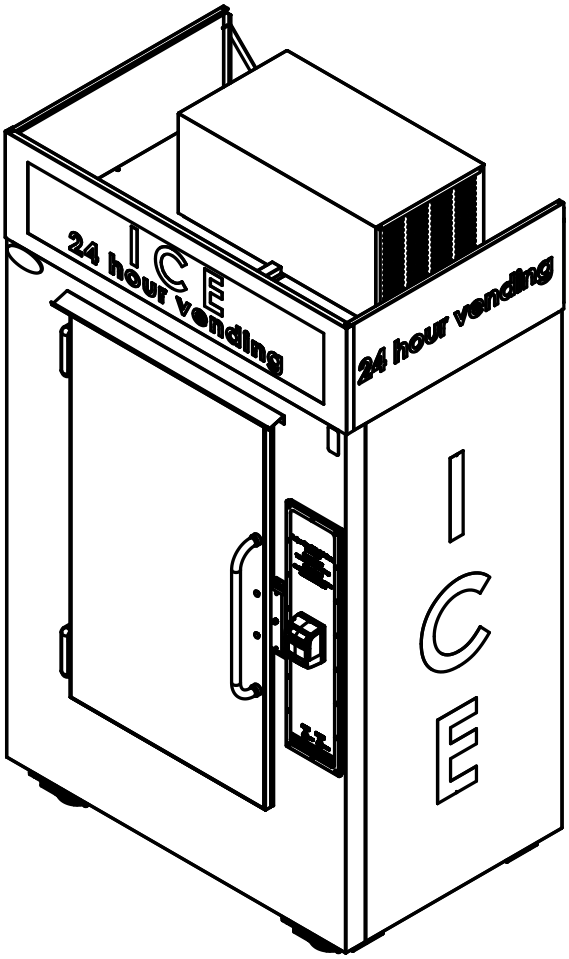

25-M0052

VENDING MERCHANDISER INSTALLATION, OPERATION AND SERVICE MANUAL

MADE IN THE USA 100% EMPLOYEE OWNED

1070319R4 6-25

Leer, Inc.
206 Leer Street
P.O. Box 206
New Lisbon, WI 53950
1-800-766-5337
www.leerinc.com

This manual provides information and procedures to safely operate and maintain your LEER product. For your own safety and protection from physical injury, carefully read, understand and observe the safety instructions described in this manual. Keep a copy of this manual with the unit at all times. Additional copies are available from LEER, Inc. or can be found by scanning the QR code on the unit or the front cover of this manual. The information contained in this manual was based on equipment in production at the time of publication. LEER, Inc. reserves the right to change any portion of this information without notice.

UNIT MODEL NUMBER:_____

UNIT SERIAL NUMBER:_____

Leer, Inc. is 100% Employee-Owned and we believe it's those employee owners that make a distinctive difference, to Leer's dedication to quality and service across all our product lines, because you have the commitment not just of one owner - but over 225 owners.

WARNING: This product can expose you to chemicals including nickel, which is known in the State of California to cause cancer or birth defects or other reproductive harm. For more information go to www.p65warnings.ca.gov.

Contents

Section 1 – Safety and General Information

1.1 Safety Rules

Study these SAFETY RULES carefully before set-up, operation or service of the unit. Become familiar with this operating manual and the unit itself. The unit can operate safely, efficiently and reliably only if it is properly setup, operated and maintained. Many accidents are caused by failure to follow simple and fundamental rules or precautions.

This manual contains DANGERS, WARNINGS, CAUTIONS and NOTES which must be followed to prevent the possibility of improper service, damage to the equipment, personal injury or death.
The following formatting options will apply when calling the reader's attention to the DANGERS, WARNINGS, CAUTIONS and NOTES.

DANGER: Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
WARNING: Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
CAUTION: Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury AND could result in property or equipment damage.
NOTE: Notes contain additional information important to a procedure and will be found within the regular text body of this manual.

1.2 Safety Symbols

This equipment has been supplied with numerous safety and operating decals. These decals provide important operating instructions and warn of dangers and hazards.

Below is a summary of the intended meanings for the symbols used on the decal. Some or all of these symbols may be part of your Leer product:

	**WARNING! FLAMMABLE REFRIGERANT USED** Risk of Fire or Explosion! DO NOT Puncture Refrigerant Tubing! To Be Repaired Only By Trained Service Personnel. Dispose of Properly In Accordance With Federal or Local Regulations.
	**WARNING! MOVING PARTS** Moving fan blade. Do not operate the unit with the compressor cover removed or missing. Contact with a rotaing fan blade can cause severe injury.
	**WARNING! ELECTRICAL SHOCK HAZARD** This unit operates on voltages that can cause injury if contact is made with terminals or bare wires while energized. Disconnect power before performing any maintenance tasks.

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	**WARNING! HOT SURFACES** Some parts may become hot during operation and contact with them could cause injury. Do not operate the unit with the compressor cover removed or missing.
	**DO NOT ENTER - ENTRAPMENT HAZARD!** Do not climb into unit and keep doors locked when in use. Remove the doors before disposal of unit.
	**DO NOT REMOVE COVER** Do not operate unit with compressor cover removed. Contact with moving parts, live electrical terminals, wiring or hot parts may cause severe injury. Keep cover secured with the OEM hardware.
	**NO UNAUTHORIZED SERVICE** Only a trained and certified refrigeration technican should perform any service work on the refrigeration system.
	**UNPLUG UNIT BEFORE SERVICE** ALWAYS disconnect unit from the source receptacle before performing any service or maintenance work AFTER moving the power switch to the off position.
	**KEEP DOORS LOCKED** ALWAYS keep the doors closed and locked when unattended to prevent accidental entrapment. Remove the doors before disposal of the unit.
	**2 MINUTE START DELAY** At initial start up or after a power reset, such as power loss, disconnect/reconnect, or cycling of the power switch, the unit may not start the compressor until the system is equalized.
	**DO NOT CUT DRAIN HOSE/HEAT WIRE** Do not cut the drain hose; the drain hose contains an electrically heated wire and cutting the wire may damage the unit and cause personal injury.

24-M0029

Replace any missing or hard-to-read decals and use care when washing or cleaning the unit. All safety decals are available free of charge with a valid model and serial number by contacting Leer direct at **1-800-766-5337**.

Section 2 - Specifications

2.1 Vending Merchandiser System Specifications

	Model VM40	Model VM85	Model VM40 (Outdoor)	Model VM85 (Outdoor)
Auto Defrost - R290	L040UASVP	L085UASVP	L040UASVP	L085UASVP
Cold Wall - R290	N/A	N/A	N/A	N/A
Capacities and Dimensions				
7 lb Bags - Auto Defrost	100	230	100	230
20 lb Bags - Auto Defrost	40	90	40	90
7 lb Bags - Cold Wall	N/A	N/A	N/A	N/A
20 lb Bags - Cold Wall	N/A	N/A	N/A	N/A
Interior Space - cu/ft (cu/m)	40 (1.13)	85 (2.40)	40 (1.13)	85 (2.40)
Door Opening - in (cm)	28 x 47 (71.1 x 119.4)	28 x 47 (71.1 x 119.4)	28 x 47 (71.1 x 119.4)	28 x 47 (71.1 x 119.4)
Dimensions (W x D x H) - in	47 x 30 x 78.5	84 x 35.5 x 78.5	47 x 30 x 78.5	84 x 35.5 x 78.5
Auto Defrost weight - lb (kg)	400 (666.8)	650 (807.4)	400 (666.8)	650 (807.4)
Cold Wall weight – lb (kg)	N/A	N/A	N/A	N/A
Operating Temperature				
Degrees F (Degrees C)	16 to 24 (-8.8 to -4.4)	16 to 24 (-8.8 to -4.4)	16 to 24 (-8.8 to -4.4)	16 to 24 (-8.8 to -4.4)
Control Type	Electronic	Electronic	Electronic	Electronic
Electrical				
Voltage (V/Hz)	115/60	115/60	115/60	115/60
Minimum Circuit (Amps)	15	15	15	15
Auto Defrost (Amps)	6.8	9.9	6.8	9.9
Cold wall (Amps)	N/A	N/A	N/A	N/A
230V/50Hz	Available	Available	Available	Available
Other				
Compressor hp (kw)	1/3 (.24)	1/2 (.37)	1/3 (.24)	1/2 (.37)
Refrigerant	R290	R290	R290	R290
Certifications	UL, cUL, CE	UL, cUL	UL, cUL, CE	UL, cUL
DOE Compliant	Yes	Yes	Yes	Yes
CARB Compliant	Yes	Yes	Yes	Yes
NSF Certification	Available Upon Request	Available Upon Request	Available Upon Request	Available Upon Request

Height includes compressor. Merchandiser storage capacities are approximate & may vary due to type of ice, bag size, and methods of loading.

2.2 Model Exterior Dimensions

Refer to Figures 2-1 for the exterior dimensions.

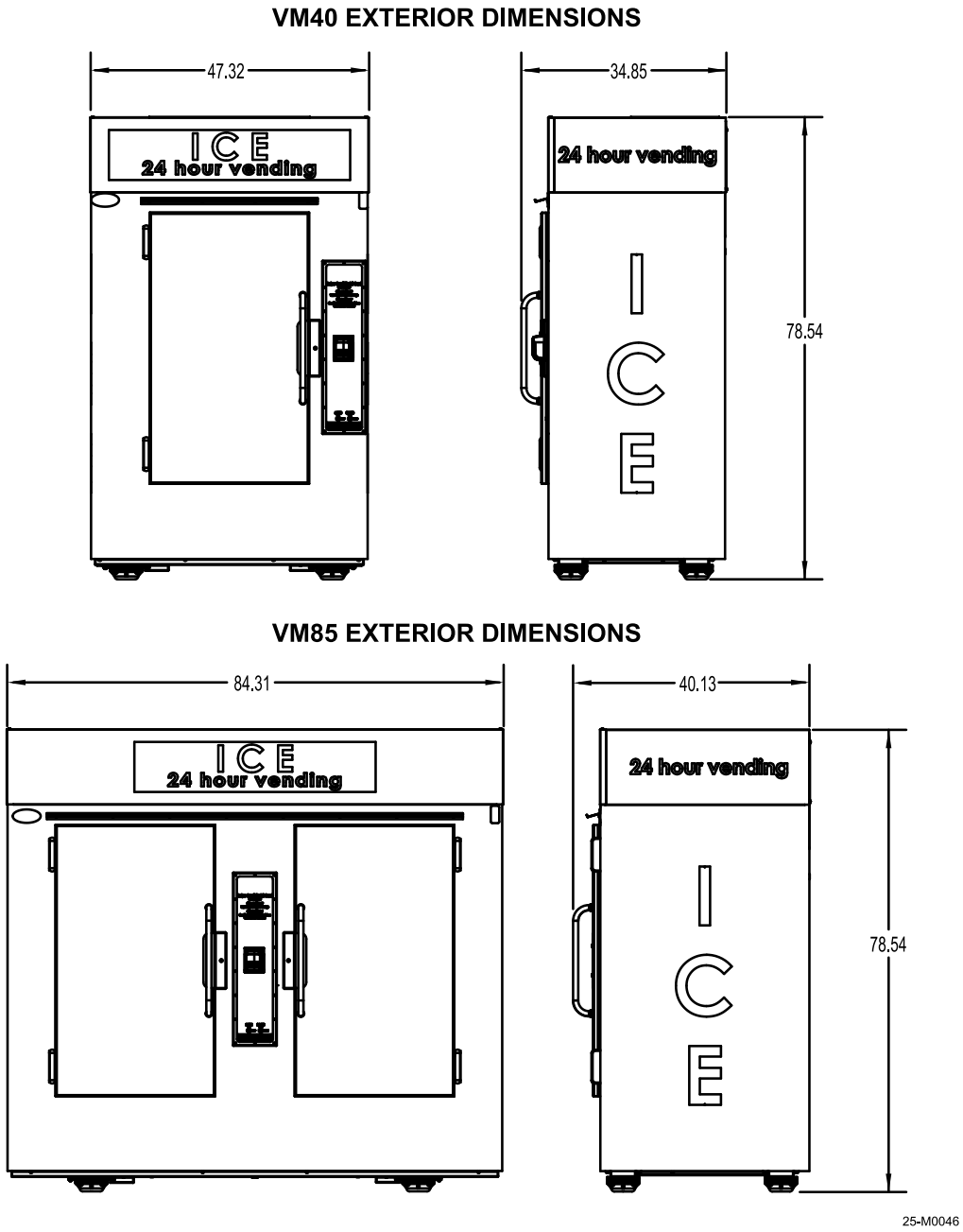


Figure 2-1

2.3 Model Component Locations

Refer to Figures 2-2 to 2-4 for the location of components.

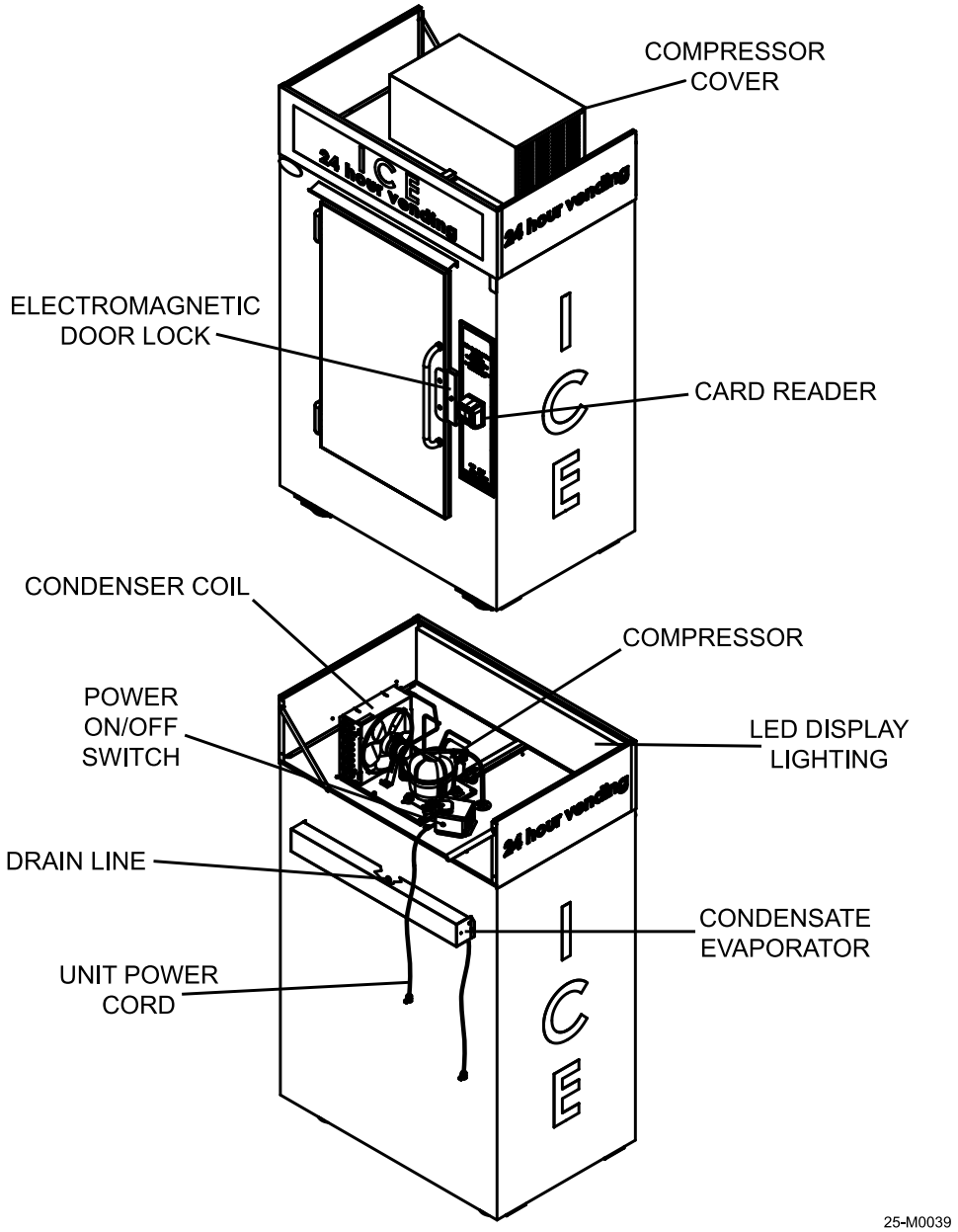


Figure 2-2

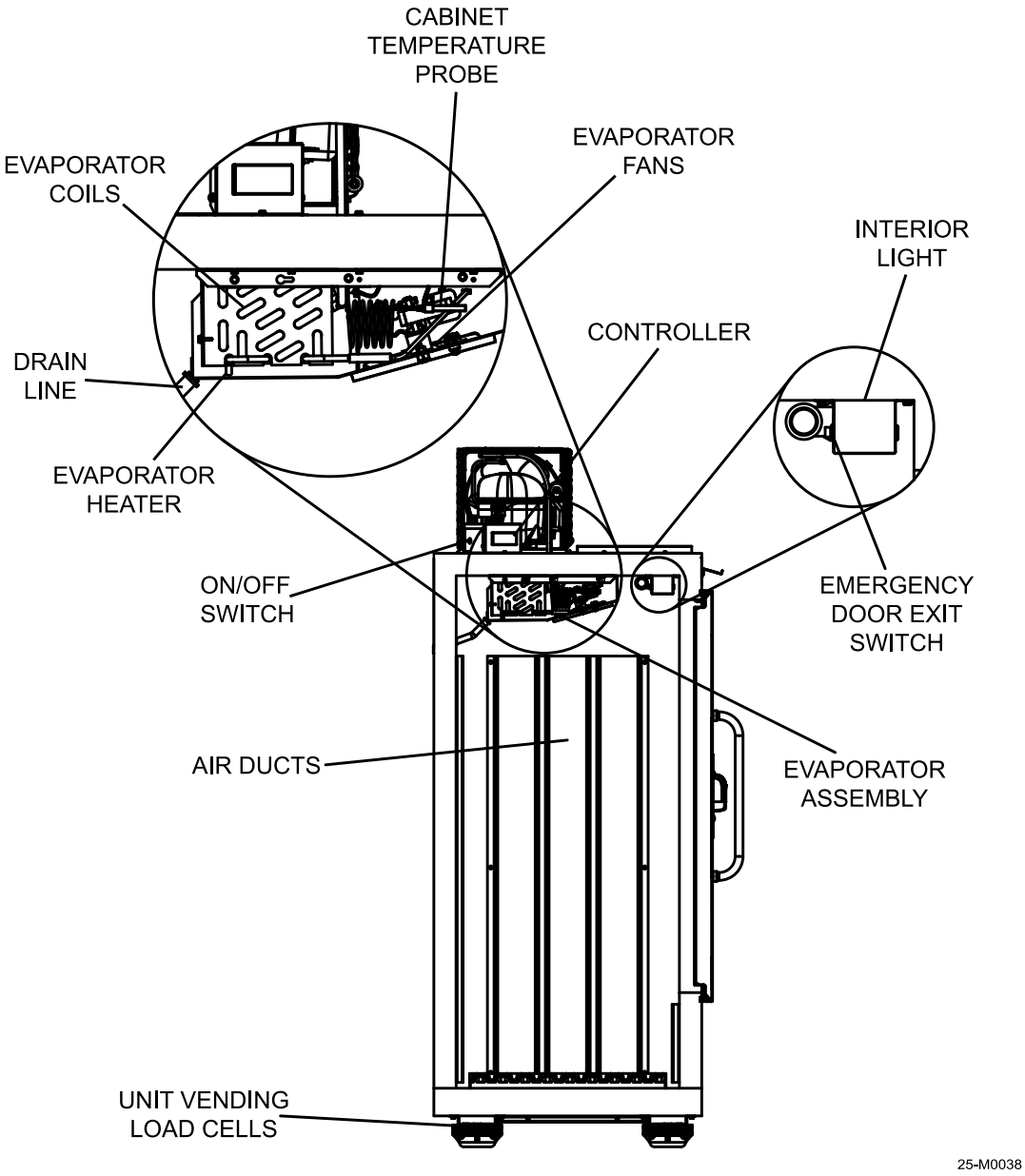

CABINET
TEMPERATURE
PROBE
EVAPORATOR
FANS
EVAPORATOR
COILS
INTERIOR
LIGHT
CONTROLLER
DRAIN
LINE
EVAPORATOR
HEATER
ON/OFF
SWITCH
EMERGENCY
DOOR EXIT
SWITCH
AIR DUCTS
EVAPORATOR
ASSEMBLY
UNIT VENDING
LOAD CELLS
25-M0038

Figure 2-3

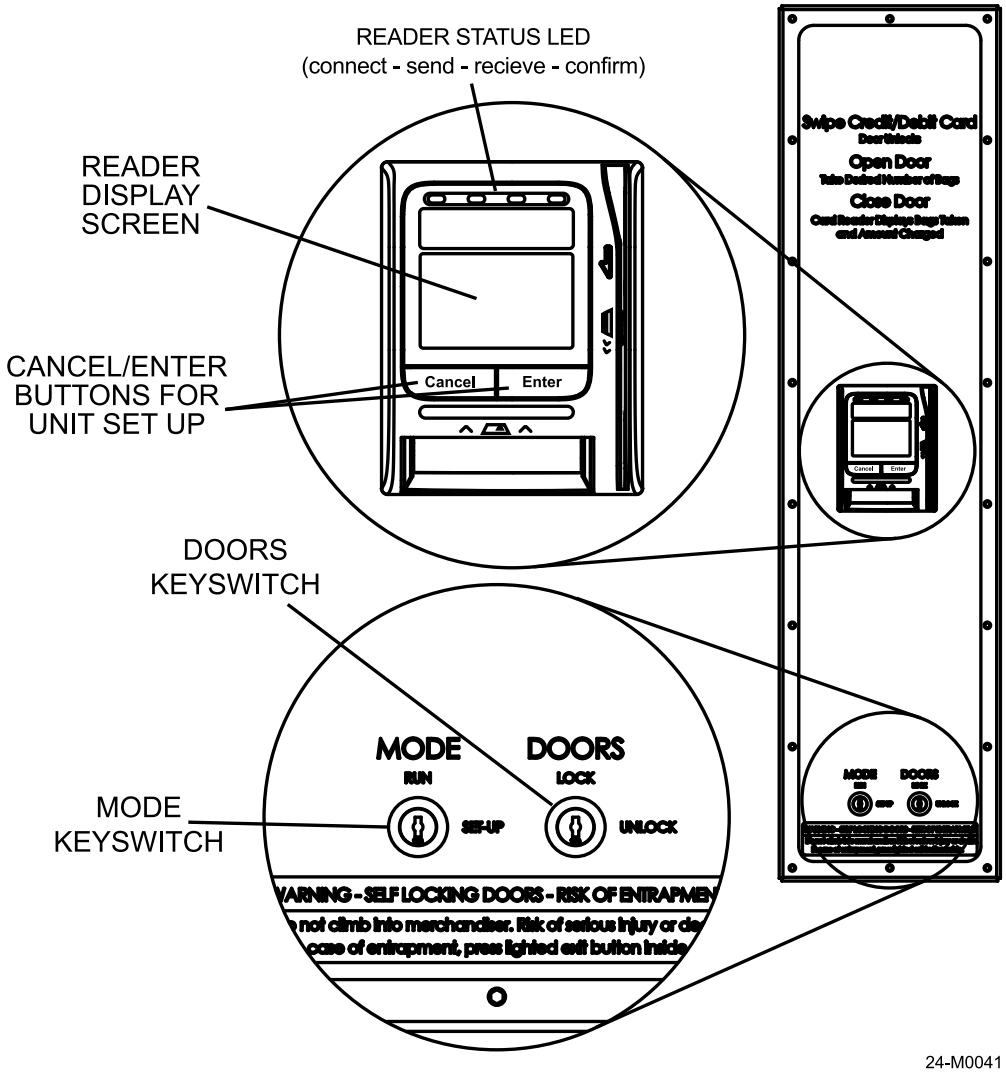


Figure 2-4

Compressor Cover: The compressor cover protects the refrigeration components from access by unauthorized persons. Keep the cover secured to the top of the unit at all times.

Electromagnetic Door Lock: Lock keep the door closed until a credit card is swiped on the card reader.

Card Reader: Vending credit card reader; with a swipe from a valid credit card reader will open the door and then adjust the total charged to the card based on the number of bags removed by the customer. Also used to calibrate and set up the unit.

Condenser Coil: Used to extract heat from the refrigerant when it is a high-pressure, high-temperature gas to a high-pressure, high temperature liquid, see Section 4.

Compressor: Device that makes low-pressure, low-temperature gas to an outgoing high-pressure, high-temperature gas, see Section 4.

On/Off Switch: Turns the power on/off for the unit.

Drain Line: Carries water melted by the evaporator heater to the exterior of the unit.

Merchandiser Power Cord: The unit is equipped with a 3-prong 15A plug. Always plug the unit into a dedicated circuit – DO NOT USE EXTENSION CORDS TO POWER THE UNIT.

LED Display Lighting: Illumination for the vending machine.

Condensate Evaporator: Evaporator dissipates water from the drain line with a heater.

Evaporator Assembly Coil: As the refrigerant passes through the coil, fans push the warmer air from the interior of the unit across the coil so the heat is absorbed by the lower temperature liquid in the coil, see Section 4.

Cabinet Temperature Probe: Detects the temperature inside of the unit for input to the controller.

Evaporator Fans: Fans circulate air inside the unit.

Evaporator Heater: Used to defrost the evaporator coil at programmed intervals.

Evaporator Drain Hose: The drain hose carries meltwater from the evaporator assembly drain pan to the exterior of the unit.

Controller: Programmable digital controller; used to set operating parameters of the unit.

Air Ducts: Ducting allows for better airflow along the back and side of the unit for better temperature control.

Evaporator Assembly: Cools the interior of the unit to the programmed temperature set on the controller.

Interior Light: LED light to illuminate the interior of the unit.

Unit Vending Load Cells: Load cells under the unit measure the weight of the unit and calculate sales based on the number of bags of ice removed.

Reader Status LED: Shows reader operation during credit card use.

Reader Display Screen: Displays unit operation.

Cancel/Enter Buttons: Used to set up the vending unit.

Doors Key Switch: Key switch to allow door operation during set up, loading and operation.

Mode Key Switch: Key switch to allow set up and operation of the vending merchandiser.

Section 3 - Transport, Unpacking, & Installation

3.1 Transporting the unit

When unloading and moving the Leer box from the truck to the permanent location:

1. Verify the lifting device has adequate capacity to move the box, see the specifications in Section 2 for the unit's size and weight.

2. Make sure the fork tines of the forklift are long enough and positioned wide enough to provide adequate support of the shipment, refer to Figure 3-1.

NOTE: DO NOT tip the unit when transporting! If the unit is moved at an angle (45 degrees or more) oil from the compressor may leak into the refrigerant tubing path and cause premature failure of the refrigeration system.

3. A thorough inspection of the unit must take place to make sure that no damage has occurred during the shipping process.

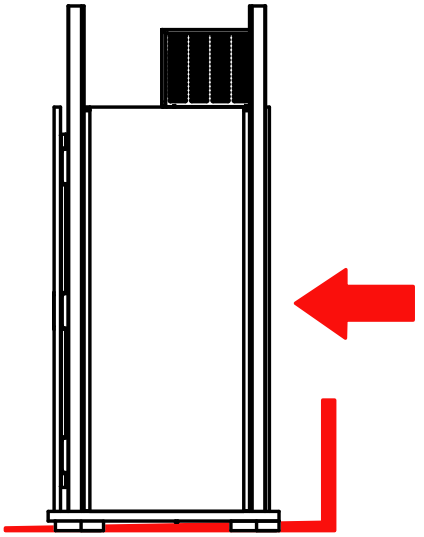


Figure 3-1

3.2 Unpacking the unit

NOTE: Thoroughly inspect this unit before and after uncrating for possible damage that may have occurred during the shipping process. If damage is apparent, note damage on the delivery receipt before the driver leaves. Damage claims not noted on the delivery <u>WILL NOT</u> be assessed.

Remove the outer wrapping and any crating from the sides of the shipment first, then remove the shipping base from the bottom, refer to Figure 3-2. The base is held on with hex-head screws that will require a 3/8" socket or wrench to remove in four places. Optional items may be included in separate boxes that are shipped inside the unit. Be sure to remove and inventory these items as well as check for possible shipping damage to the optional items and the inside of the unit.

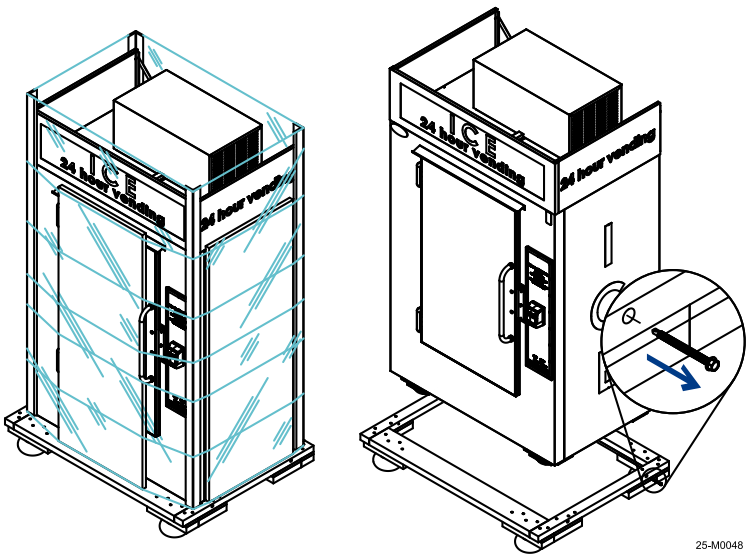


Figure 3-2

3.3 Installation

Electrical connections: Electrical service connections must be in accordance with the National Electrical Code, as well as any state or local codes that may apply. The electrical voltage and frequency must coincide with the serial tag. All units are equipped with a 3-prong NEMA 5-15P or 20P plug, refer to Figure 3-3.

WARNING!
Improper use or removal of the grounding plug can result in a risk of electrical shock.

The refrigeration system must be connected to a dedicated 120-volt, 60 Hz grounded electrical outlet with a circuit breaker or fuse. The condensing unit data plate will indicate the maximum circuit breaker size required.

NOTE: DO NOT use standard extension cords! Extension cords will decrease the voltage to the refrigeration unit and ultimately cause the compressor to fail prematurely.

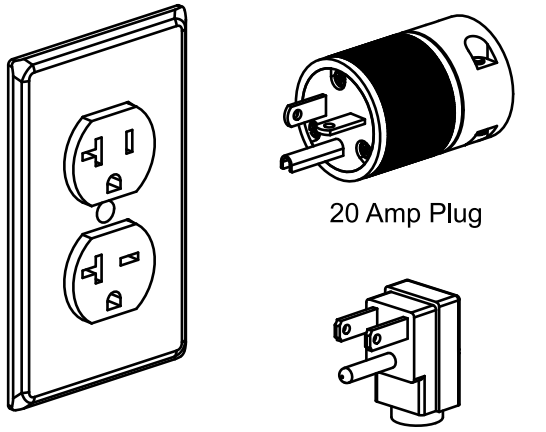


Figure 3-3

3.4 Placement

Avoid placing the unit in direct sunlight or next to dark colored surfaces, if possible, to reduce the amount solar heat the unit may be exposed to.

Allow for an air gap of at least 3” behind the unit and on all sides for air circulation around the box – this will aid in the operation of the refrigeration system. Place the unit on a firm, level surface. If the unit is leaning to the front, the doors may not seal properly and the drain tube on the evaporator assembly may not empty completely, leading to ice buildup. Place a level on the top of the unit and shim/adjust the feet until the unit is level in both directions, refer to Figure 3-4.

WARNING!
Keep ventilation openings, in the appliance enclosure or in the built-in structure, clear of obstruction.

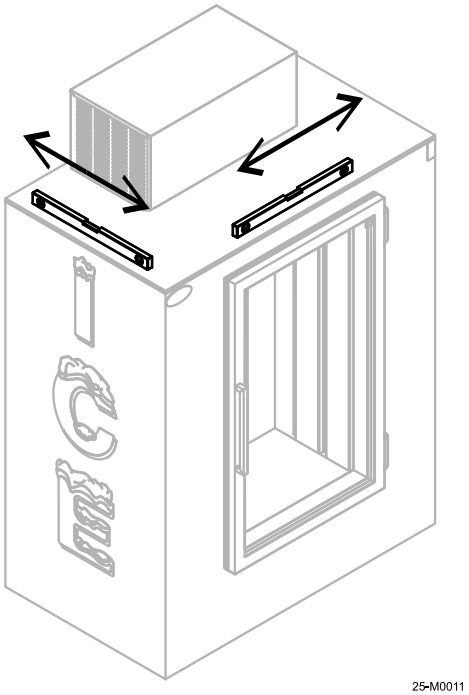


Figure 3-4

3.5 NSF Spacer Kit

R290 units shipped in the USA can only be certified as NSF compliant by the addition of the leveling kit. This kit is required by NSF to maintain a 6-inch clearance from bottom of unit to the floor. This kit must be installed on location to maintain compliance.

To install, use a proper lifting device to raise the merchandiser from the ground. Allow enough room to get the full kit under the skid plates/feet on the bottom of the unit.

DO NOT TIP THE MERCHANDISER beyond 45° of vertical as mentioned in section 3.1. Insert the stem of the leveling kit into the bottom of the skid plates as shown in Figure 3-5. Lower the merchandiser, making sure the weight of the unit is equal across all of the feet. Check the level of the unit in both directions and adjust as necessary.

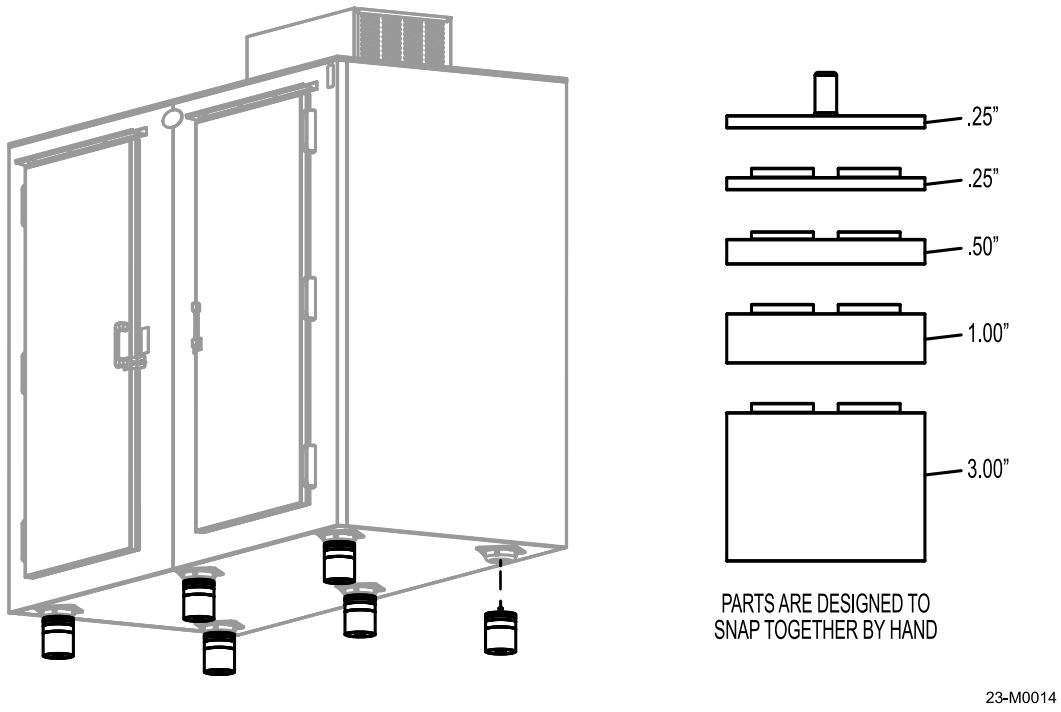


Figure 3-5

3.6 Condensate Evaporator

On auto defrost models, the defrosting cycle melts any accumulated frost and ice on the evaporator coil inside the unit. The water is collected into a drain pan and then the water drains out the back of the unit by a hose. Depending on the climate, and the frequency of door openings, the water must be dissipated by evaporation. Failure to install this assembly will result in water draining directly onto the floor during the defrost cycle

Place the evaporator assembly onto the screws on the back of the unit, making sure the drain hose will empty into the pan and that the power cord is not pinched or kinked; refer to Figure 3-6.

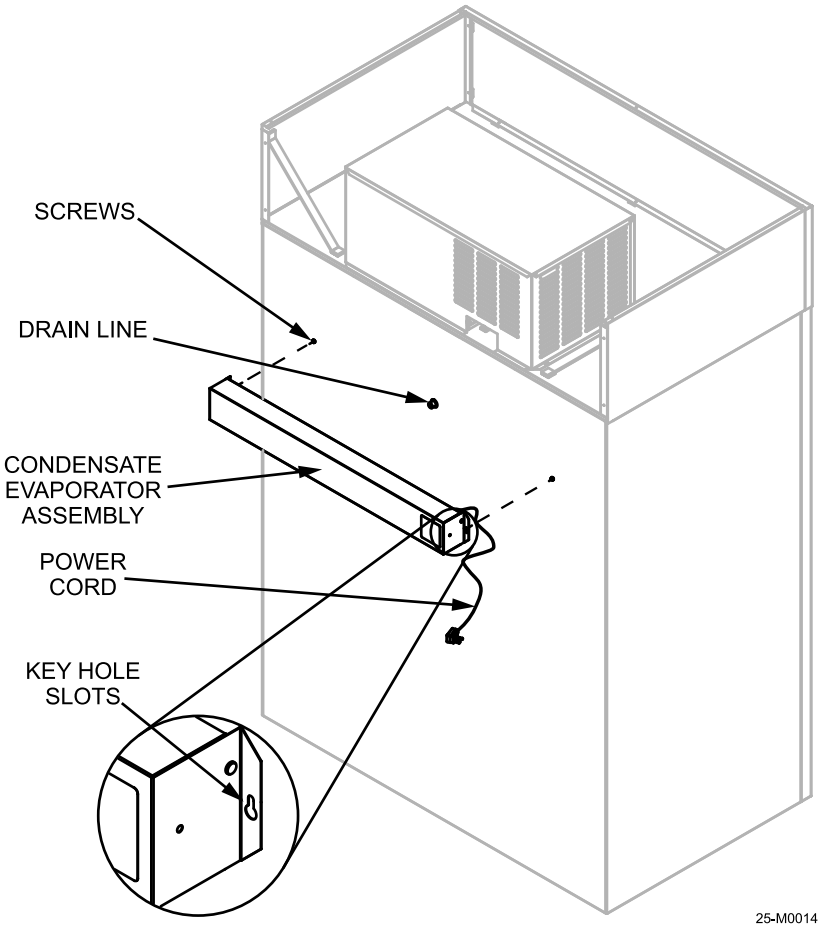


Figure 3-6

Install the evaporator cover over the evaporator assembly, making sure there is at least 1” clearance between the cover and any other materials.

3.7 Emergency Door Switch

Vending merchandisers are equipped with an emergency door lock switch, located on the front of the interior LED light housing. During normal operation the door will lock automatically upon closing. In case of entrapment, find the lock switch and set it to EXIT; this will allow the door to be opened without a credit card swipe. Always keep the switch set to LOCK when vending, refer to Figure 3-7.

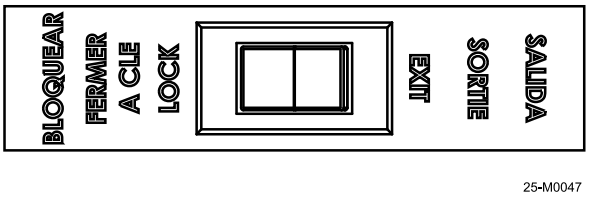


Figure 3-7

Section 4 – Operation

4.1 How the System Works

There are four main elements to a refrigeration system:

- The Compressor
- The Condenser
- The Expansion Device/Capillary Tube
- The Evaporator

As with any refrigeration system, it cannot create cold – it can only remove heat. If a system is operating at 0°F and the interior of the unit is 20°F, the 0°F temperature is lower than the 20°F temperature, so the heat is transferred (absorbed into the cold) from the higher temperature to the lower one until an equilibrium is achieved.

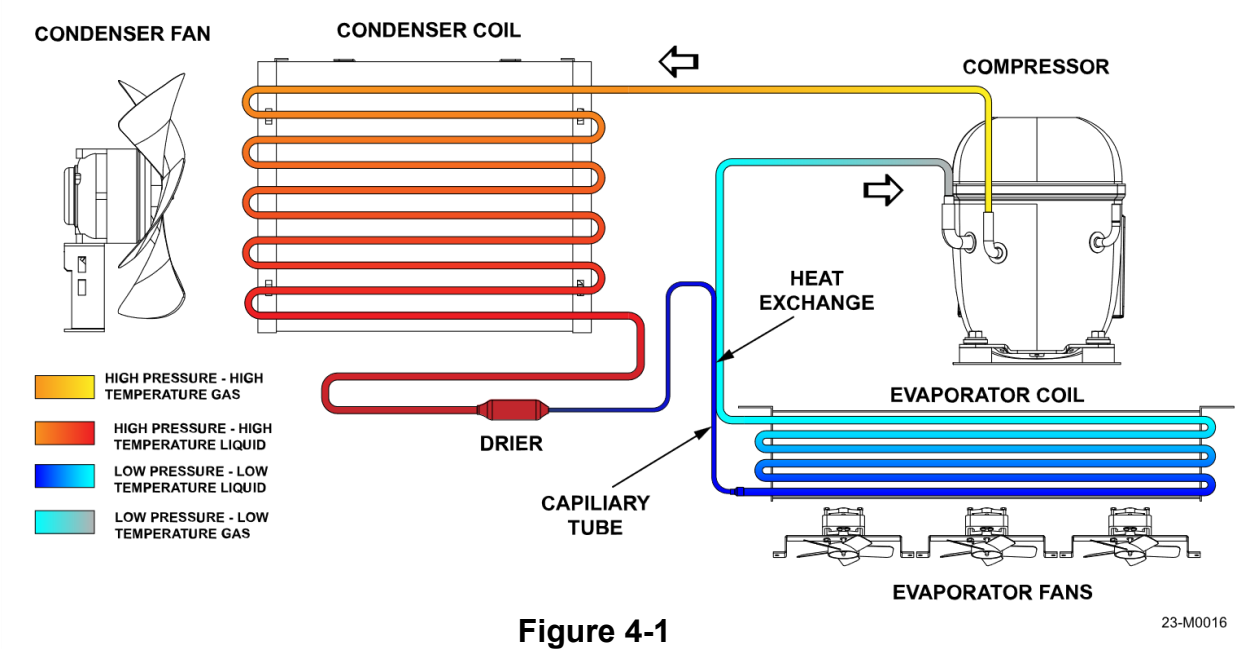


Figure 4-1

The compressor: Compression is the first step in a refrigeration cycle. A motor driven compressor is used to convert the refrigerant medium from an incoming low-pressure, low-temperature gas to an outgoing high-pressure, high-temperature gas.

The condenser: The condenser (or condenser coil) is one of two types of heat exchangers used in a refrigeration cycle. The high-pressure, high-temperature gas from the compressor is routed through the coil and a fan removes heat from the hot refrigerant vapor gas vapor until it condenses into a saturated liquid state. The medium is now a high-pressure, high-temperature liquid.

The expansion device/capillary tube: When the refrigerant enters the capillary tubing it expands and a pressure drop occurs. This pressure drop will cause some of that refrigerant to quickly boil, creating a two-phase mixture (liquid and gas). This phase change is called flashing and the medium is now a low-pressure, low temperature liquid. The heat exchange is a soldered

connection between the capillary tubing and the suction line which removes any residual heat from the vapor returning to the compressor.

The evaporator: The evaporator is the second heat exchanger in a standard refrigeration circuit and it absorbs the heat form the interior of the unit. Remember, even 20°F air has heat in it - if the evaporator has 0°F (20 degrees colder) refrigerant, the heat will move from warm to cold.

On auto defrost models an evaporator coil has fans pushing air across the coil to remove heat in the air as it passes over the colder coil. As the heat is absorbed the refrigerant is returned to the compressor as a low-pressure, low-temperature gas. The cycle continues until the thermostat tells the system an equilibrium has been achieved, refer to Figure 4-1

4.2 Powering Up

Prior to installing the Vending Machine at the retail location, perform a series of steps for set up and checks to ensure the unit was not damaged during delivery.

NOTE: The pallet and all packaging material must be removed before proceeding. The Vending unit should be on level surface for testing - the unit should not rock. Verify that nothing is on, in, or leaning against unit.

Prior to energizing the vending machine, place the MODE key in the 'RUN' position and the DOORS key in the 'LOCK' position, refer to Figure 4-2.

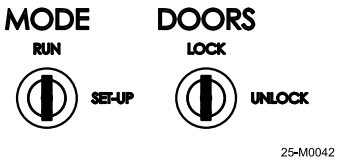


Figure 4-2

The refrigeration unit must be connected to a dedicated 120-volt, 60 Hz grounded electrical outlet with a circuit breaker. A 20-amp circuit may be required, due to the shape of the cord plug (see Figure 3-3). Turn the unit on with the power switch located under the compressor cover. **After a 2-minute delay, the compressor and the condenser fan should start.** The evaporator fans and the interior light (if equipped) will operate immediately when power is applied. The condensing unit will continue to run until the air temperature in the cabinet reaches the temperature set point on the controller.

4.3 Vending Set Up

At start-up, watch for and record the provision code displayed on the card reader, refer to Figure 4-3. Report the provision code to VendNovation by calling 425-637-2344 or email info@vendnovation.com

VendNovation will provision the vending machine and create your vending account. VendNovation will also assign product and link test a credit card system for USA based units. For 230v International customers please contact your Nayax representative and connect your machine to your Nayax account.

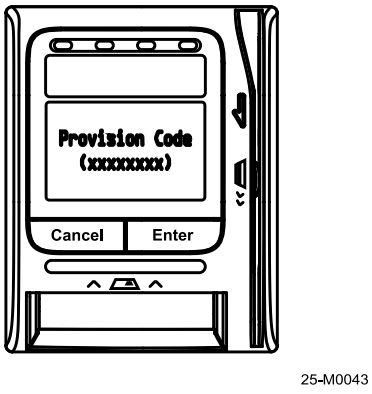


Figure 4-3

Testing the door locking: After the unit is powered up and the provision code is recorded, the door locks can be tested. Check the doors, they should be locked. If the doors are not locked, open the door and check the Emergency Door Switch near the LED light – It needs to be in the Locked position; refer to Figure 4-4 for the operation steps.

1. Turn the mode key to the **SET-UP** position.

2. The card reader display should show "**Synchronize Inventory**".

3. Press the left side "**Cancel**" button once, the card reader will display "**Hardware**".

4. Press the right side "**Enter**" button once, the card reader will display "**Test Door**".

5. Press the right side "**Enter**" button once, the doors will unlock and the card reader will display "**Door Closed**". If the display reads "**Door Open**" the door sensors need to be adjusted. Open and close each door – the card reader display should show "**Door Open**" or "**Door Closed**".

6. Press the left side "**Cancel**" button once, the door will lock and the card reader will display "**Test Door**".

7. Turn the mode key to the **RUN** position.

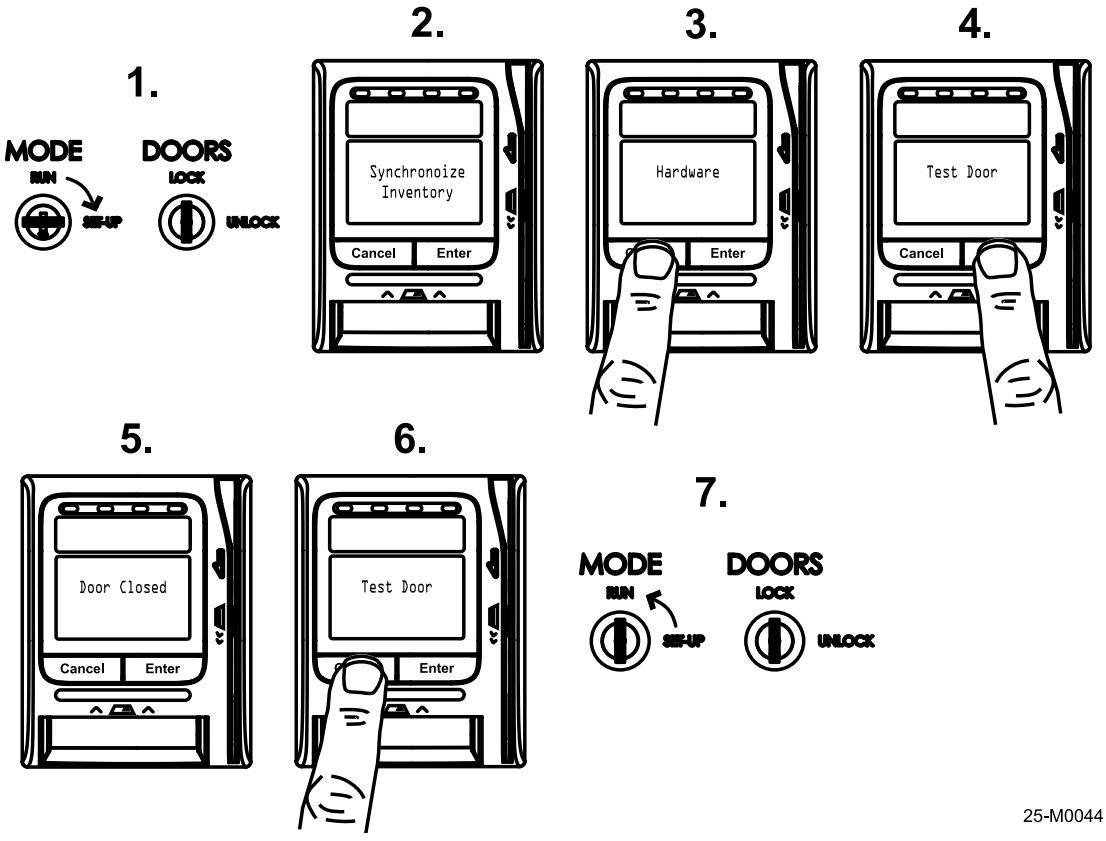


Figure 4-4

Scale calibration: After the door locks are tested, the scale can be calibrated. The unit must be completely empty of any product and there cannot be any foreign items on the unit or leaning against the sides. Be sure to check underneath the unit as well and remove any foreign objects; refer to Figure 4-5 for the operation steps.

1. Turn the mode key to the **SET-UP** position.
2. The card reader display should show "**Synchronize Inventory**".
3. Press the left side "**Cancel**" button once, the card reader will display "**Hardware**".
4. Press the right side "**Enter**" button once, the card reader will display "**Test Door**".
5. Press the left side "**Cancel**" button FOUR times, the card reader will display "**Calibrate Scale**".
6. Press the right side "**Enter**" button once, the card reader should display "**Calibration Complete**" and then change to "**Calibrate Scale 0 lbs**".
7. Turn the mode key to the **RUN** position.

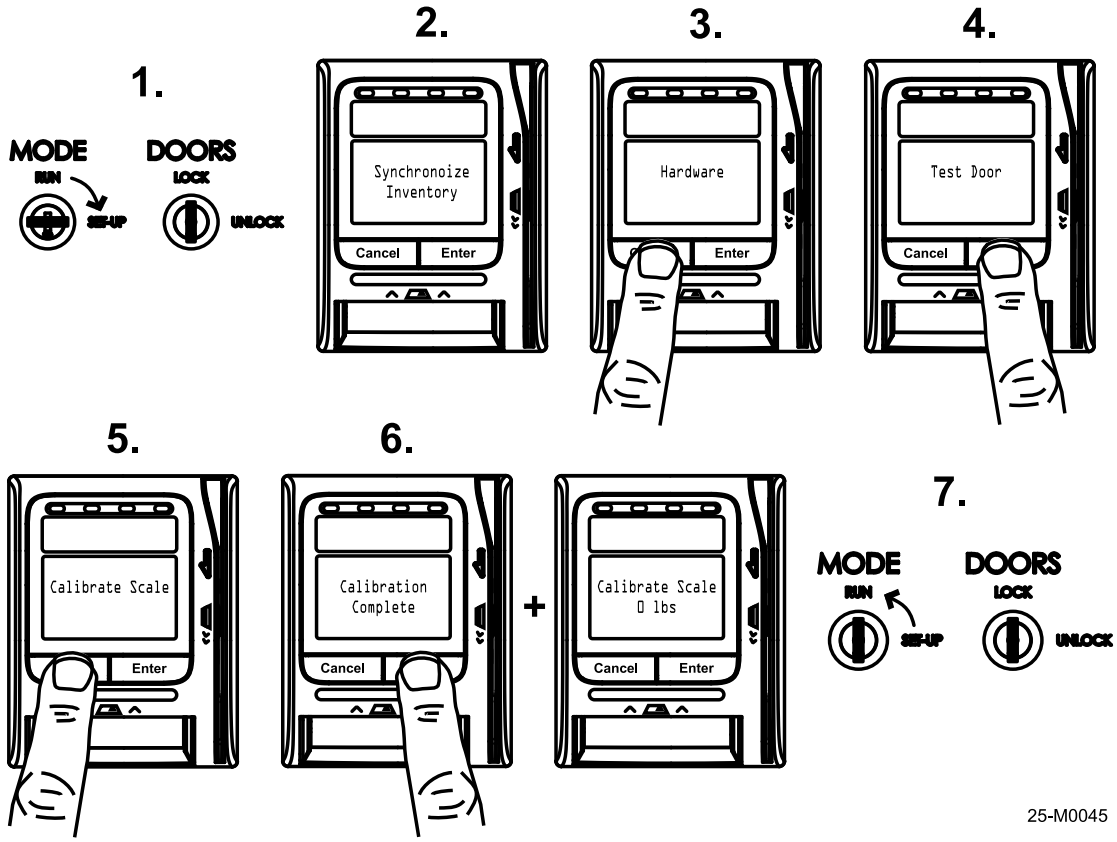


Figure 4-5

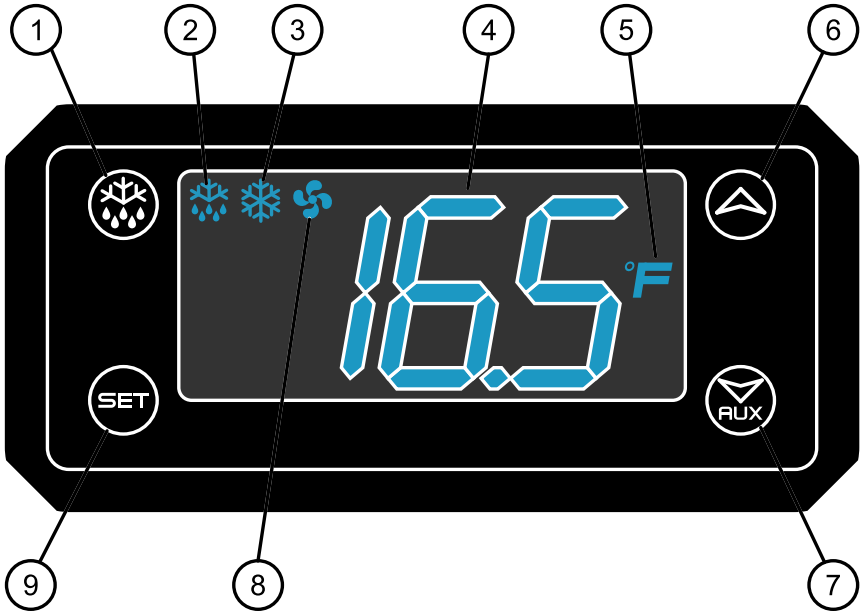
Test transactions: After the scale is calibrated perform a test transaction. The unit must be set up with the bag weight and price with your VendNovation account. Load a few bags of ice in the Vending Machine. Verify that the display reads the correct bag size, amount and price and

perform a test transaction; verify the transaction processed successfully. Contact VendNovation and have the Vending Machine unit linked to a live credit card account for USA based units.

For 230VAC units A Nayax vending account will have to be set up, contact Leer technical service at **1-800-766-5337.**

4.4 Controller Operation

The controller is located under the compressor cover on the top of the unit, refer to Figure 2-1. The controller features are described below, refer to Figure 4-6**.**



23-M0018

Figure 4-6

1. **Defrost button:** Used to initiate defrost cycle – see controller manual.
2. **Defrost mode:** Defrost enabled when on.
3. **Compressor mode:** Compressor operating when on, flashing when delaying between cycles.
4. **Temperature display:** Display of current temperature, temperature setpoints.
5. **Temperature units (°F/°C):** Temperature in degrees Fahrenheit or Celsius.
6. **UP arrow:** Used to display parameter codes or increase the displayed value.
7. **DOWN arrow:** used to display parameter codes or decrease the displayed value.
8. **Fan operation:** Fan operating when on, flashing when delayed after defrost.
9. **Set button:** Used to display target set point and the real set point; in programming mode it selects a parameter or confirms an operation.

The control also offers monitoring of the operational status of the unit via the icon and digital temperature display. The controller has been programmed by Leer to operate within the design parameters of the refrigeration system. The condensing unit will continue to run until the air temperature in the cabinet reaches the factory set point temperature of 16°F, with a differential of 2°F (14 to 18°F).

4.5 Loading the Unit

The unit should be pre-chilled before loading any product by allowing it to run for 2-4 hours after powering up. This will allow the unit to reach the programmed temperature faster once it is loaded and reduce the risk of products stored melting or softening. Also, make sure the product going into the unit is cold and at storage temperature if possible. This will allow the unit to operate more efficiently since it will not have to run to remove heat from the product being stored in the box.

WARNING:
Flammable refrigerant used! Do not store explosive substances such as aerosol cans with flammable propellants in this appliance.

Always allow for air circulation around the products being stored when loading. Packing the interior too tightly will not allow the products to chill evenly and maintain a steady temperature. For the best possible performance of the unit, NEVER place any product on or near the following locations:

1. In front of or directly under the evaporator fans near the ceiling of the unit; this will reduce the air circulation, or on top of or past the tops of the air duct channels on the back and sides of the box.

2. In front of or next to the temperature probe on the left side of the evaporator housing. The probe will not detect the interior temperature accurately and the compressor may not operate as needed.

3. On units with the polyethylene “egg crate” floor protector, place items directly on that surface while maintaining an air gap between the product being stored and the bottom of the air ducting, refer to Figure 4-7.

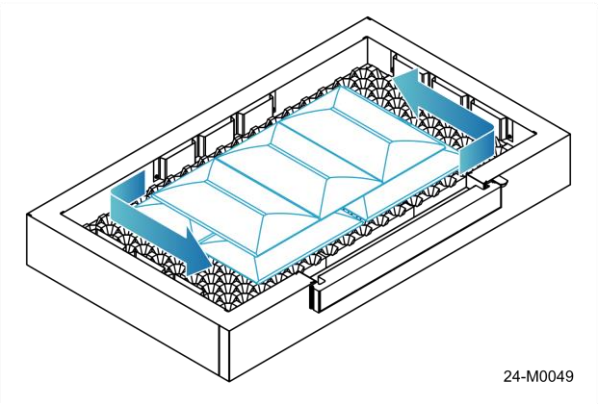


Figure 4-7

After loading of product, the card reader display will scroll through the screens shown in Figure 4-8. “Out of Service Ice Sold Out” displayed when the box is empty.

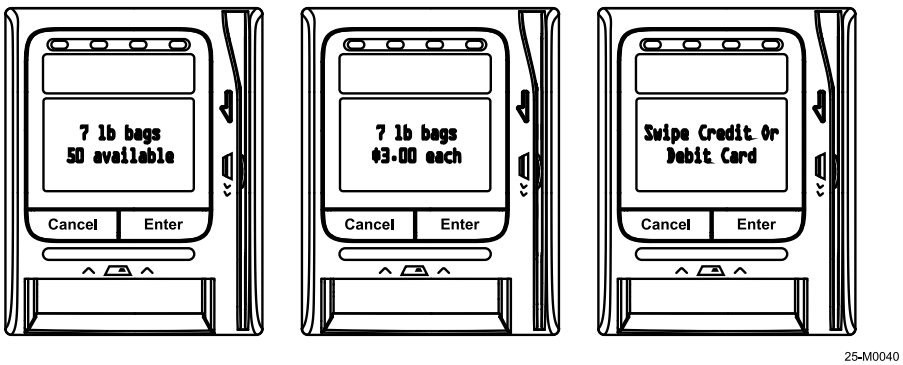


Figure 4-8

Section 5 - Maintenance

5.1 General Information

Regular service and upkeep will keep your freezer/cooler operating at peak efficiency.

WHEN THE UNIT IS IN OPERATION:	EVERY DAY	EVERY 3 MONTHS	EVERY 6 MONTHS	EVERY YEAR	AS NEEDED
Verify operation on the electronic display	■				
Verify the doors close tight and there are no gaps in the door gaskets	■				
Verify drain line is open and free of ice	■				
Remove compressor cover and inspect for leaks or damage		■		■	
Clean condenser coils and fan		■		■	■
Verify evaporator heater is working on Auto-Defrost models		■		■	
Clean the evaporator coils, fans and drain pan		■		■	■
Check for leaks/broken caulk lines, repair as needed			■	■	■
Check door hinges for worn or missing components, repair as needed			■	■	■
Perform defrost and clean the interior and door gaskets			■	■	■
Check compressor cut-in and cut-out temperatures				■	
Check interior temperature and perform calibration				■	
Clean the exterior				■	■

NOTE: Component parts shall only be replaced with like components. Maintenance and repair of the electrical and refrigeration systems should only be done by trained and qualified personnel. Disconnect power before performing service, certain models may contain multiple voltages.

5.2 Cleaning the Unit

In corrosive environments such as coastal regions the unit should be cleaned as needed. When cleaning the interior of the unit, use dilluted household dishwashing detergents with low or no odor, followed with a clear water rinse.

DO NOT use detergents with strong odors (i.e. citrus based cleaners or solvent based cleaners) or cleaners with abrasive or scouring compounds. They may leave objectionable odors or particles inside the cabinet which may be absorbed by the product being stored in the unit. Rinse and allow the unit to air dry with the doors open before returing it to service.

WARNING:
Flammable refrigerant used. Do not pierce or burn. Be aware that refrigerants may not contain an odor. Do not damage the refrigeration circuit.

NOTE: Do not use bleach or ammonia to clean the inside of the unit as it may cause damage to the evaporator coil aluminum fins.

Door gaskets: Door gaskets may mildew and stiffen over time. The gasket is made of a soft, flexible rubber-like material that can be cleaned using most kitchen and bath cleaners designed for mildew removal, refer to Figure 5-1. Review manufacturer information and instructions on any cleaning agent prior to use to determine the cleaner's compatability with the surface being cleaned.

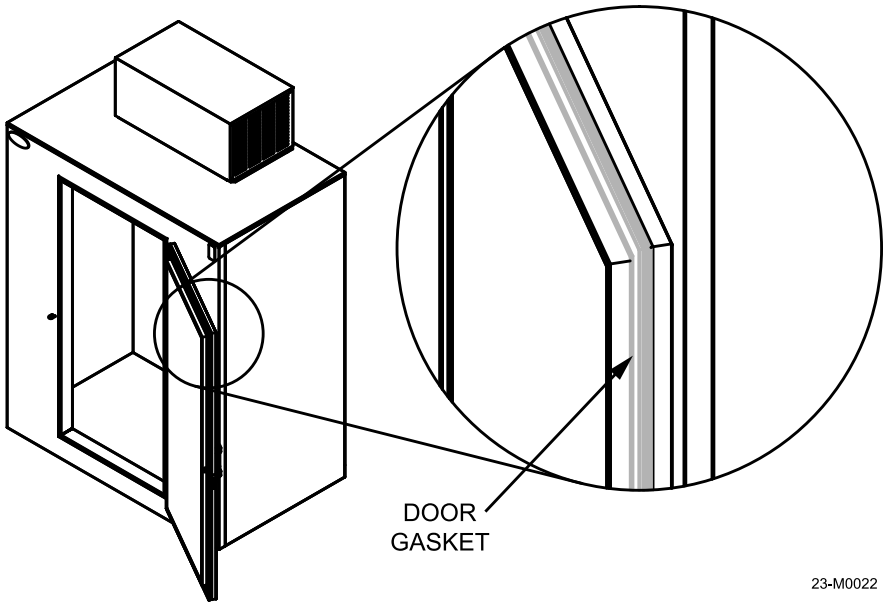


Figure 5-1

Visually inspect the unit for damage, corrosion or loose or missing hardware before washing. The exterior of the unit can be cleaned with the use of household automotive detergents diluted

in warm water followed with a clear water rinse. Take extreme care to avoid spraying water into the condensing unit and electrical controls.

The exterior paint is capable of withstanding the use of standard automotive polishing compounds and most solvents. If using stronger cleaning agents, they should be tested on a small, inconspicuous areas prior to application onto visible surfaces of the

5.3 Defrosting

Auto-Defrost models: Auto-Defrost models are designed to be self-defrosting and enter defrost mode once every few hours on a programmed cycle. During the defrost operation power is sent to the defrost heating coil and the condensing unit. The evaporator fans do not run.

The heat generated by the defrost coil at the bottom of the evaporator will melt the ice and frost buildup on the coil tubes and fins. The resulting water will drain through a tube through the back wall of the box. It is recommended to check the operation and condition of the evaporator coil and for signs of excessive ice buildup every 3 months.

WARNING:
Flammable refrigerant used. DO NOT use metal ice scrapers, ice picks, or hammers as these tools may inadvertently penetrate through the wall of the cabinet, puncture the evaporator tubing or wiring, and cause irreparable damage to the unit.

WARNING:
Flammable refrigerant used. Do not use electrical appliances inside the storage compartments of the appliance, unless they are of the type recommended by the manufacturer.

5.4 Door Hinge Install and Adjustment

Hinge assembly: The hinge components are shown in Figure 5-2; The hinge body, spring cartridge, thrust washer, adjustment rod, stop pin and cover.

NOTE: Wear eye protection when doing any servcing or adjustment of door hinges.

To replace the hinge spring assembly:

1. Install (No. 220 shown) hinge with adjustment plate.
2. Assemble the spring cartridge as shown in Figure 5-2. Grease both ends of the cartridge with petroleum jelly.
3. Insert the thrust washer over the round spring mount. Insert the stationary (square end) of the

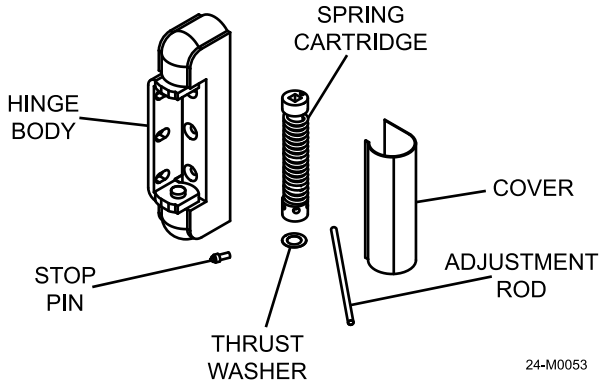


Figure 5-2

spring cartridge over the stationary end and compress the spring assembly with the adjustment rod until it can be placed over the round spring mount on the hinge, refer to Figure 5-3.

4. After installation, adjust the spring tension.

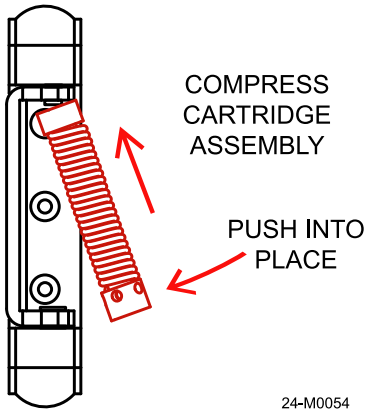


Figure 5-3

To adjust the spring tension follow the steps below and refer to Figure 5-4:

1. Insert the adjustment rod in the hole closest to the hinge on the adjustment collar and turn the rod clockwise until it contacts the other side of the hinge.

2. Hold the adjusting rod in place and insert a second rod. Use this to hold tension, remove the first rod, and continue rotating the second rod in the adjustment collar clockwise until it contacts the hinge again, and repeat the process one more time. The maximum tension is 4 holes or approximately 1 full turn. Do not put the adjustment rod more than halfway through the adjustment collar.

3. Insert the stop pin into the hole closest to the hinge and slowly release tension until the pin contacts the hinge. Make sure the stop pin is fully seated in the adjustment collar before releasing the tension!

4. Install the hinge cover by placing it over the hinge and pushing until it locks in.

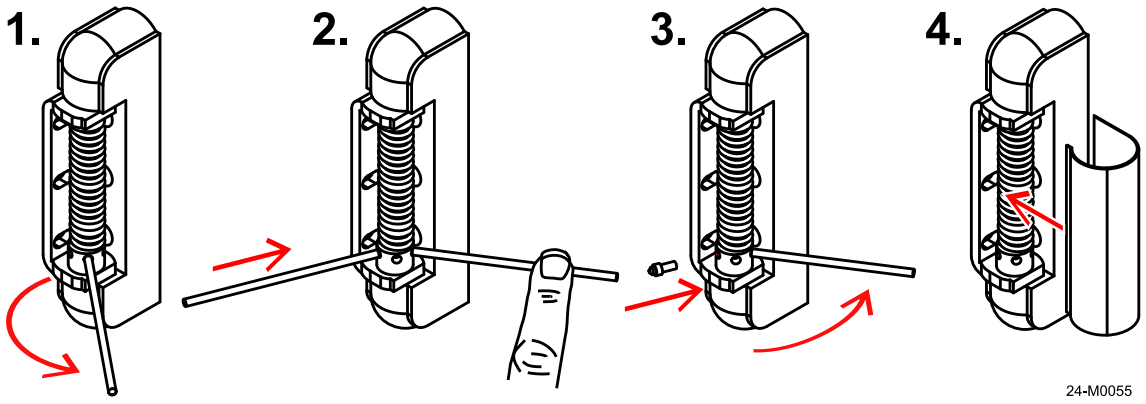


Figure 5-4

5.5 Refrigeration System Maintenance

Cleaning the condenser coils: Dirty or clogged condenser coils will cause poor performance of the refrigeration system by not allowing efficient heat transfer to take place, causing the compressor to run for longer periods of time. The condenser fan and coils should be cleaned every three months to ensure proper operation. If operating in very dusty conditions, the cleaning frequency will need to increase. To clean the coils follow the steps below and refer to Figure 5-5.

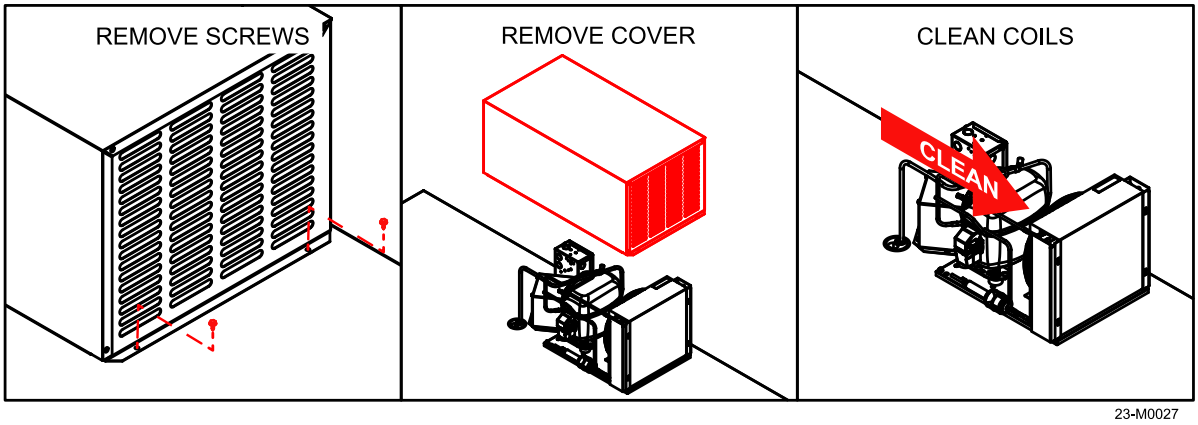


Figure 5-5

1. Move the power switch to the OFF position and once the unit is powered down, disconnect the power cord from the source receptacle.

2. Move the unit outdoors if possible.

3. Remove the the screws securing the compressor cover to the unit (4 places, 2 per side).

4. Lift the compressor cover straight up to remove.

5. Blow the coils and fan clean with compressed air in the opposite direction as the airflow – from the compressor side through the coil as shown.

WARNING:
Flammable refrigerant used. Do not damage the refrigeration circuit!

6. Check the fan for any loose blades. Inspect the coil and fins for any damge or leaks.

7. Repalce the cover and secure it with the screws removed in step 3.

Cleaning the evaporator assembly: Dirty or clogged evaporator coils will cause poor performance of the refrigeration system by not allowing efficient heat transfer to take place inside the box. Clogged evaporator coils will not allow cold air to circulate freely, causing uneven temperatures and possible thawing/melting of product.

1. Move the power switch to the OFF position and once the unit is powered down, disconnect the power cord form the source receptacle.

2. Disconnect the drain hose from the evaporator pan. The pan is secured with quarter-turn screws, one on each side. Push the screw in with a Phillips head screwdriver, rotate and carefully lower the pan down, refer to Figure 5-6.

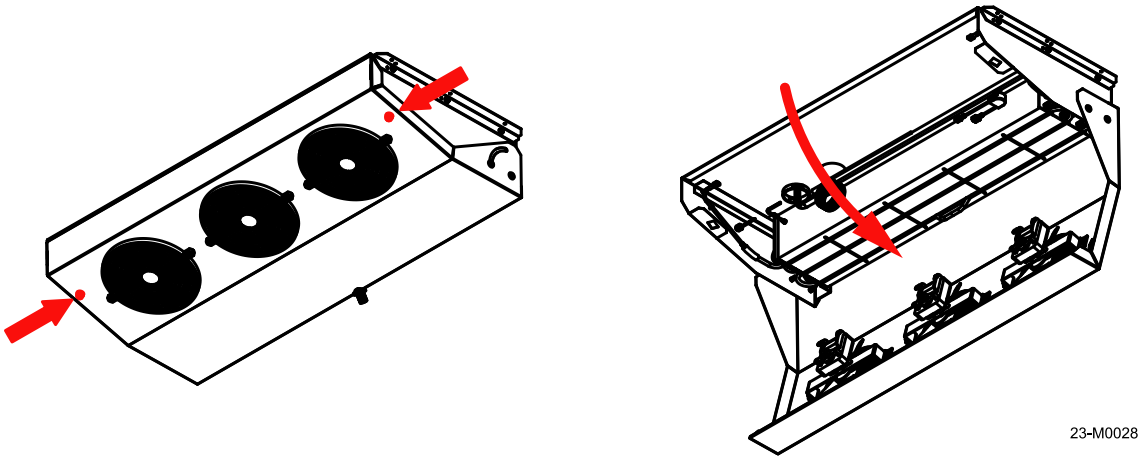


Figure 5-6

3. Check the drain pan for ice, which may be a sign of a blocked drain hose or the heater coil not functioning properly. Remove any buildup and check the drain hose that is on the outside of the unit as well for blockage, refer to Figure 2-3.

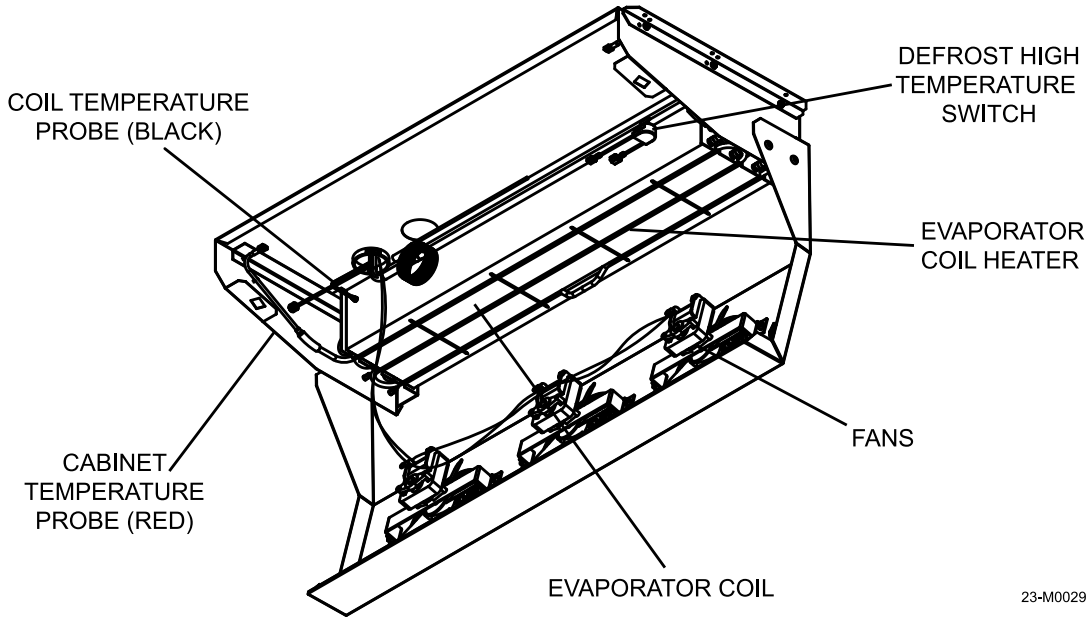


Figure 5-7

4. Inspect the evaporator for dust and dirt; clean the coils with compressed air if necessary. Make sure the evaporator fans spin freely and check them for loose blades or harware; repair or replace them as necessary, refer to Figure 5-7.

Checking the evaporator coil heater operation: The evaporator coil heater is the main component that makes Auto-Defrost models possible. The heater operates at pre-set intervals, usually every 4 hours, to melt any accumulated frost on the evaporator coil assembly. The

compressor and evaporator fans will stop, the heater element will warm up, and the resulting melt water will drain out of the unit via the drain tube in the rear wall. Excessive ice buildup can be an indication of a faulty heater, a blocked drain, or both. To check the coil heater operation:

1. Remove the compressor cover to can access to the electronic controller. Initiate the defrost cycle by pressing the defrost button – the display will show a dripping snowflake symbol and “dF” for defrost; refer to Figure 5-8.

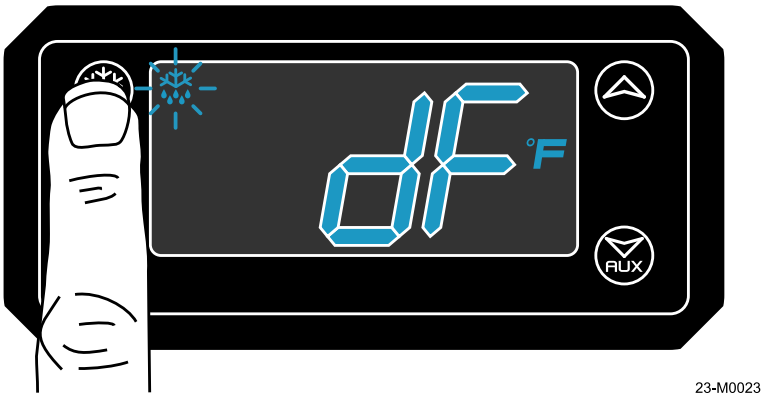


Figure 5-8

NOTE: Probe “P2” (inserted into the finned section of the evaporator coil) must be below the termination temperature set on the controller.

2. Inside the unit, heat should be felt at the drain pan nipple within 2 minutes of defrost cycle initiation. If not, lower the evaporator pan and fans to carefully check if the defrost heater is warming the coils.

WARNING:
ELECTRIC SHOCK HAZARD. This unit operates on electrical voltages that may cause injury or death. Use extreme care when servicing the electrical components of this unit.

3. If the heating element is not getting warm, check for voltage at the yellow wire (position 12) on the back of the digital XR04 controller – it should reflect the incoming line voltage when in defrost mode. If voltage is not present, the controller should be replaced.

4. Check for voltage before and after the defrost high temperature switch when in defrost mode. The termination switch must be below 70°F – if the temperature is higher the switch may remain open and not send voltage to the coil heater. If voltage is present after the termination switch, the heating element itself may be faulty.

Checking the evaporator coil heater: To check the function of the coil heater:

1. Move the power switch to the OFF position and once the unit is powered down, disconnect the power cord from the source receptacle.

2. Locate the spade terminals on each end of the coil heater. Unplug the connectors and use a multimeter set to Ohms to measure the resistance of the coil heater, refer to

Figure 5-9. Resistance must be checked at 70°F for the best accuracy, with a tolerance range of +/- 10%; refer to the table for the size and resistance value of the heater. If the reading is not within the specified range the coil heater must be replaced.

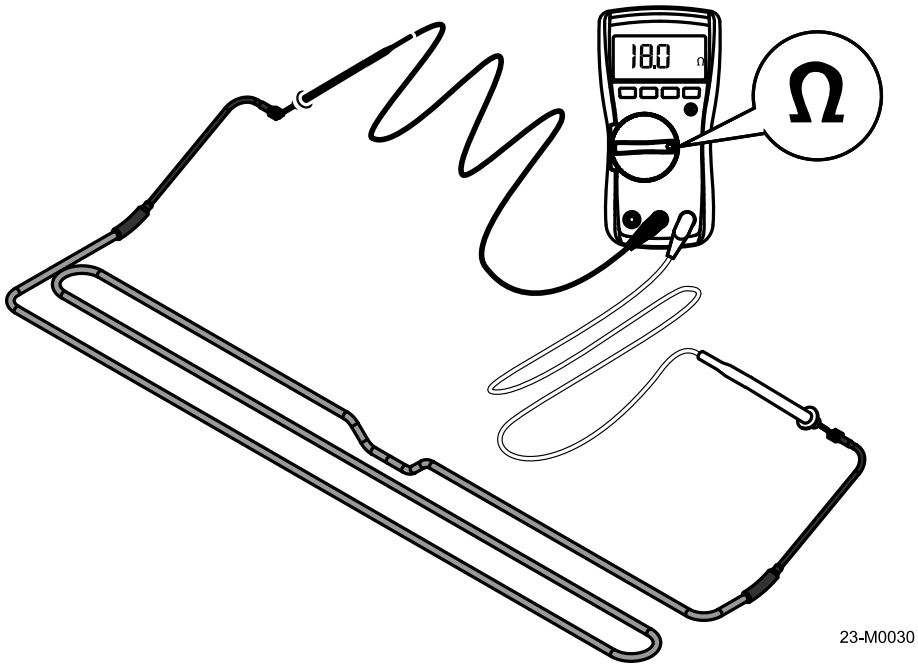


Figure 5-9

Defrost Heater Resistance @70°F		
Heater Size	Resistance	Range
400 watts	36 ohms	39.6 - 32.4 ohms
600 watts	24 ohms	26.4 - 21.6 ohms
800 watts	18 ohms	19.8 - 16.2 ohms

5.6 Vending System Maintenance

Checking the vending controller battery: The vending conrtroller has circuits backed up by a CR2032 coin battery. A faulty or dead battery can cause errors in card reader operation and display "`Tare Weight 0`" after a power cycle if the battery is dead. To check the battery refer to Figure 5-10 and follow the steps below:

1. Remove the Security T-25 Torx head screws securing the vending face plate frame (18 places).

2. Remove the vending face plate and lower it to one side.

3. Locate the CR2032 coin battery on the control panel. Remove the battery and check the voltage with a multimeter; the batterty should read 3.0 VDC.

4. If the battery is low, replace it with a fresh CR2032 battery.

5. Repalce the face place and secure it with the face plate frame and secure it with the 18 Torx head screws.

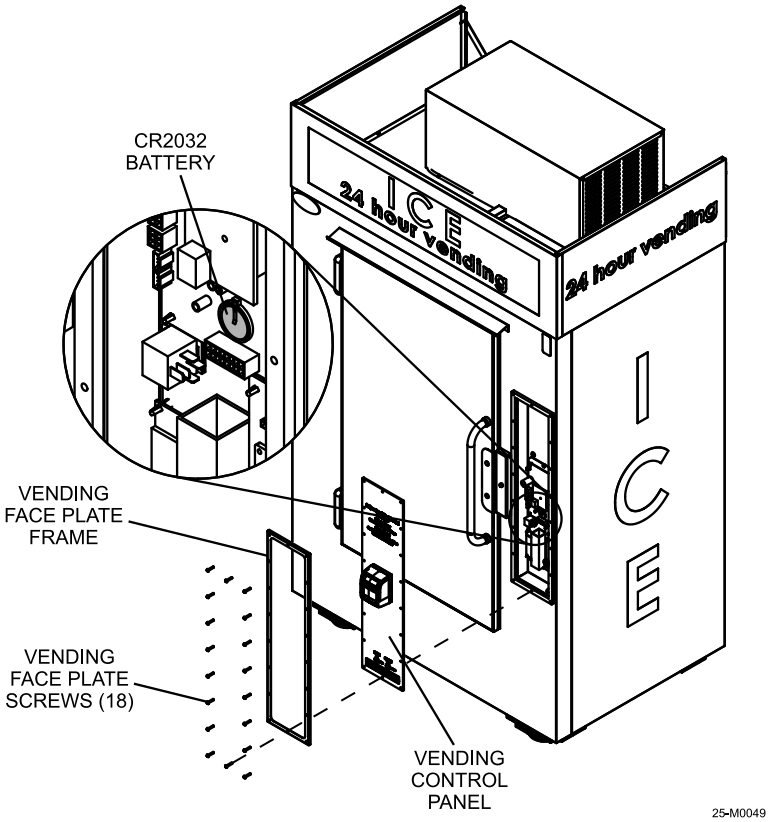


Figure 5-10

6. Test the vending operation after powering the unit up as described in Section 4.2.

Adjusting the door electromagnets: Poorly aligned door electromagnets may not allow the doors to close or stay locked , causing a loss in sales. The electromagnets are permanently mounted to the shell of the unit so adjusing the door security is done on the door keeper plate. To adjust the door security, refer to Figures 5-11 and 5-12 and follow the steps below:

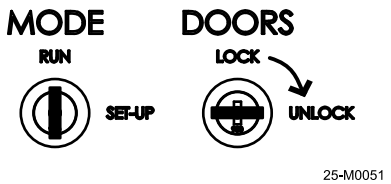


Figure 5-11

1. Set the DOORS key switch to "UNLOCK".

2. Open the door and check the condition and position of the door gasket, making sure it is

centered in the door frame; then locate the slotted hex screw securing the door keeper to the door plate frame.

NOTE: The door keeper will feel loose – this is normal. The keeper needs to have some free movement in order to work properly with the electromagnets.

3. Use a hex head wrench or socket to turn the screw counterclockwise about ¼ turn.

4. Close the door. Turn the DOORS key switch to “LOCK” and pull on the door handle. If the door opens, repeat steps 1-3. Continute adjusting the screw in the door keeper unit the door can no longer be opened with DOORS key switch to “LOCK”.

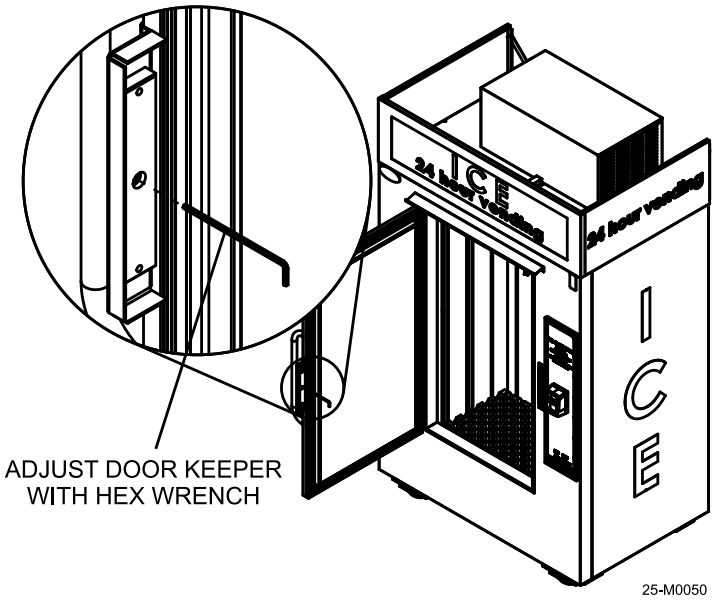


Figure 5-12

Checking the load cells: Faulty, stuck or damaged load cells will not allow for accurate weight or inventory, causing a loss in sales. Load cell operation can be checked before replacement. To check the load cell function, refer to Figures 5-13 and 5-14 and follow the steps below:

1. Remove the Security T-25 Torx head screws securing the vending face plate frame (18 places).

2. Remove the vending face plate and lower it to one side.

3. Locate the load cell connections on the bottom right of the control board, refer to Figure 5-13. Disconnect the load cell wires from the board; the order of removal and later installtion of the connectors does not matter.

4. Use a miltimeter set to OHMS to check the resistance of each loade cell at the connector. Place the probe ends into the small square openings at the end of the connectors, refer to Figure 5-14.

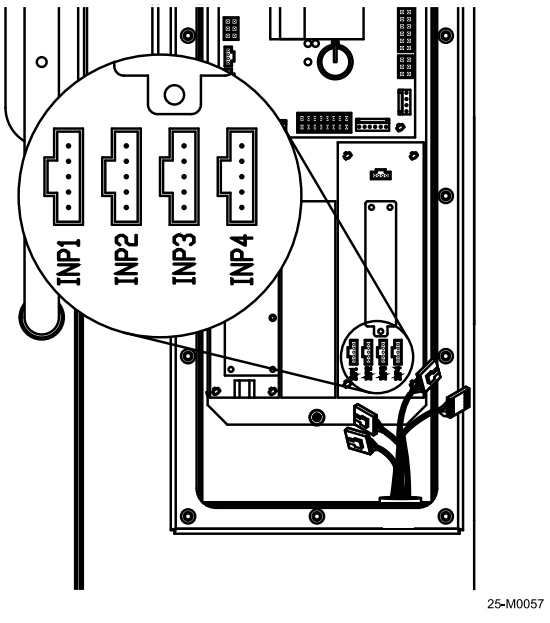


Figure 5-13

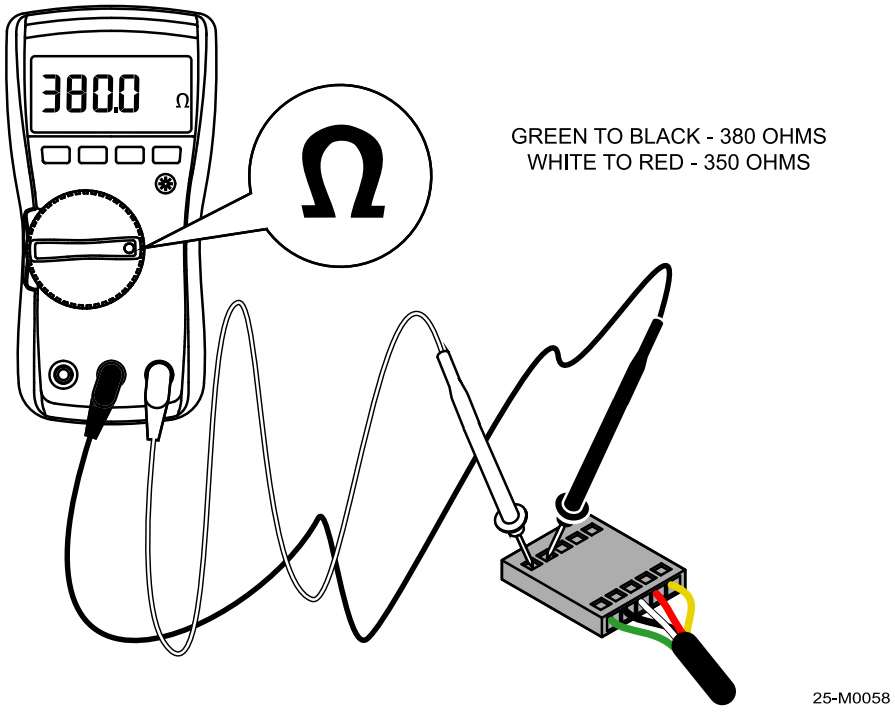


Figure 5-14

5. Check the GREEN and BLACK wires first, the resistance should be at 380 ohms. Then check the WHITE and RED wires, the resistance should be 350 ohms. The yellow wire does not get checked. Continue with the other three load cell wire connectors and note the resistance on each set of GREEN/BLACK and WHITE/RED wires; they shoul be within 1-2 ohms of each other.If the values are higher or lower, contact Leer technical service at **1-800-766-5337.**

6. Once the load cells have been checked, the load cells can be re-connected to the control board. The order of the plugs does not matter. Replace the vending face plate and secure it with frame and the Security T-25 Torx head screws (18 places).

Replacing the load cells: If checking the load cells indicates one or more need replacement, Leer recommends replacing all four load cells at the same time for optimal performance of the vending unit. Refer to Figures 5-13 to 5-19 and follow the steps below:

1. Remove the Security T-25 Torx head screws securing the vending face plate frame (18 places).

2. Remove the vending face plate and lower it to one side.

3. Locate the load cell connections on the bottom right of the control board, refer to Figure 5-13. Disconnect the load cell wires from the board; the order of removal and later installtion of the connectors does not matter.

4. Remove the Permagum (grayish putty) from around the wires set aside to reuse.

5. After the load cells are disconnected, replace face plate. You will only need to place a few of the screws as you will need to get to the load cell controller after changing the cells.

6. Raise the unit up high enough to get at screws on bottom of unit.

NOTE: DO NOT tip the unit when lifting! If the unit is tilted at an angle (45 degrees or more) oil from the compressor may leak into the refrigerant tubing path and cause premature failure of the refrigeration system.

7. Remove the center hat channel, secured with 1/4” socket hex head screws (4 places); refer to Figure 5-15.

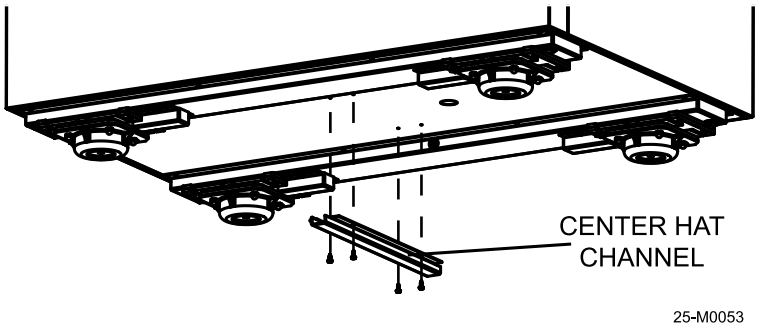


Figure 5-15

8. Remove the load cell channel assembly from the bottom of the unit. The load cell is secured with 3/8” socket hex head screws (8 places); refer to Figure 5-16. As the load cell assembly is lowered pull the load cell wires from the hole in the corner of the unit that leads to the control panel. Them remove the tape securing the wires to the back of the load cell channel assembly. Carefully feed the wires from the rear load cell through the bushing on the front load cell and then repeat step 8 for removal of the rear load cell assembly.

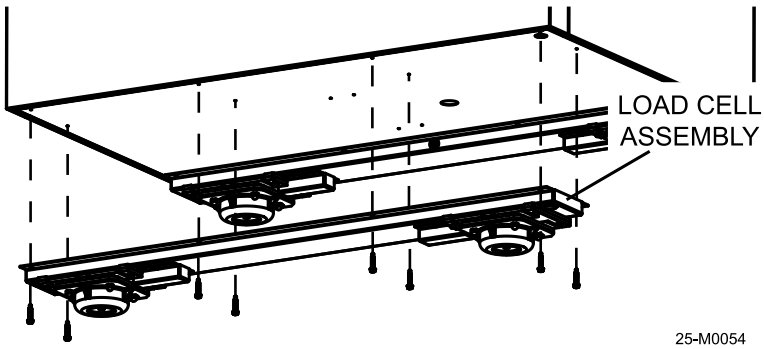


Figure 5-16

9. Remove the load cells from the load cell channel by removing the small hat channel, secured with 1/4” socket hex head screws (2 places) on both ends of the load cell assembly; refer to Figure 5-17.

10. Remove the gray plastic skid plate from the load cell by removing acorn nuts with a 10mm socket and flat washers (4 places) on both ends of the load cell assembly; refer to Figure 5-17.

11. Remove the load cells from the load cell channel, secured with a 3/8” socket (4 places) on both ends of the load cell assembly; refer to Figure 5-17.

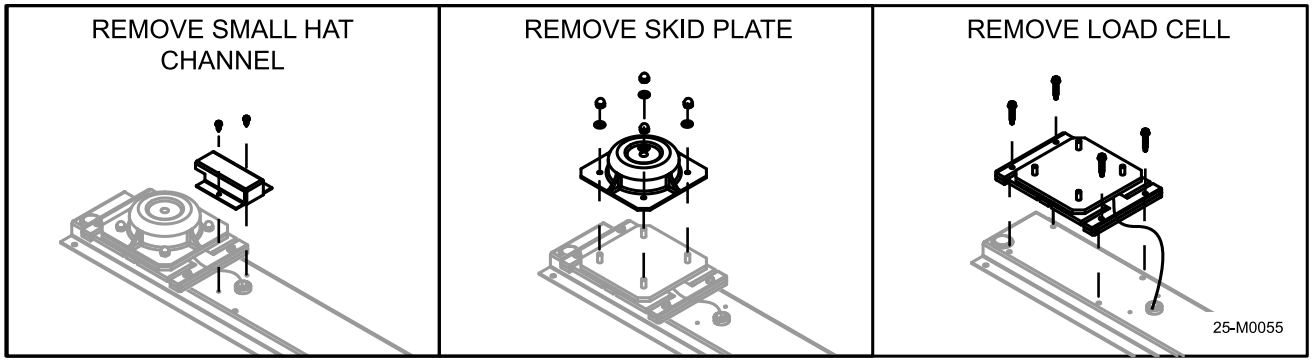


Figure 5-17

12. Replace each load cell and secure it with the screws removed in Step 11. Feed the load cell wires through the bushing on each end of the channel. Install the gray plastic skid plates and secure them with the acorn nuts and washers removed in step 10; torque the nuts to 35 in-lbs.

13. Replace the small hat channels and secure with 1/4” socket hex head screws.

14. On the rear load cell assembly, feed the load cell wires through the center bushing, then loosely tape any excess wiring to the load cell channel, leaving enough to reach the control panel: refer to Figure 5-18.

15. Secure the rear load cell to the bottom of the vend unit with the 3/8” socket hex head screws removed in Step 8.

16. Feed the rear load cell wires through the center bushing on the front load cell assembly. Install the front load cell assembly loosely with the four outside screwsleave enough space to be able to fee the load cell connectors through the hole in the corner of the unit.

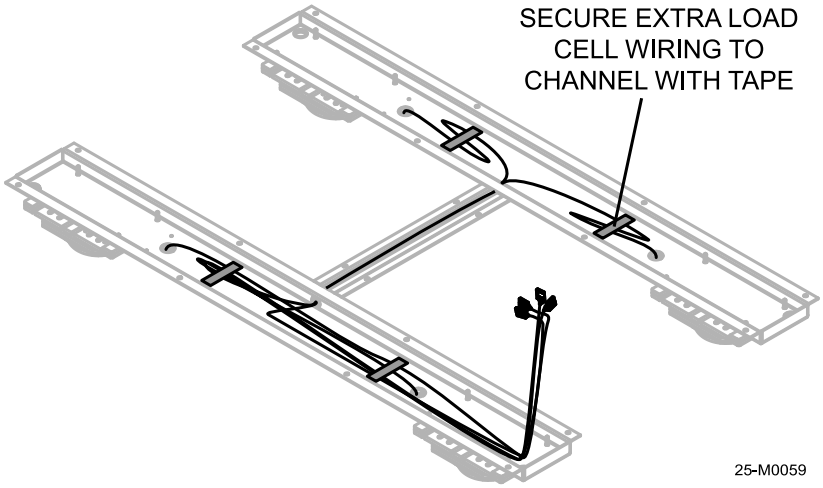


Figure 5-18

17. Using fish tape or a piece of wire, pull the load cell wires through the hole on the bottom of the unit and up to the control panel. Once the wires are pulled through, secure the load cell wires to the control panel with tape; refer to Figure 5-19. Secure any excess wire to the front load cell assembly channel with tape, making sure the wires cant be pinched or crimped. Finish Installing the front load cell assembly and then replace the center hat channel, securing it with the 1/4” socket hex head screws removed in Step 7.

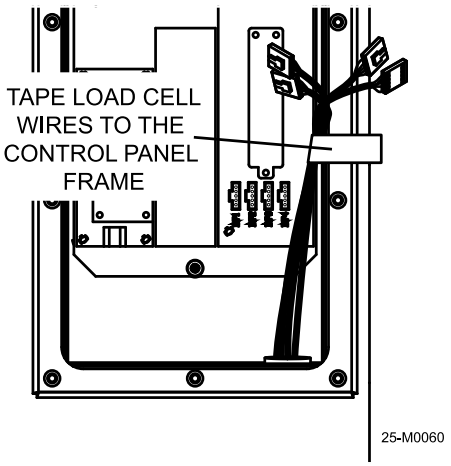


Figure 5-19

18. Lower the unit and make sure it is level. Remove the tape securing the wires to the control panel and reconnect the load cell wires to the locations shown in Figure 5-13. They do not need to be in any specific order or location.

19. Reinstall the vending face plate and secure it with the Security T-25 Torx head screws removed in step 1.

20. Verify nothing is leaning on the unit and that there are no obstructions underneath.Turn the unit power on and perform the scale calibration in Section 4.3.

Section 6 - Troubleshooting

6.1 Troubleshooting Tables

Some of the problems with your Leer unit can be solved by using the troubleshooting table. Use extreme care when diagnosing the unit if the cover on the refrigeration system is removed.

WARNING:
ELECTRIC SHOCK HAZARD. This unit operates on electrical voltages that may cause injury or death. Use extreme care when servicing the electrical components of this unit.

If a problem cannot be resolved after consulting the table call Leer technical service at **1-800-766-5337.**

Problem	Possible Cause	Action
Merchandiser not operating.	Power switch located on the controller box turned off.	Turn power switch on.
	Fuse blown / circuit breaker tripped.	Replace fuse/reset circuit breaker.
	Power cord unplugged.	Plug in power cord.
	dF showing on controller display (if equipped).	At initial start-up, units have a 2-minute delay; the controller will check to see if a defrost cycle is needed by the P2 probe temperature.
	Receptacle for power cord not working.	Check the receptacle for power with power meter.
	Improper voltage supplied to cabinet / overload of power circuit.	Remove extension cords or other equipment on the same circuit. Check receptacle voltage with power meter.
Merchandiser not getting cold but compressor is operating.	Merchandiser located in direct sunlight or ambient (room) temperature is too high from other sources (exhaust fans or similar).	Move merchandiser away from direct sunlight. Room temperature is recommended not to exceed 86ºF (30ºC), 55% RH.
	Door not closing properly.	See "Door does not close tight " and “Doors not locking" sections.
	Condenser clogged with dust.	Clean Condenser (see Maintenance Section 5).
	Refrigerant leak.	Contact a certified refrigeration technician to evaluate the unit.
Electronic control blank, flashing, or displaying incorrect characters.	Wires disconnected at back of electronic control.	Check wiring to controller.

Problem	Possible Cause	Action
Condensing unit operating for a prolonged period or continuously	Unit loaded with excessive amount of warm product.	Allow enough time for product to cool down.
	Prolonged door opening or door ajar.	See "Door does not close tight " and “Doors not locking" sections.
	Door not closing properly.	Level the unit. See "Door does not close tight " and “Doors not locking" sections.
	Condenser clogged with dust/debris.	Clean Condenser (see Maintenance Section 5).
	Evaporator coil blocked with ice or frost.	Defrost manually if required (see Maintenance Section 5).
Merchandiser cabinet temperature too high.	Electronic control set too high.	Adjust control setting.
	Poor air circulation in cabinet.	Follow instructions for product loading.
	Insufficient clearance around cabinet or ambient temperature too high.	Keep at least 3”(7.62cm) free space around all sides of the merchandiser. Room temperature is recommended not to exceed 86ºF (30ºC), 55% RH. Make sure the air flow to the compressor is not blocked.
	Condenser clogged with dust.	Clean Condenser (see Maintenance, Section 5).
Door does not close tight.	Merchandiser is not leveled.	Level the unit.
	Hinges are loose / not adjusted.	Adjust / tighten the hinge screws.
	Door gasket is out of the groove.	Check gasket condition. Adjust position or replace gasket.
	Door spring out of adjustment.	Check/adjust the door spring(s).
	Ice or frost in door opening or latches.	Check door for ice buildup or obstructions.
	Door hinge pins or bushings worn.	Check and repair door pins/bushings.
	Door electromagnets out of adjustment.	Adjust door electromagnets (see Maintenance, Section 5, 5.6 “Adjust the door electromagnets”
Doors not locking.	Emergency switch set to unlock.	Check the emergency (entrapment) switch inside the merchandiser near the light housing is set to lock.
	Failed door electromagnets.	Check for magnet operation with a screwdriver or other metal object.
	Door electromagnets out of adjustment.	Adjust door electromagnets (see Maintenance, Section 5, 5.6 “Adjust the door electromagnets”
	Interior temperature too high.	Unit must be below 30°F before checking door locks, press cancel on card reader to check internal and external temperatures.
Doors lock but have little holding force.	Door electromagnets out of adjustment.	Adjust door electromagnets (see Maintenance, Section 5, 5.6 “Adjust the door electromagnets”

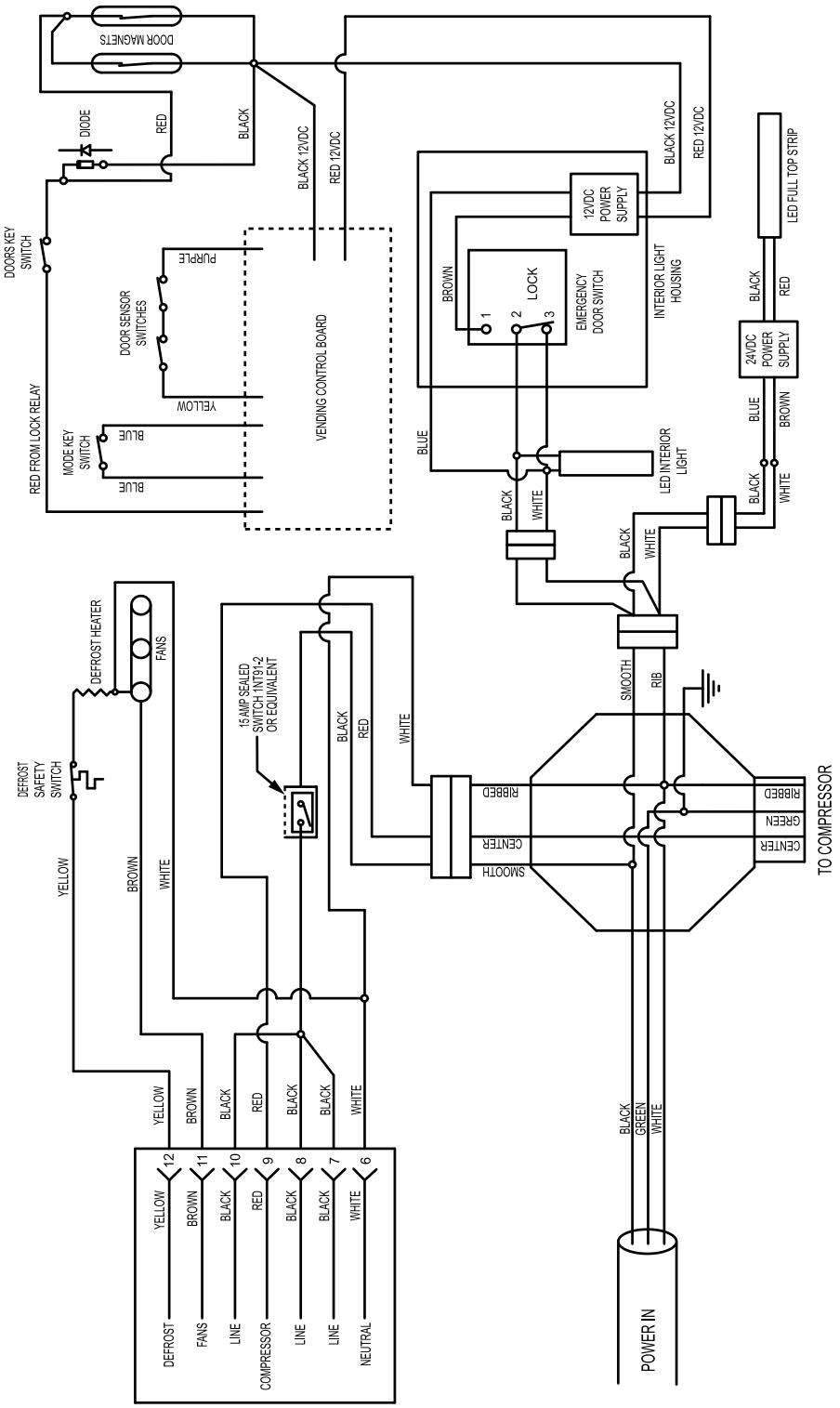
Problem	Possible Cause	Action
Excessive ice buildup Inside unit.	Unit is not leveled.	Level the unit; slight angle toward compressor is desirable.
	Door hinges are loose / not adjusted.	Adjust / tighten the hinge screws.
	Gasket is out of the groove.	Check gasket condition. Adjust position or replace gasket.
	Defrost probe not attached to the evaporator coil.	Check the location of defrost probe.
	Ambient humidity too high.	To prevent condensation, limit the amount of door openings.
	Evaporator fans not working.	Check fan wiring. Fans blocked with ice from clogged drain tube, defrost manually. Failed timer cycle, check controller programming.
	Evaporator coil blocked with ice or frost.	Check evaporator heat coil for operation (see Maintenance, Section 5). Defrost manually if required (Maintenance, Section 5).
	Evaporator drain pan hose blocked with ice or frost.	Defrost manually if required (see Maintenance, Section 5).
Electronic Display Fault Codes.	P1	Air Probe failure: The control will override the “P1” functions and cycle the compressor at 5-minute intervals, until the probe fault can be corrected.
	P2	Evaporator Probe failure: The control will override the “P2” function and operate with a timed defrost cycle, until the probe fault can be corrected.
	HA	Maximum Temperature Alarm: The cabinet air temperature has exceeded programmed temperature for a period exceeding 45 minutes. The alarm will continue to display until the cabinet temperature drops below the set maximum level of 32°F.
	LA	Minimum Temperature Alarm: The cabinet air temperature has dropped below the programmed minimum. This alarm will continue to display until the cabinet temperature rises above the minimum level.
Cabinet is noisy.	Part(s) loose.	Locate and tighten loose part(s).
	Tubing vibrating.	Ensure tubing is not in contact with other tubing or components.

Problem	Possible Cause	Action
Evaporator fan does not run.	Unit in defrost cycle.	Fans do not operate during defrost cycles.
	Fan wire disconnected.	Check wiring.
	Fans blocked by ice.	Defrost manually if required (see Maintenance, Section 5).
	Defrost probe not attached to the evaporator coil.	Check the location of defrost probe.
Unit is offline.	Merchandiser is empty of product.	Fill merchandiser with ice, check bag count.
	Merchandiser has ice but shows 0 bags on display	Adjust Tare Value to show how many bags are in the untt: refer to set up instructions "set tare value"
No cellular signal.	Low strength signal or no network available.	Press cancel to check signal strength; should be -100dbm or more. Relocate antenna or merchandiser for better signal; -90dbm is better than -100 dbm.
	Poor antenna connection.	Check antenna connection at terminal "M".
	Failed or unprogrammed SIM card.	Contact vending system account supplier.
Missed sales.	Door not closing properly.	See "Door does not close tight " and “Doors not locking" sections.
	Product weight is not consistent.	Bag weight should be +/- .5 lbs of marked weight.
Door error code (DM01)	Door is open.	Close door.
	Bad door sensor	Go to Operation, Section 4, 4.3 Testing the door locking.
Card reader will not read credit card.	Bad card reader.	Replace card reader.
Load cell error.	Damaged load cell.	Check for obvious damage to the load cell feet or cables.
	Unit is not touching the ground.	Check for obstructions under merchandiser; skid plates must be on the ground and the unit must be removed from the shipping skid.
	Load cell controller not working.	Check load cell controller for power or unplugged connections in vend box.
Unit shows more or less ice than known inventory.	Unit needs to be calibrated.	Verify unit is level and free of obstructions, then go to Operating, Section 4, Scale calibration.
		Adjust Tare Value to show how many bags are in the unit: refer to set up instructions "set tare value"
Tare WT 0 after power cycle or power failure	Vend controller battery is bad.	Check battery voltage on vend controller; should be close to 3 volts DC. See Maintenance, Section 5, 5.6, “Checking the vending controller battery.”

Problem	Possible Cause	Action
Display shows Celsius for temperatures.	Set up error on website.	Celsius or Fahrenheit is determined by weight measurement. Example: If unit is set to KG on the website it will show Celsius and KG on the display.
LED lighting strips are not working.	Light switch is off.	Check if the light switch is on.
	Faulty LED strip.	Replace the LED strip.
Interior LED lighting not working.	Faulty door light switch.	Check if the light switch operation, replace it if needed.
	Faulty LED lamp.	Replace the LED lamp.

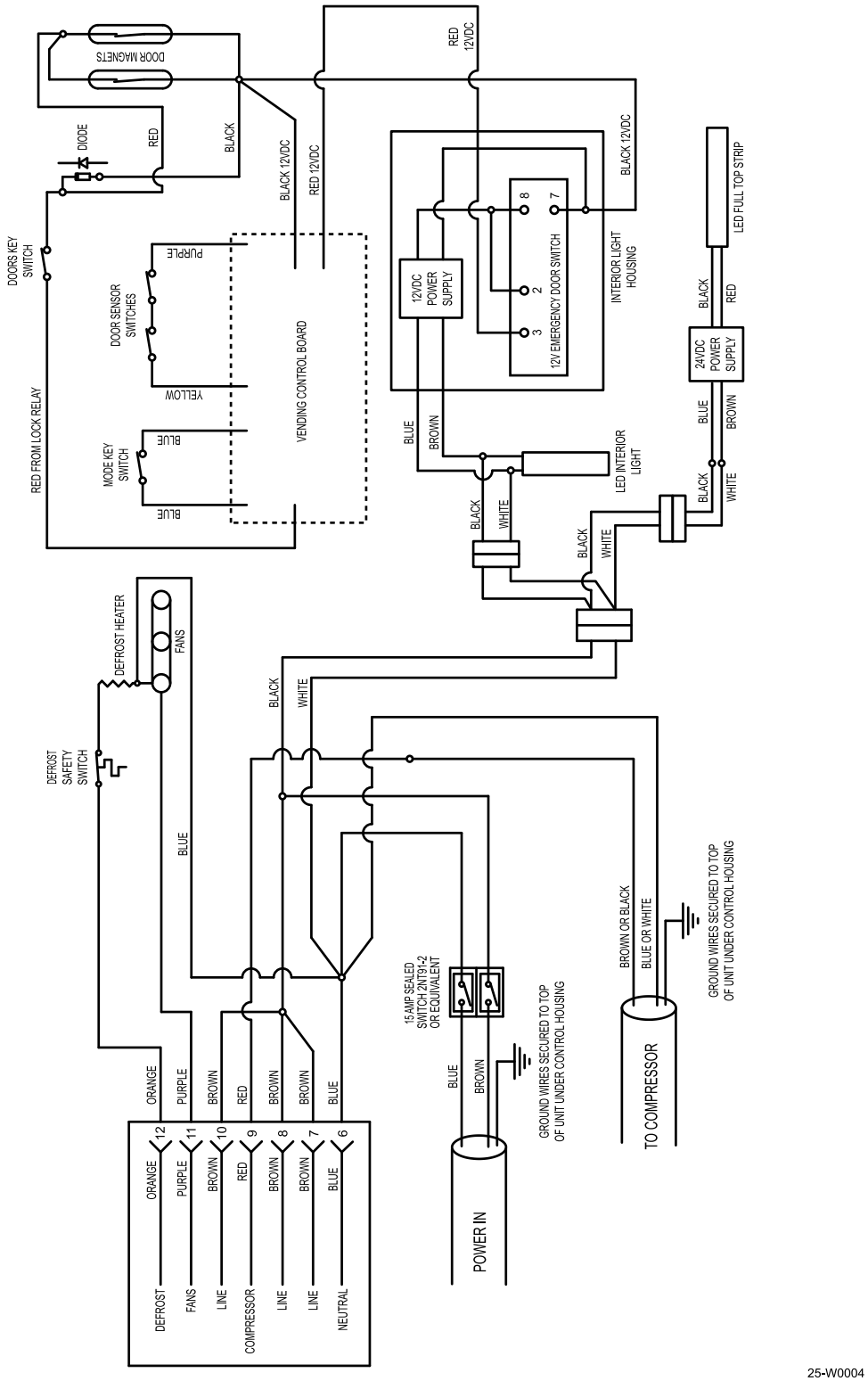
Section 7 – Wiring Diagram

7.1 115 VAC Vending Wiring Diagram



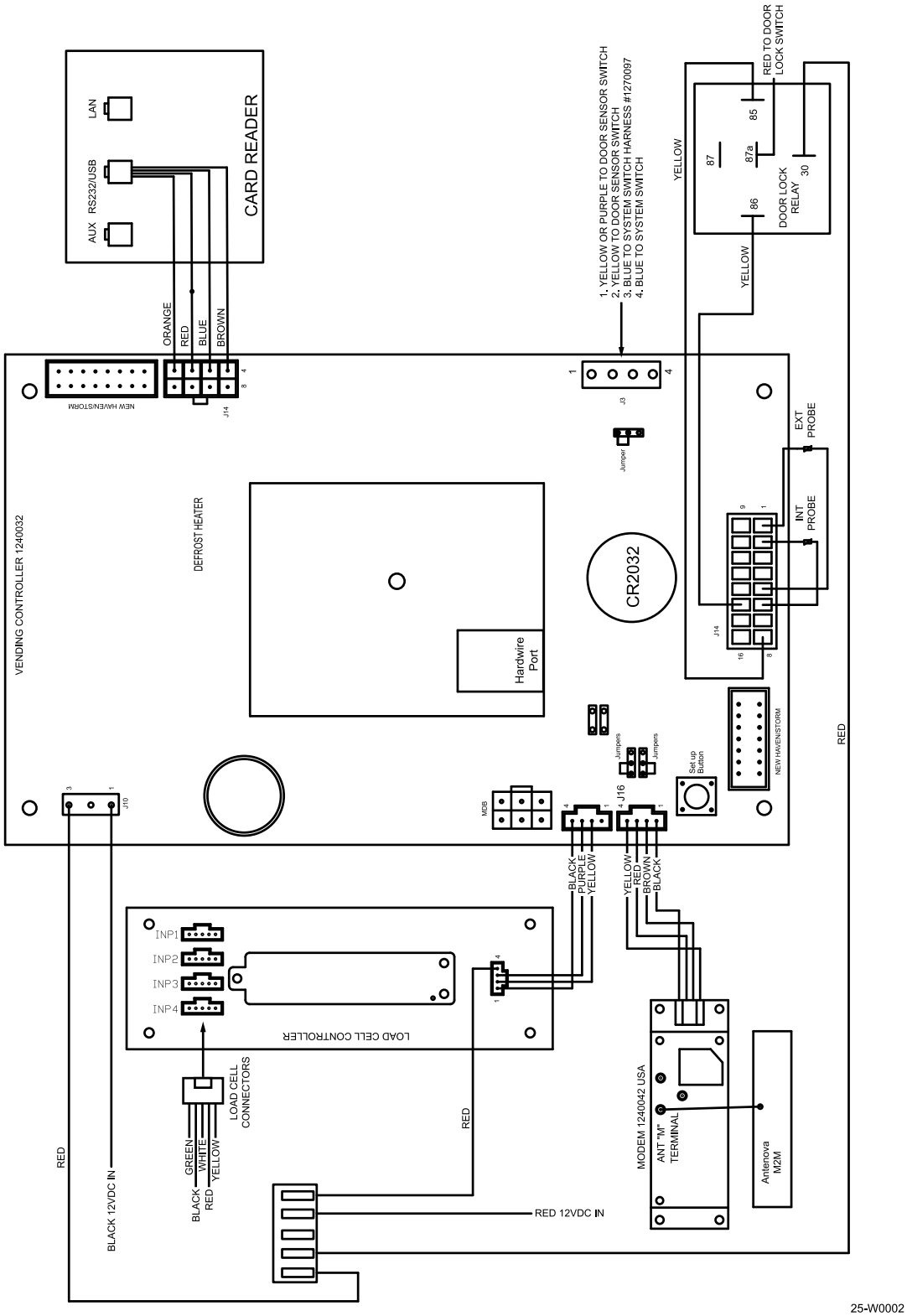
25-W0001

7.2 230 VAC Vending Wiring Diagram



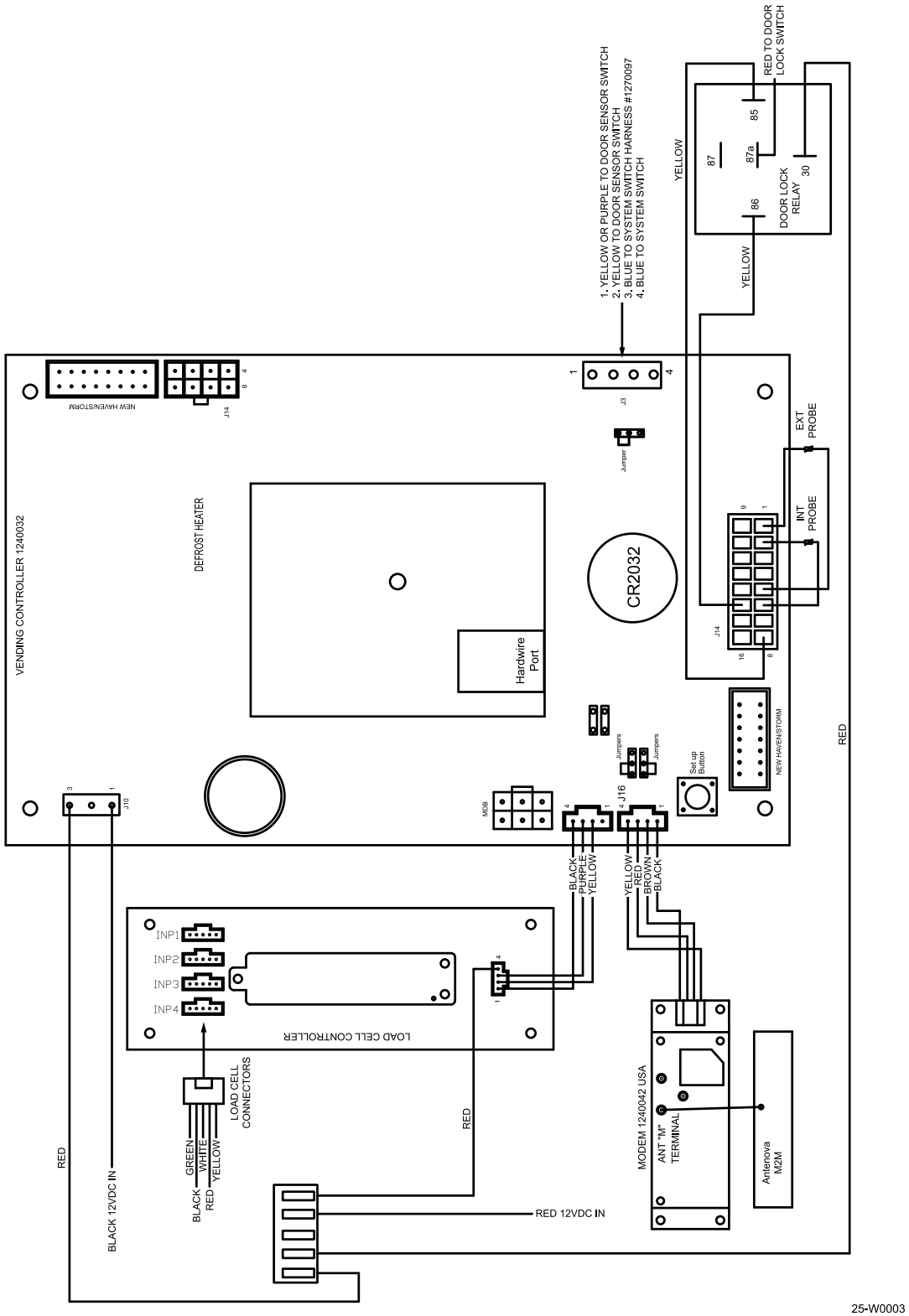
25-W0004

7.3 115 VAC Vending Control Diagram



25-W0002

7.4 230 VAC Vending Control Diagram



Warranty

WARRANTY: Leer, Inc., an Iowa corporation (**"Seller"**) warrants to the original purchaser (**"Purchaser"**) that the parts manufactured by Seller (such parts, the **"Parts"**) of the Ice Merchandiser product sold by Seller directly to Purchaser (the **"Product"**) will be free from defects in materials and workmanship under normal use and service, beginning on the date of shipment thereof to Purchaser and continuing for the applicable Warranty Period (this **"Warranty"**). The **"Warranty Period"** means (a) for the Product's compressor motor (the **"Compressor Motor"**), five (5) years, and (b) for all component Parts of the Product other than the Compressor Motor, one (1) year.

IN ORDER TO MAKE A WARRANTY CLAIM, PURCHASER MUST COMPLY WITH SELLER'S CLAIMS PROCESS AS SET FORTH AT WWW.LEERINC.COM AND PROVIDE TO SELLER THE PRODUCT MODEL NUMBER, SERIAL NUMBER, AND ITEMIZED INVOICE FOR THE WARRANTY CLAIM. Seller shall not be liable for any breach of this Warranty unless Seller is informed immediately upon the discovery of defective Part(s). The remedies set forth in this Warranty are available only with respect to Products installed in the United States or Canada. **Subject to the limitations set forth in this Warranty, Seller's sole obligation and Purchaser's sole and exclusive remedy for a defective Part or Product shall be limited to one of the following remedies, as selected by Seller in its sole discretion: (i) repair of any Part(s) that prove(s), to Seller's satisfaction, to be defective within the applicable Warranty Period, (ii) replacement of such Part(s) or the Product, or (iii) refund of the purchase price paid to Seller by the Purchaser for the Product of which such defective Part(s) are components.** Seller reserves the right to inspect defective Part(s) and may, at Seller's discretion require return, of Part(s) to Seller's factory for inspection at Purchaser's sole cost and expense. The determination as to whether any defect exists shall be made in Seller's sole judgement. A Part repaired or replaced under this Warranty is warranted only for the balance of the Warranty Period on the original Part that was repaired or replaced. All Replacement Parts will be provided by Seller to Purchaser; Purchaser will not be reimbursed by Seller for Parts Purchaser replaces from another supplier of parts. This Warranty is not assignable and shall operate only in favor of the Purchaser.

LIMITATIONS ON LABOR COVERAGE: In the event of any claim for breach of this Warranty for which Seller selects repair or replacement of the Part as the remedy, Seller shall be responsible for labor charges for repair or replacement of any defective Part(s) or defective assembly of Part(s) only for defects reported to Seller within the first ninety (90) days of the Warranty Period. **TO BE ELIGIBLE FOR SUCH REIMBURSEMENT: ALL LABOR CHARGES MUST BE PERFORMED BY AN HVAC REPAIR COMPANY SELECTED BY PURCHASER THAT IS LICENSED UNDER APPLICABLE LAWS, AND ALL LABOR CHARGES SHALL BE AUTHORIZED OR APPROVED BY SELLER IN WRITING PRIOR TO THE REPAIR OR REPLACEMENT OF PART(S).** In all other events, Seller shall not be responsible for any labor charges. Labor charges shall only include standard straight time labor hours at the site of Product installation, and shall exclude charges for travel time, mileage, or other premium charges.

WARRANTY EXCLUSIONS: The remedies under this Warranty are not available with respect to any Product, or any Part thereof, which may have been subject to any damage in transit, damage caused by normal wear and tear, accident, negligence, abuse or misuse, unauthorized alteration or repair, acts of nature or failure to follow any of Seller's manuals or instructions, if in Seller's sole judgement, such act, omission or event has detrimentally affected the physical condition, use or operating qualities of the Product.

DISCLAIMER OF IMPLIED WARRANTIES AND LIMITATIONS ON LIABILITY: THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES; SELLER MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, BY REASON OF LAW, STATUTE OR OTHERWISE, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE AND ANY WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE, AND ALL IMPLIED WARRANTIES ARE HEREBY DISCLAIMED. SELLER SHALL NOT BE LIABLE, WHETHER BASED IN CONTRACT, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY), STATUTE OR OTHER LEGAL THEORY, FOR ANY SPECIAL, INDIRECT, PUNITIVE, INCIDENTAL OR CONSEQUENTIAL DAMAGES WHATSOEVER, INCLUDING FOR LOSS OF GOODS, MERCHANDISE OR OTHER PROPERTY, OR LOSS OF PROFITS, RESULTING FROM PRODUCT OR PART DEFECTS OR OTHERWISE, REGARDLESS OF WHETHER SUCH DAMAGES WERE FORESEEABLE AND WHETHER OR NOT SELLER WAS ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO EVENT SHALL SELLER'S LIABILITY UNDER ANY CIRCUMSTANCES FOR ANY BREACH OF CONTRACT OR FOR ANY OTHER CLAIM BY PURCHASER AGAINST SELLER EXCEED THE PRICE OF THE PRODUCTS SOLD BY SELLER WITH RESPECT TO WHICH SUCH CLAIM ARISES.

The invalidity or unenforceability of any provision of this warranty shall not affect the validity or enforceability of any other provision. If any provision of this warranty is determined to be invalid or otherwise unenforceable, then this warranty shall be construed in accordance with the remaining terms as if the invalid or unenforceable provision was not contained therein. This Warranty is governed by the laws of the province of Ontario and any federal laws applicable therein, without regard to conflict of laws principles.

For Quebec-based Purchasers Only: The parties hereto have required that this Agreement, and all related documents, be drafted in English, at their express wish. A French version of this Agreement has been provided to the customer or adhering party. *Les parties aux présentes ont requis que la présente convention, ainsi que tous les documents qui s'y rattachent, soient rédigés en anglais, selon leur volonté expresse. Une version française de la présente convention a été remise au consommateur ou à l'adhérent.*