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ICE MERCHANDISER
INSTALLATION, OPERATION, AND SERVICE
MANUAL
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Material and product improvement is a continuous commitment at Leer. This manual is subject to modification or
I. PACKAGING

Prior to installation, the outer packaging on the merchandiser will need to be removed. The majority of the packaging materials can be recycled and disposed of in an environmentally friendly manner. The wooden skid is secured to the underside of merchandiser with hex-headed screws and will require the use of a 3/8” hex-socket for screw removal. Glass door models are shipped with door support brackets installed between the merchandiser's door opening(s) and the bottom rail of the door. These support brackets need to be removed prior to operation of the merchandiser. Failure to remove the brackets will affect the seal of the door gasket to the cabinet face.

Placing merchandiser: When placing the merchandiser, there should be a minimum of 3 inches of air space allowed from all surfaces of the cabinet and any surrounding structures. This air space allows for air flow over the surface of the cabinet, thus reducing condensation and aid in the drying of these surfaces. This will reduce stress on the painted surface of the cabinet. On outdoor auto-defrost models, the 3 inch space behind the merchandiser will also help ensure that the evaporator drain tube, which exits the back wall, is not being restricted or blocked during the defrost cycle.

II. STORAGE AND TRANSPORTATION

The merchandiser should be stored and transported in an upright position. If the merchandiser is tilted beyond 45 degrees of vertical, oil may drain from the compressor casing. Should this occur, it is recommended that the merchandiser be returned to a vertical position for a period of time that is comparable to the time spent tilted. This will allow oil that may have migrated out of the casing an opportunity to drain back to the compressor prior to energizing.

Do Not stack merchandisers on top of one another due to risk of falling. Falling merchandisers could result in damaged units or serious injuries. It is recommended to use warehouse racking design to accommodate the weight of the merchandisers and prevent falling.

III. INSTALLATION

Attention: During the delivery of the merchandiser, the connectors on the electronic control wire harness may become loose. After the merchandiser is delivered to the installation site, verify that the electronic control wire harness connectors are properly and securely installed. If needed, apply a small amount of pressure to fully seat the connectors.

Merchandiser leveling: The merchandiser installation location should have a solid, level base. If the merchandiser is exhibiting a slight forward lean, the front of the cabinet should be blocked to bring the cabinet to a level position. A forward lean of the cabinet could inadvertently allow the product inside the cabinet to shift forward and interfere with the closure of the door(s). On upright cabinet models, a forward lean may also counter-act the spring tension in the hinges, which may affect the proper closing and seal of the door(s). On auto-defrost models, a forward lean may affect proper draining of the unit cooler assembly during the defrost cycle.

- Leveling Kit No. 1050019, which is compatible for use on most cabinet models, is available through the manufacturer.

Contact the Merchandiser Sales Department at Leer, Inc. for additional information.
Electrical: Locate the merchandiser so that the main power cord is within reach of an electrical outlet. The merchandiser comes equipped with an 8 to 10 foot power cord terminated in a Type B North American, grounded, 3-prong plug. The electrical connection should be made to a Type B socket. If a 3-prong grounded socket is not available, a 3-prong adapter may be temporarily used to connect to a Type A 2-prong socket so long as the socket housing is grounded (see Figure 1). Do not defeat or remove the grounding prong on the merchandiser’s power cord.

Figure 1: Ground Adapter

The electrical voltage and frequency being supplied to the merchandiser must coincide with the ratings noted on the merchandiser’s serial data plate (for most units sold in North America, this would be 115 Volt, 60 Hz). This data plate is typically located at the upper left hand corner of the merchandiser’s interior.

The electrical service connections are compliant with national electric code and local codes that may apply. Electrical power to the merchandiser should be supplied through a dedicated service that is controlled through a fuse or circuit breaker. Information available from the condensing unit data plate will indicate the maximum fuse/circuit breaker size required for the specific merchandiser model.

Note: Operating more than one appliance on the same circuit may result in voltage fluctuations when both appliances are operating simultaneously. This voltage fluctuation may lead to premature compressor or electronic control failure.

It is strongly recommended that extension cords are not used in supplying power to the merchandiser. An improperly sized extension cord may cause a drop in voltage feeding into the merchandiser. Voltage fluctuations exceeding +/- 5% will place added strain on the merchandiser’s refrigeration system, which may result in a pre-mature compressor or electronic control failure. If the use of an extension cord is unavoidable, then an extension cord with 12 gauge wire minimum and a length not exceeding 25 feet is recommended. If an extension cord is utilized, regardless of its sizing, then it is recommended that the merchandiser be measured for voltage drop during the compressor start.

- Testing of the merchandiser’s electrical or refrigeration system should be performed by a qualified technician.

If voltage drop is detected, contact Leer Service for additional instructions.

Condensate evaporator: Indoor auto-defrost models are supplied with a condensate evaporator heater assembly which is packaged with instructions and shipped inside the merchandiser. It will require simple installation by the consumer (see Figure 2). A separate copy of this instruction sheet is supplied with the condensate evaporator assembly. The condensate evaporator assembly contains a drip pan to collect water generated by the merchandiser’s defrost cycle and a heat element to evaporate the water. Once energized, the heat element in the condensate evaporator assembly is continuously generating heat. The merchandiser is to be placed so that there is at least 1 inch of air space between the back surface of the condensate evaporator housing and any wall surface behind the cabinet which allows for heat dissipation away from the surface of the wall. The main power cord should also be routed to avoid pinching.
Note: Do not operate an indoor auto-defrost merchandiser without having a condensate evaporator assembly installed over the evaporator drain tube exiting the back wall of the cabinet. Failure to install this assembly would result in water being generated during the defrost cycle which will drain directly onto the floor of the unit. This may result in water damage to the floor and create a hazardous slip condition in the area surrounding the merchandiser.

Temperature Controls: Merchandisers are currently available with either mechanical controls (optional) or an electronic control (standard).

Mechanical Controls: Thermostat
This is the classic thermostat where the engagement and disengagement of the thermostat is controlled by the expansion and contraction of gas within a sensing tube. As the air in the cabinet warms, the gas in the tube expands until the switch in the thermostat closes and re-energizes the refrigeration system. This will then cool the cabinet air and the sensing tube until the cabinet reaches the control’s pre-set cut-out temperature. Merchandisers with mechanical thermostats are factory set to operate at a cut-out temperature of 18 degrees F +/- 2 deg. The thermostat has an adjustment knob that allows a limited adjustment range. Rotating the adjustment knob clockwise will lower the cabinet temperature while a counter-clockwise rotation will raise the cabinet temperature. Rotating the adjustment knob fully counter-clockwise will shut off power completely to the merchandiser’s condensing unit. The thermostat has a pre-set differential of 7 degrees F, which is not adjustable.

On cold wall (CW) cabinet models, the thermostat is located on top of the cabinet under the cover housing the condensing unit. The sensor tube inserts through the ceiling of the cabinet and exits near the interior back wall.

On automatic defrost (AD) cabinet models, the thermostat is housed inside the unit cooler assembly that is mounted to the interior ceiling of the cabinet.

Mechanical Controls: Defrost Timer
The defrost timer is located under the condensing unit housing. The timer will engage the merchandiser’s defrost cycle once every 4 hours for a duration of 16 minutes. The standard timer, supplied with most merchandisers, is pre-set and non-adjustable. The timer may be manually advanced into defrost by rotating the advancement knob in a clock-wise direction. The knob is located on the rear of the timer casing. Manual
advancement into the defrost mode will re-set the next controlled defrost cycle to take place in 4 hours.

The automatic defrost function is available on cabinet models designated as “auto-defrost” (AD). The cold wall (CW) cabinet models do not have an electronically controlled defrost and require manual de-icing of the cabinet’s interior walls.

Electronic Controls: Digital Display

Operating Mode Display:
- Snowflake “ON” – compressor enabled in run cycle; control displays current cabinet temperature.
- Snowflake “Flashing” – anti short cycle delay enabled to protect the compressor from trying to start too frequently.
- Melting Snowflake “ON” – defrost in progress, control displays the letters “DE”
- To view the control’s programmed “Set Point” (cut-out temperature): press and release the “Set Key.”
- To initiate a manual defrost cycle: press and hold the “Manual Defrost Key” for more than 2 seconds.

Note: Manual Defrost will not initiate if the cabinet temperature is above 40 degrees F

The electronic control combines the functions of both the mechanical thermostat and defrost timer into a single control. The control also offers the consumer the capability of monitoring the operational status of the merchandiser via the icon and digital temperature display (located on the face of the control). The controls have been programmed by the manufacturer to operate the merchandiser within the design parameters of the refrigeration system. The set-point (cut-out) for these controls has been factory programmed for 16 degrees F, with a differential of 8 degrees F. Should the user desire to alter the Set-Point, the new set-points should not exceed +/-4 degrees of the original factory setting. It is not recommended to alter any of the parameter programming in the controls without first consulting the manufacturer. There are two separate electronic controls available based upon the cabinet type; Cold Wall or Auto-Defrost.

Cold Wall Control: The CW control is located on under the condensing unit housing. The control has a single thermal-couple probe wire used to monitor the air temperature inside the cabinet. The probe enters through the top of the cabinet and is secured at a specific location where the back wall and ceiling of the interior meet. The control will display the air temperature in the cabinet at the probe’s location. Although the control has a Manual Defrost Key, this action is non-functional on the CW cabinet models (see the defrost instructions for CW cabinet models in the “MAINTENANCE” section of this manual). The control will power up when the merchandiser is plugged into its’ power supply. There will be a few second delay between the control powering up and the condensing unit energizing. Certain cabinet models may have an ON/OFF power switch installed in the wall of the control housing. If the control should fail to energize when plugged in, check to see that the toggle switch is in the ON position.

Auto-Defrost Control: The AD control is also located on top of the merchandise and the control contains two thermal-couple probe wires. Both probe wires are routed through the cabinet’s suction line hole and into the unit cooler assembly, which is mounted to the interior ceiling of the cabinet. The Air Sensing Probe (“P1”) routes through the unit cooler and has its’ sensing bulb secured to the outer, left-hand wall of the unit cooler. Probe “P1” monitors the air temperature in the merchandiser at that location. During the normal operation of the control, the digital display will show the cabinet temperature at the probe “P1” location. Probe “P2” is inserted into the finned section of the evaporator coil, near the top of the unit cooler assembly. This probe monitors the temperature of the evaporator coil during the defrost cycle. The control is factory
IV. OPERATION Cont’d.

programmed to engage in a defrost cycle in 4 hour intervals. The defrost cycle is timed to last for a total of 16 minutes, unless the temperature at “P2” reaches 50 degrees F prior to the end of the timed cycle. Should that occur, the temperature at “P2” will override and end the defrost cycle. During the defrost cycle, the control will display the letters “DE” along with the melting snowflake icon.

Possible Displayed Alarm 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 maximums for a period exceeding 15 minutes. The alarm will continue to display until the cabinet temperature drops below maximum levels.

“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.

Note: Should a “P1” or “P2” alarm occur, check the probe wire connections to the control prior to replacing the probe wire.

Cold Wall Models: If the bagged ice blocks off air flow from the front of the cabinet to the control’s air probe, the control may not respond quickly enough to maintain proper cabinet temperature. Allow a minimum of 6 inches clearance between the top of the ice stack and the ceiling of the cabinet interior. This distance will allow a pathway for warmer air entering the cabinet during door openings to migrate to the sensing bulb on the probe.

Auto-Defrost Models: Avoid stacking ice above the top edge of the air ducts that are installed on the walls of the cabinet interior. Blocking off these air ducts may restrict the even distribution of cold air throughout the cabinet which may result in warm spots developing within the cabinet. Also, do not stack ice high enough to block off the evaporator fans in the unit cooler assembly. The evaporator fans are intended to pull warm air entering the cabinet into the unit cooler and then push that warm air across the surface of the evaporator coil. This process removes the heat prior to distributing the air into the cabinet.

V. MAINTENANCE

Cleaning the Merchandiser: The merchandiser should be cleaned annually. In corrosive environments such as coastal regions and areas where deicing chemicals and road salts are used, more frequent cleaning is recommended. The exterior of the merchandiser can typically be cleaned with the use of detergents diluted in warm water followed with a tap water rinse. The exterior paint is capable of withstanding the use of 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 merchandiser. If cleaning the interior of the merchandiser, the use of detergents with strong odors (i.e. citrus based cleaners), abrasive cleaners containing chlorine bleach, and any form of solvent based cleaners are not recommended. They may leave objectionable odors inside the cabinet which may be absorbed by the ice being stored in the merchandiser.

Cleaning Door Gaskets: Door gaskets on outdoor cabinet models may mildew and stiffen over time. The gasket is made of a soft, flexible PVC and can be cleaned using most kitchen and bath cleaners designed for mildew removal. Review manufacturer
information and instructions on any cleaning agent prior to use to determine the cleaner’s compatibility with the surface being cleaned.

**Cleaning Condenser Coils:** The merchandiser is manufactured utilizing an air-cooled condensing unit. As a result, dust and debris may be drawn into the finned surface of the condenser coil. Over time, the build-up of foreign materials in the coil will decrease the coil’s ability to remove heat from the refrigerant being pumped through the coil. The lack of cooled refrigerant will eventually lead to elevated cabinet temperatures, an increase in system pressures and temperatures and ultimately a compressor failure. It is recommended to inspect and clean the condenser coil and fan blade every 3 month intervals. These intervals will often vary depending upon the environment in which the merchandiser operates. A preventive maintenance plan should be developed to aid in determining realistic cleaning intervals.

There are a variety of methods available for cleaning the condenser coils. The simplest methods would involve the use of a vacuum cleaner to suck the debris from the coil, compressed air to blow the dust from the coil or a combination of both methods. Keep in mind that the debris is being drawn into the coil by the condenser fan and the debris should be removed in the opposite direction. If a vacuum is used, the debris should be drawn out of the coil from the outside surface. If compressed air is used, the debris should be blown out from the inside surface of the coil. If compressed air is used, there may be a cloud of dust released into the air surrounding the merchandiser. The dust plume can be reduced by using a vacuum cleaner on the outer surface of the coil as the compressed air is being applied to the inner surface. Another method of trapping the dust would be to drape a wet towel over the outer surface as the compressed air is being applied. The service person will need to determine the cleaning method that best suits the merchandiser’s location along with wearing the proper protective equipment (i.e. safety glasses and a dust mask) when performing coil cleanings.

**Note:** It is not recommended that any type of filter media be placed in front of the condenser coil to trap dust. Filter testing has proven to create enough restriction of air flow to reduce the efficiency of the coil’s heat exchange.

While the compressor cover is removed for the condenser cleaning, the service person should use the opportunity to visually check any wiring for cracked or damaged insulation. Any exposed copper wire should be replaced or temporarily repaired until replacement parts can be obtained.

**Note:** Replace damaged wire harnesses and power cords with OEM supplied parts only.

**Defrosting the Merchandiser:** The function of the evaporator coil is to remove heat from the air within the merchandiser and to remove varying amounts of humidity. During the refrigeration process, the humidity may collect and freeze on the surface of the evaporator. The amount of moisture collected and the rate that it accumulates will vary depending upon ambient air conditions, door openings, door seal quality, and the “wetness” of the product being loaded into the merchandiser. As ice builds up on the surface of the evaporator’s tubing, it will act as an insulator between the air in the cabinet and the surface of the tubing. Eventually the ice build-up will need to be removed or it will decrease the efficiency of the refrigeration system. The means and methods of the ice removal are dependent upon whether the merchandiser is a Cold Wall model or an Auto-Defrost model.

**Cold Wall Defrost Methods:** The evaporator tubing for the cold wall cabinet models are located within the walls of the cabinet. After the cold wall merchandiser is energized, a visual inspection of the cabinet’s interior will reveal a serpentine frost pattern developing on the ceiling and walls. This frost pattern represents the configuration of the evaporator tubing as it’s attached to the inside surface of the cabinet. As humidity enters the cabinet, it will collect and accumulate along this frost-line pattern. As the frost-line expands and builds in thickness, it will slow the heat transfer between the cabinet walls and the evaporator tubing. The cold wall cabinet models do not have
V. MAINTENANCE cont’d.

the design capability to self-defrost. In order to defrost the cold wall models, product will need to be emptied from the cabinet and the power to the cabinet disconnected. Defrosting requires the entire interior surface of the cabinet to be warmed above freezing in order to melt and remove the build-up of ice from the interior surfaces.

Power to the merchandiser can be turned off by merely unplugging the cabinet from its power source. If the merchandiser is equipped with a mechanical thermostat, power can also be turned off by rotating the temperature adjustment knob to its full counter-clockwise position. After the defrost operation is complete, return the knob to its normal position to re-energize the condensing unit. If the cold wall cabinet has an electronic control, power can also be turned off by use of the ON/OFF toggle switch located on the control box of certain cabinet models. If the toggle switch is not present on the control box, the only means of disconnecting power is to unplug the main power cord at the power source. Although the electronic control on the CW merchandiser has a defrost key on its display face, this feature does not function with the CW cabinet design and will not switch off power if pressed. With the merchandiser de-energized, the defrost process can be expedited with the addition of hot air being forced through the cabinet’s door opening(s) with the use of a small space heater or a similar item. As the ice build-up softens, a plastic ice scraper may be utilized to aid in the removal of ice from interior of the cabinet. If possible, avoid the use of metal ice scrapers, ice picks, or hammers as these tools may inadvertently penetrate through the wall of the cabinet, puncture the evaporator tube, and cause irreparable damage.

A floor drain is present in most merchandiser models. For outdoor models, the floor drain plug can be removed to allow water drainage. If draining to the ground is not desirable or if the merchandiser is located indoors, the water may be removed with the use of a wet-vac and disposed of. It is suggested that some of the time allocated to defrost the cold wall cabinet may be utilized for the cleaning of the condenser coil as well as inspecting the condition of wiring insulation, door gaskets, and spring-loaded hinges.

Auto-Defrost Methods: Auto-Defrost cabinet models are equipped to be self-defrosting and are designed to automatically enter into defrost mode once every four hours. During the defrost cycle, the power to the refrigeration system will be automatically re-directed to the defrost circuit. This will shut down power to the condensing unit and evaporator fan motors and also send power to a heat element that is attached to the surface of the evaporator coil. The heat generated by the element will melt the ice build-up on the evaporator coil and the resulting melt water will drain through a tube out of the back wall of the merchandiser.

On outdoor cabinet models, the melt water will exit the drain tube directly to the ground. On indoor cabinet models, the consumer needs to install the condensate evaporator heater assembly (described in the INSTALLATION section of this manual) onto the exterior back wall of the cabinet. The melt water from the defrost cycle will drain into a catch pan where it will then be heated to the point of evaporation. The function of the condensate evaporator’s heat element should be checked routinely. Failure of the element could result in an over-flow condition for the assembly’s drain pan. A simple check of the heater would be a touch test of the surface temperature of the assembly’s housing. The condensate evaporator’s heat element is energized continuously so the surface of the housing should always be hot to the touch. If testing the heat element with a meter, the element can be unplugged from its’ power source and a resistance reading can be taken through the plug’s bladed terminals. The condensate heater is rated to generate 125 watts of power, which translates to approximately 106 ohms of resistance.

Auto-Defrost Mechanical Timer: The AD merchandiser may come equipped with a mechanical timer (as described in the OPERATION section of this manual). The timer is factory set for a 16 minute defrost cycle to occur at 4 hour intervals. During its’ run-cycle, the timer supplies power to the thermostat, condensing unit, and evaporator fan motors. During the defrost cycle, the timer switches power from the run-circuit to the defrost-circuit and energizes the defrost heater. The AD mechanical timer may be manually advanced to a defrost mode by rotating the advancement knob (located on the back of the timer) in a clockwise direction until the defrost switch engages. The
merchandiser maintenance:

The merchandisers are largely available for two applications 1) indoor use and 2) outdoor use. Most indoor models are described as “glass door cabinets,” while the outdoor versions are referred to as “solid door cabinets.”

Glass Door Models: The glass door is constructed with a non-heated, triple-pane glass-pack, with both inner and outer panes being tempered. The doors are intended for use in a controlled environment. To avoid possible condensation on the outer surface of the door, case temperature in the merchandiser should be maintained near its’ designed set-point of 16 degrees F +/- 4 degrees and ambient dew-points around the cabinet location should be kept below 60 degrees F. Any household glass cleaner can be used to clean the surface of the door. The glass door’s gasket is a rubber bellows-style magnetic gasket. The gasket should be inspected for possible damage or a poor seal to the cabinet surface on a regular basis. If damage has occurred to the gasket, it may allow outside air to penetrate into the cabinet and the gasket should be replaced. The replacement gasket has an insert dart that installs into a retaining slot in the door frame. The gasket can be started in-place with simple hand pressure, followed with mild impact pressure applied with a dead-blow hammer to ensure that the legs of the dart penetrate fully into the slot. Always set the gasket at the 4-corners of the door first to reduce stretching the gasket during replacement. If the door gasket appears to be in good condition but is failing to seal to the surface of the cabinet, both the spring-load tension and adjustment of the hinges should be checked.

A simple test of the spring-load tension is to open the door just enough to insert two fingers between the surface of the cabinet and the handle side of the door. When the fingers are withdrawn, there should be enough tension set on the hinge spring-loads to slowly move the door to a closed position. If the door does not move from this two-finger location, it’s likely that either the spring-load requires re-tensioning or lubrication. If the door moves part way from the two-finger location but stops short of the cabinet, the compression of the gasket along the hinge side of the door should be checked. If there is too much compression, the door will bind when closed and should have its hinge-mount location checked and possibly adjusted. Removing the hinge covers will expose the spring-loads for tension adjustment or removal. Removal of the spring-load ...
V. MAINTENANCE cont’d.

will expose the hinge-adjustment plate and mounting screws should hinge adjustment be required. See Figure 3 for instruction regarding spring-load installation and adjustment for the Kason Model 220 Edge-Mount Hinge.

Solid Door Models: Cabinet models designed for outdoor use will have a metal clad door that has been insulated with the same urethane foam insulation as the cabinet. The exterior metal is stucco embossed to hide minor impacts and is coated with fluorocarbon paint system. This paint system was designed to withstand years of outdoor exposure. For routine cleaning of the door’s exterior surface, a mild detergent diluted in warm water should be adequate. Some consumers wish to utilize the door’s surface to apply personalized or point-of-sale decaling. Both the stucco embossed and painted surface may hinder that application. The following can be followed to apply decals to the surface of stucco and embossed doors.

Decaling Recommendations:

a) Use a decal with a 2 mil cast vinyl substrate. Cast vinyl contains less memory than a calendared vinyl or a polyester substrate and will conform to the embossed surface with the least amount of stress on the decal’s adhesive.

b) The decal’s adhesive should have a minimum peel-strength rating of 80 oz./inch.

c) Clean the surface of the door with isopropyl alcohol and either air dry or dry with a clean cloth.

d) Heating the surface of the door immediately before applying the decal will aid the adhesive bond of the decal. Never apply a decal to a surface that is colder than 50 degrees F.

e) Use a soft roller or plastic squeegee to apply the decal and press it into the embossed surface of the metal. Applying a small amount of heat to the surface of the decal will aid in this process.

f) A recommended decal substrate is “Arlon DPF 8000 – Cast Laminate”*

*Recommendation based on application testing performed by “AllOver Media.” Test results of the “Arlon DPF 8000 Laminate” are available upon request to the Customer Service Dept. at Leer, Inc.

*AllOver Media is an independent graphics company and is not directly affiliated with Leer, Inc. Examples of their graphic applications can be viewed on their web-site at www.allovermedia.com.

Door Gaskets and Hardware: Routine inspection of the door gasket seal and the action of the door’s hinges are recommended. The upright door (measuring 27” x 46”) utilizes the same Kason Model 220 hinge as previously mentioned in the “Glass Door Models” section of this manual. The slant door (measuring 27” x 27”) utilizes a Kason Model 211 hinge which is not spring-loaded. Both doors have the same gasket profile, which has a barbed dart that inserts into a slot opening in the surface of the door frame. See Figure 4 for instructions on solid door gasket replacement. Damaged or torn gaskets may allow infiltration of warm, moist air into the merchandiser and should be replaced.
Instructions:
Solid Door Magnetic Gasket Replacement

1) Position solid door on a flat non-abrasive surface, exterior side down.
2) Remove old gasket by grasping firmly at corners and pulling away from door frame extrusion.
3) Inspect the extruded slot to ensure there are no particles to interfere with new gasket installation.
4) Align new gasket with door corners and use thumb to press into frame extrusion.
5) Start at one corner of the frame and begin pressing the new gasket into the slot. Using a non-abrasive tool with a blunt end (hammer) works best for this application. Apply downward pressure while moving along perimeter of frame. Excessive pressure may stretch the gasket and cause bulging at corners.

Figure 4: Solid Door Gasket Replacement

Note: Maintenance and repair of the electrical and refrigeration systems should only be performed by trained and qualified personnel.

CAUTION
RISK OF ELECTRIC SHOCK, DISCONNECT POWER BEFORE SERVICING OR CLEANING UNIT.
VI. Cold Wall Wiring Diagram – Electronic Control

VII. Auto-Defrost Wiring Diagram – Electronic Control
## VIII. Cold Wall Trouble Shooting Table – Electronic Control

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### IX. Auto-Defrost Trouble Shooting Table – Electronic Control

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<th>Potential Faults</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condensing unit fan motor running?</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>• Broken fan blade</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Possible dirty condenser</td>
</tr>
<tr>
<td>Ice Melting</td>
<td></td>
<td></td>
<td></td>
<td>• Defective evaporator fan motor</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Defective wiring to evaporator fan motor(s)</td>
</tr>
<tr>
<td>Compressor functioning?</td>
<td>No</td>
<td></td>
<td></td>
<td>• Defective relay, overload, capacitor, compressor, or component wiring</td>
</tr>
<tr>
<td>Compressor functioning: ice build-up on compressor coil?</td>
<td>Yes</td>
<td></td>
<td></td>
<td>• Evaporator hose obstructed or kinked</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Defective wiring in defrost circuit</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Possible defective defrost heat, circuit, or controller</td>
</tr>
<tr>
<td>Compressor functioning: no ice build-up on compressor coil?</td>
<td>Yes</td>
<td></td>
<td></td>
<td>• Incorrect refrigerant</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Wrong or low voltage</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Impurities in refrigerant charge</td>
</tr>
<tr>
<td>Interior light functioning?</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>• Defective controller wiring</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Defective evaporator fan wiring</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Defective bulb</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Defective controller wiring</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Defective evaporator fan wiring</td>
</tr>
<tr>
<td>Condensing unit fan and compressor running when plugged into substitute power source</td>
<td>No</td>
<td></td>
<td></td>
<td>• Defective motor</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Defective wiring</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Defective controller</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Defective wiring in circuit</td>
</tr>
</tbody>
</table>
X. Cold Wall Wiring Diagram – Mechanical Control

XI. Auto-Defrost Wiring Diagram – Mechanical Control
### Cold Wall Trouble-Shooting Table – Mechanical Control

<table>
<thead>
<tr>
<th>Problem</th>
<th>Area to Check</th>
<th>Potential Faults</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cabinet is not maintaining temperature</td>
<td>Condensing unit fan motor running?</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yes</td>
</tr>
</tbody>
</table>

- Low voltage on start up
- Fault connection to compressor windings
- Thermostat adjustment knob is set too warm – re-set to factory setting between 12:00 and 1:00
- Air flow through condenser coil is blocked or restricted and the fan blade is coated in dust
  - Clean the condenser coil
- Cabinet has been over-filled with ice and is blocking air flow to the thermostat’s sensing tube
- Door is not closing or sealing properly allowing warm, outside air to enter the cabinet
- Excess frost is built up on the interior walls and the cabinet needs to be defrosted
- Lack of a frost-line on the back wall of the cabinet’s interior
  - Loss of refrigerant or an undercharge
  - Restriction in the refrigeration system
  - Loss of compressor pumping capacity
  - Uneven feed through the capillary tubes on a dual capillary tube system leading to flooding of one evaporator while starving the other

<table>
<thead>
<tr>
<th>Condensing unit fan motor running?</th>
<th>No</th>
<th>Compressor is running?</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- No power at service outlet
- Thermostat is turned to “off” position
- Faulty thermostat
- Open circuit in cabinet
- Faulty connection to fan motor
- Faulty fan motor
<table>
<thead>
<tr>
<th>Problem</th>
<th>Area to Check</th>
<th>Potential Faults</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ice Melting</td>
<td>On/Off switch (some models) in “off” position?</td>
<td>• Switch to “on” position</td>
</tr>
</tbody>
</table>
| Interior light working? | | • Defective bulb  
• Power source failure  
• Incoming wire failure/fault |
| Condensing fan running? | | • Thermostat pointer to be between the 12:00-1:00 position  
• Broken fan blade  
• Dirty condenser  
• Bad relay, overload, capacitor, or compressor |
| Ice build-up on evaporator coil? | | • Incorrect refrigerant charge  
• Incorrect voltage  
• Impurities in refrigerant |
| No ice build-up on evaporator coil | | • Evaporator hose kinked or obstructed  
• Bad defrost circuit wiring  
• Defective defrost timer  
• Defective defrost thermostat  
• Defective defrost heater |
| Evaporator fan running | | • Thermostat pointer to be between the 12:00-1:00 position  
• Timer failure  
• Faulty wiring to timer  
• Evaporator fan motor failure |
| Condensing unit fan and compressor running with substitute power source | | • Bad fan motor or defective fan motor wiring  
• Defective thermostat  
• Defective thermostat circuit wiring |
# XIV. Replacement Parts List

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>PART #</th>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>PART #</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Condensing Unit: Provide</td>
<td></td>
<td>14.</td>
<td>Door, Stucco Charcoal Gray</td>
<td></td>
</tr>
<tr>
<td></td>
<td>condensing unit model number</td>
<td></td>
<td></td>
<td>27” x 27” with gasket</td>
<td>5591027</td>
</tr>
<tr>
<td>2.</td>
<td>Thermostat - Mechanical</td>
<td>1328046</td>
<td></td>
<td>15.</td>
<td>Door Gasket for</td>
</tr>
<tr>
<td></td>
<td>Timer - Mechanical</td>
<td>1328023</td>
<td></td>
<td>27” x 27” solid door</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electronic Control – Cold Wall</td>
<td>1328034</td>
<td></td>
<td>16.</td>
<td>Hinge with cover for 27” x 27” solid door</td>
</tr>
<tr>
<td></td>
<td>Electronic Control – Auto Defrost</td>
<td>1328035</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sensor Probe – Electronic Control</td>
<td>1328036</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Power Harness w/o Switch Terminal</td>
<td>1270062</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Power Harness with Switch Terminal</td>
<td>1270070</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Toggle Switch (for PN 1270070)</td>
<td>1213042</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Unit Cooler Evaporator Parts:</td>
<td></td>
<td>18.</td>
<td>Door Gasket for</td>
<td>1030014</td>
</tr>
<tr>
<td></td>
<td>Fan Guard</td>
<td>1396023</td>
<td></td>
<td>27” x 46” solid door</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fan Blade</td>
<td>1392008</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fan Mounting Bracket</td>
<td>1101401</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fan Motor</td>
<td>1393029</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Defrost Limit Thermostat; 30F/70F</td>
<td>1328003</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LCL 120 Defrost Heater – 400W</td>
<td>1261007</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LCL 170 Defrost Heater – 600W</td>
<td>1261008</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LCL 190/280 Defrost Heater – 800W</td>
<td>1261009</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Full Top Enclosure: Provide the</td>
<td></td>
<td>19.</td>
<td>Glass Door, 28” x 47” Silver Frame</td>
<td>1412012</td>
</tr>
<tr>
<td></td>
<td>merchandiser model number.</td>
<td></td>
<td></td>
<td>Glass Door, 28” x 47” Gold Frame</td>
<td>1412013</td>
</tr>
<tr>
<td>5.</td>
<td>&quot;ICE&quot; Decal for full top (Red)</td>
<td>1070076</td>
<td></td>
<td>20.</td>
<td>Door Gasket for 28” x 47” glass door</td>
</tr>
<tr>
<td></td>
<td>&quot;ICE&quot; Decal for full top (Blue)</td>
<td>1070069</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>&quot;ICE&quot; sign for full top (Red)</td>
<td>5991022</td>
<td></td>
<td>21.</td>
<td>Door Hinge for 28” x 47” door:</td>
</tr>
<tr>
<td></td>
<td>“ICE” sign for full top (Blue)</td>
<td>5991021</td>
<td></td>
<td>Silver w/spring &amp; cover</td>
<td>1911022</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Gold w/spring &amp; cover</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Silver Hinge Cover</td>
<td>1990008</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Gold Hinge Cover</td>
<td>1990009</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Spring-Load Kit (Kason 220 hinge)</td>
<td>1990002</td>
</tr>
<tr>
<td>7.</td>
<td>Cover w/o decal</td>
<td>5848004-5</td>
<td></td>
<td>22.</td>
<td>&quot;ICE&quot; Decals (Red) One Set</td>
</tr>
<tr>
<td></td>
<td>Cover w/ decal</td>
<td>5848000-5</td>
<td></td>
<td>&quot;ICE&quot; Decals (Blue) One Set</td>
<td>1070070</td>
</tr>
<tr>
<td>8.</td>
<td>&quot;Packaged Ice&quot; Decal.</td>
<td>1070068</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Items 8 &amp; 9 now a combined decal</td>
<td>1070068</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>J-Bolt for all solid doors</td>
<td>1160008</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Door Hasp for all solid doors</td>
<td>5120001</td>
<td></td>
<td>23.</td>
<td>Rain Shield for 27” x 46” solid door</td>
</tr>
<tr>
<td>12.</td>
<td>Door Handle for all solid doors</td>
<td>1914001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Check Chain</td>
<td>1915001</td>
<td></td>
<td>24.</td>
<td>Ice Pallet 22” x 28” Black</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>25.</td>
<td>LED lamp (2’ T8 cool white clear)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>26.</td>
<td>Condensate evaporator assy. for</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>automatic defrost models (White)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>27.</td>
<td>Cond. evaporator heat element 125W</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>28.</td>
<td>Merchandiser leveling kit (not shown)</td>
</tr>
</tbody>
</table>

Note: Providing the cabinet model and serial number will aid in identifying parts for a specific merchandiser.

Return authorized parts to this address: Leer, Inc. 206 Leer St. New Lisbon, WI 53950
- Contact Leer Merchandiser Customer Service Dept. to obtain a Return Material Authorization (RMA) Number.

NOTE: Leer electrical and refrigeration parts are installed in compliance to UL Standard 471. Replacement parts that are not UL Certified or are not identical to the OEM installed part, will void the merchandiser’s UL Listing and/or the Factory warranty per “General Provisions” of the accompanying warranty statement.
Note:
LP models similar to slant except for refrigeration location

SLANT MODELS
NOTES:

Model No. & Serial No. Nomenclature

Manufacturer
L = Leer

Cabinet Profile
U = Upright
S = Slant
L = Low

Door Type
G = Glass
S = Solid

Refrigeration Style
A = Auto-Defrost
C = Cold Wall

Options
E = Electronic Control
X = Mechanical Control
R = Refrigeration Upgrade

Year & Month of Manufacture
15 = 2015
01 = January

Individual I.D. Number

Approx. Cabinet Capacity in Cubic Feet
075 = 75 cu. ft.
ICE MERCHANDISERS: Seller warrants the merchandiser under normal use and service, for one (1) year for the component parts (to be shipped by seller), and ninety (90) days for repair labor from the date of original shipment. The merchandiser compressor motor is warranted for five (5) years from the date of original shipment. SELLER MUST BE CONTACTED AND PROVIDED A MERCHANDISER SERIAL NUMBER FOR WARRANTY CLAIM. This applies only to goods installed in the United States. Seller’s obligation under this warranty shall be limited to repair (subject to the limitations below) or replacement of any part(s), F.O.B. Seller’s factory, which prove(s) defective within the applicable warranty period. 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. The determination as to whether any defect exists shall be made in Seller’s sole judgment.

GENERAL PROVISIONS APPLICABLE TO ALL WARRANTIES AND PRODUCTS: Seller shall not be liable for any breach of any express warranty set forth above unless Seller is informed immediately upon the discovery of defective part(s). The warranties described above are not assignable and shall operate only in favor of the original buyer/user. In event of any claim for breach of express warranty, Seller shall be responsible for labor charges for repair or replacement of any defective part(s) or assembly only for defects reported to Seller within ninety (90) days after the date of installation. ALL LABOR CHARGES SHALL BE AUTHORIZED OR APPROVED BY SELLER 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. These warranties shall not apply to any goods, or any part thereof, which may have been subject to any damage in transit, accident, negligence, abuse or misuse, unauthorized alteration or repair, acts of nature or failure to follow any of the Seller’s manuals or instructions, if in Seller’s sole judgment, such act, omission or event has detrimentally affected the physical condition, use or operating qualities of the product. SELLER MAKES NO 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 ALL IMPLIED WARRANTIES ARE HEREBY DISCLAIMED. SELLER SHALL NOT BE LIABLE FOR LOSS OF GOODS, MERCHANDISE OR OTHER PROPERTY, OR LOSS OF PROFITS, RESULTING FROM PRODUCT DEFECTS. IN NO EVENT SHALL SELLER’S LIABILITY UNDER ANY CIRCUMSTANCES FOR ANY BREACH OF CONTRACT OR FOR ANY OTHER CLAIM BY BUYER AGAINST SELLER EXCEED THE CONTRACT PRICE OF THE GOODS SOLD HEREUNDER WITH RESPECT TO WHICH SUCH CLAIM ARISES.

MODEL NO. ______________________ SERIAL NO. ______________________