

# **COLD WALL EVAPORATOR MILK COOLERS**

## **Installation, Operation and Maintenance Instructions**

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### **INSPECTION**

When the equipment is received, all items should be carefully checked against the bill of lading to insure all crates and cartons have been received. All units should be inspected for concealed damage by uncrating the units immediately. If any damage is found, it should be reported to the carrier at once, and a claim should be filed with the carrier. This equipment has been inspected and tested in the Nor-Lake Manufacturing Facility and has been crated in accordance with transportation rules and guidelines. Manufacturer is not responsible for freight loss or damage.

### **INSTALLATION**

#### **GENERAL**

After the unit crate and base have been removed, locate the casters or legs found in the interior of the cabinet. Attach the casters to the unit base by screwing them into the same threaded fittings that were used to secure the crate base to the cabinet. Do not tip cabinet to install casters or legs. Insure that the casters or legs are screwed all the way into the base.

#### **LOCATION**

The self contained refrigeration system located at the bottom of the cabinet requires free air access for proper operation. These guidelines must be followed for cabinets with casters or legs. The two door cabinets must have a clearance of four inches at each side and the rear and open at the top and front. The four door cabinets must have a clearance of four inches at each side and open at the top, front and rear.

## **ELECTRICAL**

Check the proposed outlet to be used to insure that the voltage, phase, and current carrying capacity of the circuit from the electrical panel correspond to the requirements of the cabinet. NEVER use an extension cord to power any unit. All inter wiring between the electrical panel and the unit must be done in accordance with the National Electric Code and all state and local codes. Refer to the Serial Tag for all pertinent electrical information.

**Observe all Warning Labels. Disconnect power supply to eliminate injury from electrical shock or moving parts when servicing equipment.**

## **GENERAL OPERATION**

The milk coolers are cooled entirely by convection as a result of copper coils completely encircling the perimeter of the storage compartment. During the refrigeration process, heat is removed through the evaporator tubing and expelled through the condensing unit. It is important that the flow of air through the side louvers is not restricted in order to ensure the condensing unit operates properly. Under normal operating conditions, any frost that might accumulate on the walls during the "on" cycle of the condensing unit may melt during the "off" cycle. Drains are installed in all milk coolers to accommodate melting frost.

The refrigeration system on this cabinet uses a temperature thermostat that senses the cut-in and cut-out temperatures of the cold wall evaporator coil. The temperature can be adjusted by turning the thermostat control knob which is located behind the louvered side panel.

## **GENERAL MAINTENANCE**

### **PERIODIC CLEANING**

Beginning with the initial installation, the interior surfaces of the cabinet should be periodically wiped down with a solution of warm water and baking soda. This solution will remove any odors from spillage that has occurred. The exterior of the cabinet should also be cleaned frequently with a commercial grade glass cleaner or with mild soap and water. Never, under any circumstances, use an abrasive cleaner or alkaline solution.

Monthly cleaning of the condenser will aid the heat transfer characteristics of the refrigeration system and increase its efficiency. To accomplish this, remove the louvered panel from the cabinet and use a wire brush to loosen any dirt particles that are attached to the fins. After this is accomplished, use a vacuum cleaner to remove the loosened particles.

All moving parts have been permanently lubricated and will generally require no maintenance.

MAINTENANCE SERVICE AND ANALYSIS GUIDE  
REFRIGERATION SYSTEMS - ALL MODELS

<u>MALFUNCTION</u>	<u>POSSIBLE CAUSE</u>	<u>SOLUTION</u>
Compressor will not start - no hum	<ol style="list-style-type: none"> <li>1. Service cord unplugged</li> <li>2. Fuse blown or removed</li> <li>3. Overload tripped</li> <li>4. Control stuck open</li> <li>5. Wiring incorrect</li> </ol>	<ol style="list-style-type: none"> <li>1. Plug in service cord</li> <li>2. Replace fuse</li> <li>3. Determine reasons and correct</li> <li>4. Repair or replace</li> <li>5. Check wiring against the diagram</li> </ol>
Compressor will not start - hums but trips on overload protector	<ol style="list-style-type: none"> <li>1. Improperly wired</li> <li>2. Low voltage to unit</li> <li>3. Starting capacitor defective</li> <li>4. Relay failing to close</li> </ol>	<ol style="list-style-type: none"> <li>1. Check wiring against the diagram</li> <li>2. Determine reason and correct</li> <li>3. Determine reason and replace</li> <li>4. Determine reason, correct or replace</li> </ol>
Compressor starts and runs, but short cycles on overload protector	<ol style="list-style-type: none"> <li>1. Low voltage to unit</li> <li>2. Overload defective</li> <li>3. Excessive head pressure</li> <li>4. Compressor hot-return gas hot</li> </ol>	<ol style="list-style-type: none"> <li>1. Determine reason and correct</li> <li>2. Check current, replace overload protector</li> <li>3. Check ventilation or restriction in refrigeration system</li> <li>4. Check refrigerant charge, fix leak if necessary</li> </ol>
Compressor operates long or continuously	<ol style="list-style-type: none"> <li>1. Short of refrigerant</li> <li>2. Control contact stuck</li> <li>3. Evaporator coil iced</li> <li>4. Restriction in refrigeration system</li> <li>5. Dirty condenser</li> </ol>	<ol style="list-style-type: none"> <li>1. Fix leak, add charge</li> <li>2. Repair or replace</li> <li>3. Determine cause, defrost manually</li> <li>4. Determine location and remove restriction</li> <li>5. Clean condenser</li> </ol>
Compressor runs fine, but short cycles	<ol style="list-style-type: none"> <li>1. Overload protector</li> <li>2. Cold control</li> <li>3. Overcharge</li> <li>4. Air in system</li> <li>5. Undercharge</li> </ol>	<ol style="list-style-type: none"> <li>1. Check wiring diagram</li> <li>2. Differential too close - widen</li> <li>3. Reduce charge</li> <li>4. Purge and recharge</li> <li>5. Fix leak, add refrigerant</li> </ol>
Starting capacitor open, shorted or blown	<ol style="list-style-type: none"> <li>1. Relay contacts stuck</li> <li>2. Low voltage to unit</li> <li>3. Improper relay</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean contacts or replace relay</li> <li>2. Determine reason and correct</li> <li>3. Replace</li> </ol>
Relay defective or burned out	<ol style="list-style-type: none"> <li>1. Incorrect relay</li> <li>2. Voltage too high or too low</li> </ol>	<ol style="list-style-type: none"> <li>1. Check and replace</li> <li>2. Determine reason and correct</li> </ol>
Refrigerated space too warm	<ol style="list-style-type: none"> <li>1. Control setting too high</li> <li>2. Refrigerant overcharge</li> <li>3. Dirty condenser</li> <li>4. Evaporator coil iced</li> <li>5. Not operating</li> </ol>	<ol style="list-style-type: none"> <li>1. Reset control</li> <li>2. Purge refrigerant</li> <li>3. Clean condenser</li> <li>4. Determine reason and defrost</li> <li>5. Determine reason, replace if necessary</li> </ol>
Standard temperature system freezes the product	<ol style="list-style-type: none"> <li>1. Control setting is too low</li> <li>2. Control points stuck</li> </ol>	<ol style="list-style-type: none"> <li>1. Reset the control</li> <li>2. Replace the control</li> </ol>
Objectionable noise	<ol style="list-style-type: none"> <li>1. Fan blade hitting fan shroud</li> <li>2. Tubing rattle</li> <li>3. Vibrating fan blade</li> <li>4. Condenser fan motor rattles</li> <li>5. General vibration</li> <li>6. Worn fan motor bearings</li> </ol>	<ol style="list-style-type: none"> <li>1. Reform or cut away small section of shroud</li> <li>2. Locate and reform</li> <li>3. Replace fan blade</li> <li>4. Check motor bracket mounting, tighten</li> <li>5. Compressor suspension bolts not loosened on applicable models - loosen them</li> <li>6. Replace fan motor</li> </ol>
Pan Area	<ol style="list-style-type: none"> <li>1. No cooling</li> <li>2. Too cold</li> <li>3. Too warm</li> </ol>	<ol style="list-style-type: none"> <li>1. Make sure switch is in the "on" position</li> <li>2. Adjust temperature control - see instructions under pan area</li> <li>3. Adjust temperature control - see instructions under pan area</li> </ol>