Delfield™

INSTALLATION & OPERATION MANUAL

Versa Drawer™ Refrigeration Units

Please read this manual completely before attempting to install or operate this equipment! Notify carrier of damage. Inspect all components immediately.

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www.delfield.com

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RECEIVING AND INSPECTING THE EQUIPMENT

Even though most equipment is shipped crated, care should be taken during unloading so the equipment is not damaged while being moved into the building.

1. Visually inspect the exterior of the package and skid or container. Any damage should be noted and reported to the delivering carrier immediately.
2. If damaged, open and inspect contents with carrier.
3. In the event that the exterior is not damaged, yet upon opening, there is concealed damage to the equipment notify the carrier. Notification should be made verbally as well as in written form.
4. Request an inspection by the shipping company of the damaged equipment. This should be done within 10 days from receipt of the equipment.
5. Check the lower portion of the unit to be sure legs or casters are not bent.
6. Be sure to inspect the compressor compartment housing and visually inspect refrigeration package. Be sure lines are secure and base is still intact.
7. Freight carriers can supply the necessary damage forms upon request.
8. Retain all crating material until an inspection has been made or waived.

IMPORTANT WARNING AND SAFETY INFORMATION

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

WARNING

**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 COVER 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.**

DO NOT USE EXTENSION CORDS WITH THIS EQUIPMENT.

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.

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 specification plate.
- 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.

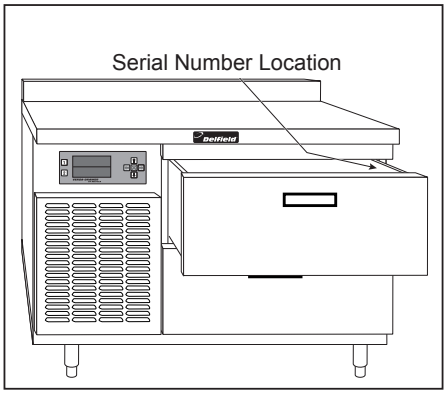
Table of Contents

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

SPECIFICATIONS (115V/60Hz)

Freestanding Models											
Model	L	D	H	# of Drawers	Volts	HZ	Amps	HP	Plug	Ref. Charge	Ship Weight lbs.
18650VDR	50" 127.0cm	31.5" 80.0cm	34" 86.4cm	2	115	60	6.0	1/3	5-15P	30oz.	520
18650VDL	50" 127.0cm	31.5" 80.0cm	34" 86.4cm	2	115	60	6.0	1/3	5-15P	30oz.	520
18682VDR	82" 208.3cm	31.5" 80.0cm	34" 86.4cm	4	115	60	12.0	(2) 1/3	5-15P	(2) 30oz.	720
18682VDL	82" 208.3cm	31.5" 80.0cm	34" 86.4cm	4	115	60	12.0	(2) 1/3	5-15P	(2) 30oz.	720
F2984VDR	84" 213.4cm	31.5" 80.0cm	26"	2	115	60	6.0	1/3	5-15P	30oz.	520
F2984VDL	84" 213.4cm	31.5" 80.0cm	26"	2	115	60	6.0	1/3	5-15P	30oz.	520
Component Crafted Models											
Model	L	D	H	# of Drawers	Volts	HZ	Amps	HP	Plug	Ref. Charge	Ship Weight lbs.
F18VD50	50" 127.0cm	31.5" 80.0cm	36" 91.4cm	2	115	60	6.0	1/3	5-15P	30oz.	520
F18VD82	82" 208.3cm	31.5" 80.0cm	36" 91.4cm	4	115	60	12.0	(2) 1/3	5-15P	(2) 30oz.	720
F17VD84	84" 213.4cm	31.5" 80.0cm	36" 91.4cm	2	115	60	6.0	1/3	5-15P	30oz.	620

SPECIFICATIONS (230-240V/50Hz)

Freestanding Models											
Model	L	D	H	# of Drawers	Volts	HZ	Amps	HP	Plug	Ref. Charge	Ship Weight
18650VDR-CE	50" 127.0cm	31.5" 80.0cm	34" 86.4cm	2	230-240	50	3.6	1/3	BS1363	850.5g	236kg
18650VDL-CE	50" 127.0cm	31.5" 80.0cm	34" 86.4cm	2	230-240	50	3.6	1/3	BS1363	850.5g	236kg
18682VDR-CE	82" 208.3cm	31.5" 80.0cm	34" 86.4cm	4	230-240	50	7.2	(2) 1/3	BS1363	(2) 850.5g	327kg
18682VDL-CE	82" 208.3cm	31.5" 80.0cm	34" 86.4cm	4	230-240	50	7.2	(2) 1/3	BS1363	(2) 850.5g	327kg
F2984VDR-CE	84" 213.4cm	31.5" 80.0cm	26" 66.0cm	2	230-240	50	3.6	1/3	BS1363	850.5g	236kg
F2984VDL-CE	84" 213.4cm	31.5" 80.0cm	26" 66.0cm	2	230-240	50	3.6	1/3	BS1363	850.5g	236kg
Component Crafted Models											
Model	L	D	H	# of Drawers	Volts	HZ	Amps	HP	Plug	Ref. Charge	Ship Weight
F18VD50-CE	50" 127.0cm	31.5" 80.0cm	36" 91.4cm	2	230-240	50	3.6	1/3	BS1363	850.5g	236kg
F18VD82-CE	82" 208.3cm	31.5" 80.0cm	36" 91.4cm	4	230-240	50	7.2	(2) 1/3	BS1363	(2) 850.5g	327kg
F17VD84-CE	84" 213.4cm	31.5" 80.0cm	36" 91.4cm	2	230-240	50	3.6	1/3	BS1363	850.5g	236kg

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

INSTALLATION

CAUTION

Never stand on the unit or its drawers! Doing so may result in bodily injury.

LOCATION

Units represented in this manual are intended for indoor use only. Be sure the location chosen has a floor strong enough to support the total weight of the cabinet and contents, which can be up to 1,200 pounds(550kg). Reinforce the floor as necessary to provide for maximum loading.

The location should be selected so that power cords can be connected without any extension cords.

For the most efficient operation, be sure to provide good air circulation inside and out. Avoid hot corners and locations near stoves and ovens.

CAUTION

Direct exposure to excessive amounts of steam in machine compartment will result in control board failure.

INSIDE CABINET

Do not pack drawer so full that air cannot circulate. Load product level with top of pans and keep all food covered.

OUTSIDE CABINET

The front louvers must be kept 24"(60cm) clear of any obstructions. Proper operation of these models is dependent on air being able to flow freely through the front louvers. Side louvers must have 24"(60cm) of clearance for service access.

CAUTION

Any restriction of the proper airflow outlined above, total or partial, will void the warranty on the unit.

LEVELING

The unit must be level so the drain pan will drain properly, drawers will line up with frames and the cabinet will not be subject to undue strain.

STABILIZING

All models are supplied with legs or casters installed for your convenience, for ease of cleaning underneath. The unit must be installed in a stable condition.

PLUMBING

All models are standard with a condensate evaporator pan.

ELECTRICAL CONNECTION

WARNING

ELECTRICAL CONNECTIONS AND GROUNDING CONNECTIONS MUST COMPLY WITH THE APPLICABLE PORTIONS OF THE NATIONAL ELECTRICAL CODE AND/OR OTHER LOCAL ELECTRICAL CODES.

WARNING

UNITS EQUIPPED WITH A FLEXIBLE ELECTRIC SUPPLY CORD ARE PROVIDED WITH A THREE-PRONG GROUNDING PLUG. THIS PLUG MUST BE CONNECTED INTO A PROPERLY GROUNDED THREE-PRONG RECEPTACLE. IF THE RECEPTACLE IS NOT THE PROPER GROUNDING TYPE, CONTACT AN ELECTRICIAN. DO NOT REMOVE THE GROUNDING PRONG FROM THIS PLUG.

A 7' (2.1 m) long grounded supply cord with three-pronged plug is provided with the standard units. Simply plug into a three-pronged wall outlet for proper grounding of the unit to begin operation.

Refer to the amperage data listed in the specifications, the serial number tag, your local code or the National Electrical Code to be sure the unit is connected to the proper power source. A protected circuit of the correct voltage and amperage must be installed for connection of the line cord or permanent connection to the unit.

Have the wall outlet checked by a qualified electrician to be sure a proper ground is present and that the outlet provides the correct voltage and required amperage to match the specifications. Do not use an adapter to connect to a two-pronged outlet. The three-pronged-outlet provides a ground connection that must be used to prevent a shock hazard.

Any power cord that is frayed or damaged should be replaced. When disconnecting the unit from the power source, do not pull on the cord. Firmly grip the plug and remove from outlet.

WARNING

The unit must be disconnected from the power source whenever performing service, maintenance functions or cleaning the refrigerated area.

OPERATION

GENERAL

Each drawer operates independently in one of four modes at any time:

Refrigerator mode The drawer operates at a set point of 37°F (3°C), maintaining a range between 34°F (1°C) and 40°F (4°C).

Freezer mode The drawer operates at a set point of -3°F (-19°C), maintaining a range between -6°F (-21°C) and 0°F (-17°C).

Thaw Cabinet mode The drawer maintains temperature between 36°F (2°C) and 41°F (5°C) for a minimum of 4 hours or longer if required. Once the thaw cycle is complete, the drawer mode is automatically changed to refrigerator mode.

Convenience Chiller mode The drawer operates as a chiller, maintaining the convenience chiller set point of 23˚F (-5˚C) for four hours. Once the convenience chiller cycle is complete, the drawer mode is changed to refrigerator mode.

Drawer gaskets are magnetic and mount to the drawer, snapping in place and are removable without tools.

REFRIGERATION SYSTEM

In a 4-drawer system there are two compressors; one operating drawers 1 and 2 and one operating drawers 3 and 4. In a 2-drawer system there is a single compressor.

TEMPERATURE MONITORING

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

CONTROL PANEL

The control panel provides information indicating the current mode of each individual drawer. In addition, the actual temperature of the drawer is displayed. See page 8 for control panel operation

DEFROST

An automatic defrost occurs every six hours in refrigerator and freezer mode.

Chiller product Info

Note: These results are based on chilling at a cabinet temperature of 5˚F(-15˚C) and 10 pounds(4.5kg) of product per drawer. The times are based on the duration to go from 140˚F(60˚C) to 40˚F(4˚C). The maximum limit of product to be chilled is no more than 10 pounds(4.5kg), not including pans. Product should be covered and no more than 2"(5cm) deep in the pan.

Product	Chill Time
Mash Potatoes	3 hours 21 minutes
Scrambled Eggs	1 hour 53 minutes
Green Beans	2 hour 49 minutes
Soup (Vegetable)	2 hour 58
Spaghetti with Meat sauce	2 hours 32 minutes

OPERATION

OPERATING CONTROLS

All operating functions are accessible on the Versa Drawer control panel. Operators can select the drawer modes or activate the manual defrost. Access to all diagnostic functions require a qualified service technician.

CONTROL	FUNCTION
1 3 2 4	Buttons are located next to the drawer display on the Control Panel. The drawer select buttons select the drawer to be configured.
▲ ▼	These arrows are used to change a drawer to operate in a desired mode (refrigerate, freezer, thaw or chill).
◀	Used to back up to the previous step.
i	The i button is used to initiate the manual defrost mode.

Setting the drawer mode

Select the drawer mode as follows:

1. Press the button next to the drawer display to be changed.

NOTE: Current drawer mode text size will decrease.

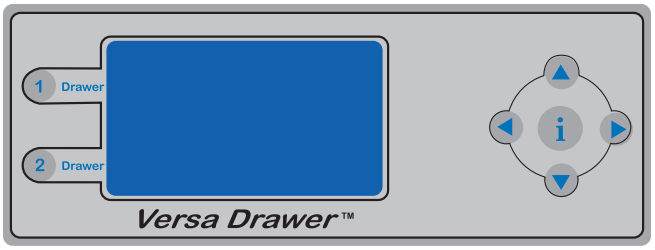
2. Press the UP or DOWN arrow to select between refrigerate, freeze, chill or thaw untill desired mode is reached.
3. Press the drawer display button again to lock the desired mode setting.

NOTE: Text size will return to original size.

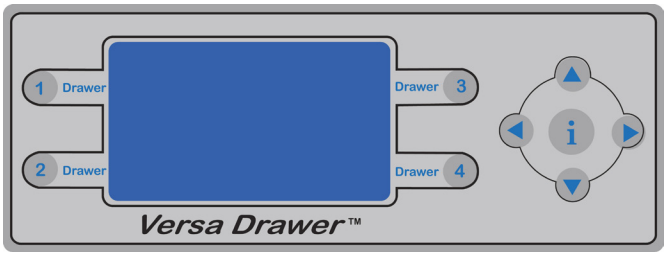
Activating Manual Defrost

NOTE: The following two steps must be performed within 1 second.

1. Press the desired drawer display button.
2. Immediately press the i button.



2-Drawer Interface Control



4-Drawer Interface Control

MAINTENANCE

Setting the Clock:

1. Press the i button until “Program Menu” appears.
2. Press the ▼ button until brackets are around “Time & Date”, then press i.
3. Press ◀ ▶ button to get to parameter to be adjusted.

NOTE: The [^] under the text show parameter to be adjusted.

4. Press the ▲ ▼ buttons to adjust parameter.
5. Once correct time and date are set press the ◀ button twice to return to the main display screen. (If no action is taken for 30 seconds control automatically returns to main display screen).

Fahrenheit to Celsius

1. Press the i button until "Service Menu" appears.
2. Press the ▼ button until brackets are around "Configuration", then press i.
3. Press ▼ arrow to "System" and press i.
4. In this menu will be "Metric", change to Yes.
5. Press ◀ arrow until back to main menu.

⚠ WARNING

THE UNIT MUST BE DISCONNECTED FROM THE POWER SOURCE WHENEVER PERFORMING SERVICE, MAINTENANCE FUNCTIONS OR CLEANING THE REFRIGERATED AREA.

GENERAL MAINTENANCE

Stainless Steel Care and Cleaning

To prevent discoloration or rust on stainless steel several important steps need to be taken. First, the properties of stainless steel need to be understood. Stainless steel contains 70-80% iron that will rust. It also contains 12-30% chromium that forms an invisible passive film over the steel's surface and acts as a shield against corrosion. As long as the protective layer is intact, the metal will not corrode, the metal is still stainless. If the film is broken or contaminated, outside elements can begin to break down the steel and begin to form rust or other discoloration.

⚠ CAUTION

Never use steel pads, wire brushes or scrapers!

Do not use an abrasive cleaner because it will scratch the stainless steel and plastic and can damage the breaker strips and gaskets. Proper cleaning of stainless steel requires soft cloths or plastic scouring pads.

Cleaning solutions need to be alkaline based or non-chloride cleaners. Any cleaner containing chlorides will damage the protective film of the stainless steel. Chlorides are also commonly found in hard water, salts and household and industrial cleaners. If cleaners containing chlorides are used, be sure to rinse repeatedly and dry thoroughly upon completion.

Routine cleaning of the interior and exterior can be done with soap and warm water. Extreme stains or grease should be cleaned with a non-abrasive cleaner and plastic scrub pad. When cleaning the exterior, always rub with the grain of the stainless steel to avoid marring the finish. There are also stainless steel cleaners available which can restore and preserve the finish of the steels protective layer.

Early signs of stainless steel breakdown can consist of small pits and cracks. If this has begun, clean thoroughly and start to apply stainless steel cleaners in attempt to restore the passivity of the steel.

⚠ CAUTION

Never use an acid based cleaning solution! Many food products have an acidic content that can deteriorate the finish. Be sure to clean ALL food products from any stainless steel surface. Common items include, tomatoes, peppers and other vegetables.

Cleaning the Condenser Coil

The condenser coil requires regular cleaning, recommended is every 90 days. In some instances you may find that there is a large amount of debris and dust or grease accumulated prior to the 90-day time frame. In these cases the condenser coil should be cleaned as needed.

If the build up on the coil consists of only light dust and debris the condenser coil can be cleaned with a simple brush. Heavier dust build up may require a vacuum or compressed air to blow through the condenser coil.

If heavy grease is present there are de-greasing agents available for refrigeration use and specifically for the condenser coils. The condenser coil may require a spray with the de-greasing agent and then blown through with compressed air.

Failure to maintain a clean condenser coil can initially cause high temperatures and excessive run times. Continuous operation with dirty or clogged condenser coils can result in compressor failures. Neglecting condenser coil cleaning procedures will void any warranties associated with the compressor or cost to replace the compressor.

⚠ CAUTION

Never use a high-pressure water wash for this cleaning procedure as water can damage the electrical components located near or at the condenser coil.

If your freezer seems to vibrate excessively when the compressor is running, loosen (but do not remove) the bolts on the compressor. Semi hermetic models should be loosened before operating.

PREVENTIVE MAINTENANCE

Gasket Maintenance

Gaskets require regular cleaning to prevent mold and mildew build up and also to keep the elasticity of the gasket. Gasket cleaning can be done with the use of warm soapy water. Avoid full strength cleaning products on gaskets as this can cause them to become brittle and prevent proper seals. Also, never use sharp tools or knives to scrape or clean the gasket, which could possibly tear the gasket and rip the bellows.

Gaskets can easily be replaced and do not require the use of tools or authorized service persons. They can be pulled out of the groove in the door and new gaskets can be pressed back into place.

Drawer Maintenance

Drawer Assembly Cleaning

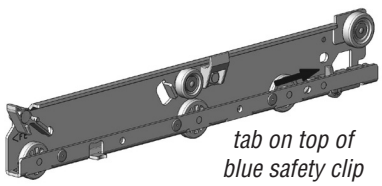
The drawer assembly is designed to be cleaned easily. Both drawer and tracks are removable without tools. The drawer tracks are dishwasher safe or can be cleaned in a sink with detergents and a soft bristle brush. Drawers and tracks should be cleaned on a weekly basis.

Remove Drawers

Pull the drawer box out until it stops. Lift up on the drawer front and pull the drawer box completely out. Using a soft bristle brush, clean the track on the bottom of the drawer box. When finished, it should be wiped clean of all food and debris.

Tracks

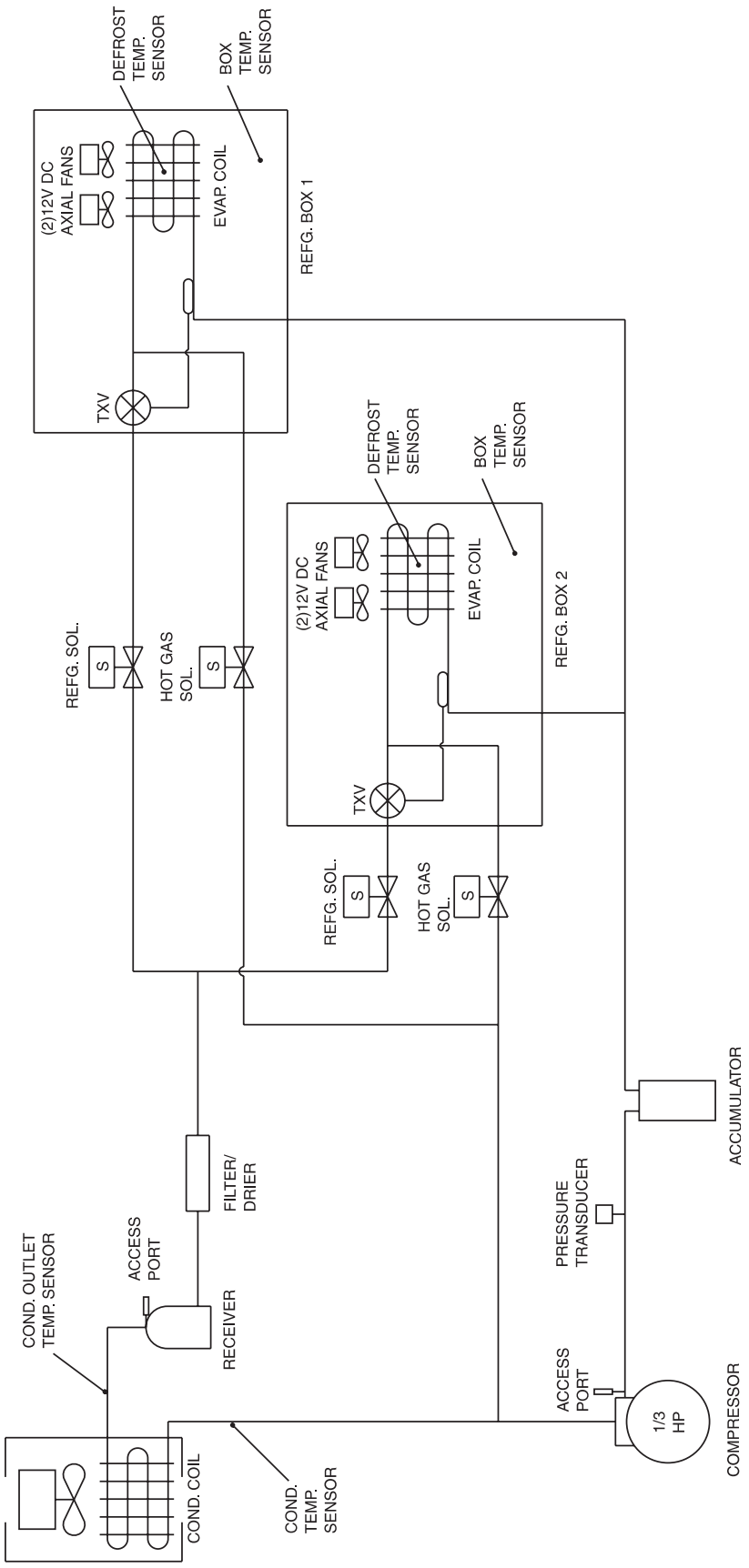
The drawer box assembly must be removed. Pull the drawer tracks out until they hit a stop. Locate blue safety clips towards the back of each drawer track. Blue safety clips have a tab on the top. Push the tab back until it clicks. Lift up and pull the drawer tracks all the way out of the drawer cage. The drawer tracks are dishwasher safe or can be cleaned in a sink with detergents and a soft bristle brush. Drawers and tracks should be cleaned on a weekly basis. Using a soft bristle brush, wash the track making sure each roller is thoroughly cleaned. The drawer cage should be cleaned with a soft bristle brush, removing any food and debris gathered on the bottom ledge. Once it's cleaned thoroughly with a soft bristle brush, wipe remaining debris clean with a soft towel.



tab on top of blue safety clip

Reassembly

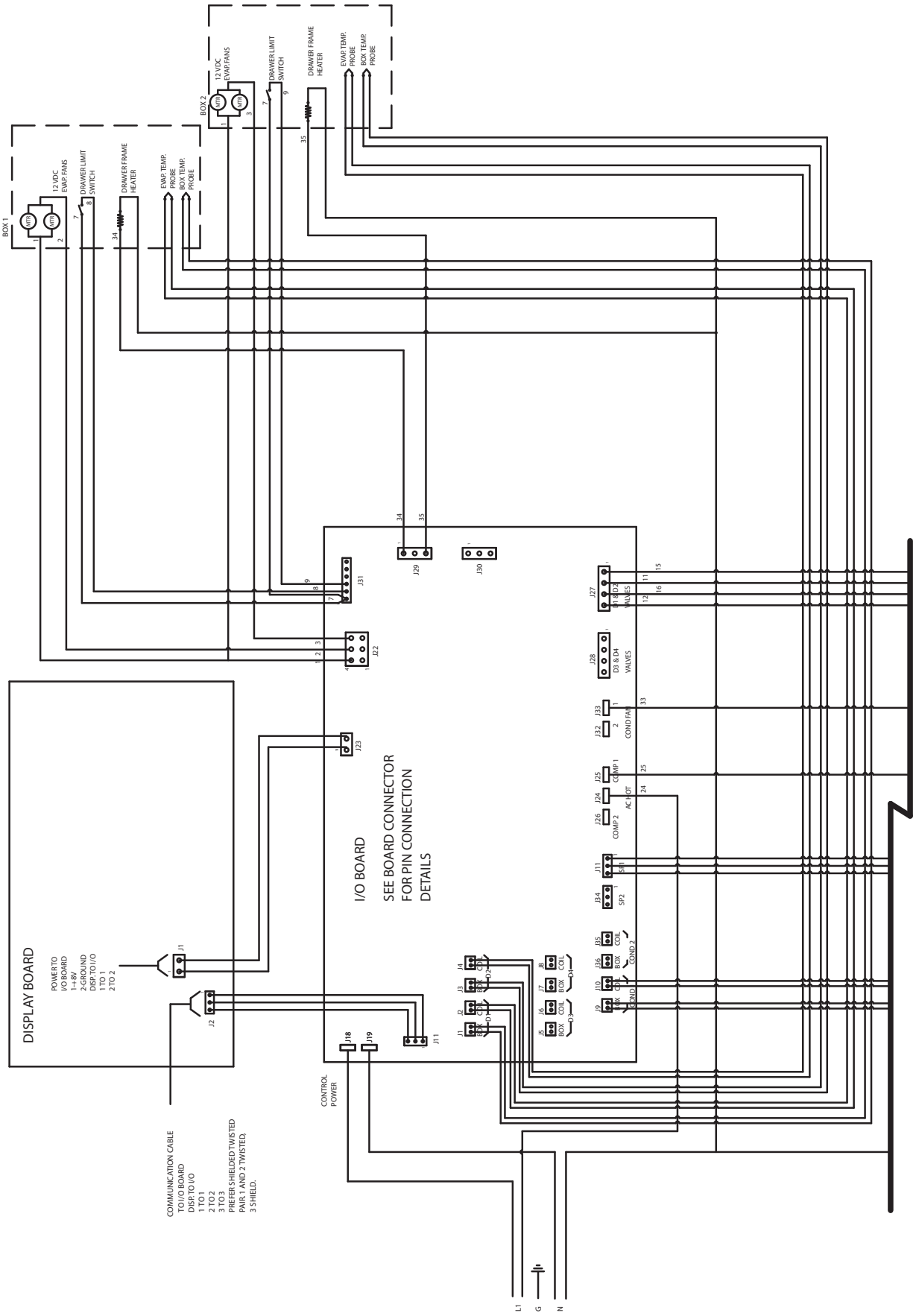
Push the drawer tracks into the drawer cage. The blue safety clip must remain pushed towards the back. Lift up and slide the drawer track all the way into the drawer cage. The blue safety clip will lock in place automatically. Once all tracks are replaced, insert the drawer box. Rest the drawer box bottom track on the front track roller. Then push the drawer back in place SLOWLY. When the drawer box is about half way in you will hit a STOP. You must lift the front of the drawer up approximately ½" (1.3cm) to continue inward. Clean tracks as often as possible. The cleaner the tracks are the better they will operate.



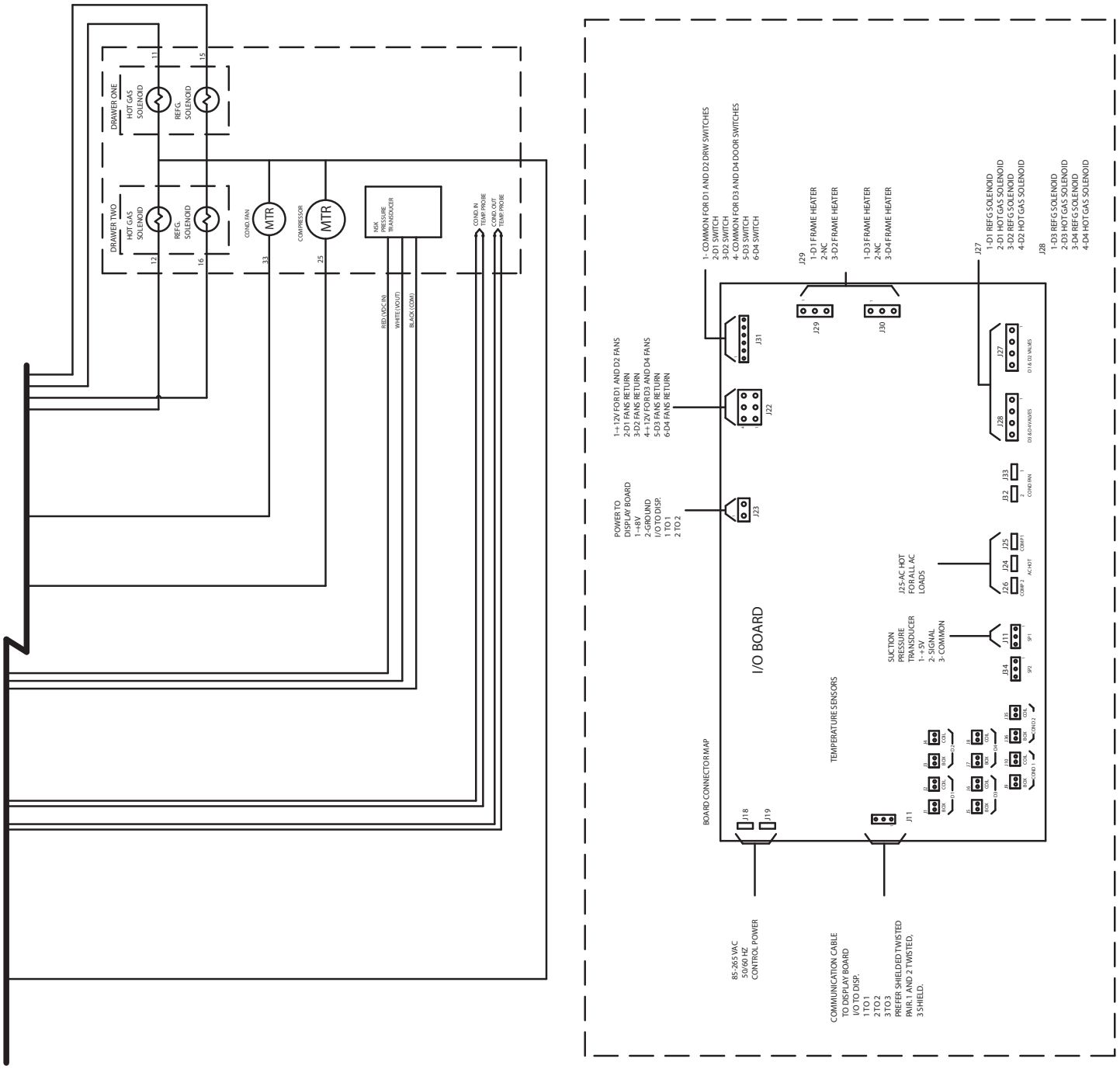
NOTE: The four drawer unit has two of these exact systems.

2-Drawer Refrigeration Schematic

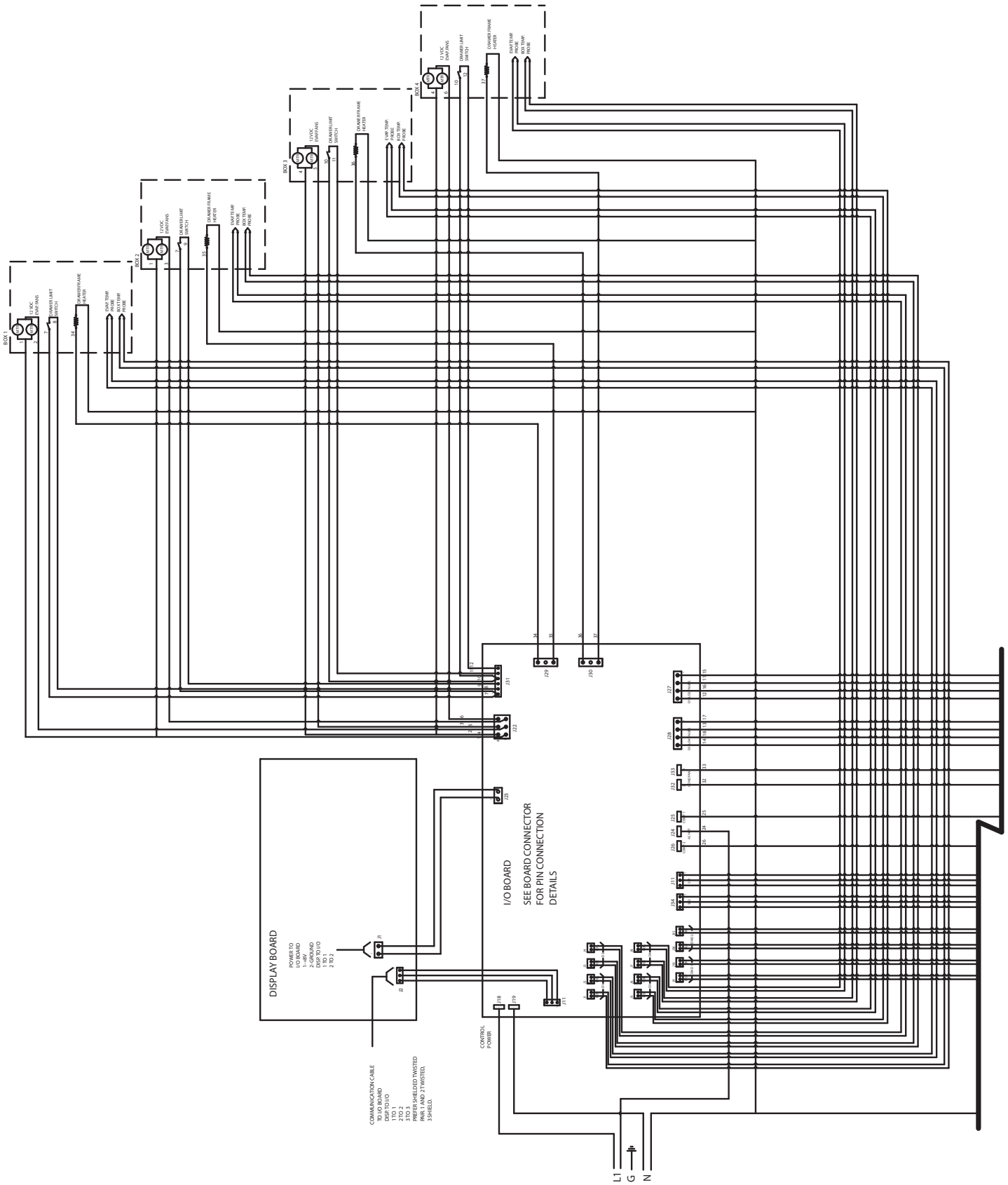
2-Drawer Wiring Schematic



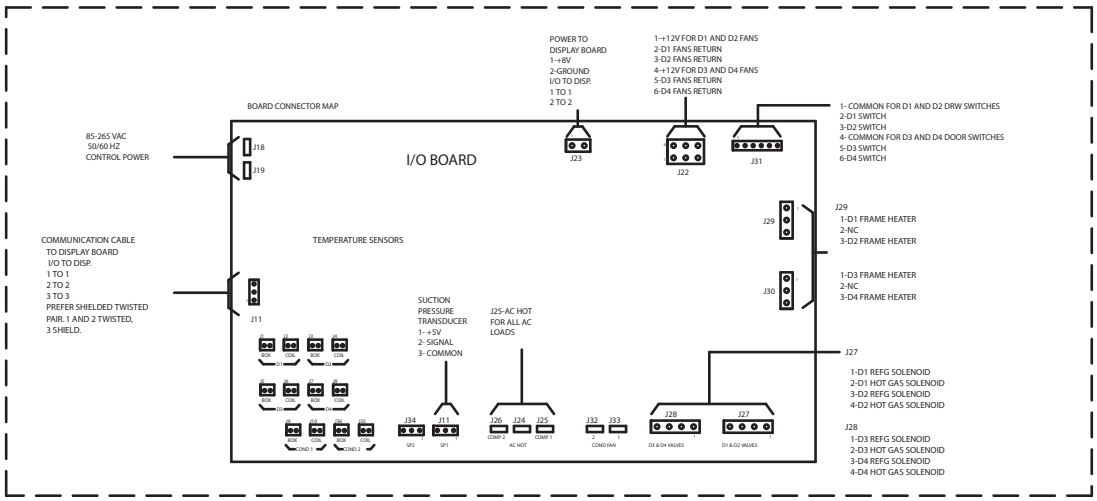
2-Drawer Wiring Schematic

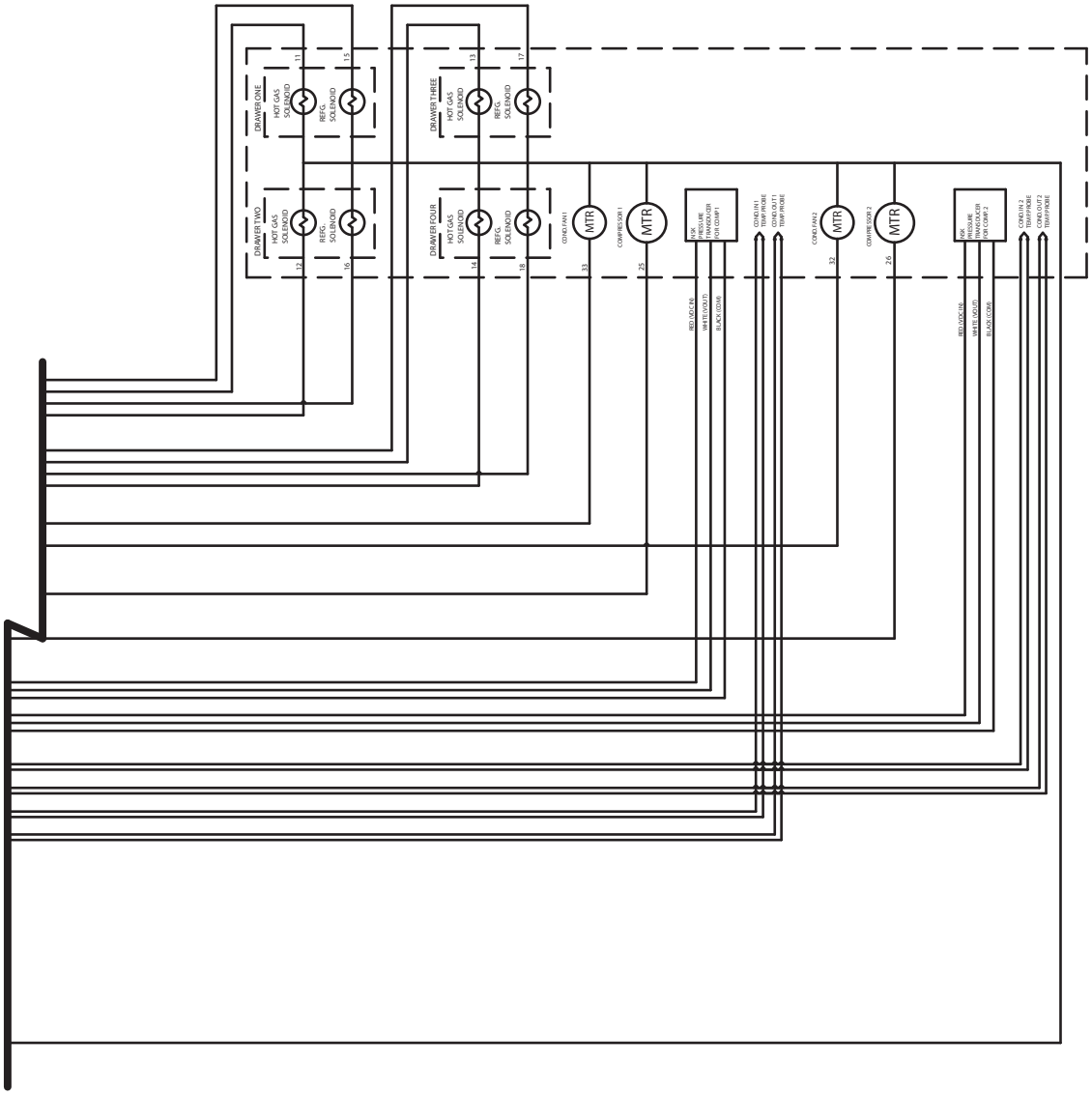


4-Drawer Wiring Schematic



4-Drawer Wiring Schematic





Versa Drawer™ Alarm

Alarm	Meaning	Action	Alternate Action
Thaw Finished	Thaw cycle is complete and unit is now in refrigeration mode.	Press corresponding drawer number to clear audio and screen.	
Chiller Finished	Chiller cycle has completed and unit is now in refrigeration mode.	Press corresponding drawer number to clear audio and screen.	
Drawer Open	Drawer's been open for greater than set time.	Close drawer.	
Drawer temperature Out of Range.	Drawer temperature's been 10 deg F above or below setpoint for more than 15 minutes.	Press corresponding drawer number to clear audio and screen.	
Loss of power	Power to unit was interrupted.	Press i button to stop audio alarm. Screen will change to display time power failed, time power was restored. Present time. Press i button once more to return to main screen	
Drawer temperature probe(s) out of range.	Temperature probe to drawer box or evaporator is damage or temperature is out of range.	Press i button to suspend audio alarm for 24 hours, screen will clear once temperature drops into range or probe is repaired.	
Condenser temperature probe(s) out of range.	Temperature probe to condenser is damaged or temperature is out of range.	Press i button to suspend audio alarm for 24 hours, screen will clear once temperature drops into range or probe is repaired.	
Compressor pressure transducer(s) out of range.	Pressure transducer damaged or pressure is higher than 150 psi	Press i button to suspend audio alarm for 24 hours. If unit is started in high ambient temperature alarm will clear on pulldown. If diagnostics shows "open" for transducer, component must be repaired.	
Condenser fan(s) failure	Condenser fan has fail to pull down condenser outlet by 1 degree over two minutes. Condenser fan may not be operating or condenser coil is dirty.	Alarm displays "Call Service" in diagnostics. Alarm will remain on screen until service work is performed	The screen will clear if power to the unit is disconnected and reconnected. If alarm keeps reoccurring after power has been removed service is required.
Compressor(s) Failure	Compressor has failed to decrease suction pressure.	Alarm displays "Call Service" in diagnostics. Alarm will remain on screen until service work is performed	The screen will clear if power to the unit is disconnected and reconnected. If alarm keeps reoccurring after power has been removed service is required.

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 round trip and 2-hours will be reimbursed.

Overtime, installation/start-up, normal control adjustments, general maintenance, glass breakage, freight damage, and/or correcting and 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 Leak

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 (USD) 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/lb.(0.43kg) (USD).

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.

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