN Breaks)
	4152220	Pnl Assy, Srvc Acc (See SN Breaks)
13.	6200720	Screw, #8-18 x 1/2 PH Truss HD
14.	4181720	Wine Rack Assembly
15.	6201420	Screw
16.	3516520	Molding, Wood Wine Rack
17.	4203100	Control Panel Pkg, SRVC - 424
18.	3560050	Kickplate Grille, Blk (See SN Breaks)
	3560120	Kickplate Grille, Blk (See SN Breaks)
	3560051	Kickplate Grille, Slvr (See SN Breaks)
	3560100	Kickplate Grille, Slvr (See SN Breaks)
19.	6200050	Screw, #10-12 x 1/2” Pan HD
20.	0163150	Drain Pan
21.	3570050	Leveling Leg, #18-3/8 x 1”
22.	3413551	Cabinet Slide, RH
23.	3413552	Cabinet Slide, LH
24.	3421830	Slide Spacer
25.	0200930	Evaporator Cover, Lower
26.	0200940	Evaporator Support Cover, RH
27.	0200950	Evaporator Support Cover, LH
28.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
29.	3520120	Brass Insert
30.	6200130	Screw, #8-18 x 3/4” Truss HD
31.	6201230	Screw, #8 x 7/8” w/a #7 PH FT Head
32.	3421820	Slide Support Spacer
33.	6201240	Screw, #8X1-3/8” w/a #7 PH FT Head
34.	0168850	Duct, Back
35.	6201240	Screw, #8 x 1-3/8” w/a #7 PH FT Hd
36.	6200060	Screw, #8-32 x 1/2” Pan HD
37.	3413600	Bottom Rack
38.	6201290	Screw, #8-15 PH PN HD SS, White
39.	6200010	Screw, #10-12 x 3/4” Pan HD
40.	4152000	Lwr Cover Assy (Incl. Power Cord)
	0120990	Back Cover, Lower
41.	0260200	Bracket - Ref to Countertop
42.	6200010	Screw, #10-12 x 3/4” Pan HD
43.	6201430	*(Not pictured) Panel Mount Hdwr Pk*
44	0168810	Anti Tip Bracket - 23-7/8"
45	3511700	Housing, Lower Light
		(No Lower Light Strip in model 424)
46	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd

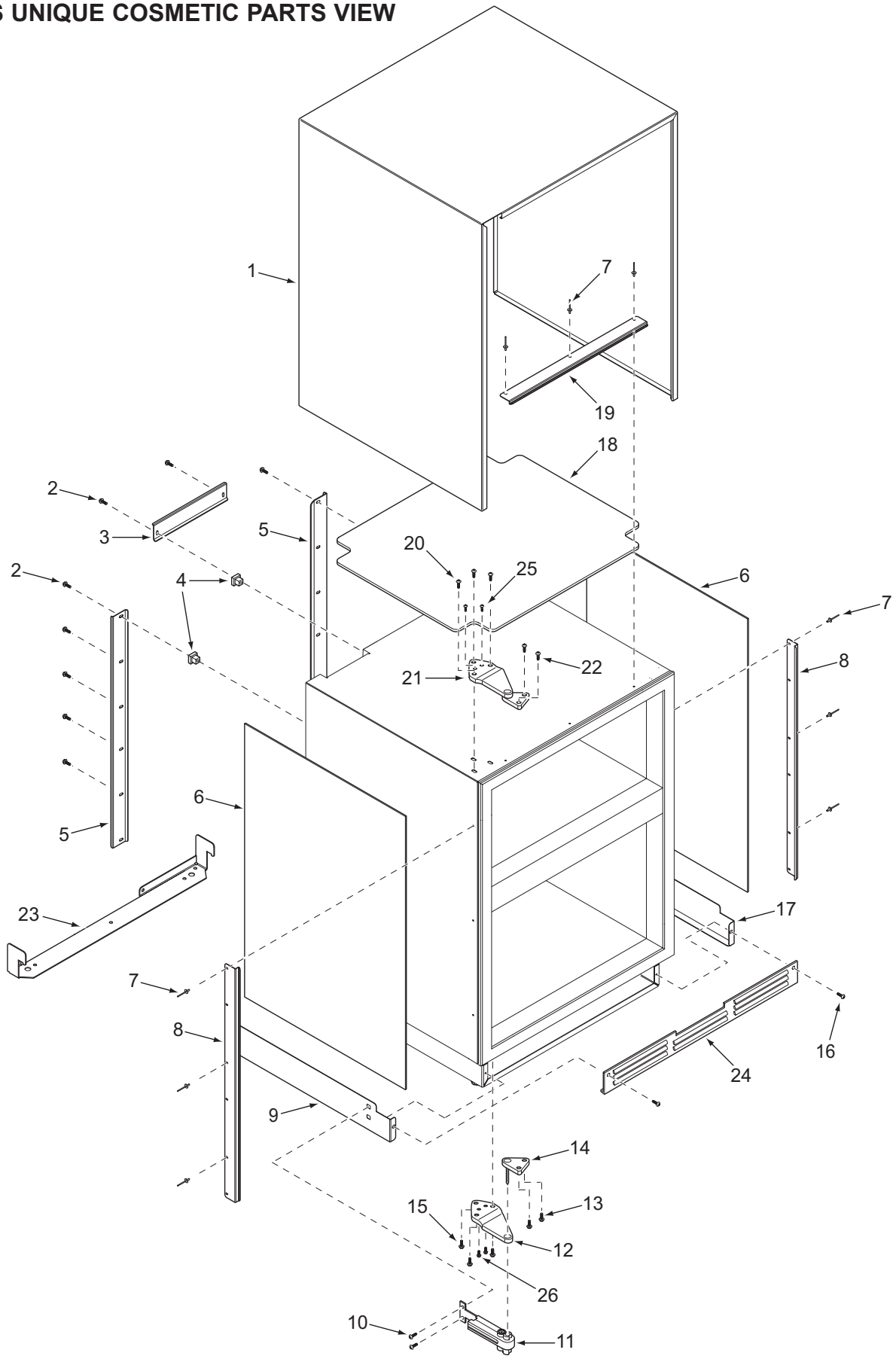
424 COSMETIC VIEW



424FS UNIQUE COSMETIC PARTS VIEW LIST

1.	0810100	Wrap, Stainless Overlay, RH
	0810110	Wrap, Stainless Overlay, LH
2.	6200130	Screw, #8-18 x 3/4" Truss HD (10)
3.	4152100	Bracket, Back Top Assy
4.	6220320	Screw Grommet (10)
5.	4152110	Bracket, Back Side (2)
6.	3220830	Foam Pad, 125 X 29.2 X 19.8 (2)
7.	6180210	Pop Rivet, 1/8 X 3/16 (9)
8.	0860910	Bracket, Front Side (2)
9.	4152121	Cover, Base Assy. - Hinge Side - RH
	4152122	Cover, Base Assy. - Hinge Side - LH
10.	6200330	Screw, #8-18 x 3/8” Pan Head (2)
11.	3540810	Door Closer
12.	3541112	Hinge, Cabinet Bottom-Silver
13.	6200780	Bolt, #10-24 x 1/2” Flat Socket HD (2)
14.	3541095	Hinge, Door Bottom, Silver - RH
	3541096	Hinge, Door Bottom, Silver - LH
15.	6200780	Screw, #10-24 x 1/2” PH Hex Washer (3)
16.	6200120	Screw, #10-12 x 1/2" Truss HD
17.	4152131	Cover, Base - Handle Side - RH
	4152132	Cover, Base - Handle Side - LH
18.	3220820	Foam Pad, .25 X 22.8 X 19.5
19.	0860920	Bracket, Front Top
20.	6110540	Bolt, #10-24 x 1/2" Flat Socket HD (3)
21.	3541122	Hinge, Cabinet Top Assy Silver
22.	6110540	Bolt, #10-24 x 1/2” Flat Socket HD (2)
23.	0860900	Bracket, Anti-Tip
24.	3560070	Kickplate, Grille (See SN Breaks)
	3560110	Kickplate, Grille (See SN Breaks)
25.	6200210	Screw, #8-32 x 1/2" Flat Head (2)
26.	6201500	Screw, #10X3/4 Drill PH Hex (2)

424FS UNIQUE COSMETIC PARTS VIEW



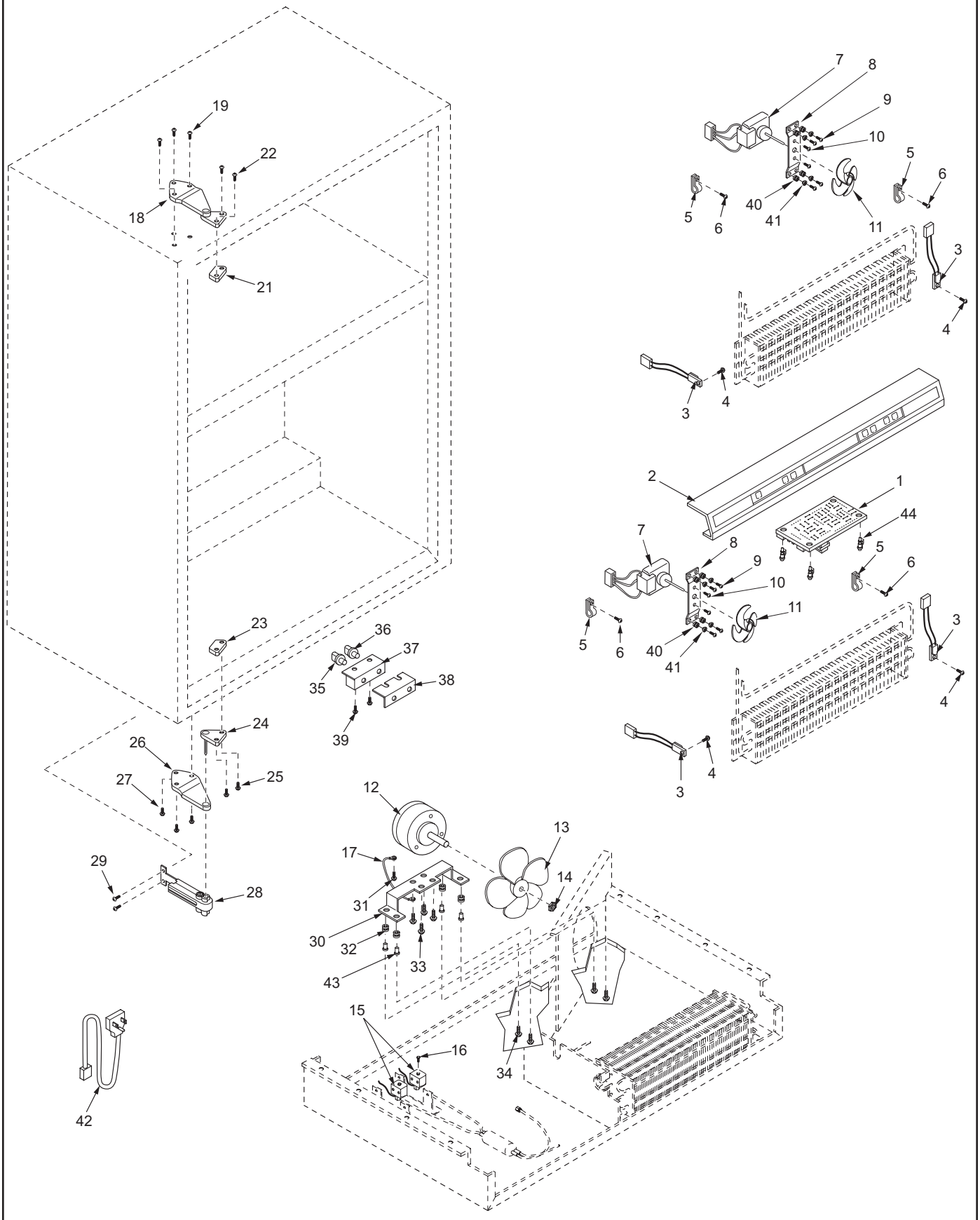
424 MECHANICAL VIEW PARTS LIST

1.	4203140	Control Board PKG, SRVC 400
2.	4203100	Control Panel Pkg, SRVC - 424
3.	3014350	Thermistor
4.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
5.	6120030	Tube Clamp, Plastic 1/4”
6.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
7.	4220490	Fan Motor Assy (Incl. Brkt & Screws)
8.	0212330	Bracket, Evap Fan Motor
9.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
10.	6110270	Bolt, #10-32 x 1/4” RD HD
11.	3150640	Fan blade, Evaporator
12.	4200740	Cond Fan Mtr Cmpnts (Blade & Brkt NOT included)
13.	3150660	Condenser Fan Blade
14.	6150410	Nut, 1/4-20
15.	4203060	Valve/Sol Components, UPR-Wine
	4203070	Valve/Sol Components, LWR-Wine
16.	N/A	(Included w/ Valve/Sol Components)
17.	4321880	Ground Wire Assembly, 9”
18.	3541121	Hinge, Cabinet Top Assy Black
	3541122	Hinge, Cabinet Top Assy Silver
19.	6110540	Bolt, #10-24 x 1/2” Flat Socket HD
20.	N/A	N/A
21.	3541130	Spacer, hinge (424G/O, 424S/O)
22.	6110540	Bolt, #10-24 x 1/2” Flat Socket HD
23.	3541130	Spacer, Hinge (424G/O, 424S/O)
24.	3541093	Hinge, Door Bottom - RH Black
	3541094	Hinge, Door Bottom - LH Black
	3541095	Hinge, Door Bottom - RH Silver
	3541096	Hinge, Door Bottom - LH Silver
25.	6110540	Bolt, #10-24 x 1/2” Flat Skt HD (Slvr)
	6110811	Bolt, #10-24X3/4 Ph Flat Hd, B
26.	3541110	Hinge, Cabinet Bottom- Black
	3541112	Hinge, Cabinet Bottom-Silver
27.	6200780	Screw, #10-24 x 1/2” PH Hex Washer
28.	3540810	Door Closer
29.	6200330	Screw, #8-18 x 3/8” Pan Head
30.	0862210	Bracket, Condenser Fan Motor
31.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
32.	3220160	Grommet, 3/16” x 7/16” x 9/32”
33.	6200490	Screw, #8-32 x 3/8” Slotted Hex T25
34.	6200610	Screw, #6-32 x 3/8” PH Rd Hd, Zinc
35.	3060030	Light Switch, Normally Closed
36.	3060020	Fan Switch, Normally Open
37.	0862290	Brckt, Dble Switch (See SN Breaks)
	0862390	Brckt, Trpl Switch (See SN Breaks)
38.	0862240	Guard, Switch (See SN Breaks)
	0862380	Guard, Switch (See SN Breaks)
39.	6200060	Screw, #8-32 x 1/2” Pan HD
40.	3220250	Grommet, Rubber-#M5351
41.	3520120	Brass Insert, Fan Bracket
42.	3025160	Flat Plg Pwr Crd (Also See 4152000)
	3220350	*(Not Pictured)* Strain Relief Bushing
43.	6220290	Stand-Off, #6-32
44.	3450810	Circuit Board Support

Not Pictured

3021420	Wire Harness, Cabinet
3220350	Strain Relief Bushing

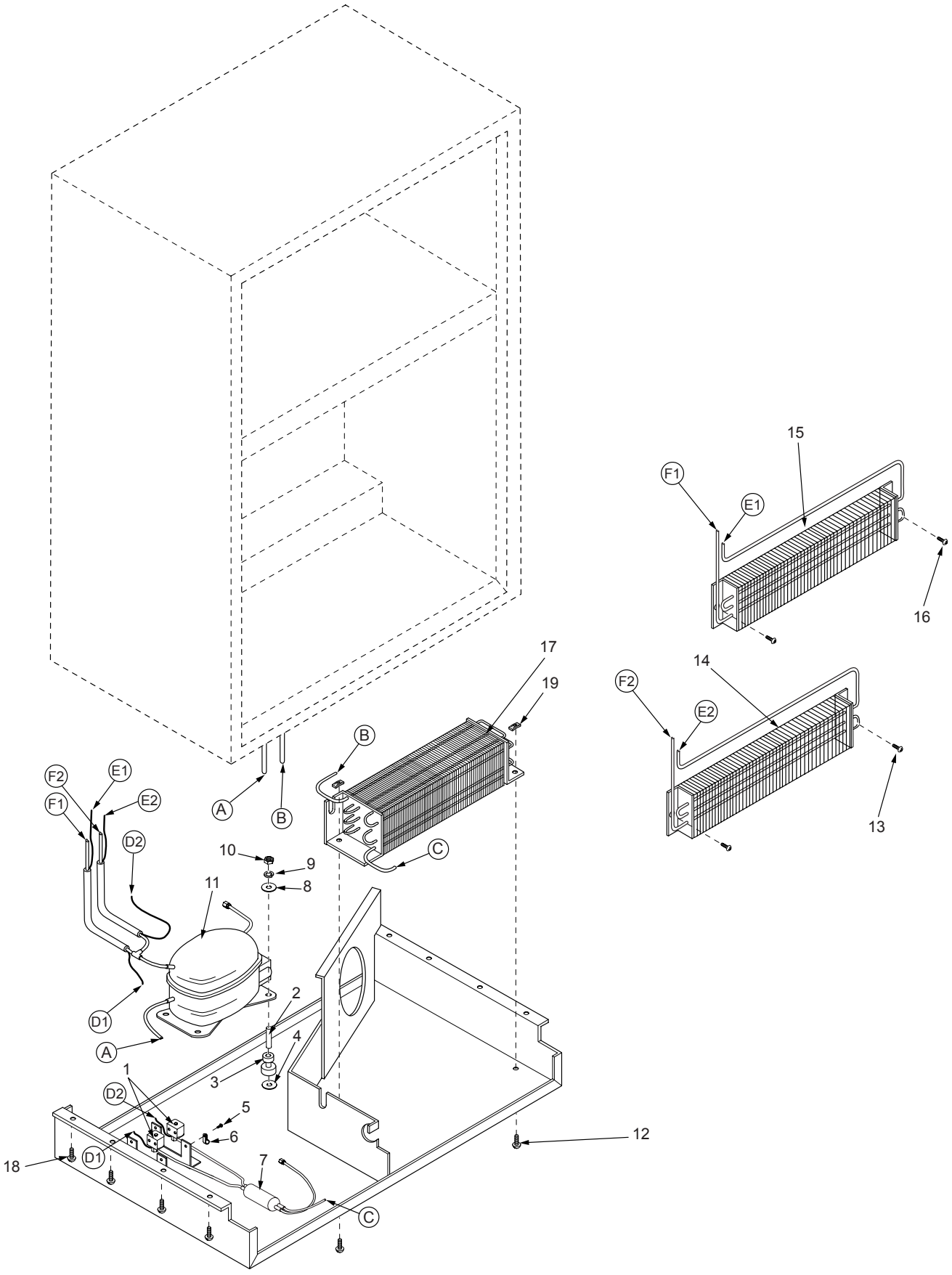
424 MECHANICAL VIEW



424 SEALED SYSTEM VIEW PARTS LIST

1.	4203060	Valve/Sol Components, UPR-Wine
	4203070	Valve/Sol Components, LWR-Wine
2.	6160030	Spacer, 5/16 x 7/16 x 5/8”
3.	3150010	Rubber Grommet, Small, 5/8”
4.	6240050	Flat Washer, 5/16”
5.	6200140	Screw, #8-15 x 3/8” Truss HD
6.	6120030	Tube Clamp, Plastic 1/4”
7.	3014420	Drier, Service Wine
8.	6240050	Flat Washer, 5/16”
9.	6240090	Lock Washer, 5/16”
10.	6150220	Nut, 5/16-18 Hex Zinc
11.	4203230	Compressor (EMI30HER)
	3111370	Relay, (1351400)
	3111410	Overload, (4TM734LFB)
12.	6200110	Screw, #10 -12 x 5/8” Truss SS
13.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
14.	4211540	Evaporator Assembly (Includes Heat Exchanger)
15.	4211540	Evaporator Assembly (Includes Heat Exchanger)
16.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
17.	3120300	Condenser
18.	6200010	Screw, #10 -12 x 3/4” Pan HD
19.	6150080	Nut-Flat, #10-24

424 SEALED SYSTEM VIEW

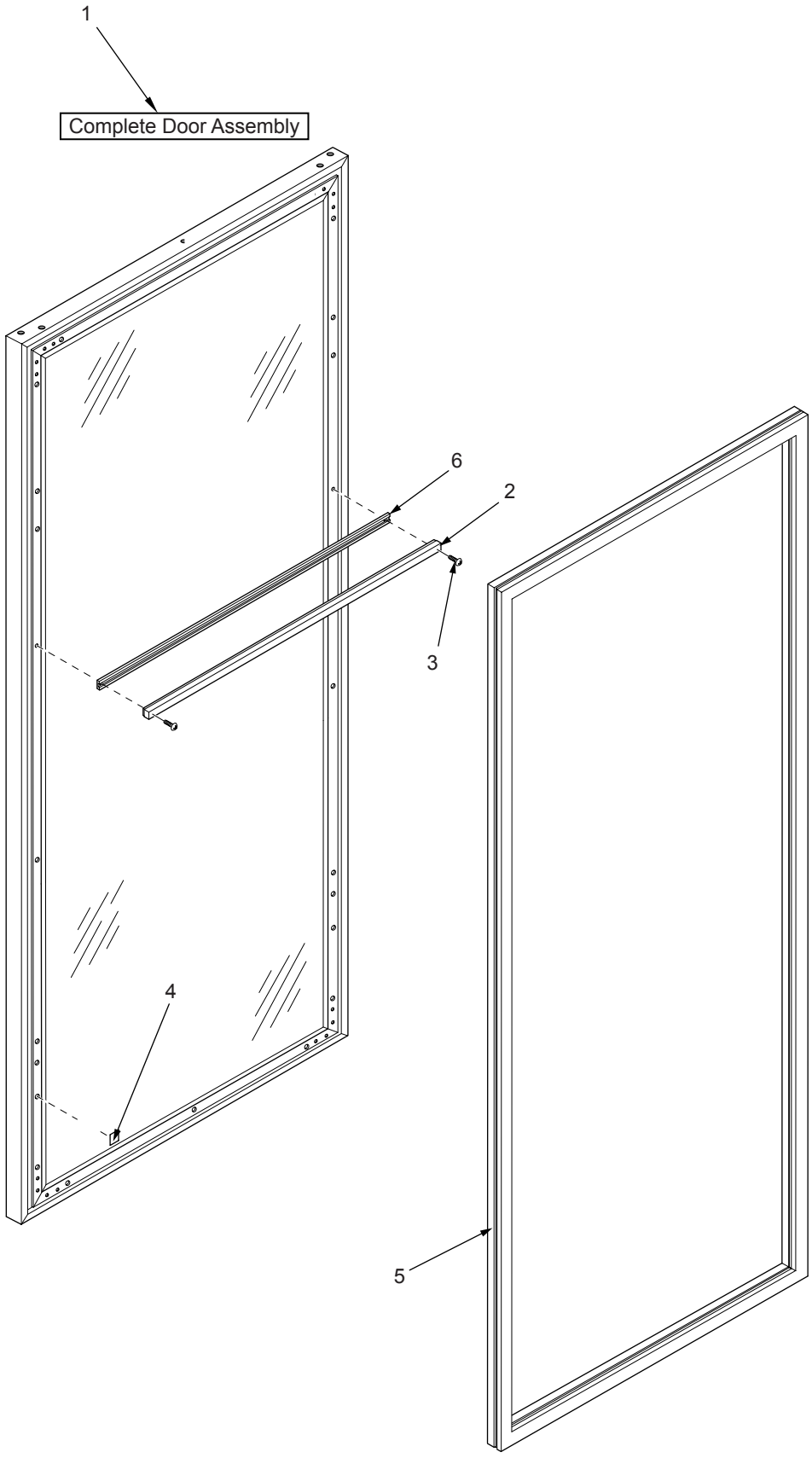


427 DOOR VIEW PARTS LIST

1.	4132741	Glass Door Assy- RH (Does Not Include Hinges or Handle)
	4132742	Glass Door Assy- LH (Does Not Include Hinges or Handle)
	4134381	Door Assy, (High Altitude) -427-G RH
	4134382	Door Assy, (High Altitude) -427-G LH
	4133001	Door Assy, Solid - RH (Does Not Include Hinges or Handle)
	4133002	Door Assy, Solid - LH (Does Not Include Hinges or Handle)
2.	3212030	Seal, Center
3.	6201360	Screw, #4 x 3/4” PH PAN HD TYPE A
4.	6230970	Tape, Black Poly
5.	3211960	Gasket, Door
6.	2813201	Holder, Compression Gasket 24.4

NOTE: *Door panels on this model are a sales accessory. For part numbers of complete door panel sets or components of the door panel sets, contact the factory.*

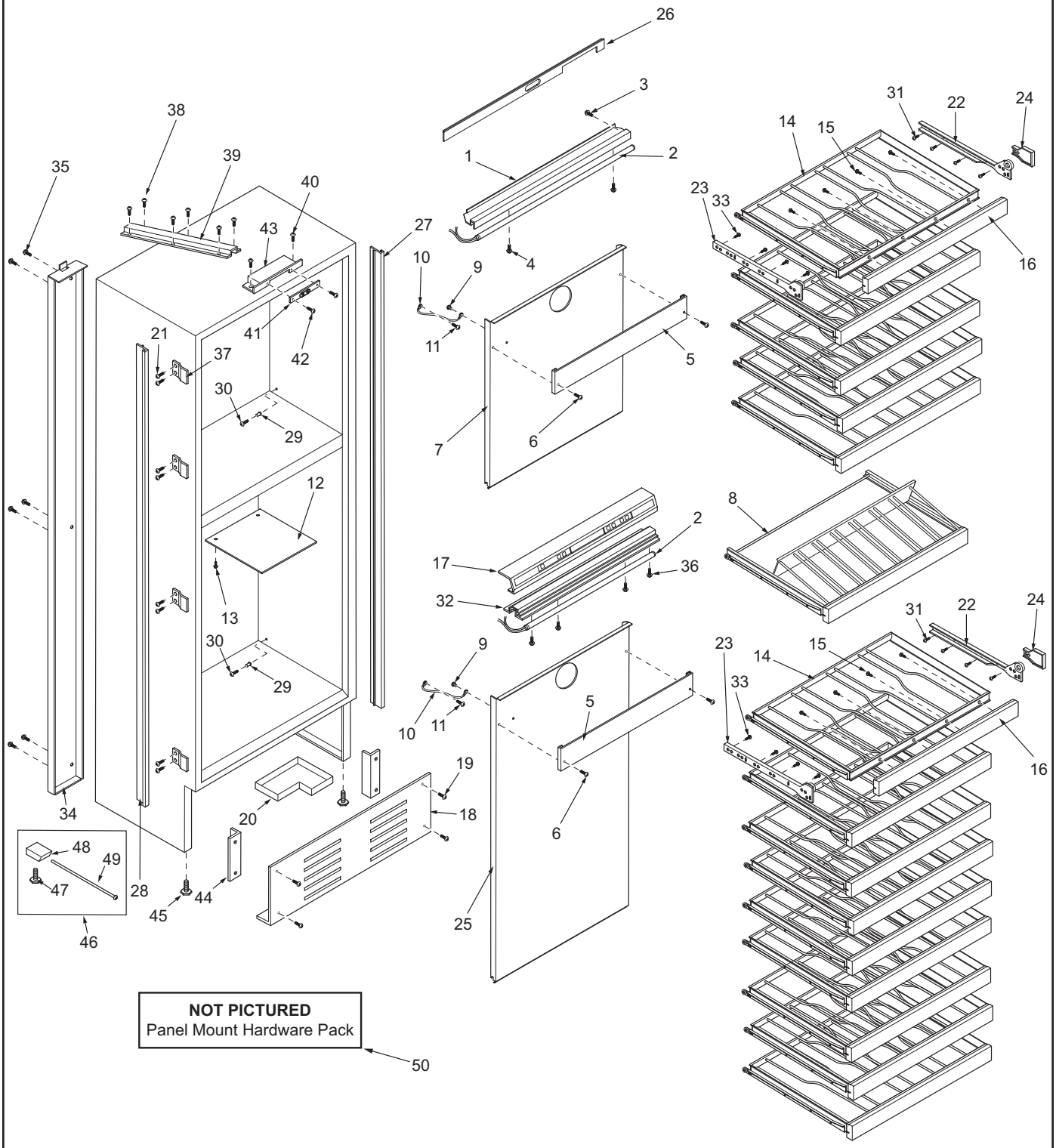
427 DOOR VIEW



427 COSMETIC VIEW PARTS LIST

1.	3511680	Extrusion, Upper Light
2.	3030150	Light Strip, 15 WATT
3.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
4.	6201310	Screw, #8 x 1-3/4” Flat PH HD
5.	0212340	Cover, Evap Fan
6.	6201010	Screw, #8-15 x 2” Pan Head
7.	0201090	Evap Cover, UPR-LH UNIT
	0201100	Evap Cover, UPR-RH UNIT
8.	4181770	Rack Assy, Display Wine
9.	6180010	Pop Rivet, 1/8”
10.	4323860	Ground Wire Assy
11.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
12.	0184410	Panel, Srvc/Access (See SN Breaks)
	4152220	Pnl Assy, Srvc Acc (See SN Breaks)
13.	6200720	Screw, #8-18 x 1/2 PH Truss HD
14.	4181730	Wine Rack Assembly
15.	6201420	Screw
16.	3516530	Molding, Wood Wine Rack
17.	4203110	Control Panel Pkg, SRVC - 427
18.	3560020	Kickplate/Grille - RH
	3560030	Kickplate/Grille - LH
19.	6200050	Screw, #10-12 x 1/2” Pan HD
20.	0168880	Pan, Drain
21.	6200720	Screw, #8-18 x 1/2 PH Truss HD
22.	3413551	Cabinet Slide, RH
23.	3413552	Cabinet Slide, LH
24.	3421830	Slide Spacer
25.	0201030	Evap Cover, LWR-LH-UNIT
	0201040	Evap Cover, LWR-RH-UNIT
26.	3516451	Molding, Top RH (See SN Breaks)
	3516680	Molding, Top RH (See SN Breaks)
	3516452	Molding, Top LH (See SN Breaks)
	3516680	Molding, Top LH (See SN Breaks)
27.	3516010	Side Molding
28.	3516010	Side Molding
29.	3520120	Brass Insert
30.	6200130	Screw, #8-18 x 3/4” Truss HD
31.	6201230	Screw, #8 x 7/8” w/a #7 PH FT Head
32.	3511710	Housing, Lower Light
33.	6201230	Screw, #8 x 7/8” w/a #7 PH FT Head
34.	0169160	Duct, Back
35.	6201240	Screw, #8X1-3/8” w/a #7 PH FT Hd
36.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
37.	3421510	Bracket-Unit to Cabinetry
38.	6200010	Screw, #10-12 x 3/4” Pan HD
39.	0169290	Raceway, Wire
40.	6200010	Screw, #10-12 x 3/4” Pan HD
41.	3450920	Bracket, Switch Mnt (See SN Breaks)
	3450980	Bracket, Switch Mnt (See SN Breaks)
42.	6200210	Screw, #8-32 x 1/2” Flat Head
43.	0169260	Switch Enclosure (See SN Breaks)
	0261710	Box, Switch RH (See SN Breaks)
	0261720	Box, Switch LH (See SN Breaks)
44.	0169400	Bracket, Kickplate
45.	3570060	Front Leveler Bolt
46.	4202000	Rear Leveler Assembly
47.	N/A	Rear leveler Foot - (See 4202000)
48.	N/A	Leveler Assy, Rear - (See 4202000)
49.	3421500	Adjusting Rod
50.	6201430	(Not pictured) Panel Mount Hdwr Pk

427 COSMETIC VIEW



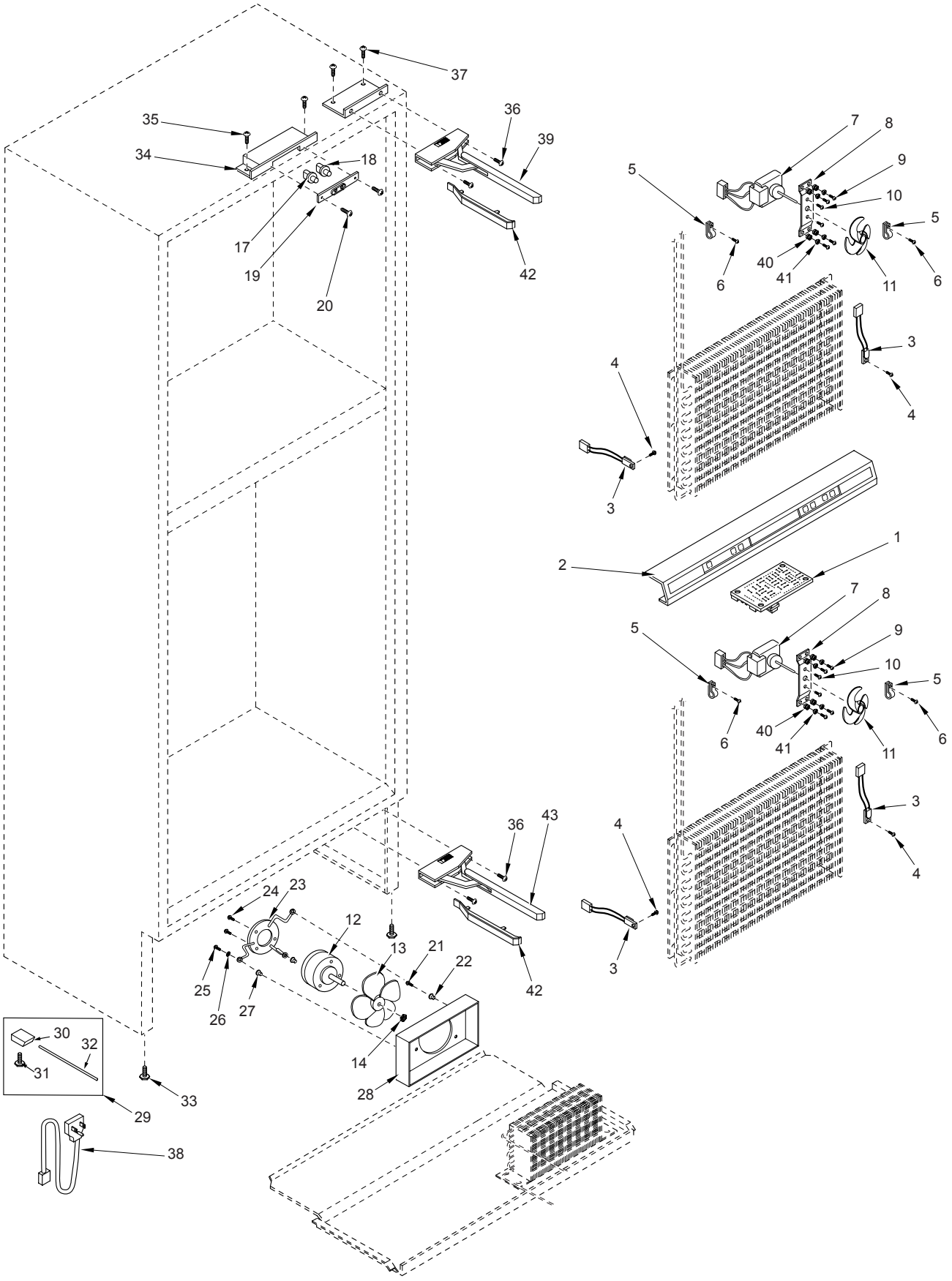
427 MECHANICAL VIEW PARTS LIST

1.	4203140	Control Board PKG, SRVC 400
2.	4203110	Control Panel Pkg, SRVC - 427
3.	3014350	Thermistor
4.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
5.	6120030	Tube Clamp, Plastic 1/4”
6.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
7.	4220490	Fan Motor Assy (Incl. Brkt & Screws)
8.	0212330	Bracket, Evap Fan Motor
9.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
10.	6110270	Bolt, #10-32 x 1/4” RD HD
11.	3150640	Fan blade, Evaporator
12.	4200740	Condenser Fan Motor Components (Blade & Bracket NOT included)
13.	3150660	Condenser Fan Blade
14.	6150410	Nut, 1/4-20
15.	4203060	Valve/Sol Components, UPR-Wine
	4203070	Valve/Sol Components, LWR-Wine
16.	N/A	(Included w/ Valve/Sol Components)
17.	3060030	Light Switch, Normally (1)
18.	3060020	Fan Switch, Normally Open (1 or 2)
19.	3450920	Bracket, Switch Mnt (See SN Breaks)
	3450980	Bracket, Switch Mnt (See SN Breaks)
20.	6200210	Screw, #8-32 x 1/2” Flat Head
21.	6200450	Screw, #8 x 1” Type AR Flat
22.	3420670	Screw Spacer
23.	3150670	Bracket, Cond Fan - Wine
24.	6200490	Screw, #8-32 x 3/8” Slotted Hex T25
25.	6201280	Machine Screw, #10-32 x 1-1/4”
26.	6240350	Fender Washer, .25x1.25x.06
27.	6150330	Well Nut, .75D x .804”, #10-32
28.	0169340	Fan Shroud, Condenser
29.	4202000	Rear Leveler Assembly
30.	N/A	Rear leveler Foot - (See 4202000)
31.	N/A	Leveler Assy, Rear - (See 4202000)
32.	3421500	Adjusting Rod
33.	3570060	Front Leveler Bolt
34.	0169260	Switch Enclosure (See SN Breaks)
	0261710	Box, Switch RH (See SN Breaks)
	0261720	Box, Switch LH (See SN Breaks)
35.	6200010	Fan Shroud, Condenser
36.	6201140	Screw, 1/4-20 x 1/2” Sems But HD
37.	6200780	Screw, #10-24 x 1/2” PH Hex Washer
38.	4324800	Retractor Assy, Power Cord
39.	3541031	Top Hinge Assy - RH (Used at Bottom on LH Units)
	3541032	Top Hinge Assy - LH (Used at Bottom on RH Units)
40.	3220250	Grommet, Rubber-#M5351
41.	3520120	Brass Insert, Fan Bracket
42.	3541050	Hinge Cover
43.	3541031	Top Hinge Assy - RH (Used at Bottom on LH Units)
	3541032	Top Hinge Assy - LH (Used at Bottom on RH Units)

Not Pictured

3021920	Wire Harness, Cabinet

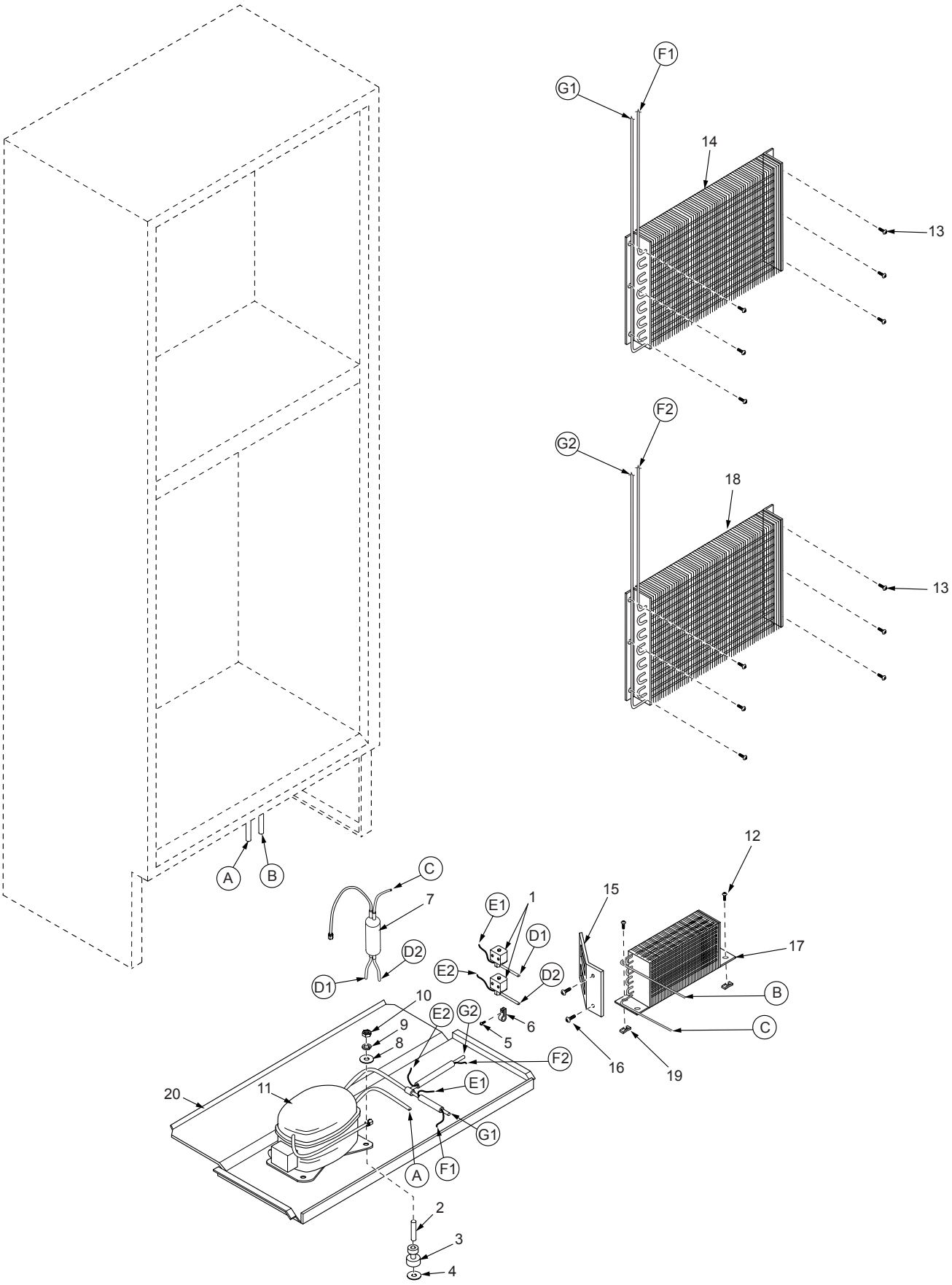
427 MECHANICAL VIEW



427 SEALED SYSTEM VIEW PARTS LIST

1.	4203060	Valve/Sol Components, UPR-Wine
	4203070	Valve/Sol Components, LWR-Wine
2.	6160030	Spacer, 5/16 x 7/16 x 5/8”
3.	3150010	Rubber Grommet, Small, 5/8”
4.	6240050	Flat Washer, 5/16”
5.	6200140	Screw, #8-15 x 3/8” Truss HD
6.	6120030	Tube Clamp, Plastic 1/4”
7.	3014420	Drier, Service Wine
8.	6240050	Flat Washer, 5/16”
9.	6240090	Lock Washer, 5/16”
10.	6150220	Nut, 5/16-18 Hex Zinc
11.	4203230	Compressor Pkg. SRVC-WINE(EMI30HER)
	3111370	Relay, (1351400)
	3111410	Overload, (4TM734LFB)
12.	6200110	Screw, #10-12 x 5/8” Truss SS
13.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
14.	4211550	Evap Assy, UPR (Includes Heat Exchanger)
	3130280	Evaporator
	4251440	Heat Exchanger
15.	0862330	Bracket, Solenoid
16.	6200330	Screw, #8-18 x 3/8” Pan Head
17.	3120360	Condenser
18.	4211560	Evap Assy, LWR (Includes Heat Exchanger)
	3130280	Evaporator
	4251450	Heat Exchanger
19.	6150080	Nut-Flat, #10-24
20.	0140360	Tray, Unit

427 SEALED SYSTEM VIEW

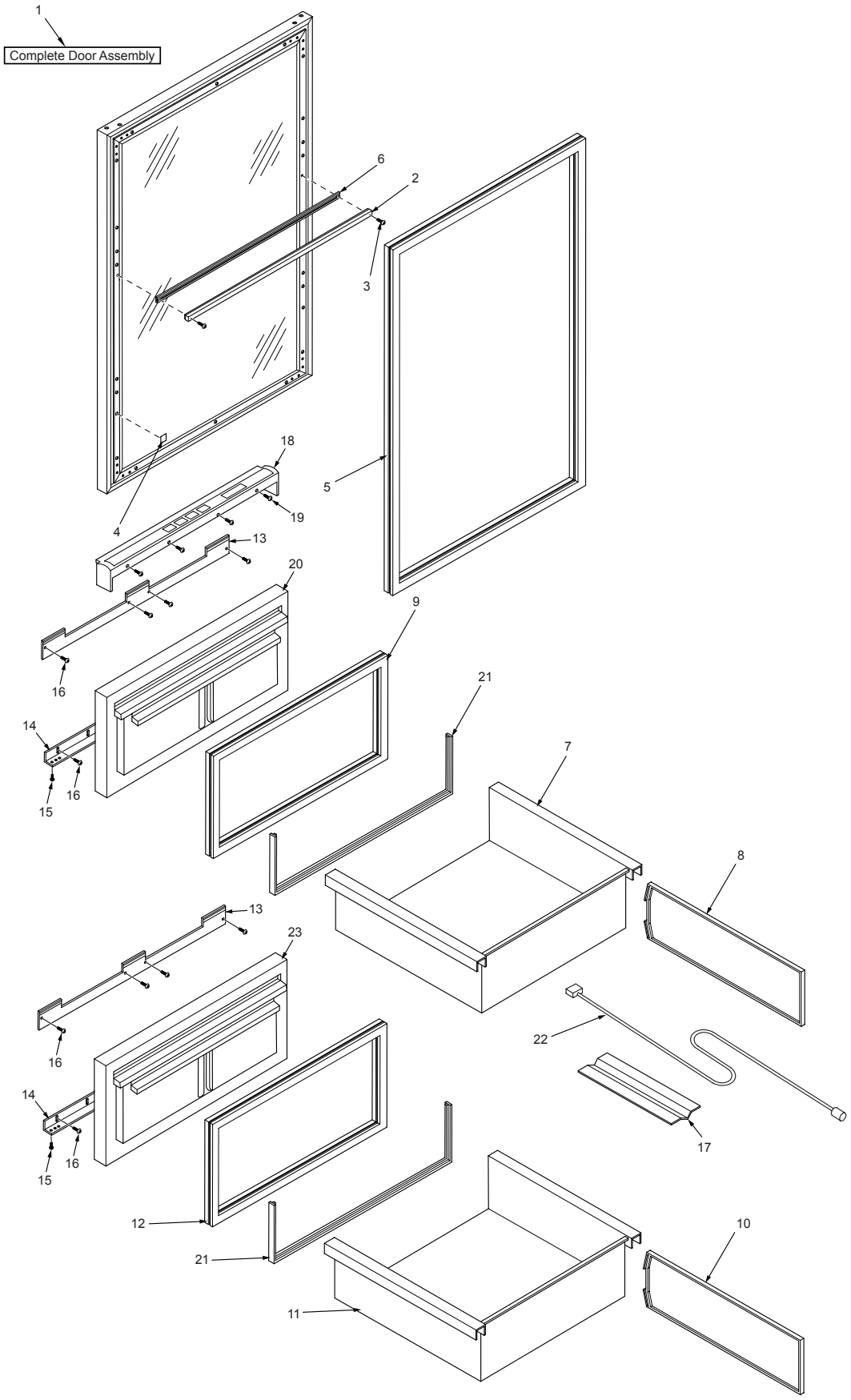


427R DOOR & DRAWER VIEW PARTS LIST

1.	4132751	Glass Door Assy- RH (Does Not Include Hinges or Handle)
	4132752	Glass Door Assy- LH (Does Not Include Hinges or Handle)
	4134391	Door Assy, (High Altitude) -427R-G RH
	4134392	Door Assy, (High Altitude) -427R-G LH
	4133011	Door Assy, Solid - RH (Does Not Include Hinges or Handle)
	4133012	Door Assy, Solid - LH (Does Not Include Hinges or Handle)
2.	3212030	Seal, Center
3.	6201360	Screw, #4 x 3/4” PH PAN HD TYPE A
4.	6230970	Tape, Black Poly
5.	3211970	Gasket, Door
6.	2813201	Holder, Compression Gasket 24.4
7.	4181930	Drawer Assy, Upper Beverage
	4131760	Upper Drawer Tub (Includes Seal, Tub White)
8.	3601340	Upper Drawer Divider
9.	3211520	Upper Drawer Gasket
10.	3601350	Lower Drawer Divider
11.	4181940	Drawer Assy, Lower Beverage
	4131780	Lower Drawer Tub (Includes Seal, Tub White)
12.	3211540	Lower Drawer Gasket
13.	0183580	Drawer Panel Bracket-Upper
14.	0183590	Drawer Panel Bracket-Lower
15.	6200780	Screw, #10-24 x 1/2” PH Hex Washer
16.	6200720	Screw, #8-18 x 1/2 PH Truss HD
17.	3421530	Channel, Wire 17.225”
18.	4161550	Drawer Control Panel Assy (See SN Breaks)
	4203380	Control Panel Assy, Drawer (See SN Breaks)
19.	6200700	Screw, #6-20 x 5/8” PH Flat HD SS
20.	4131730	Upper Drawer Front Assembly
21.	3211560	Seal, Tub White 37-5/8”
22.	3022950	Cable Assy, Control
23.	4131740	Lower Drawer Front Assy

NOTE: *Door panels on this model are a sales accessory. For part numbers of complete door panel sets or components of the door panel sets, contact the factory.*

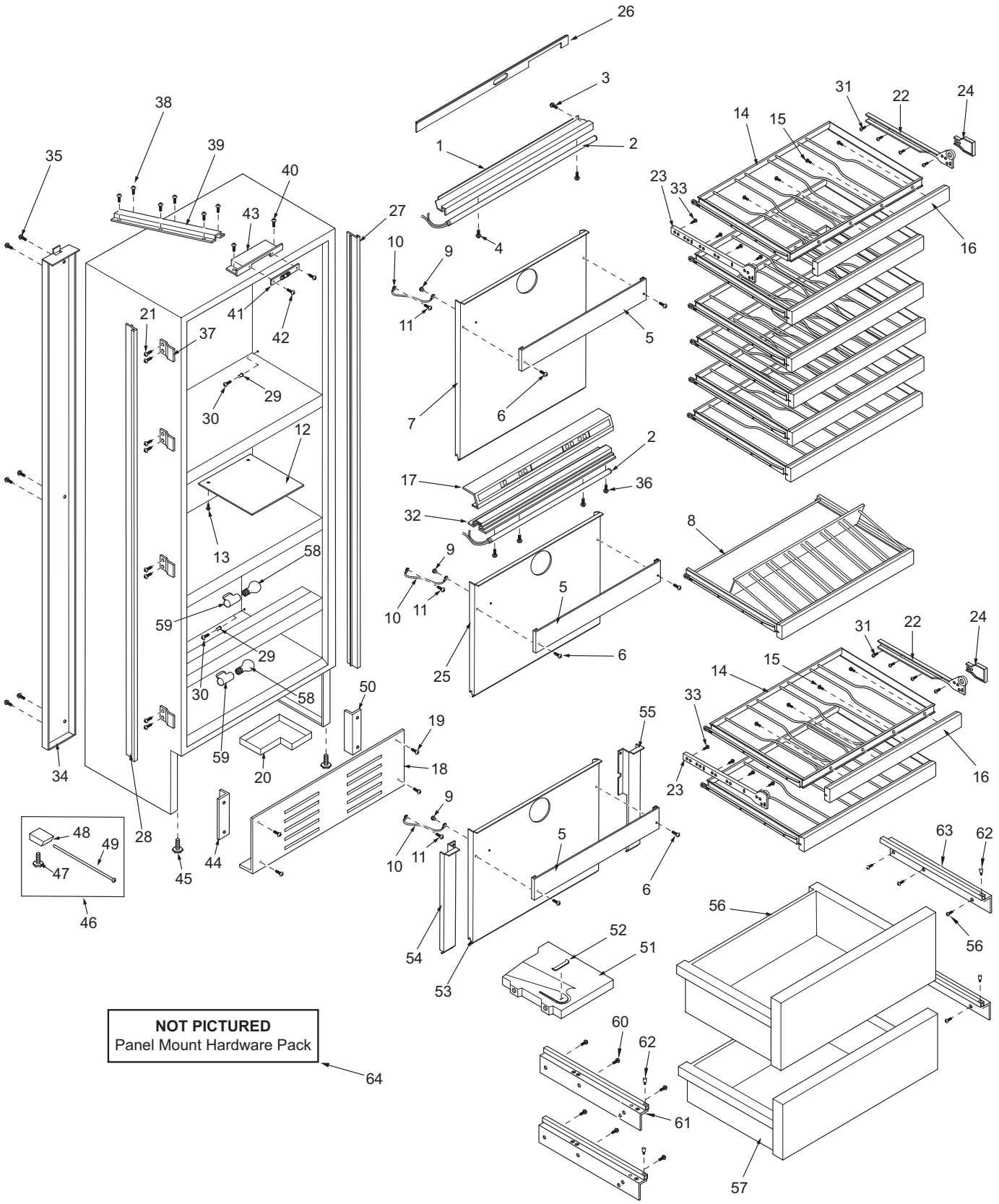
427R DOOR & DRAWER VIEW



427R COSMETIC VIEW PARTS LIST

1.	3511680	Extrusion, Upper Light
2.	3030150	Light Strip, 15 WATT
3.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
4.	6201310	Screw, #8 x 1-3/4” Flat PH HD
5.	0212340	Cover, Evap Fan
6.	6201010	Screw, #8-15 x 2” Pan Head
7.	0201070	Evap Cover, UPR-LH UNIT
	0201080	Evap Cover, UPR-RH UNIT
8.	4181770	Rack Assy, Display Wine
9.	6180010	Pop Rivet, 1/8”
10.	4323860	Ground Wire Assy
11.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
12.	0184410	Panel, Srvc/Access (See SN Breaks)
	4152220	Pnl Assy, Srvc Acc (See SN Breaks)
13.	6200720	Screw, #8-18 x 1/2 PH Truss HD
14.	4181730	Wine Rack Assembly
15.	6201420	Screw
16.	3516530	Molding, Wood Wine Rack
17.	4203120	Control Panel Pkg, SRVC - 427
18.	3530430	Kickplate/Grille
19.	6200050	Screw, #10-12 x 1/2” Pan HD
20.	0168880	Pan, Drain
21.	6200720	Screw, #8-18 x 1/2 PH Truss HD
22.	3413551	Cabinet Slide, RH
23.	3413552	Cabinet Slide, LH
24.	3421830	Slide Spacer
25.	0201050	Evap Cover, MDL-LH UNIT
	0201060	Evap Cover, MDL-RH UNIT
26.	3516451	Molding, Top RH (See SN Breaks)
	3516680	Molding, Top RH (See SN Breaks)
	3516452	Molding, Top LH (See SN Breaks)
	3516680	Molding, Top LH (See SN Breaks)
27.	3516010	Side Molding
28.	3516010	Side Molding
29.	3520120	Brass Insert
30.	6200130	Screw, #8-18 x 3/4” Truss HD
31.	6201230	Screw, #8 x 7/8” w/a #7 PH FT Head
32.	3511710	Housing, Lower Light
33.	6201230	Screw, #8 x 7/8” w/a #7 PH FT Head
34.	0169160	Duct, Back
35.	6201240	Screw, #8 x 1-3/8” w/a #7 PH FT Hd
36.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
37.	3421510	Bracket-Unit to Cabinetry
38.	6200010	Screw, #10-12 x 3/4” Pan HD
39.	0169290	Raceway, Wire
40.	6200010	Screw, #10-12 x 3/4” Pan HD
41.	3450920	Bracket, Switch Mnt (See SN Breaks)
	3450980	Bracket, Switch Mnt (See SN Breaks)
42.	6200210	Screw, #8-32 x 1/2” Flat Head
43.	0169260	Switch Enclosure (See SN Breaks)
	0261710	Box, Switch RH (See SN Breaks)
	0261720	Box, Switch LH (See SN Breaks)
44.	0167662	Kickplate Bracket - LS
45.	3570060	Front Leveler Bolt
46.	4202000	Rear Leveler Assembly
47.	N/A	Rear leveler Foot - (See 4202000)
48.	N/A	Leveler Assy, Rear - (See 4202000)
49.	3421500	Adjusting Rod
50.	0167661	Kickplate Bracket - RS
51.	0233490	Wire Tray
52.	3450780	Wire Clip
	6150760	Wire Fastener
53.	0201020	Evap Cover, LWR
54.	0201120	Evap Support, LWR LH
55.	0201110	Evap Support, LWR RH
56.	4181930	Drawer Assy, Upper Beverage (See Door View for Breakdown)
57.	4181940	Drawer Assy, Lower Beverage (See Door View for Breakdown)
58.	3030060	Light Bulb, 25 Watt
59.	3050010	Light Sckt, 3/4 Sngl (See SN Breaks)
	3050220	Socket, Light Sngl (See SN Breaks)
60.	6201140	Screw, 1/4-20 x 1/2” Sems But HD
61.	3412032	Drawer Slide-LS
62.	3550720	White Thread Pin
63.	3412031	Drawer Slide-RS
64.	6201430	(Not pictured) Panel Mnt Hrdwr Pack

427R COSMETIC VIEW



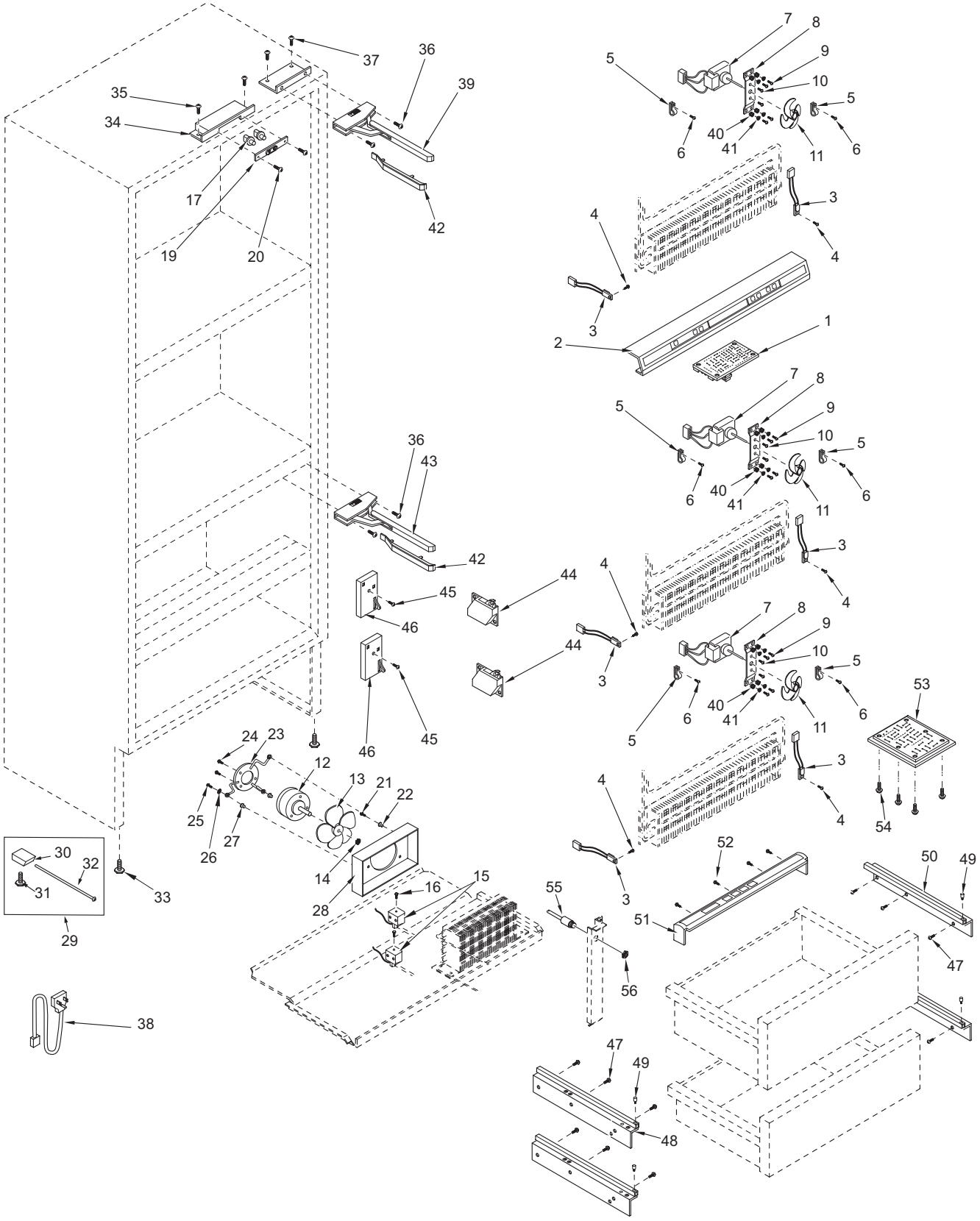
427R MECHANICAL VIEW PARTS LIST

1.	4203140	Control Board PKG, SRVC 400
2.	4203120	Control Panel Pkg, SRVC - 427R
3.	3014350	Thermistor
4.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
5.	6120030	Tube Clamp, Plastic 1/4”
6.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
7.	4220490	Fan Motor Assy (Incl. Brkt & Screws)
8.	0212330	Bracket, Evap Fan Motor
9.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
10.	6110270	Bolt, #10-32 x 1/4” RD HD
11.	3150640	Fan blade, Evaporator
12.	4200740	Condenser Fan Motor Components (Blade & Bracket NOT included)
13.	3150660	Condenser Fan Blade
14.	6150410	Nut, 1/4-20
15.	4203060	Valve/Sol Components, UPR-Wine
	4203070	Valve/Sol Components, LWR-Wine
16.	N/A	(Included w/ Valve/Sol Components)
17.	3060030	Light Switch, Normally
18.	3060020	Fan Switch, Normally Open
19.	3450920	Bracket, Switch Mnt (See SN Breaks)
	3450980	Bracket, Switch Mnt (See SN Breaks)
20.	6200210	Screw, #8-32 x 1/2” Flat Head
21.	6200450	Screw, #8 x 1” Type AR Flat
22.	3420670	Screw Spacer
23.	3150670	Bracket, Cond Fan - Wine
24.	6200490	Screw, #8-32 x 3/8” Slotted Hex T25
25.	6201280	Machine Screw, #10-32 x 1-1/4”
26.	6240350	Fender Washer, .25x1.25x.06
27.	6150330	Well Nut, .75D x .804”, #10-32
28.	0169340	Fan Shroud, Condenser
29.	4202000	Rear Leveler Assembly
30.	N/A	Rear leveler Foot - (See 4202000)
31.	N/A	Leveler Assy, Rear - (See 4202000)
32.	3421500	Adjusting Rod
33.	3570060	Front Leveler Bolt
34.	0169260	Switch Enclosure (See SN Breaks)
	0261710	Box, Switch RH (See SN Breaks)
	0261720	Box, Switch LH (See SN Breaks)
35.	6200010	Screw, #10-12 x 3/4” Pan HD
36.	6201140	Screw, 1/4-20 x 1/2” Sems But HD
37.	6200780	Screw, #10-24 x 1/2” PH Hex Washer
38.	4324800	Retractor Assy, Power Cord
39.	3541031	Top Hinge Assy - RH
	3541032	Top Hinge Assy - LH
40.	3220250	Grommet, Rubber-#M5351
41.	3520120	Brass Insert, Fan Bracket
42.	3541050	Hinge Cover
43.	3541041	Lower Hinge Assy - RH
	3541042	Lower Hinge Assy - LH
44.	3541020	Drawer Closer
45.	6200280	Screw, #8-18 x 1” Pan Head
46.	4202580	Reed Switch
47.	6201140	Screw, 1/4-20 x 1/2” Sems But HD
48.	3412032	Drawer Slide-LS
49.	3550720	White Thread Pin
50.	3412031	Drawer Slide-RS
51.	4161550	Drwr Cntrl Pnl Assy (See SN Breaks)
	4203380	Drwr Cntrl Pnl Assy (See SN Breaks)
52.	6200700	Screw, #6-20 x 5/8” PH Flat HD SS
53.	4203240	Pckg, Cntrl Brd Ref (See SN Breaks)
	4203290	Pckg, Cntrl Brd Ref (See SN Breaks)
54.	6201130	Screw, #8x 1/2" PH FL HD SS
55.	4202770	Cabinet W/H Rpair Pkg
56.	6150800	Plastic Hex Nut, 5/8-27 UNS-2A

Not Pictured

3021890	Wire Harness,Cabinet - Ref. Section
3021920	Wire Harness,Cabinet - Wine Section

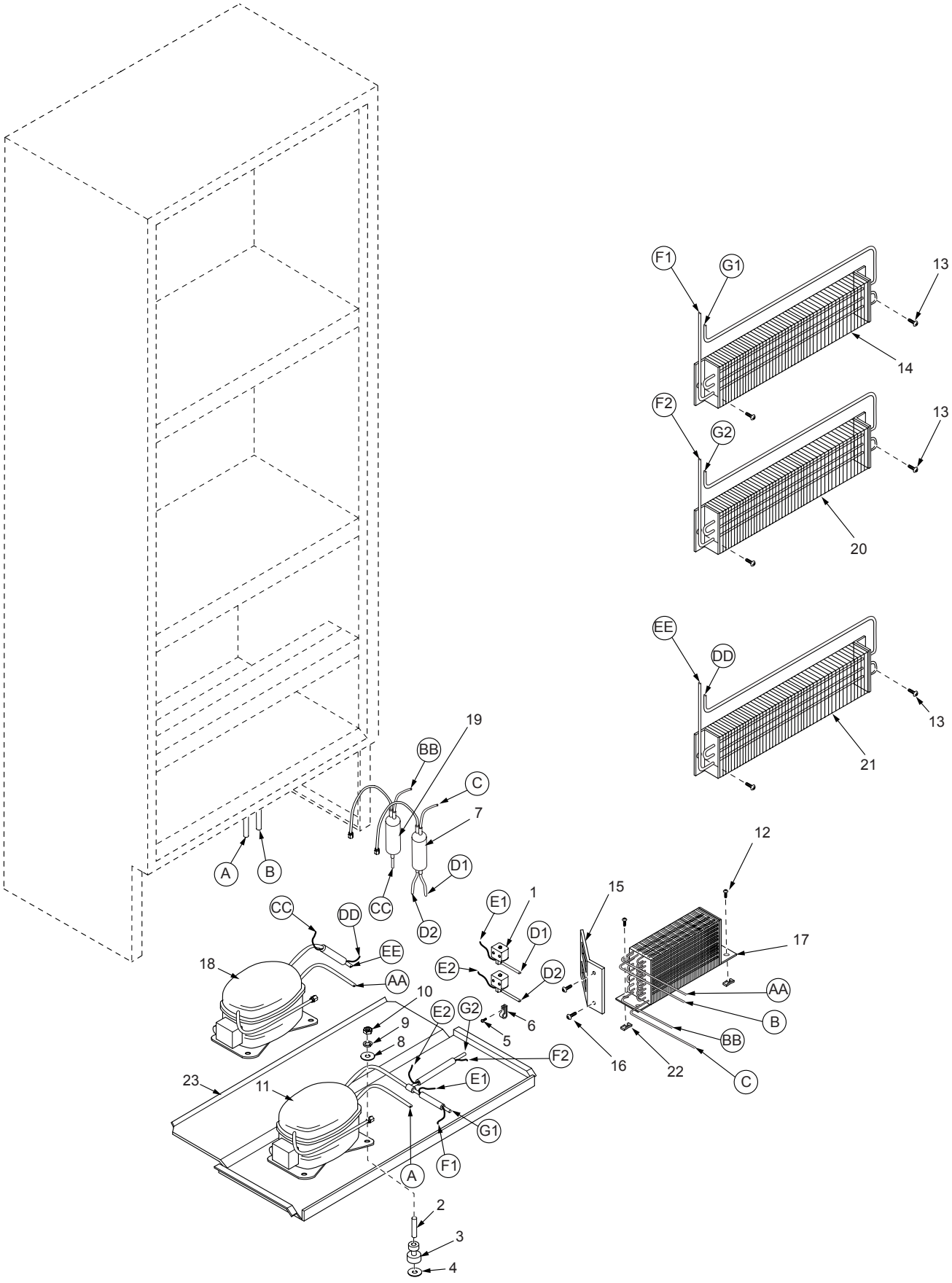
427R MECHANICAL VIEW



427R SEALED SYSTEM VIEW PARTS LIST

1.	4203060	Valve/Sol Components, UPR-Wine
	4203070	Valve/Sol Components, LWR-Wine
2.	6160030	Spacer, 5/16 x 7/16 x 5/8”
3.	3150010	Rubber Grommet, Small, 5/8”
4.	6240050	Flat Washer, 5/16”
5.	6200140	Screw, #8-15 x 3/8” Truss HD
6.	6120030	Tube Clamp, Plastic 1/4”
7.	3014420	Drier, Service Wine
8.	6240050	Flat Washer, 5/16”
9.	6240090	Lock Washer, 5/16”
10.	6150220	Nut, 5/16-18 Hex Zinc
11.	4203230	Compressor Pkg. SRVC-WINE (EMI30HER)
	3111370	Relay, (1351400)
	3111410	Overload, (4TM734LFB)
12.	6200110	Screw, #10-12 x 5/8” Truss SS
13.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
14.	4211570	Evaporator Assy, UPR (Includes Heat Exchanger)
	3130510	Evaporator, 4 Pass
	4251460	Heat Exchanger
15.	0862330	Bracket, Solenoid
16.	6200330	Screw, #8-18 x 3/8” Pan Head
17.	3120350	Condenser
18.	4201880	Compressor, Refrig. (EMI30HER)
	3111370	Relay, (1351400)
	3111410	Overload, (4TM734LFB)
19.	3014230	Filter-Drier, High Side
20.	4211580	Evaporator Assy, MDL (Includes Heat Exchanger)
	3130510	Evaporator, 4 Pass
	4251470	Heat Exchanger
21.	4211590	Evaporator Assy, LWR (Includes Heat Exchanger)
	3130510	Evaporator, 4 Pass
	4251480	Heat Exchanger
22.	6150080	Nut-Flat, #10-24
23.	0140360	Tray, Unit

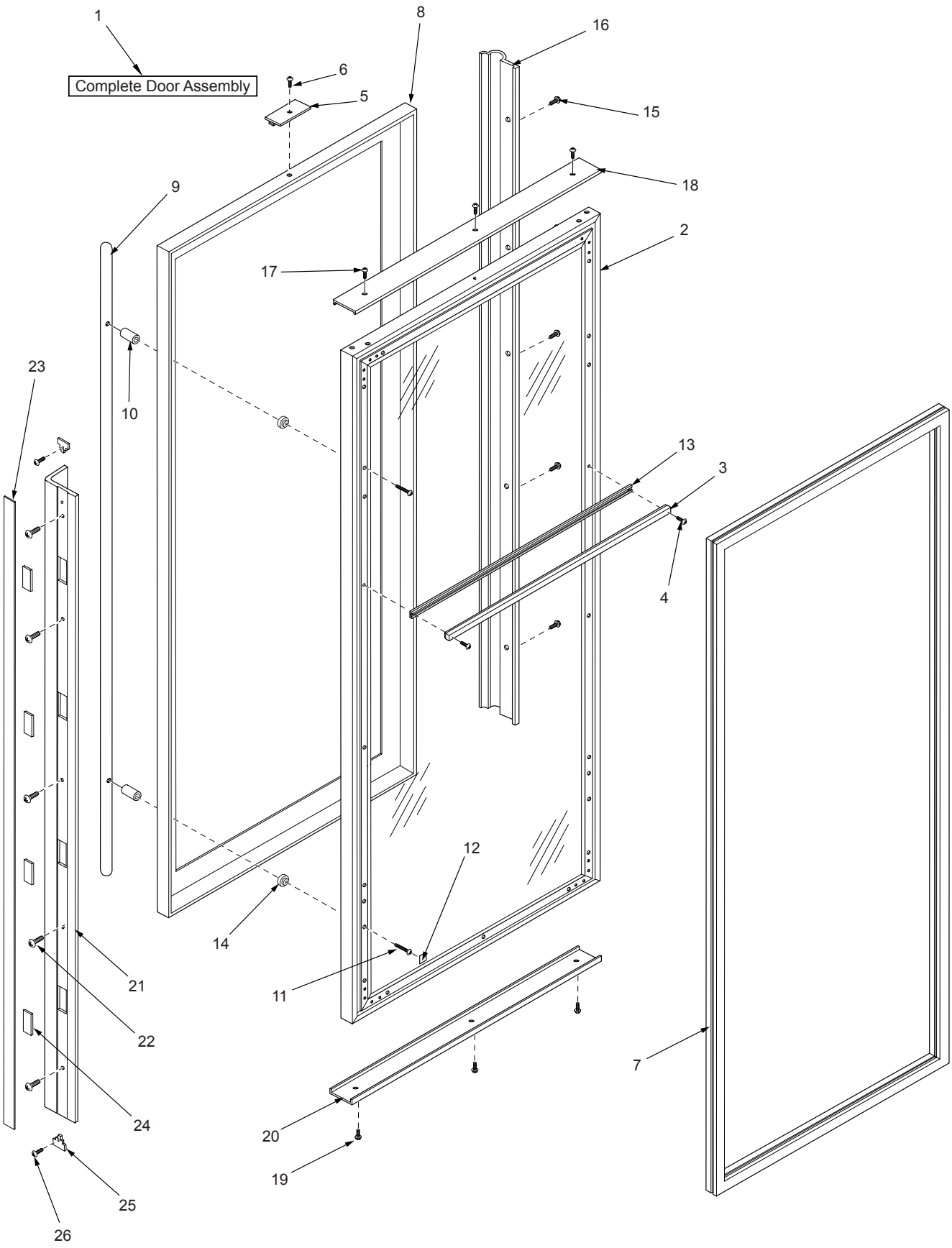
427R SEALED SYSTEM VIEW



430 DOOR VIEW PARTS LIST

1.	4134240	Door Assy, SRVC - 430G/F&O RH (Does not include hinges or handle)
	4134250	Door Assy, SRVC - 430G/F&O LH (Does not include hinges or handle)
	4134401	Door Assy, (High Altitude) - 430HAG/F&O RH (Does not include hinges or handle)
	4134402	Door Assy, (High Altitude) - 430HAG/F&O LH (Does not include hinges or handle)
	4134260	Door Assy, SRVC - 430G/S RH (Does not include hinges)
	4134270	Door Assy, SRVC - 430G/S LH (Does not include hinges)
	4134403	Door Assy, (High Altitude) - 430HAG/S RH (Does not include hinges)
	4134404	Door Assy, (High Altitude) - 430HAG/S LH (Does not include hinges)
	4133785	Door Assy,SRVC-430G/B-RH (Does not include hinges or handle)
	4133786	Door Assy,SRVC-430G/B-LH (Does not include hinges or handle)
	4133787	Door Assy,SRVC-430HAG/B-RH (High Altitude) (Does not include hinges or handle)
	4133788	Door Assy,SRVC-430HAG/B-LH (High Altitude) (Does not include hinges or handle)
	4134915	Door Assy,SRVC-430G/P-RH (Does not include hinges or handle)
	4134916	Door Assy,SRVC-430G/P-LH (Does not include hinges or handle)
	4134917	Door Assy,SRVC-430HAG/P-RH (High Altitude) (Does not include hinges or handle)
	4134918	Door Assy,SRVC-430HAG/P-LH (High Altitude) (Does not include hinges or handle)
	4134280	Door Assy, SRVC - 430S/F&O RH (Does not include hinges or handle)
	4134290	Door Assy, SRVC - 430S/F&O LH (Does not include hinges or handle)
	4134300	Door Assy, SRVC - 430S/S RH (Does not include hinges)
	4134310	Door Assy, SRVC - 430S/S LH (Does not include hinges)
	4133793	Door Assy,SRVC-430S/B-RH (Does not include hinges or handle)
	4133794	Door Assy,SRVC-430S/B-LH (Does not include hinges or handle)
	4134923	Door Assy,SRVC-430S/P-RH (Does not include hinges or handle)
	4134924	Door Assy,SRVC-430S/P-RH (Does not include hinges or handle)
2.	4132760	Door Assy, 430Glass
	4134400	Door Glass Assy, (High Altitude) - 430
	4133020	Door Assy, 430Solid
3.	3212040	Seal, Center
4.	6201360	Screw, #4 x 3/4" PH PAN HD TYPE A
5.	3421380	Depressor, Switch (430G/F&O, 430G/P, 430G/S, 430S/F&O, 430S/P, 430S/S)
	3421381	Depressor, Switch, B (430G/B, 430S/B)
6.	6200720	Screw, #8-18 x 1/2 PH Truss HD (430G/F&O, 430G/P, 430G/S, 430S/F&O, 430S/P, 430S/S)
	6200721	Screw, #8-18X1/2 Ph Low Prfl, B (430G/B, 430S/B)
7.	3211980	Gasket, Door
8.	4203170	SS Door Panel Pkg, Glass-430RH (430G/S-RH)
	4203180	SS Door Panel Pkg, Glass-430LH (430G/S-LH)
	4133881	Door Skin Assy,SRVC-430G/B-RH (430G/B, 430HAG/B)
	4133882	Door Skin Assy,SRVC-430G/B-LH (430G/B, 430HAG/B)
	4135011	Door Skin Assy,SRVC-430G/P-LH (430G/P, 430HAG/P)
	4135012	Door Skin Assy,SRVC-430G/P-LH (430G/P, 430HAG/P)
	4203210	SS Door Panel Pkg, Solid-430RH (430S/S-RH)
	4203220	SS Door Panel Pkg, Solid-430LH (430S/S-LH)
	0185471	Skin, Door-430S/B-RH (430S/B)
	0185472	Skin, Door-430S/B-LH (430S/B)
	0185473	Skin, Door-430S/P-RH (430S/P)
	0185474	Skin, Door-430S/P-LH (430S/P)
9.	3511160	SS Door Handle, 1"Dia x 63-7/8" (430G/S, 430S/S) - (See SN Breaks)
	3511970	Handle, Door SS 1 X 63.875 (430G/S, 430S/S) - (See SN Breaks)
	3511971	Handle, Door 1X63.88, B (430G/B, 430S/B)
	3511972	Handle, Door 1X63.88, P (430G/P, 430S/P)
10.	3511190	Handle Standoff, 1"Dia (430G/S, 430S/S) - (See SN Breaks)
	3512200	Standoff, SS Oval (430G/S, 430S/S) - (See SN Breaks)
	3512201	Standoff, Oval, B (430G/B, 430S/B)
	3512202	Standoff, Oval, P (430G/P, 430S/P)
11.	6110650	Machine Screw, #10-24x2 TRHDSS (430G/B, 430G/P, 430G/S, 430S/B, 430S/P, 430S/S)
12.	6230970	Poly Tape
13.	2813301	Holder, Compression Gasket 26.5
14.	6160250	Spacer - Door Handle (430G/B, 430G/P, 430G/S, 430S/B, 430S/P, 430S/S)
15.	6200720	Screw, #8-18 x 1/2 PH Truss HD (430G/F&O, 430G/P, 430G/S, 430S/F&O, 430S/P, 430S/S)
	6200721	Screw, #8-18X1/2 Ph Low Prfl, B (430G/B, 430S/B)
16.	3511130	Door Trim, Hinge Side - Square Corner (430G/S, 430S/S)
	3511131	Door Trim, Hinge Side - Mitered Corner (430G/F&O, 430S/F&O)
	3512241	Trim, Door Hinge Side - Carbon (430G/B, 430S/B)
	3512242	Trim, Door Hinge Side - Platinum (430G/P, 430S/P)
17.	6200720	Screw, #8-18 x 1/2 PH Truss HD
18.	2230619	Trim, Door Top Ref - RH (430G/F&O, 430S/F&O)
	2230622	Trim, Door Top Ref - LH (430G/F&O, 430S/F&O)
19.	6200720	Screw, #8-18 x 1/2 PH Truss HD
20.	2230620	Trim, Door Bot Ref - RH (430G/F&O, 430S/F&O)
	2230621	Trim, Door Bot Ref - LH (430G/F&O, 430S/F&O)
21.	4132270	Extended Door Handle Assy, 67.88 (430G/F, 430S/F)
	4132320	Handle-side Door Trim (430G/O, 430S/O)
22.	6201300	Tapping Screw, #8 x 1/2" (430G/F&O, 430S/F&O)
23.	4131860	Handle/Trim Molding Assembly (430G/F&O, 430S/F&O)
24.	3450450	Molding Magnet - 3" (430G/F&O, 430S/F&O)
25.	3413340	Handle/Trim End Cap (430G/F&O, 430S/F&O)
26.	6180160	Rivet, Open End Blind, 1/8" X 3/16" (430G/F&O, 430S/F&O)

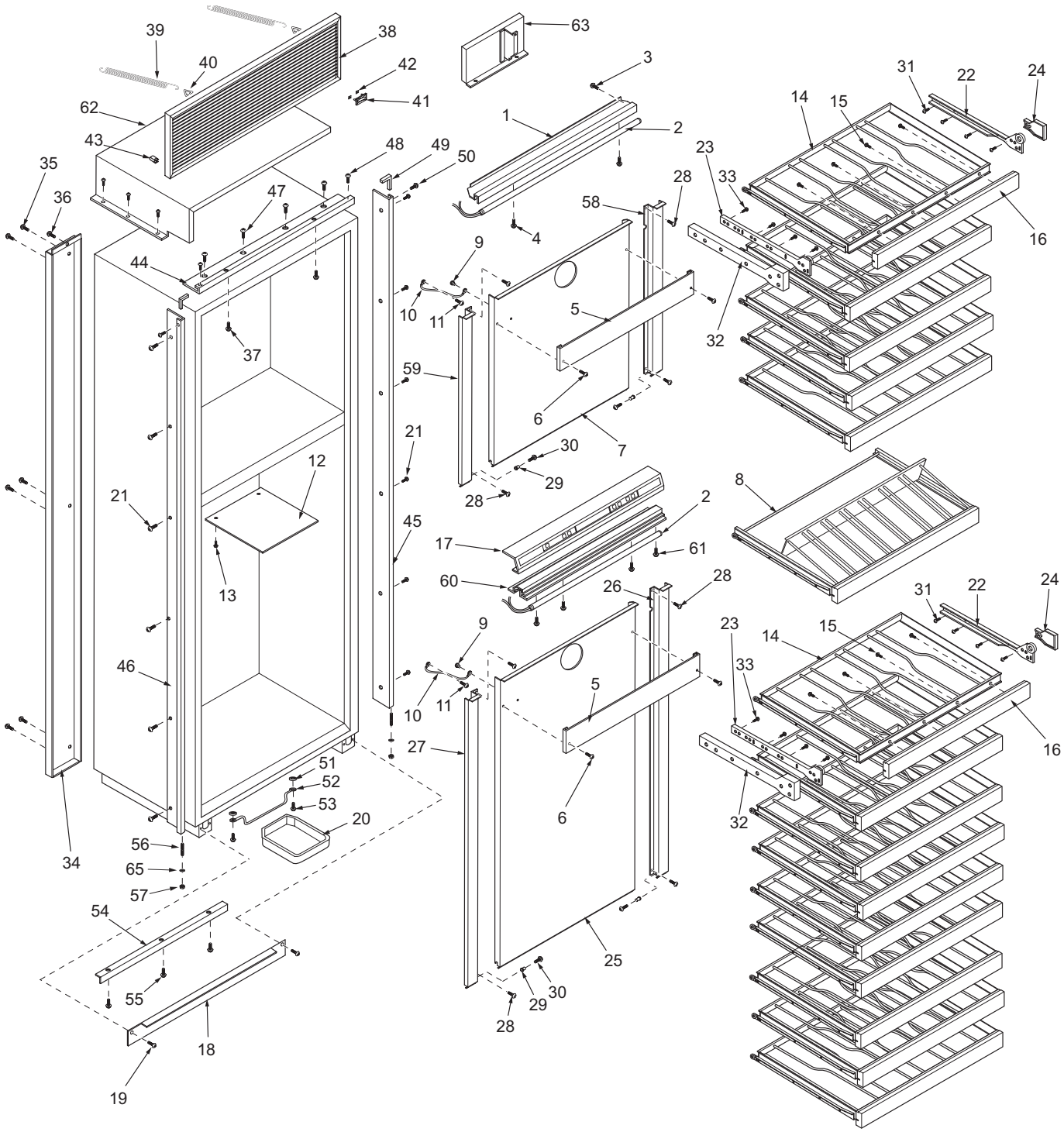
430 DOOR VIEW



430 COSMETIC VIEW PARTS LIST

1.	3511690	Extrusion, Upper Light
2.	3030150	Light Strip, 15 WATT
3.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
4.	6201310	Screw, #8 x 1-3/4” Flat PH HD
5.	0212360	Evaporator Fan cover
6.	6201010	Screw, #8-15 x 2” Pan Head
7.	0200960	Cover, Evaporator Upper
8.	4181780	Rack Assy, Display Wine
9.	6180010	Pop Rivet, 1/8”
10.	4323860	Ground Wire Assy
11.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
12.	0184410	Panel, Srvc/Access (See SN Breaks)
	4152220	Pnl Assy, Srvc Acc (See SN Breaks)
13.	6200720	Screw, #8-18 x 1/2 PH Truss HD
14.	4181750	Wine Rack Assembly
15.	6201420	Screw
16.	3516540	Molding, Wood Wine Rack
17.	4203130	Control Panel Pkg, SRVC - 430
18.	0168570	Kickplate, Stainless Steel (430/S)
	0260710	Kickplate, Solid (430/F, 430/O)
	0168571	Kickplate, Solid-30", B (430/B)
	0168572	Kickplate, Solid-30", P (430/P)
19.	6200050	Screw, #10-12 x 1/2” Pan HD
	6200120	Screw, #10-12 x 1/2" Truss HD (SS)
20.	0164940	Drain Pan, Plastic
21.	6200210	Screw, #8-32 x 1/2” Flat Head
	6201550	Screw, #8-18 X 1/2 Low Profile
22.	3413551	Cabinet Slide, RH
23.	3413552	Cabinet Slide, LH
24.	3421830	Slide Spacer
25.	0200970	Cover, Evaporator Lower
26.	0201010	Evap Support, Lower RH
27.	0201000	Evap Support, Lower LH
28.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
29.	3520120	Brass Insert
30.	6200130	Screw, #8-18 x 3/4” Truss HD
31.	6201230	Screw, #8 x 7/8” w/a #7 PH FT Head
32.	3421820	Slide Support Spacer
33.	6201240	Screw, #8 x 1-3/8” w/a #7 PH FT Hd
34.	0168950	Duct, Back
35.	6201060	Screw, #8x1-1/4” PH FLAT TAP
36.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
37.	6201310	Screw, #8 x 1-3/4” Flat PH HD
	6201311	Screw, #8X1-3/4 Flt Ph Hd, B
38.	6LG3011	Louvered Grille Assembly, 30” x 11”
	6PG3011	Panel Grille Assembly, 30” x 11”
	6SG3011	SS Grille 30” x 11” (See SN Breaks)
	6SG3011/S	SS Grille,30X11-CLSC(See SN Breaks)
	6SG3011/B	SS Grille 30X11-Carbon
	6SG3011/P	SS Grille 30X11-Platinum
39.	3450900	Grille Spring
40.	3450520	Grille Hook
41.	3580230	Name Plate, Approx 1-1/4X3” w/Pegs
	3580210	Name Plate, Appr. 1-1/4”X3” Stick-on
	3580211	Nameplate, B,P
42.	6150140	Spring Grip Nut, 1/8”
43.	6150840	Tinnerman J-Clip
44.	2229626	Frame, Main Top 30” - RH (See SN Breaks)
	2229910	Frame,Mn Top 30" RH (See SN Breaks)
	2234028	Frame,Main Top 30 RH (See SN Breaks)
	3517051	Frame,Main Top 30-RH, B
	3517054	Frame,Main Top 30-RH, P
	2229627	Frame, Main Top 30” - LH (See SN Breaks)
	2229920	Frame,Main Top 30"LH (See SN Breaks)
	2234029	Frame,Main Top 30 LH (See SN Breaks)
	3517052	Frame,Main Top 30-LH, B
	3517055	Frame,Main Top 30-LH, P
45.	4120580	Main Frame Assy, Right -RH (See SN Breaks)
	4120860	Frame Assy, Main RT Side-RH (See SN Breaks)
	4120861	Frame Assy,Main Right -RH, B
	4120862	Frame Assy,Main Right -RH, P
	2229602	Main Frame, Right Side - LH (See SN Breaks)
	2234006	Frame, Main Side Right-LH (See SN Breaks)
	3517006	Frame,Main Side Right-LH, B
	3517031	Frame,Main Side Right-LH, P
46.	2229603	Main Frame, Left Side-RH (See SN Breaks)
	2234004	Frame,Main Side Left-RH (See SN Breaks)
	3517004	Frame,Main Side Left-RH, B
	3517029	Frame,Main Side Left-RH, P
	4120590	Main Frame Assy, Left -LH (See SN Breaks)
	4120870	Frame Assy, Main Left -LH (See SN Breaks)
	4120871	Frame Assy, Main Left -LH, B
	4120872	Frame Assy, Main Left -LH, P
47.	6200010	Screw, #10-12 x 3/4” Pan HD
48.	6200070	Screw, #4-24 x 3/8” Flat HD
49.	2210701	Main Frame Angle
50.	6200070	Screw, #4-24X3/8” Flat HD
	6200071	Screw, #4-24X3/8 Flat Hd, B
51.	3420670	Screw Spacer
52.	3420760	Drain Pan Holder
53.	6201060	Screw, #8x1-1/4” PH FLAT TAP
54.	0169050	Kickplate Support
55.	6200010	Screw, #10-12 x 3/4” Pan HD
56.	3550190	Bottom Hinge Stud
57.	6150200	Nut, 1/4-20 Hex
	6150201	Nut, 1/4-2 0 Hex, B
58.	0200990	Evap Support, Upper RH
59.	0200980	Evap Support, Upper LH
60.	3511720	Housing, Lower Light
61.	6200720	Screw, #8-18 x 1/2 PH Truss HD
62.	4281250	Shroud Assy, Unit
63.	4281100	Shroud Assy, Compressor
64.	6201430	*(Not pictured)* Panel Mnt Hrdwr Pack
65.	6240070	Lock Washer, 1/4" SS
	6240071	Washer, Lock 1/4", B

430 COSMETIC VIEW



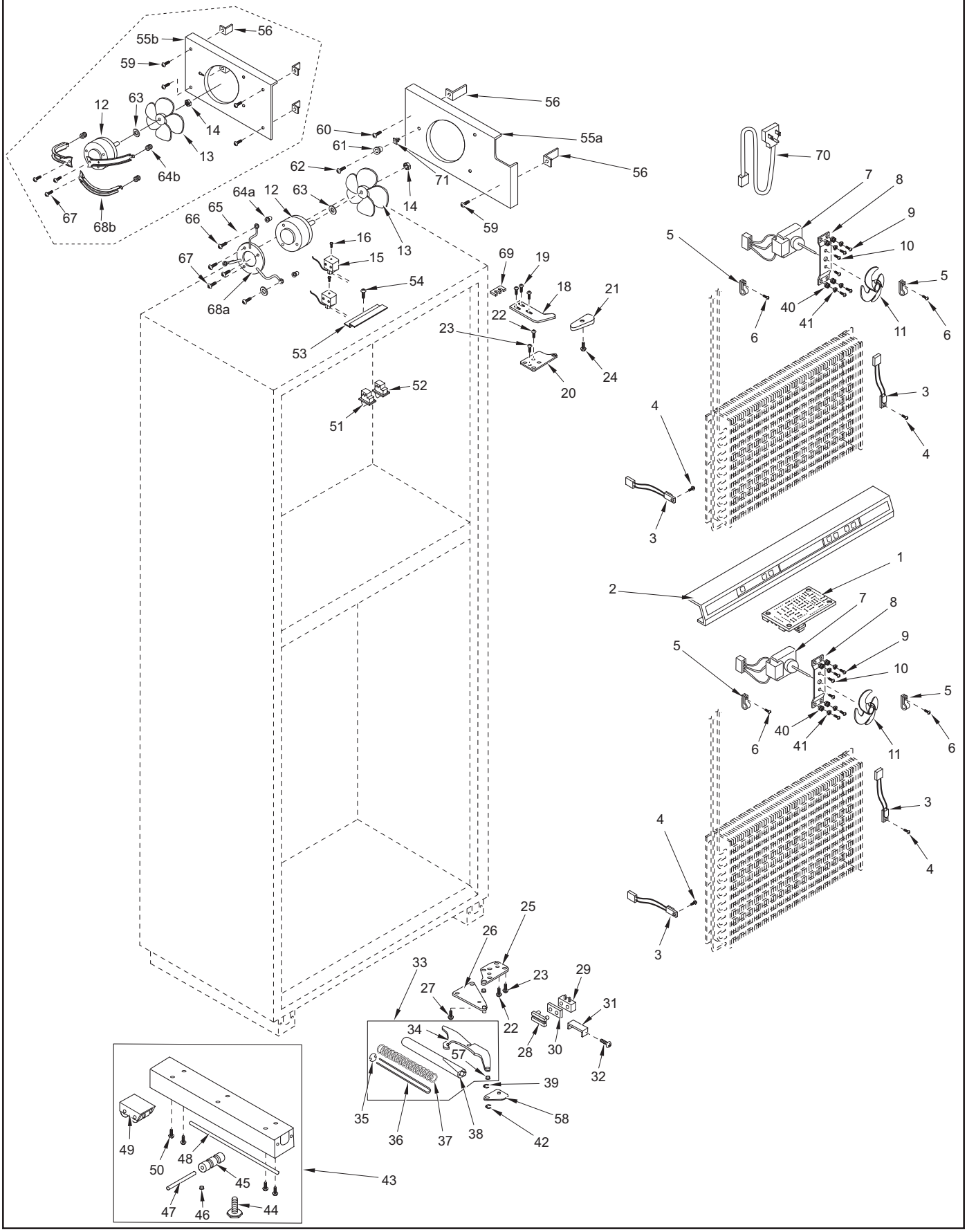
430 MECHANICAL VIEW PARTS LIST

1.	4203140	Control Board PKG, SRVC 400
2.	4203130	Control Panel Pkg, SRVC - 430
3.	3014350	Thermistor
4.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
5.	6120030	Tube Clamp, Plastic 1/4”
6.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
7.	4220490	Fan Motor Assembly (Includes Bracket & Screws)
8.	0212330	Bracket, Evap Fan Motor
9.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
10.	6110270	Bolt, #10-32 x 1/4” RD HD
11.	3150640	Fan blade, Evaporator
12.	4200740	Cond Fan Mtr Pkg (Blade NOT Incl.) (See SN Breaks)
	4200741	Cond Fan Mtr Pkg (Blade NOT Incl.) (See SN Breaks)
13.	3150320	Fan Blade, Cond, 5 prop, 7”
14.	6150410	Nut, 1/4-20
15.	4203060	Valve/Sol Components, UPR-Wine
	4203070	Valve/Sol Components, LWR-Wine
16.	N/A	(Included w/ Valve/Sol Components)
17.	4321880	Ground Wire Assembly, 9”
18.	4151271	Cabinet Hinge Assy, Upper; RH (Slvr)
	4151273	Hinge Assy, Upr Cab-RH, B
	4151272	Cabinet Hinge Assy, Upper; LH (Slvr)
	4151274	Hinge Assy, Upr Cab-LH, B
19.	6110070	Bolt, 1/4-20 x 3/4” Spinlock Zinc
20.	4151471	Door Hinge Assy, Top; RH (Silver)
	4151473	Hinge Assy, Top Cab-RH, B
	4151472	Door Hinge Assy, Top; LH (Silver)
	4151474	Hinge Assy, Top Cab-LH, B
21.	3541017	Top Cabinet Hinge Cover, RH (Silver)
	3541211	Cover, Top Cabinet Hinge-RH, B
	3541213	Cover, Top Cabinet Hinge-RH, P
	3541018	Top Cabinet Hinge Cover, LH (Silver)
	3541212	Cover, Top Cabinet Hinge-LH, B
	3541214	Cover, Top Cabinet Hinge-LH, P
22.	6110540	Bolt, #10-24 x 1/2” Flat Socket HD
23.	6200390	Screw, #6 x 3/8” T25 Flat Head PH
24.	6200140	Screw, #8-15 x 3/8" Truss HD
25.	4151241	Door Hinge, Bot; RH (Silver)
	4151243	Hinge Assy, Bot Door-RH, B
	4151242	Door Hinge, Bot; LH (Silver)
	4151244	Hinge Assy, Bot Door-LH, B
26.	4151281	Cabinet Hinge Assy, Lower; RH (Slvr)
	4151283	Hinge Assy, Lwr Cab-RH, B
	4151282	Cabinet Hinge Assy, Lower; LH (Slvr)
	4151284	Hinge Assy, Lwr Cab-LH, B
27.	6110070	Bolt, 1/4-20 x 3/4” Spinlock Zinc
28.	3421310	Door Closer Guide
29.	3450570	Door Closer Cushion
30.	0165970	Door Closer Guide Support
31.	0166360	Door Closer Cushion Retainer
32.	6180010	Pop Rivet, 1/8”
33.	4201111	Door Closer Assy, RH (430/F/O/S/P)
	4201115	Door Closer Assy, SBS RH-B (430/B)
	4201112	Door Closer Assy, LH (430/F/O/S/P)
	4201116	Door Closer Assy, SBS LH-B (430/B)
34.	NA	See 4201111, 1112, 1115 or 1116
35.	0165980	Door Closer Spring Retainer
36.	3421290	Door Closer Linkage
37.	3450530	Door Closer Spring
38.	NA	See 4201111, 1112, 1115 or 1116
39.	3450550	E-Ring / Klipring , 5/16”
40.	3220250	Grommet, Rubber-#M5351
41.	3520120	Brass Insert, Fan Bracket
42.	3450560	E-Ring,7/16” (Supl w/DS90 & DS105)
43.	4110353	Base Assy (w/rollers)
44.	3570050	Leveling Leg, #18-3/8 x 1”
45.	3421240	Cabinet Roller
46.	3450620	Canoe Clip
47.	3550560	Straight Pin, Base Assy - .312”X2.88”
48.	6110580	Adjusting Screw
49.	4110331	Base Rear Roller Assy
50.	6200010	Screw, #10-12 x 3/4” Pan HD
51.	3060140	SPST Light Switch (White)
	3060141	Switch, Rocker N.C. Black
52.	3060130	SPST Fan/Icemaker Switch (White)
	3060131	Switch, Rocker N.O. Black
53.	0168960	Cover, Switch
54.	6200010	Screw, #10-12 x 3/4” Pan HD
55a.	0169040	Shroud, Condenser (See SN Breaks)
55b.	0261310	Shroud, Cond Fan (See SN Breaks)
56.	3450290	Angle Bracket
57.	3421260	Door Closer Bearing
	3421261	Bearing, Door Closer, B
58.	DS90	Door Stop-90 Deg (N/C Sales Accy)
	DS105	Door Stop-105 Deg (N/C Sales Accy)
59.	6200010	Screw, #10-12 x 3/4” Pan HD
60.	6200010	Screw, #10-12 x 3/4” Pan HD
61.	3420670	Screw Spacer
62.	6200450	Screw, #8 x 1” Type AR Flat
63.	3210340	Neoprene Silencer, 7/8”
64a.	6150330	Well Nut, .75D x .804”, #10-32
64b.	3220360	Grommet, Mounting Bracket
65.	6240350	Fender Washer, .25x1.25x.06
66.	6201280	Machine Screw, #10-32 x 1-1/4”
67.	6200490	Screw, #8-32 x 3/8” Slotted Hex T25
68a.	3150650	Cond. Fan Brkt (See SN Breaks)
68b.	0261150	Bracket, Cond Mtg (See SN Breaks)
69.	0164510	Shim, Cabinet Top or Bot Hinge
70.	4321820	Power Cord
71.	6220220	Screw Grommet, 1/32 x 3/8” SQ

Not Pictured

3021950	Wire Harness, Cabinet

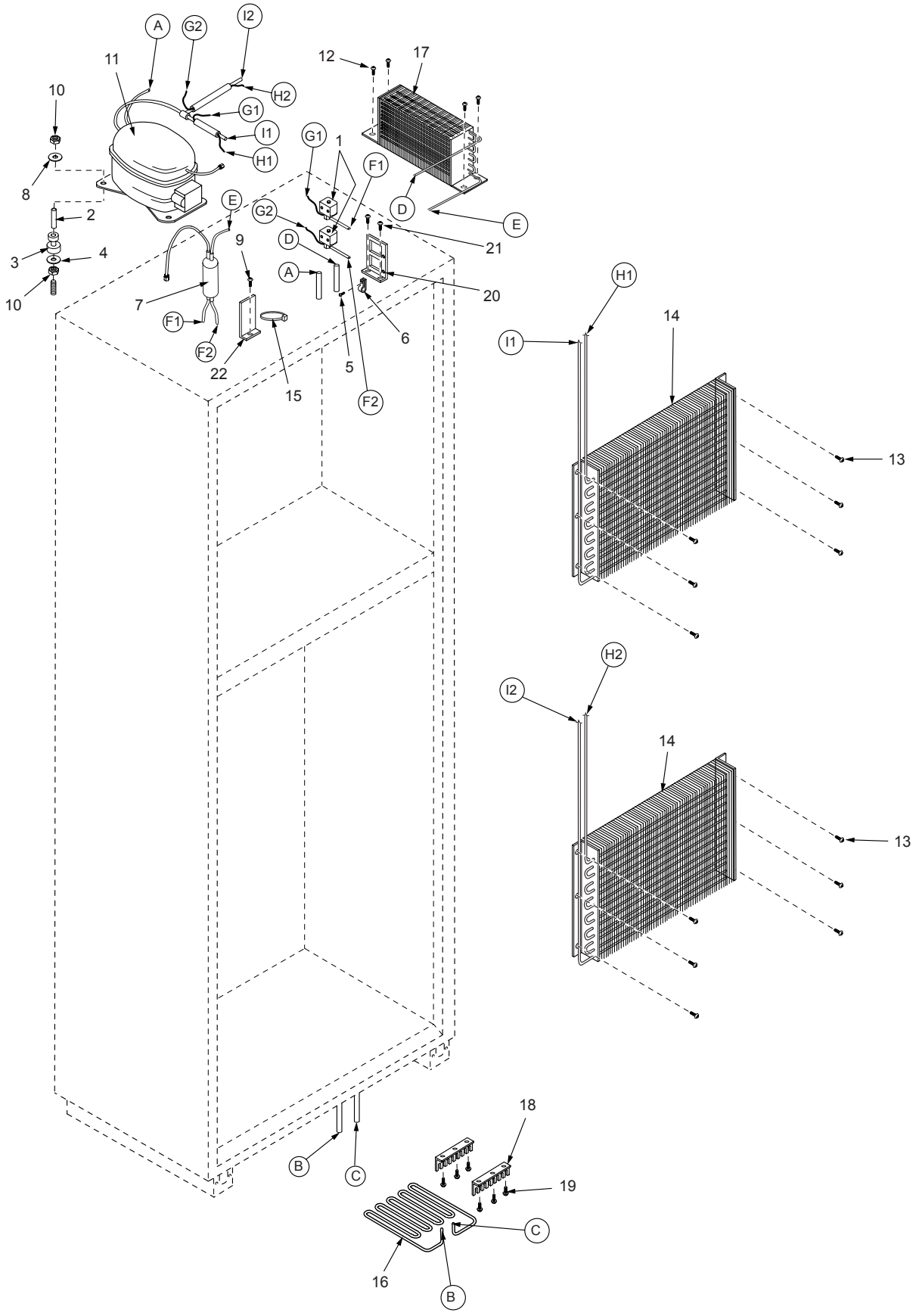
430 MECHANICAL VIEW



430 SEALED SYSTEM VIEW PARTS LIST

1.	4203060	Valve/Sol Components, UPR-Wine
	4203070	Valve/Sol Components, LWR-Wine
2.	6160030	Spacer, 5/16 x 7/16 x 5/8”
3.	3150010	Rubber Grommet, Small, 5/8”
4.	6240050	Flat Washer, 5/16”
5.	6200140	Screw, #8-15 x 3/8” Truss HD
6.	6120030	Tube Clamp, Plastic 1/4”
7.	3014420	Drier, Service Wine
8.	6240050	Flat Washer, 5/16”
9.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
10.	6150220	Nut, 5/16-18 Hex Zinc
11.	4203230	Compressor Pkg. SRVC-WINE(EMI30HER)
	3111370	Relay, (1351400)
	3111410	Overload, (4TM734LFB)
12.	6200010	Screw, #10-12 x 3/4” Pan HD
13.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
14.	4211600	Evaporator Assy (Includes Heat Exchanger)
	3130280	Evaporator
	4251490	Heat Exchanger
15.	6120170	Locking Cable Tie, Red, 11-1/2”
16.	2600138	Drain Pan Heater Loop
17.	3120370	Condenser
18.	3421410	Drain Pan Heater Loop Support
19	6200010	Screw, #10-12 x 3/4” Pan HD
20.	0862320	Bracket, Solenoid
21.	6201270	Screw, #8-18 x 5/8” PH PN SS-Gnd
22.	0168040	Drier Bracket

430 SEALED SYSTEM VIEW



SECTION 8

TROUBLESHOOTING GUIDES

WINE STORAGE DIAGNOSTIC WORKSHEET INFORMATION & INSTRUCTIONS:

The 400 Series Wine Storage Troubleshooting Guide is supplied with several copies of the Diagnostic Worksheet. The information gathered on this worksheet will assist in narrowing the search for the cause of suspected temperature problems. To fill out the worksheet, you will need to be familiar with the Diagnostic Mode and the Temperature Log Recall Mode (See section 3 of this manual).

NOTE: *The diagnostic worksheet does not apply to temperature problems in the refrigerator section of a 427R. Go straight to the 427R Refrigerator General Troubleshooting Guide.*

Diagnostic Worksheet Instructions:

Whenever servicing a 400 Series Wine Storage unit for temperature problems, follow the steps below and fill out the diagnostic worksheet before referencing the Wine Storage General Troubleshooting Guide.

1. Register the displayed temperatures.
   a. *If "EE" is displayed for either compartment temperature with "SERVICE" flashing, the thermistor in that compartment is disconnected or defective.*
   b. *If the unit is OFF, switch unit ON and go on to step #2 below.*
2. Register the set-points, keeping in mind that the initial key stroke will change the set-point by a one degree increment or decrement depending on your choice of WARMER key or COLDER key, respectively.
3. Initiate Wine Storage Diagnostic Mode by pressing and holding either COLDER key and the UNIT ON/OFF key, then register the temperature readings for each thermistor location.
   a. *If "EE" is displayed for any of the locations, the thermistor in that location is disconnected or defective.*
4. Initiate Temperature Log Recall Mode by pressing and holding the desired compartment WARMER key and the UNIT ON/OFF key, then register the temperature of each index for both wine storage compartments. If "BELL ON" or "SERVICE" illuminate during an index, indicate which one by circling it on the worksheet.
   a. *By observing the temperatures logged, you should be able to notice any warming or cooling trends, whether this trend was in one or both compartments, whether there was a power interruption ("BELL ON" illuminate) and whether the unit was switched OFF ("SERVICE" illuminates).*
   b. *If double dashes ("**- -**") are displayed, the control board is defective.*

   NOTE: *To see the index/time correlation, reference Temperature Log Index Chart on page 3-23 of this manual.*
5. Reference the General Troubleshooting Guide with the information gathered on the worksheet.

WINE STORAGE DIAGNOSTIC WORKSHEET

Temperature Display: Lower _____ Upper _____

Set-Point: Lower _____ Upper _____

Diagnostic Mode Thermistor Readings:

_____ *UE* (Upper Evap) _____ *LE* (Lower Evap) _____ *UP* (Upper Cmprt) _____ *LO* (Lower Cmprt)

Index	Logged Temp.		Annunciator Lit
	Lower	Upper	
1			BELL ON / SERVICE
2			BELL ON / SERVICE
3			BELL ON / SERVICE
4			BELL ON / SERVICE
5			BELL ON / SERVICE
6			BELL ON / SERVICE
7			BELL ON / SERVICE
8			BELL ON / SERVICE
9			BELL ON / SERVICE
10			BELL ON / SERVICE
11			BELL ON / SERVICE
12			BELL ON / SERVICE
13			BELL ON / SERVICE
14			BELL ON / SERVICE
15			BELL ON / SERVICE
16			BELL ON / SERVICE
17			BELL ON / SERVICE
18			BELL ON / SERVICE
19			BELL ON / SERVICE
20			BELL ON / SERVICE
21			BELL ON / SERVICE
22			BELL ON / SERVICE
23			BELL ON / SERVICE
24			BELL ON / SERVICE
25			BELL ON / SERVICE
26			BELL ON / SERVICE
27			BELL ON / SERVICE
28			BELL ON / SERVICE
29			BELL ON / SERVICE
30			BELL ON / SERVICE
31			BELL ON / SERVICE
32			BELL ON / SERVICE

Index	Logged Temp.		Annunciator Lit
	Lower	Upper	
33			BELL ON / SERVICE
34			BELL ON / SERVICE
35			BELL ON / SERVICE
36			BELL ON / SERVICE
37			BELL ON / SERVICE
38			BELL ON / SERVICE
39			BELL ON / SERVICE
40			BELL ON / SERVICE
41			BELL ON / SERVICE
42			BELL ON / SERVICE
43			BELL ON / SERVICE
44			BELL ON / SERVICE
45			BELL ON / SERVICE
46			BELL ON / SERVICE
47			BELL ON / SERVICE
48			BELL ON / SERVICE
49			BELL ON / SERVICE
50			BELL ON / SERVICE
51			BELL ON / SERVICE
52			BELL ON / SERVICE
53			BELL ON / SERVICE
54			BELL ON / SERVICE
55			BELL ON / SERVICE
56			BELL ON / SERVICE
57			BELL ON / SERVICE
58			BELL ON / SERVICE
59			BELL ON / SERVICE
60			BELL ON / SERVICE
61			BELL ON / SERVICE
62			BELL ON / SERVICE
63			BELL ON / SERVICE
64			BELL ON / SERVICE

WINE STORAGE DIAGNOSTIC WORKSHEET

Temperature Display: Lower _____ Upper _____

Set-Point: Lower _____ Upper _____

Diagnostic Mode Thermistor Readings:

_____ UE (Upper Evap) _____ LE (Lower Evap) _____ UP (Upper Cmprt) _____ LO (Lower Cmprt)

Index	Logged Temp.		Annunciator Lit
	Lower	Upper	
1			BELL ON / SERVICE
2			BELL ON / SERVICE
3			BELL ON / SERVICE
4			BELL ON / SERVICE
5			BELL ON / SERVICE
6			BELL ON / SERVICE
7			BELL ON / SERVICE
8			BELL ON / SERVICE
9			BELL ON / SERVICE
10			BELL ON / SERVICE
11			BELL ON / SERVICE
12			BELL ON / SERVICE
13			BELL ON / SERVICE
14			BELL ON / SERVICE
15			BELL ON / SERVICE
16			BELL ON / SERVICE
17			BELL ON / SERVICE
18			BELL ON / SERVICE
19			BELL ON / SERVICE
20			BELL ON / SERVICE
21			BELL ON / SERVICE
22			BELL ON / SERVICE
23			BELL ON / SERVICE
24			BELL ON / SERVICE
25			BELL ON / SERVICE
26			BELL ON / SERVICE
27			BELL ON / SERVICE
28			BELL ON / SERVICE
29			BELL ON / SERVICE
30			BELL ON / SERVICE
31			BELL ON / SERVICE
32			BELL ON / SERVICE

Index	Logged Temp.		Annunciator Lit
	Lower	Upper	
33			BELL ON / SERVICE
34			BELL ON / SERVICE
35			BELL ON / SERVICE
36			BELL ON / SERVICE
37			BELL ON / SERVICE
38			BELL ON / SERVICE
39			BELL ON / SERVICE
40			BELL ON / SERVICE
41			BELL ON / SERVICE
42			BELL ON / SERVICE
43			BELL ON / SERVICE
44			BELL ON / SERVICE
45			BELL ON / SERVICE
46			BELL ON / SERVICE
47			BELL ON / SERVICE
48			BELL ON / SERVICE
49			BELL ON / SERVICE
50			BELL ON / SERVICE
51			BELL ON / SERVICE
52			BELL ON / SERVICE
53			BELL ON / SERVICE
54			BELL ON / SERVICE
55			BELL ON / SERVICE
56			BELL ON / SERVICE
57			BELL ON / SERVICE
58			BELL ON / SERVICE
59			BELL ON / SERVICE
60			BELL ON / SERVICE
61			BELL ON / SERVICE
62			BELL ON / SERVICE
63			BELL ON / SERVICE
64			BELL ON / SERVICE

WINE STORAGE DIAGNOSTIC WORKSHEET

Temperature Display: Lower _____ Upper _____

Set-Point: Lower _____ Upper _____

Diagnostic Mode Thermistor Readings:

_____ *UE* (Upper Evap) _____ *LE* (Lower Evap) _____ *UP* (Upper Cmprt) _____ *LO* (Lower Cmprt)

Index	Logged Temp.		Annunciator Lit
	Lower	Upper	
1			BELL ON / SERVICE
2			BELL ON / SERVICE
3			BELL ON / SERVICE
4			BELL ON / SERVICE
5			BELL ON / SERVICE
6			BELL ON / SERVICE
7			BELL ON / SERVICE
8			BELL ON / SERVICE
9			BELL ON / SERVICE
10			BELL ON / SERVICE
11			BELL ON / SERVICE
12			BELL ON / SERVICE
13			BELL ON / SERVICE
14			BELL ON / SERVICE
15			BELL ON / SERVICE
16			BELL ON / SERVICE
17			BELL ON / SERVICE
18			BELL ON / SERVICE
19			BELL ON / SERVICE
20			BELL ON / SERVICE
21			BELL ON / SERVICE
22			BELL ON / SERVICE
23			BELL ON / SERVICE
24			BELL ON / SERVICE
25			BELL ON / SERVICE
26			BELL ON / SERVICE
27			BELL ON / SERVICE
28			BELL ON / SERVICE
29			BELL ON / SERVICE
30			BELL ON / SERVICE
31			BELL ON / SERVICE
32			BELL ON / SERVICE

Index	Logged Temp.		Annunciator Lit
	Lower	Upper	
33			BELL ON / SERVICE
34			BELL ON / SERVICE
35			BELL ON / SERVICE
36			BELL ON / SERVICE
37			BELL ON / SERVICE
38			BELL ON / SERVICE
39			BELL ON / SERVICE
40			BELL ON / SERVICE
41			BELL ON / SERVICE
42			BELL ON / SERVICE
43			BELL ON / SERVICE
44			BELL ON / SERVICE
45			BELL ON / SERVICE
46			BELL ON / SERVICE
47			BELL ON / SERVICE
48			BELL ON / SERVICE
49			BELL ON / SERVICE
50			BELL ON / SERVICE
51			BELL ON / SERVICE
52			BELL ON / SERVICE
53			BELL ON / SERVICE
54			BELL ON / SERVICE
55			BELL ON / SERVICE
56			BELL ON / SERVICE
57			BELL ON / SERVICE
58			BELL ON / SERVICE
59			BELL ON / SERVICE
60			BELL ON / SERVICE
61			BELL ON / SERVICE
62			BELL ON / SERVICE
63			BELL ON / SERVICE
64			BELL ON / SERVICE

WINE STORAGE DIAGNOSTIC WORKSHEET

Temperature Display: Lower _____ Upper _____

Set-Point: Lower _____ Upper _____

Diagnostic Mode Thermistor Readings:

_____ *UE* (Upper Evap) _____ *LE* (Lower Evap) _____ *UP* (Upper Cmprt) _____ *LO* (Lower Cmprt)

Index	Logged Temp.		Annunciator Lit
	Lower	Upper	
1			BELL ON / SERVICE
2			BELL ON / SERVICE
3			BELL ON / SERVICE
4			BELL ON / SERVICE
5			BELL ON / SERVICE
6			BELL ON / SERVICE
7			BELL ON / SERVICE
8			BELL ON / SERVICE
9			BELL ON / SERVICE
10			BELL ON / SERVICE
11			BELL ON / SERVICE
12			BELL ON / SERVICE
13			BELL ON / SERVICE
14			BELL ON / SERVICE
15			BELL ON / SERVICE
16			BELL ON / SERVICE
17			BELL ON / SERVICE
18			BELL ON / SERVICE
19			BELL ON / SERVICE
20			BELL ON / SERVICE
21			BELL ON / SERVICE
22			BELL ON / SERVICE
23			BELL ON / SERVICE
24			BELL ON / SERVICE
25			BELL ON / SERVICE
26			BELL ON / SERVICE
27			BELL ON / SERVICE
28			BELL ON / SERVICE
29			BELL ON / SERVICE
30			BELL ON / SERVICE
31			BELL ON / SERVICE
32			BELL ON / SERVICE

Index	Logged Temp.		Annunciator Lit
	Lower	Upper	
33			BELL ON / SERVICE
34			BELL ON / SERVICE
35			BELL ON / SERVICE
36			BELL ON / SERVICE
37			BELL ON / SERVICE
38			BELL ON / SERVICE
39			BELL ON / SERVICE
40			BELL ON / SERVICE
41			BELL ON / SERVICE
42			BELL ON / SERVICE
43			BELL ON / SERVICE
44			BELL ON / SERVICE
45			BELL ON / SERVICE
46			BELL ON / SERVICE
47			BELL ON / SERVICE
48			BELL ON / SERVICE
49			BELL ON / SERVICE
50			BELL ON / SERVICE
51			BELL ON / SERVICE
52			BELL ON / SERVICE
53			BELL ON / SERVICE
54			BELL ON / SERVICE
55			BELL ON / SERVICE
56			BELL ON / SERVICE
57			BELL ON / SERVICE
58			BELL ON / SERVICE
59			BELL ON / SERVICE
60			BELL ON / SERVICE
61			BELL ON / SERVICE
62			BELL ON / SERVICE
63			BELL ON / SERVICE
64			BELL ON / SERVICE

GENERAL TROUBLESHOOTING GUIDE:

The alphabetical list below indicates how the General Troubleshooting Guide is arranged. Letters “A” through “P” pertain to the wine storage units, letters “Q through “AA” pertain to the 427R Refrigerator section only.

If servicing a 400 Series unit for temperature problems, it is recommended that a Wine Storage Diagnostic Worksheet be completed before referencing this General Troubleshooting Guide (See Page 8-2.). The information gathered on this worksheet will assist in narrowing the search for the cause of suspected temperature problems.

NOTE: *The diagnostic worksheet does not apply to temperature problems in the refrigerator section of a 427R. See “Q” through “BB” below.*

NOTE: *All key strokes necessary to help in diagnosing a problem in a 400 Series unit are explained in section 3 of this manual.*

Wine Storage **PAGE**

A. Warm Temperature in Both Wine Storage Compartments 8-8
B. Warm Temperature in Only One Wine Storage Compartment 8-9
C. Product Temperature Is 10° or More Colder than Displayed Temperature 8-10
D. Cold Temperatures in Both Wine Storage Compartments 8-10
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F. 1. "Extremely" Cold Temperatures Displayed (3° to 18°) 8-11
2. If Outside US - this could be "Extremely" Warm Temperatures Displayed (38° to 65°) 8-11
G. "**SERVICE**" Flashing 8-11
H. "**EE**" Displayed for Either Wine Storage Compartment with "**SERVICE**" Flashing 8-11
I. Lights Stay on in Either Wine Storage Compartment 8-11
J. Lights Will Not Energize in One or Both Wine Storage Compartments 8-11
K. Control Panel Keys Inoperable or Malfunctioning 8-12
L. LED's Do Not Illuminate 8-12
M. All LED's Stay Illuminated 8-12
N. Same Segment(s) Missing from Both Display Windows 8-12
O. Segment(s) Missing from Only One Display Windows 8-12
P. Door / Unit Un-level 8-12

427R Refrigerator Only **PAGE**

Q. Warm Temperature in Refrigerator Compartment 8-13
R. “**EE**” and “**SERVICE**” Flashing 8-14
*(**NOTE:** Before serial #1728753, the Drawer Location Annunciators will flash)*
S. “**EO**” or “**E3**” and “**SERVICE**” Flashing 8-14
*(**NOTE:** Before serial #1728753, the Drawer Location Annunciators will flash)*
T. “**SERVICE**” Alone Flashing 8-14
*(**NOTE:** Before serial #1728753, the Drawer Location Annunciators will flash)*
U. Product Temperature in Refrigerator 10° or More Colder than Displayed Temperature 8-14
V. Cold Temperature Displayed in Refrigerator Compartment 8-14
W. 1. "Extremely" Cold Temperatures Displayed in Refrigerator (1° to 7°) 8-15
2. If Outside US - this could be "Extremely” Warm Temp's Displayed in Refrig. (34° to 45°)
X. Lights Stay on with Drawer Closed 8-15
Y. Lights Will Not Energize 8-15
Z. Control Panel Keys &/or LCD Inoperable or Malfunctioning 8-15
AA. Drawer(s) / Unit Un-level 8-15

PROBLEM	POSSIBLE CAUSE	TEST / ACTION
A. WARM TEMPERATURE IN BOTH WINE STORAGE COMPARTMENTS	**Control Set Too Warm**	Check set-points. Adjust set-points COLDER
	Unit in Showroom Mode	Adjust set-points colder and listen for compressor & condenser fan operation. If they do not run, switch unit OFF then press and hold upper compartment COLDER & WARMER keys while pressing UNIT ON/OFF key.
	Unit Recently Energized	Allow time for unit to pull down
	Unit Recently Stocked with Wine	Instruct customer
	High Room Ambient	Instruct Customer that unit performs best between 60°F / 16°C - 90°F / 32°C
	Door Ajar a. Wine Rack Obstruction b. Door out of Adjustment c. Door or Cabinet Hinge Problem	 a. Adjust wine rack b. See Door Adjustment procedure in section 2 of this manual. c. Check hinges. Replace if defective.
	Condenser Air Flow / Fan Fault a. Dirty Condenser b. Condenser Fan Blade Loose or Obstructed c. Fan Motor Disconnected or Malfunctioning d. Defective or disconnected fan relay (427R after serial #1944319 Only)	 a. Clean condenser. Clean if needed. b. Check fan blade. Tighten or remove obstruction. c. Check fan motor operation. Check fan motor electrical connections back to compressor. Check for 115V AC from compressor to motor. Reconnect or repair wires or replace motor if defective. d. Check electrical connections and power at 427R condenser fan relay. Reconnect or replace relay if defective.
	Evaporator Fan Circuit Fault a. Fan Switch(es) Disconnected or Malfunctioning b. 427 / 427R Top Hinge Cover Missing c. No Power from Control Board (Prior to serial #1944319 Only)	 a. Check fan switch electrical connections. Check for 115V AC to and from switch. Reconnect or replace switch if defective. b. Replace top hinge cover. c. Check for 115V AC between P5 & P10 of J3 on control board. (NOTE: make sure unit is not in showroom Mode) If no power between P5 & P10, replace board.
	Compressor Fault a. Compressor Electricals Disconnected or Malfunctioning b. Compressor Inefficient c. Compressor Locked	 a. Check integrity of compressor electricals. Check continuity back to control board. Check for 115V AC between P10 of J3 and E2 on control board. Correct wiring problems or replace compressor electricals if defective. If no power between J3 and E2 , replace control board. b. Check AMP draw on compressor. If high by 15% or more, replace compressor. c. Check AMP draw on compressor. If extremely high, replace compressor.
	Sealed System Leak or Restriction	SEE SEALED SYSTEM DIAGNOSTIC INFORMATION FOLLOWING THIS GENERAL TROUBLESHOOTING GUIDE.

PROBLEM	POSSIBLE CAUSE	TEST / ACTION
B. WARM TEMPERATURE IN ONLY ONE WINE STORAGE COMPARTMENT	**Control Set Too Warm**	Check set-points. Adjust set-points COLDER
	Unit Recently Energized	Allow time for unit to pull down
	Unit Recently Stocked with Wine	Instruct customer
	High Room Ambient	Instruct Customer that unit performs best between 60°F / 16°C - 90°F / 32°C
	Door Ajar a. Wine Rack Obstruction b. Door out of Adjustment c. Door or Cabinet Hinge Problem	 a. Adjust wine rack b. See Door Adjustment procedure in section 2 of this manual. c. Check hinges. Replace if defective.
	Evaporator Thermistor Fault	Initiate Diagnostic Mode. If "EE" is displayed for either evap temp, check thermistor electrical connections back to control board. Correct wiring problems. If wiring is OK, verify thermistor is in correct location. Relocate if needed. Check thermistor ohms = 30,000 - 33,000 at 32°F / 0°C. Replace if defective.
	Condenser Air Flow / Fan Fault a. Dirty Condenser b. Condenser Fan Blade Loose or Obstructed c. Fan Motor Disconnected or Malfunctioning d. Defective or disconnected fan relay (427R after serial #1944319 Only)	 a. Clean condenser. Clean if needed. b. Check fan blade. Tighten or remove obstruction. c. Check fan motor operation. Check fan motor electrical connections back to compressor. Check for 115V AC from compressor to motor. Reconnect or repair wires or replace motor if defective. d. With a compressor running, check electrical connections and power at 427R condenser fan relay. Reconnect or replace relay if defective.
	Evaporator Fan / Fan Circuit Fault a. Fan Blade out of Position or Obstructed b. Fan Motor Disconnected or Malfunctioning c. Fan Switch Disconnected or Malfunctioning d. No Power from Control Board (Prior to serial #1944319 Only)	 a. Check fan blade position. (See section 5 of this manual.) Reposition blade or remove obstructions. b. Check fan motor operation by pressing fan switch. Check fan motor electrical connections. Also check for 115V AC to motor. Reconnect or repair wires or replace motor if defective. c. Check fan switch electrical connections. Check for 115V AC to and from switch. Reconnect or replace switch if defective. d. Check for 115V AC between P5 & P10 of J3 on control board. (NOTE: make sure unit is not in showroom Mode) If no power between P5 & P10, replace board.

(Continued)

PROBLEM	POSSIBLE CAUSE	TEST / ACTION
(Continued) **B. WARM TEMPERATURE IN ONLY ONE WINE STORAGE COMPARTMENT**	**Refrigerant Valve Solenoid Fault** a. Solenoid Disconnected or Malfunctioning	a. Initiate Manual Valve Activation Mode to verify operation. If inoperative, toggle to other evap temp reading to verify valve wiring is not crossed. Check solenoid electrical connections back to control board. Check for 115V AC between P8 & P10 (upper) or P6 & P10 (lower) of J3 on the control board. Correct wiring problems or replace solenoid if defective. If no power between points mentioned above, replace board.
	b. Refrigerant Valve Stuck Closed, or Restricted at Cap Tube End	b. If solenoid checks OK, but temperatures do not drop while in Refrigerant Valve Activation Mode, replace defective or restricted valve. (NOTE: restriction is most likely in cap tube attached to valve. Check this after removing valve.)
	Compressor Fault a. Compressor Electricals Disconnected or Malfunctioning	a. Check integrity of compressor electricals. Check electrical connections back to control board. Replace defective electricals or repair wiring. Check for 115V AC between P10 of J3 and E2 on the control board. Correct any wiring problems or replace compressor electricals if defective. If no power from control board to compressor, replace board.
	b. Compressor Inefficient or Locked	b. Check AMP draw on compressor. If high by 15% or more, replace compressor.
	Sealed System Leak or Restriction	SEE SEALED SYSTEM DIAGNOSTIC INFORMATION FOLLOWING THIS GENERAL TROUBLESHOOTING GUIDE.
C. PRODUCT TEMPERATURE IS 10° OR MORE COLDER THAN DISPLAYED TEMPERATURE	**Compartment Thermistor Fault (Misread)**	Check thermistor ohms = 30,000 - 33,000 at 32°F / 0°C. Replace if defective. If thermistors are OK, replace control board.
D. COLD TEMPERATURES IN BOTH WINE STORAGE COMPARTMENTS	**Room Temperature Below Set-Point**	Instruct Customer.
	Control Set Too Cold	Check set-points. Adjust set-points WARMER
	Door Ajar a. Wine Rack Obstruction b. Door out of Adjustment c. Door or Cabinet Hinge Problem	a. Adjust wine rack b. See Door Adjustment procedure in section 2 of this manual. c. Check hinges. Replace if defective.

PROBLEM	POSSIBLE CAUSE	TEST / ACTION
E. COLD TEMPERATURES IN ONLY ONE WINE STORAGE COMPARTMENT	**Room Temperature Below Set-Point**	Instruct Customer.
	Control Set Too Cold	Check set-point. Adjust set-points WARMER
	Door Ajar a. Wine Rack Obstruction b. Door out of Adjustment c. Door or Cabinet Hinge Problem	a. Adjust wine rack b. See Door Adjustment procedure in section 2 of this manual. c. Check hinges. Replace if defective.
	Refrigerant Valve Solenoid Fault (Stuck Open)	Initiate Manual Valve Activation Mode on opposite valve as that suspected. Toggle to evaporator temp readings associated with suspected valve to verify it is closed. If it's open, Check solenoid electrical connections to make sure they're not crossed. Unplug solenoid to see if valve closes. If valve closes, replace solenoid. If valve does not close, replace valve.
F. 1. "EXTREMELY' COLD TEMPERATURES DISPLAYED (3° TO 18°) ***2. If outside US - this could be* "EXTREMELY' WARM TEMPERATURES DISPLAYED (38° TO 65°)**	**1. Control Set to Display Celsius but Customer Thought it Was Fahrenheit** **2. If Outside US - Control Set to Display Fahrenheit but Customer Thought it Was Celsius**	1. Initiate Temperature Units Selection Mode and select Fahrenheit units of measure. 2. Initiate Temperature Units Selection Mode and select Celsius units of measure.
G. "SERVICE" FLASHING	**SEE PAGE 8-2 OF THIS MANUAL**	SEE PAGE 8-2 OF THIS MANUAL
H. "EE" DISPLAYED FOR EITHER WINE STORAGE COMPARTMENT WITH "SERVICE" FLASHING	**Compartment Thermistor Fault**	Check thermistor electrical connections back to control board. Correct wiring problems. Check thermistor ohms = 30,000 - 33,000 at 32°F / 0°C. Replace if defective.
I. LIGHTS STAY ON IN EITHER WINE STORAGE COMPARTMENT	**Lights Switched "ON" 100%**	Press & release LIGHTS ON/OFF key.
	Fan & Light Switch Wiring Crossed	Check wiring at fan & light switch, and at control board. Rewire if incorrect.
	Light Switch Malfunction	Press & release LIGHTS ON/OFF key, then depress light switch. Repeat steps. If no effect, replace switch.
J. LIGHTS WILL NOT ENERGIZE IN ONE OR BOTH WINE STORAGE COMPARTMENTS	**Unit in Sabbath Mode**	Press & release UNIT ON/OFF key.
	Lights Burned-out	Plug in known good lights. If they work, replace defective lights.
	Light Switch Disconnected or Malfunctioning	Check light switch operation and electrical connections. Check for 115V AC to and from switch. Reconnect wires or replace switch if defective.
	No Power from Control Board	Check for 115V AC between P10 of J3 and E3 on control board. (NOTE: make sure unit is not in Sabbath Mode) If no power, replace board.

PROBLEM	POSSIBLE CAUSE	TEST / ACTION
K. CONTROL PANEL KEYS INOPERABLE OR MAL-FUNCTIONING	**Control Panel Ribbon Cable Plugged in Wrong**	Check control panel ribbon cable (silver area on the ribbon cable terminal should be facing away from the control board). Plug in correctly if incorrect.
	Control Panel or Ribbon Cable Defective (OR) No Signal Read at Control Board	SEE CONTROL PANEL TEST PROCEDURE AT BACK OF TROUBLESHOOTING GUIDE SECTION.
L. LED's DO NOT ILLUMINATE	**Unit Switched OFF**	Press UNIT ON/OFF key
	Led Ribbon Cable Plugged in Wrong	Check LED ribbon cable. Plug in correctly if incorrect.
	No Data from Control Board	Replace Control Board
M. ALL LED's STAY ILLUMI-NATED	**Bad Data from Control Board**	Replace Control Board
N. SAME SEGMENT(S) MISS-ING FROM BOTH DISPLAY WINDOWS	**Bad Data from Control Board**	Replace Control Board
O. SEGMENT(S) MISSING FROM ONLY ONE DISPLAY WINDOWS	**Bad LED Board in Control Panel**	Replace Control Panel Assembly
P. DOOR / UNIT UN-LEVEL	**SEE SECTION 2 OF THIS MANUAL**	SEE SECTION 2 OF THIS MANUAL

PROBLEM	POSSIBLE CAUSE	TEST / ACTION
Q. WARM TEMPERATURE IN REFRIGERATOR COMPARTMENT *<u>Troubleshooting pointer:</u>* *After checking the first six possible problems in column 2, open drawer to energize compressor.* *With compressor running, depress Reed switch to see if evap fan energizes, If not, see Evaporator Fan Fault.* *If fan checks OK, then release switch and observe evaporator temperatures for five minutes with drawer open and compressor running.* *1. If evap temp pulls down to 15°F / -9°C, see:* • *Evaporator Fan Fault (a. fan blade position)* • *Sealed System Leak or Restriction* *2. If evap temp cannot pull down to 30°F / -1°C, see:* • *Condenser Air flow / Condenser Fan Fault* • *Compressor Fault* • *sealed system leak or restriction* ***(Continued)***	**Control Set Too Warm**	Check set-points. Adjust set-points COLDER
	Unit Recently Energized	Allow time for unit to pull down
	Unit Recently Stocked with Food	Instruct customer
	High Room Ambient	Instruct Customer that unit performs best between 60°F / 16°C - 90°F / 32°C
	Unit in Showroom Mode	Open drawer, adjust set-points colder & listen for compressor operation. If compressor does not energize after 5 minutes with drawer open, switch refrigerator OFF then press & hold COLDER & WARMER keys while pressing UNIT ON/OFF key.
	Drawer Ajar a. Food Product Obstruction b. Drawer Not Installed Correctly c. Drawer Closer Tripped Forward	 a. Move obstruction b. Reinstall drawer. c. Trip closer forward, or replace if defective.
	Evaporator Fan Fault a. Fan Blade out of Position or Obstructed b. Reed Switch Disconnected or Malfunctioning c. Fan Motor Disconnected or Malfunctioning d. No Power from Control Board	 a. Check fan blade position. (See section 5 of this manual.) Reposition blade or remove obstructions. b. Check Reed switch operation and electrical connections. Check for 5V DC to and from switch. Reconnect wires or replace Reed switch if defective. c. Check fan motor operation by pressing either Reed switch. Check fan motor electrical connections. Also check for 115V AC to motor. Reconnect or repair wires or replace motor if defective. d. Check for 115V AC between P5 & P8 on control board. (NOTE: make sure unit is not in showroom Mode) If no power between P5 & P8, replace board.
	Condenser Air Flow / Fan Fault a. Dirty Condenser b. Condenser Fan Blade Loose or Obstructed c. Fan Motor Disconnected or Malfunctioning d. Defective or disconnected fan relay (427R after serial #1944319 Only)	 a. Clean condenser. Clean if needed. b. Check fan blade. Tighten or remove obstruction. c. Check fan motor operation. Check fan motor electrical connections back to compressor. Check for 115V AC from compressor to motor. Reconnect or repair wires or replace motor if defective. d. Check electrical connections and power at 427R condenser fan relay. Reconnect or replace relay if defective.
	Compartment Thermistor Fault (Misread)	Check thermistor ohms = 30,000 - 33,000 at 32°F / 0°C. Replace if defective.

PROBLEM	POSSIBLE CAUSE	TEST / ACTION
(Continued) **Q. WARM TEMPERATURE IN REFRIGERATOR COMPARTMENT** *(See Pointers on previous page)*	**Compressor Fault** a. Compressor Electricals Disconnected or Malfunctioning	a. Check integrity of compressor electricals. Check electrical connections back to control board. Replace defective electricals or repair wiring. Check for 115V AC between P5 & P14 on the control board. Correct any wiring problems or replace compressor electricals if defective. If no power at between P5 & P14, replace board. (NOTE: Compressor will not energize unless evaporator is above 40°F / 4°C.)
	b. Compressor Inefficient or Locked	b. Check AMP draw on compressor. If high by 15% or more, replace compressor.
	Sealed System Leak or Restriction	SEE SEALED SYSTEM DIAGNOSTIC INFORMATION FOLLOWING THIS GENERAL TROUBLESHOOTING GUIDE.
R. "EE" and "SERVICE" FLASHING *(Before serial #1728753, the Drawer Location Annunciators will flash)*	**Compartment Thermistor Fault**	Check electrical connections to thermistor and check thermistor ohms = 30,000 - 33,000 at 32°F / 0°C. Repair connections or replace if defective.
S. "EO" OR "E3" and "SERVICE" FLASHING *(Before serial #1728753, the Drawer Location Annunciators will flash)*	**Control Cable Disconnected or Faulty**	Check control cable and connections between control panel and Methode connector on back duct. Reconnect, repair or replace if defective.
	Disconnected or Faulty Wiring between Back Duct and Electronic Control Board	Check wiring from Methode connector on back duct to electronic control board. Reconnect, repair or replace if defective.
	Faulty Control Panel or Electronic Control Board	If unit passes all tests above, replace control panel and electronic control board.
T. "SERVICE" ALONE FLASHING *(Before serial #1728753, the Drawer Location Annunciators will flash)*	**Evaporator Thermistor Fault**	Initiate Diagnostic Mode. If "EE" is displayed for evap temp, check thermistor electrical connections back to control board. Correct wiring problems. If wiring is OK, verify thermistor is in correct location. Relocate if needed. Check thermistor ohms = 30,000 - 33,000 at 32°F / 0°C. Replace if defective.
U. PRODUCT TEMPERATURE IN REFRIGERATOR 10° OR MORE COLDER THAN DISPLAYED TEMPERATURE	**Compartment Thermistor Fault (Misread)**	Check thermistor ohms = 30,000 - 33,000 at 32°F / 0°C. Replace if defective. If thermistors are OK, replace control board.
V. COLD TEMPERATURE DISPLAYED IN REFRIGERATOR COMPARTMENT	**Control Set Too Cold**	Check set-points. Adjust set-points WARMER
	Drawer Ajar A. Food Product Obstruction B. Drawer Not Installed Correctly C. Drawer Closer Tripped Forward	a. Move obstruction b. Reinstall drawer. c. Trip closer forward, or replace if defective.

PROBLEM	POSSIBLE CAUSE	TEST / ACTION
W. 1. "EXTREMELY' COLD TEMPERATURES DISPLAYED IN REFRIGERATOR (1° TO 7°)	**1. Control Set to Display Celsius but Customer Thought it Was Fahrenheit**	1. Initiate Temperature Units Selection Mode and select Fahrenheit units of measure.
***2. If outside US - this could be* "EXTREMELY' WARM TEMPERATURES DISPLAYED IN REFRIGERATOR (34° TO 45°)**	**2. If Outside US - Control Set to Display Fahrenheit but Customer Thought it Was Celsius**	2. Initiate Temperature Units Selection Mode and select Celsius units of measure.
X. LIGHTS STAY ON WITH DRAWER CLOSED	**Reed Switch Wiring**	Check wiring between Reed switch and control board. Rewire if incorrect.
Y. LIGHTS WILL NOT ENERGIZE	**Unit in Sabbath Mode**	Press & release UNIT ON/OFF key.
	Lights Burned-out	Plug in known good lights. If they work, replace defective lights.
	Reed Switch Disconnected or Malfunctioning	Check Reed switch operation and electrical connections. Check for 5V DC to and from switch. Reconnect wires or replace switch if defective.
	No Power from Control Board	Check for 115V AC between P7 and P5 on control board. (NOTE: make sure unit is not in Sabbath Mode) If no power, replace board.
Z. CONTROL PANEL KEYS &/OR LCD INOPERABLE OR MALFUNCTIONING	**Control Cable Disconnected or Faulty**	Check control cable and connections between control panel and Methode connector on back duct. Reconnect, repair or replace if defective.
	Disconnected or Faulty Wiring between Back Duct and Electronic Control Board	Check wiring from Methode connector on back duct to electronic control board. Reconnect, repair or replace if defective.
	Faulty Control Panel or Electronic Control Board	If unit passes all tests above, replace control panel and electronic control board.
AA. DRAWER(S) / UNIT UNLEVEL	**SEE SECTION 2 OF THIS MANUAL**	SEE SECTION 2 OF THIS MANUAL

SEALED SYSTEM DIAGNOSTIC INFORMATION:

Before troubleshooting the sealed system with the information below, see pages 8-2 through 8-15 in this manual.

NOTE: *Whenever entering the sealed system, always use solder-in process valves. Do NOT use bolt-on process valves as they are prone to leak.*

NOTE: *Whenever servicing the sealed system, the high-side filter-drier must be replaced.*

NORMAL OPERATING PRESSURES		
Model	**Normal Low Side Pressures**	**Normal High Side Pressures**
424	**8 psi to 38 psi**	**90 psi to 100 psi**
427	**8 psi to 38 psi**	**90 psi to 100 psi**
427R - Wine Storage	**8 psi to 38 psi**	**90 psi to 100 psi**
427R - Refrigerator	**10 psi to 40 psi**	**90 psi to 100 psi**
430	**8 psi to 38 psi**	**90 psi to 100 psi**

PRESSURE INDICATIONS		
If low side pressure is	***& high side pressure is***	***possible problem is***
NORMAL	*NORMAL*	*MECHANICAL* *(see General Troubleshooting Guide)*
LOW	*LOW*	*LEAK*
LOW	*HIGH*	*RESTRICTION*
HIGH	*LOW*	*INEFFICIENT COMPRESSOR*
HIGH	*HIGH*	*OVER CHARGE*

NOTE: *The 427R Refrigerator Sealed System Service Procedures for 134a are the same as those in the table at right, except for the "NOTE" in the second column of the table.*

WINE STORAGE SEALED SYSTEM REPAIR PROCEDURES

Problem	Service Procedures
Non-Operating, Inefficient, Noisy Compressor *(**NOTE**: To check for a non-operating compressor, a hard start kit can be used)*	a. Capture refrigerant b. Replace Compressor c. Replace filter-drier d. Evacuate or sweep charge system ***NOTE:** If evacuating the sealed system, you must evacuate from both the low & high sides, due to the refrigerant valves. If sweep charging the sealed system, you must energize each refrigerant valves during the sweeping procedure. (See Manual Valve Activation Mode in Section 3)* e. Recharge system with Virgin 134a refrigerant.
High Side leak	a. Capture refrigerant. b. Repair leak. c. Replace filter-drier. d. Evacuate or sweep charge system. ***NOTE:** If evacuating the sealed system, you must evacuate from both the low & high sides, due to the refrigerant valves. If sweep charging the sealed system, you must energize each refrigerant valves during the sweeping procedure. (See Manual Valve Activation Mode in Section 3)* e. Recharge system with Virgin 134a refrigerant.
Low Side Leak	a. Capture refrigerant. b. Repair leak (if at solder joint) or replace part. c. Back flush high side of sealed system. d. Replace compressor. e. Replace filter-drier. f. Evacuate or sweep charge system. ***NOTE:** If evacuating the sealed system, you must evacuate from both the low & high sides, due to the refrigerant valves. If sweep charging the sealed system, you must energize each refrigerant valves during the sweeping procedure. (See Manual Valve Activation Mode in Section 3)* g. Recharge system with Virgin 134a refrigerant.
Contaminated Sealed System *Examples:* > *Burned out compressor* > *Excessive moisture from leak in condensate loop or in low side* > *Plugged capillary tube*	a. Capture refrigerant. b. Repair leak (if at solder joint) or replace part. c. Back flush high side of sealed system. d. Replace compressor. e. Replace filter-drier. f. Replace heat exchanger if cap tube is clogged. g. Install a low side drier on suction line. h. Evacuate or sweep charge sealed system. ***NOTE:** If evacuating the sealed system, you must evacuate from both the low & high sides, due to the refrigerant valves. If sweep charging the sealed system, you must energize each refrigerant valves during the sweeping procedure. (See Manual Valve Activation Mode in Section 3)* i. Recharge with Virgin 134a refrigerant.
Restriction *(**NOTE**: If restriction is due to sealed system being contaminated, see Contaminated Sealed System above.)*	a. Capture refrigerant. b. Locate and remove restriction or locate and replace part. c. Back flush high side of sealed system. d. Replace filter-drier. e. Evacuate or sweep charge system. ***NOTE:** If evacuating the sealed system, you must evacuate from both the low & high sides, due to the refrigerant valves. If sweep charging the sealed system, you must energize each refrigerant valves during the sweeping procedure. (See Manual Valve Activation Mode in Section 3)* f Recharge system with Virgin 134a refrigerant.
Overcharge	a. Capture refrigerant. b. Replace filter-drier. c. Evacuate or sweep charge system. ***NOTE:** If evacuating the sealed system, you must evacuate from both the low & high sides, due to the refrigerant valves. If sweep charging the sealed system, you must energize each refrigerant valves during the sweeping procedure. (See Manual Valve Activation Mode in Section 3)* d. Recharge system with Virgin 134a refrigerant.

WINE STORAGE MEMBRANE SWITCH / RIBBON CABLE TEST PROCEDURE

The membrane switch is that part of the control panel assembly consisting of the function keys used for all input functions to the electronic control system. (See Figure 8-1)

Below is the procedure to follow if the integrity of the membrane switch and/or its ribbon cable is suspect. To perform these tests, the ribbon cable terminal housing must be disconnected from the control board.

NOTE: *The wires of the ribbon cable are exposed at the back side of the terminal housing. With an Ohm Meter, check for continuity at these exposed points/pins. Pin #1 is at the top of the terminal housing, closest to the arrow on the housing (see Figure 8-1).*

1. Without pressing any of the keys on the membrane switch, check for continuity across all pin combinations. With no keys pressed, there should be no continuity.
2. With the UNIT ON/OFF key depressed, there should be continuity across pins #4 & #6 only.
3. With the lower wine storage COLDER key depressed, there should be continuity across pins #2 & #3 only.
4. With the lower wine storage WARMER key depressed, there should be continuity across pins #3 & #4 only.
5. With the upper wine storage COLDER key depressed, there should be continuity across pins #2 & #6 only.
6. With the upper wine storage WARMER key depressed, there should be continuity across pins #5 & #7 only.
7. With the LIGHTS ON/OFF key depressed, there should be continuity across pins #5 & #6 only.
8. With the alarm bell key depressed, there should be continuity across pins #3 & #7 only.

NOTE: *If the membrane switch fails any of the fore mentioned tests, the control panel assembly should be replaced. If all the tests are passed and the control panel is still inoperable, replace the control board.*

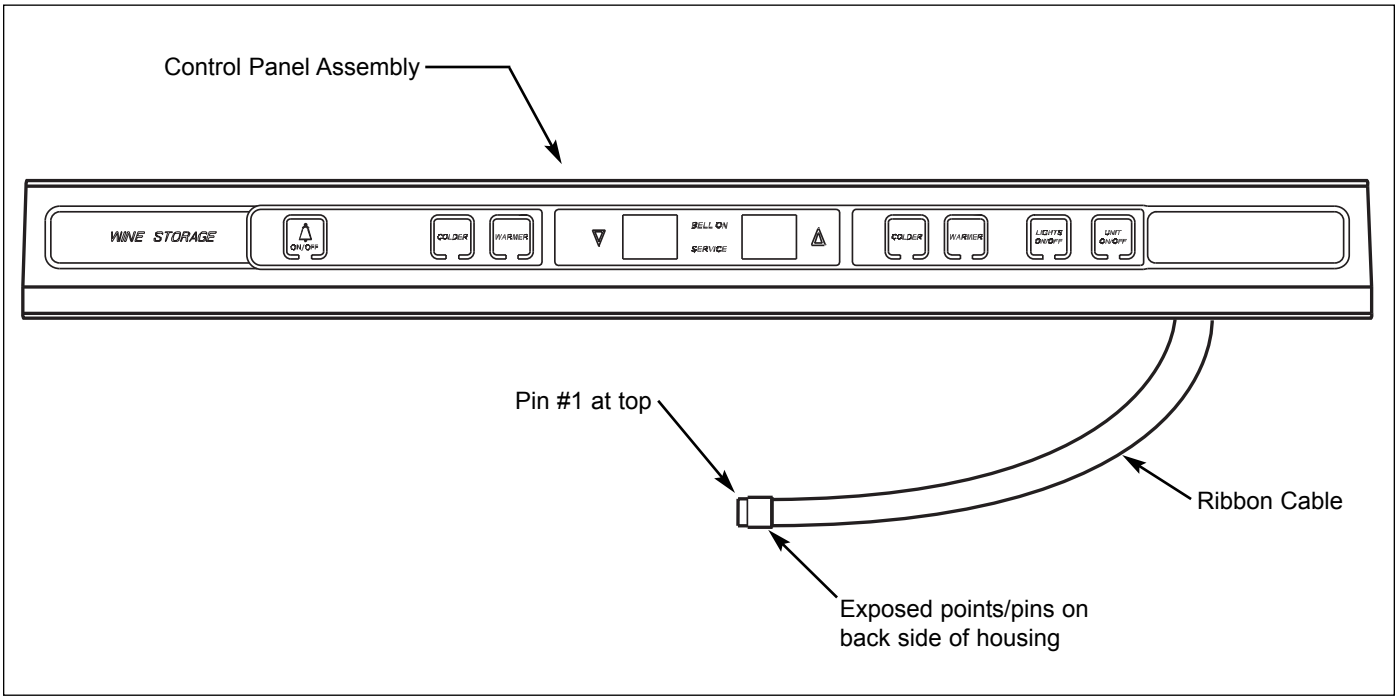


Figure 8-1. Membrane Switch

SECTION 9

TECHNICAL DATA

MODEL 424 TECHNICAL DATA TABLE

REFRIGERANT CHARGE *(R-134a Refrigerant)*	4.0 Ounces
NORMAL SYSTEM OPERATING PRESSURES ***NOTE:*** *These pressure readings are for verification purposes only. The only time pressures should be checked is if a sealed system problem is suspected after trouble-shooting through the control panel.*	
LOW SIDE PRESSURES	8 psi to 38 psi
HIGH SIDE PRESSURE	90 psi to 100 psi
COMPRESSOR	
SERVICE PART NUMBER	4201880
MANUFACTURER	Embraco
MFG. PART NUMBER	EMI30HER
SERVICE COMPRESSOR AMPS	0.9
SERVICE COMPRESSOR BTU's	280
DEFROST METHOD	Off - Cycle Defrost *Evaporator(s) > 39°F / 4°C to 66°F / 19°C, depending on set-point, before calling for cooling.*
REFRIGERANT SOLENOID VALVES	
SERVICE PART NUMBER	4290350
WATTS	7.5
AMPS	0.1
OHMS	160 - 360
EVAPORATOR FAN MOTORS	
SERVICE PART NUMBER	3150680
WATTS	6.5
AMPS	0.1
OHMS	55
THERMISTORS	
SERVICE PART NUMBER	3014350
OHMS *(at 32°F / 0°C)*	30000 - 33000

MODEL 427 TECHNICAL DATA TABLE

REFRIGERANT CHARGE *(R-134a Refrigerant)*	5.0 Ounces
NORMAL SYSTEM OPERATING PRESSURES ***NOTE:*** *These pressure readings are for verification purposes only. The only time pressures should be checked is if a sealed system problem is suspected after trouble-shooting through the control panel.*	
LOW SIDE PRESSURES	8 psi to 38 psi
HIGH SIDE PRESSURE	90 psi to 100 psi
COMPRESSOR	
SERVICE PART NUMBER	4201880
MANUFACTURER	Embraco
MFG. PART NUMBER	EMI30HER
SERVICE COMPRESSOR AMPS	0.9
SERVICE COMPRESSOR BTU's	280
DEFROST METHOD	Off - Cycle Defrost *Evaporator(s) > 39°F / 4°C to 66°F / 19°C, depending on set-point, before calling for cooling.*
REFRIGERANT SOLENOID VALVES	
SERVICE PART NUMBER	4290350
WATTS	7.5
AMPS	0.1
OHMS	160 - 360
EVAPORATOR FAN MOTORS	
SERVICE PART NUMBER	3150680
WATTS	6.5
AMPS	0.1
OHMS	55
THERMISTORS	
SERVICE PART NUMBER	3014350
OHMS *(at 32°F / 0°C)*	30000 - 33000

MODEL 427R TECHNICAL DATA TABLE

	WINE STORAGE	REFRIGERATOR
REFRIGERANT CHARGE *(R-134a Refrigerant)*	4.5 Ounces	3.5 Ounces
NORMAL SYSTEM OPERATING PRESSURES ***NOTE:*** *These pressure readings are for verification purposes only. The only time pressures should be checked is if a sealed system problem is suspected after trouble-shooting through the control panel.*		
LOW SIDE PRESSURES	8 psi to 38 psi	10 psi to 40 psi
HIGH SIDE PRESSURE	90 psi to 100 psi	90 psi to 100 psi
COMPRESSOR		
SERVICE PART NUMBER	4201880	4201880
MANUFACTURER	Embraco	Embraco
MFG. PART NUMBER	EMI30HER	EMI30HER
SERVICE COMPRESSOR AMPS	0.9	0.9
SERVICE COMPRESSOR BTU's	280	280
DEFROST METHOD	Off - Cycle Defrost *Evap.(s) > 39°F / 4°C to 66°F / 19°C, depending on set-point, before calling for cooling.*	Off - Cycle Defrost *Evaporator > 40°F / 4°C before compressor allowed ON*
REFRIGERANT SOLENOID VALVES		
SERVICE PART NUMBER	4290350	----
WATTS	7.5	----
AMPS	0.1	----
OHMS	160 - 360	----
EVAPORATOR FAN MOTORS		
SERVICE PART NUMBER	3150680	3150680
WATTS	6.5	6.5
AMPS	0.1	0.1
OHMS	55	55
THERMISTORS		
SERVICE PART NUMBER	3014350	3014350
OHMS *(at 32°F / 0°C)*	30000 - 33000	30000 - 33000

MODEL 430 TECHNICAL DATA TABLE

REFRIGERANT CHARGE *(R-134a Refrigerant)*	5.5 Ounces
NORMAL SYSTEM OPERATING PRESSURES ***NOTE:*** *These pressure readings are for verification purposes only. The only time pressures should be checked is if a sealed system problem is suspected after trouble-shooting through the control panel.*	
LOW SIDE PRESSURES	8 psi to 38 psi
HIGH SIDE PRESSURE	90 psi to 100 psi
COMPRESSOR	
SERVICE PART NUMBER	4201880
MANUFACTURER	Embraco
MFG. PART NUMBER	EMI30HER
SERVICE COMPRESSOR AMPS	0.9
SERVICE COMPRESSOR BTU's	280
DEFROST METHOD	Off - Cycle Defrost *Evaporator(s) > 39°F / 4°C to 66°F / 19°C, depending on set-point, before calling for cooling.*
REFRIGERANT SOLENOID VALVES	
SERVICE PART NUMBER	4290350
WATTS	7.5
AMPS	0.1
OHMS	160 - 360
EVAPORATOR FAN MOTORS	
SERVICE PART NUMBER	3150680
WATTS	6.5
AMPS	0.1
OHMS	55
THERMISTORS	
SERVICE PART NUMBER	3014350
OHMS *(at 32°F / 0°C)*	30000 - 33000

SECTION 10

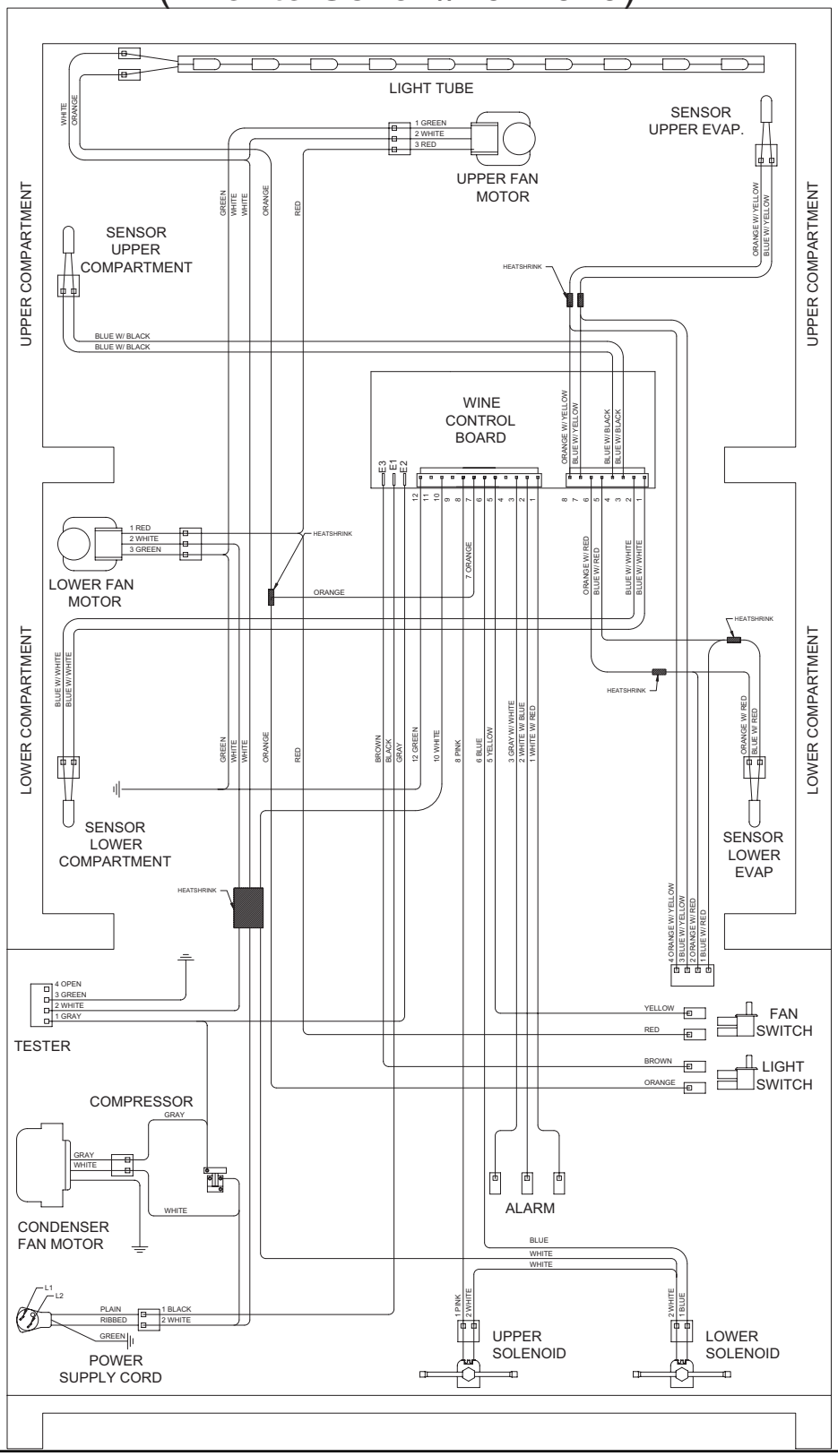
WIRING DIAGRAMS & SCHEMATICS

NOTE: Due to our continuous improvement program, it is recommended to always use the wiring diagram & schematic supplied with the unit, located in the envelope in the compressor area. This section is for referencing prior to servicing or if the wiring diagram & schematic are missing from the unit.

WIRING DIAGRAM
MODEL 424
(Prior to Serial #1944319)

⚠ WARNING

- This wiring information is provided for use by qualified service personnel only.
- Disconnect appliance from electrical supply before beginning service.
- Be sure all grounding devices are connected when service is complete.
- Failure to observe the above warnings may result in severe electrical shock.



400 SERIES CONTROL BOARD SUMMARY/ LAYOUT

CIRCUIT	DESCRIPTION	COLOR	CIRCUIT	DESCRIPTION	FUNCTION	COLOR
	120 VOLT CIRCUITS			LOW VOLTAGE CIRCUITS		
E1	POWER IN	BLACK	J3	ALARM CIRCUIT		
E2	POWERS COMPRESSOR	GRAY	P1	ALARM CIRCUIT- NORMALLY OPEN	FOR HOME ALARMS	WHT/RED
E3	POWERS LIGHTS	BROWN	P2	ALARM CIRCUIT-NORMALLY CLOSED	FOR HOME ALARMS	WHT/BLUE
			P3	ALARM CIRCUIT-COMMON	FOR HOME ALARMS	GRAY/WHT
J3						
P12	GROUND	GREEN	J2	THERMISTER CIRCUITS		
P11	EMPTY		P1	LOWER CABINET	SENSES TEMPERATURE	BLUE/WHITE
P10	NEUTRAL	WHITE	P2	LOWER CABINET	SENSES TEMPERATURE	BLUE/WHITE
P9	EMPTY		P3	UPPER CABINET	SENSES TEMPERATURE	BLUE/BLACK
P8	UPPER SOLENOID VALVE	PINK	P4	UPPER CABINET	SENSES TEMPERATURE	BLUE/BLACK
P7	LIGHTS OVERRIDE ON WHEN LIGHTS ON 100 %	ORANGE	P5	LOWER EVAPORATOR	SENSES TEMPERATURE	BLUE/RED
P6	LOWER SOLENOID VALVE	BLUE	P6	LOWER EVAPORATOR	SENSES TEMPERATURE	ORANGE/RED
P5	EVAPORATOR FANS	YELLOW	P7	UPPER EVAPORATOR	SENSES TEMPERATURE	BLUE/YELLOW
P4	EMPTY		P8	UPPER EVAPORATOR	SENSES TEMPERATURE	ORANGE/YELL

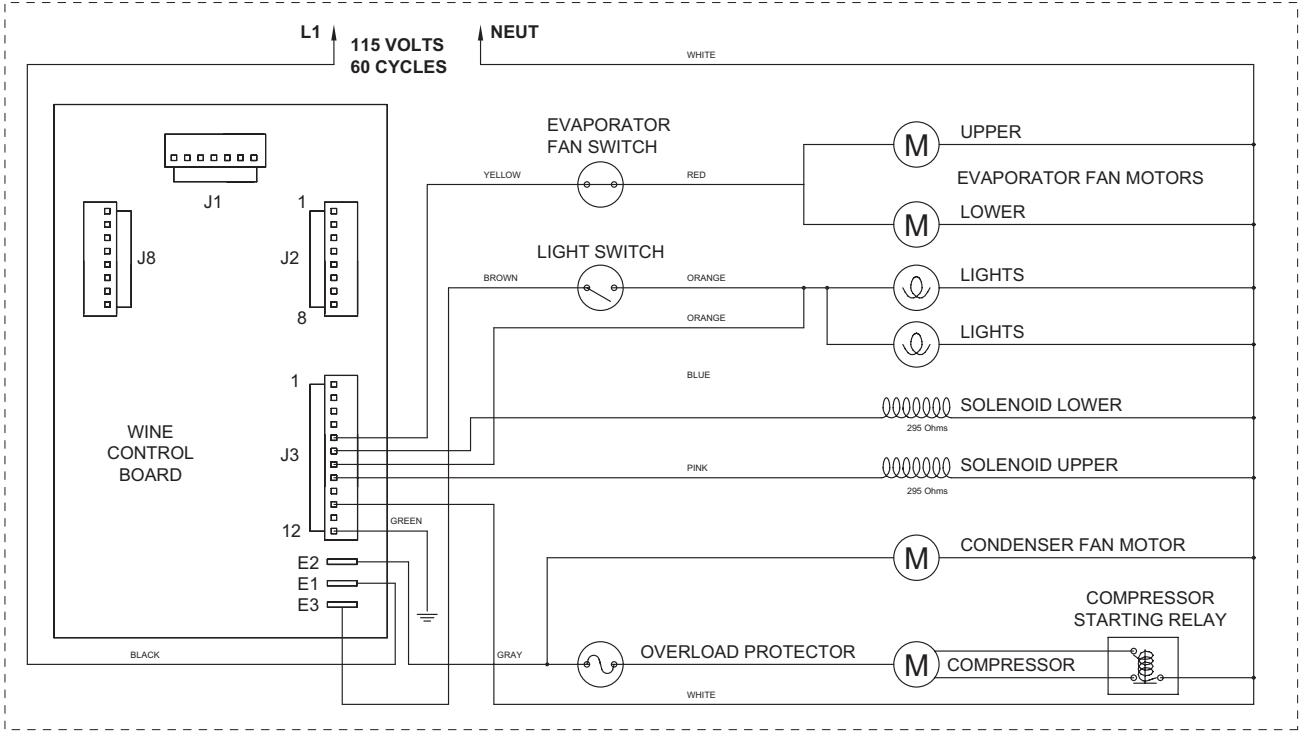
PART NUMBER 3756360 - Rev. C

WIRING SCHEMATIC
MODEL 424
(Prior to Serial #1944319)

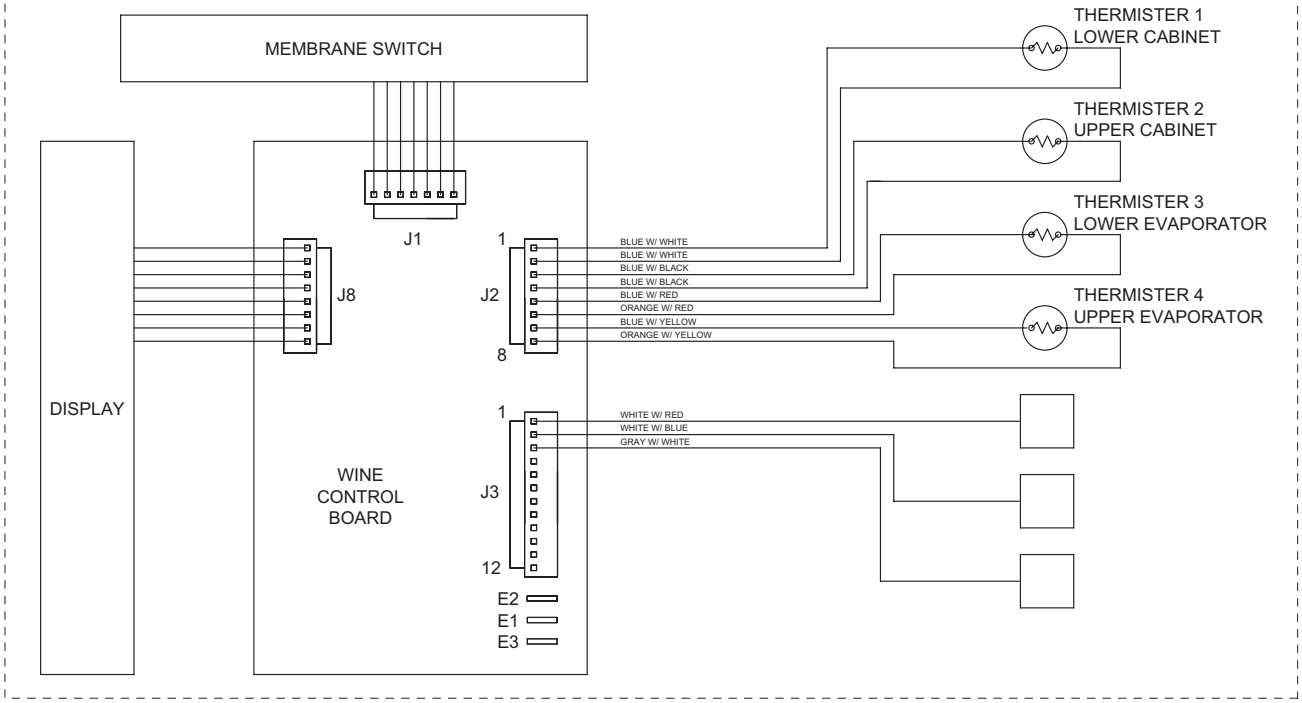
⚠ WARNING

-This wiring information is provided for use by qualified service personnel only.
-Disconnect appliance from electrical supply before beginning service.
-Be sure all grounding devices are connected when service is complete.
-Failure to observe the above warnings may result in severe electrical shock.

HIGH VOLTAGE



LOW VOLTAGE

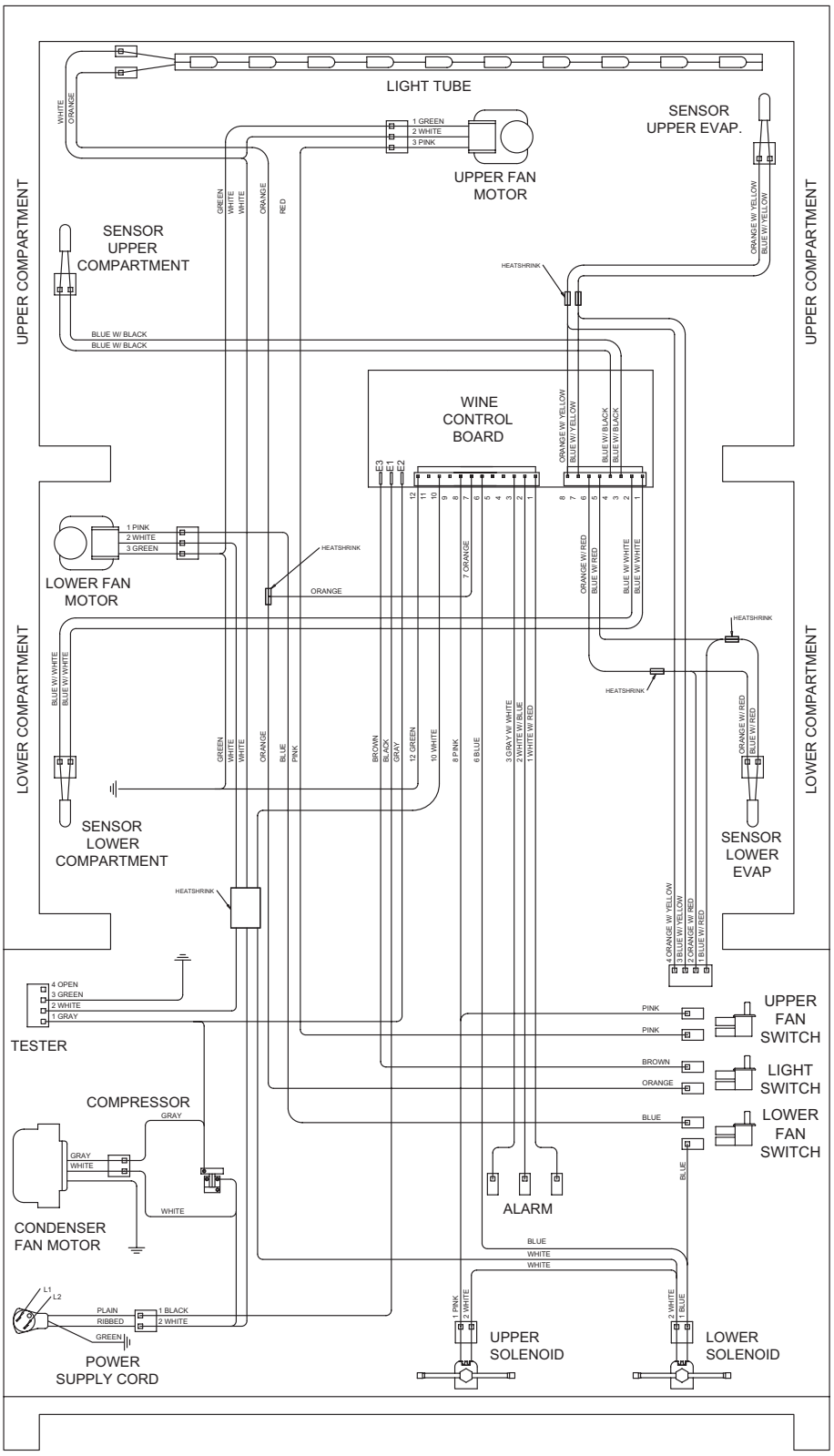


PART NUMBER 3756360

WIRING DIAGRAM
MODEL 424
(Starting with Serial #1944319)

⚠ WARNING

- This wiring information is provided for use by qualified service personnel only.
- Disconnect appliance from electrical supply before beginning service.
- Be sure all grounding devices are connected when service is complete.
- Failure to observe the above warnings may result in severe electrical shock.



400 SERIES CONTROL BOARD SUMMARY/ LAYOUT

CIRCUIT	DESCRIPTION	COLOR	CIRCUIT	DESCRIPTION	FUNCTION	COLOR
	120 VOLT CIRCUITS			LOW VOLTAGE CIRCUITS		
E	POWER IN	BLACK	J3	ALARM CIRCUIT		
E2	POWERS COMPRESSOR	GRAY	P	ALARM CIRCUIT-NORMALLY OPEN	FOR HOME ALARMS	WHT/RED
E3	POWERS LIGHTS	BROWN	P2	ALARM CIRCUIT-NORMALLY CLOSED	FOR HOME ALARMS	WHT/BLUE
			P3	ALARM CIRCUIT-COMMON	FOR HOME ALARMS	GRAY/WHT
J3						
P12	GROUND	GREEN	J2	THERMISTER CIRCUITS		
P11	EMPTY		P	LOWER CABINET	SENSES TEMPERATURE	BLUE/WHITE
P10	NEUTRAL	WHITE	P2	LOWER CABINET	SENSES TEMPERATURE	BLUE/WHITE
P9	EMPTY		P3	UPPER CABINET	SENSES TEMPERATURE	BLUE/BLACK
P8	UPPER SOLENOID VALVE	PINK	P4	UPPER CABINET	SENSES TEMPERATURE	BLUE/BLACK
P7	LIGHTS OVERRIDE	ORANGE	P5	LOWER EVAPORATOR	SENSES TEMPERATURE	BLUE/RED
P6	LOWER SOLENOID VALVE	BLUE	P6	LOWER EVAPORATOR	SENSES TEMPERATURE	ORANGE/RED
P5	EVAPORATOR FANS	YELLOW	P7	UPPER EVAPORATOR	SENSES TEMPERATURE	BLUE/YELLOW
P4	EMPTY		P8	UPPER EVAPORATOR	SENSES TEMPERATURE	ORANGE/YELL

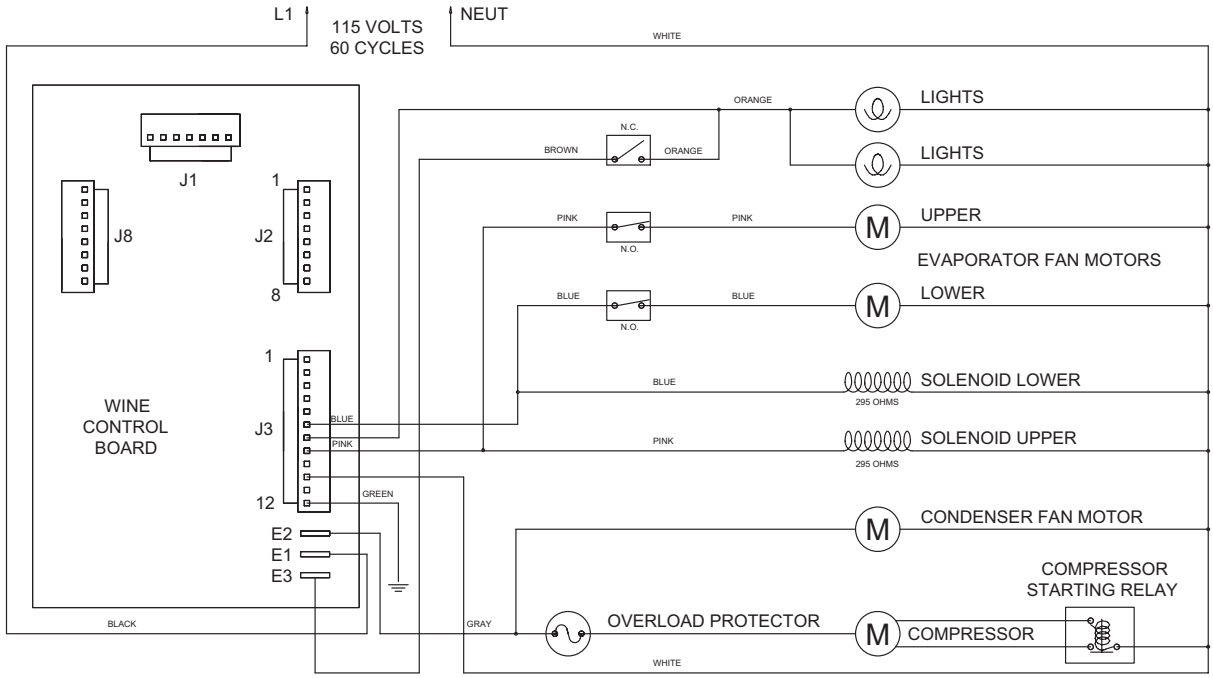
PART NUMBER 3757510 REV A

WIRING SCHEMATIC
MODEL 424
(Starting with Serial #1944319)

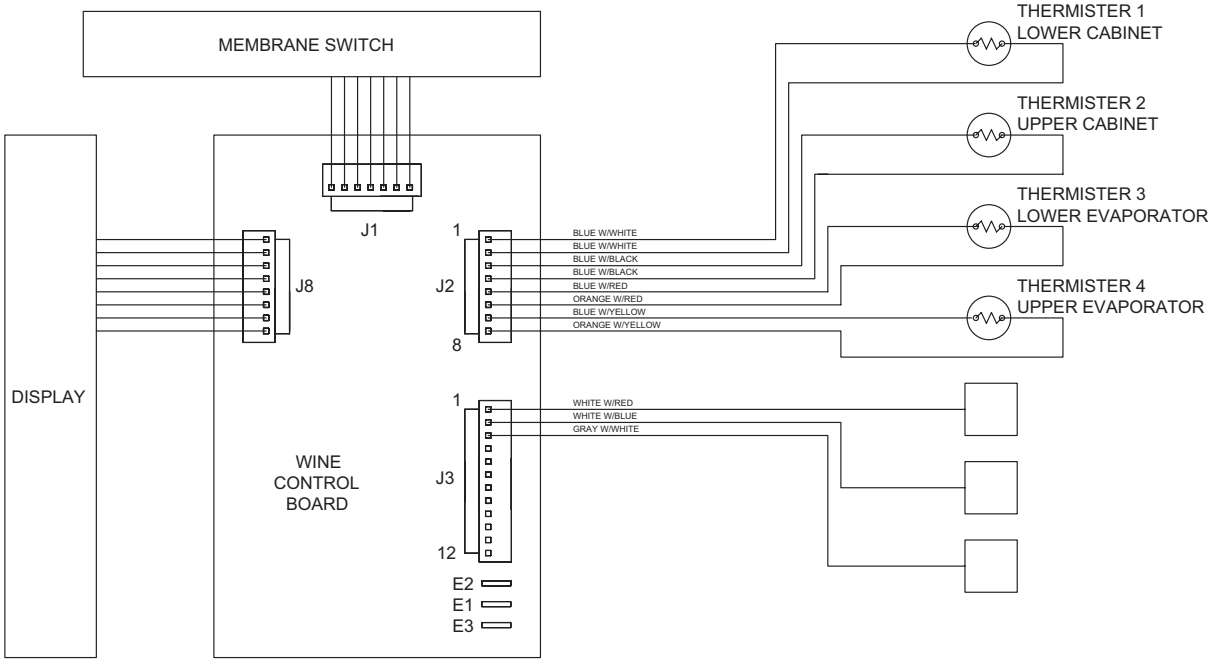
⚠ WARNING

-This wiring information is provided for use by qualified service personnel only.
-Disconnect appliance from electrical supply before beginning service.
-Be sure all grounding devices are connected when service is complete.
-Failure to observe the above warnings may result in severe electrical shock.

HIGH VOLTAGE



LOW VOLTAGE

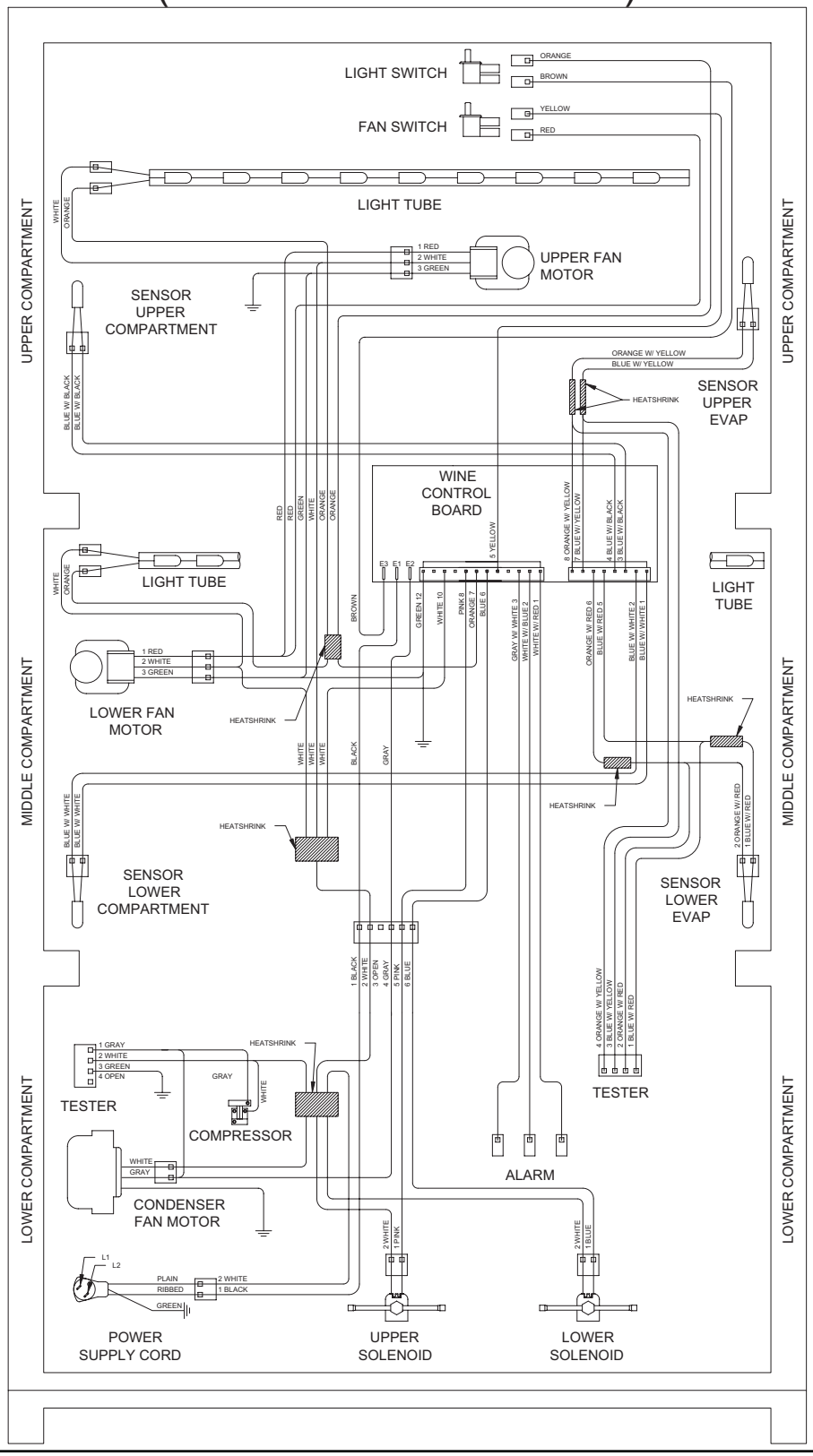


PART NUMBER 3757510 REV A

WIRING DIAGRAM
MODEL 427
(Prior to Serial #1944319)

⚠ WARNING

- This wiring information is provided for use by qualified service personnel only.
- Disconnect appliance from electrical supply before beginning service.
- Be sure all grounding devices are connected when service is complete.
- Failure to observe the above warnings may result in severe electrical shock.



400 SERIES CONTROL BOARD SUMMARY/ LAYOUT

CIRCUIT	DESCRIPTION	FUNCTION	COLOR
	120 VOLT CIRCUITS		
E1	POWER IN	POWER INTO BOARD	BLACK
E2	COMPRESSOR	POWERS COMPRESSOR	GRAY
E3	LIGHTS	POWERS LIGHTS	BROWN
J3			
P12	GROUND	EARTH GROUND	GREEN
P11	EMPTY		
P10	NEUTRAL	NEUTRAL INTO BOARD	WHITE
P9	EMPTY		
P8	UPPER SOLENOID VALVE	COOLS UPPER COMPARTMENT	PINK
P7	LIGHTS OVERRIDE	ON WHEN LIGHTS ON 100 %	ORANGE
P6	LOWER SOLENOID VALVE	COOLS LOWER COMPARTMENT	BLUE
P5	EVAPORATOR FANS	POWERS EVAPORATOR FANS	YELLOW
P4	EMPTY		
	LOW VOLTAGE CIRCUITS		
J3	ALARM CIRCUIT		
P1	ALARM CIRCUIT- NORMALLY OPEN	FOR HOME ALARMS	WHT/RED
P2	ALARM CIRCUIT-NORMALLY CLOSED	FOR HOME ALARMS	WHT/BLUE
P3	ALARM CIRCUIT-COMMON	FOR HOME ALARMS	GRAY/WHT
J2	THERMISTER CIRCUITS	SENSES TEMPERATURE	BLUE/WHITE
P1	LOWER CABINET	SENSES TEMPERATURE	BLUE/WHITE
P2	LOWER CABINET	SENSES TEMPERATURE	BLUE/BLACK
P3	UPPER CABINET	SENSES TEMPERATURE	BLUE/BLACK
P4	UPPER CABINET	SENSES TEMPERATURE	BLUE/RED
P5	LOWER EVAPORATOR	SENSES TEMPERATURE	ORANGE/RED
P6	LOWER EVAPORATOR	SENSES TEMPERATURE	BLUE/YELLOW
P7	UPPER EVAPORATOR	SENSES TEMPERATURE	ORANGE/YELL
P8	UPPER EVAPORATOR	SENSES TEMPERATURE	

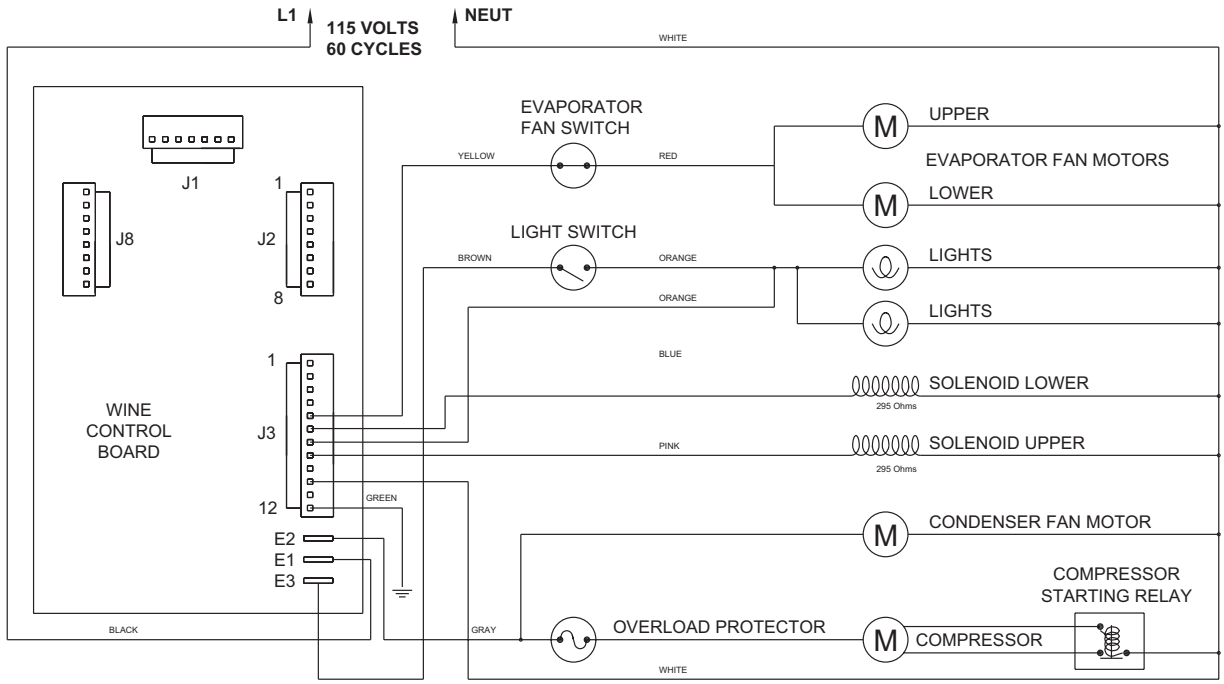
PART NUMBER 3756361 - Rev. B

WIRING SCHEMATIC
MODEL 427
(Prior to Serial #1944319)

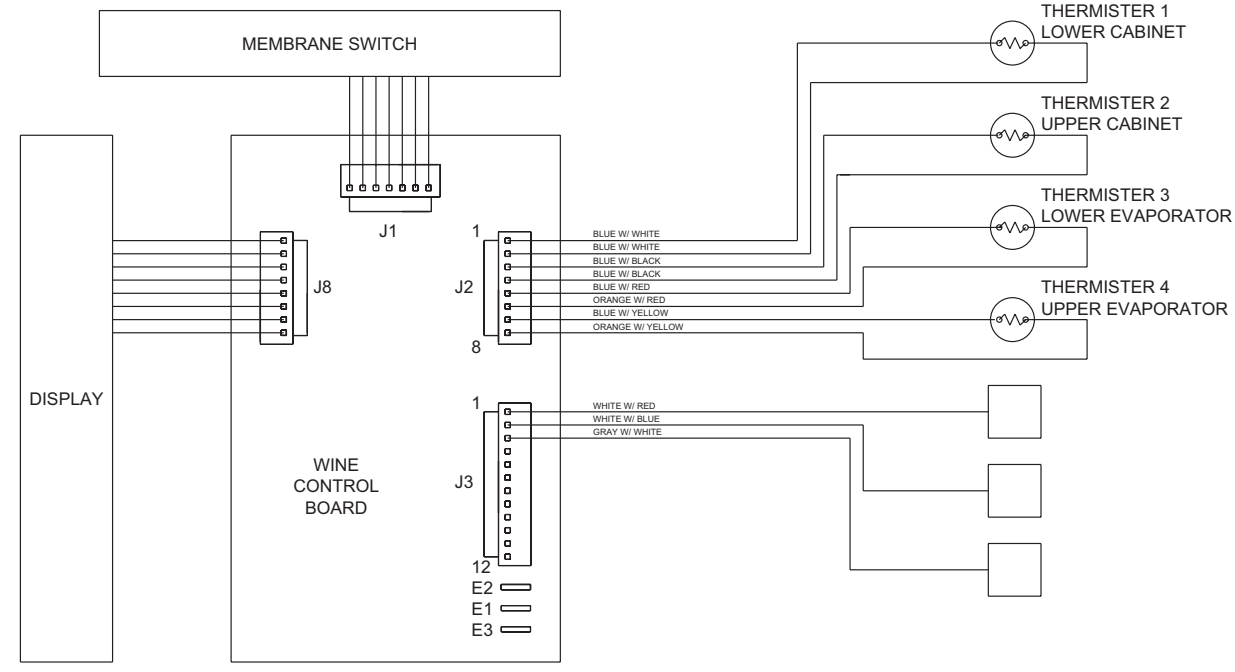
⚠ WARNING

- This wiring information is provided for use by qualified service personnel only.
- Disconnect appliance from electrical supply before beginning service.
- Be sure all grounding devices are connected when service is complete.
- Failure to observe the above warnings may result in severe electrical shock.

HIGH VOLTAGE



LOW VOLTAGE

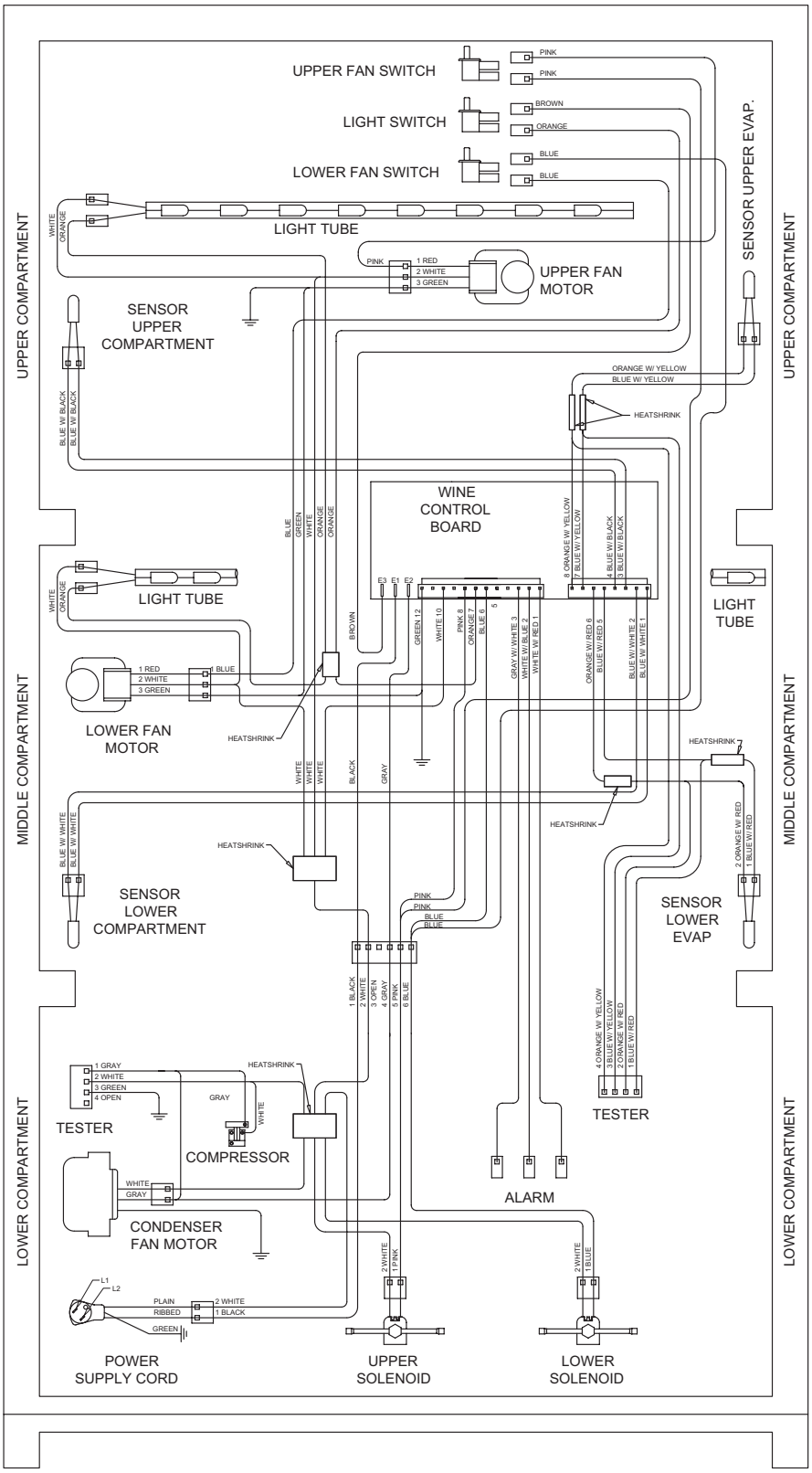


PART NUMBER 3756361

WIRING DIAGRAM
MODEL 427
(Starting with Serial #1944319)

⚠ WARNING

- This wiring information is provided for use by qualified service personnel only.
- Disconnect appliance from electrical supply before beginning service.
- Be sure all grounding devices are connected when service is complete.
- Failure to observe the above warnings may result in severe electrical shock.



400 SERIES CONTROL BOARD SUMMARY/ LAYOUT

CIRCUIT	DESCRIPTION	FUNCTION	COLOR
	120 VOLT CIRCUITS		
E	POWER IN	POWER INTO BOARD	BLACK
E2	COMPRESSOR	POWERS COMPRESSOR	GRAY
E3	LIGHTS	POWERS LIGHTS	BROWN
J3	GROUND	EARTH GROUND	GREEN
P12	EMPTY		
P11	NEUTRAL	NEUTRAL INTO BOARD	WHITE
P10	EMPTY		
P9	UPPER SOLENOID VALVE	COOLS UPPER COMPARTMENT	PINK
P8	LIGHTS OVERRIDE	ON WHEN LIGHTS ON 100%	ORANGE
P7	LOWER SOLENOID VALVE	COOLS LOWER COMPARTMENT	BLUE
P6	EVAPORATOR FANS	POWERS EVAPORATOR FANS	YELLOW
P5	EMPTY		
P4			

CIRCUIT	DESCRIPTION	FUNCTION	COLOR
	LOW VOLTAGE CIRCUITS		
J3	ALARM CIRCUIT		
P	ALARM CIRCUIT-NORMALLY OPEN	FOR HOME ALARMS	WHT/RED
P2	ALARM CIRCUIT-NORMALLY CLOSED	FOR HOME ALARMS	WHT/BLUE
P3	ALARM CIRCUIT-COMMON	FOR HOME ALARMS	GRAY/WHT
J2	THERMISTER CIRCUITS	SENSES TEMPERATURE	BLUE/WHITE
P	LOWER CABINET	SENSES TEMPERATURE	BLUE/WHITE
P2	LOWER CABINET	SENSES TEMPERATURE	BLUE/BLACK
P3	UPPER CABINET	SENSES TEMPERATURE	BLUE/BLACK
P4	UPPER CABINET	SENSES TEMPERATURE	BLUE/RED
P5	LOWER EVAPORATOR	SENSES TEMPERATURE	ORANGE/RED
P6	LOWER EVAPORATOR	SENSES TEMPERATURE	BLUE/YELLOW
P7	UPPER EVAPORATOR	SENSES TEMPERATURE	ORANGE/YELL
P8	UPPER EVAPORATOR	SENSES TEMPERATURE	

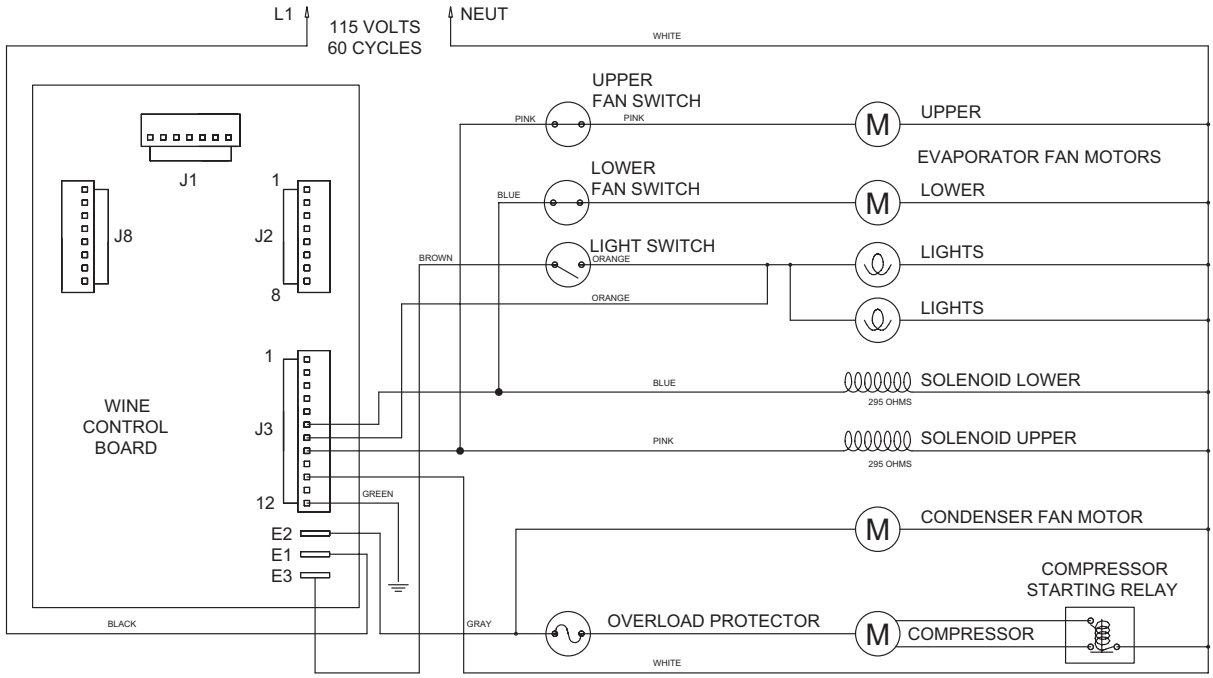
PART NUMBER 3757500 REV A

WIRING SCHEMATIC
MODEL 427
(Starting with Serial #1944319)

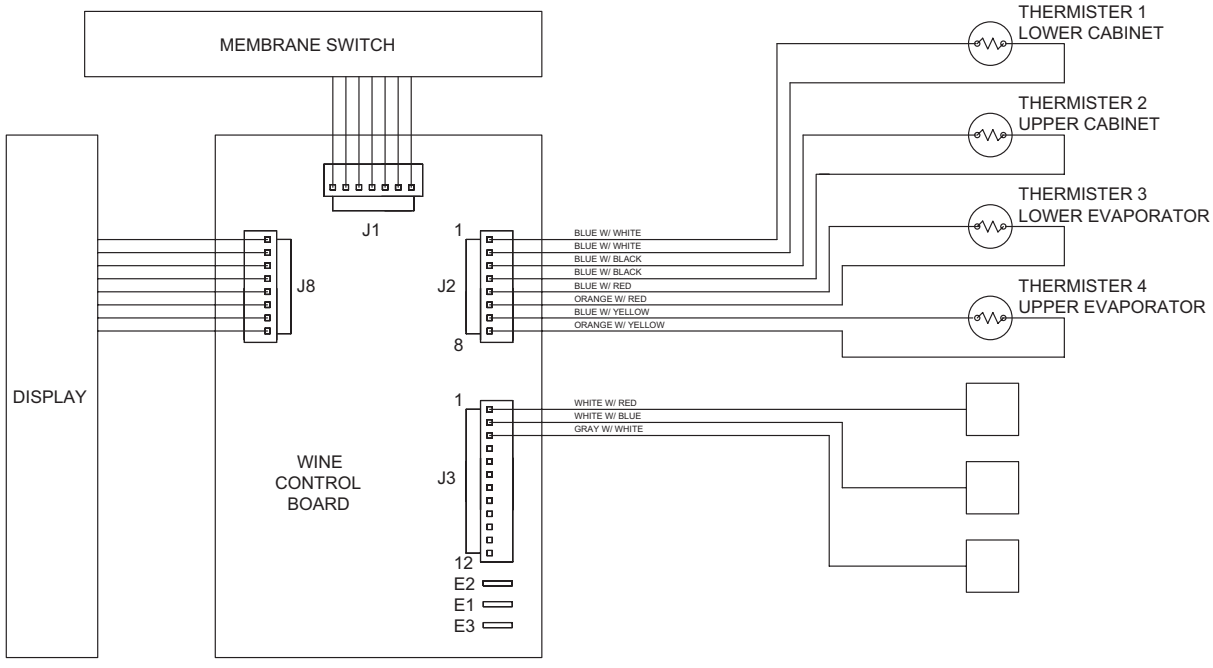
⚠ WARNING

- This wiring information is provided for use by qualified service personnel only.
- Disconnect appliance from electrical supply before beginning service.
- Be sure all grounding devices are connected when service is complete.
- Failure to observe the above warnings may result in severe electrical shock.

HIGH VOLTAGE



LOW VOLTAGE

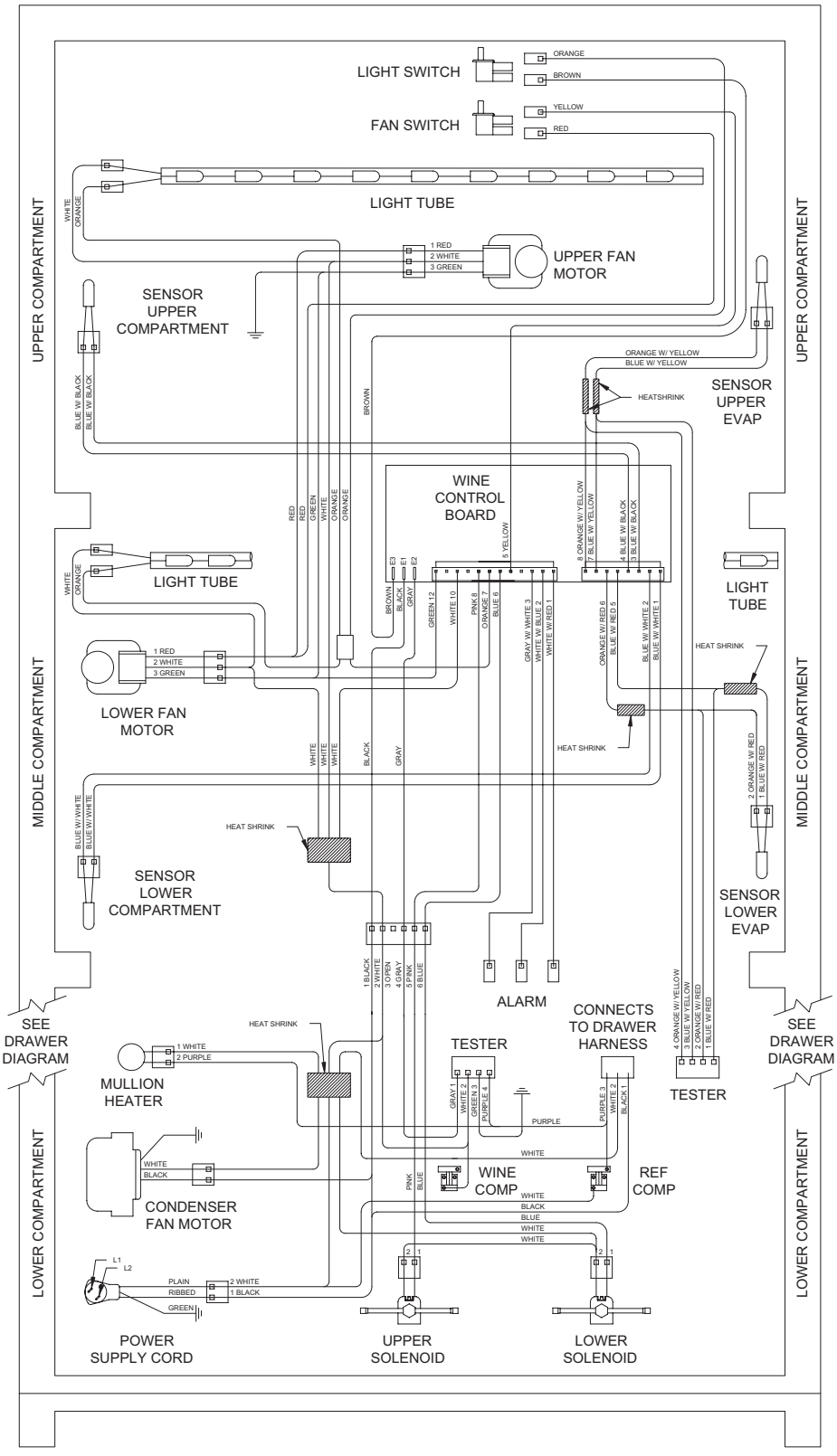


PART NUMBER 3757500 Rev A

WIRING DIAGRAM
MODEL 427R - WINE
(Prior to Serial #1944319)

⚠ WARNING

-This wiring information is provided for use by qualified service personnel only.
-Disconnect appliance from electrical supply before beginning service.
-Be sure all grounding devices are connected when service is complete.
-Failure to observe the above warnings may result in severe electrical shock.



400 SERIES CONTROL BOARD SUMMARY/ LAYOUT

CIRCUIT	DESCRIPTION	FUNCTION	COLOR
	120 VOLT CIRCUITS		
E1	POWER IN	POWER INTO BOARD	BLACK
E2	COMPRESSOR	POWERS COMPRESSOR	GRAY
E3	LIGHTS	POWERS LIGHTS	BROWN
J3			
P12	GROUND	EARTH GROUND	GREEN
P11	EMPTY		
P10	NEUTRAL	NEUTRAL INTO BOARD	WHITE
P9	EMPTY		
P8	UPPER SOLENOID VALVE	COOLS UPPER COMPARTMENT	PINK
P7	LIGHTS OVERRIDE	ON WHEN LIGHTS ON 100 %	ORANGE
P6	LOWER SOLENOID VALVE	COOLS LOWER COMPARTMENT	BLUE
P5	EVAPORATOR FANS	POWERS EVAPORATOR FANS	YELLOW
P4	EMPTY		

CIRCUIT	DESCRIPTION	FUNCTION	COLOR
	LOW VOLTAGE CIRCUITS		
J3	ALARM CIRCUIT		
P1	ALARM CIRCUIT- NORMALLY OPEN	FOR HOME ALARMS	WHT/RED
P2	ALARM CIRCUIT-NORMALLY CLOSED	FOR HOME ALARMS	WHT/BLUE
P3	ALARM CIRCUIT-COMMON	FOR HOME ALARMS	GRAY/WHT
J2	THERMISTER CIRCUITS		
P1	LOWER CABINET	SENSES TEMPERATURE	BLUE/WHITE
P2	LOWER CABINET	SENSES TEMPERATURE	BLUE/WHITE
P3	UPPER CABINET	SENSES TEMPERATURE	BLUE/BLACK
P4	UPPER CABINET	SENSES TEMPERATURE	BLUE/BLACK
P5	LOWER EVAPORATOR	SENSES TEMPERATURE	BLUE/RED
P6	LOWER EVAPORATOR	SENSES TEMPERATURE	ORANGE/RED
P7	UPPER EVAPORATOR	SENSES TEMPERATURE	BLUE/YELLOW
P8	UPPER EVAPORATOR	SENSES TEMPERATURE	ORANGE/YELL

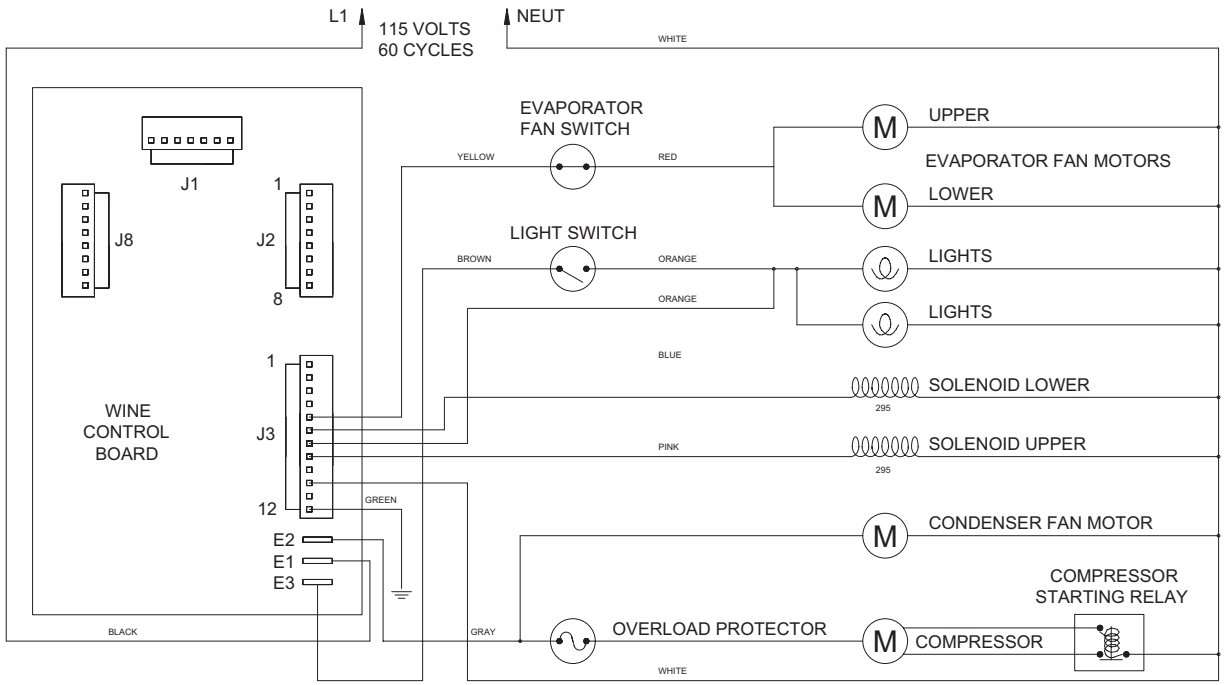
PART NUMBER 3756362 - Rev. C

WIRING SCHEMATIC
MODEL 427R - WINE
(Prior to Serial #1944319)

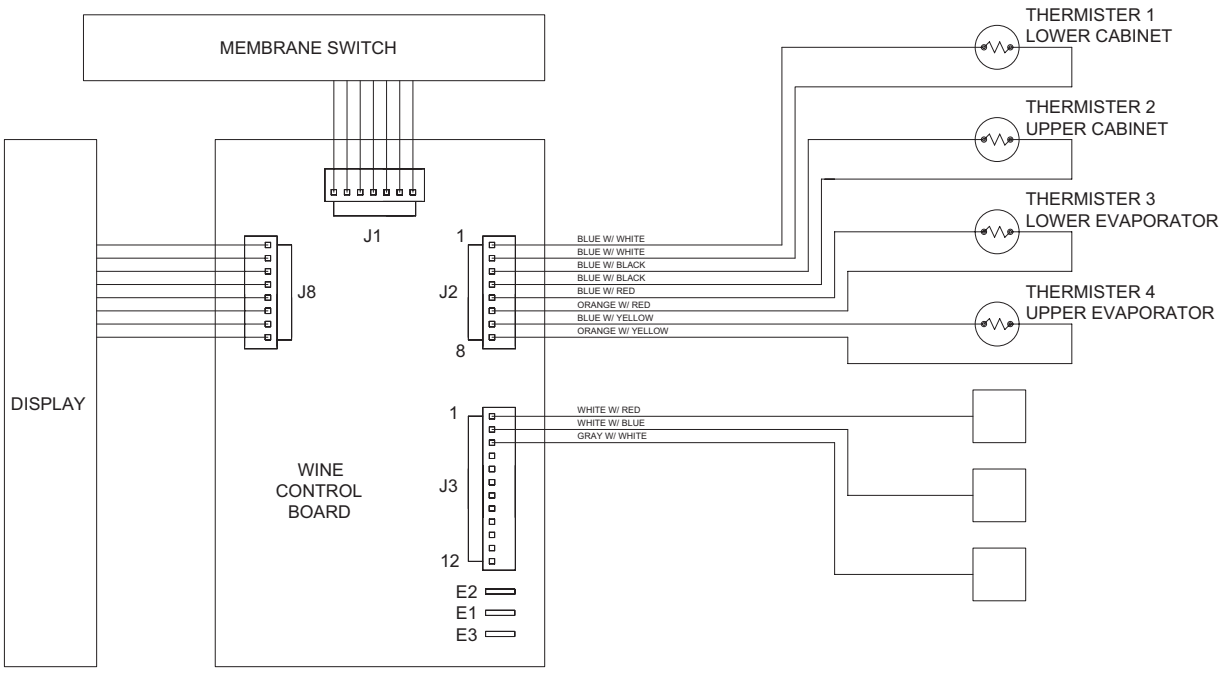
⚠ WARNING

-This wiring information is provided for use by qualified service personnel only.
-Disconnect appliance from electrical supply before beginning service.
-Be sure all grounding devices are connected when service is complete.
-Failure to observe the above warnings may result in severe electrical shock.

HIGH VOLTAGE



LOW VOLTAGE

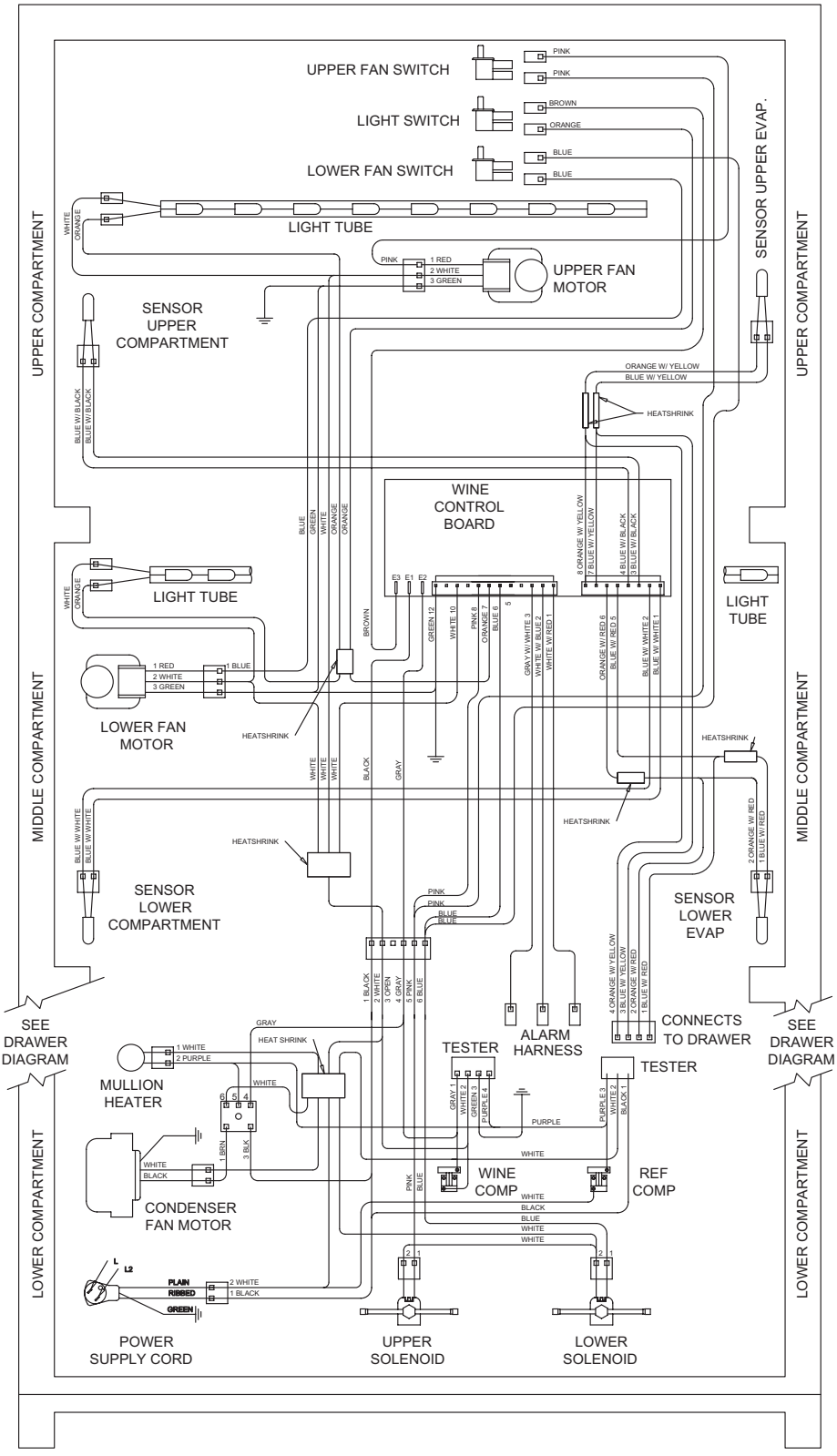


PART NUMBER 3756362 - REV C

WIRING DIAGRAM
MODEL 427R - WINE
(Starting with Serial #1944319)

⚠ WARNING

-This wiring information is provided for use by qualified service personnel only.
-Disconnect appliance from electrical supply before beginning service.
-Be sure all grounding devices are connected when service is complete.
-Failure to observe the above warnings may result in severe electrical shock.



400 SERIES CONTROL BOARD SUMMARY/ LAYOUT

CIRCUIT	DESCRIPTION	FUNCTION	COLOR
	120 VOLT CIRCUITS		
E	POWER IN	POWER INTO BOARD	BLACK
E2	COMPRESSOR	POWERS COMPRESSOR	GRAY
E3	LIGHTS	POWERS LIGHTS	BROWN
J3			
P12	GROUND	EARTH GROUND	GREEN
P11	EMPTY		
P10	NEUTRAL	NEUTRAL INTO BOARD	WHITE
P9	EMPTY		
P8	UPPER SOLENOID VALVE & FAN	COOLS UPPER COMPARTMENT	PINK
P7	LIGHTS OVERRIDE	ON WHEN LIGHTS ON 100%	ORANGE
P6	LOWER SOLENOID VALVE & FAN	COOLS LOWER COMPARTMENT	BLUE
P5	EMPTY		
P4	EMPTY		

CIRCUIT	DESCRIPTION	FUNCTION	COLOR
	LOW VOLTAGE CIRCUITS		
J3	ALARM CIRCUIT		
P	ALARM CIRCUIT-NORMALLY OPEN	FOR HOME ALARMS	WHT/RED
P2	ALARM CIRCUIT-NORMALLY CLOSED	FOR HOME ALARMS	WHT/BLUE
P3	ALARM CIRCUIT-COMMON	FOR HOME ALARMS	GRAY/WHT
J2	THERMISTER CIRCUITS		
P	LOWER CABINET	SENSES TEMPERATURE	BLUE/WHITE
P2	LOWER CABINET	SENSES TEMPERATURE	BLUE/WHITE
P3	UPPER CABINET	SENSES TEMPERATURE	BLUE/BLACK
P4	UPPER CABINET	SENSES TEMPERATURE	BLUE/BLACK
P4	LOWER EVAPORATOR	SENSES TEMPERATURE	BLUE/RED
P5	LOWER EVAPORATOR	SENSES TEMPERATURE	ORANGE/RED
P6	LOWER EVAPORATOR	SENSES TEMPERATURE	BLUE/YELLOW
P7	UPPER EVAPORATOR	SENSES TEMPERATURE	ORANGE/YELL
P8	UPPER EVAPORATOR	SENSES TEMPERATURE	

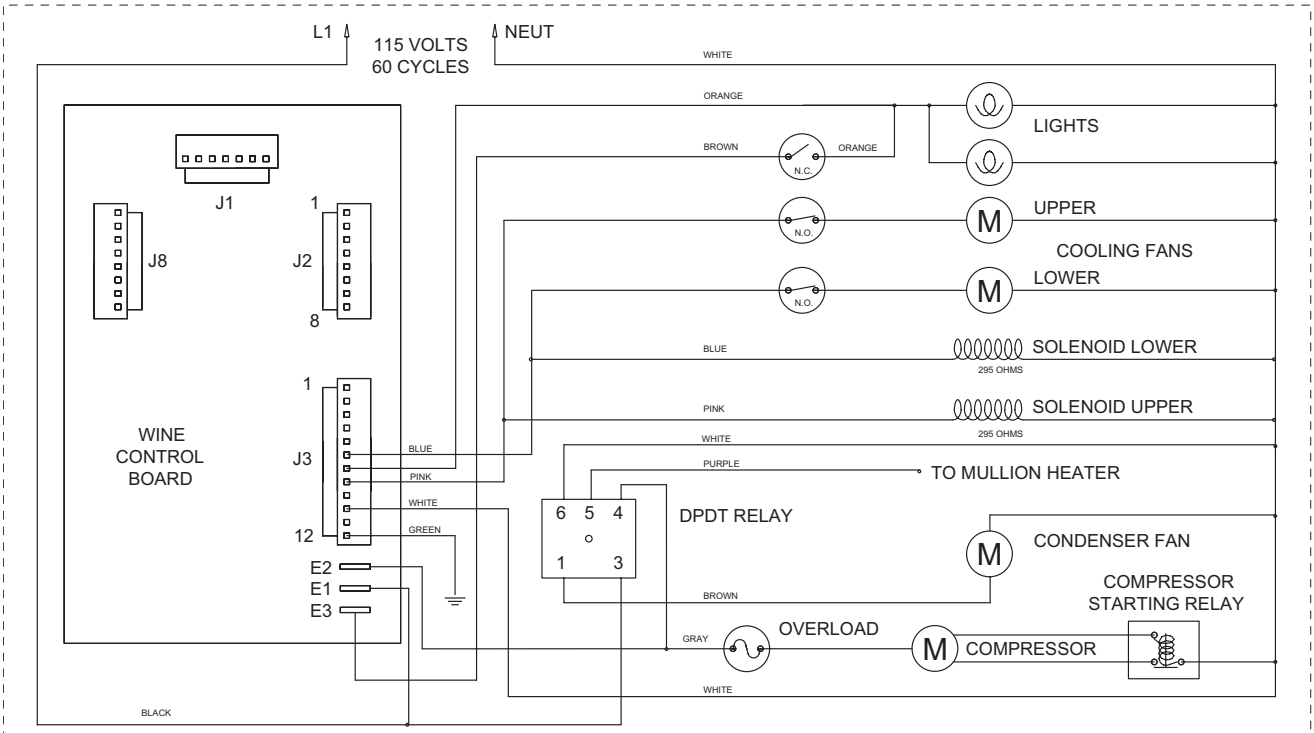
PART NUMBER 3757530 REV A

WIRING SCHEMATIC
MODEL 427R - WINE
(Starting with Serial #1944319)

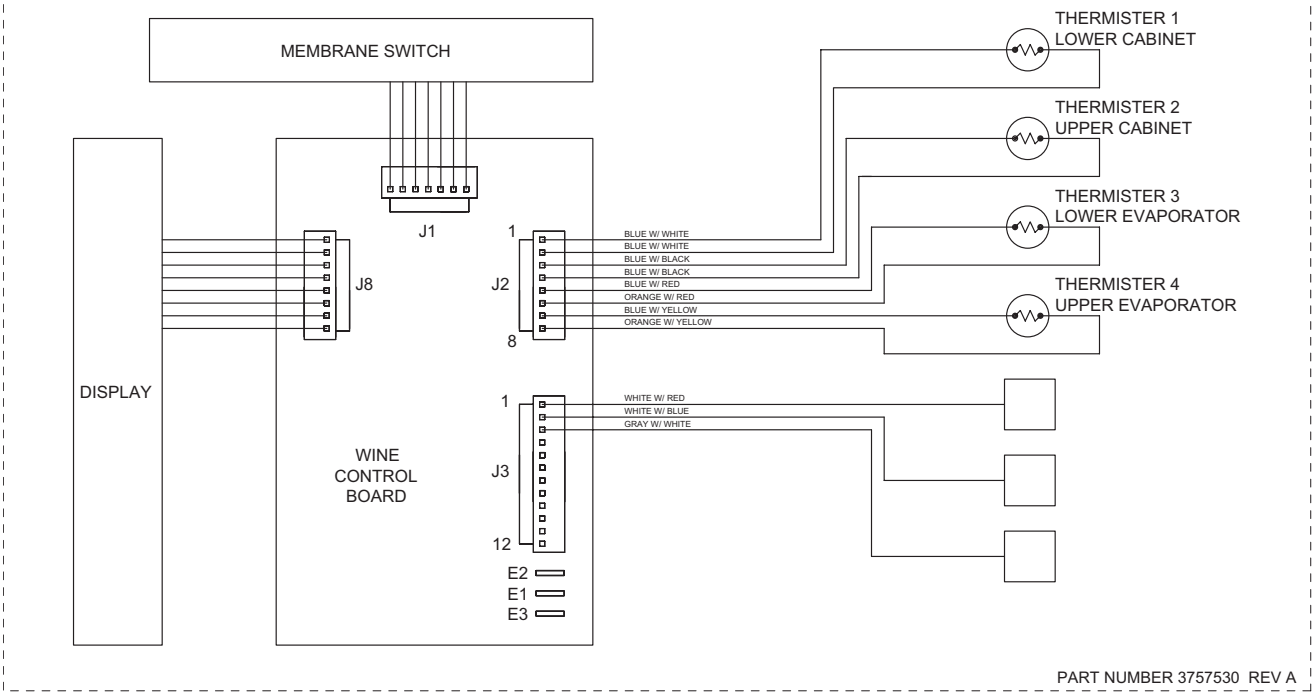
⚠ WARNING

-This wiring information is provided for use by qualified service personnel only.
-Disconnect appliance from electrical supply before beginning service.
-Be sure all grounding devices are connected when service is complete.
-Failure to observe the above warnings may result in severe electrical shock.

HIGH VOLTAGE



LOW VOLTAGE

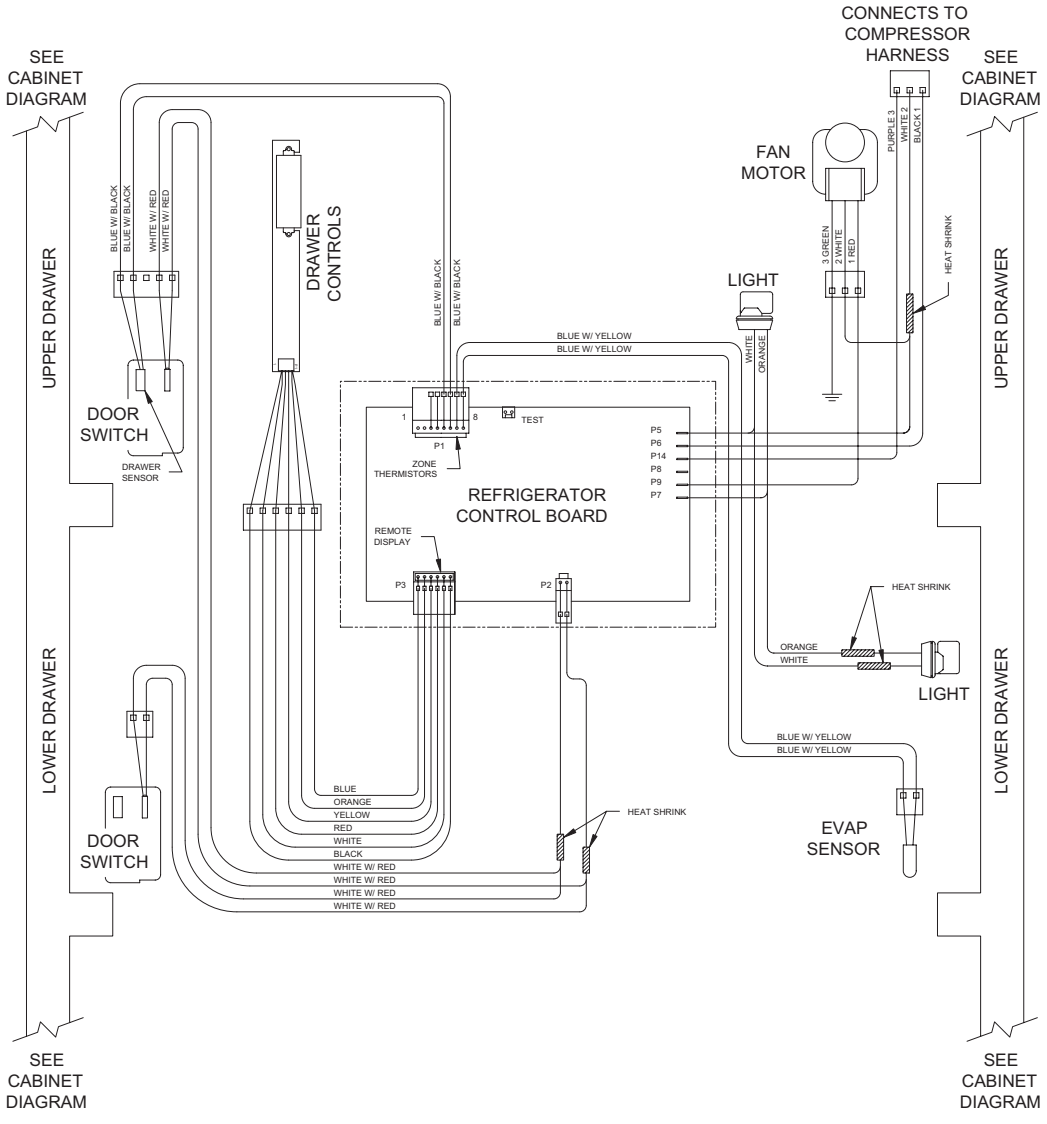


PART NUMBER 3757530 REV A

WIRING DIAGRAM
MODEL 427R - REFRIGERATOR
(Prior to Serial #1944319)

⚠ WARNING

-This wiring information is provided for use by qualified service personnel only.
-Disconnect appliance from electrical supply before beginning service.
-Be sure all grounding devices are connected when service is complete.
-Failure to observe the above warnings may result in severe electrical shock.



AUXILIARY CHART

TERM.	No#	DESCRIPTION	FUNCTION	COLOR
P1	1	THERMISTER CIRCUITS	EMPTY	EMPTY
	2	EMPTY	EMPTY	EMPTY
	3	EMPTY	EMPTY	EMPTY
	4	EMPTY	EMPTY	EMPTY
	5	DRAWER	SENSES TEMPERATURE	LT. BLUE W/BLACK
	6	DRAWER	SENSES TEMPERATURE	LT. BLUE W/BLACK
	7	EVAPORATOR	SENSES TEMPERATURE	LT. BLUE W/YELLOW
	8	EVAPORATOR	SENSES TEMPERATURE	LT. BLUE W/YELLOW
P3	1	DISPLAY BOARD	DISPLAY BOARD	BLACK
	2	" "	" "	WHITE
	3	" "	" "	RED
	4	" "	" "	YELLOW
	5	" "	" "	ORANGE
	6	" "	" "	BLUE

TERM.	DESCRIPTION	FUNCTION	COLOR
P1	THERMISTORS	SENSES TEMPERATURES	SEE AUX. CHART
P2	LIGHT SWITCH	CONTROLS LIGHTS	WHITE/RED
P3	REMOTE DISPLAY	CONNECTS TO DISPLAY	SEE AUX. CHART
P4	NOT USED		
P5	L2-NEUTRAL 115	NEUTRAL INTO THE BOARD	WHITE
P6	L1-HOT 115	POWER INTO BOARD	BLACK
P7	LIGHTS-120V OUT	POWERS LIGHTS	ORANGE
P8	NOT USED		
P9	EVAPORATOR FAN	POWERS FANS	RED
P10-P12	NOT USED		
P14	COMPRESSOR	POWERS COMPRESSOR	PURPLE

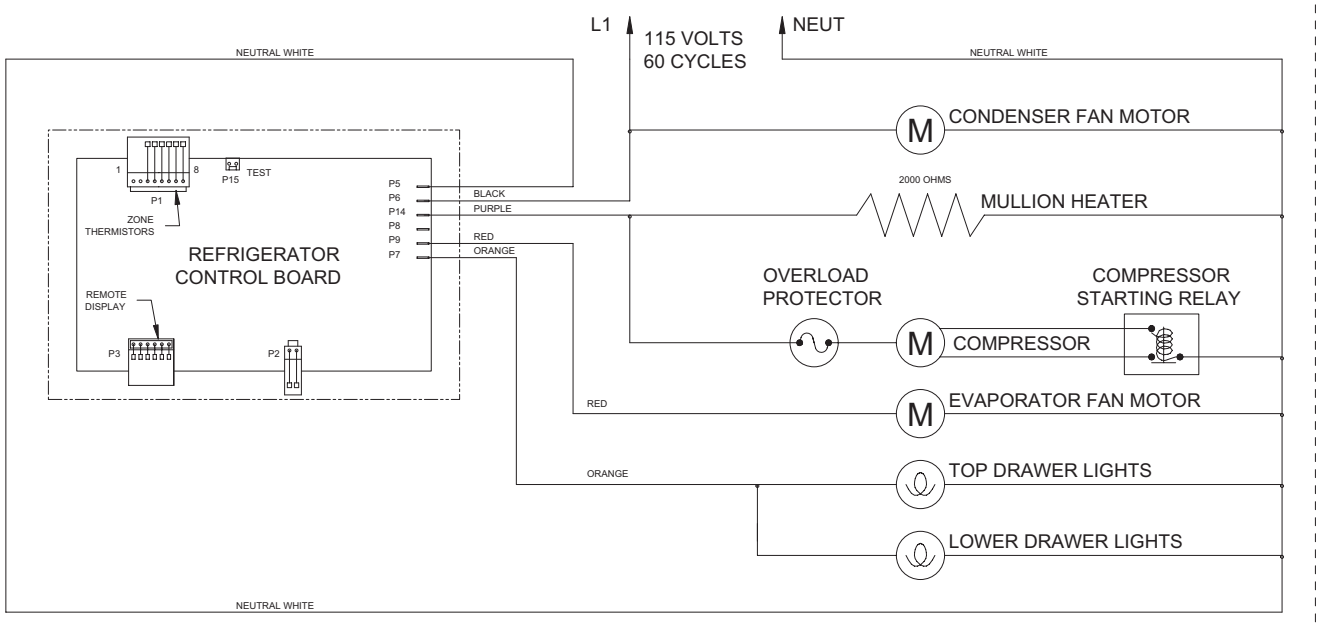
PART NUMBER 3756362 REV C

WIRING SCHEMATIC
MODEL 427R - REFRIGERATOR
(Prior to Serial #1944319)

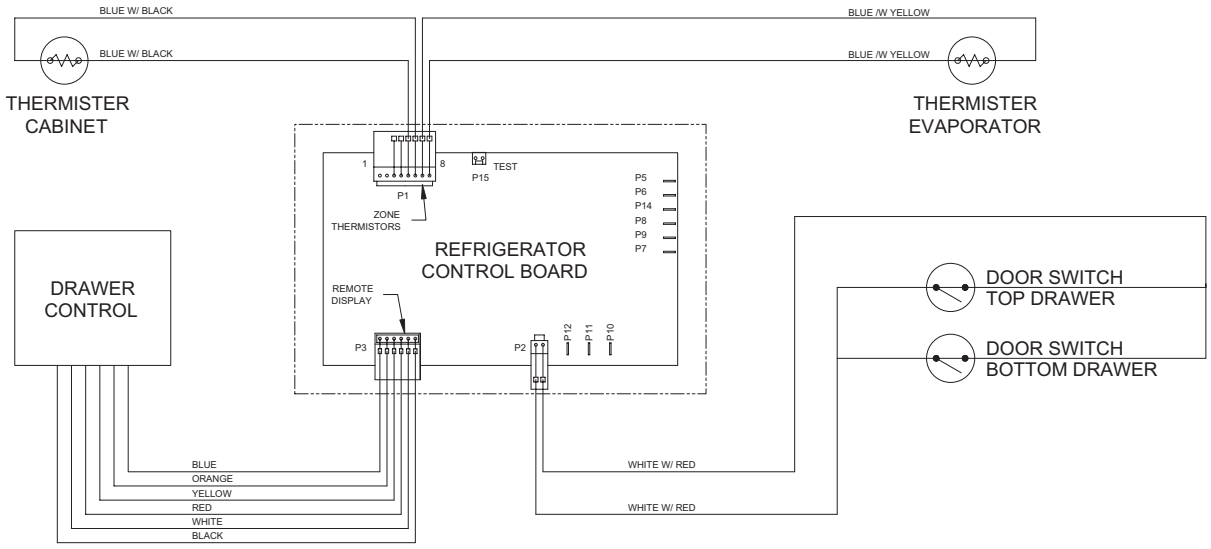
⚠ WARNING

-This wiring information is provided for use by qualified service personnel only.
-Disconnect appliance from electrical supply before beginning service.
-Be sure all grounding devices are connected when service is complete.
-Failure to observe the above warnings may result in severe electrical shock.

HIGH VOLTAGE



LOW VOLTAGE

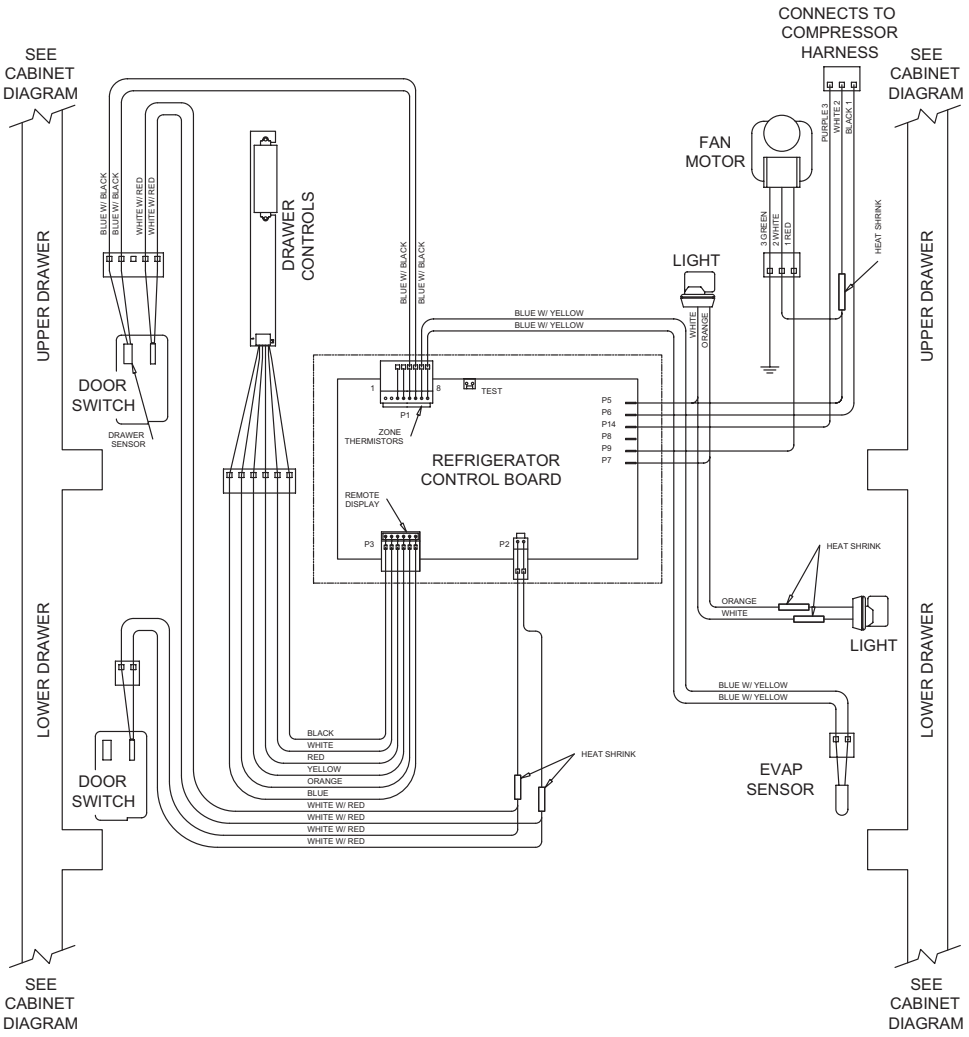


PART NUMBER 3756362 - REV. C

WIRING DIAGRAM
MODEL 427R - REFRIGERATOR
(Starting with Serial #1944319)

⚠ WARNING

- This wiring information is provided for use by qualified service personnel only.
- Disconnect appliance from electrical supply before beginning service.
- Be sure all grounding devices are connected when service is complete.
- Failure to observe the above warnings may result in severe electrical shock.



TERM.	DESCRIPTION	FUNCTION	COLOR
P1	THERMISTORS	SENSES TEMPERATURES	SEE AUX. CHART
P2	LIGHT SWITCH	CONTROLS LIGHTS	WHITE/RED
P3	REMOTE DISPLAY	CONNECTS TO DISPLAY	SEE AUX. CHART
P4	NOT USED		
P5	L2-NEUTRAL 115	NEUTRAL INTO THE BOARD	WHITE
P6	L1-HOT 115	POWER INTO BOARD	BLACK
P7	LIGHTS-120V OUT	POWERS LIGHTS	ORANGE
P8	NOT USED		
P9	EVAPORATOR FAN	POWERS FANS	RED
P10-P12	NOT USED		
P14	COMPRESSOR	POWERS COMPRESSOR	PURPLE

AUXILIARY CHART

TERM.	No#	DESCRIPTION	FUNCTION	COLOR
P1	1	THERMISTER CIRCUITS	EMPTY	EMPTY
	2	EMPTY	EMPTY	EMPTY
	3	EMPTY	EMPTY	EMPTY
	4	EMPTY	EMPTY	EMPTY
	5	DRAWER	SENSES TEMPERATURE	LT. BLUE W/BLACK
	6	DRAWER	SENSES TEMPERATURE	LT. BLUE W/BLACK
	7	EVAPORATOR	SENSES TEMPERATURE	LT. BLUE W/YELLOW
	8	EVAPORATOR	SENSES TEMPERATURE	LT. BLUE W/YELLOW
P3	1	DISPLAY BOARD	DISPLAY BOARD	BLACK
	2	" "	" "	WHITE
	3	" "	" "	RED
	4	" "	" "	YELLOW
	5	" "	" "	ORANGE
	6	" "	" "	BLUE

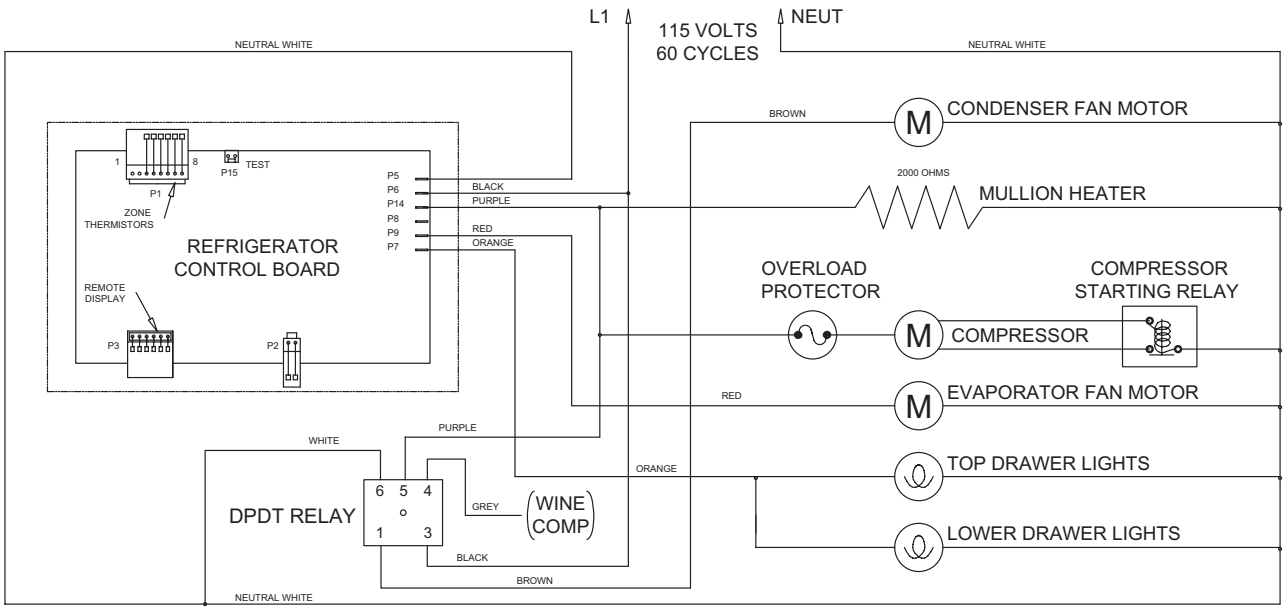
PART NUMBER 3757530 REV A

WIRING SCHEMATIC
MODEL 427R - REFRIGERATOR
(Starting with Serial #1944319)

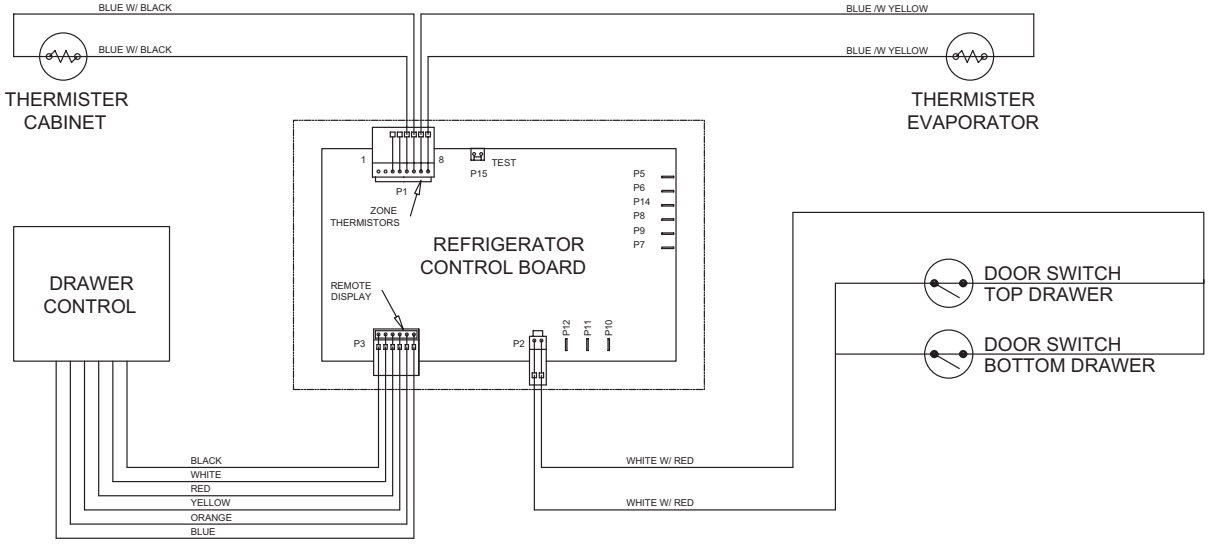
⚠ WARNING

-This wiring information is provided for use by qualified service personnel only.
-Disconnect appliance from electrical supply before beginning service.
-Be sure all grounding devices are connected when service is complete.
-Failure to observe the above warnings may result in severe electrical shock.

HIGH VOLTAGE



LOW VOLTAGE

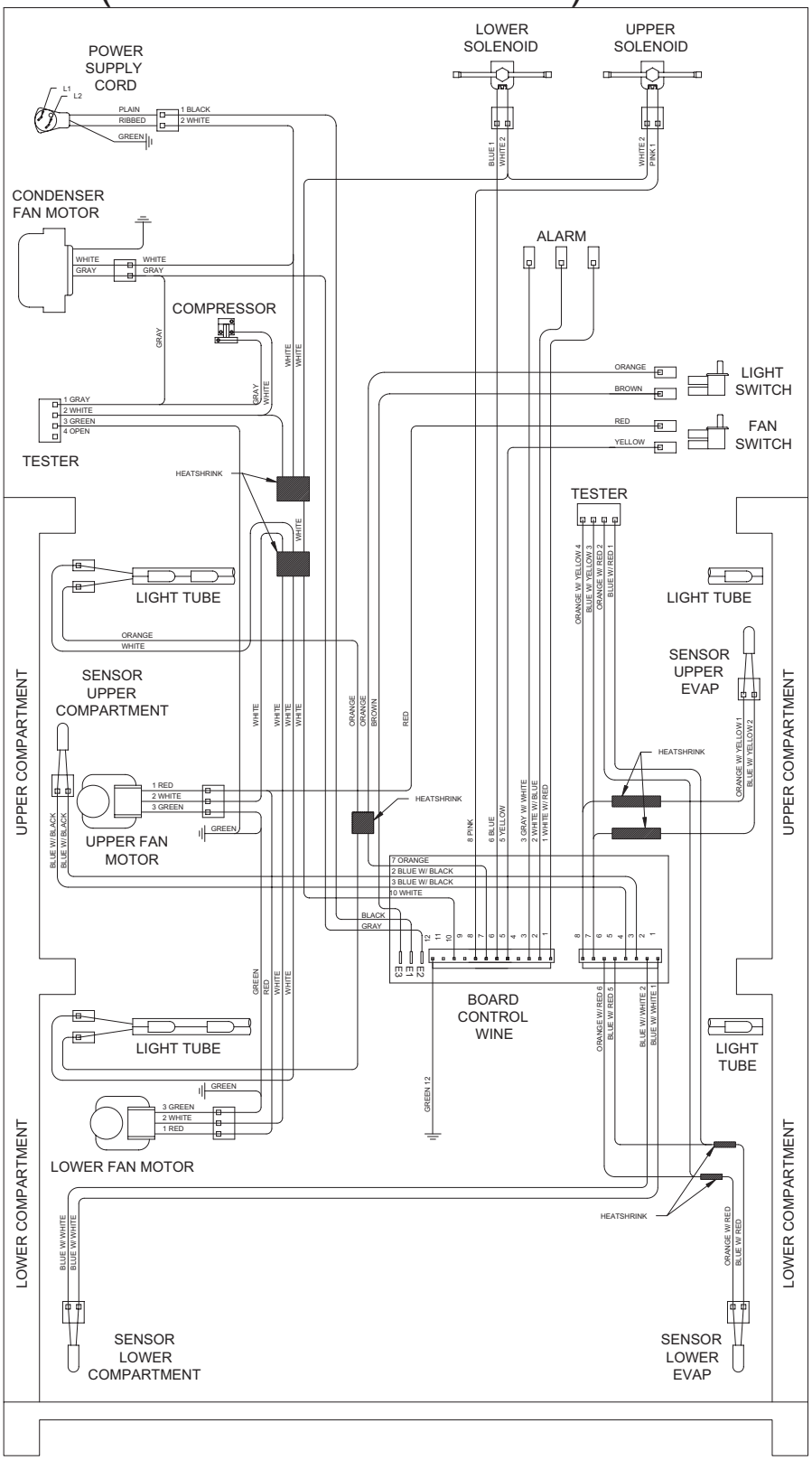


PART NUMBER 3757530 REV A

WIRING DIAGRAM
MODEL 430
(Prior to Serial #1944319)

⚠ WARNING

- This wiring information is provided for use by qualified service personnel only.
- Disconnect appliance from electrical supply before beginning service.
- Be sure all grounding devices are connected when service is complete.
- Failure to observe the above warnings may result in severe electrical shock.



400 SERIES CONTROL BOARD SUMMARY/ LAYOUT

CIRCUIT	DESCRIPTION	FUNCTION	COLOR
	120 VOLT CIRCUITS	LOW VOLTAGE CIRCUITS	
E1	POWER IN	POWER INTO BOARD	BLACK
E2	COMPRESSOR	POWERS COMPRESSOR	GRAY
E3	LIGHTS	POWERS LIGHTS	BROWN
J3			
P12	GROUND	EARTH GROUND	GREEN
P11	EMPTY		
P10	NEUTRAL	NEUTRAL INTO BOARD	WHITE
P9	EMPTY		
P8	UPPER SOLENOID VALVE	COOLS UPPER COMPARTMENT	PINK
P7	LIGHTS OVERRIDE	ON WHEN LIGHTS ON 100 %	ORANGE
P6	LOWER SOLENOID VALVE	COOLS LOWER COMPARTMENT	BLUE
P5	EVAPORATOR FANS	POWERS EVAPORATOR FANS	YELLOW
P4	EMPTY		

CIRCUIT	DESCRIPTION	FUNCTION	COLOR
	LOW VOLTAGE CIRCUITS		
J3	ALARM CIRCUIT		
P1	ALARM CIRCUIT- NORMALLY OPEN	FOR HOME ALARMS	WHT/RED
P2	ALARM CIRCUIT-NORMALLY CLOSED	FOR HOME ALARMS	WHT/BLUE
P3	ALARM CIRCUIT-COMMON	FOR HOME ALARMS	GRAY/WHT
J2	THERMISTER CIRCUITS		
P1	LOWER CABINET	SENSES TEMPERATURE	BLUE/WHITE
P2	LOWER CABINET	SENSES TEMPERATURE	BLUE/WHITE
P3	UPPER CABINET	SENSES TEMPERATURE	BLUE/BLACK
P4	UPPER CABINET	SENSES TEMPERATURE	BLUE/BLACK
P5	LOWER EVAPORATOR	SENSES TEMPERATURE	BLUE/RED
P6	LOWER EVAPORATOR	SENSES TEMPERATURE	ORANGE/RED
P7	UPPER EVAPORATOR	SENSES TEMPERATURE	BLUE/YELLOW
P8	UPPER EVAPORATOR	SENSES TEMPERATURE	ORANGE/YELL

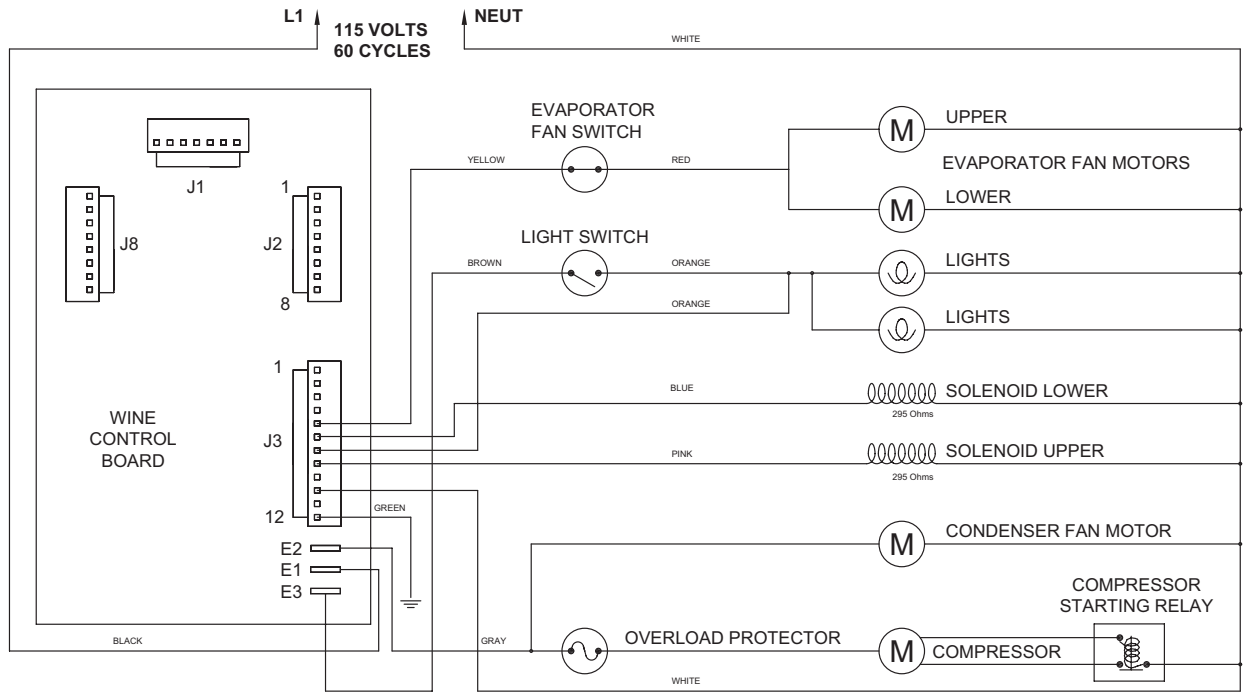
PART NUMBER 3756363 - REV. B

WIRING SCHEMATIC
MODEL 430
(Prior to Serial #1944319)

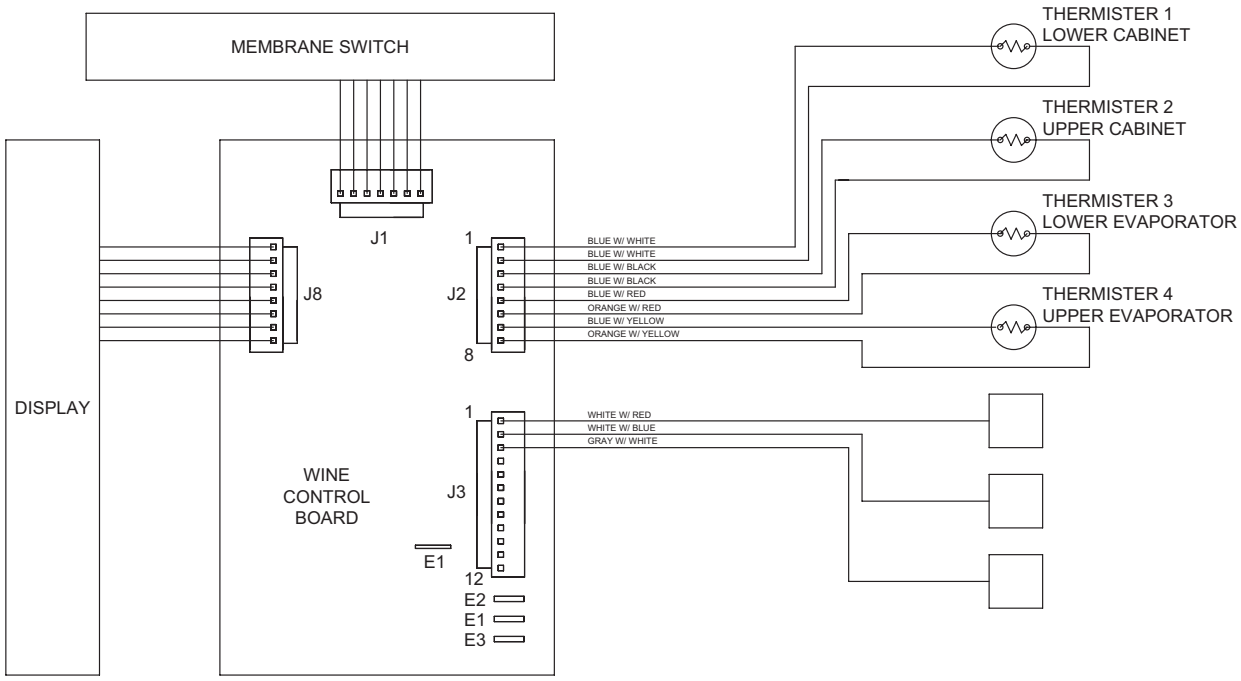
⚠ WARNING

-This wiring information is provided for use by qualified service personnel only.
-Disconnect appliance from electrical supply before beginning service.
-Be sure all grounding devices are connected when service is complete.
-Failure to observe the above warnings may result in severe electrical shock.

HIGH VOLTAGE



LOW VOLTAGE



PART NUMBER 3756363

WIRING DIAGRAM
MODEL 430
(Starting with Serial #1944319)

⚠ WARNING

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- Disconnect appliance from electrical supply before beginning service.
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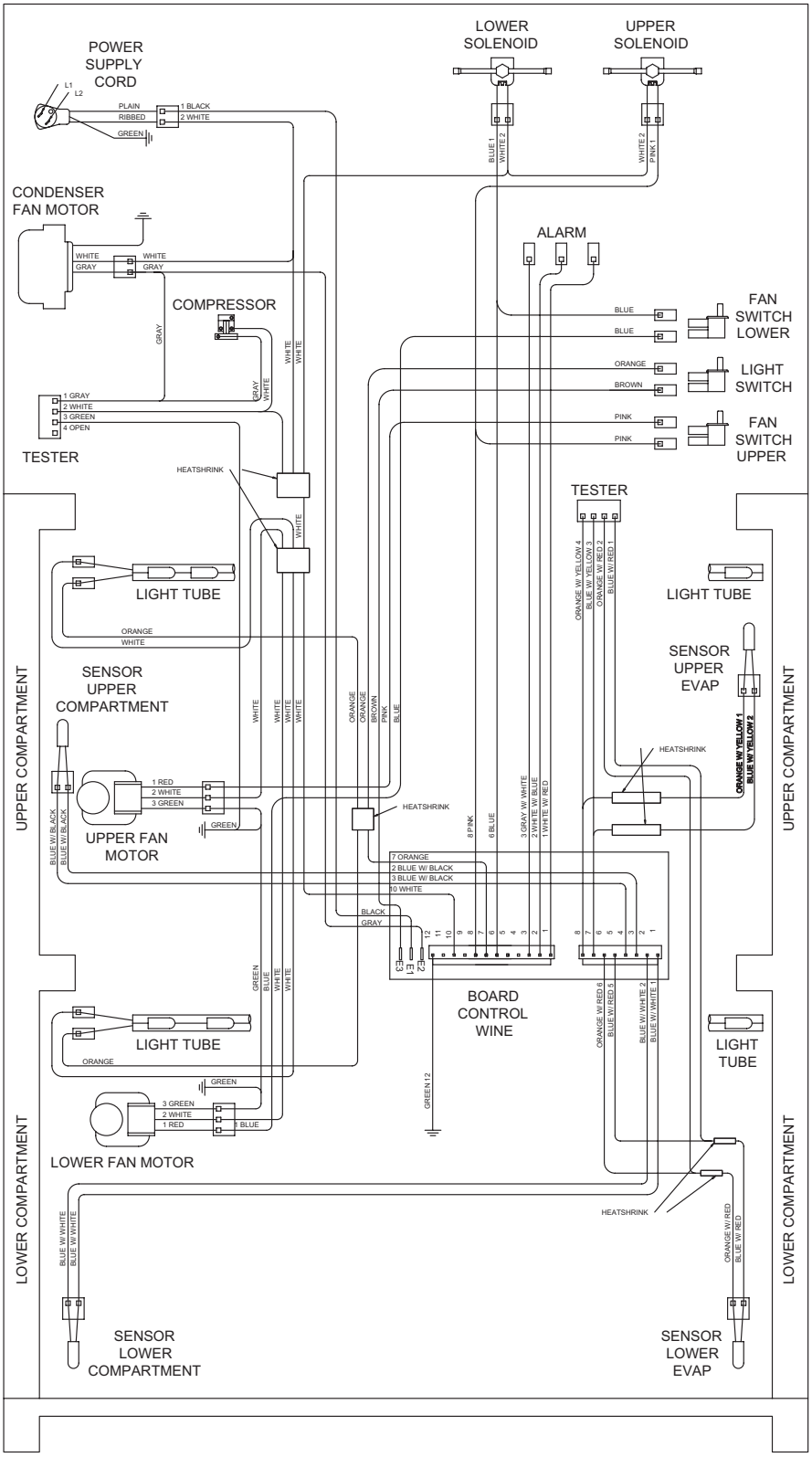

400 SERIES CONTROL BOARD SUMMARY/ LAYOUT

CIRCUIT	DESCRIPTION	FUNCTION	COLOR
	120 VOLT CIRCUITS		
E	POWER IN	POWER INTO BOARD	BLACK
E2	COMPRESSOR	POWERS COMPRESSOR	GRAY
E3	LIGHTS	POWERS LIGHTS	BROWN
J3			
P12	GROUND	EARTH GROUND	GREEN
P11	EMPTY		
P10	NEUTRAL	NEUTRAL INTO BOARD	WHITE
P9	EMPTY		
P8	UPPER SOLENOID VALVE	COOLS UPPER COMPARTMENT	PINK
P7	LIGHTS OVERRIDE	ON WHEN LIGHTS ON 100%	ORANGE
P6	LOWER SOLENOID VALVE	COOLS LOWER COMPARTMENT	BLUE
P5	EVAPORATOR FANS	POWERS EVAPORATOR FANS	YELLOW
P4	EMPTY		

CIRCUIT	DESCRIPTION	FUNCTION	COLOR
	LOW VOLTAGE CIRCUITS		
J3	ALARM CIRCUIT		
P	ALARM CIRCUIT-NORMALLY OPEN	FOR HOME ALARMS	WHT/RED
P2	ALARM CIRCUIT-NORMALLY CLOSED	FOR HOME ALARMS	WHT/BLUE
P3	ALARM CIRCUIT-OPEN	FOR HOME ALARMS	GRAY/WHT
J2	THERMISTER CIRCUITS	SENSES TEMPERATURE	BLUE/WHITE
P	LOWER CABINET	SENSES TEMPERATURE	BLUE/WHITE
P2	LOWER CABINET	SENSES TEMPERATURE	BLUE/BLACK
P3	UPPER CABINET	SENSES TEMPERATURE	BLUE/BLACK
P4	UPPER CABINET	SENSES TEMPERATURE	BLUE/BLACK
P5	LOWER EVAPORATOR	SENSES TEMPERATURE	BLUE/RED
P6	LOWER EVAPORATOR	SENSES TEMPERATURE	ORANGE/RED
P7	UPPER EVAPORATOR	SENSES TEMPERATURE	BLUE/YELLOW
P8	UPPER EVAPORATOR	SENSES TEMPERATURE	ORANGE/YELL

PART NUMBER 3757520 REV. A

WIRING SCHEMATIC
MODEL 430
(Starting with Serial #1944319)

⚠ WARNING

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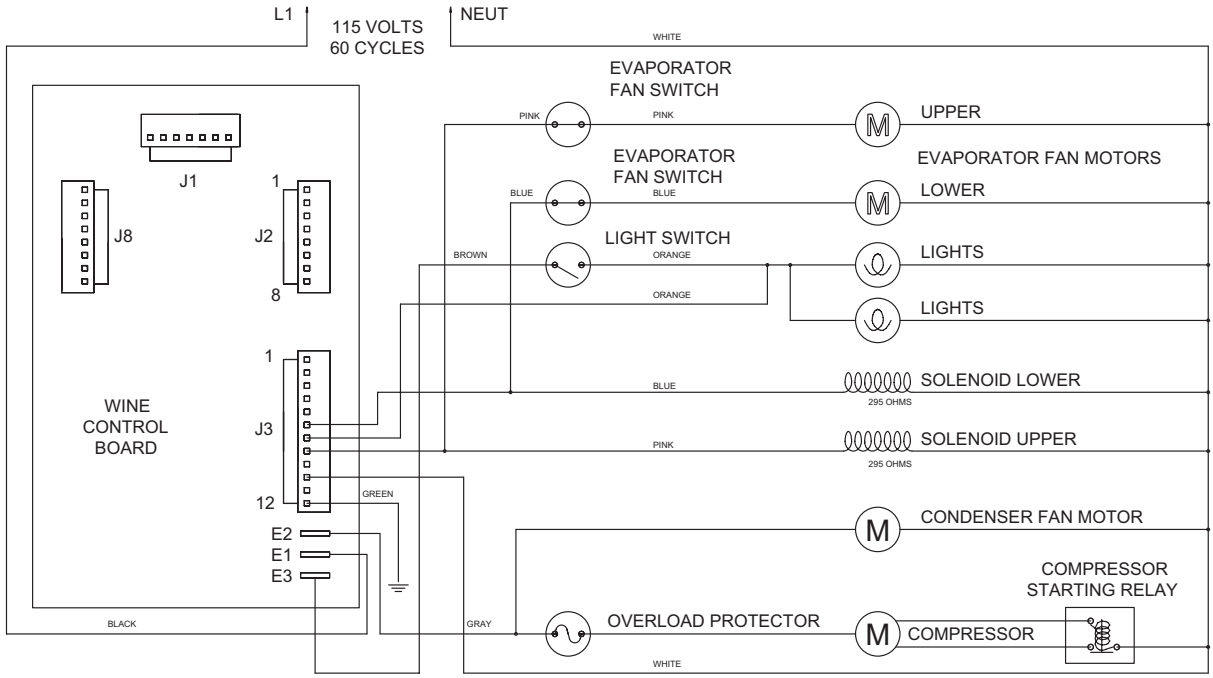
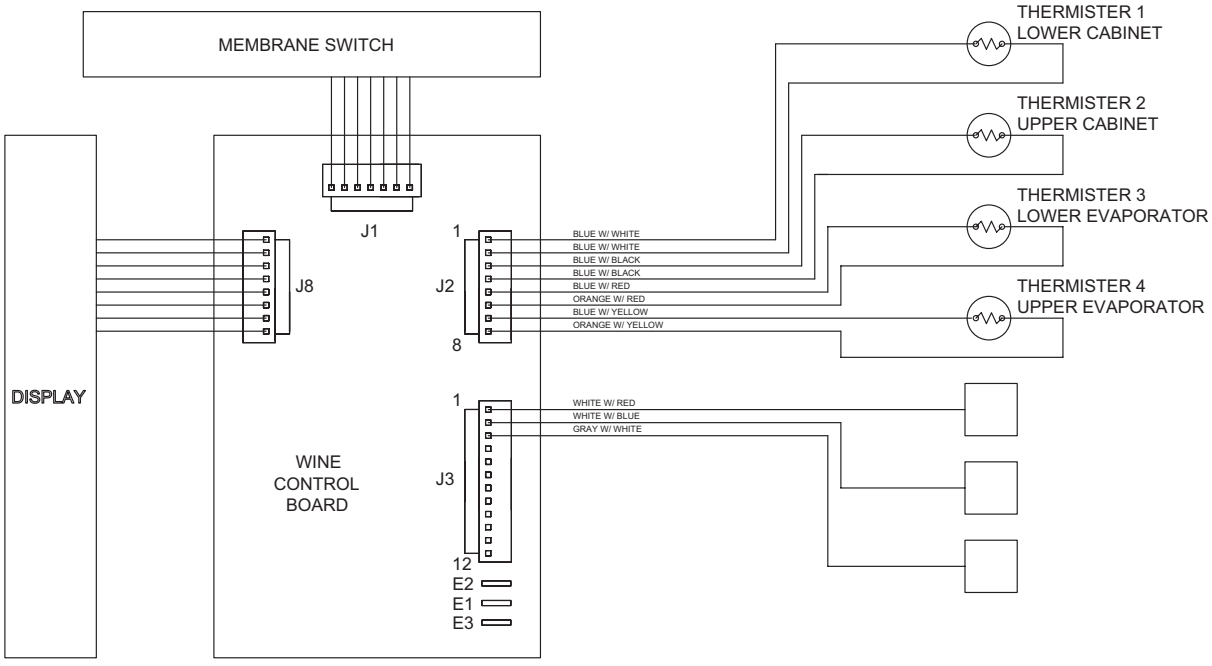
-Failure to observe the above warnings may result in severe electrical shock.

HIGH VOLTAGE



LOW VOLTAGE



PART NUMBER 3757520 REV. A