Delfield®

SERVICE MANUAL

Versa Drawer Refrigeration Units

Please read this manual completely before attempting to service this equipment.

RETAIN THIS MANUAL FOR FUTURE REFERENCE.

Delfield 980 S. Isabella Rd., Mt. Pleasant, MI 48858
+1(989) 773-7981 or (800) 733-8829 • Fax (866) 779-2040
www.delfield.com

February 2013

IMPORTANT WARNINGS AND SAFETY INFORMATION

WARNING

ANY REFRIGERATION SERVICE PROCEDURES DESCRIBED IN THIS MANUAL MUST BE PERFORMED BY A CERTIFIED EPA TECHNICIAN.

Read this manual thoroughly before installing, operating, or performing maintenance on the equipment.

FAILURE TO FOLLOW INSTRUCTIONS IN THIS MANUAL CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH.

- **Do not store or use gasoline or other flammable vapors or liquids in the vicinity of this or any other appliance.**
- **Unless all covers and access panels are in place and properly secured, do not operate this equipment.**
- **Damp or wet hands may stick to cold surfaces.**
- **Allow heated equipment to cool down before attempting to clean or service.**
- **Read and understand instruction manuals and labels. Learn all applications and restrictions for the service performed.**
- **Do not remove ground prong from service equipment cords.**
- **Use extension cords rated for the intended service and as short in length as possible.**
- **Use refrigerant hoses SAE J196-1992 approved with a shutoff device within 12 inches of the ends.**
- **Make sure recovery tanks are DOT approved for use with the type of refrigerant being serviced.**
- **Service units only in well ventilated areas using mechanical ventilation systems.**
- **Follow all accessory advisories and instructions.**
- **Do not operate any unit with defective or damaged parts.**
- **Do not use electrical appliances inside the food storage compartments of the appliance.**
- **Do not use mechanical devices or other means to accelerate the defrosting process.**

WARNING

Serious injury or death can occur from inhaling high concentrations of refrigerant vapors. These vapors also reduce oxygen levels in confined areas. Contact with liquid can cause frostbite. All containers, equipment and hoses are under high pressure. Do not puncture or damage these components.

CAUTION

Observe the following:

- *Keep the equipment area free and clear of combustible material.*
- *Maintain adequate clearance for air openings.*
- *Operate equipment only on the type of electricity indicated on the data plate.*
- *Unplug the unit before making any repairs.*
- *Handle all refrigerant hoses, recovery tanks, lines and other vessels as containers under pressure at all times.*
- *Models 18682VDR-CE, 18682VDL-CE and F18VD82-CE did not pass the flicker test (IEC 61000-3-3). These models must not be connected to any electrical circuit with lights.*
- *Retain this manual for future reference.*

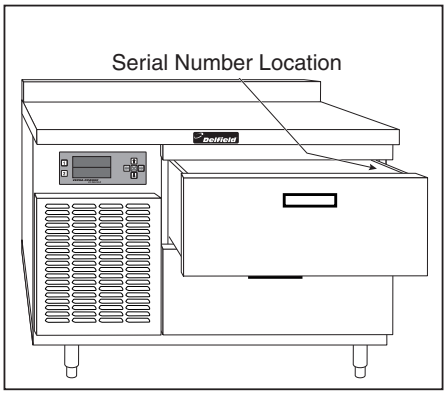
TABLE OF CONTENTS

SERIAL NUMBER INFORMATION

NOTE: This manual covers standard units only. If you have a custom unit, consult the technical service department.

SERIAL NUMBER

The serial number is located on the data plate mounted inside of Drawer 1. Always have the serial number of your unit available when calling for parts or service.



WARRANTY INFORMATION

Visit *http://www.delfield.com/minisite/service/warranty_info* to:

- Register your product for warranty.
- Verify warranty information.
- View and download a copy of your warranty.

REGULATORY CERTIFICATIONS

115V Models are certified by:

National Sanitation Foundation (NSF)

Underwriters Laboratories (UL)
Underwriters Laboratories of Canada (ULC)

230-240V Models are certified by:

National Sanitation Foundation (NSF)

European Conformity
Technical Inspection Association

INTRODUCTION

GENERAL

Versa Drawer series refrigeration units have two or four drawers, each of which can operate in one of four modes at any time. The two-drawer and four-drawer models feature countertop-height stainless steel work surfaces. A two-drawer Lo Profile unit is also available.

Refrigeration mode: The drawer operates as a refrigerator, maintaining the refrigeration set point between 32°F(0˚C) and 41°F(5˚C).

Freezer mode: The drawer operates as a self-defrosting freezer, maintaining the freezer set point between -5°F(-20˚C) and 5°F(-15˚C).

Thaw Cabinet mode: The drawer operates as a thaw cabinet, maintaining the thaw cabinet set point between 32°F(0˚C) and 46°F(10˚C) using hot gas and refrigeration as required for a fixed time period. Once the period has elapsed, the drawer mode is changed to refrigeration mode.

Convenience Chiller mode: The drawer operates as a convenience chiller, maintaining the convenience chiller set point between -5°F(-20˚C) and 25°F(-4˚C) for four hours. Once the period has elapsed, the drawer mode is changed to refrigeration mode.

All units have stainless steel exteriors and interiors. Drawer gaskets are magnetic and mount to the drawer, snapping in place. The gaskets are removable without tools.

This manual covers standard units. If you have a custom unit, consult the service department at 800-733-8829.

THAW SYSTEM

Hot gas is used for the thaw cabinet operation and the defrost mode. A hot gas solenoid controls the heat. In the defrost mode the hot gas will be used to warm the evaporator coil when a drawer is used as a thaw cabinet. The hot gas solenoid will open to maintain drawer temperature.

REFRIGERATION SYSTEM

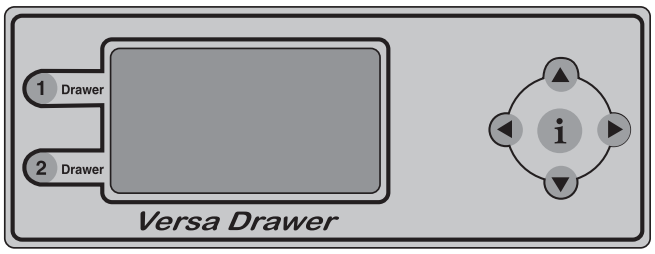
The refrigeration system is used in all modes. The refrigeration solenoid controls refrigerant. Two compressors run in parallel operation in a four-drawer system while one compressor operates the two-drawer system.

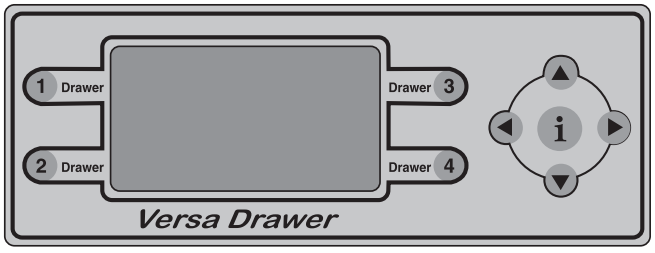
TEMPERATURE MONITORING

Temperature sensors are located in each drawer. The drawer temperature is displayed on the control panel.

CONTROLLER

The controller provides information indicating the drawer mode. In addition, the actual temperature of the drawer is displayed. The push button tabs, located next to the display screen, represent each drawer. These tabs are used to select the drawer for control. The control display located on the right side of the control panel is used to toggle between control screens and to select drawer modes and temperatures.





SPECIFICATIONS (115V/60Hz)

MODEL	VOLTS	HP	COMP POS	AMPS	HEIGHT	WIDTH	DEPTH	NO. OF DRAWERS	SHIP WGT	NEMA PLUG
F18VD50	115	1/3	Left	6.0	36"	50"	31.5"	2	520lbs	5-15P
F18VD82	115	(2) 1/3	Left	12.0	36"	82"	31.5"	4	720lbs	5-15P
F17VD84	115	1/3	Left	6.0	36"	84"	31.5"	2	750lbs	5-15P
F2984VDL	115	1/3	Left	6.0	26"	84"	31.5"	2	850lbs	5-15P
F2984VDR	115	1/3	Right	6.0	26"	84"	31.5"	2	850lbs	5-15P
18650VDL	115	1/3	Left	6.0	34"	50"	31.5"	2	520lbs	5-15P
18650VDR	115	1/3	Right	6.0	34"	50"	31.5"	2	520lbs	5-15P
18682VDL	115	(2) 1/3	Left	12.0	34"	82"	31.5"	4	720	5-15P
18682VDR	115	(2) 1/3	Right	12.0	34"	82"	31.5"	4	720	5-15P

SPECIFICATIONS (230-240V/50Hz)

MODEL	VOLTS	HP	COMP POS	AMPS	HEIGHT	WIDTH	DEPTH	NO. OF DRAWERS	SHIP WGT	NEMA PLUG
F18VD50-CE	230-240	1/3	Left	3.6	91cm	127cm	80cm	2	236kg	BS1363
F18VD82-CE	230-240	(2) 1/3	Left	7.2	91cm	208cm	80cm	4	327kg	BS1363
F17VD84-CE	230-240	1/3	Left	3.6	91cm	213cm	80cm	2	340kg	BS1363
F2984VDL-CE	230-240	1/3	Left	3.6	66cm	213cm	80cm	2	386kg	BS1363
F2984VDR-CE	230-240	1/3	Right	3.6	66cm	213cm	80cm	2	386kg	BS1363
18650VDL-CE	230-240	1/3	Left	3.6	86cm	127cm	80cm	2	236kg	BS1363
18650VDR-CE	230-240	1/3	Right	3.6	86cm	127cm	80cm	2	236kg	BS1363
18682VDL-CE	230-240	(2) 1/3	Left	7.2	86cm	208cm	80cm	4	327kg	BS1363
18682VDR-CE	230-240	(2) 1/3	Right	7.2	86cm	208cm	80cm	4	327kg	BS1363

The plug for the above (CE) models must be accessible at all times or a switch must be provided in the fixed wiring in accordance with the wiring rules.

Refrigeration System
HFC-404A Refrigerant

Electrical Connections
115 Volt, 60 Hertz, single phase, 3-wire, grounded, 8' cord with plug
230-240 Volt, 50 Hertz, single phase, 3-wire, grounded, 8' cord with plug

Drawers
32"/81cm, 11-12 gauge stainless steel, 12"/31cm X 20"/51cm pan capacity

Legs
6"/15cm adjustable

Casters
5"/13cm casters, with and without brakes

INSTALLATION, OPERATION & OPERATOR MAINTENANCE
See the Installation and Operation Manual for installation information.

COMPONENT REMOVAL AND REPLACEMENT

Lo Profile and 2-Drawer refrigeration units use one compressor, one accumulator, one receiver and four solenoids. In addition, one evaporator is used for each drawer along with support components. The 4-Drawer refrigeration unit uses two complete 2-Drawer units. Component removal and replacement is similar for both types.

Perform the following procedures to remove and replace parts. To eliminate mistakes when ordering parts, always provide the following information:

- Model Number
- Serial Number

COVERS AND PANELS

Front Louvered Panel

NOTE: Front louvered panel removal is similar for all models.

1. Lift up on louver from bottom and pull away from unit (Figure 1).
2. Reverse the above step to install the front louvered panel.

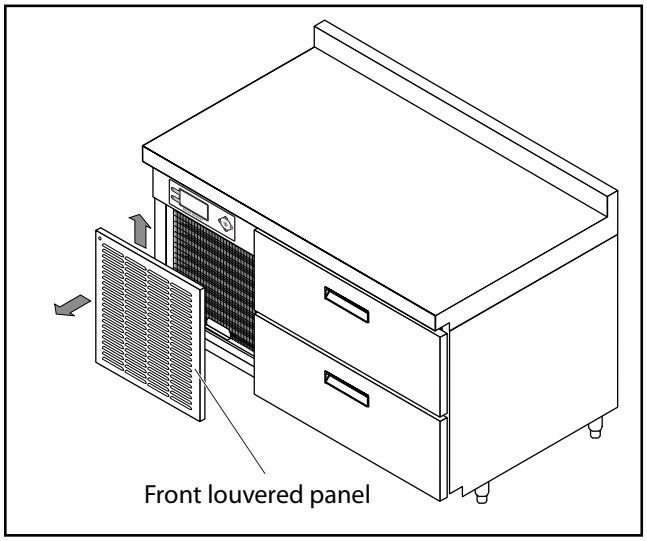


Figure 1. Front Louvered Panel

Louvered Access End Panel

NOTE: Louvered access end panel removal is similar for all models.

1. While supporting the louvered access end panel, remove mounting screws.
2. Lift louvered access end panel out and up to remove.
3. Reverse the above steps to install the louvered access end panel.

Rear Panel

1. While supporting the rear panel, remove 11 screws.
2. Remove the rear panel from the unit.
3. Reverse the above steps to install the rear panel.

DRAWER ASSEMBLY

Drawer Removal

1. Empty the drawer.
2. Pull and lift the drawer to remove it from the unit (Figure 2).

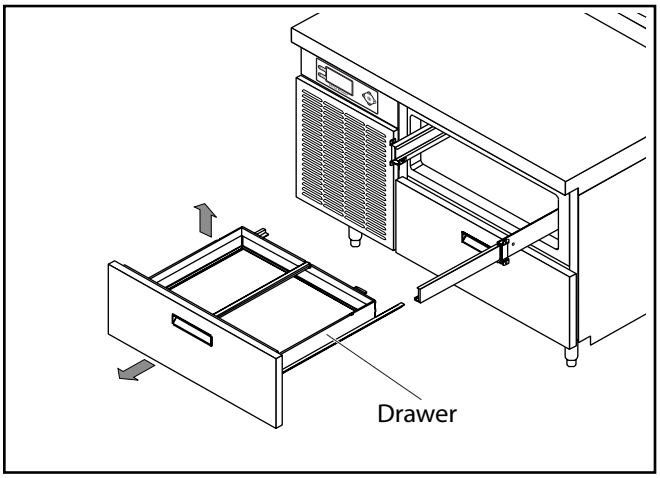


Figure 2. Drawer Removal

Drawer Gasket

The drawer gasket is installed on the inner side of the drawer front and fitted into a slot (Figure 3).

1. Remove the drawer gasket by carefully pulling the drawer gasket out of the groove.
2. Reverse the above step to install the drawer gasket.

Drawer Front Assembly

1. Remove the drawer from the refrigeration unit (Figure 3).
2. Place the drawer on a solid surface with the drawer front assembly down.
3. Remove six screws securing the drawer front assembly to the drawer.
4. Reverse the above steps to install the drawer front assembly.

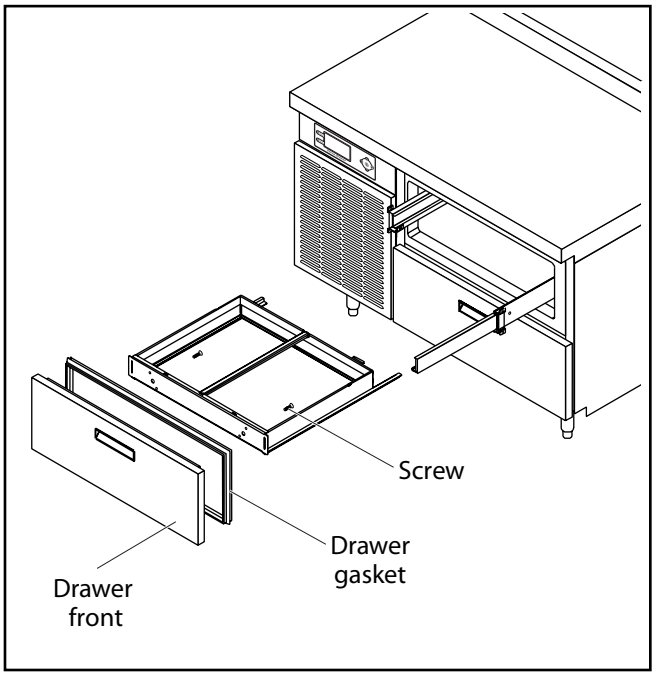


Figure 3. Drawer Front Assembly

Return Air Baffle

1. Remove screws from return air baffle (Figure 4).
2. Remove blue wires from drawer switch while supporting air baffle.
3. Reverse the above steps to install the return air baffle.

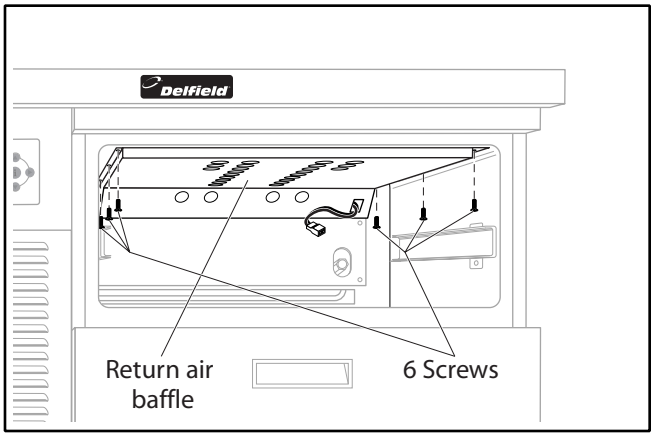


Figure 4. Return Air Baffle

Drawer Switch

1. Disconnect power from the refrigeration unit.
2. Remove the drawer as described previously.
3. Reach inside the box and carefully remove the drawer switch out of the mounting slot (Figure 5).

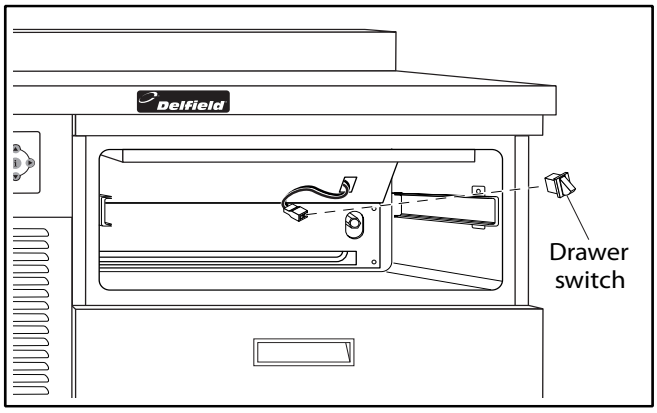


Figure 5. Drawer Switch

4. Tag and disconnect the wiring harness from the drawer switch.
5. Reverse the above steps to install a replacement drawer switch.

EVAPORATOR COIL ASSEMBLY COVER

NOTE: Evaporator coil assembly cover removal is similar for all models.

1. The evaporator coil assembly cover is mounted behind the drawer (Figure 6).
2. Reach inside the box and remove four screws from the front of the evaporator coil assembly cover.

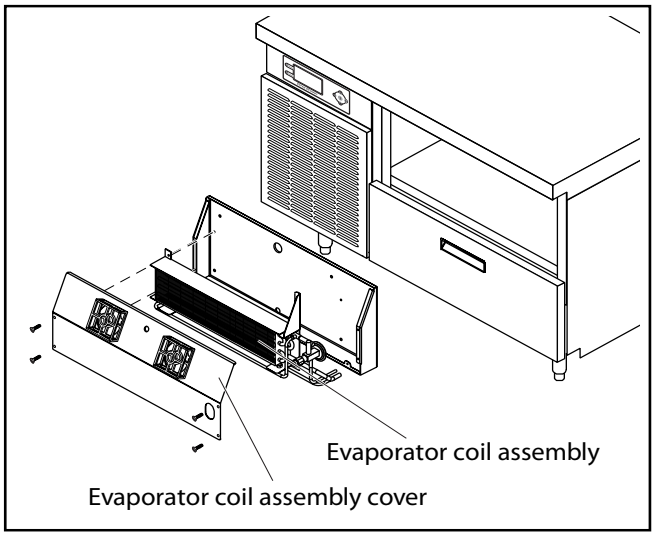


Figure 6. Evaporator Coil Assembly Cover

3. Tag and disconnect the fan electrical connectors.
4. Remove the evaporator coil assembly cover from the box.
5. Reverse the above steps to install the evaporator coil assembly cover.

EVAPORATOR COIL ASSEMBLY

1. Disconnect power from the refrigeration unit.
2. Remove the drawer as described above.
3. Remove the rear panel as described in COVERS AND PANELS.
4. Remove the evaporator coil assembly cover as described previously.
5. Follow the guidelines and/or government regulations for RECOVERY, PURGING/TESTING AND RECHARGING REFRIGERATION UNIT to recover the refrigerant from the refrigeration system.

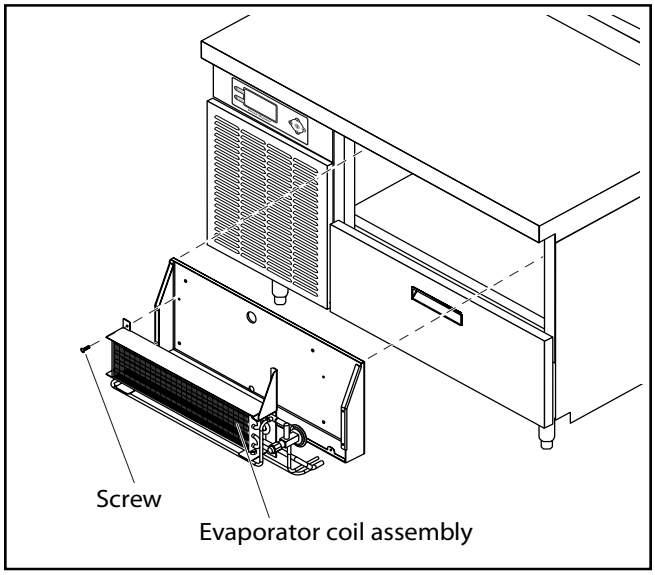


Figure 7. Evaporator Coil Assembly Removal

6. From the rear of the refrigeration unit, unsolder the refrigeration lines from the evaporator coil assembly.
7. Carefully remove the expansion valve thermocouple from evaporator line.
8. Remove the evaporator coil assembly from the unit (Figure 7).
9. Reverse the above steps to install a replacement or repaired evaporator coil assembly. Recharge the system as described in the guidelines and/or government regulations for RECOVERY, PURGING/ TESTING AND RECHARGING REFRIGERATION UNIT.

EXPANSION VALVE

1. Disconnect power from the refrigeration unit.
2. Remove the evaporator coil assembly cover as described in COVERS AND PANELS.
3. Remove the expansion valve thermocouple from the evaporator line.

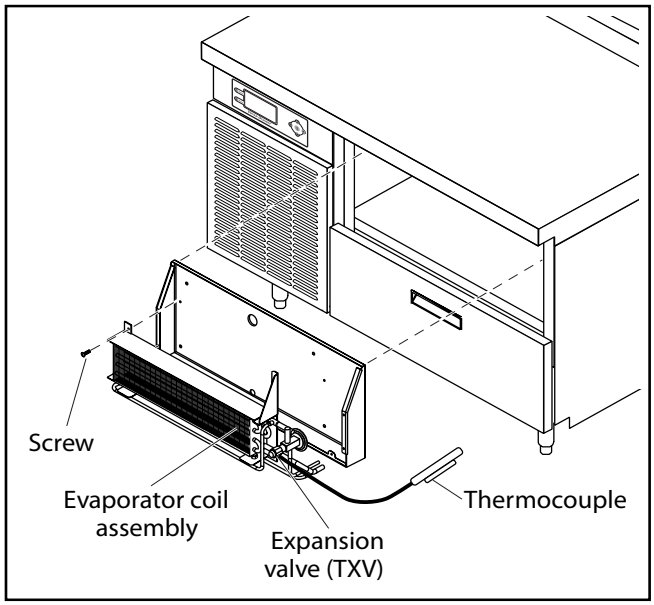


Figure 8. Expansion Valve and Thermocouple

4. Reach inside the drawer box and unsolder the refrigeration lines. Remove the expansion valve and thermocouple from the evaporator housing (Figure 8).
5. Reverse the above steps to install a replacement expansion valve.

CONDENSER FAN BLADE

1. Disconnect power from the refrigeration unit.
2. Remove the louvered access end panel as described in COVERS AND PANELS.

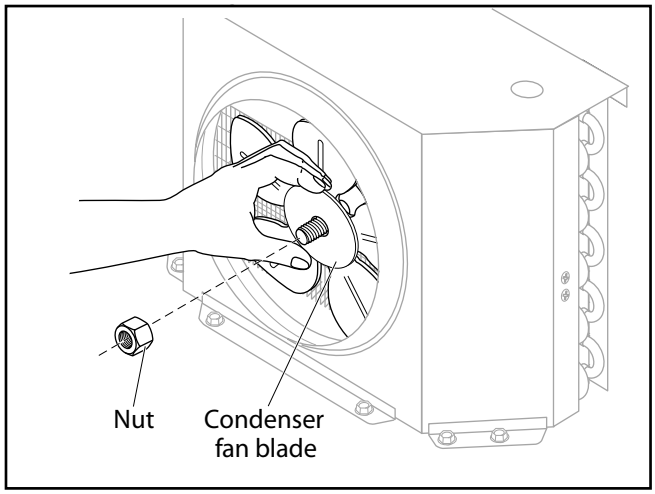


Figure 9. Condenser Fan Blade

3. While holding the condenser fan blade (Figure 9), remove the lock nut from the center of the condenser fan blade.
4. Reverse the above steps to install the condenser fan blade.

CONDENSER FAN MOTOR

CAUTION

Make sure power to the refrigeration unit is disconnected before servicing the condenser fan and condenser fan motor.

1. Disconnect power from the refrigeration unit.
2. Remove the louvered access end panel as described in COVERS AND PANELS.
3. Tag and disconnect the wiring harness at the condenser fan motor.
4. Remove the condenser fan blade as described above.

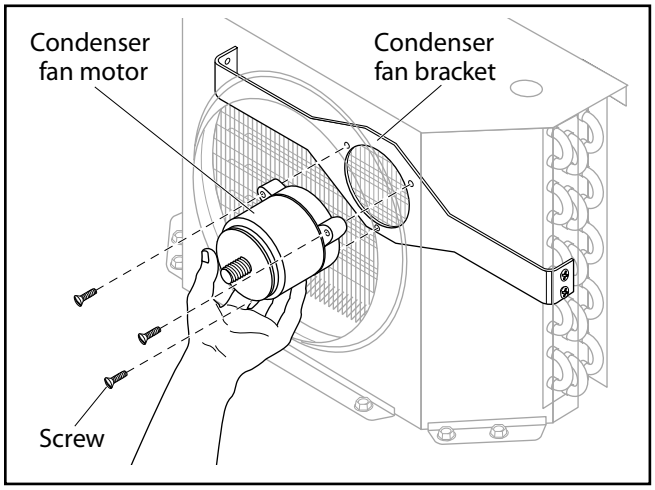


Figure 10. Condenser Fan Motor

5. While supporting the condenser fan motor, remove three screws securing the condenser fan motor to the condenser fan bracket (Figure 10).
6. Reverse the above steps to install a replacement condenser fan motor.

CONDENSER COIL

1. Disconnect power from the refrigeration unit.
2. Remove the front louvered panel as described in COVERS AND PANELS.

NOTE: The two-drawer system uses a condenser coil mounted behind the front louvered panel. The four-drawer unit uses two condenser coils stacked behind the front louvered panel. The removal procedure is similar for all models.

3. Refer to all guidelines and/or government regulations for RECOVERY, PURGING/TESTING AND RECHARGING REFRIGERATION UNIT to recover the refrigerant from the refrigeration system.
4. Remove the louvered access end panel as described in COVERS AND PANELS.
5. Tag and remove the temperature sensor from the condenser coil.
6. Remove six screws securing the condenser coil inside the machine compartment (Figure 11).
7. Tag and disconnect the condenser fan motor.
8. Unsolder the refrigeration lines from the condenser coil and remove the condenser coil from the unit.
9. Remove four screws securing the condenser coil to the condenser cover and condenser fan bracket.
10. Reverse the above steps to install a replacement or repaired condenser coil.

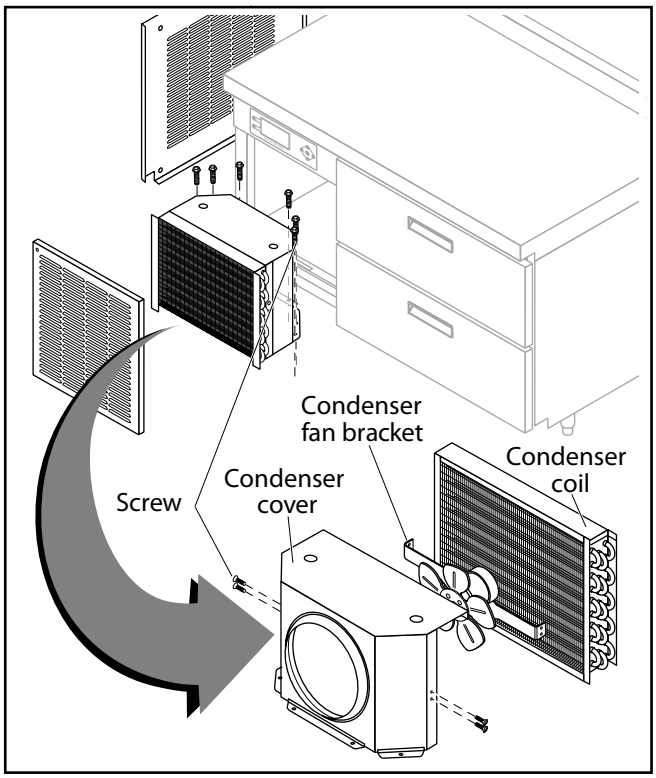


Figure 11. Condenser Fan Blade and Condenser Fan Bracket

COMPRESSOR

1. Disconnect power from the refrigeration unit.
2. Remove the louvered access end panel as described in COVERS AND PANELS.
3. Refer to the guidelines and/or government regulations for RECOVERY, PURGING/TESTING AND RECHARGING REFRIGERATION UNIT to recover the refrigerant from the refrigeration system.

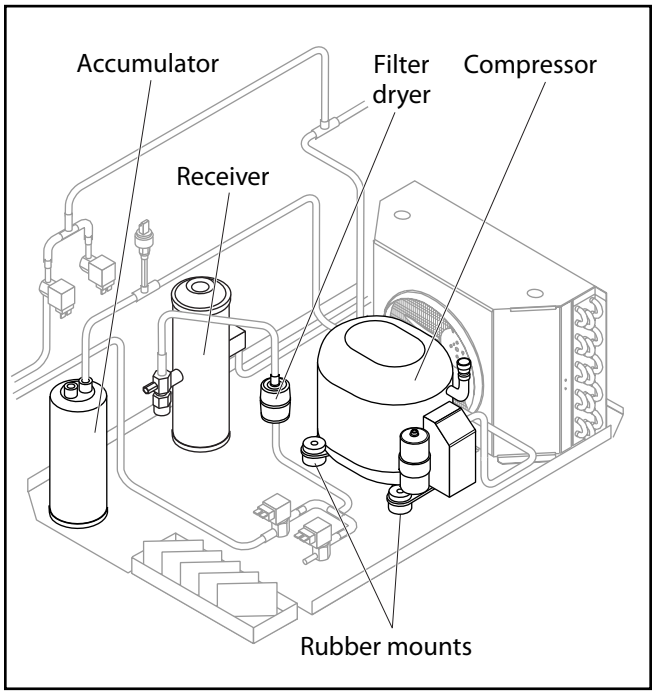


Figure 12. Refrigeration Compartment

4. Unsolder the refrigeration lines at the compressor (Figure 12).
5. Tag and disconnect the wiring harness at the compressor.
6. Remove four screws securing the compressor to the refrigeration unit.
7. Remove compressor and four isolation rubber mounts.
8. Reverse the above steps to install a replacement or repaired compressor.

ACCUMULATOR/RECEIVER

1. Disconnect power from the refrigeration unit.
2. Remove the louvered access end panel as described in COVERS AND PANELS.
3. Refer to the guidelines and/or government regulations for RECOVERY, PURGING/TESTING AND RECHARGING REFRIGERATION UNIT to recover the refrigerant from the refrigeration system.
4. Remove the insulation jacket from the accumulator (Figure 12).
5. Unsolder the refrigeration lines at the accumulator.
6. Reach underneath refrigeration unit and remove one screw securing the accumulator to the refrigeration unit.
7. Remove the accumulator from the unit.
8. Reverse the above steps to install a replacement accumulator.

FILTER DRYER

1. Disconnect power from the refrigeration unit.
2. Remove the louvered access end panel as described in COVERS AND PANELS.
3. Refer to the guidelines and/or government regulations for RECOVERY, PURGING/TESTING AND RECHARGING REFRIGERATION UNIT to recover the refrigerant from the refrigeration system.
4. Unsolder the refrigerant line at the filter dryer (Figure 12).
5. Remove the filter dryer from the refrigeration unit.
6. Reverse the above steps to install a replacement filter dryer.

SOLENOID VALVES

All solenoid valves are identical. Remove as follows:

1. Disconnect power from the refrigeration unit.
2. Remove the louvered access end panel as described in COVERS AND PANELS.

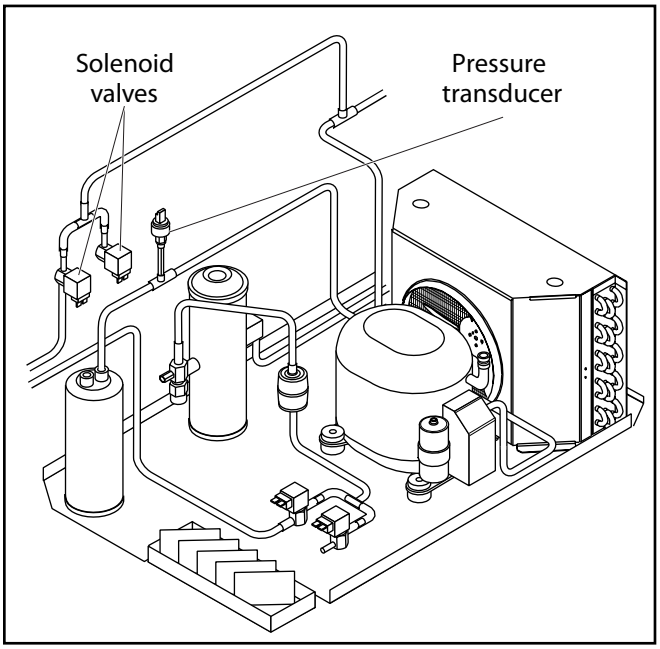


Figure 13. Solenoid Valves and Pressure Transducer

3. Tag and disconnect the wiring harness at the solenoid valve (Figure 13).
4. To check or remove the solenoid coil, remove the nut securing the solenoid coil on the solenoid valve. Remove the solenoid coil and wiring harness.
5. Unsolder the refrigeration lines at the solenoid valve.

6. Remove the solenoid valve from the refrigeration unit.
7. Reverse the above steps to install a replacement solenoid coil or replacement solenoid valve.

PRESSURE TRANSDUCER

1. Disconnect power from the refrigeration unit.
2. Remove the louvered access end panel as described in COVERS AND PANELS.
3. Tag and disconnect the wiring harness from the pressure transducer (Figure 13).
4. While holding pressure transducer mount, use pliers to remove the pressure transducer from the Schrader access valve.
5. Reverse the above steps to install a replacement pressure transducer. Apply leak lock to the pressure transducer threads before installation.

BOX TEMPERATURE SENSOR

1. Disconnect power from the refrigeration unit.
2. Remove the drawer as described previously.
3. Remove the rear panel as described in COVERS AND PANELS.
4. Reach inside the box and remove the temperature sensor mounting screw (Figure 14).

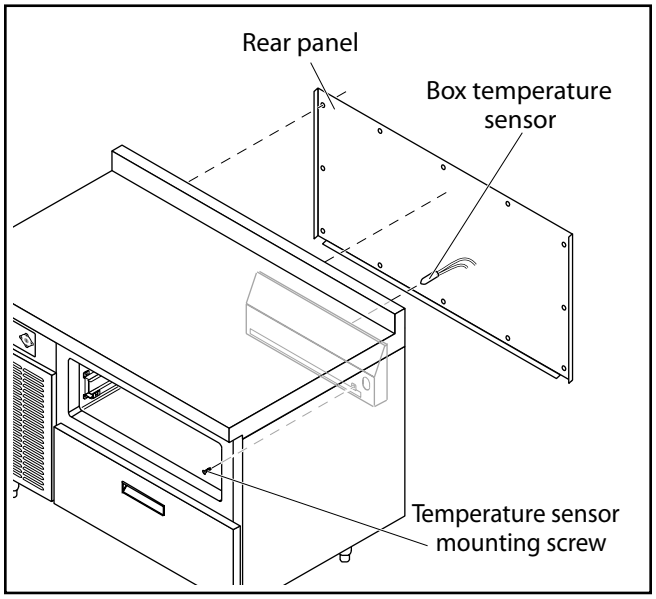


Figure 14. Box Temperature Sensor

5. Tag and disconnect the wiring harness from the box temperature sensor.
6. Remove the temperature sensor mounting screw and remove the box temperature sensor from the rear.
7. Reverse the above steps to install a replacement box temperature sensor.

DISPLAY CONTROL BOARD

1. Disconnect power from the refrigeration unit.
2. Remove the louvered access end panel as described in COVERS AND PANELS.
3. Remove the front louvered panel as described in COVERS AND PANELS.
4. Inside the machine compartment, tag and disconnect the wiring harness from the display control board (Figure 15).

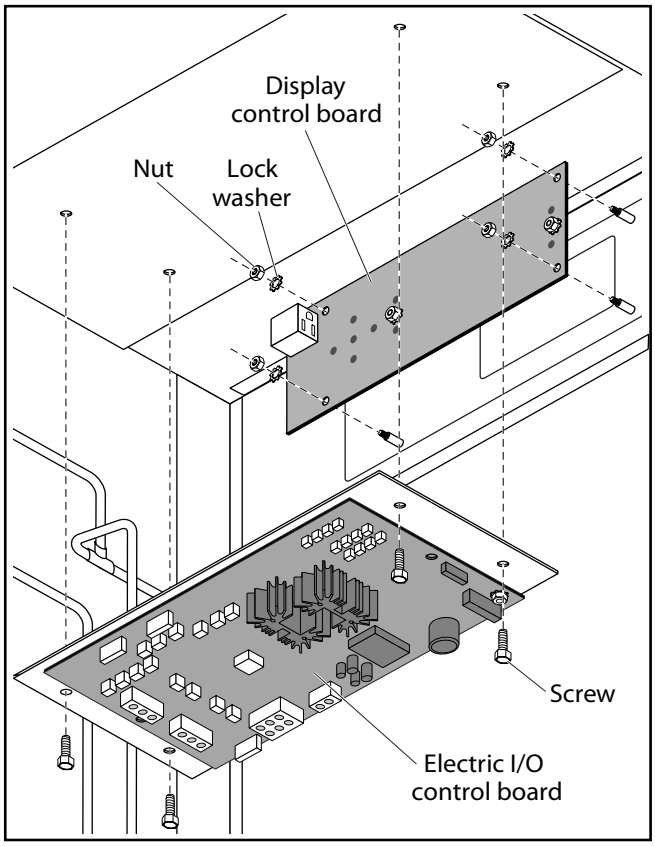


Figure 15. Control Boards

5. Remove four nuts and four lock washers from the display control board.
6. Carefully remove the display control board from the machine compartment.
7. Reverse the above steps to install a replacement display control board.

ELECTRIC INPUT/OUTPUT (I/O) CONTROL BOARD

CAUTION

ELECTROSTATIC SENSITIVE ASSEMBLY; USE PRECAUTIONARY PROCEDURES WHEN HANDLING CIRCUIT CARD ASSEMBLIES.

1. Disconnect power from the refrigeration unit.
2. Remove the front louvered panel as described in COVERS AND PANELS.
3. Remove the louvered access end panel as described in COVERS AND PANELS.

NOTE: The electric input/output (I/O) control board is mounted on the inside top of the machine compartment.

4. Tag and disconnect the wiring harness from the electric I/O control board (Figure 16).
5. Remove four screws securing the electric I/O control board to the machine compartment.
6. Remove the electric I/O control board from the refrigeration unit.
7. Reverse the above steps to install a replacement electric I/O control board.

LEGS

DANGER

Use a jack to lift the refrigeration unit off the ground just far enough to remove the leg. Place blocking underneath the refrigeration unit. Do not work underneath a raised unit without proper blocking. Do not lift the unit more than necessary to remove the leg. Lifting the unit too far can make the unit unstable.

1. Place a jack underneath the refrigeration unit as close as possible to the leg (Figure 16). Lift the unit just high enough to remove the leg from underneath the refrigeration unit. Place blocking underneath the unit to prevent the unit from falling during removal of the leg.
2. Remove four screws from the upper portion of the leg.
3. Remove the leg from the refrigeration unit.
4. Reverse the above steps to install a replacement leg.

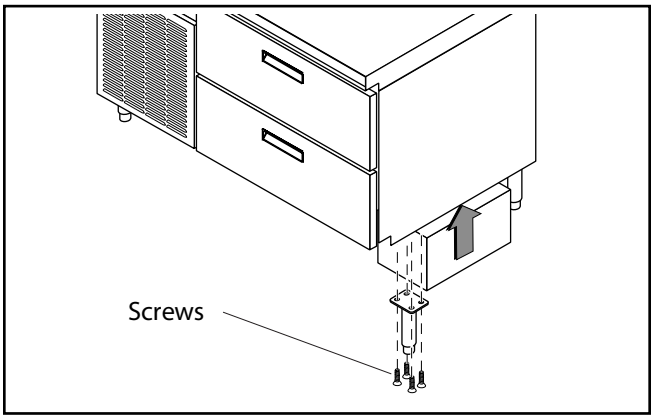


Figure 16. Leg Removal

CASTERS

DANGER

Use a jack to lift the refrigeration unit off the ground just far enough to remove the leg. Place blocking underneath the refrigeration unit. Do not work underneath a raised unit without proper blocking. Do not lift the unit more than necessary to remove the caster. Lifting the unit too far can make the unit unstable.

1. Place a jack underneath the refrigeration unit as close as possible to the caster (Figure 17). Lift the unit up just high enough to remove the caster from underneath the refrigeration unit. Place blocking underneath the unit to prevent the unit from falling during removal of the caster.
2. Remove four screws from the upper portion of the caster.
3. Remove the caster from the refrigeration unit.
4. Reverse the above steps to install a replacement caster.

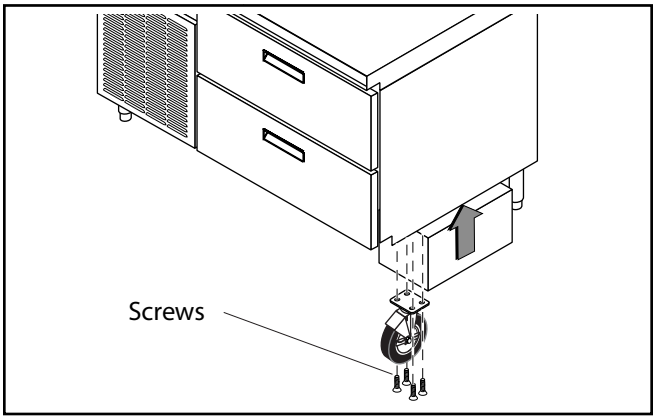


Figure 17. Caster Removal

CONTROL CONSOLE

The control console contains the data display and control buttons (Figures 18 and 19) needed to operate the drawers. The menus can be accessed by pressing and holding the i (Enter) button for approximately 5 seconds. The various screens used to monitor unit operation and to change settings will time out after 30 seconds. The exception is the diagnostics screen which does not time out.

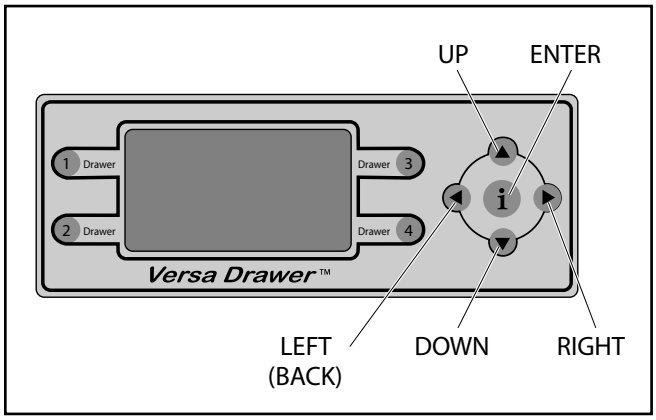


Figure 18. 4-Drawer Console Display

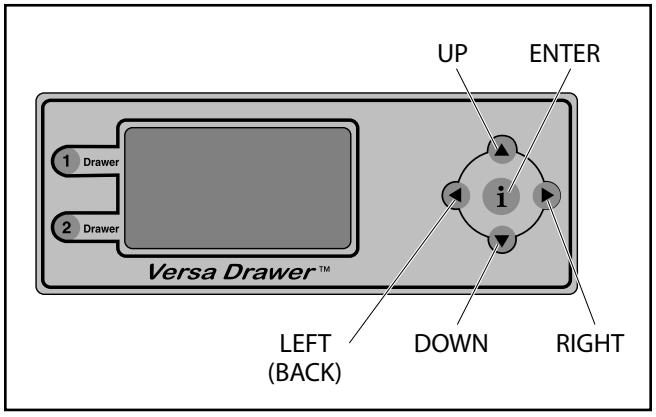


Figure 19. 2-Drawer Console Display

CHANGING DRAWER MODES

NOTE: At anytime while using the control, go back to the previous screen by pressing the LEFT arrow.

1. Press the desired drawer tab on the display.
2. Press the UP or DOWN arrows to the desired mode (Refrigerate, Freeze, Chill, or Thaw) (Figure 20).

NOTE: The desired mode will display with parenthesis when selected.

3. Press the drawer tab again to lock the desired mode setting.

Figure 20. Drawer Mode Display (2-Drawer Display shown)

CAUTION

Only qualified technicians should access the following programming menus.

MANUAL DEFROST

NOTE: Both buttons must be pressed within one second to manually set defrost.

To manually set a drawer to defrost, press the desired drawer tab (Figure 20) and then very quickly press i (Enter). To turn off manual defrost, press the desired drawer tab and very quickly press i (Enter).

PROGRAM MENU

NOTE: At any time while using the control, go back to the previous screen by pressing the LEFT arrow.

The Program Menus can be accessed by pressing and holding i (Enter) for five seconds.

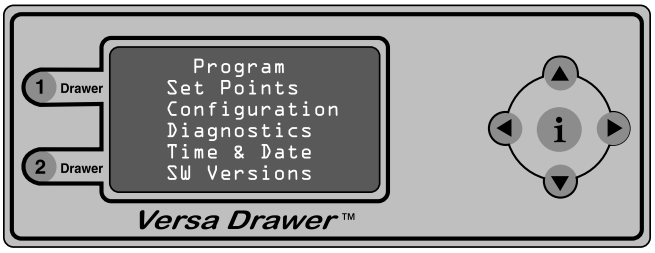


Figure 21. Program Menu (2-Drawer Display Shown)

1. Select the desired function by pressing the UP or DOWN arrows (Figure 21).
2. Press i (Enter) to select the function.

SET POINTS

Once in the Program Menu press the UP or DOWN arrows to Set Points and press i (Enter) (Figure 22).

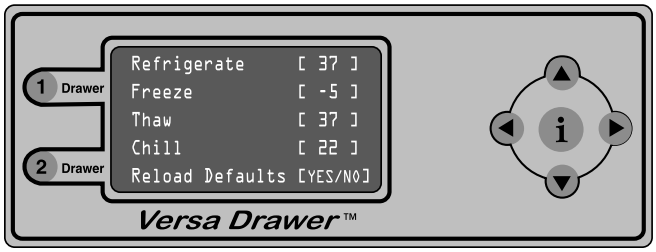


Figure 22. Set Points Menu (2-Drawer Display Shown)

1. Select a function from the Set Points menu by pressing the UP or DOWN arrows to the desired function and press i (Enter). This selection will allow the temperature setting to be adjusted.
2. Press i (Enter) to lock in the desired temperature setting.

CONFIGURATION

Once in the Program Menu press the UP or DOWN arrows to Configuration and press i (Enter) (Figure 23).

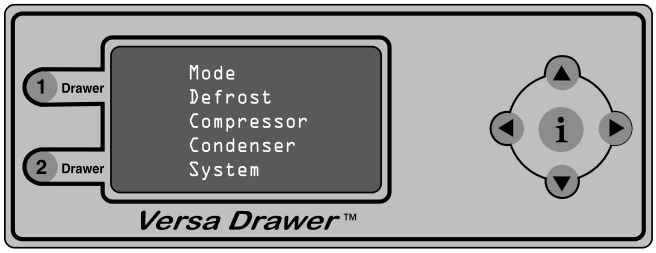


Figure 23. Configuration Menu (2-Drawer Display Shown)

1. Select a function from the Configuration Menu by pressing the UP or DOWN arrows to the desired function and pressing i (Enter) allowing the function to be adjusted or viewed.
   - **Mode:** System temperature set points differential
   - **Defrost:** Defrost times and set points
   - **Compressor:** Compressor run times
   - **Condenser:** Condenser temperatures and run times
   - **System:** Drawer open timeout, data log interval, run frame heaters, metric, language, reload defaults
2. Press i (Enter) to lock in an adjusted setting or press the LEFT arrow to go back.

DIAGNOSTICS

Once in the Program Menu press the UP or DOWN arrows to Diagnostics and press i (Enter) for diagnostics display (Figure 24).

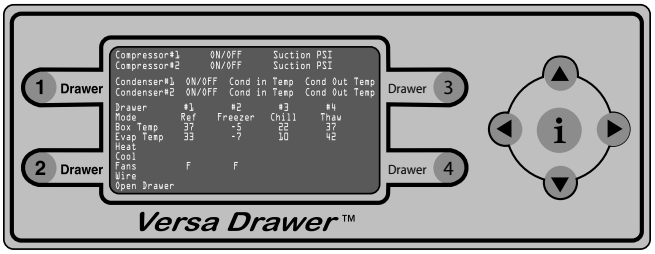


Figure 24. Diagnostics Menu (4-Drawer Display Shown)

TIME AND DATE

Once in the Program Menu press the UP or DOWN arrows to Time & Date and press i (Enter) allowing the time and date to display.

1. Adjust the time and date by pressing the RIGHT arrow to the desired digit location and the UP or DOWN arrow to the proper digit.
2. Press i (Enter) to lock in the setting.
3. Repeat for each digit location on the screen.
4. When completed press i (Enter) then the LEFT arrow to exit the Time and Date screen.

SOFTWARE VERSIONS

Once in the Program Menu press the UP or DOWN arrows to SW Versions (Figure 25) and press i (Enter) allowing the software versions to display.

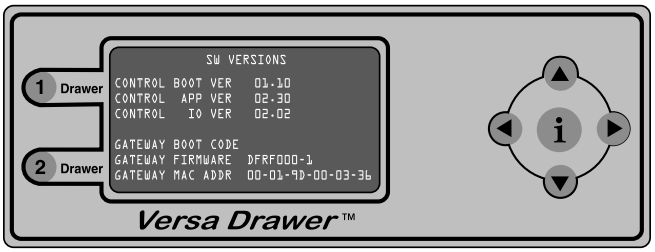


Figure 25. Software Versions Display (2-Drawer Display Shown)

NOTE: The software versions in Figure 25 are shown as examples only and are not the actual software versions.

TROUBLESHOOTING

GENERAL

The troubleshooting chart below provides common symptoms, causes and remedies. The chart cannot cover every problem that may occur. However, the most common problems, as shown in the table, can be used to troubleshoot many symptoms. The chart used in conjunction with the diagnostics screen provides good troubleshooting information.

DIAGNOSTICS

The diagnostics screen as described above provides an ongoing display of drawer data. The diagnostics screen does not time out but remains available for observation by a service technician. This screen can be accessed as described above.

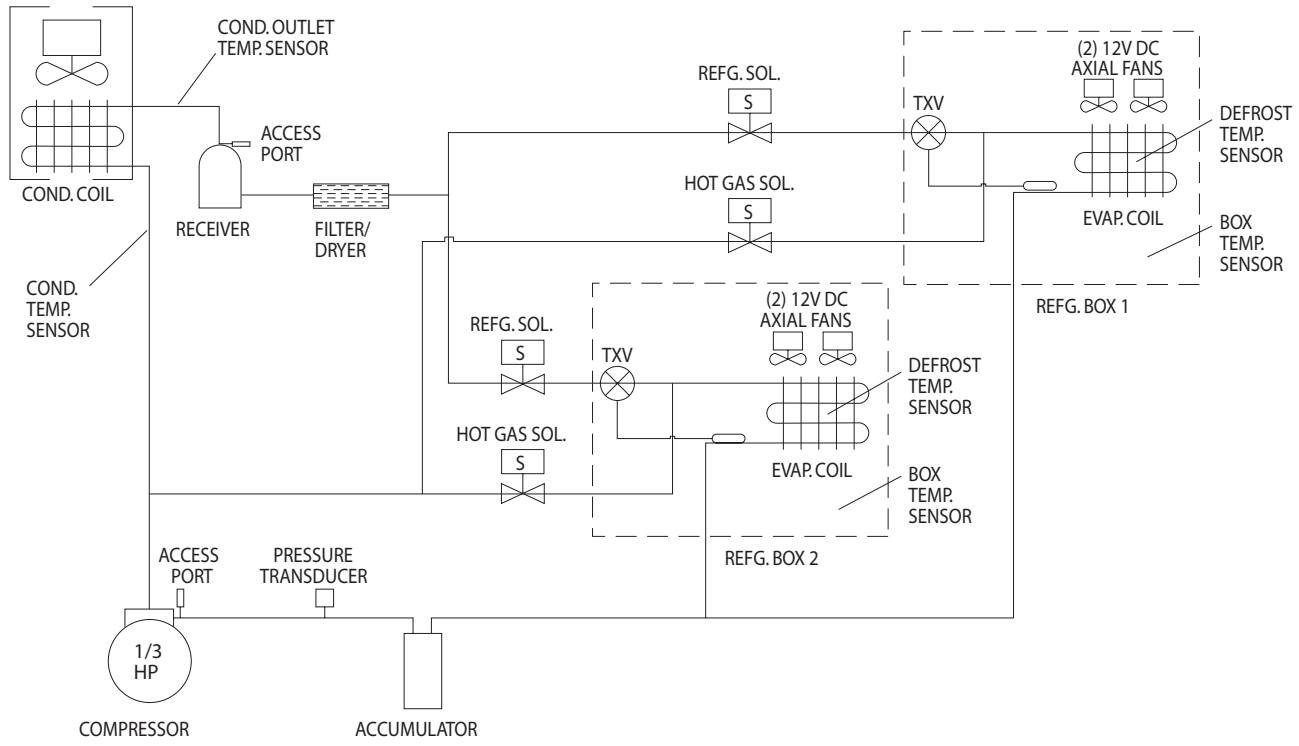
TROUBLESHOOTING CHART

SYMPTOM	CAUSE/REMEDY
Unit does not run.	Make sure the unit is plugged into a proper power source.
	Check for a blown fuse or tripped breaker.
	Test the outlet for the correct voltage.
	Inspect the electrical cord for damage.
Unit has power but does not run.	Check for power at the junction box inside the compressor compartment.
	Check for power coming out of the control board (12VDC) at the terminal for the control board.
	If no power is coming out of the control board, replace the control board.
Condensing unit does not run.	Check voltage from the control board.
	Check control settings and make sure the control is calling for the refrigeration.
	Check for voltage to solenoid while spade terminals are connected.
Compressor does not run but the fan works.	Check voltage from the control board.
	Make certain there is ample air flow for the evaporator and condenser coils.
	Clean the condenser coils.
	Test the compressor relays for overload.
	Test the compressor for open or shorted windings.
	Check control settings and make sure the control is calling for the fans to run.
Evaporator fans do not run.	Check for voltage (12VDC) at the fan motors.
	Check for obstructions to the fan blade.
	Check to see if the door switch is open or is shorted out.
	Check control settings and make sure the control is calling for the fans to run.
Condenser fans do not run.	Check for voltage (12VDC) at the fan motors.
	Check for obstructions to the fan blade.
	Check control settings and make sure the control is calling for the fans to run.
	Check the temperature sensor in the condenser coil to see if it is open or shorted.

SYMPTOM	CAUSE/REMEDY
Unit is not reaching desired temperature.	Check to see that the unit is in the correct mode of operation.
	Check to see that the unit is set at the desired set point.
	Check to see if the box temperature sensor is open or shorted.
	Listen to determine if the compressor is cycling or if the unit is continuously running.
	Check evaporator air flow.
	Check for ice buildup on the evaporator coils.
	Check the drawers and gaskets to ensure they seal properly.
Unit is getting too cold.	Check to see that the unit is in the correct mode of operation.
	Check to determine that the unit is set at the desired set point.
	Check to determine if the box temperature sensor is open or shorted.
	Listen to determine if the compressor is cycling or if the unit is continuously running.
Unit is noisy.	Check for loose or broken fan blades.
	Check for ice buildup on the evaporator coil.
	Inspect the compressor mounts.
	Check for loose or missing screws on the compressor compartment louvers.
Unit runs continuously.	Clean the condenser coils.
	Check the drawer gaskets.
	Check to determine if the box temperature sensor is open or shorted.
	Check refrigerant charge.
	Check the compressor.
	Check the evaporator fans.
Unit short cycles.	Check the drawer gaskets.
	Check to determine if the box temperature sensor is open or shorted.
	Check refrigerant charge.
	Check the compressor.
	Check condenser fans.
	Check TXV.
Unit evaporator coils are freezing up.	Clean the condenser coils.
	Check the drawer gaskets.
	Check to determine if the box temperature sensor is open or shorted.
	Check refrigerant charge.
	Check the evaporator fans and air flow.
	Check to assure that the hot gas loop is more than 1 inch away from either end of the evaporator drain pan.
	Check the TXV.
Water on floor outside the unit.	Check the evaporator drain pan and drain lines.
	Check the condensate drain pan.
	Make sure the condensate wicks are not missing.
Water inside the unit.	Check the evaporator drain pan and drain lines.
	Verify proper condensate removal.
	Verify proper condensate pan installation.

SYMPTOM	CAUSE/REMEDY
Unit is showing “Drawer Open” on the display.	Close drawer.
	Check drawer switch.
	Check control.
Unit is showing “Out of Temperature Range” on the display.	Check to determine that the unit is in the correct mode of operation.
	Check to determine that the unit is set at the desired set point.
	Check to determine if the box temperature sensor is open or shorted.
	Check to determine if any drawers are open.
The unit has power but the display is not lit.	Check voltage at the display plug on the control.
	If there is voltage at the display plug on the control board, replace the display board.
	If there is not voltage at the display plug on the control board, replace the control board.
Unit alarm is sounding after losing power.	Press the i (Enter) button on the display once to make the alarm quit. This will then show on the display the time that the unit last had power and the time that the unit had power restored. Press the i (Enter) button again to show the main display screen.
Unit alarm displays "Call Service" in diagnostics, compressor is failing.	Check for up-to-date software.(Boot:1.10, APP: 3.40, IO: 2.02).
	Check the unit pressures.
	Check the suction line pressure transducer.

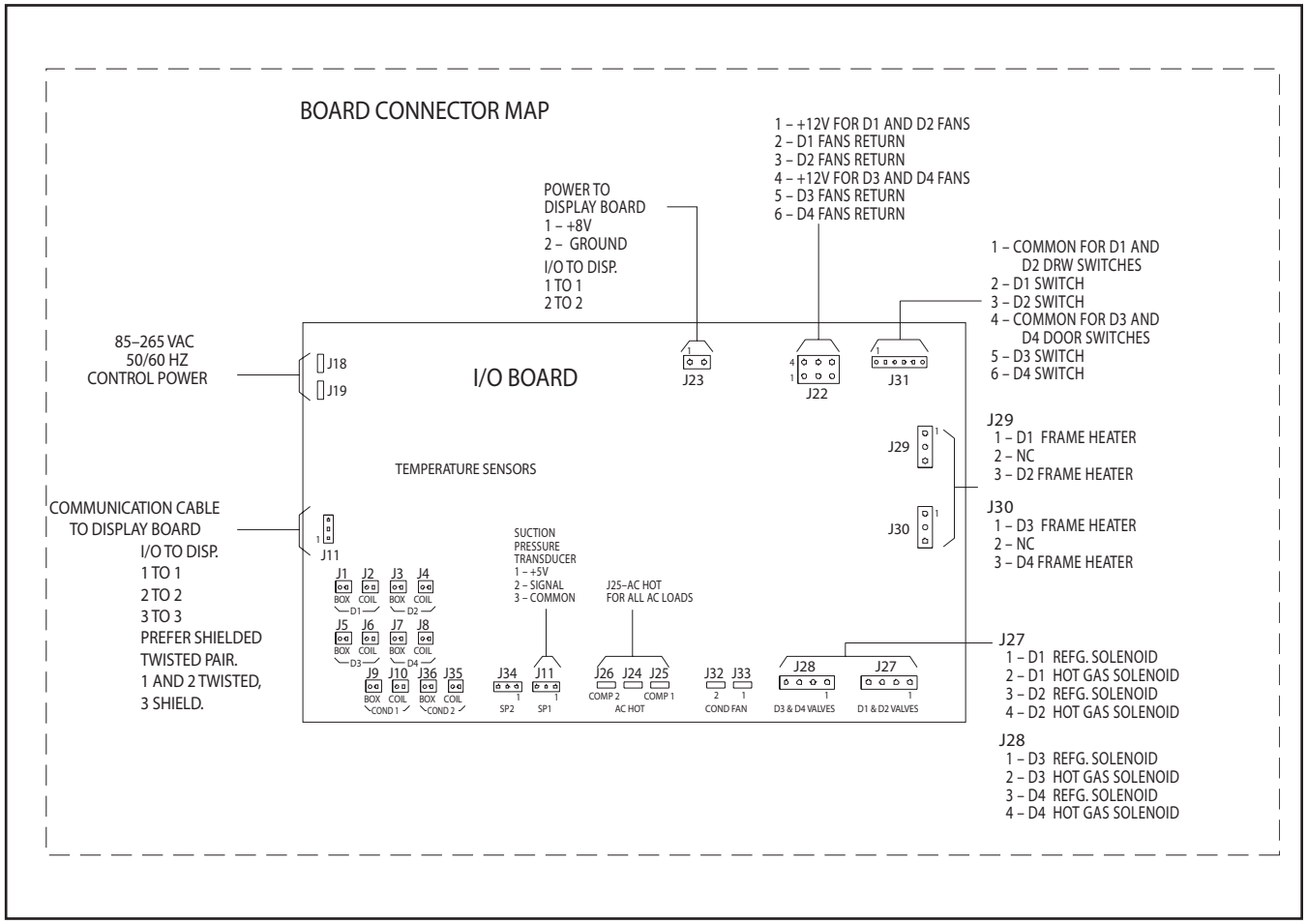
CIRCUIT AND CONTROL DIAGRAMS



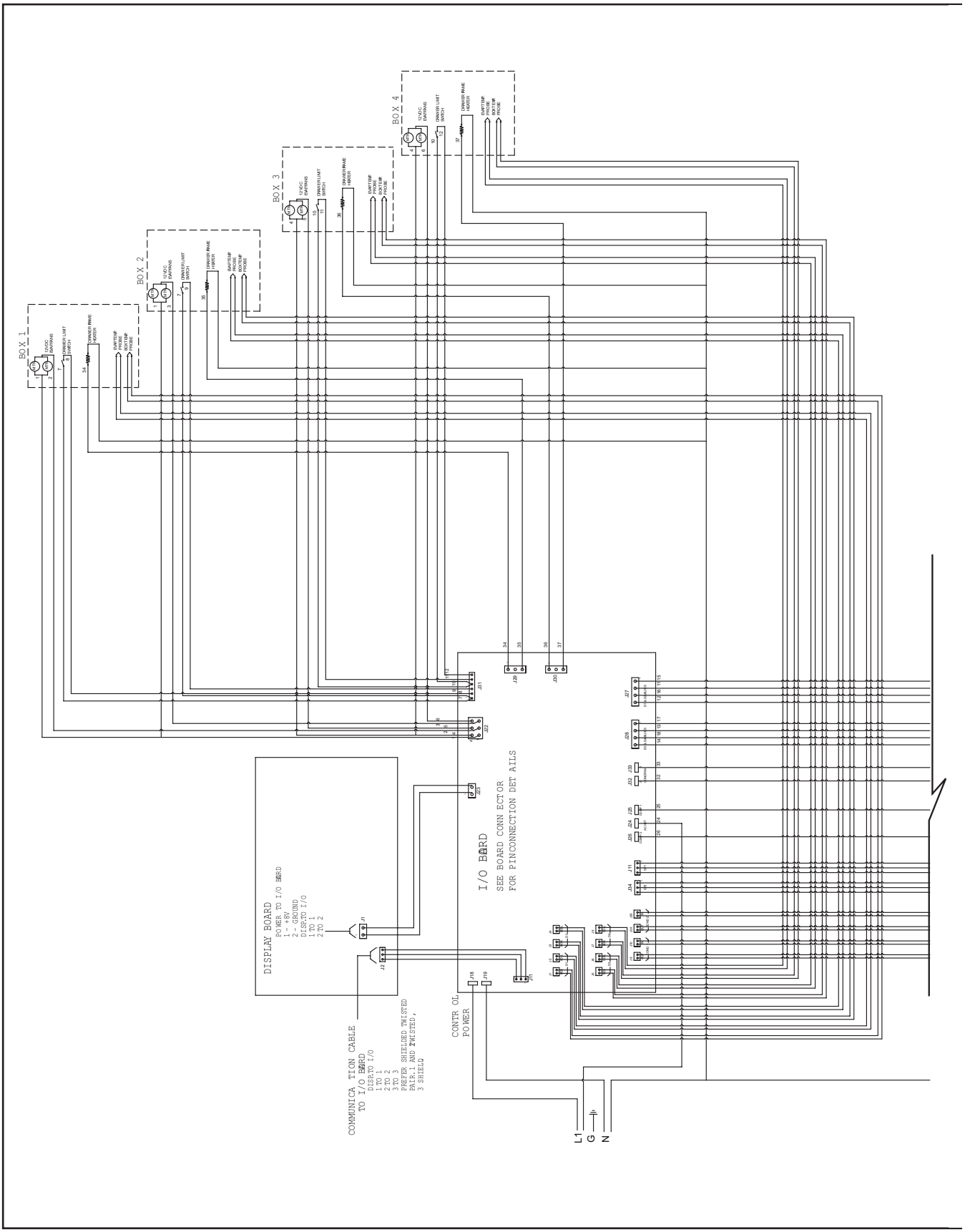
THIS REPRESENTS A 2-DRAWER SYSTEM.

4-DRAWER UNIT IS COMPRISED OF TWO (2)
2-DRAWER SYSTEMS OPERATED BY ONE CONTROL.

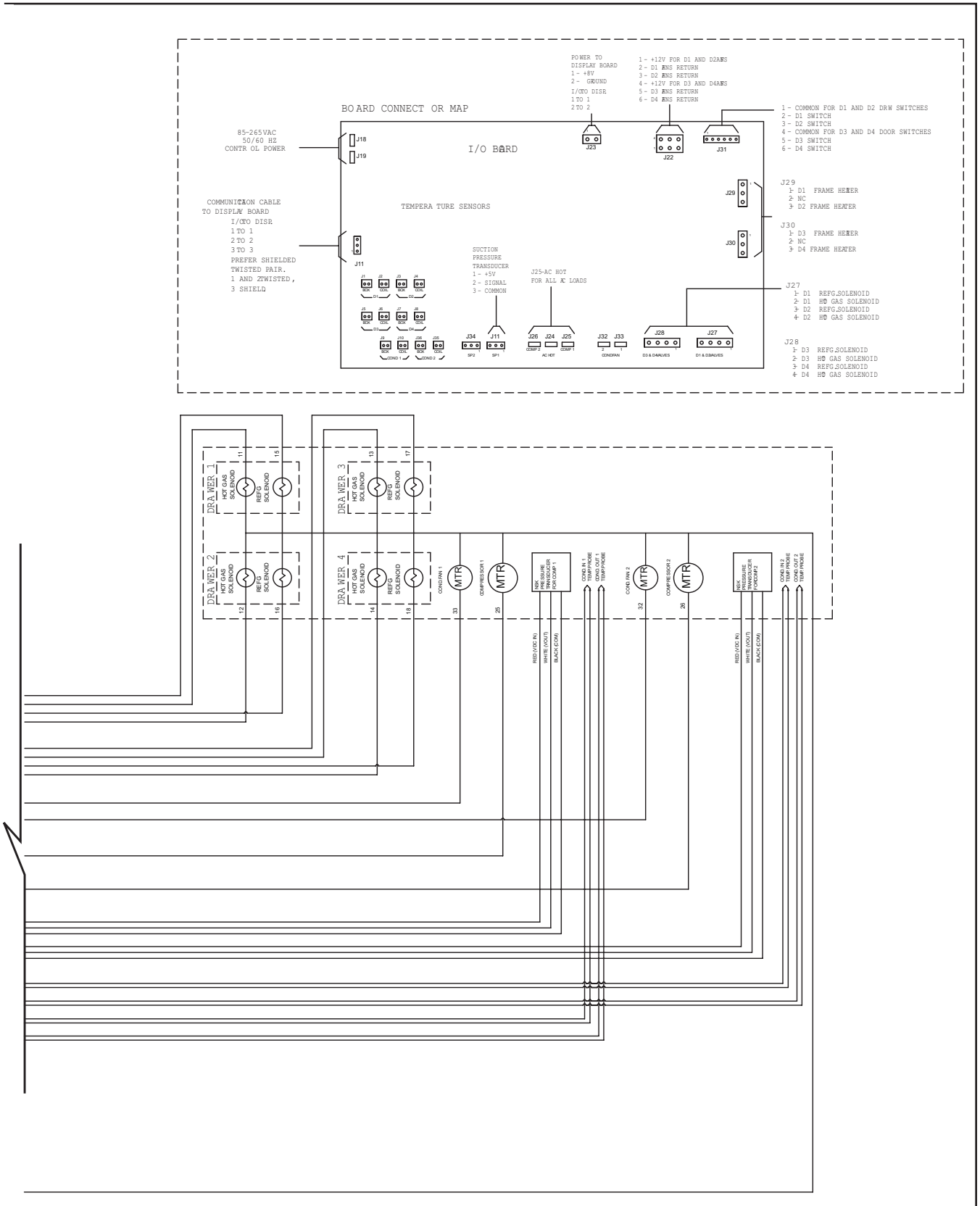
Refrigeration Schematic



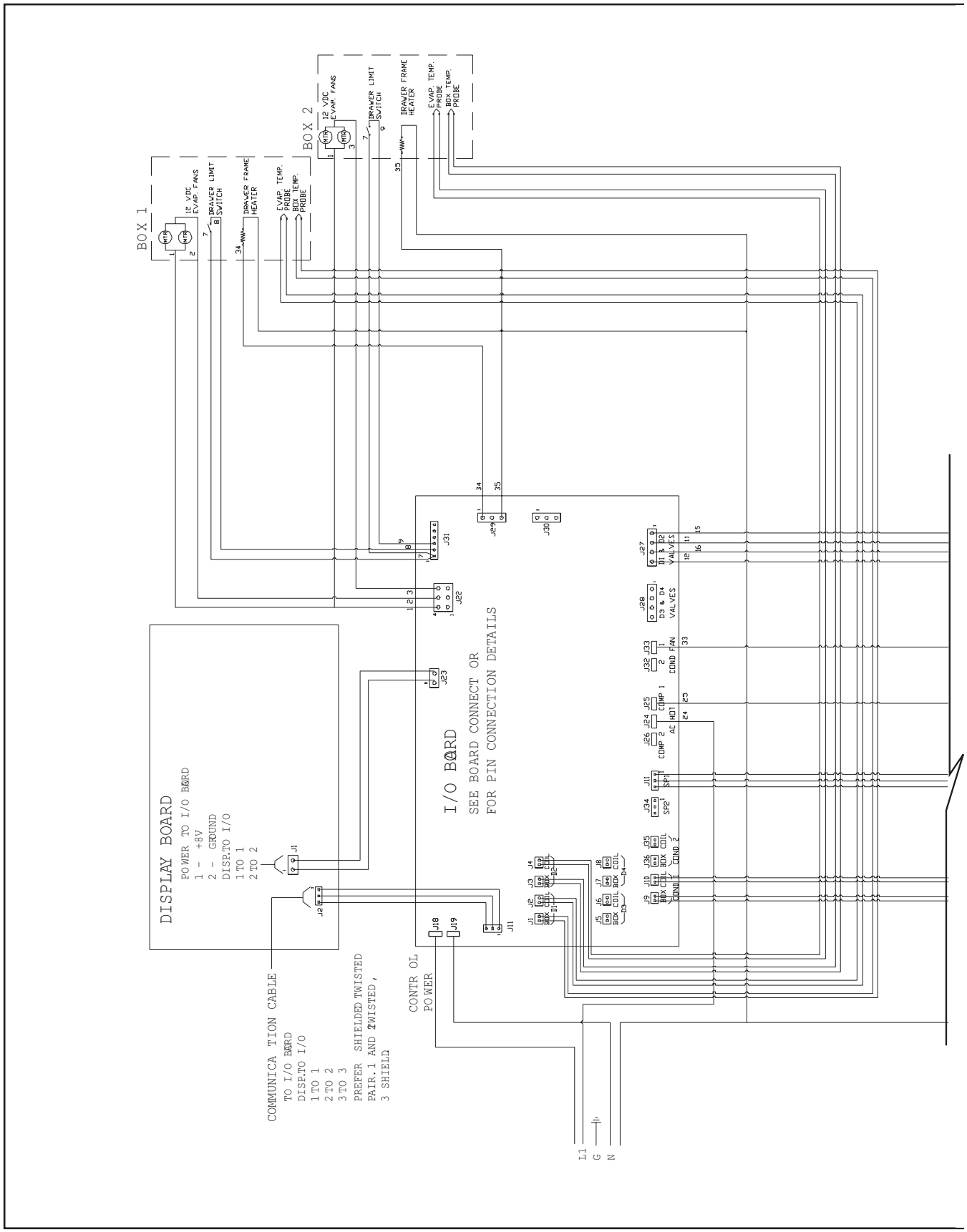
Versa Drawer Electric Input/Output (I/O) Control Board Connector Map



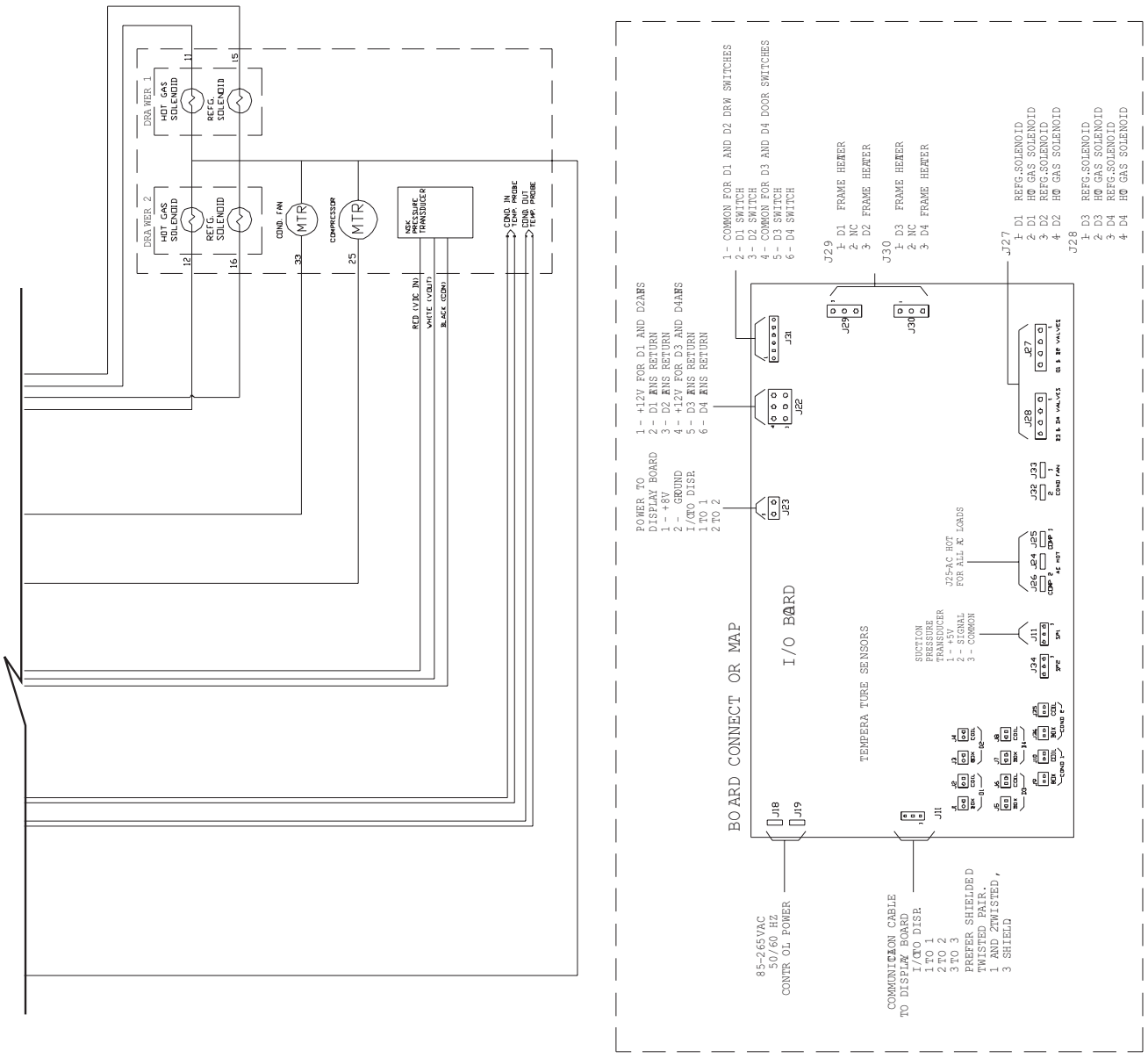
Versa Drawer 4-Drawer Wiring Diagram (1 of 2)



Versa Drawer 4-Drawer Wiring Diagram (2 of 2)



Versa Drawer 2-Drawer Wiring Diagram (1 of 2)



Versa Drawer 2-Drawer Wiring Diagram (2 of 2)

STANDARD LABOR GUIDELINES TO REPAIR OR REPLACE PARTS ON DELFIELD EQUIPMENT UNDER WARRANTY

Advice and recommendations given by Delfield Service Technicians do not constitute or guarantee any special coverage.

A maximum of 1 hour is allowed to diagnose a defective component.

A maximum of 1 hour is allowed for retrieval of parts not in stock.

A maximum travel distance of 100 miles(160km) round trip and 2 hours will be reimbursed.

Overtime, installation/start-up, normal control adjustments, general maintenance, glass breakage, freight damage, and/or correcting an end-user installation error will not be reimbursed under warranty unless pre-approved with a Service Work Authorization from Delfield. You must submit the number with the service claim.

LABOR OF 1 HOUR IS ALLOWED TO REPLACE:

- Solenoid Coil
- Hi-limit/Thermal Protector Switch
- Compressor Start Components and Overload Protector
- Evaporator/Condenser Fan Motor and Blade
- Door Hinges, Locks and Gaskets

LABOR OF 2 HOURS TO REPLACE:

- Drawer Tracks/Cartridges
- Pressure Control
- Microprocessor Control
- Solenoid Valve
- Locate/Repair

LABOR OF 3 HOURS TO REPLACE:

- Expansion Valve
- Condenser or Evaporator Coil

LABOR OF 4 HOURS TO REPLACE:

Compressor

This includes recovery of refrigerant and leak check.

$55.00 maximum reimbursement for refrigerant recovery (includes recovery machine, pump, torch, oil, flux, minor fittings, solder, brazing rod, nitrogen, or similar fees.)

Refrigerants

R404A A maximum of $16.00(USD)/lb(.043kg).

Delfield

Mt. Pleasant, MI

Covington, TN

Thank you for choosing Delfield!

Help is a phone call away. Help our team of professional, courteous customer service reps by having your model number and serial number available at the time of your call (800) 733-8829.

Model: _____ S/N: _____

Installation Date: _____

Manitowoc STAR CERTIFIED SERVICE AND PARTS

For a list of Delfield's authorized parts depots, visit our website at www.delfield.com

Register your Delfield warranty online. Go to www.delfield.com under the service tab to complete.

Delfield

980 S. Isabella Rd., Mt. Pleasant, MI 48858, U.S.A. • +1(989) 773-7981 or (800) 733-8829 • Fax (866) 779-2040 • www.delfield.com

DMVDSVC 02/13
9291505