



# LEER, INC.

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## MERCHANDISER INSTALLATION, OPERATION, SAFETY AND MAINTENANCE MANUAL



**Q.B. Says**  
**"Please read and retain"**

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# THINK SAFETY



Read **CAUTION** highlighted statements and merchandiser labels

**NOTE: Electrical and refrigeration repair work should be done by licensed professionals.**

Material and product improvement is a continuous commitment at Leer. This manual is subject to modification or change without notice and without incurring responsibility for previously sold merchandisers and components.

## I. PACKAGING

All merchandisers are run cycle tested, inspected and carefully packaged to ensure each unit arrives ready for operation. Retain this manual for future reference and required maintenance.

Remove plastic overwrap, banding, corrugation packaging and special crating when required. The wooden skid is removed by unscrewing hex head screws holding the skid to cabinet bottom. Glass Door Models: Remove glass door support brackets and handle protective packaging.

**NOTE: Merchandiser should be in an upright position. If merchandiser is tilted 45° past vertical, it is recommended the unit not be used for a time equal to the time it was not vertical. This will allow the compressor lubricant to return to level for designed operation.**

## II. INSTALLATION

The merchandiser installation location should have a solid level base. If merchandiser is not level, the self-closing doors on upright models may not close or seal properly. The installation location must also provide good air flow for designed refrigeration system operation. **DO NOT** block refrigeration grill openings. Grill blockage may result in compressor failure.

Outdoor merchandiser locations shaded from sunlight are recommended for more economical operation.

Auto-Defrost Models: Leave sufficient space behind merchandiser to prevent the drain hose from being kinked or obstructed. A blocked hose will not allow unit cooler condensate water to drain.

Indoor merchandisers must have the full top cover area above the cabinet kept clear of storage items or from obstructions. As per above, refrigeration grill openings must be open to provide good air flow for designed refrigeration operation. Auto-Defrost Glass Door Models: Remove condensate evaporator carton from inside merchandiser and install evaporator on back of merchandiser per instruction sheet inside carton.

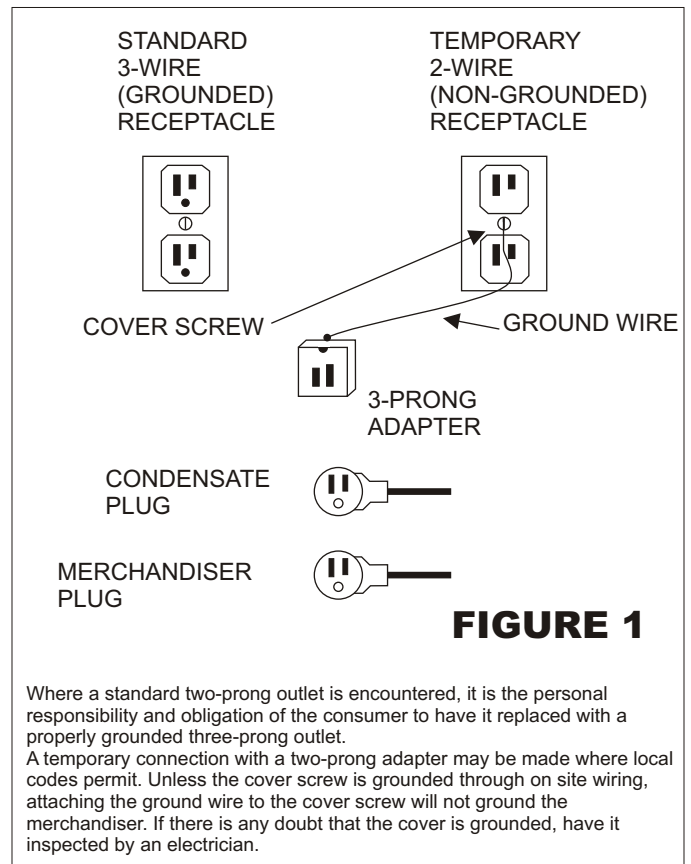
Position cabinet to allow minimum one inch clearance between condensate evaporator and wall. Route main power cord away from surface of condensate evaporator. **DO NOT** position main power cord so it may become pinched between condensate evaporator and wall.

## III. OPERATION

1. Electrical: The electrical voltage and frequency cycle at installation site must coincide with merchandiser decal label. Electrical service connections must be in accordance with the national electrical code and any local code that may apply. All merchandisers must be wired to a polarized power cord with 3-prong plug.

**CAUTION: Improper use or removal of the grounding plug can result in risk of electrical shock.**

The merchandiser must be plugged into a 115 volt, 60 Hz grounded receptacle electrical outlet with a circuit fuse or breaker. (See figure 1). The condensate unit data plate will indicate the maximum fuse/breaker size. **DO NOT** use extension cords. Extension cords may decrease the voltage to the unit and ultimately cause the compressor to fail.



### III. OPERATION CONT.

1. NOTE: Some models are equipped with a main power switch. If so equipped, make sure the switch is in the off position before plugging the merchandiser into the outlet. Plug the merchandiser power cord into the lower receptacle of electrical outlet. After a few seconds delay, the compressor and the condenser fan motor should start. If the merchandiser is an automatic defrost system, the evaporator fan motors and the light fixture should start immediately when power is applied. The condensing unit will continue to run until the air temperature in the cabinet reaches +16° F. If the merchandiser has a condensate evaporator, plug the cord into the upper receptacle of the electrical outlet and the heater rod will begin to heat.
2. Temperature Control: The merchandiser is equipped with an electronic temperature controller. The controller display is visible through the left end of the compressor cover and will display the cabinet temperature. The cabinet temperature is maintained by the controller turning off the compressor when the set point on the control is reached. Refer to page (6) for instruction on viewing the set point. Consult Leer Inc. for instructions if the adjustment to the control set point is necessary.
3. Loading Ice: After merchandiser is operating at required temperature, load with packaged ice. Stacked packaged ice should not exceed heights that will cause poor refrigeration efficiency. Approximately 6" needs to be clear from top of stacked ice to top of inside interior for effective refrigerated ice storage. Auto-Defrost units require good fan air flow for effective circulation. **DO NOT** block evaporator assembly fan/grill openings. Air channels require unrestricted air flow convection around packaged ice. Cold Wall units should have ice stacked to allow access of air to thermostat sensor at upper rear interior.

### IV. MAINTENANCE



**CAUTION: Disconnect power plug from electrical supply before maintenance on electrical components to avoid risk of electrical shock.**

1. Refrigeration: Clean refrigeration cover grill openings, condenser fins, and condenser fan blades at least every 3 months or more often if needed. A dirty condensing unit can cause merchandiser to become less efficient, and may lead to compressor Failure.

**NOTE: DO NOT place any type of filter media for dust/dirt collection in front of condenser coil. Testing has shown filter media will create restricted air flow and may lead to compressor Failure.**

2. Defrosting: Frost forms on the evaporator when door is opened and warm air enters merchandiser.

A. Cold Wall (CW) Evaporator: Cold Wall merchandisers utilize the merchandiser interior walls and ceiling as the refrigeration evaporator and frost will accumulate on all these surfaces. The merchandiser can be defrosted using a wooden paddle, plastic scraper, or hot air. **DO NOT** use a sharp instrument to "chop" the frost as you may penetrate metal surface and refrigerant tubing and do irreparable damage. A drain plug is located on the right side of cabinet floor under the ice pallet to allow water to drain.

B. Auto-Defrost (AD) Evaporator: Auto-Defrost merchandisers utilize a unit cooler evaporator with an electric defrost heating element to melt the frost off the evaporator coil. The defrost cycle is controlled by the electronic controller which will energize the defrost heating element every four (4) hours for a maximum of 15 minutes. The controller has a sensor inserted into the evaporator coil that monitors the coil temperature. When the preset temperature is reached the controller will terminate the defrost cycle and begin the refrigeration operation.

Before each reloading of packaged ice, inspect operation of unit cooler fan motor(s). Replace motor(s) not operating or merchandiser refrigeration will not work effectively. Inspect unit cooler drain hose to be sure it is not kinked or plugged. Water must drain to condensate evaporator for designed operation. (See Condensate evaporation maintenance)

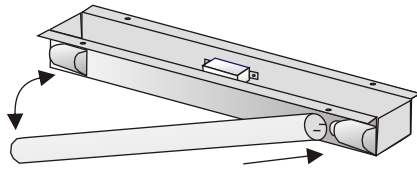
## IV. MAINTENANCE CONT.

C. Condensate Evaporator: Inspect operation and condition of evaporator every three (3) months. The heating rod should be heating and examined for excessive corrosion. Failure of the heating rod to heat properly can result in the drain pan water overflowing. Also, accumulative dust buildup may limit proper operation of the unit.

3. Electrical: Inspect each month all power harnesses for cracks, abrasions or connection plug damage.

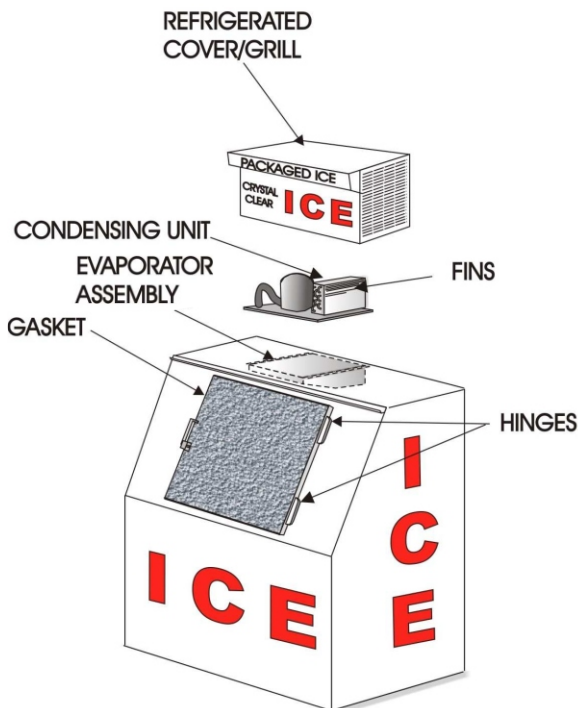
**⚠ CAUTION: Damaged power cord must be replaced with manufacturer cord and installed by a qualified service contractor or similar qualified person in order to avoid an electrical hazard.**

Lamp Replacement: Remove lamp by pushing lamp towards spring loaded retainer, rotate opposite end out of retainer. Install lamp by pushing end into spring loaded retainer, rotate opposite end into retainer.



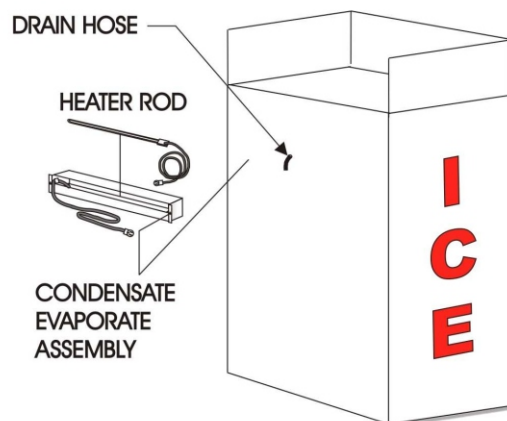
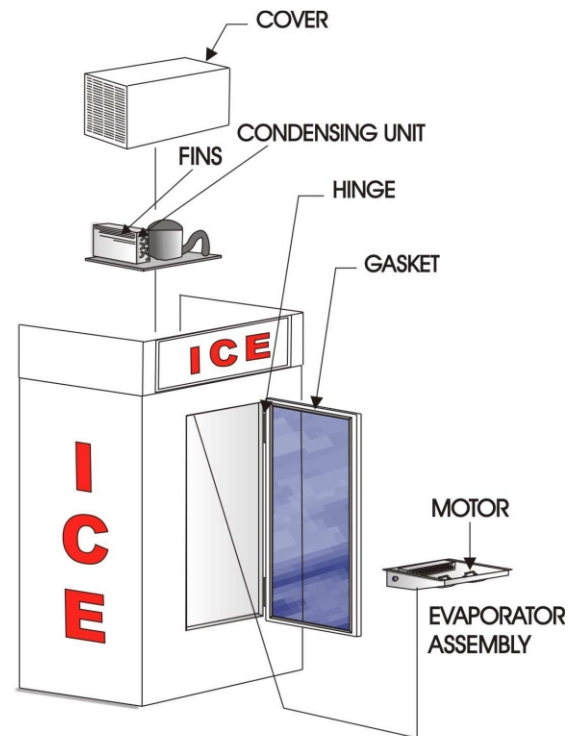
4. Door(s): Inspect each month for component wear, function and secure attachment.

A. Gasket(s) should be examined for tears or any other problems that would cause loss of seal. Replace torn/worn gaskets to maintain correct seal and refrigeration efficiency.



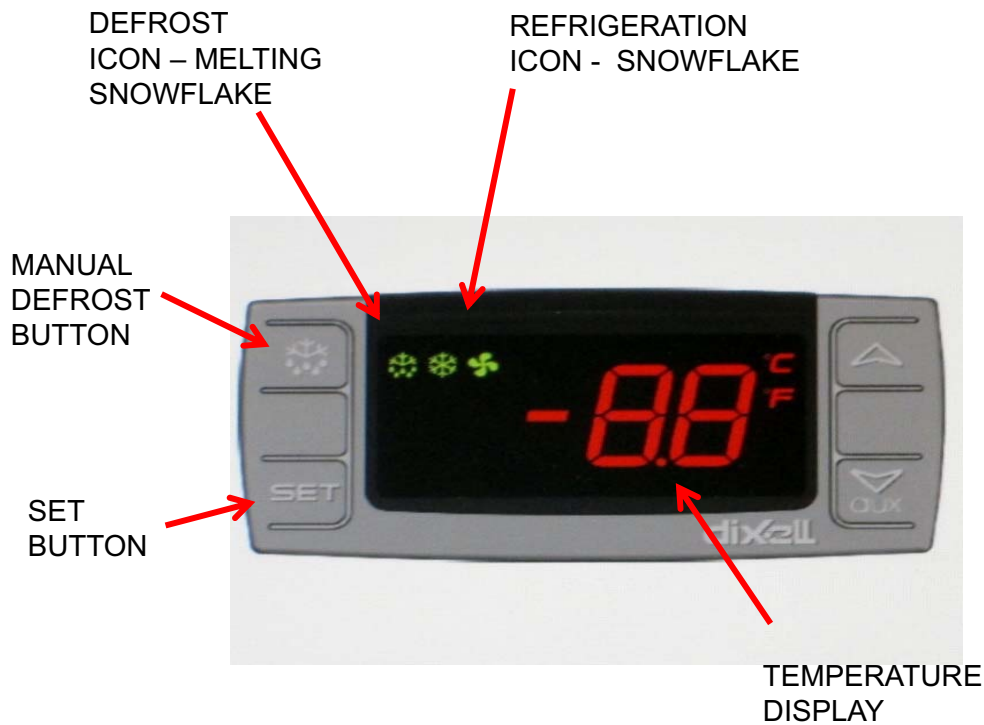
B. Hinges exposed to harsh environmental conditions may require a lubricant for ease of operation. Spray a light penetrating oil on hinge pivot points to ease the work load and extend life of hinge.

4. Cleaning: Schedule yearly cleaning of merchandiser interior with solution of 8 tablespoons of baking soda to 1 gallon of warm water. **DO NOT** use strong detergents, abrasive cleansers, solvents, wax or polish as they are likely to leave objectionable odors which may be absorbed by the ice. Wash the exterior with warm water and mild soap applied with a soft sponge or cloth. Wax exterior to maintain appearance and extend life of paint.



## V. ELECTRONIC CONTROL

### ELECTRONIC CONTROL



To see the set point – Press and release the SET key. The control set point will be displayed.

To initiate a manual defrost – Press the defrost key for more than 2 seconds and a defrost will begin.

NOTE: The cabinet temperature must be below 40 degrees for this function to operate.

Operating mode display:

Snowflake ON – Compressor enabled

Snowflake FLASHING – Anti short cycle delay is enabled. This parameter protects the compressor from trying to start too frequently.

Melting Snowflake ON – Defrost in progress.

The controller keypad is locked to prevent inadvertent changes to programming parameters.

#### ERROR CODES:

P1 – Room temperature probe failure.

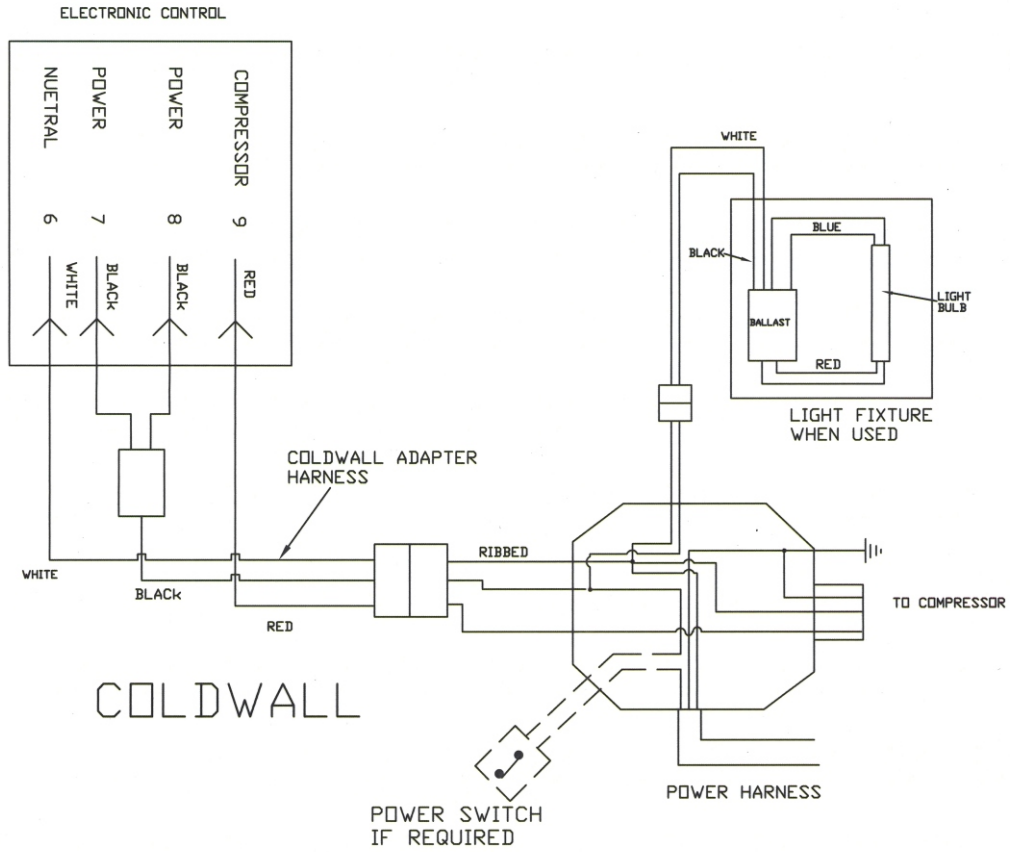
P2 – Defrost probe failure

HA – Maximum temperature alarm

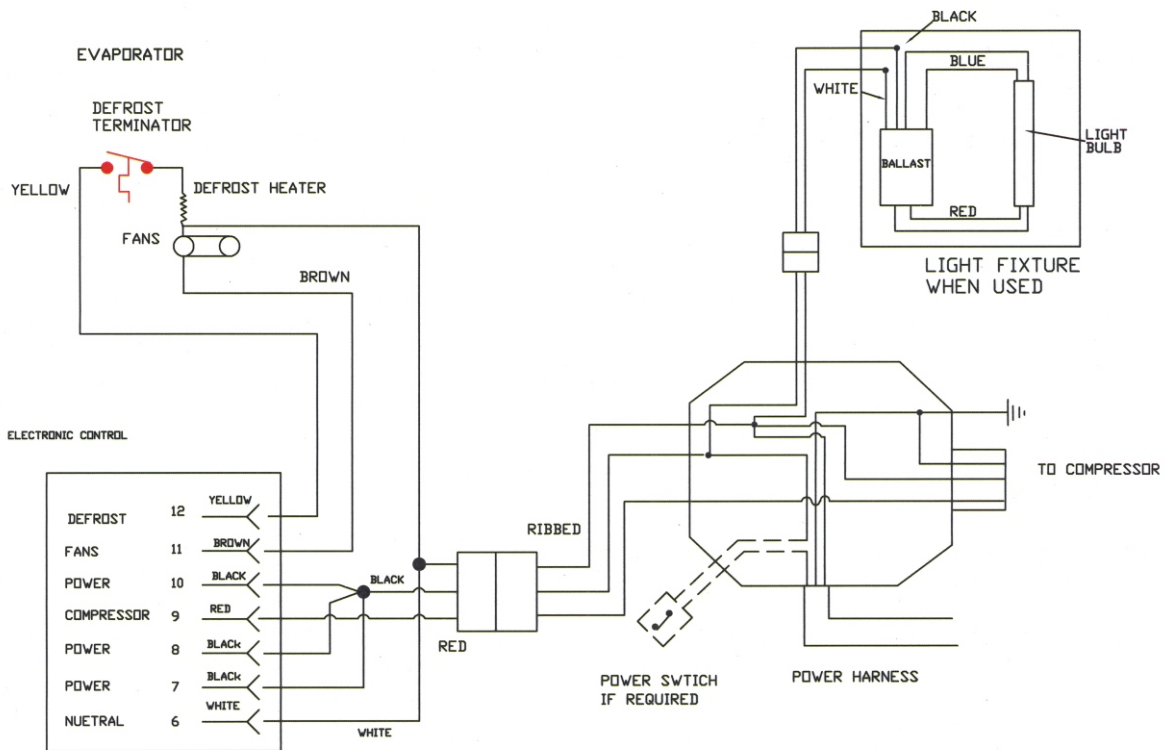
LA – Minimum temperature alarm

Consult Leer Inc. for instructions to adjust parameters on the control.

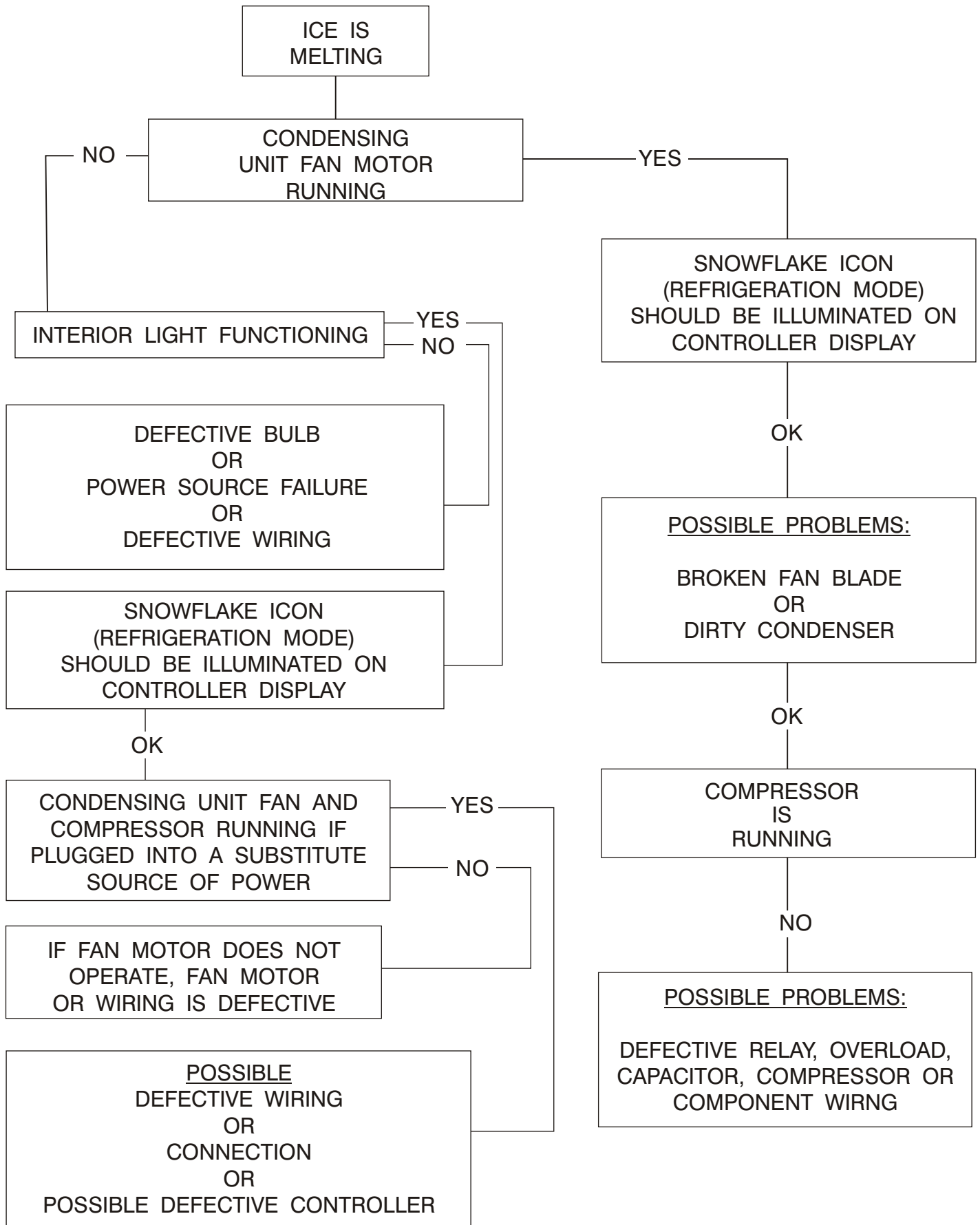
## VI. COLDWALL WIRING DIAGRAM



## VII. AUTO-DEFROST WIRING DIAGRAM

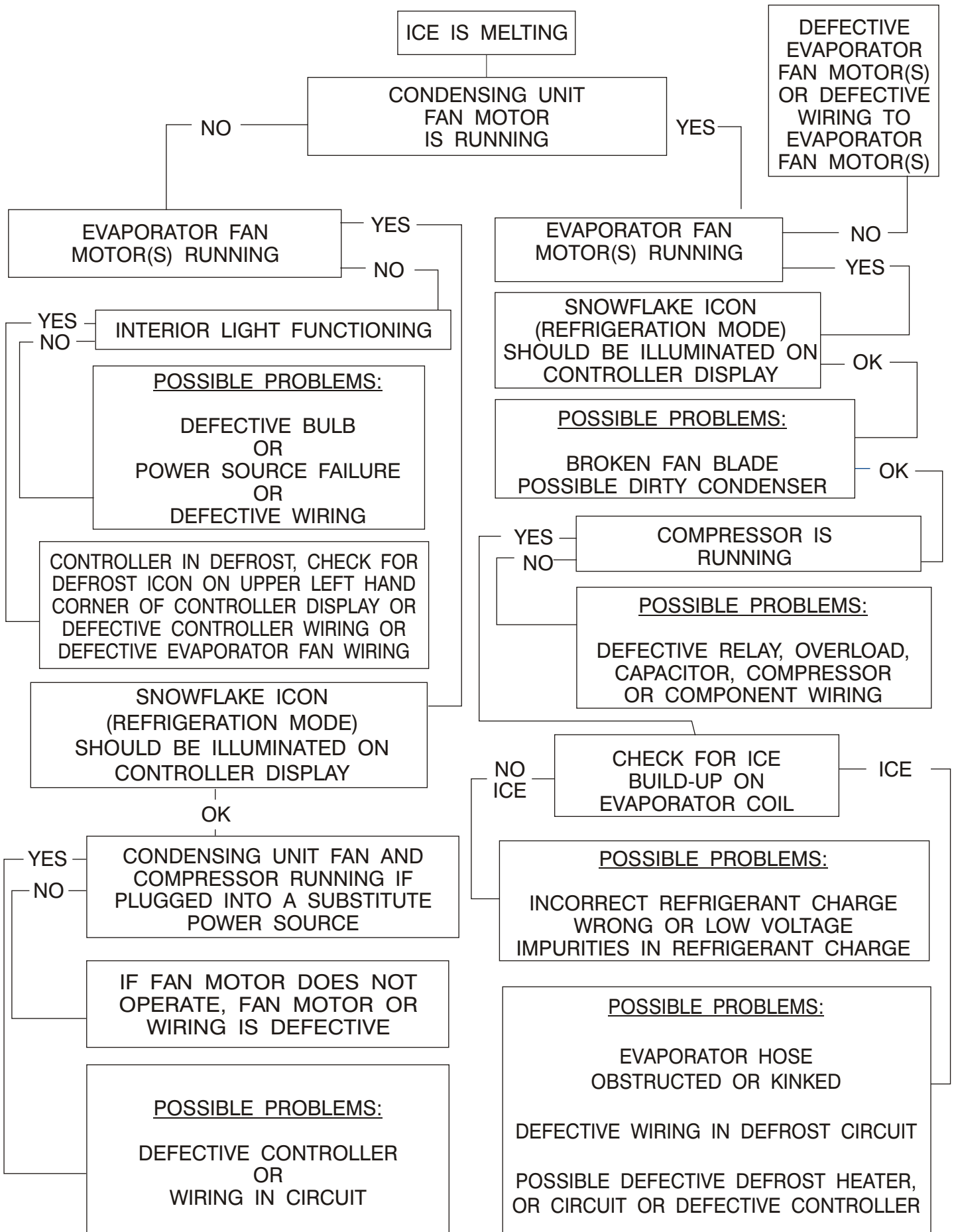


## VIII. COLD WALL TROUBLESHOOTING FLOWCHART





# IX. AUTO-DEFROST TROUBLESHOOTING FLOWCHART



## X. REPLACEMENT PARTS

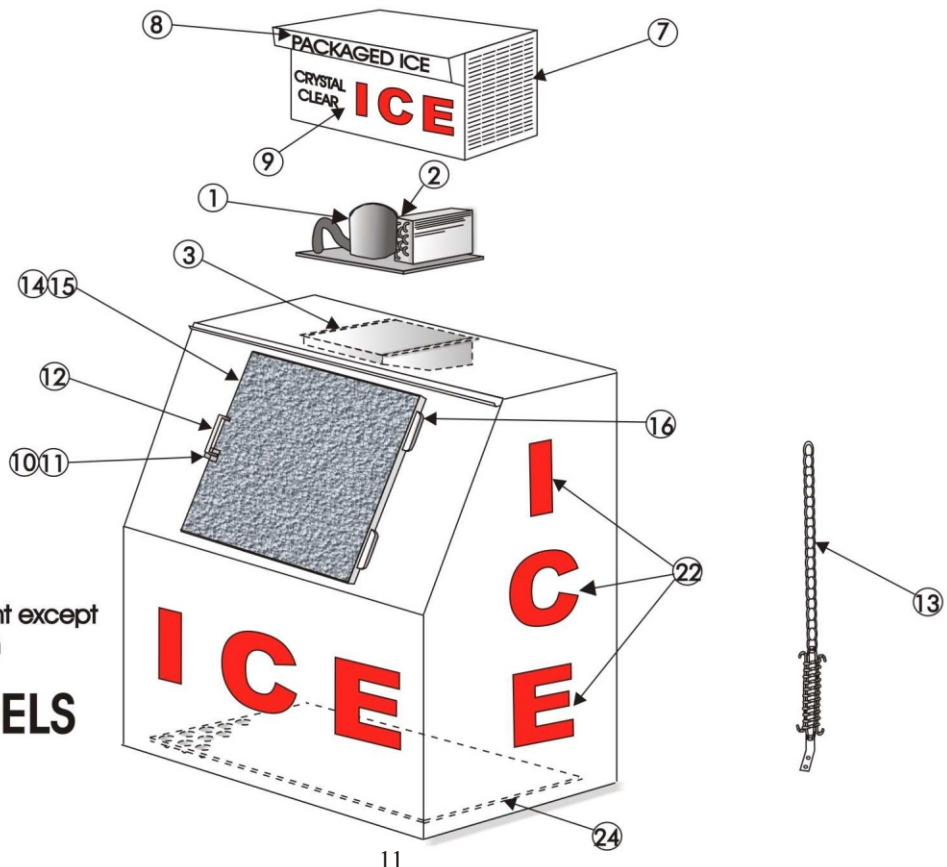
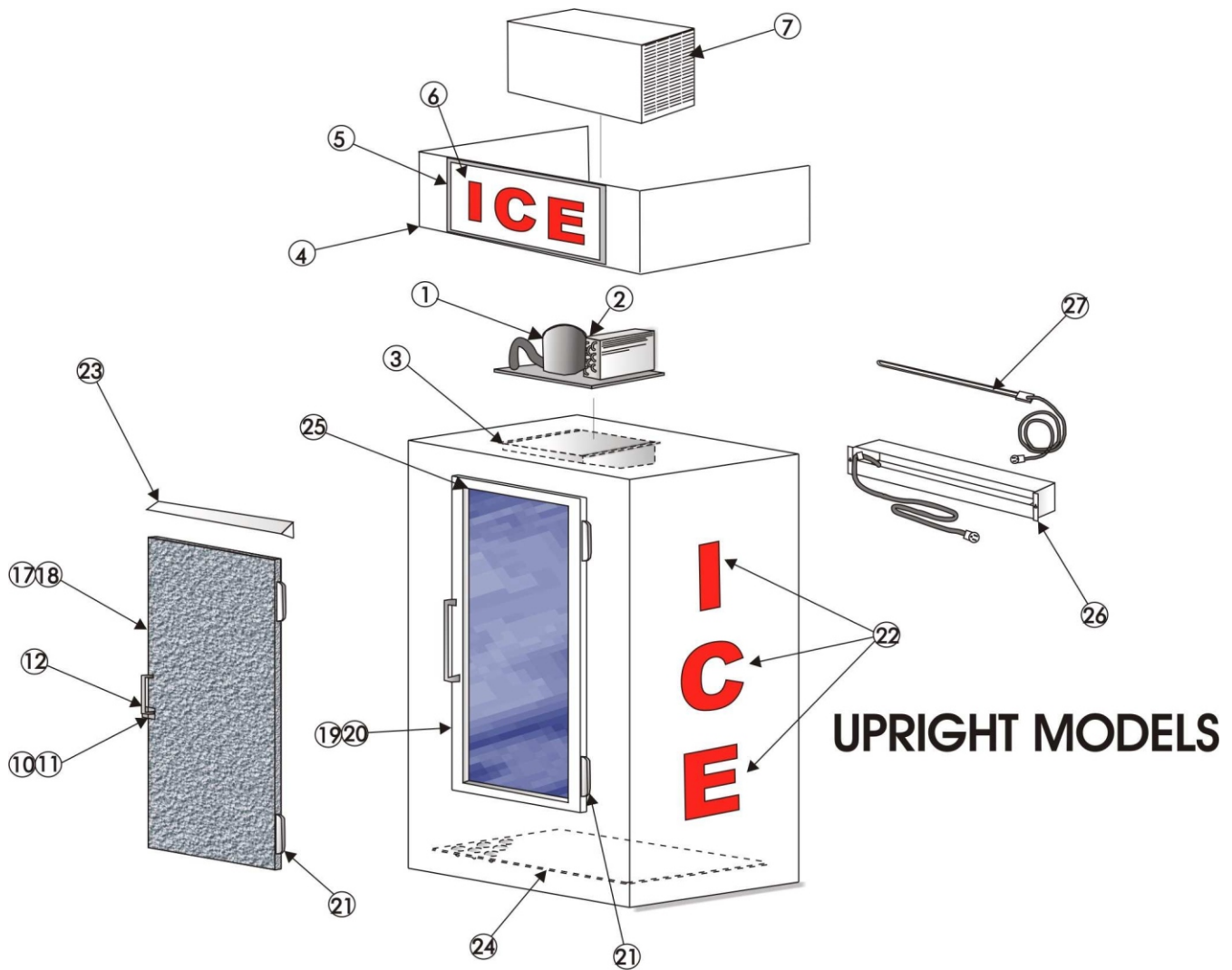
ITEM	DESCRIPTION	PART #	ITEM	DESCRIPTION	PART #
1.	Condensing Unit: Provide condensing unit model number		14.	Door, Stucco Stainless Steel 27" x 27" with gasket	5590025
2.	Drier	1323002	15.	Door Gasket for 27" x 27" solid door	1030016
	Timer	1328023	16.	Door Hinge with cover for 27" x 27" solid door	1911019
	Control CW	1328034	17.	Door, Stucco Stainless Steel 27" x 46" with gasket	5590030
	Control AD	1328035	18.	Door Gasket for 27" x 46" solid door	1030014
	Sensors	1328036	19.	Glass Door 28" x 47" Silver Frame	1412012
	Compressor Harness	1270061		Glass Door 28" x 47" Gold Frame	1412013
3.	Unit Cooler Evaporator Parts		20.	Door Gasket for 28" x 47" glass door	1490007
	Harness	1270049	21.	Door Hinge for 28" x 47" door	
	Fan Guard	1270071		Silver with spring & cover	1911002
	Fan Blade	1392008		Gold with spring & cover	1911022
	Fan Mounting Bracket	5120140		Silver Cover	1990008
	Fan Motor	1393029		Gold Cover	1990009
	Defrost Limit Thermostat	1328003		Spring Kit	1990002
	LCL 120 Defrost Heater	1261007	22.	"ICE" Decals (Red) one set	1070074
	LCL 170 Defrost Heater	1261008		"ICE" Decals (Blue) one set	1070070
	LCL 190/280 Defrost Heater	1261009	23.	Rain Shield for 27" x 46" solid door	5150098-5
	LCL120 Evaporator Coil	1315002	24.	Ice Pallet 22" x 28"	1050079
	LCL170Evaporator Coil	1315004	25.	Fluorescent Light Fixture (bulb included)	5239006
	LCL190 Evaporator Coil	1315005		Fluorescent Bulb	1216005
	LCL280 Evaporator Coil	1315006		Ballast	1230005
4.	Full Top Enclosure: Provide merchandiser model and serial number			Spring Lampholder	1240008
5.	"ICE" Decal for full top (Red)	1070076		Solid Lampholder	1240009
	"ICE" Decal for full top (Blue)	1070069	26.	Condensate evaporator assembly for automatic defrost models (White)	5349040
6.	"ICE" sign for full top (Red)	5991021	27.	Condensate evaporator heater rod	1261004
	"ICE" sign for full top (Blue)	5991022	28.	Skid Plate (Not Shown)	1050005
7.	Cover without flasher shield and decals	5840035-5			
	Cover with flasher shield and decals	5849000-5			
8.	"Packaged Ice" Decal for cover	1070077			
9.	"Crystal Clear" Decal for cover (Red)	1070075			
	"Crystal Clear" Decal for cover (Blue)	1070071			
10.	J-Bolt for all solid doors	1160008			
11.	Door Hasp for all solid doors	5120001			
12.	Door Handle for all solid doors	1914001			
13.	Check Chain for 27" x 27" solid door	1915001			

Provide Leer merchandiser Model number and Serial number for accurate processing of parts orders.

Return only authorized parts to this address:

Leer, Inc.  
206 Leer Street  
New Lisbon, WI 53950

**NOTE: Leer electrical and refrigeration parts are all U.L. recognized and installed to comply with U.L. merchandiser product listings. Replacement of parts that are not U.L. recognized and not installed per original assembly will void merchandiser U.L. listing and Leer warranty per "General Provisions".**



Note:  
LP models similar to slant except  
for refrigeration location

**SLANT MODELS**

103000-1

**ICE MERCHANDISERS:** Seller warrants the merchandiser under normal use and service, for one (1) year for 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 warranty 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 judgement.

**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 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. 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. \_\_\_\_\_