Service Manual

This manual is to be used by qualified appliance technicians only. VIKING does not assume any responsibility for property damage or personal injury for improper service procedures done by an unqualified person.

This Base Manual covers general and specific information including, but not limited to the following models:

VUWC244DRSS & DLSS
VUWC244CRSS & CLSS
VUWC244FRSS & FLSS
DFUW244CR & CL
DFUW244FR & FL

SMR-0005
October 2010

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Section 1

Introduction to Dual Zone

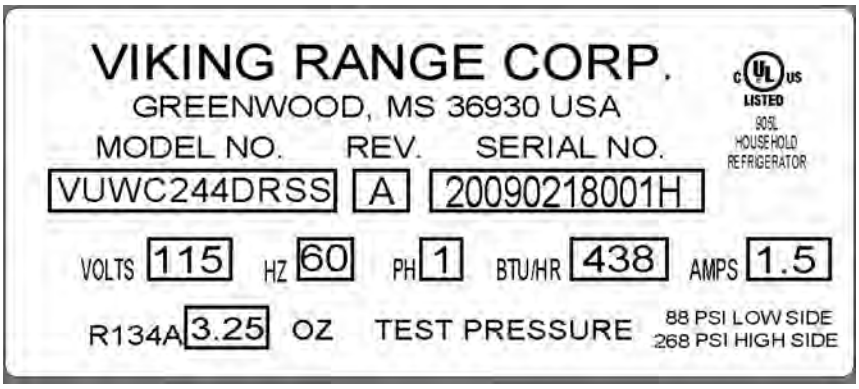
1.1 Unit Specifications

Model: VUWC244DRSS, DLSS, CRSS, CLSS, FRSS, FLSS
DFUW244CR, CL, FR, FL

Cabinet dimensions

Height:	33 ¾”
Width:	23 7/8”
Depth:	23 7/8”
Weight:	170 lbs
Electrical:	115 VAC / 60Hz
Power Cord Length:	7 foot
Refrigerant:	R-134a - 3.25 ounces
Temperature Control:	Electronic – TruProtect™
Compressor:	Hermetically sealed, 115 VAC, 438 BTU/HR, 1.5 Amp
Condenser Fan:	115 VAC, 2.3 Watts, 1300 RPM
Compartment Fans:	(2) 12 VDC
Heater / Fans	(2) 12 VDC

Serial Nameplate



How to read the above serial plate: 20090218001H

Left to right;	1st 4 digits:	2009 is the year built
	5th & 6th digit:	02 is the month built
	7th and 8th digits:	18 is the day built
	9th, 10th, 11th digit:	001 is the sequential number built that day
	12th digit:	H is the assembly site.

1.2 Installation Tips

1) This unit can be installed freestanding or built-in. The front of the unit must be unobstructed for proper air circulation and operation at all times
2) Area should be ventilated and without extreme temperatures.
3) Unit must be installed indoors and away from the elements of nature. This unit is not U.L. approved for outdoor installation. If installed against these recommendations the warranty will be void.
4) Unit must be installed on a level surface capable of supporting the loaded weight of the unit plus its contents.
5) If unit is installed freestanding insure that power cord is not in a position for tripping over or accidental pulling.
6) Make sure that door is aligned at a right angle to cabinet top and securely fastened to hinge assembly.
7) Insure that door is properly closed and making contact with reed switch on the user interface control. The display will “black out” when the door is closed properly.
8) Check to insure that unit is cooling after installation is complete.
9) Familiarize the customer with the product after installation is complete. Make sure they understand the functions of the control panel.

1.3 Electrical Requirements

1) Supply voltage to the unit is 115 VAC, 60 Hz, 1 phase.
2) Power receptacle should be fed through a 15 amp, delayed action fuse or circuit breaker. ***Do not fuse the neutral or ground side of the circuit.***
3) This unit requires the use of a grounded outlet.
4) It is recommended that a single circuit receptacle be used for this unit only. ***Do not use an extension cord with this product.***

1.4 Interior Components

1.4.1 Wine Shelves

A total of six (6) glide out shelves with wine mats.
- Includes five (5) wine shelves
  - Overall shelf dimensions are: 19 ¼" wide x 17" deep
  - Shelf capacity of 8 bottles each
  - Extends outward: 12" maximum
- Includes one (1) Bottom wine shelf
  - Overall shelf dimensions are: 19 ¼" wide x 11" deep
  - Shelf capacity of 4 bottles
  - Extends outward: 6 ½" maximum

1.4.1.1 To Remove Shelves

1) Unload shelf
2) Pull forward until the shelf has reached its forward limit.
3) Pick front edge of shelf upward towards a 45˚ angle.
4) Pull shelf out away from slides
5) Reverse process to install

NOTE: Built in units must accommodate a 90˚ door opening to facilitate shelf extension.

CAUTION

1) Do not lean or press down heavily on the wine shelves. Doing so may damage the shelves.
2) It is also advisable not to pull more then one wine shelf out at a time.
3) Pull wine shelves out carefully to minimize unsettling of the wine collection.

1.4.2 Lights

Each compartment has a 115 volt interior light. The lights function utilizing a door magnet mounted on the inside of the cabinet door. A reed switch located inside the User Interface control turns the lights on and off with each door position.
The lights can also be operated using "Display Lighting" or "Show Room Lighting". These functions are controlled by the light keypad on the User Interface panel. Refer to Section 2, Paragraphs, 2.1.7 & 2.1.8 of this manual describing their use.
The interior lights come as an assembly piece which includes the bulb, mounting bracket, and electrical plug.

1.4.2.1 To Replace the Light Assembly

1) Remove the top two shelves of the compartment to access the light assembly.
2) Disconnect the lights electrical plug where it plugs into the cabinet liner.
3) Remove the two hex head screws that fasten the fixture in place.
4) Remove and replace with new assembly.

Section 2

Dual Zone Characteristics

2.1 Introduction: TruProtect™ Control Features

2.1.1 TruProtect™ System

Vikings exclusive TruProtect™ refrigeration monitor governs the intuitive user interface panel. The Tru Protect™ system informs you if the unit is not working properly through both visual and audible alarms. A message center is located on the right side of the user interface over-lay.
The TruProtect™ System can be enabled or disabled by pressing and holding the "Set" keypad for five (5) seconds, the audible alarm will sound three (3) times and the message center will display either a green "on" (enabled) or amber "off" (disabled) icon.

2.1.2 Initial Start Up

Plug unit into a power receptacle. The display on the user interface panel should beep and an amber power failure will show on the message center. This is normal at initial start-up as the wine cellar was operated for quality checks at the factory.
To clear this code, simply depress the "On/Off" keypad for five (5) seconds to turn the control off. Press the "On/Off" keypad once again to start the wine cellar with a fresh display.

If the wine cellar has recently been stored in temperature exceeding 99˚F the display will only read up to 99˚F. This will be seen only if the thermistor still sense's that extreme temperature. This is not a concern, as soon as the wine cellar starts cooling the thermistors will display the compartments temperatures as it cools.

2.1.3 Turning the Unit On & Off

Press and hold the "On/Off" keypad for five (5) seconds to turn the unit on and off.
When "off" the display will be blank and the refrigeration system will be inoperative. The lights will still function, however they will time-out after 15 minutes if the door is left open or the display lighting is on to prevent overheating.

2.1.4 Display Temperature

The temperature display for both the upper and lower compartments is located on the user interface panel on the face of the control box inside the upper compartment.
Compartment temperature is displayed as actual "real time" temperatures. This is unique to competitive models that display set-point or lock-in temperatures.
Slight temperature variations are a normal characteristic of this wine cellar.
It is important to note that variations of display temperature will appear due to certain factors. A couple of examples would be the amount of door openings, and length of time into either an "off" or "defrost" cycle.

It is also important to note that although the inside temperatures of the wine cellar may vary a few degrees that stored product will not be effected by small amounts of temperature change due to their mass.

2.1.5 Setting the Display Temperature

To adjust the set-point temperature, press the “Set” keypad once. The user interface board will beep once and a “set” icon will appear in the upper compartment display. Once in the Set Mode use the “Warmer” and “Colder” keypads to obtain the desired point.
To adjust the lower compartment press the “Set” keypad a second time. Again, there will be an audible beep and the “set” icon will appear in the lower compartment display. Exit the “Set” Mode by using either one of two methods: The first would be to press the “Set” keypad a third time, once again the audible alarm will sound and the user interface will return to display mode. The second method is to let the Set Mode “time out” after five (5) seconds of no keypad activity and return back to display mode.

2.1.6 Select Fahrenheit (˚F) or Centigrade (˚C)

The display temperature can be changed from Fahrenheit to Centigrade by pressing the ˚F/˚C keypad one time. An audible beep will sound with every keypad function.

2.1.7 Display Lighting

There are two interior lights located inside the wine cellar. Each compartment has its own dedicated bulb. The normal operation is that the light bulbs turn on as the door is opened and off when the door is closed.

The display lighting can be enabled by pressing the light keypad once. An audible alarm will sound when activated and the light keypad will display a blue LED. Display lighting will stay on continuously.

2.1.8 Show Room Mode

Show room lighting is activated by pressing and holding the “On/Off” keypad simultaneous of performing a P-O-R (Power-on-Reset). P-O-R is defined as momentarily interrupting power to the unit. This can be accomplished by simply unplugging and plugging the unit back into the receptacle. Remember to press and hold the the “On/Off” keypad at the same time as the P-O-R.
The compressor, condenser fan, compartment fans, heater/fans, and alarms are disabled during this mode. The following functions will remain enabled: the display showing the last set-points, the “On” icon in the message center, key tones, internal lights, set keypad, warmer/colder keypad, mode keypad, light keypad, and the F/C keypad.
When the P-O-R has been preformed, press the light keypad, an audible beep will sound, and the blue LED on the light keypad will turn on.
The compartment lights will remain on for a maximum of 15 minutes. After 15 minutes the compartment lights will time-out and shut off. However the blue LED light on the

keypad will remain lit as a reminder that Showroom Mode is still activated. To repeat the Show Room Mode, simply open and close the doors momentarily to cycle the compartment lights on for another 15 minute period.
To escape from “Show Room” mode repeat the activation process.

2.1.9 Black Out Mode

This is an automatic function and simply means that when the door is closed, the display readouts and the compartment lights turn off. Display lighting is the exception.

2.1.10 Sabbath Mode

To activate the Sabbath Mode, press and hold the “Set” keypad while pressing the ˚F/C keypad four (4) times within seven (7) seconds. The display will flash “SA” seven (7) times before the displays black out. The display, audible alarms, message center, and lights will be disabled at this time. Although in Sabbath Mode, the wine cellar will still operate randomly. The Sabbath Mode automatically times-out in 72 hours. To exit the Sabbath Mode simply repeat the same procedure used to enable.

2.1.11 Door Ajar Alarm

When the TruProtect™ system is enabled an audible alarm will sound three (3) times every 30 seconds and the message center will display an amber “Door Ajar” alarm.

2.1.12 High/Low Temperature Alarm

When the TrueProtect™ system is enabled an audible alarm will sound six (6) times every minute and the message center will display a red “Hi/Low Temp Upper” or a red “Hi/Low Temp Lower” alarm.
It is a normal condition if the alarm occurs when changing set-points in excess of 10˚F and/or high usage.

2.1.13 Power Failure Alarm

When the Truprotect™ system is enabled the message center will display an amber “Power Failure” alarm if power has been interrupted to the unit. No audible alarm is heard.
This is normal at initial start-up as the wine cellar was operated for quality checks at the factory.

2.1.14 Reset Alarms

To reset the Door Alarm, simply close the door of the unit. For all other alarms press the “On/Off” keypad. Although the alarms have been reset, the alarm will still resume if the condition has not been corrected.

2.2 System Operation

The dual zone wine cellar is designed with the intent of storing and chilling of wines. It is not classified as a refrigerator and should not be utilized as such.

The dual zone wine cellar has two independent, temperature controlled zones. The temperature range for each zone has an adjustable set-point range of 45˚F to 65˚F. Ideally these units should be set to operate with a warmer upper zone for red wines (55˚F) while maintaining the lower zone at a colder temperature for white wines (45˚F).

The temperature shown on the user interface is displayed as “real time” temperature for each zone. This is unlike competitive models. It is important that the customer realizes that during normal operation of the wine cellar, the display will show slight variations. This is the result of temperatures monitored during on/off cycles, calls for heat, and defrosts periods.

The evaporator is located behind the evaporator cover located on the back wall of the cabinet interior. A sealed divider separates the upper and lower compartments. Each zone has an independent thermistor, compartment fan, and heater / fan assembly.

The dual zone wine cellar utilizes a single refrigeration system.
Temperature control for each zone is achieved by tempering the air in each compartment. This is achieved by cycling the compressor with compartment fans or the heater / fan assembly at intervals when needed. The thermistor of each compartment monitors the need for either a call for cooling or the call for heat. The signal is then sent to the User Interface board on the control panel.

When a call for heat is monitored, the compressor, condenser fan, and compartment fans will all be disabled. A 10 minute delay will occur before a call for heating can be initiated in the same compartment, unless the set-point for that compartment has been changed. During a call for heat cycle, the compartment fan is disabled during a simultaneous call for cooling in the other compartment

A call for heating will only occur if a set-point is set at 49˚F or above. A call for heating cycle will be terminated if the set-point is changed to a setting less then 49˚F.

2.3 Defrost

The dual zone wine cellar does not incorporate either an electric heater or hot gas method for defrost.

Depending on the software version (See following page), defrost is achieved by utilizing additional compressor off time at the conclusion of a predetermined, accumulated run time period. These parameters have been programmed into the User Interface board and can not be changed or re-programmed.

The latest software is version 1.9. This software version will incorporate an additional 30 minutes of compressor “off time” when 5 hours of accumulated run time has been obtained. The defrost period will initiate at the beginning of the next call for cooling. At this point the compressor remains off until the conclusion of the 30 minute defrost period.

2.4 Software Versions

To determine the software version of the dual zone, enter into the diagnostics mode on the User Interface board.
This is accomplished by pressing and holding the “Warmer” keypad while pressing the “Colder” keypad four (4) times within five (5) seconds. The display will flash both the software and firmware version.
To exit the diagnostics mode repeat the above process or let the User Interface time out of the mode after five (5) minutes of no keypad functions.

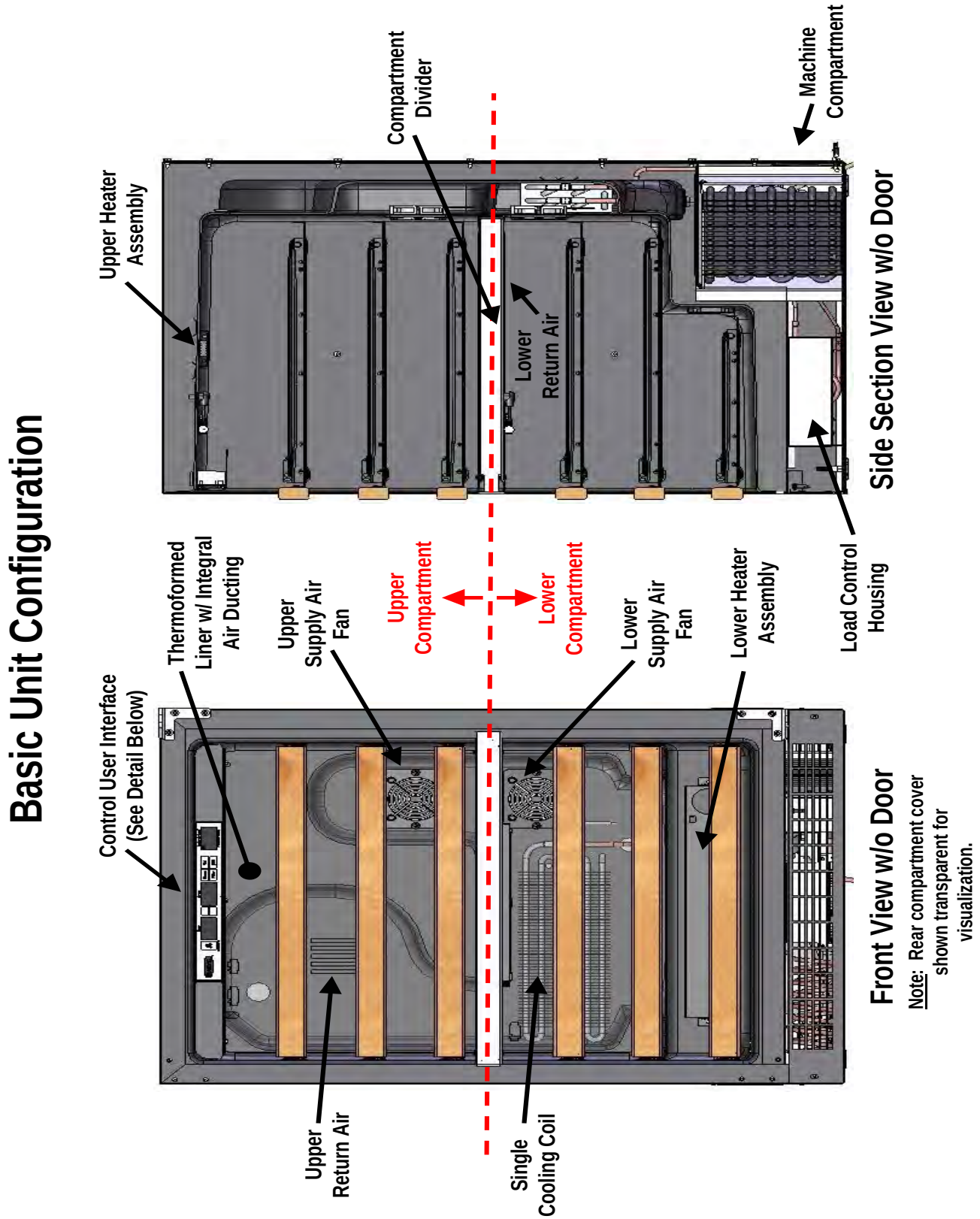
Firm Ware	Soft Ware	Compressor off time	Accumulated run time
1.0	1.5	20 Minutes	12 Hours
1.0	1.7	20 Minutes	5 Hours
1.0	1.8	25 Minutes	5 Hours
1.0	1.9	30 Minutes	5 Hours

NOTE: All part orders will receive software version 1.9

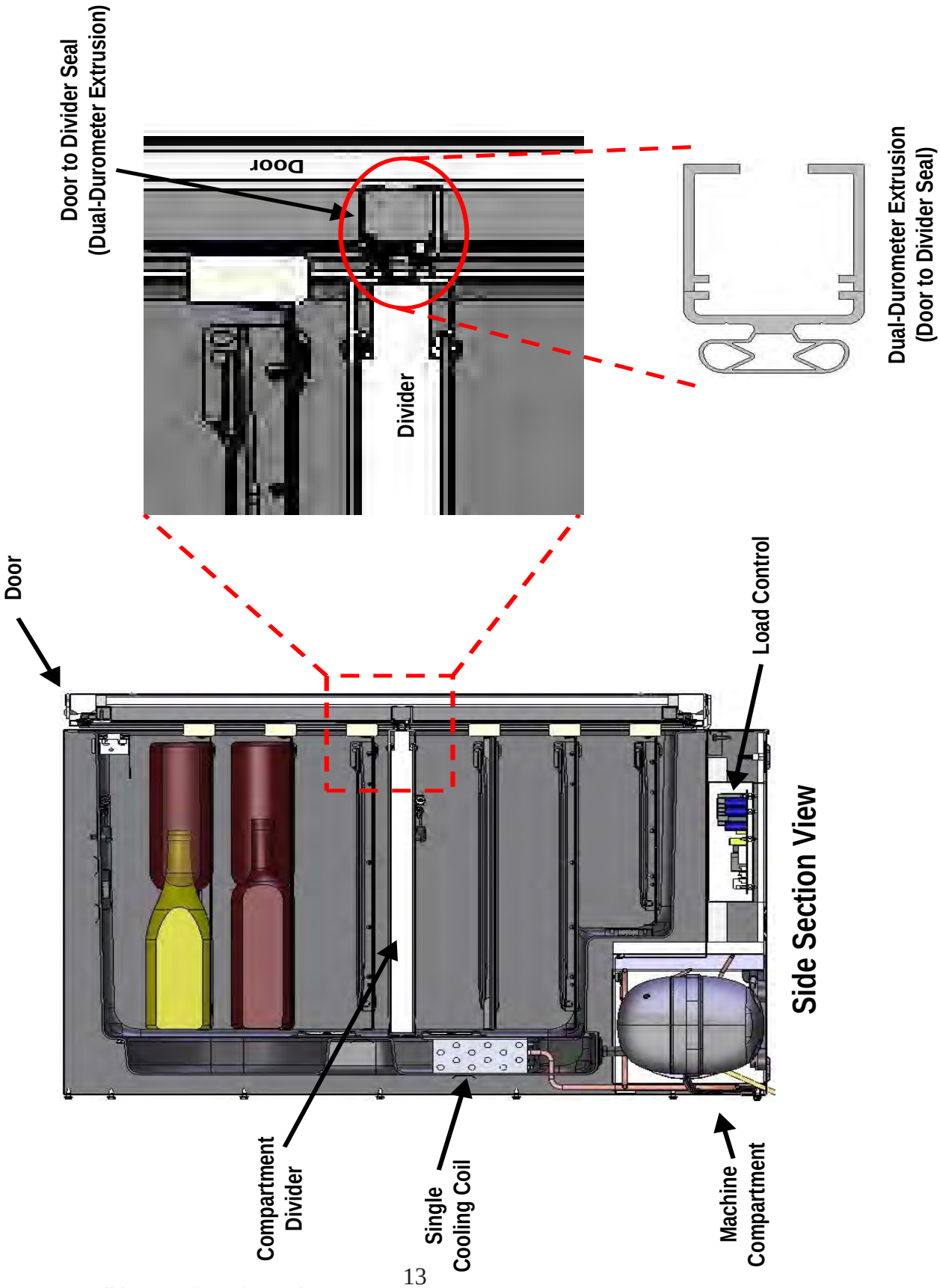
Section 3

Refrigeration Systems

3.1 Basic Unit Configuration



3.1 Basic Unit Configuration cont.



3.2 Servicing

1) Always disconnect power to any Viking product before attempting to service.
2) ***CAUTION of electrical shock.*** Never attempt any electrical repairs in damp or wet areas when power is connected to the unit.
3) If the unit has been running, use CAUTION around the compressor, condenser, and connecting high side tubing. These areas may be hot and capable of burning flesh.
4) Use CAUTION around the condenser fins and evaporator fins, also edges around the back panel, rear cabinet edges, and the mechanical base plate. These areas are sharp and could result in minor to severe cuts.
5) Refrigerant is under pressure. Never attempt to open a refrigeration system without properly evacuating it.
6) Any refrigerant, R-12 (CFC), R-22 (HCFC), or R-134a (HFC), must be recovered. Federal regulations prohibit the intentional venting or release of refrigerants during the repair or disposal of an appliance.
7) Whenever possible it is best to perform all system repairs at the service center rather then the customer's home.
8) Always have proper ventilation using a torch when disconnecting soldered joints. It is not uncommon to have some oil flash when the copper tubes are heated and separated.
9) Always wear protective safety glasses and gloves when working on any Viking product.

3.3 Basic Tools Needed for R-134a Service & Repair

1) Manifold gage
2) Hoses with couplers
3) Certified refrigerant recovery system
4) Charging cylinder or dial-a-charge
5) Weight scale
6) Access taps
7) Brazing torch
8) Vacuum pump
9) Leak detector
10) Small & large tubing cutters
11) Swaging tools
12) Multi-meter
13) Standard hand tools (¼" nut-driver, 5/16" nut-driver, 3/8" nut-driver, slotted and Phillips screwdriver, allen wrenches, combination and adjustable wrenches, 3/8" drive socket set).
14) Rivet gun with assorted rivets
15) Drill motor and assorted metal drill bits
16) Solder and flux.

3.4 R-134a

The following CAUTIONs should be read before proceeding

The dual zone wine cooler utilized R-134a refrigerant.

R-134a and R-12 are completely incompatible. Extreme care should be taken to use only dedicated equipment not only when evacuating and recharging the system but for all system repair.

With the possible exception of the vacuum pump, all service equipment that comes in contact with R-134a during evacuation and recharging must be dedicated. Accordingly, R-134a will require a dedicated charging cylinder, manifold gauge set, process tube adaptors, and hoses. Any residual mineral oil or other tools used for system repair must be cleaned thoroughly before using R-134a / Ester oil systems.

CAUTION Ester oil is synthetic oil used as a lubricant in R-134a systems. Ester oils include various types of additives for improving viscosity, and temperature sensitivity. These additives are often aggressive and skin contact should be avoided.

It is important to note that Ester oil and mineral oil do not mix

If a vacuum pump with mineral oil is used to evacuate an R-134a system, it is absolutely essential to have a shut-off valve between the pump and the manifold gauge. The hand valve must be closed during all times when the vacuum pump is not operating. This prevents the migration of mineral oil vapor into the R-134a / Ester oil system. If the vacuum pump should stop during evacuation, the hand valve must be closed immediately.

Insure that all refrigeration hoses are specified for use with R-134a refrigerant. Research has shown that compounds in standard refrigeration hoses may enter the sealed systems and eventually restrict the capillary tube.

3.5 Sealed System

The following should always be practiced with any sealed system that has been opened. Only open the system after a complete diagnostic evaluation of all electrical and mechanical components has revealed that a definite system problem has occurred. Items that could cause similar failures are loose or broken wiring connections, fans, bad control, faulty thermistors, door gasket leaks, misc. air leaks, and dirty condenser. The diagnosis of a sealed system can be determined by accurate pressure and temperature measurements.

1) Use a leak detection system that will detect R-134a refrigerant. A small charge might have to be added to the unit if the leak was critical enough or the unit has set for a period of time before service.
2) Find and repair the leak. Look for traces of oil around solder joints. This is a good tool to pin-point a leak in a tight area.
3) Remember that any charge in the system must be reclaimed prior to repairing the leak.
4) Replacing the filter drier is mandatory when ever a system repair has occurred. Using a dirty filter / drier will increase the percentage of system failure. Moisture and other non-condensable material are detrimental to the operation of the refrigeration system. Do not open the new sealed filter / drier until ready to install and solder the system closed.
5) It is also recommended that the compressor be replaced if a low side leak was found. The com pressor has drawn moisture into the system at the point of the low side leak. Dry nitrogen gas should be used to flush the system prior to evaluation.
6) In the case that the capillary tube has been restricted or kinked a new evaporator will also be sup plied as a sub-assembled piece.

3.6 Low Side Leaks

As mentioned above it is recommended that the compressor and filter / drier be replaced if moisture has been drawn into and contaminated the system. After repair, dry nitrogen should be flushed through the system before the unit is evacuated and recharged.

3.7 High Side Leaks

It is not necessary to replace the compressor with a high side leak however the filter / drier should be replaced. Once again after the leak has been repaired, flush the system with dry nitrogen before evacuating and re-changing the unit.

3.8 Restricted Capillary Tube

Moisture and other contaminants that enter the system can cause deposits in the system. These deposits will usually collect in the capillary tube and form a restriction that can not be completely removed by flushing. If the capillary tube is restricted the filter / drier, capillary tube, evaporator, and suction line assembly should be replaced.

3.9 Access Valves

A temporary access valve can be used to diagnosis and service the system. To access the low side of the system, install the access valve on the process tube at the compressor. Do not install the access valve near the base of the compressor leave some room on the process tube in case the unit has to be serviced again. Before piercing the process tube, install the low side hose from your manifold gage to the access valve. Once the valve has been pierced, slightly crack the hose fitting at the manifold long enough to bleed the air from line. When service has been completed the access valve should be removed. This will prevent future leaking as these valves are not guaranteed leak proof. To remove the valve, use a pinch off tool to close the process tube between the valve and the compressor. With the pinch off tool in place, remove the valve and solder the pierced hole shut. At this time remove the pinch off tool and check for leaks with the system off.

3.10 Refrigerant Recovery

Recovering the refrigerant is the removal of the charge from the system by use of a recovery pump and storing in either a recovery bag or tank that is specifically designed for this purpose only.

Refrigerant recovery requires an EPA certification.

3.11 Flushing a System

Flushing a system is recommended when moisture, non-condensable, or other contaminants are suspected in the system. It is also a must when a compressor burn out has occurred. A compressor burn out will be evident by the smell when the system has been opened.

It is recommended that the system be flushed with dry nitrogen. Refrigerant can also be used for this process as long as it is the same that is used when charging the system. Check the serial plate for the type of refrigerant used in the system.

CAUTION: Use extreme care when using dry nitrogen. A nitrogen tank could be pressurized as high as 2000 PSI. The cylinder should be equipped with a pressure regulator, relief valve, and pressure gauge. Also ensure that hoses are adequate and not worn or damaged. Do not exceed 300 PSI when flushing a system.

To flush the system, remove the compressor and filter / drier from the system. The condenser, evaporator, and capillary tube should all be flushed independent from each other.

Before flushing, a process adaptor needs to be placed on one end of the component being flushed. Place a rag over the opposite end to catch any oil or particles removed when flushed. Slowly open the valve on the nitrogen tank to begin. Once started, the valve can be opened further.

CAUTION: IF REFRIGERANT IS USED AS A MEANS OF FLUSHING - IT MUST BE RECOVERED

3.12 System Evacuation

R-134A SYSTEMS ARE PARTICULARLY SUSCEPTIBLE TO MOISTURE CONTAMINATION WHICH CAN ONLY BE PREVENTED BY EVACUATING THE SYSTEM FOR A MINIMUM OF 30 MINUTES TO ATTAIN A MINIMUM 29.9 INCHES (50 MICRON) VACUUM

A properly maintained two stage vacuum pump is required to achieve the minimum requirements of a good vacuum. The vacuum pump oil should be changed at regular scheduled periods to insure proper operation. It is mandatory to change oil every time a contaminated system is serviced.

Care should be taken when evacuating a system. It is possible with today's equipment to draw oil from the compressor thru the low side if both the high and low side manifold valves are opened initially. To prevent this, start the vacuum with only the high side open. The low side manifold valve can slowly be opened after a couple minutes of high side operation.

3.12.1 Evacuating the Refrigerant

1) Make sure that power is disconnected from the unit.
2) Install process valves or adaptors if not already completed.
3) Attach manifold gauges.
4) Low side to suction process.
5) High side to filter / drier process.
6) Center port of manifold hose before hand shut-off valve to charging cylinder.
7) Center port of manifold hose after hand shut-off valve to vacuum pump.
8) Make sure that the charging cylinder valve, hand shut-off valve, and manifold gauges are closed.
9) Start vacuum pump.
10) Open the high side manifold valve first.
11) After a couple of minutes slowly open the low side manifold valve.
12) Operate the vacuum pump for a minimum of 30 minutes or 29.9 inches (50 microns).
13) Close the hand shut-off valve to the vacuum pump and watch the low side manifold gauge for a few minutes. If there is no change in the gauge pressure the system is sealed and no leaks are present. At this time the system is ready to charge.

If the vacuum pump can not achieve a good vacuum in a reasonable amount of time, or the low side gauge looses its vacuum (step 8 above) a leak is present.
At this time add a small amount of charge into the system and check for leaks.

3.13 Charging the System

BEFORE CHARGING ALWAYS VERIFY THE AMOUNT OF CHARGE PRINTED ON THE SERIAL PLATE

1) Check to make sure that the hand shut-off valve to vacuum pump is closed.
2) Close the high side manifold gauge valve.
3) If using a Dial-A-Charge, set the charging cylinder scale to the pressure indicated on the pressure gauge.
4) Observe the refrigerant level in the sight glass of the Dial-A-Charge, the a-joining scale indicates the amount of charge in the cylinder. Subtract the amount of charge needed (per the serial plate) from the amount of charge on the cylinder scale. See Below Example
5) Open the charging cylinder valve slowly and watch the sight glass on the Dial-A-Charge.
6) When the charge is reduced to the calculated level on the Dial-A-Charge scale, the correct amount of charge is in the system.
7) Close charging valve on Dial-A-Charge.

Example:
1) Dial-A-Charge liquid level is 15 ounces.
2) Viking Dual Zone requires 3.25 ounces of charge.
3) 15 oz - 3.25 oz = 11.75 oz.
4) 11.75 ounces will be the liquid level on the Dial-A-Charge when the Dual Zone has obtained its proper charge.

8) Turn on unit and let compressor run for a few minutes.
9) Monitor system pressures and the temperature of lines with your hand.
10) If everything is satisfactory, clamp off the high side process tube when the unit is running.
11) Slowly open the high side valve and allow the compressor to remove any refrigerant remaining in the high side line.
12) Close both manifold gauges.
13) Remove the high side process adaptor and solder tube shut.
14) Clamp the low side process tube, remove adaptor, and solder tube shut.
15) Check for leaks.

3.13.1 Alternate Charging Method

If a weighted charge method is used.

1) Simply weigh the charging cylinder before charging.
2) Continue to charge while monitoring the scale weight.
3) When the predetermined weight has been reached the valve can be shut off.

3.14 Leak Test System

Using a leak detector:
1) Check the high side with the compressor running.
2) Check the low side with the compressor off.

Section 4

TruProtect™ Control Diagnostics

4.1 Diagnostics Mode

Enter the diagnostics mode by pressing and holding the “Warmer” keypad while pressing the “Colder” keypad four (4) times within five (5) seconds. The display will flash both the software and firmware version.
At this time depress the “Set” keypad once more. This will enter the Service Mode where individual components can be tested individually.
Continue to press the “Set” keypad one time to access the test mode for each specific component. The status of each component can then be tested by pressing either the “Warmer” or “Colder” button to cycle each component. The “Warmer” keypad will turn each component on and the “Colder” keypad will turn them off.

When testing the status of each thermistor the display will only show the status of the current condition. When testing the status of the door reed switch a magnet held between the “On/Off” keypad and display will show the status. The “Warmer” / “Colder” keypad serve no purpose for this test.

The Service Mode will time out and return to the main display mode after five (5) minutes if keypad is left idle.

Please refer to the following chart for Test Number, Component, and Status.

		Available Status Indicators		
Test #	Component Description	OK	Off / Open	On / Short
0	Upper Thermistor	0-	00	00
1	Lower Thermistor	1-	10	11
2	Compressor	n/a	20	21
3	Condenser Fan	n/a	30	31
4	Upper Compartment Fan	n/a	40	41
5	Lower Compartment Fan	n/a	50	51
6	Upper Heater / Fan	n/a	60	61
7	Lower Heater / Fan	n/a	70	71
8	Door Sensor (use magnet)	n/a	80	81

Note: n/a on chart means that component must be turned off/on to check performance

To exit the diagnostics mode repeat the above process or let the User Interface time out of the mode after five (5) minutes of no keypad functions.

4.2 Error Codes

The microprocessor in the control continually monitors critical components for proper operation. If any of the components parameters exceed normal operating specifications, an audible alarm will sound six (6) times every minute. The corresponding error code will then be displayed on the User Interface board. If more then one critical error occurs the display will flash each error sequentially.
Refer to the error codes below for possible causes.

E1: Compressor Error (High Amps)

Possible Causes:
1) Compressor wire disconnected
2) Faulty Compressor
3) Faulty Control
4) Faulty Overload
5) Faulty PTC Starter

E2: Condenser Fan Error (Low Amps)

Possible Causes:
1) Condenser Fan Motor Wires Disconnected
2) Faulty Condenser Fan
3) Faulty Control

E3: Upper Compartment – Thermistor Sensor Error (Open or Out-of-Range)

Possible Causes:
1) Disconnected / Broken Wire
2) Shorted Thermistor Wires
3) Faulty Thermistor

E4: Lower Compartment – Thermistor Sensor Error (Open or Out-of-Range)

Possible Causes:
1) Disconnected / Broken Wire
2) Shorted Thermistor Wires
3) Faulty Thermistor

Any E# error codes could possibly be the fault of a power surge, a low voltage condition, or some type of power interruption. Before further diagnostics are continued, it would be beneficial at this point to perform a “Power-On-Reset”to verify component fault.

With any of the above errors the audible alarm will sound six (6) times every minute. A “Power-On-Reset” is accomplished by unplugging the wine cellar momentarily at the power supply or by resetting its circuit breaker. If the error code persists, component is faulty and requires service.

Please refer to the trouble shooting section of this manual for additional information.

Section 5

Mechanical System Components

5.1 Accessing the Mechanical Base-Plate

Access to the mechanical base-plate is located at the rear of the unit. Most mechanical and electrical components on the unit mount directly to the base-plate.
To gain access to the mechanical base-plate proceed as follows, be sure to reference the photos as called out.

Step 1: Remove all screws around the perimeter of the cabinet. Do not remove the screws from the slotted area. (See figure 12.3)
Step 2: To loosen the rear of the mechanical assembly, remove both hex screws at each lower back corner (See figures 12.4).
Step 3: Remove the two Phillips screws and remove the front grille (See figure 12.5).
Step 4:To loosen the front of the mechanical assembly, remove both Phillips screws that secure the front corners (See figure 12.6).
Step 5:**CAUTION**, (See figures 12.7 & 12.8) before sliding out the mechanical assembly please read the following carefully. To avoid kinking of any system tubing do not slide the mechanical section forward farther then 6" maximum. Doing so may kink any or all of the following: discharge line at the compressor, suction line at the compressor, suction line as it exits the rear of the cabinet.

SEE PHOTO SECTION FOR REFERENCE TO ABOVE MENTIONED FIGURES

5.2 Compressor

The compressor is the heart of the refrigeration system. However, it relies on other parts of the system to function. Make certain that the other parts of the system are functioning correctly before determining that the compressor is faulty.

The following tests should be conducted before concluding the compressor is faulty.

1) Low and high side pressure, temperature of compressor, discharge and suction lines, temperature of air leaving the evaporator compartment, temperature of condenser coil, condenser fan operation, and amp draw at compressor.
2) Use a compressor start cord to isolate and test the compressor.
3) Use an ohmmeter to measure resistance / continuity at the compressor to check for shorted or grounded windings.
   a. Resistance between the "Common" and "Run" terminals: this will be the lowest ohm reading obtained.
   b. Resistance between the "Common" and the "Start" terminals: this will be the mid range ohm reading obtained.
   c. Resistance between the "Start" and "Run" terminals: this will be the highest ohm reading obtained.
   d. No resistance between any two terminals signifies an open winding.
   e. Check continuity between compressor terminals and the compressor itself (Scrap off a little paint on compressor to make sure that resistance can be measured). If continuity is obtained, the compressor is grounded and needs to be replaced.

5.2.1 Removal of the Compressor

1) Remove all screws around the perimeter of the cabinet. Do not remove the screws from the slotted area. (See figure 12.3)
2) To loosen the rear of the mechanical assembly, remove both hex screws at each lower back corner (See figures 12.4).
3) Remove the two Phillips screws and remove the front grille (See figure 12.5).
4) To loosen the front of the mechanical assembly, remove both Phillips screws that secure the front corners (See figure 12.6).
5) **CAUTION**, (See figures 12.7 & 12.8) before sliding out the mechanical assembly please read the following carefully. To avoid kinking of any system tubing do not slide the mechanical section forward farther then 6" maximum. Doing so may kink any or all of the following: discharge line at the compressor,suction line at the compressor, suction line as it exits the rear of the cabinet.

SEE PHOTO SECTION FOR REFERENCE TO ABOVE MENTIONED FIGURES

6) Install sealed system access valves and recover refrigerant. After recovery, cap off valve.
7) Remove electrical cover from side of compressor (See figures 12.9 & 12.10).
8) Remove PTC starter and overload from compressor terminals.
9) Heat joints and remove filter / drier.
10) Heat joints and remove the discharge and suction lines at the compressor.
11) It is advisable that the un-soldered copper tubes be capped if the system will be exposed to the atmosphere for any length of time.
12) Remove the lock nuts on the mounting plate and lift the compressor off the carriage bolts.

5.3.2 Installation of the new Compressor

1) Do not remove the rubber plugs at the tube stubs on the compressor at this time.
2) Install the four (4) rubber grommets onto the compressor base.
3) Install the three sleeves where the carriage bolts are located.
4) Mount the compressor into position on the mechanical base-plate.
5) Install the three washers and lock nuts and tighten snuggly into place. Do not over tighten.
6) Install and solder a new filter / drier.
7) Remove rubber plugs from compressor tube stubs.
8) Install and solder a new process tube to compressor.
9) Install and solder the discharge line into compressor.
10) Install and solder the suction line into compressor.
11) Re-install PTC relay and overload to compressor terminals.
12) Replace compressor electrical cover and snap into place.
13) Carefully slide mechanical base plate assembly back under cabinet.
14) Screw mechanical base plate assembly to cabinet (See figures 12.4 and 12.6).
15) Evacuate, change, and leak check system.
16) Replace front grille (See figure 12.5), back panel and power cord grommet (See figure 12.3).

SEE PHOTO SECTION FOR REFERENCE TO ABOVE MENTIONED FIGURES

5.3 Condenser

The condenser is a fin and tube, forced air application (See figure 12.12). The front grille facilitates both intake and exhaust air. An air baffle located behind the front grille separates the air drawn across the condenser by the condenser fan.
A common problem with this system is restricted air flow caused by lint, dust, dirt, and pet hair. These particulates will build up on the condenser and result in overheating due to the lack of heat transfer across the coil.

5.3.1 Removal of the Condenser

1) Remove all screws around the perimeter of the cabinet. Do not remove the screws from the slotted area. (See figure 12.3)
2) To loosen the rear of the mechanical assembly, remove both hex screws at each lower back corner (See figures 12.4).
3) Remove the two Phillips screws and remove the front grille (See figure 12.5).
4) To loosen the front of the mechanical assembly, remove both Phillips screws that secure the front corners (See figure 12.6).
5) **CAUTION**, (See figures 12.7 & 12.8) before sliding out the mechanical assembly please read the following carefully. To avoid kinking of any system tubing do not slide the mechanical section for ward farther then 6" maximum. Doing so may kink any or all of the following: discharge line at the com pressor,suction line at the compressor, suction line as it exits the rear of the cabinet.
6) Remove condenser fan by removing the four screws on the fan mounting base plate. The electrical leads do not need to be disconnected. The fan assembly can now be set aside and out of the way.
7) Remove the condenser fan shroud.
8) Install sealed system access valves and recover refrigerant. After recovery, cap off valve.
9) Heat joints and remove filter / drier.
10) Heat joints and remove the discharge and liquid lines at the condenser.
11) It is advisable that the un-soldered copper tubes be capped if the system will be exposed to the atmosphere for any length of time.

SEE PHOTO SECTION FOR REFERENCE TO ABOVE MENTIONED FIGURES

5.3.2 Installation of a new Condenser

1) Pop rivet the new condenser in place from underneath the machine compartment.
2) Install the condenser shroud.
3) Install and solder the discharge and liquid lines to condenser.
4) Install new filter / drier.
5) Install the condenser fan assembly.
6) Carefully slide mechanical base plate assembly back under cabinet.
7) Screw mechanical base plate assembly to cabinet (See figures 12.4 and 12.6)
8) Evacuate, change, and leak check system.
9) Replace front grille (See figure 12.5), back panel and power cord grommet (See figure 12.3).

SEE PHOTO SECTION FOR REFERENCE TO ABOVE MENTIONED FIGURES

5.4 Evaporator

The evaporator for the dual zone wine cellar is a 12 pass, fin-tube design. It is located inside the unit and behind the evaporator cover.
The location of the evaporator is setting so that the re-circulated air from the upper and lower compartments is drawn into the return air section of the evaporator compartment and across the evaporator coil where it is cooled. The cooled air is then drawn into the supply air portion of the evaporator compartment and distributed to either upper or lower compartment as needed.

5.4.1 Removal of the Evaporator

1) Remove all screws around the perimeter of the cabinet. Do not remove the screws from the slotted area. (See figure 12.3)
2) To loosen the rear of the mechanical assembly, remove both hex screws at each lower back corner (See figures 12.4).
3) Remove the two Phillips screws and remove the front grille (See figure 12.5).
4) To loosen the front of the mechanical assembly, remove both Phillips screws that secure the front corners (See figure 12.6).
5) **CAUTION**, (See figures 12.7 & 12.8) before sliding out the mechanical assembly please read the following carefully. To avoid kinking of any system tubing do not slide the mechanical section for ward farther then 6" maximum. Doing so may kink any or all of the following: discharge line at the compressor,suction line at the compressor, suction line as it exits the rear of the cabinet.
6) To access the evaporator please refer to the steps for removing the divider assembly (See page 34)
7) Install sealed system access valves and recover refrigerant. After recovery, cap off valve.
8) Remove liquid and capillary lines from filter / drier.
9) Disconnect suction line from compressor.
10) Remove evaporator, suction line, and capillary tube assembly from the unit.

SEE PHOTO SECTION FOR REFERENCE TO ABOVE MENTIONED FIGURES

5.4.2 Installation of a new Evaporator

1) The new evaporator will come as an assembly which includes the suction and capillary lines. A filter / drier will also be included.
2) Reverse the above procedure to reinstall the evaporator and divider assemblies.
3) Install and solder a new filter / drier.
4) Install and solder a new process tube to compressor.
5) Install and solder the suction line into compressor.
6) Carefully slide mechanical base plate assembly back under cabinet
7) Screw mechanical base plate assembly and front grille to cabinet (See figures 12.4, 12.5, and 12.6).
8) Evacuate, change, and leak check system.

SEE PHOTO SECTION FOR REFERENCE TO ABOVE MENTIONED FIGURES

Section 6

Structural Components

6.1 Divider Assembly & Evaporator Cover

The divider of the dual zone wine cellar separates the upper and lower compartments. The return air for the lower compartment is directed through a return air damper located on the bottom of the divider. Return air is then diverted through the rear of the divider assembly and into the return air compartment of the evaporator section.
The return air damper is automatically drawn open when that compartment fan is running. The damper door consists of a Mylar material that is taped into position and simply opens when air is drawn through it when the compartment fan is running.

The power supply for the lower compartment light is also run through the rear, right hand corner of the divider assembly.

6.1.1 Removal of the Divider & Evaporator Cover

Step 1: Remove all shelving.
Step 2: Remove the 2 screws that secure the divider to the sidewall channel rails. These screws are located on the front edge of the divider bottom (See figure 12.18). Do not remove the screws located closest to the front as these hold the divider assembly together.
Step 3: Pull divider assembly out approximately 2-3 inches, just enough to disconnect the white Molex connector located behind the divider at the right hand corner (See figure 12.19). The Molex connector has a release clip on each side of the plug. Using the thumb and forefinger, simply press the release towards the body of the plug and gently pull back and away from the connection.
Step 4: Slide divider assembly out and remove.
Step 5: Remove screws that secure the channel rails on the left and right hand sides of liner (See figure 12.20).
Step 6: Disconnect the two Molex connectors located in the top left corner of the upper compartment (See figure 12.21). Use the method in Step 3 to release plug.
Step 7: (See figure 12.21) Locate the Molex connecter (second from the left hand side) that is still at tached to the evaporator cover. Place the flat of your thumb over the plug and apply pressure to push the connector back behind the evaporator cover.
Step 8: Disconnect the Molex connector located in the top left corner of the lower compartment (See figure 12.22). Release the clip using the same method as before.
Step 9: Remove the 6 push plugs that hold the evaporator cover in place (See figure 12.23). This can be done with a pair of pliers or channel locks. Grasp the head of the nut with the pliers and pull outward, take some care as these plugs can be reused.
Step 10: Both supply fans need to be disconnected before the evaporator cover can be removed. To accomplish this bring the left hand side of the evaporator cover forward and reach behind the cover to disconnect the Molex connections to both fans (See figure 12.24). Use the same method previously mentioned to disconnect Molex plugs.
Step 11: Remove cover. You now have access to the evaporator assembly (See figure 12.25).

SEE PHOTO SECTION FOR REFERENCE TO ABOVE MENTIONED FIGURES

6.1.2 Installation of the Divider & Evaporator Cover

Step 1: Re-assemble by reversing the above steps

Step 2: Before re-installing the divider make sure that the back edge of the assembly has a small piece of tape (between each corner and return air channel) to hold the assembly together (See figure 12.26). This will aid when re-installing into the rear channel. The tape should not extend any farther out then 3/16" on the upper and lower divider panels. NOTE: make sure that the return air channel on the back of the divider is not restricted or covered with the tape

Step 3: When re-installing the divider it is pertinent that the divider is sandwiched between both the side and rear channel rails. This is necessary to obtain proper assembly and to obtain proper performance of the wine cellar. A putty knife with a 6" blade will help the assembly process by inserting it between the rear divider surface and the inside of the back channel flange. Gradually work the knife along the back edge while sliding the divider in place (See figure 12.27). This can be achieved by rotating this process between the top and bottom edges of the divider until it is clear of any binding and rests securely inside the back of the rear channel.

SEE PHOTO SECTION FOR REFERENCE TO ABOVE MENTIONED FIGURES

6.2 Door Handle

To remove, adjust, or tighten the door handle use a 3/32” allen wrench to either tighten or loosen the two (2) set screws that secure the handle at the top and bottom stand-offs (See figure 12.28). If removing the handle and stand-offs completely the truss head screws inside the stand-offs will have to be removed using a Phillips screwdriver (See figure 12.29).

6.3 Door Hinge Adjustment

The cabinet and door components that are related to the top and bottom of the door are: (2) hinges, (2) hinge adaptors, (2) hinge pins, (2) nylon bushings, (4) ¼-20 screws, and (6) 10-32 counter sunk screws.

To adjust the door:
Use a 5/32” allen wrench to loosen the two (2) ¼-20 screws securing the door adaptor to the top of the door (See figure 12.32). Once loosened, the height of the door can be adjusted. Align the top of the door so that it appears parallel to the cabinet top. Tighten the ¼-20 screws.

Note: The top of the door will not set as high as the top of the cabinet, but it will appear that both cabinet and door are aligned the same.

6.4 Leveling Legs

There are a total of four (4) leveling legs, one on each bottom corner of the cabinet.

Lift each corner separately to adjust individual legs. The bottom of each leg is hex shaped so that an adjustable wrench or channel-lock pliers could be used if necessary to adjust height. Leveling legs on a new unit are finger tight and can be adjusted without the use of a tool.
Turning the leveling legs clockwise will raise the height while counter-clockwise will lower the adjustment.
It is recommended placing a bubble level on the cabinet top to check for side to side and front to back levelness.

Section 7

Electrical Components

7.1 Fans

7.1.1 Condenser Fan

The condenser fan is used to force air over the condenser coil. The condenser fan cycles on and off simultaneously along with the compressor.

1) Make sure that the motor shaft turns freely. The blade can be turned in either direction to verify that the shaft is not seized or the blade binding. Watch the blade and listen for any noise that might indicate a problem.
2) Check resistance between the terminals of the motors power cord. Replace the motor if the wind ings are shorted (open).
3) Check for continuity between each lead of the power wires to the motors casing. If the motor is grounded there will be a continuity reading.
4) Check amp draw. Typical current draw will be approximately 0.15 without any resistance on the fan. A current draw exceeding 0.19 will be an indication that the motor or fan blade is not turning freely.

7.1.1.1 Removal of the Condenser Fan Motor

1) Remove all screws around the perimeter of the cabinet. Do not remove the screws in the slotted area. (See figure 12.3)
2) To loosen the rear of the mechanical assembly, remove both hex screws at each lower back corner (See figures 12.4).
3) Remove the two Phillips screws and remove the front grille (See figure 12.5).
4) To loosen the front of the mechanical assembly, remove both Phillips screws that secure the front corners (See figure 12.6).
5) **CAUTION**, (See figures 12.7 & 12.8) before sliding out the mechanical assembly please read the following carefully. To avoid kinking of any system tubing do not slide the mechanical section forward farther then 6” maximum. Doing so may kink any or all of the following: discharge line at the compressor, suction line at the compressor, suction line as it exits the rear of the cabinet.
6) Remove condenser fan by removing the four screws on the fan mounting base plate.
7) Remove the tinnerman clip from the motor shaft and remove the fan blade and rubber silencer.
8) Remove the fan motor from the bracket.
9) Disconnect the electrical leads.

SEE PHOTO SECTION FOR REFERENCE TO ABOVE MENTIONED FIGURES

7.1.1.2 Installation of the Condenser Fan Motor

1) Reverse the above process.

7.1.2 Compartment Fans

There are two compartment fans located with-in the dual zone wine cellar. Both the upper and lower compartment has a dedicated fan for independent air circulation of each zone.
The compartment fans are located in the supply air compartment and mounted to the evaporator cover (See figure 12.19). The fans draw air from the return air compartment, across the evaporator coil and into each compartment area.
Each compartment has its own dedicated return air damper. This damper is automatically drawn open when that compartment fan is running. The damper door consists of a Mylar material that is taped into position and simply opens when air is drawn through it when the compartment fan is running.

The following sequence is how the compartment fans relate to the basic system operation.

SEE PHOTO SECTION FOR REFERENCE TO ABOVE MENTIONED FIGURES

7.1.2.1 Compartment Fan Operation

Typical compartment call for cooling cycle:

At cut-in temperature:

On: Compressor, Condenser Fan, & Compartment Fan

Off: Heater / Fan

At cut-out temperature:

Off: Compressor, Condenser Fan, Compartment Fan, Heater / Fan

The compressor and condenser fan cycle on and off together. The compressor has a minimum off time of five (5) minutes.

A call for cooling in either compartment will activate the compartment fan. The other compartment fan will not run if there is no call for cooling.

A call for cooling in either compartment will energize the fan for that compartment.
A call for heat in either compartment will de-energize the fan for that compartment.
If the set-point for either compartment has been obtained the fan for that compartment will be de-energized.

If a compartment has a call for cooling while the other compartment is satisfied.

The compressor and condenser fan will energize.

The compartment fan for the call for cooling compartment will energize.

The compartment fan for the satisfied compartment will remain off.

This will prevent evaporator air from being circulated into the satisfied compartment. However, the heater / fan for the satisfied compartment may energize to heat any cool air which will migrate or convect into that compartment.

During a defrost cycle the compressor, condenser fan, and the coldest compartment fan are off. The compartment fan in the warmest compartment will run for a total of 30 minutes.

7.1.2.2 Replacing Compartment Fans

1) Replace compartment fans by removing the 2 Phillips screws on each side of fan assembly (See figure 12.19).
2) Pull fan away from evaporator cover to disconnect Molex connection.
3) Depress the release clips on each side of the Molex plug and separate from the wire harness connection.
4) Reverse above steps to replace.

7.1.3 Heater / Fan Assembly

There is a heater / fan assembly located inside each compartment. These heater / fans are used to add heat into the specific compartment as needed to maintain the desired set-point.
During a call for heat (cut-in) the compartment fan will de-energize. The compartment heater / fan for that compartment will then energize.
The compressor and condenser fan will continue to run if the other compartment is still calling for cooling.

7.1.3.1 Heater / Fan Operation

Typical compartment call for heat cycle:

At cut-in temperature:

On: Heater / Fan

Off: Compressor, Condenser Fan, & Compartment Fan

At cut-out temperature:

Off: Compressor, Condenser Fan, Compartment Fan, Heater / Fan

A call for heating cycle is terminated if the set point is changed to less than 49˚F.

If a compartment has a call for heat while the other compartment is satisfied.

The compressor and condenser fan will de-energize.

The heater / fan for the call for heat compartment will energize.

The compartment fan for the satisfied compartment will remain off to prevent the circulation of non-cooled evaporator air from being circulated into the satisfied compartment.

SEE PHOTO SECTION FOR REFERENCE TO ABOVE MENTIONED FIGURES

7.1.3.2 Replacing Heater / Fan Assembly

1) To replace either upper or lower heater/fans, remove the 2 hex screws on each end of end of each assembly (See figure 12.15 & 12.17).
2) Upper compartment: Disconnect the Molex connection at top left hand corner (See figure 12.21).
3) Lower compartment: The Molex connector for the lower heater/fan is located behind the heater/fan assembly. After removing the hex head screws, pull assembly away from the liner, reach behind and disconnect at Molex connector.
4) Reverse above steps to replace.

SEE PHOTO SECTION FOR REFERENCE TO ABOVE MENTIONED FIGURES

7.2 Thermistors

The wine cellar utilizes two thermistors, one as the upper zone display thermistor and the other as the lower zone display thermistor.

The upper zone thermistor (part number 41050208) is connected to the LED display and displays the temperature inside the upper compartment.

The lower zone thermistor (part number 41050209) is connected to the LED display and displays the temperature inside the lower compartment.

Both thermistors individually maintain their compartment set-points by cycling the compressor along with their individual compartment fans.
In addition each heater/fan assembly is also cycled to maintain the desired set-point. This will occur only when a compartment set-point is greater or equal to 49˚F. When a call for heat is detected, the compressor, condenser, & compartment fan will cycle off and the heater/fan for that compartment will turn on until set-point is obtained.

The display panel will flash E3 for a failure of the upper thermistor and E4 for a lower thermistor failure. If both thermistors fail, the code will be displayed sequentially. An audible alarm will also sound six times every minute if either one or both thermistors fail.

7.2.1 To Check Thermistor Resistance

1) Disconnect power to the wine cellar and drop the User Interface Control Housing to access the thermistor connections on back side of the board. (See figures 12.35 & 12.36).
2) Unplug the appropriate connector on the rear of the User Interface board.
3) Determine the temperature of the thermistor at its present location. Refer to the following chart and determine the approximate resistance value of the thermistor to be tested.
4) With an ohm-meter, measure the resistance of the thermistor by inserting the tips of the test leads into the two small holes on the thermistor plug previously removed.
5) Record the resistance value shown on the ohm-meter and determine if it corresponds to the reference chart below.
6) If the resistance value falls outside the resistance values given by 4% or greater, the thermistor needs to be replaced.

SEE PHOTO SECTION FOR REFERENCE TO ABOVE MENTIONED FIGURES

Note the resistance reading and compare to the chart below. When determining what temperature range to reference pick the closest given point and either add or subtract a small value so that it falls in line with the flow of the chart.

EXAMPLE: A thermistor setting at a room temperature of 72˚F should have an approximate resistance value of 2.2K.

˚C	˚F	K-Ohms	˚C	˚F	K-Ohms
0	32	5.630	17.8	64	2.655
0.6	33	5.492	18.3	65	2.597
1.1	34	5.359	18.9	66	2.540
1.7	35	5.229	19.4	67	2.484
2.2	36	5.102	20.0	68	2.430
2.8	37	4.979	20.5	69	2.378
3.3	38	4.860	21.1	70	2.326
3.9	39	4.743	21.6	71	2.276
4.4	40	4.630	22.2	72	2.227
5.0	41	4.520	22.8	73	2.179
5.6	42	4.413	23.3	74	2.133
6.1	43	4.309	23.9	75	2.088
6.7	44	4.207	24.4	76	2.043
7.2	45	4.108	25.0	77	2.000
7.8	46	4.012	25.5	78	1.958
8.3	47	3.919	26.1	79	1.917
8.9	48	3.828	26.6	80	1.877
9.4	49	3.739	27.2	81	1.837
10.0	50	3.653	27.8	82	1.799
10.5	51	3.569	28.3	83	1.762
11.1	52	3.487	28.9	84	1.725
11.7	53	3.407	29.4	85	1.690
12.2	54	3.330	30.0	86	1.655
12.8	55	3.254	30.5	87	1.621
13.3	56	3.180	31.1	88	1.588
13.9	57	3.109	31.6	89	1.556
14.4	58	3.039	32.2	90	1.524
15.0	59	2.971	32.7	91	1.493
15.5	60	2.904	33.3	92	1.463
16.1	61	2.840	33.9	93	1.434
16.7	62	2.776	34.4	94	1.405
17.2	63	2.715	35.0	95	1.377

7.2.2 Replacing the Upper Display Thermistor Cable

Step 1: Disconnect power.
Step 2: Remove top and middle shelves from upper compartment.
Step 3: Unscrew thermistor from left hand sidewall.
Step 4: Loosen both screws inside the front edge of control box (See figure 12.35). Insert a 5/16" nut driver thru the located holes of the control box to reach the hex head screws. Loosen the screws only for ease of re-assembling.
Step 5: Gently slide the control box forward and let suspend.
Step 6: The thermistor connector will be the smaller white plug located to the extreme right inside the control box (See figure 12.36).
Step 7: Gently press down on the top, back edge of the plug and push away to disconnect.
Step 8: Remove both thermistor cables from the white "C" shaped nylon fasteners. This will give some slack for the next steps.
Step 9: Carefully place the shaft of a Phillips screwdriver approximately 2" inside the wire channel and between the channel top and the thermistor and communication cables.
Step 10: Gently press downward on the handle of the screwdriver. This will unlatch the channel seam . Remove the screwdriver and continue opening the channel by running a finger along the open seam towards the rear until completely unlatched.
Step 11: Remove the upper thermistor cable from the channel and remove from the black nylon "C" fastener.
Step 12: Remove the thermistor cable.
Step 13: Reverse the above procedure to replace the new cable.
Step 14: When sealing the wire channel, make sure cables are not interfering and press upwards along the channel edge to seal.

SEE PHOTO SECTION FOR REFERENCE TO ABOVE MENTIONED FIGURES

7.2.3 Replacing the Lower Display Thermistor Cable

Step 1: Disconnect power.
Step 2: Remove top and middle shelves from lower compartment.
Step 3: Unscrew thermistor from left hand sidewall.
Step 4: Trace thermistor cable to the upper left hand corner to the back wall of lower compartment.
Step 5: Place thumb and forefinger on each side of the black Molex plug, squeeze together, and pull away to disconnect.
Step 6: Remove and replace thermistor cable.
Step 7: Reverse the above procedure to replace the new cable.

Section 8

Control Components

8.1 User Interface Board

The user interface board is located inside the interior control panel. The front of the interface board is covered with the decorative overlay showing the display and keypad features.

Please refer to the “User Interface Quick Reference Sheet” for a description of settings and functions in this manual.

The user interface board is a 12 volt DC circuit that interfaces: keypad & display functions, compartment temperatures, set-points, light functions, alarms, message center, Sabbath mode, error codes, and service diagnostics.

The user interface board is factory programmed and is not adjustable or re-programmable in the field. See the Software Section for further reference.

Located on the back side of the user interface board are the electrical connections for the communication cable and both upper and lower thermistor cables. A run time battery is also located on the rear of the user interface board. This battery supplies power to the memory during off periods. Located on the battery face, is a sticker with the software version written in ink (See figure 12.36).

The user interface board is only available as an assembly piece which includes the control housing and overlay. This is because of possible static issues that might possibly damage the user interface.

SEE PHOTO SECTION FOR REFERENCE TO ABOVE MENTIONED FIGURES

8.1.1 Replacing the User Interface Board

1) There are two (2) locater holes in the front of the control housing (See figure 12.35).
2) Use a 5/16” nut-driver to loosen the screws, do not remove, these screws can be used to re-locate the control housing when re-installing.
3) After the screw have been loosened, pull the housing forward and let suspend.
4) Reach behind the housing and disconnect the communication and thermistors cables using thumb pressure.
5) Remove the cables from the nylon clips that secure the cables to the control housing.
6) Reverse the above process to re-install.

8.2 Main Power Board

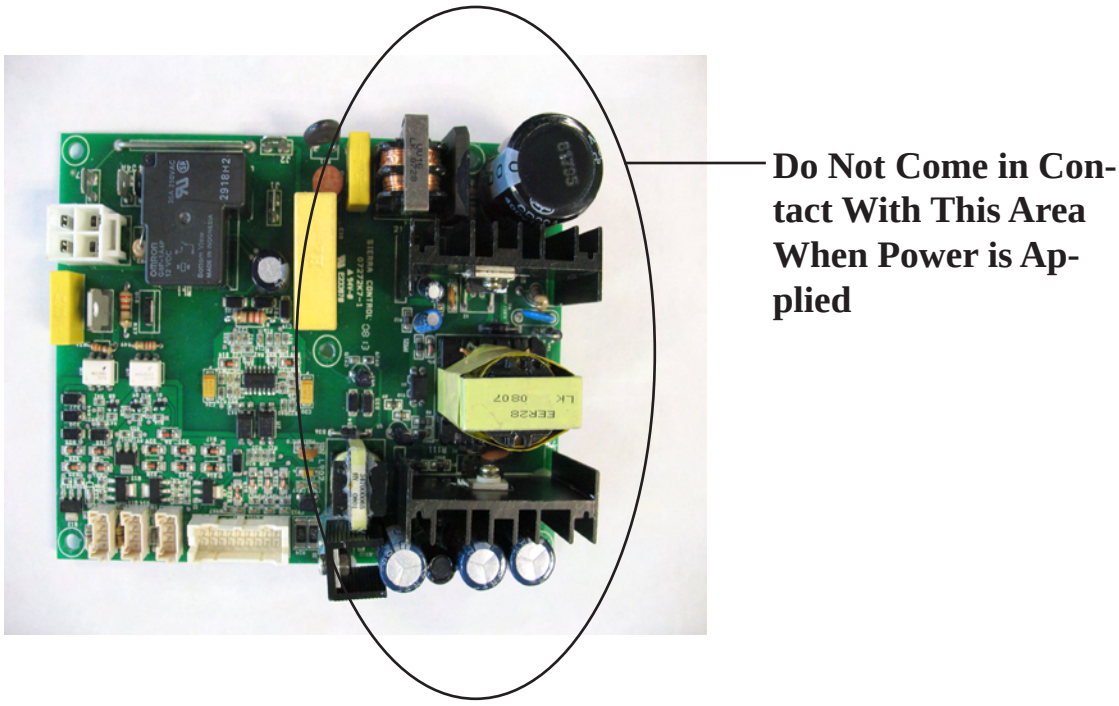
The main power board is the power source for all electrical components in the system. The power cord supplies 120 volts to the main power board and then is distributed to the compressor, condenser fan, and interior lights.
The 12 volt DC control circuit is also supplied from the main power board. These components include the user interface board, thermistors, compartment fans, and heater / fans.

WARNING: HIGH VOLTAGE DANGER OF ELECTRICAL SHOCK OR DEATH.

It is EXTREMELY IMPORTANT TO READ THIS if there is a need to apply power to the main power board for diagnosing.

DO NOT TOUCH the lower-top half of the main power board when energized. This is the side opposite from cable connections and contains the transformers, heat sinks, and capacitors.

SEE FIGURE BELOW



8.2.1 Removal of the Main Power Board / Control Housing

1) Unplug power from to unit.
2) Remove the two Phillips screws on each side of the front grille. (See figure 12.5)
3) The main power board is located inside the main control housing. The control housing must be removed to access the power board.
4) Using a ¼" nut-driver remove the hex head screws that hold the control housing in place. Also remove the hex head screw that secures the ground wire (See figure 12.33).
5) Before the control housing is removed, it would be advisable to place a piece of cardboard on the floor to prevent possible scratching of the surface when the control housing is slid forward.
6) Place a hand on each side of control housing and slide forward until the rear of the control housing comes to rest with the bottom flange on the cabinet frame.
7) At this point move both hands to the back corners of the control housing.
8) Place the index fingers of each hand on the back, top rear of the control housing.
9) Place the remaining fingers of each hand beneath the control housing.
10) Simultaneously pull the back corners of the control housing forward with the index fingers while holding the bottom edge firmly from underneath with the remaining fingers. At this time, pull the control housing forward until the back edge clears the cabinet frame (See figure 12.34).
11) Lift the control housing up and out to clear the rear mounting tabs.
12) The power board can now be accessed and the cable connectors disconnected.

SEE PHOTO SECTION FOR REFERENCE TO ABOVE MENTIONED FIGURES

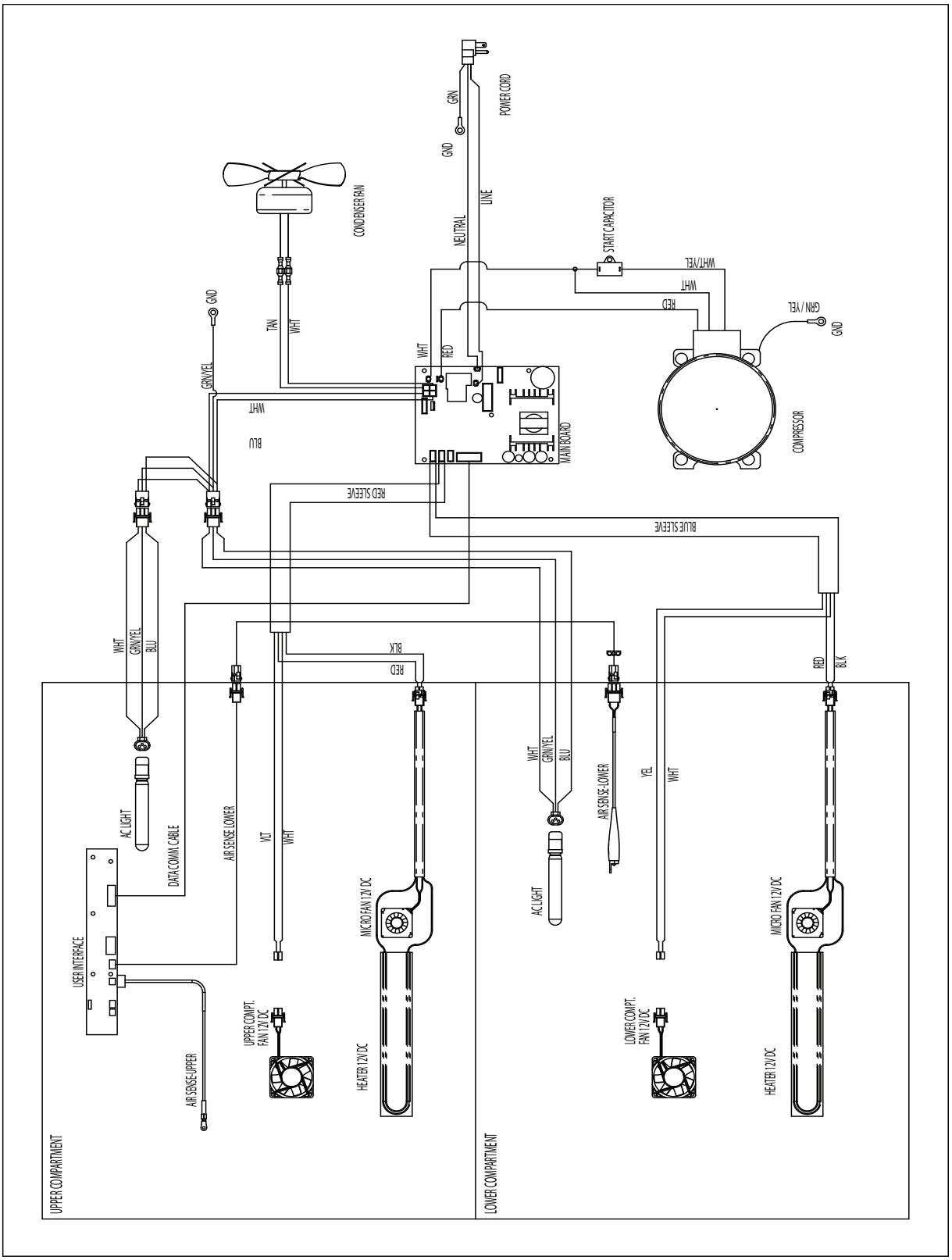
8.2.2 Installation of the Main Power Board

1) Refer to the wiring diagram if there are questions as to where the electrical connections belong before assembling.
2) Reverse the above process.
3) When sliding the control housing back in place, some care must be taken not to pinch any wires or cables. These will also restrict the control box from its anchor point if they are not pushed aside when the control housing is slid in place.

Section 9

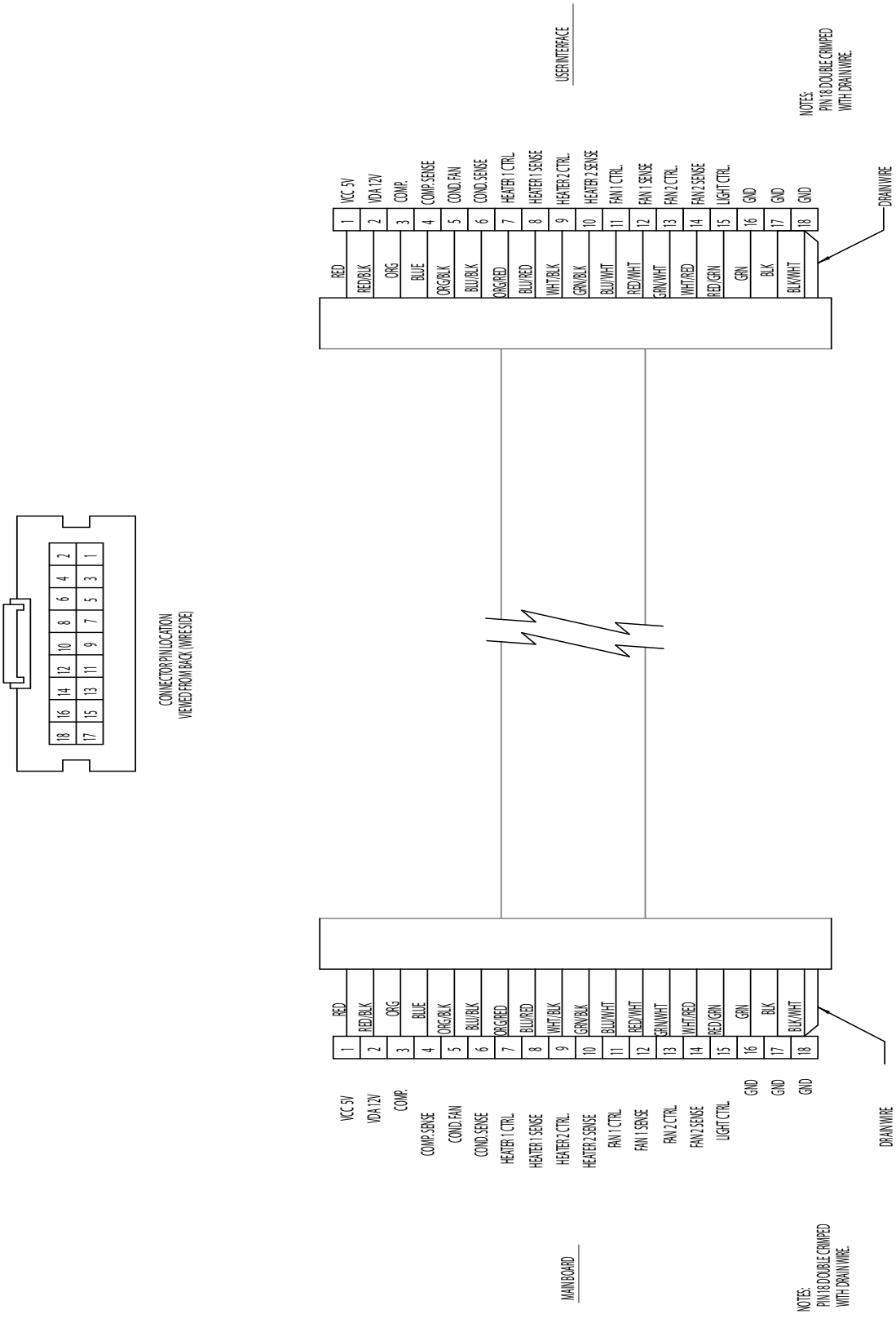
Wiring

9.1 Diagram

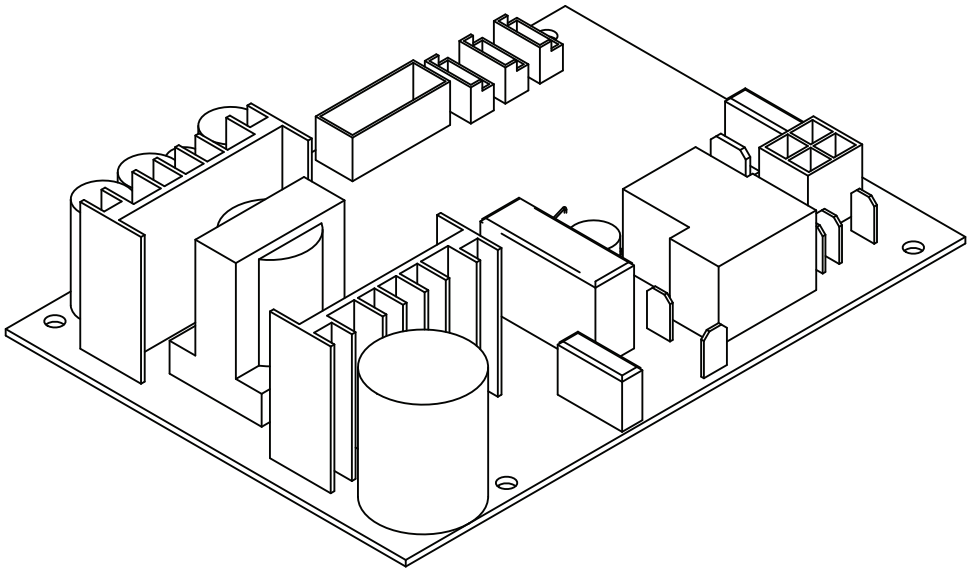


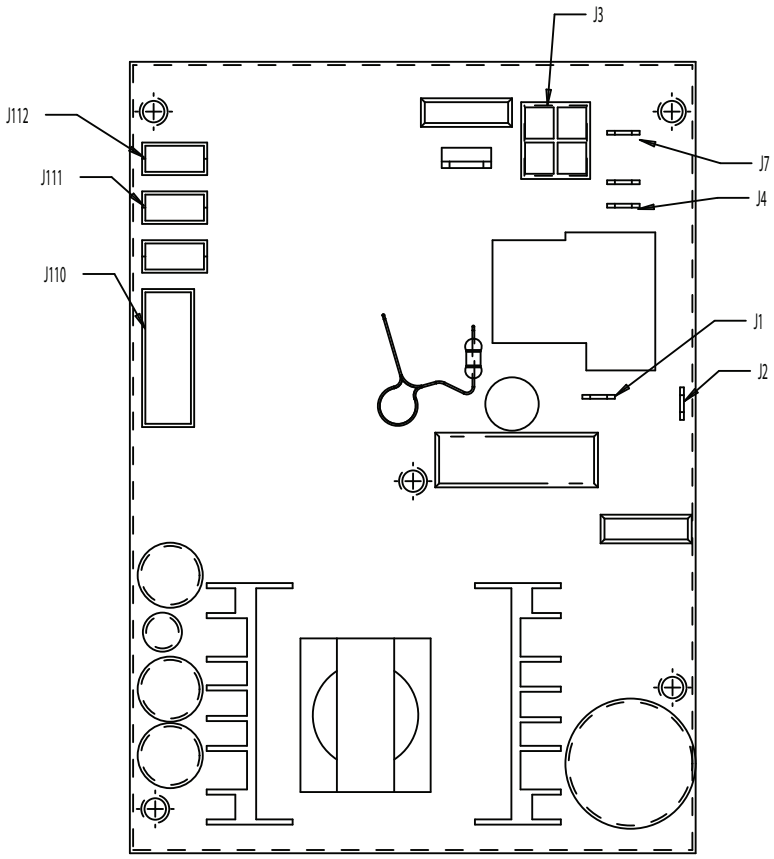
Wiring Diagram P/N 41050200

9.2 Communication Cable

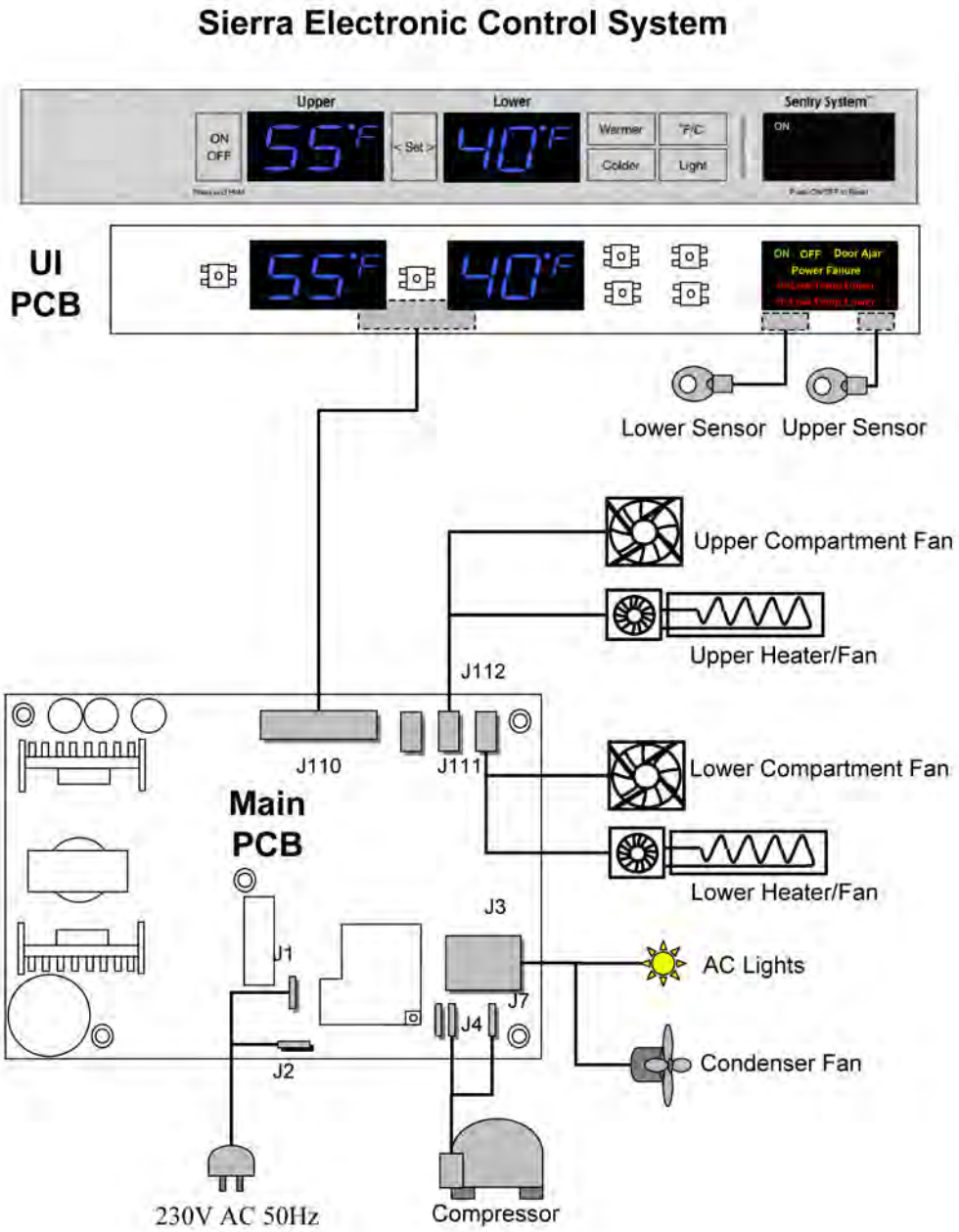


9.3 Main Power Board





9.4 User Interface



Section 10

Reference Charts

10.1 Resistance Temperature Reference

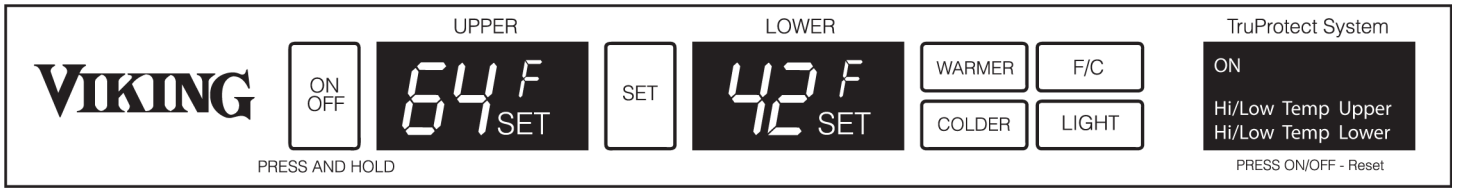
˚C	˚F	K-Ohms	˚C	˚F	K-Ohms
0	32	5.630	17.8	64	2.655
0.6	33	5.492	18.3	65	2.597
1.1	34	5.359	18.9	66	2.540
1.7	35	5.229	19.4	67	2.484
2.2	36	5.102	20.0	68	2.430
2.8	37	4.979	20.5	69	2.378
3.3	38	4.860	21.1	70	2.326
3.9	39	4.743	21.6	71	2.276
4.4	40	4.630	22.2	72	2.227
5.0	41	4.520	22.8	73	2.179
5.6	42	4.413	23.3	74	2.133
6.1	43	4.309	23.9	75	2.088
6.7	44	4.207	24.4	76	2.043
7.2	45	4.108	25.0	77	2.000
7.8	46	4.012	25.5	78	1.958
8.3	47	3.919	26.1	79	1.917
8.9	48	3.828	26.6	80	1.877
9.4	49	3.739	27.2	81	1.837
10.0	50	3.653	27.8	82	1.799
10.5	51	3.569	28.3	83	1.762
11.1	52	3.487	28.9	84	1.725
11.7	53	3.407	29.4	85	1.690
12.2	54	3.330	30.0	86	1.655
12.8	55	3.254	30.5	87	1.621
13.3	56	3.180	31.1	88	1.588
13.9	57	3.109	31.6	89	1.556
14.4	58	3.039	32.2	90	1.524
15.0	59	2.971	32.7	91	1.493
15.5	60	2.904	33.3	92	1.463
16.1	61	2.840	33.9	93	1.434
16.7	62	2.776	34.4	94	1.405
17.2	63	2.715	35.0	95	1.377

1) Unplug thermistor from connection at rear of User Interface Board
2) Measure resistance across the two pins on the front end of the thermistor plug
3) Determine ambient temperature at thermistor bulb
4) Cross reference the chart reading at that temperature and compare to actual resistance reading obtained with multi-meter
5) Refer back to Section 7.2.1 for additional information

10.2 Pressure - Temperature Chart

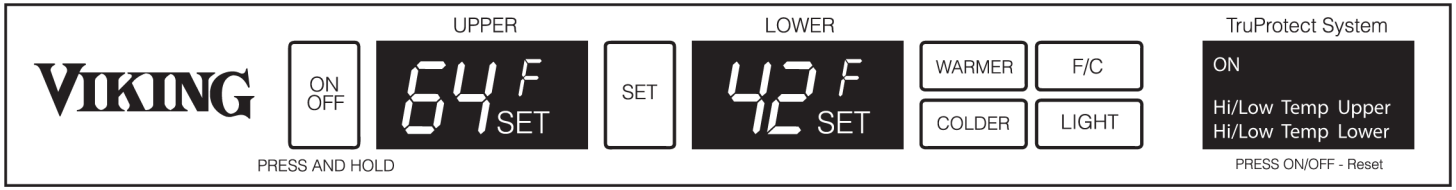
Degrees F	Pressure (psi) R134a	Pressure (psi) R12
-15	0.1	2.4
-10	2	4.5
-5	4.2	6.7
0	6.5	9.2
5	9.2	11.8
10	12	14.6
15	15.1	17.7
20	18.5	21
25	22.2	24.6
30	26.1	28.5
35	30.4	32.5
40	35.1	37
45	40.1	41.7
50	45.5	46.7
55	51.2	52
60	57.4	57.7
65	64.1	63.8
70	71.1	70.2
75	78.7	77
80	86.7	84.2
85	95.3	91.8
90	104.3	99.8
95	114	108
100	124.2	117
105	135	127
110	146.4	136
115	158.4	147
120	171.2	158
125	184.6	169
130	198.7	181
135	213.6	194
140	229.2	207
145	245.5	220
150	262.9	234

TruProtect™ "Basic" Function "Quick" Reference



Function / Feature	Description	Control Confirmation / Comment
Turn Unit On & Off	Pressing and holding the "ON/OFF" key for five seconds will turn the unit "ON" and "OFF".	The display will be blank when the refrigeration system is off. Lights will still function, but will time-out in 15 minutes after each activation if door is left open or display lighting is on, to prevent overheating.
Adjust Temperature Set Point	To adjust the temperature set-point, press the "SET" key. When a compartment is in "SET" mode, a "SET" icon will be displayed. Pressing either the "WARMER" or "COLDER" keys located on the display pad will raise or lower the set temperature by one (1) °F or °C (depending on your setting).	"SET" mode will automatically time-out in ten (10) seconds and default back to actual content temperature if no keypad activity occurs, or you may exit "SET" mode by pressing the "SET" key until "SET" icon disappears.
Display "Actual" Temperature	No action required. The display represents "real-time" temperature of each compartment's stored wine and/or contents, unlike some competitive product displays that only show or lock-in on set-point. Therefore, some minor temperature fluctuation around your desired set-point is normal.	Temperature variation in "compartment" air, above and below set-point, is a normal effect of refrigeration system cycling on and off. Stored items will not experience the full temperature swing of the compartment air due to the dampening effect of their thermal mass.
Select °F or °C Display	Pressing the "°F/C" key will toggle the display between Fahrenheit and Centigrade temperature display.	Temperature variation in "compartment air" above and below set point is a normal effect of the refrigeration system cycling on and off.
Black-Out Mode	No action required. The display automatically shuts off when the door is closed.	In addition, the control panel is hidden when the door is closed.
Display Lighting	The display lighting can be enabled with the door closed by pressing the "LIGHT" key.	Display lighting stays on continuously.
Sabbath Mode	Press and hold the "SET" key while pressing the "°F/C" key four (4) times in seven (7) seconds.	The display will flash "SA" seven (7) times then the unit will enter Sabbath Mode. The display, audible alarms, message center and lights will be disabled. Sabbath Mode will automatically time-out in 72 hours, or can be exited by repeating the enabling process.
Sentry System™	No action required. System monitoring is automatically enabled unless system has been shut off (see below).	**TruProtect™** message center displays a green "ON" when **TruProtect™** is enabled and an amber "OFF" when **TruProtect™** is disabled.
Door Ajar Alarm	No action required if **TruProtect™** is enabled.	An audible alarm will sound 3-times every 30 seconds and the message center will display an amber "DOOR AJAR".
High/Low Temp Alarm	No action required if **TruProtect™** is enabled. NOTE: This alarm may occur when changing set-points in excess of 10 °F, and/or high usage, this is normal.	An audible alarm will sound 6-times every minute and the message center will display a red "HI/LOW TEMP UPPER" or a red "HI/LOW TEMP LOWER" if product temperature excursions occur for a duration outside acceptable limits.
Power Failure Alarm	No action required if **TruProtect™** is enabled. NOTE: This alarm may occur upon initial installation since the unit was run at the factory to verify quality, this is normal.	The message center will display an amber "POWER FAILURE" whenever power is interrupted to the unit. There is no audible alarm with a power failure.
Reset Alarms	Close door to reset "DOOR AJAR" Alarm. Press the "ON/OFF" key to reset all other alarms.	Although pressing the "ON/OFF" key resets the alarms, the alarm will resume if the "alarm condition" still exists.
Enable/Disable **TruProtect™**	Press and hold the "SET" key for five (5) seconds to enable or disable the **TruProtect™**.	The message center displays a green "ON" when the alarms are enabled. The message center displays an amber "OFF" when the alarms are disabled.

TruProtect™ "Advanced" Function "Quick" Reference



Function / Feature	Description	Control Confirmation / Comment
Service Diagnostics Mode	To enter and exit Service Diagnostics Mode, press and hold the "WARMER" key while pressing the "COLDER" key four (4) times in five (5) seconds. Service Diagnostics Mode will automatically exit after five (5) minutes of no keypad entry. Display Error Code Reference: The microprocessor in the control continually monitors critical refrigeration system components for proper operation. If component parameters exceed normal operation specifications, the display will automatically flash the respective error code as follows: E1 – Compressor Error (High/Low Amps) E2 – Condenser Fan Error (Low Amps) E3 – Upper Compartment "Sensor A" Error (Out-of-Range) E4 – Lower Compartment "Sensor B" Error (Out-of-Range) Please call your dealer or Viking Customer Service if any of these codes are displayed.	Service Diagnostics Mode enables service technicians to identify the firmware and software versions, test status of "model specific" system components and sensors, and change the state of components where applicable, (i.e. compressor on/off, etc...). While in Service Diagnostics Mode, tests are incremented by pressing the "SET" key, and specific component states can be changed to "ON" and "OFF" by pressing the "WARMER" and "COLDER" keys respectively. The following component tests are available: Test # / Component Description / Available Status Indicators (OK / Off/Open / On/Shorted) 0 – Temperature Sensor, Upper – 0- / 00 / 01 1 – Temperature Sensor, Lower – 1- / 10 / 11 2 – Compressor – n/a / 20 / 21 3 – Condenser Fan – n/a / 30 / 31 4 – Compartment Fan, Upper – n/a / 40 / 41 5 – Compartment Fan, Lower – n/a / 50 / 51 6 – Heater/Fan Assembly, Upper – n/a / 60 / 61 7 – Heater/Fan Assembly, Lower – n/a / 70 / 71 8 – Door Sense – n/a / 80 / 81 NOTE: The Door Sense is located between the Upper Compartment display and the ON/OFF key and can be tested with any magnet.

Section 11

Trouble Shooting Guide

11.1 Problem / Cause / Correction

PROBLEM	POSSIBLE CAUSE	CORRECTION
Unit does not operate	Unit is unplugged	Plug in the unit
	ON/OFF keypad was not held long enough on display	Press ON/OFF keypad for 5 seconds
Unable to set desired compartment set-points.	SET keypad was not depressed while using the WARMER and COLDER keypad to find desired point.	Press the SET keypad, audible beep will sound. Press the WARMER or COLDER keypad to reach the desired set-point. An audible beep will sound at each keypad function.
Display lighting doesn't work.	Keypad function not activated.	Press the LIGHT keypad, audible beep will sound and a blue light will appear on keypad. The light with stay lit when the door is closed. Replace bulb and keypress light keypad.
	Light bulb is burned out.	
Door is closed but the light is still on.	Display lighting is on.	Turn off display lighting.
	Door magnet is not activating reed switch	Align or space door magnet closer to reed switch.
Cannot activate Show Room Mode	ON/OFF keypad was not held during power on reset. (P-O-R).	Hold ON/OFF keypad firmly while unplugging unit momentarily before plugging back into recepticle (P-O-R)
Interior lights functioning but compressor, condenser fan, compartment fans and heater/fans are disabled	Show Room Mode is enabled.	Hold ON/OFF keypad firmly while unplugging unit momentarily before plugging back into receptacle (P-O-R)
Sabbath Mode is not engaging	Set keypad was not depressed and held firmly while pressing the WARMER keypad 4 times within 7 seconds.	Depress and hold SET keypad firmly while pressing the WARMER keypad 4 times within 7 seconds. Audible beep will sound at every key stroke
Sabbath Mode is not disabling.	Set keypad was not depressed and held firmly while pressing the WARMER keypad 4 times within 7 seconds.	Depress and hold SET keypad firmly while pressing the WARMER keypad 4 times within 7 seconds. Audible beep will sound at every key stroke
Sabbath Mode is automatically disabled.	Sabbath Mode automatically disables after 72 hours.	Reset Sabbath Mode as mentioned above.
Alarm sounds 3 times every 30 seconds.	Door magnet is not activating reed switch.	Close door.
		Adjust door magnet to close reed switch.
Alarm sounds 6 times every minute.	High or low temperature alarm.	Check compartment diagnostics below.
Message center displays Power Failure.	This is normal at initial start up - power to unit was disrupted after factory quality test.	Press ON/OFF keypad once to reset.
	Loss of power to electrical circuit or home.	Press ON/OFF keypad once to reset.
E1 error code along with audible alarm (6 / per min.) - Compressor high/low amps	Compressor wire disconnected.	Check wiring.
	Faulty compressor.	Check winding resistance- replace if necessary
	Faulty Power Board	Replace board.
	Faulty overload	Ohm and replace if necessary
	Faulty PTC relay	Ohm and replace if necessary.
	Power surge	Reset alarm.

11.1 Problem / Cause / Correction, continued.

PROBLEM	POSSIBLE CAUSE	CORRECTION
E2 error code along with audible alarm (6 /per min.) - condenser low amp	Condenser fan motor wire disconnected.	Check wiring to fan motor
	Faulty condenser fan motor.	
	Faulty power board.	Replace condenser fan motor. Replace power board.
E3 error code along with audible alarm (6 /per min.) - upper thermistor	Disconnected thermistor plug	Check connection on rear of user interface board.
	Shorted thermistor	Ohm and replace if necessary.
	Faulty thermistor	Ohm and replace if necessary
E4 error code along with audible alarm (6 /per min.) - lower thermistor	Disconnected thermistor plug.	Check connection on rear of user interface board.
	Shorted thermistor.	Ohm and replace if necessary.
	Faulty thermistor.	Ohm and replace if necessary
Service Diagnostics Mode is not engaging	WARMER keypad was not depressed and held firmly while pressing the COLDER keypad 4 times within 5 seconds.	Depress and hold WARMER keypad firmly while pressing the COLDER keypad 4 times within 5 seconds. Audible beep will sound at every key stroke
Service Diagnostics Mode is not disabling	WARMER keypad was not depressed and held firmly while pressing the COLDER keypad 4 times within 5 seconds.	Depress and hold WARMER keypad firmly while pressing the COLDER keypad 4 times within 5 seconds. Audible beep will sound at every key stroke
Service Diagnostics Mode is automatically disabled	After 5 minutes of no keypad functions, the Diagnostics Mode will automatically disable	Re-enter the diagnostics mode to continue.
Compartment temperature to warm.	Frosted evaporator coil.	Older version of software is installed. Replace, current version is 1.9
	Compartment fan not working	Replace compartment fan.
	Return air damper not closing-tape securing damper has come loose.	Remove divider and repair.
	Heater/fan assembly not disabling	Faulty main power board. Replace
	Air leak at rear of cabinet.	Remove back panel to make sure all wire and tubing portals are properly sealed. Seal using permagum or RTV.
	Bad door gasket / seal.	Check for worn or torn gasket - replace.
		Gasket pulling away from inner door pan - seal with superglue or RTV.
	Divider seal on door is by-passing air.	Inspect and replace door divider seal if needed.
	Open or out of range thermistor.	Ohm and replace thermistor if needed
	Broken or loose connection on communication cable, U/I board, or main power board.	Check cable connections at U/I board and main power board.
		Check wire continuity from one end of the communication cable harness to the opposite - OL reading means a broken harness - replace.
		A close visual inspection of all terminal block pins could reveal any broken connections.
Compartment temperature to cold	Bad fan/heater assembly	Check heater continuity - Resistance of heater/ fan assembly should be 7.5 Ohms @70°F.

11.1 Problem / Cause / Correction, continued.

PROBLEM	POSSIBLE CAUSE	CORRECTION
Compartment temperature to cold, cont.	Heater / fan assembly not enabling	Faulty main power board-replace.
	Return air damper not opening.	Air leak - check to make sure divider is properly installed.
	Thermistor out of range.	Ohm and replace if necessary.
	Broken or loose connection on communicaton cable, U/I board, or main power board	Check cable connections at U/I board and main power board Check continuity from one end of the communication cable harness to the opposite end - 0L reading means a broken harness - replace A close visual inspection of all terminal block pins could reveal any broken connections
Compressor runs but does not cool.	Low on charge.	Repair and charge.
	Restriction	Repair and charge.
Compressor excesively hot.	Condensor fan motor not working.	Replace condensor fan motor.
	Condensor fan blade not turning.	Look for restriction in fan shroud orifice.
	Dirty condensor.	Clean vacuum machine compartment.
	Restricted air flow.	Check for blocked or restricted air intake. Clean/vacuum if needed.
	Compressor tripping.	Check continuity of overload & relay - replace if necessary Bad compressor - check for grounded or shorted windings - replace compressor if necessary Low voltage condition - Check incoming power supply. This condition could cause an E2 error Bad capacitor - replace
Frost buildup in divider	Older version of software is installed. Evaporator is not clearing during defrost.	Install version 1.9 software.
	No air flow.	Check for bad compartment fan.
	Condensation has built up and frozen.	Look for warm air leak at all tubing and wiring portals.
	Plugged evaporator drain.	Look for interior / exterior plug in evaporator drain trough or drain line.
Frost build up on evaporator cover.	Older version of software is installed. Evaporator is not clearing during defrost.	Install version 1.9 software.
Neither compartment is maintaining its required set-point.	Possibly the compartment fans are mis-wired. Top fan to bottom harness and visa versa. (Particularly if previously serviced).	Enter diagnostics mode and check compartment fan operation (See section 4.1). Refer to sections 7.1.2, 7.1.2.1, & 7.1.2.2 if diagnostics shows that fan operation is controlling opposite compartment.
	Divider seal on door is by-passing air.	Inspect and replace door divider seal if needed.
Upper compartment is not satisfied and lower compartment excessively cold.	Upper compartment fan not working.	Enter diagnostic mode and check compartment fan operation (See section 4.1). Refer to Sections 7.1.2, 7.1.2.1, and 7.1.2.2 if diagnostics show fan is not operating.

Section 12

Reference Photos

View of Upper Compartment

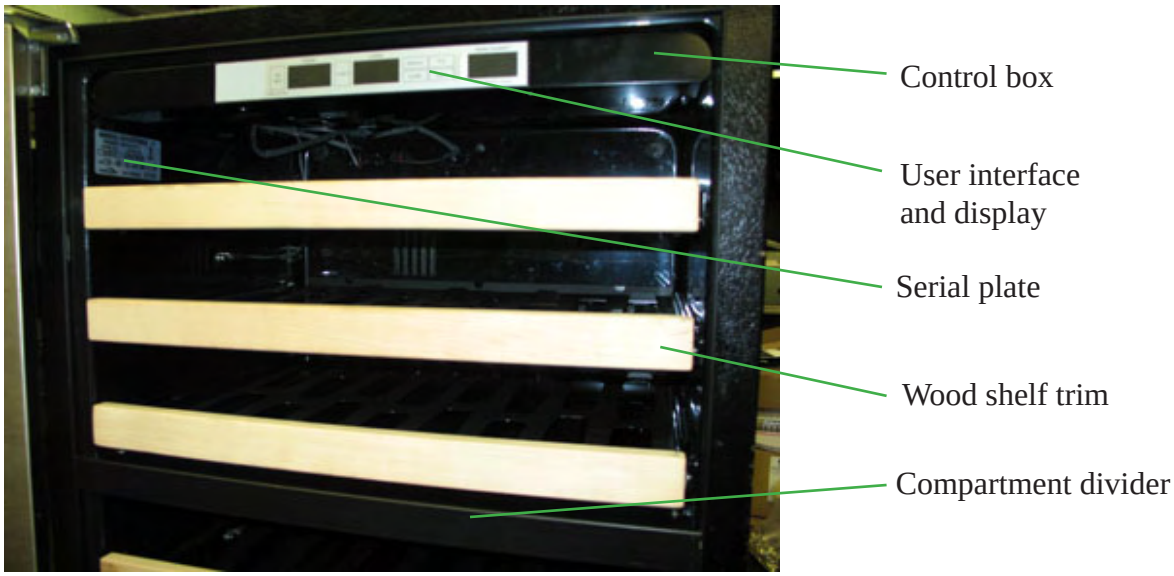


Figure 12.1

View of Lower Compartment

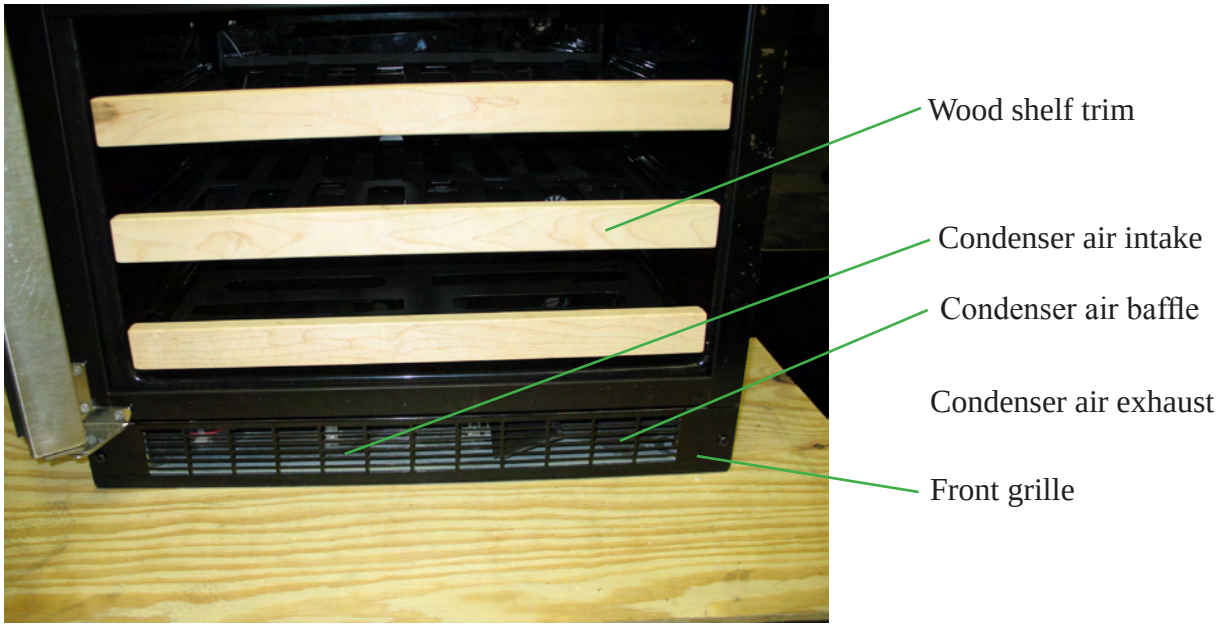


Figure 12.2

View of Cabinet Back

Figure 12.3

View of cabinet back corner

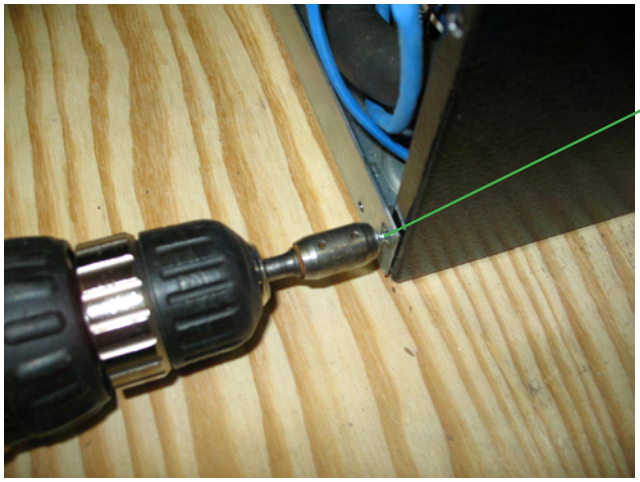


Figure 12.4

View of front grille

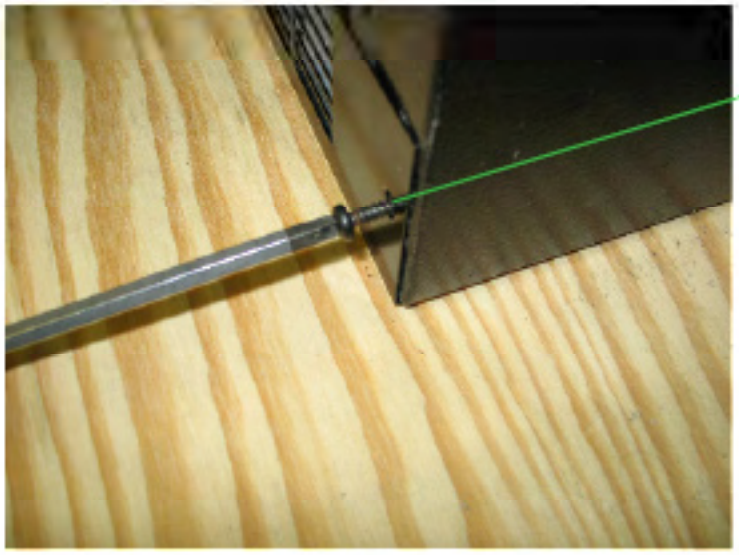


Figure 12.5

View of cabinet front cover

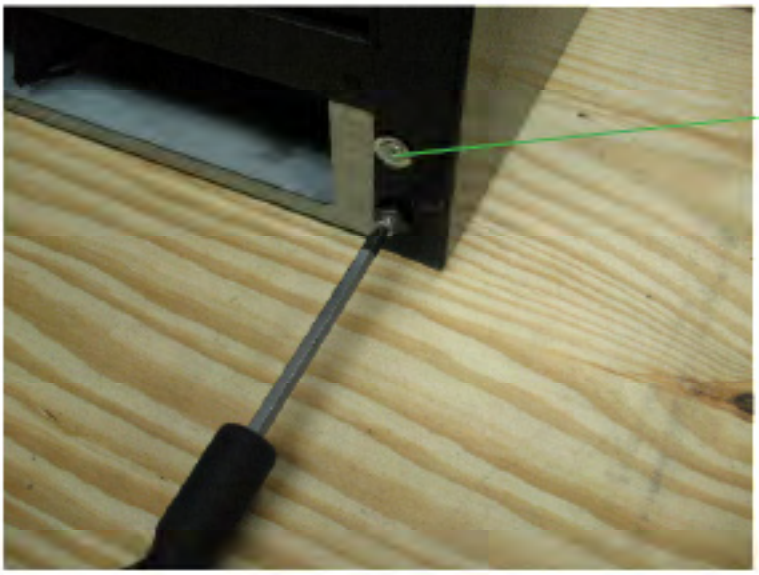


Figure 12.6

Views of mechanical assembly

CAUTION: SEE NOTE BELOW

Figure 12.7

Figure 12.8

IMPORTANT NOTE: See figures 12.7 & 12.8
CARE MUST BE TAKEN NOT TO EXTEND THE MECHANICAL SECTION OUTWARD FROM THE CABINET BY MORE THEN 6" MAXIMUM.
AREAS THAT MUST BE WATCHED TO AVOID THE SYSTEM TUBES FROM KINKING AREA:

1. DISCHARGE LINE AT COMPRESSOR.
2. SUCTION LINE INTO COMPRESSOR
3. SUCTION LINE EXTENDING FROM CABINET REAR.

View of compressor electrical cover

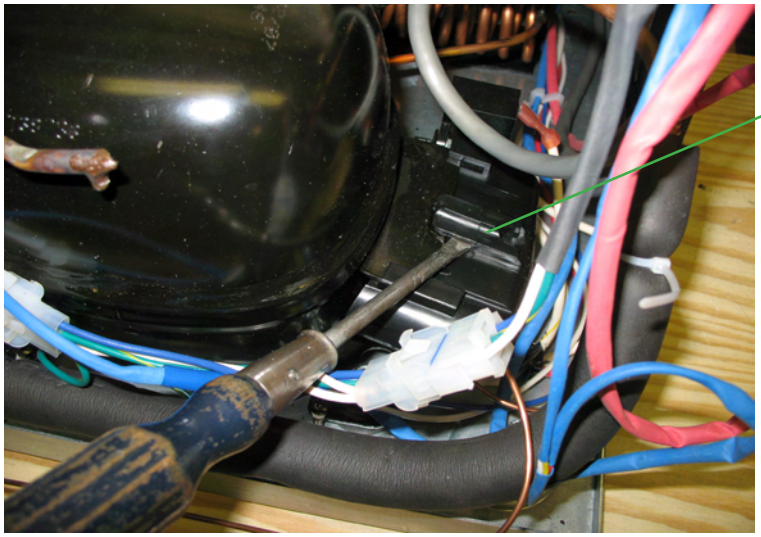


Figure 12.9

View of compressor electricals

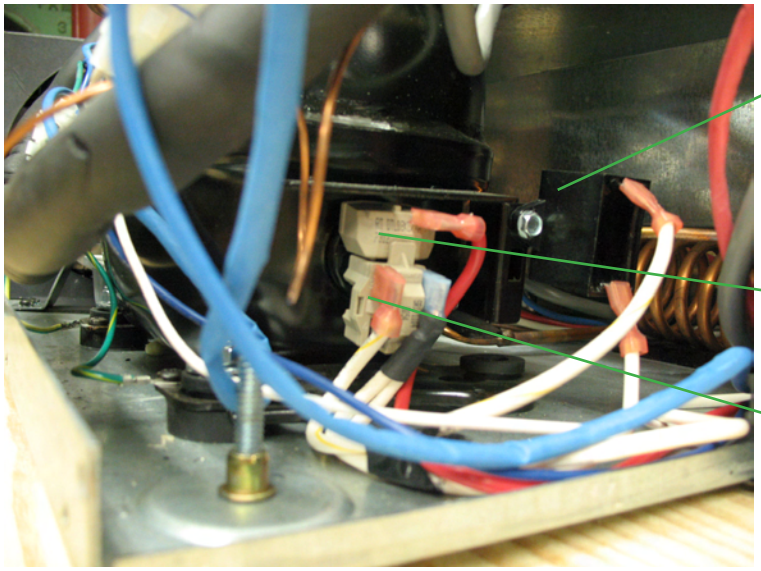


Figure 12.10

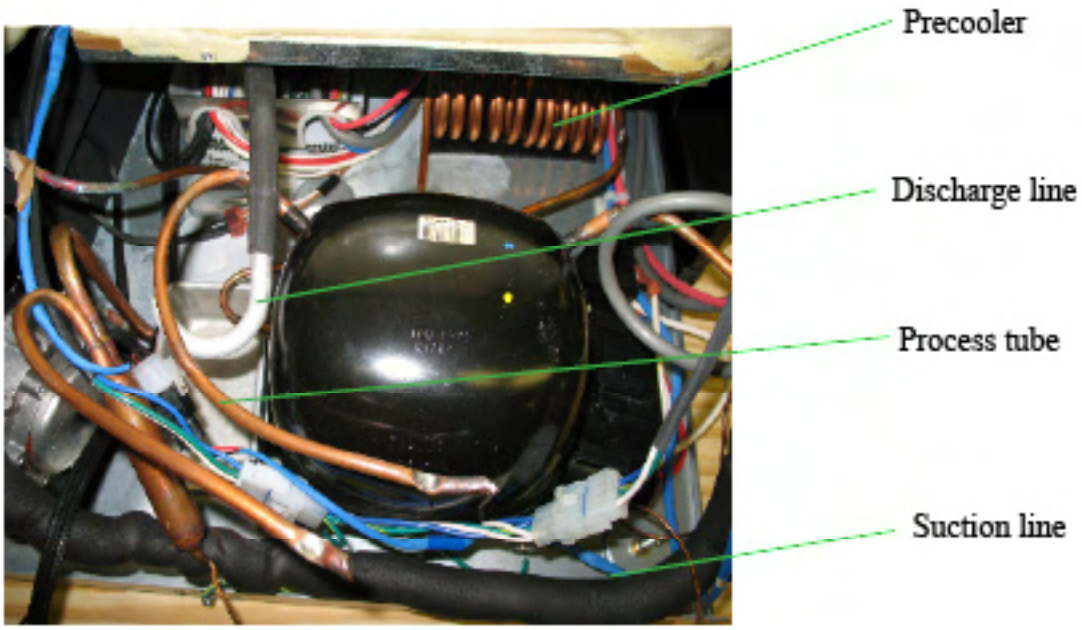


Figure 12.11

Top & side view of mechanical assembly

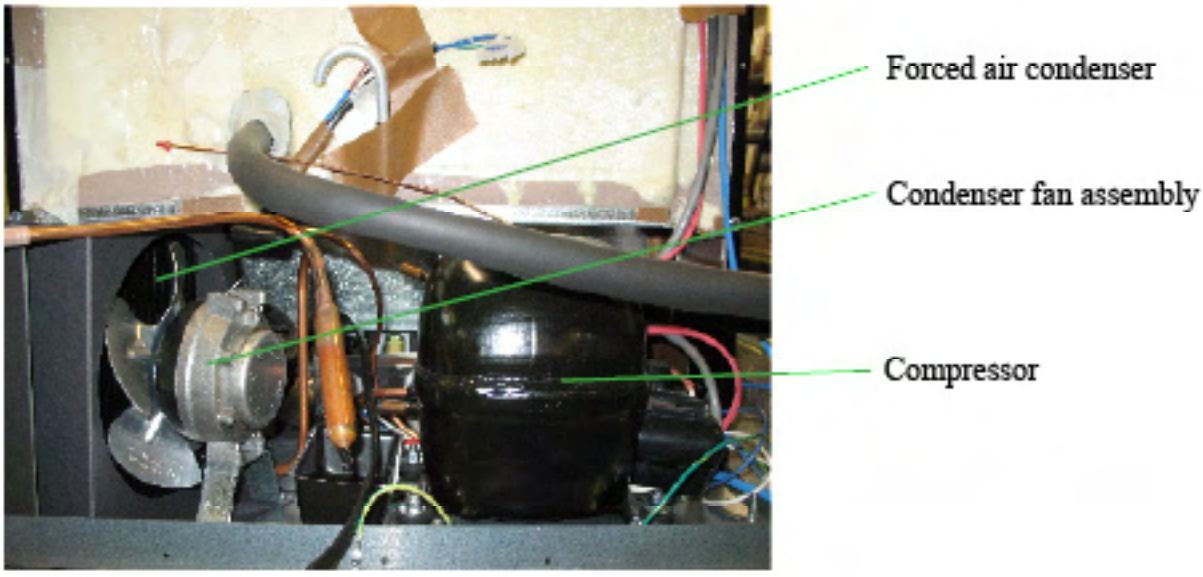


Figure 12.12

View inside of upper compartment

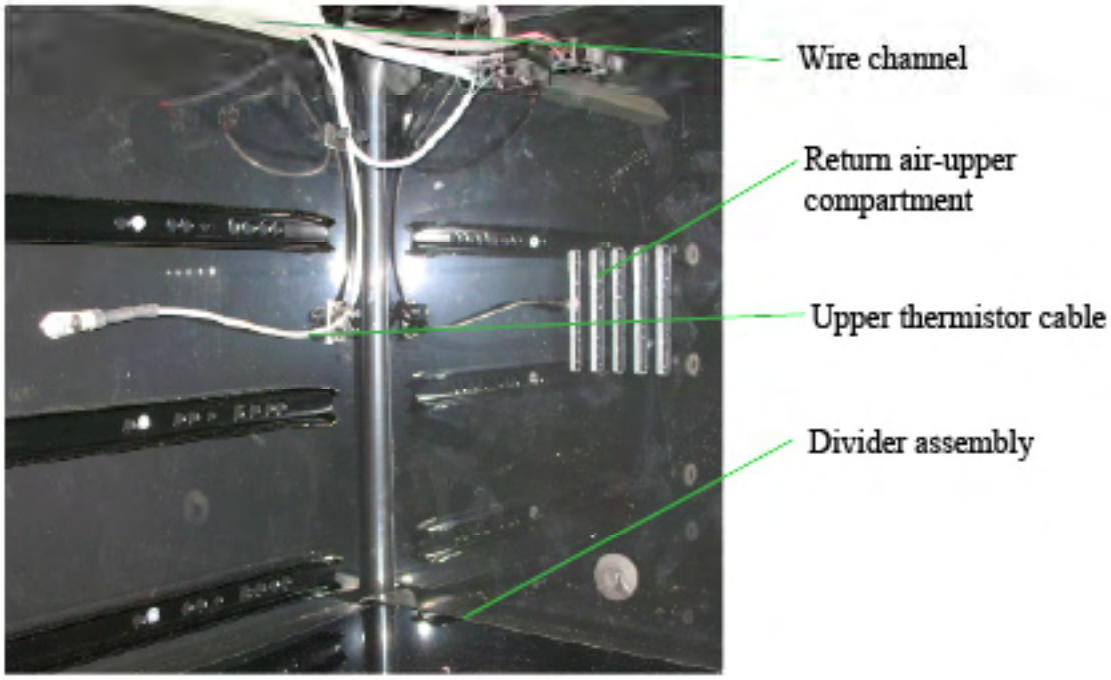


Figure 12.13

View inside of lower compartment

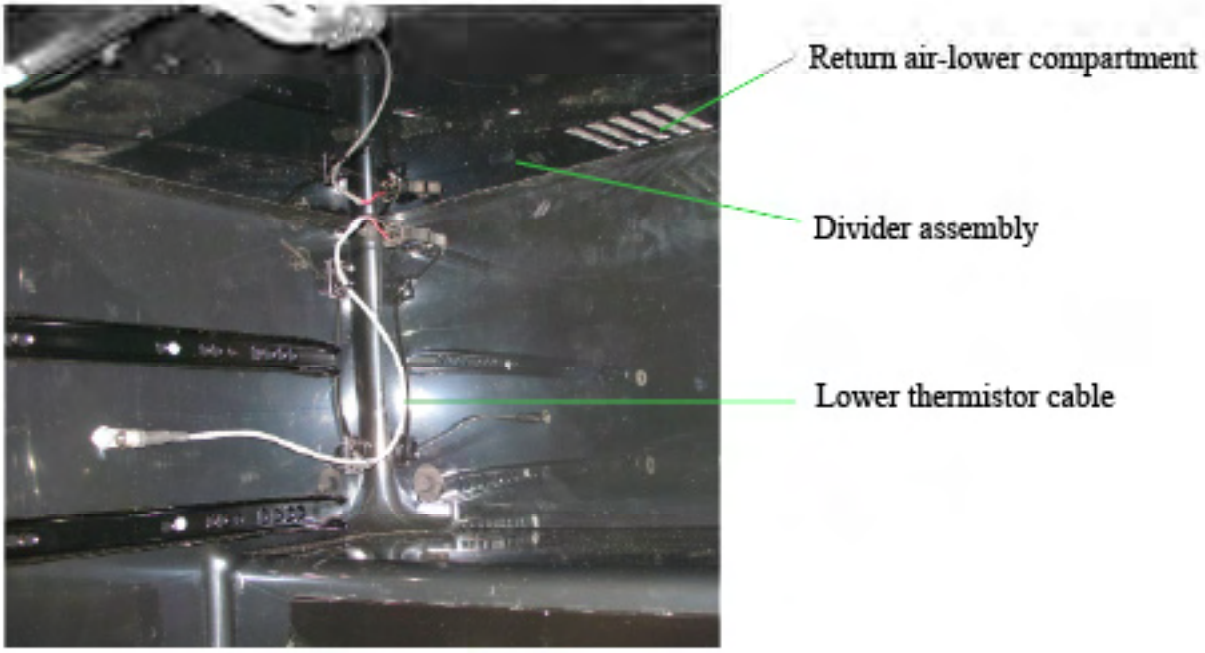


Figure 12.14

View of inside (top)-of upper compartment

Figure 12.15

View of inside (top)-of lower compartment

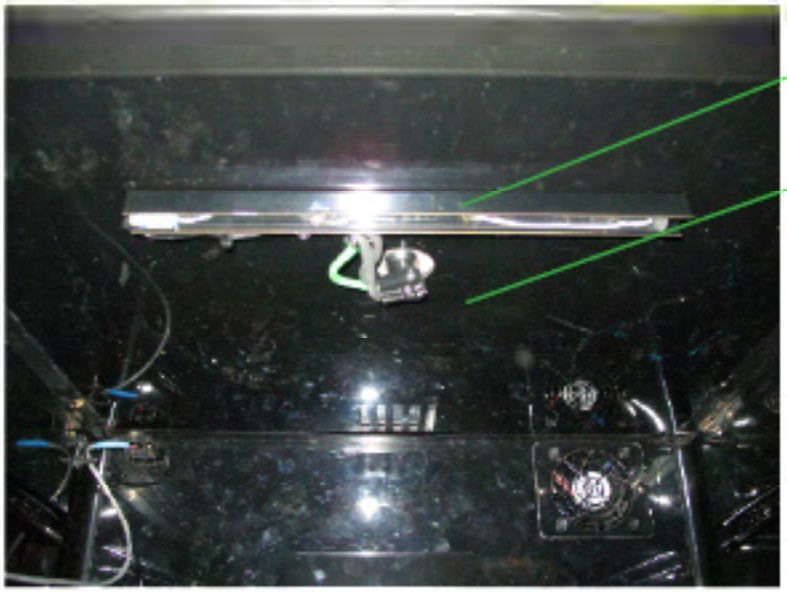


Figure 12.16

View of bottom of lower compartment

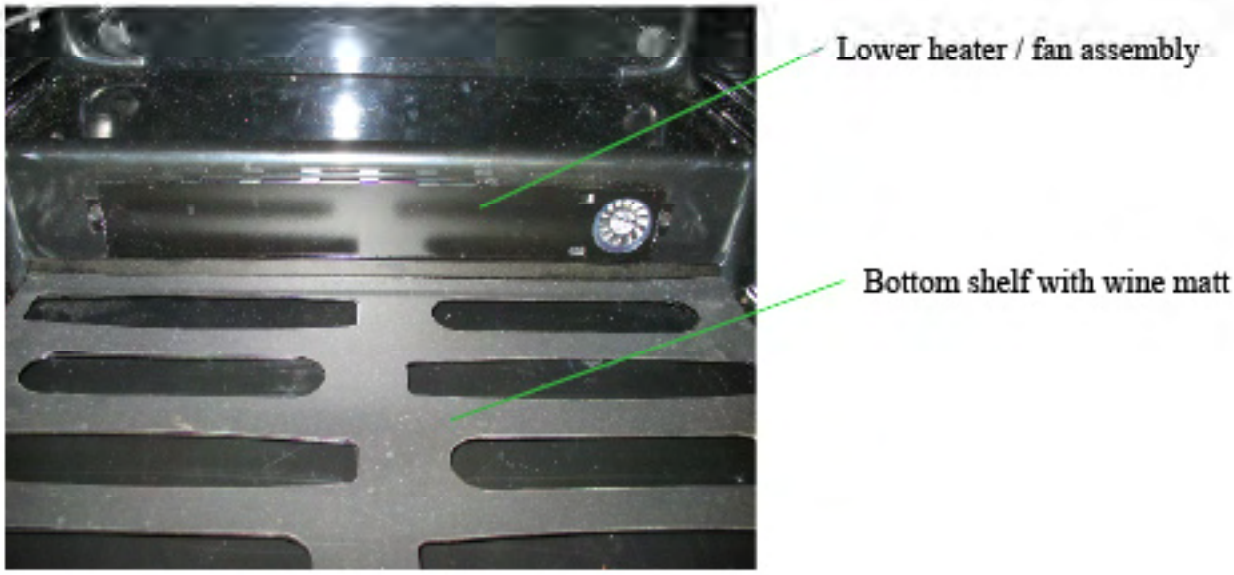


Figure 12.17

Front view of left hand side of compartment divider and lower compartment

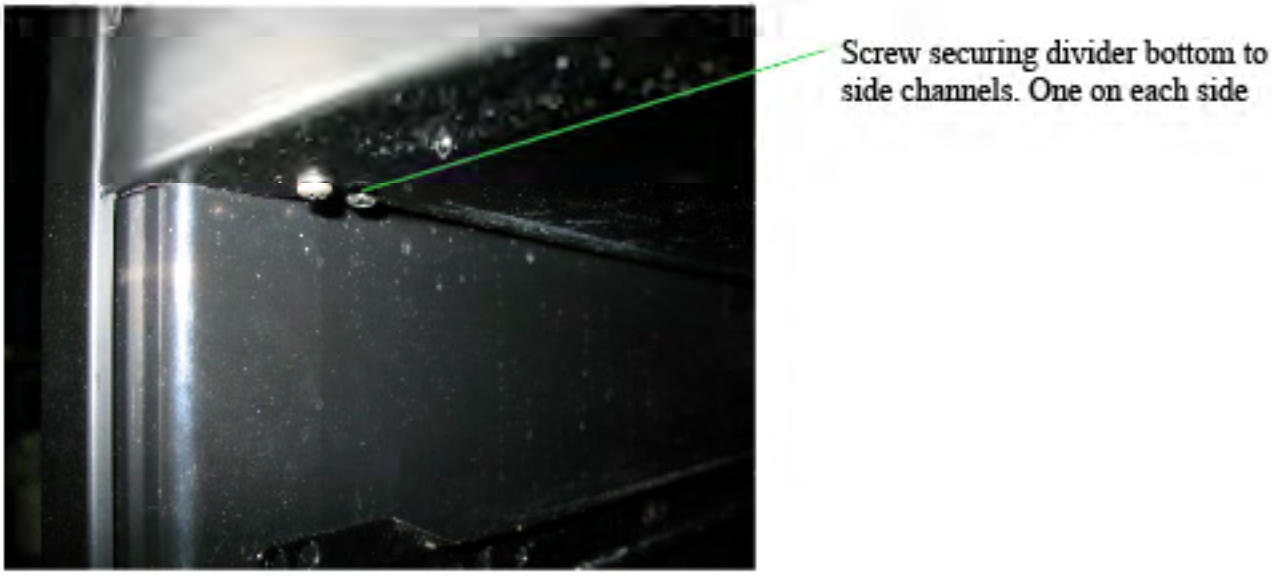


Figure 12.18

View inside upper compartment

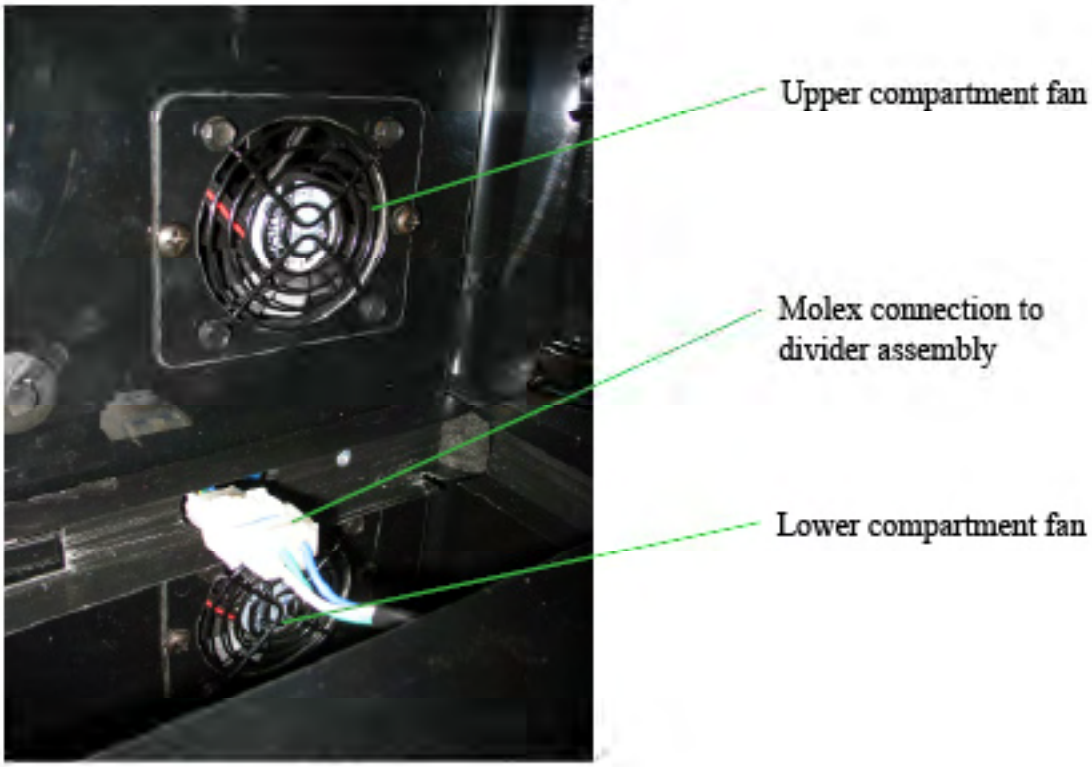


Figure 12.19

View of divider side and rear channels

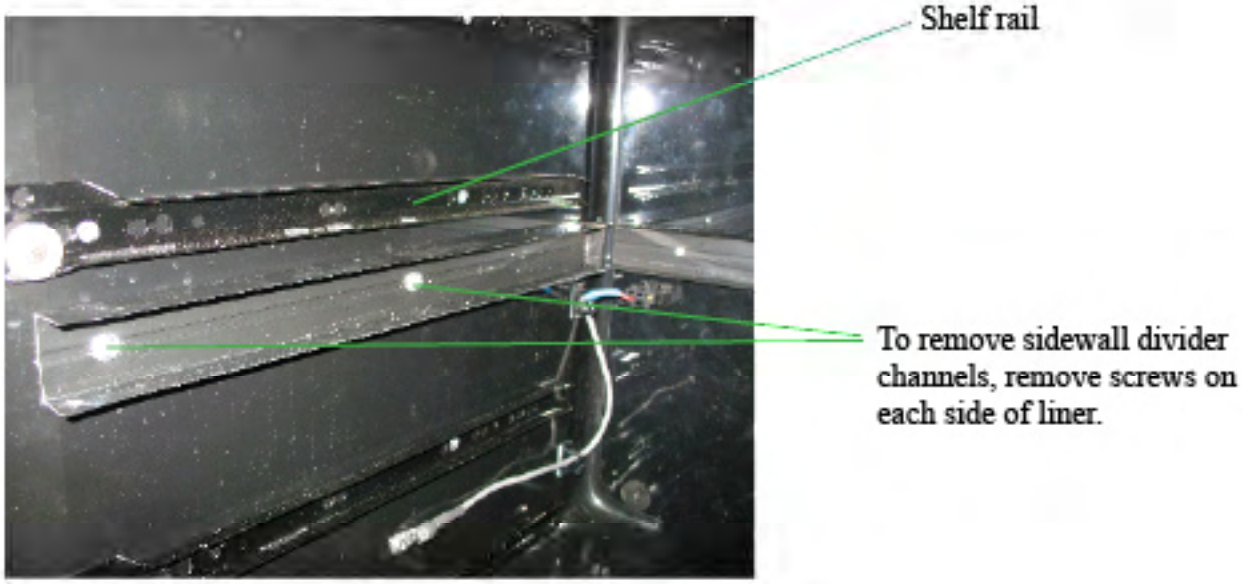


Figure 12.20

View of upper compartment

Figure 12.21

View of lower compartment after divider has been removed

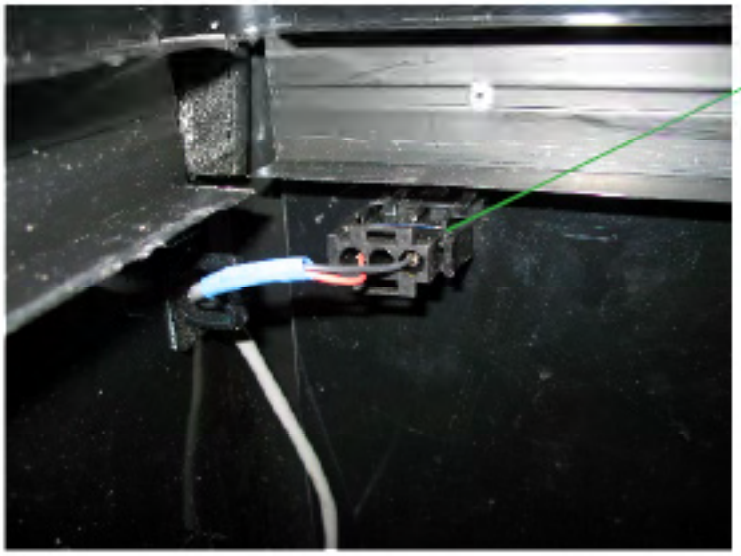
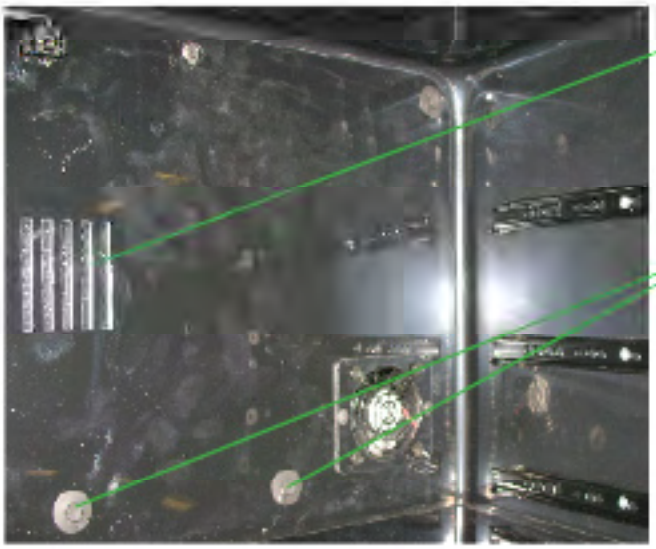


Figure 12.22

View of upper compartment

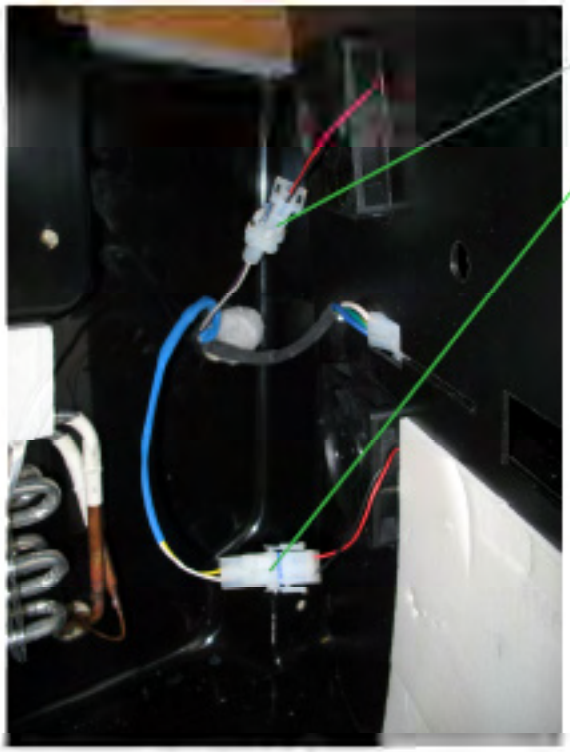


Return air for upper compartment

Remove plastic plugs on evaporator cover. There are a total of six.

Figure 12.23

View behind evaporator cover



Molex connectors from the upper and lower fans. *NOTE: The upper fan is connected to the harness with the "red" sleeve. The lower fan is connected to the harness with the "blue" sleeve.*

Insulation seperating evaporator and cover.

Figure 12.24

View of evaporator compartment

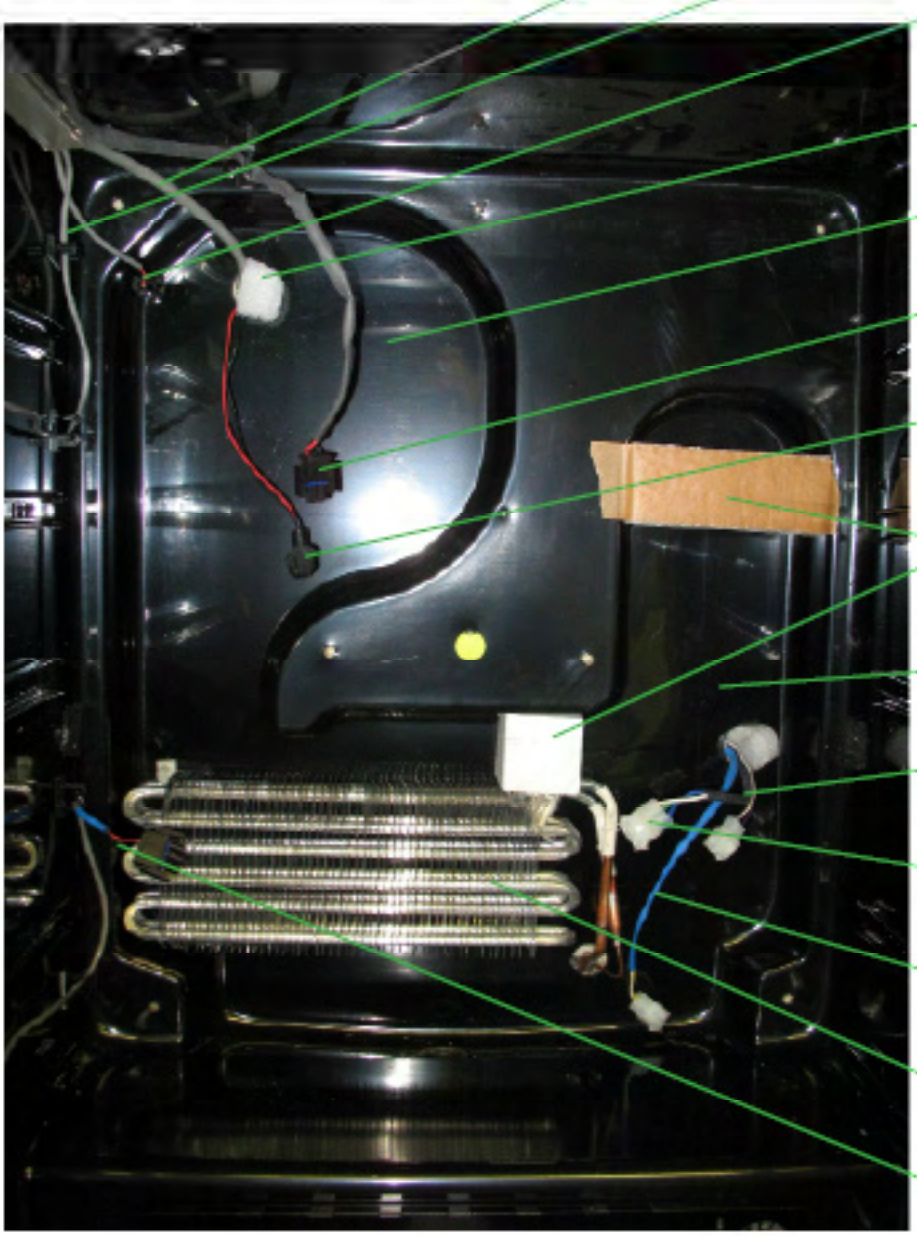


Figure 12.25

View of divider bottom

Figure 12.26

View of upper divider top

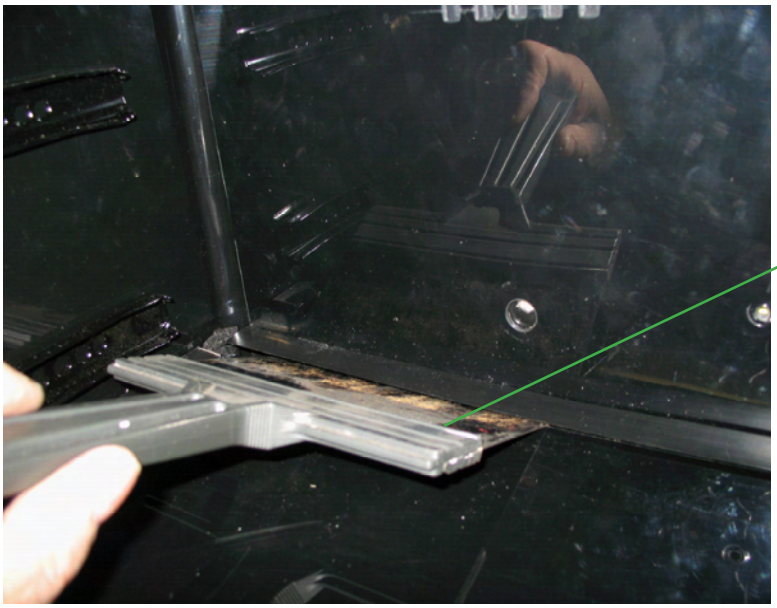


Figure 12.27

View of handle stand-off

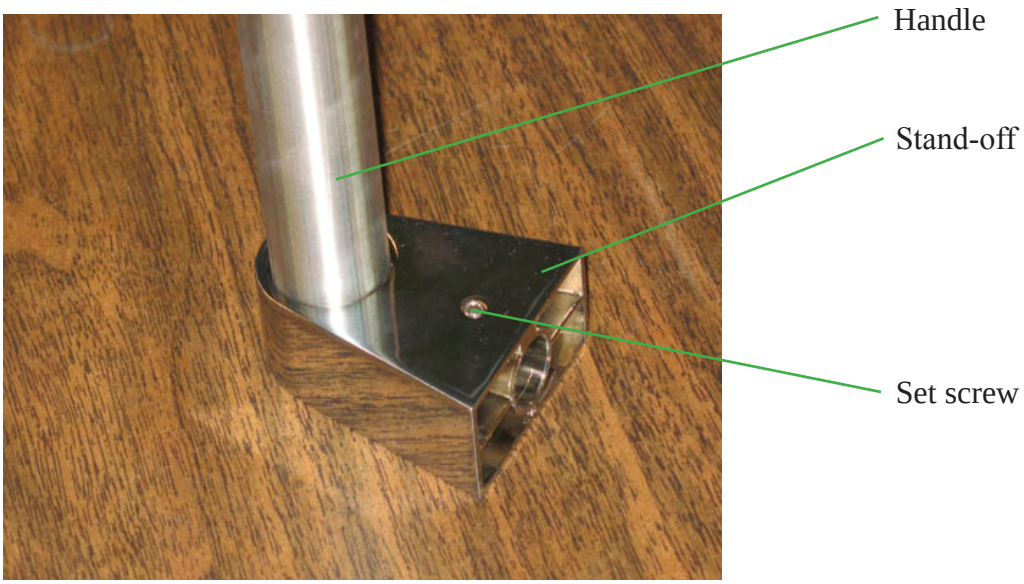


Figure 12.28

Front view of handle stand-off mounting stud

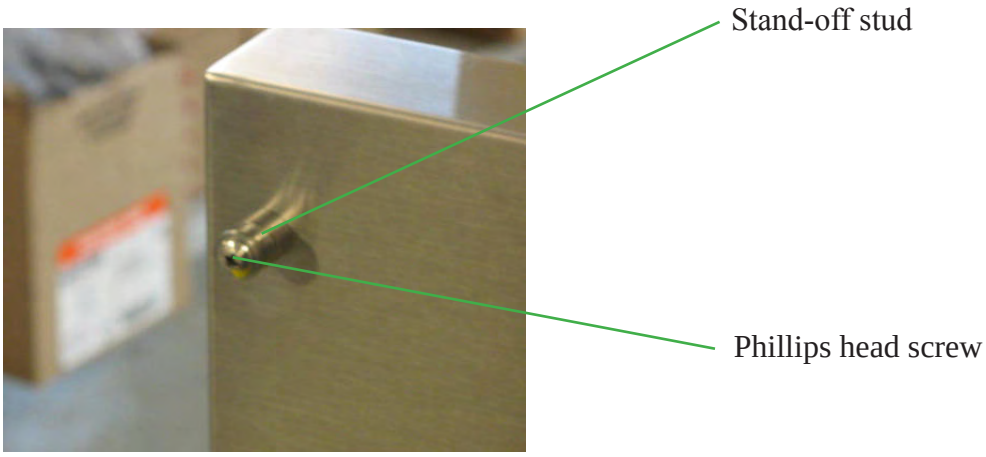


Figure 12.29

View of top inside

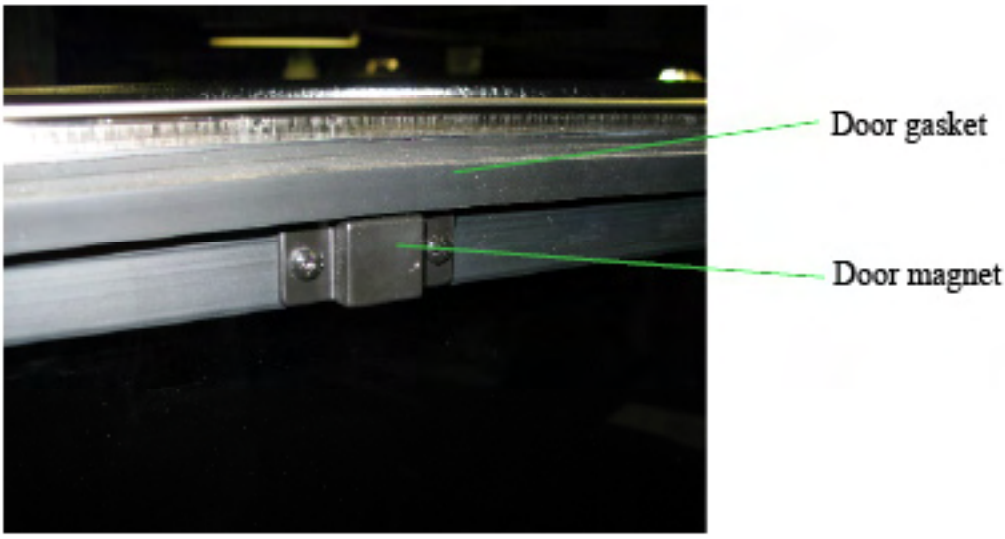


Figure 12.30

View of door divider seal

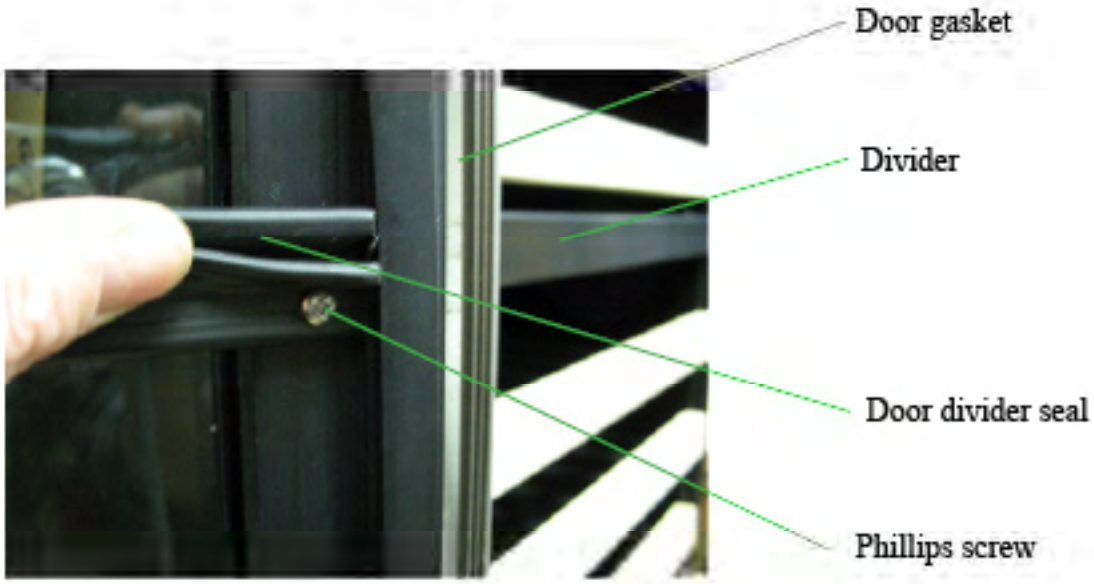


Figure 12.31

View of top hinge door assembly

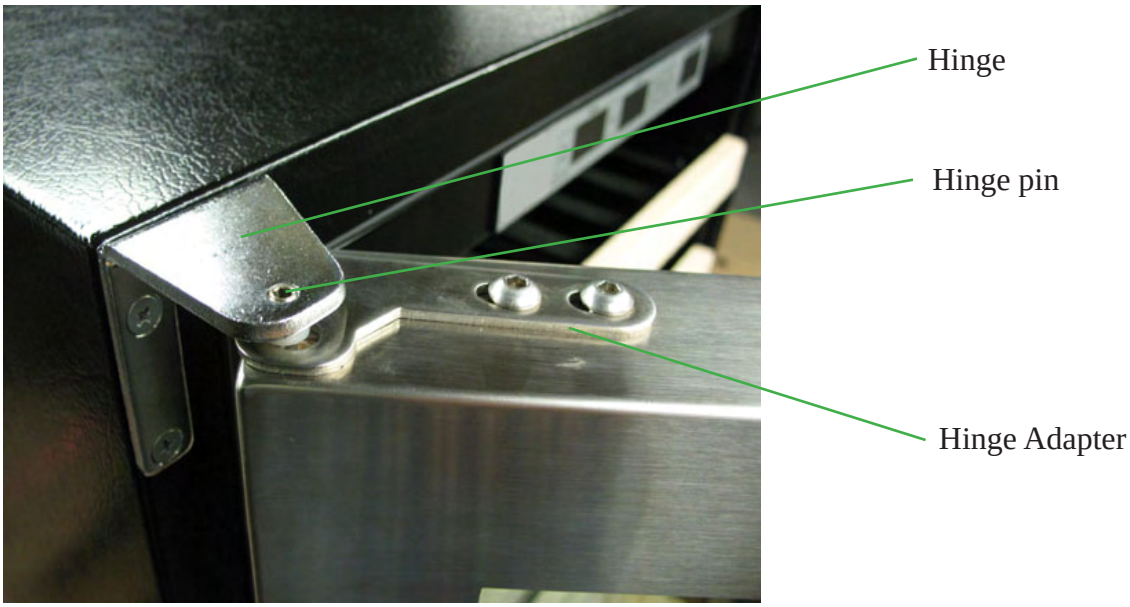


Figure 12.32

View of main power board - front grille

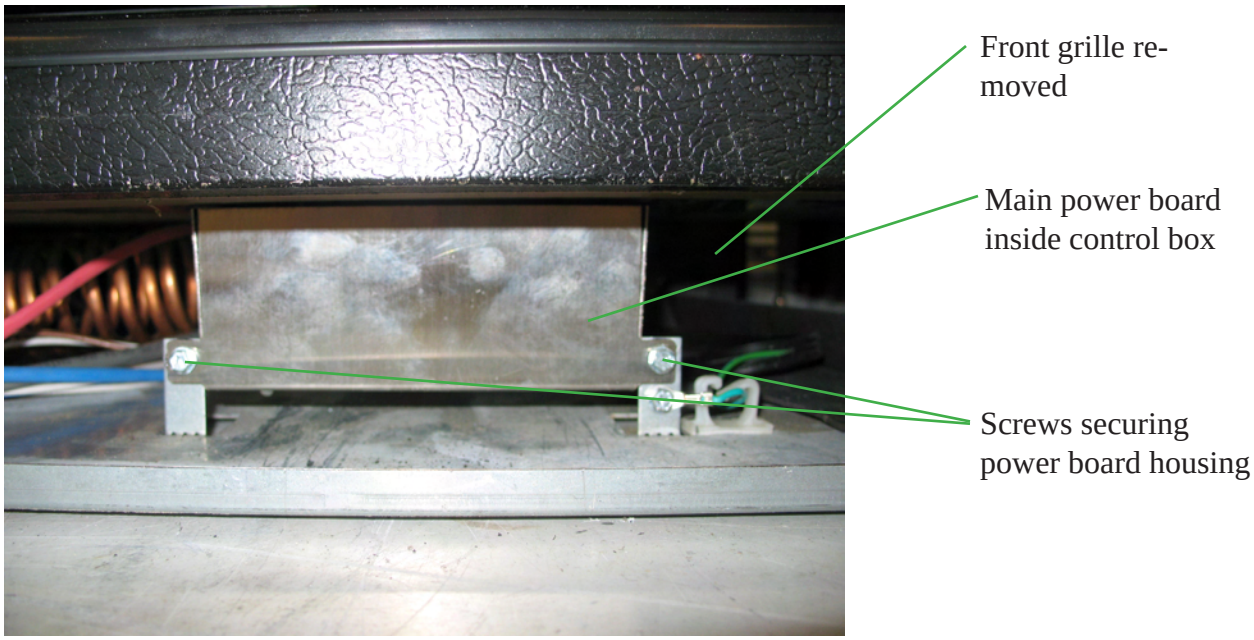


Figure 12.33

View of main power board - Pulled forward to cabinet flange

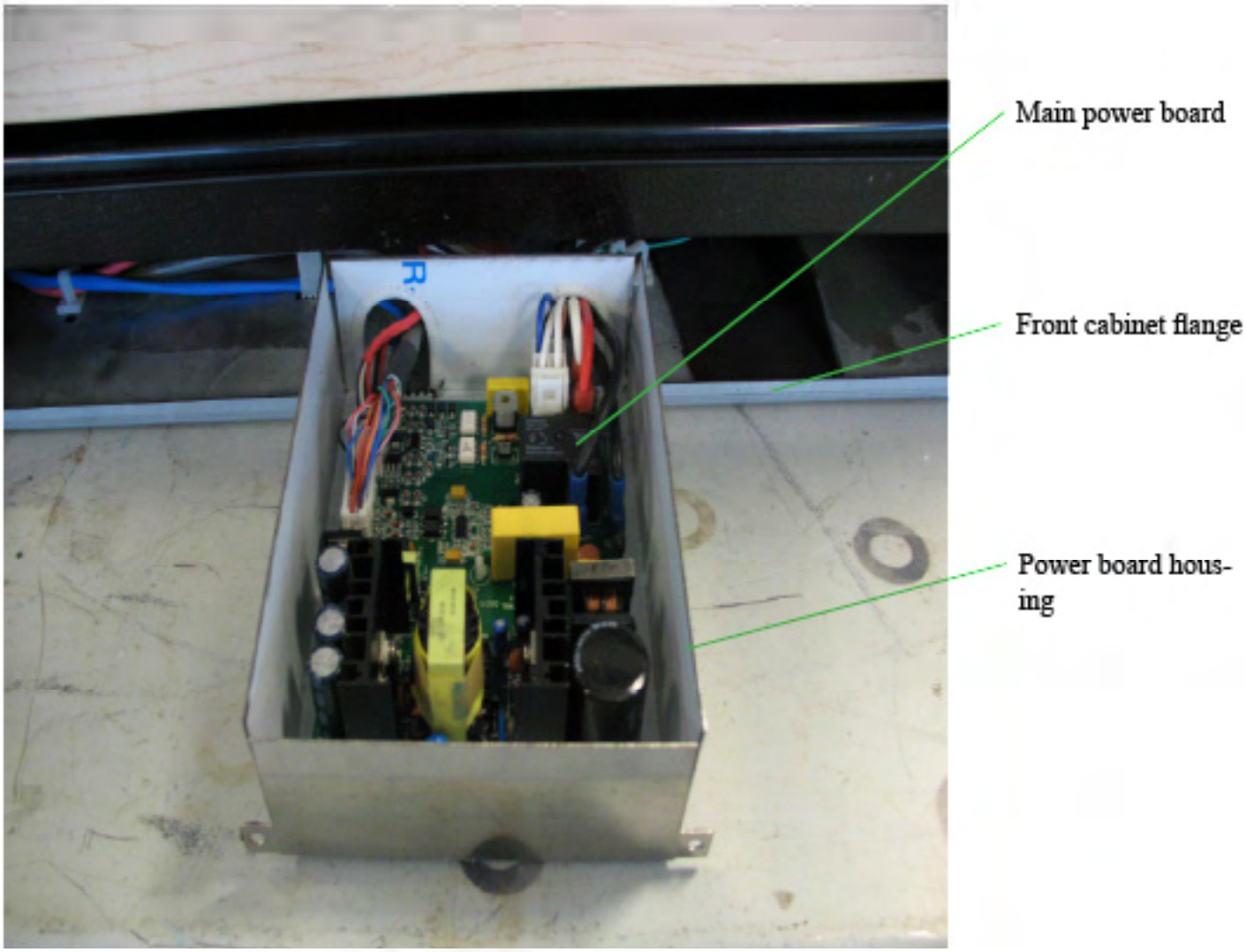


Figure 12.34

CAUTION: READ WARNING IN SECTION 8.2 BEFORE SERVICING THIS AREA.

View of inside control box showing user interface board, thermistor, and communication cables

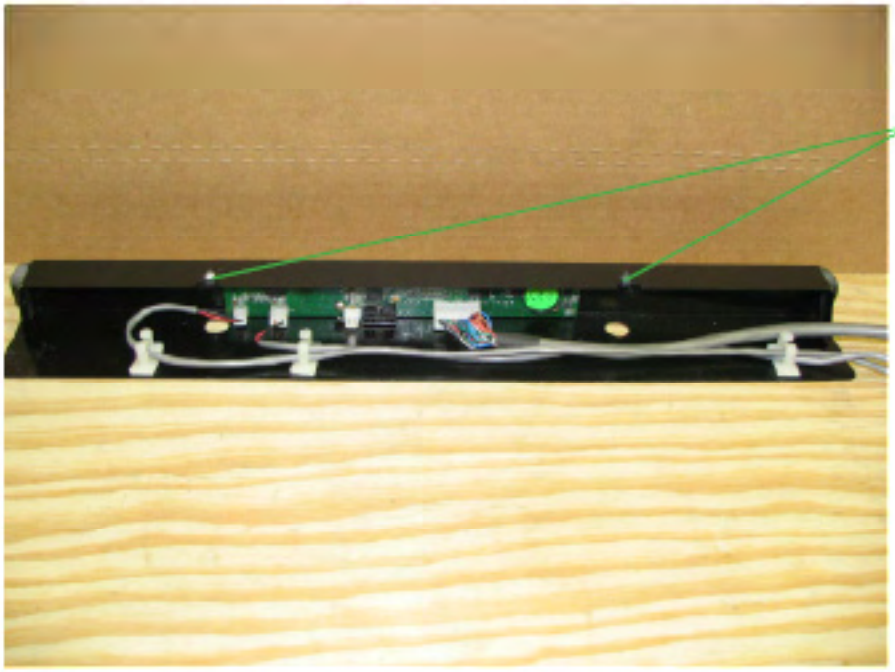


Figure 12.35

View of inside control box showing user interface board

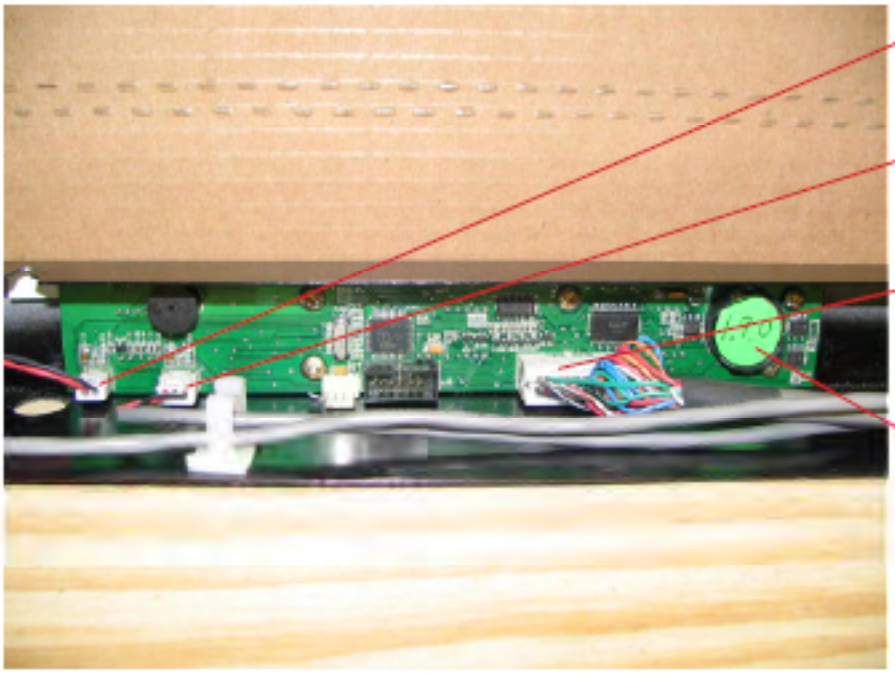


Figure 12.36