Installation and Operation Manual

Novelty Ice Cream Case

Models NIC183R01, NIC183S01

The Novelty Ice Cream Case has been safety and performance-test approved by Intertek, a safety regulatory testing agency. In the course of new installations or periodic inspections, reference to agency approvals may be required. The regulatory agency file number is ETL File #4007858, complying with ANSI/UL 471, CSA C22.2 and NSF/ANSI 7.

ETL File #4007858

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CONTENTS

SPECIFICATIONS

Model		NIC183R01	NIC183S01
Performance at 75ºF 55%RH		Integrated Average Temperature -15ºF / 12ºF Max.	
Environmental Conditions		Maximum indoor 80ºF and relative humidity 54%	
External Dimensions	Width (inches)	72.4	
	Depth (inches)	35.8	
	Height (inches)	40.0	
Structure	Outer / Inner Box	Powder coated steel / zinc coated steel	
	Insulation	Rigid insulating foam	
Color		White	
Baskets		32 Baskets	
Electrical	Power	220 VAC, 12 amp, 60 Hz, single phase	
	Outdoor condensing unit	230 VAC, 12 amp, 60 Hz, 3 phase	n/a
	Power cord/plug	Length 8 ft. 3 wire 16 gauge / plug type NEMA L6-20P	
	Fan Motors	ECM high efficiency	
Compressor		Outdoor Reciprocating	Horizontal Scroll
Refrigeration Connections	Liquid Line	3/8 inch OD	n/a
	Suction Line	1/2 inch OD	
Refrigerant		R404A	
Evaporator		Fin tube type, forced convection	
Expansion Valve		Internally equalized automatic thermal expansion valve	
Controller		Digital programmable controller with Modbus communication protocol	
Casters		Five 2 inch diameter casters	
Internal Volume		16.4 ft³	
Weight		Approximately 450 lbs.	Approximately 520 lbs.
Agency Approvals		ANSI/UL 471, CSA C22.2, NSF/ANSI 7	
		ETL File #4007858	

SAFETY PRECAUTIONS

- Electrical service installation should only be performed by qualified, licensed Electricians.
- Mechanical service should only be performed by qualified, licensed Service Technicians.
- Use adequate equipment when moving the Novelty Ice Cream Case (NIC).
- Test for proper grounding to reduce the risk of electrical shock and fire.
- High voltage is present in the NIC. Disconnect power before servicing.
- Use only fully trained service technicians for power-on servicing.
- Use only authorized replacement parts.
- Lines in the remote units are pressurized with nitrogen. Use caution when opening lines.
- Use refrigeration lines with adequate wall thickness to handle refrigeration pressures.
- Replacement fuses must have identical ratings as the fuses being replaced.
- The NIC is designed for indoor use only, in a controlled environment that typically does not exceed 80ºF (27ºC). Check room and system airflow as described in this document to ensure food is maintained at required temperatures.

INITIAL SET-UP

It is the responsibility of the installer to ensure the unit is installed and working properly. The following instructions provide step-by-step set-up, piping, condensate drain connections (if applicable), electrical connection, start-up, performance and maintenance guidelines.

For Parts or Technical Service, please call: 1-800-344-7216 or FAX: 1-800-541-5684 or email: customerservice@vendoco.com. Additional reference manuals can be obtained at www.vendoco.com

ELECTRICAL SUPPLY

NIC: Provide 220 VAC, 12 amp, 60 Hz, single phase for plug type NEMA L6-20P

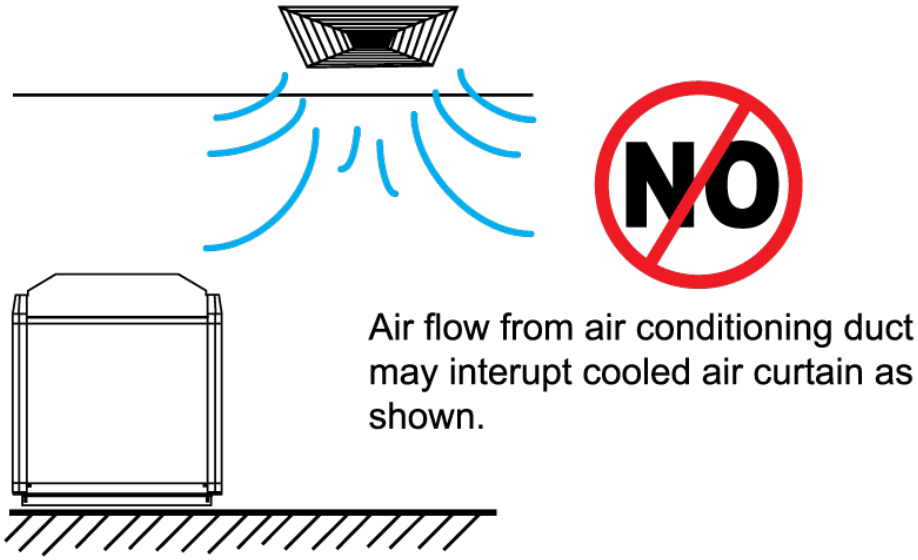
Provide 230 VAC, 12 amp, 60 Hz, 3 phase power for the remote condensing unit (NIC183R01 only, refer to condensing unit manual)

CABINET LOCATION AND SETUP

Choose a location for the NIC. Avoid placing the cabinet near equipment that releases heat, near an outside door, or in direct sunlight. To protect all electrical parts, do not place the cabinet where it will be subjected to rain, splashed liquid, or excessive humidity.

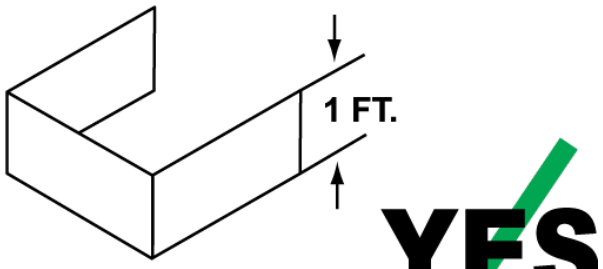
Check the airflow around the cabinet, since strong airflow may displace the cooled air in the NIC. Place the cabinet where the airflow speed is less than 50 feet per minute (see following figures). Also, avoid areas subject to wind.

AIR CONDITIONING DUCT
(CEILING TYPE)

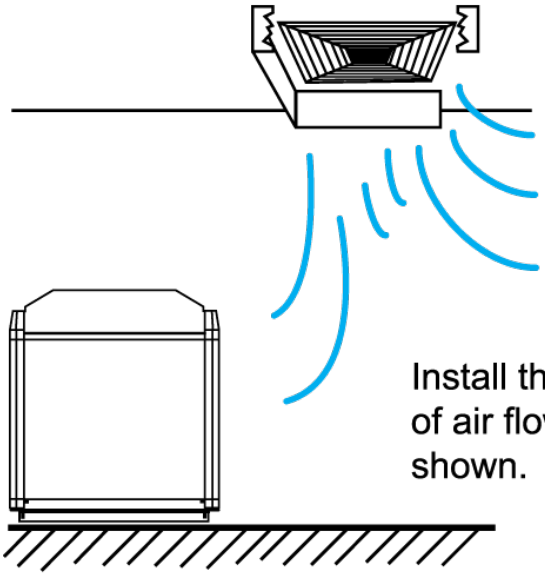


Air flow from air conditioning duct may interupt cooled air curtain as shown.

FIGURE 1



AIR DAM (REF.)
FIGURE 2

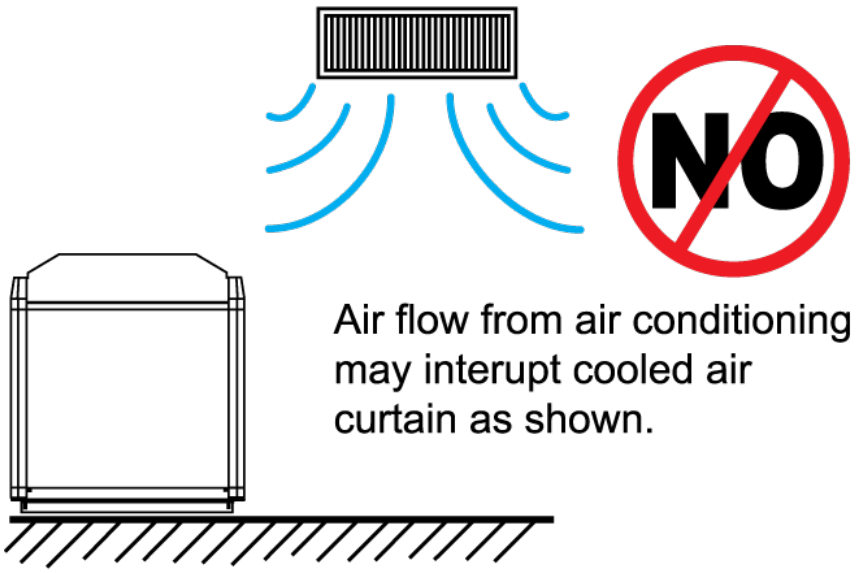


Install the air dam to block the direction of air flow from air conditioning duct as shown.

FIGURE 3

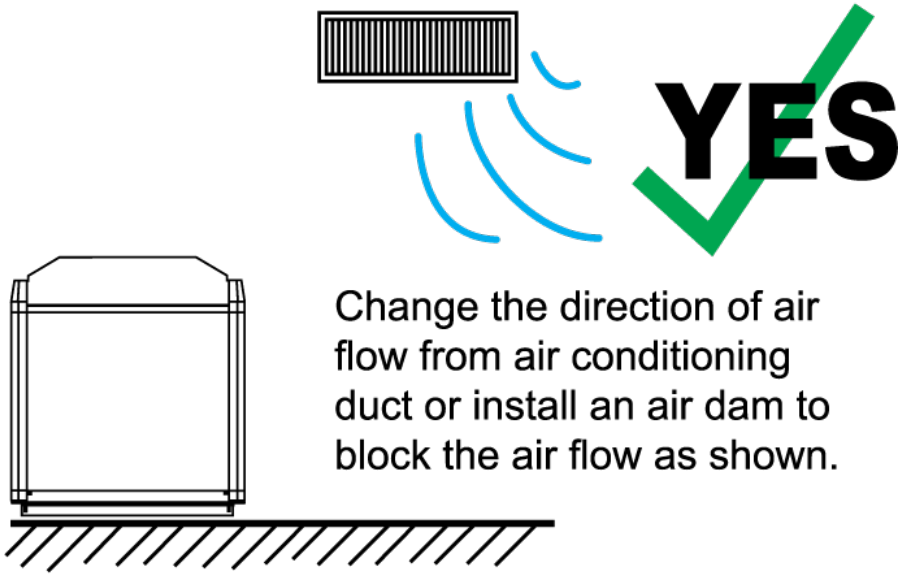
…

AIR CONDITIONING DUCT
(WALL TYPE)



Air flow from air conditioning may interupt cooled air curtain as shown.

FIGURE 4



Change the direction of air flow from air conditioning duct or install an air dam to block the air flow as shown.

FIGURE 5

TO CHECK AIR CURTAIN

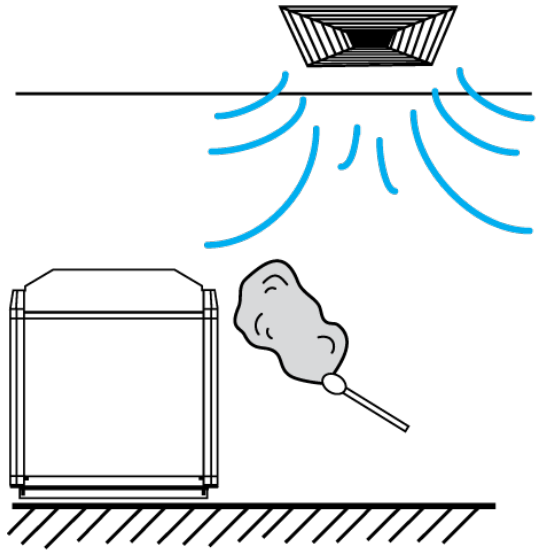


FIGURE 8

Hold matchstick 1 foot from front opening of showcase as shown. (Figure 8)

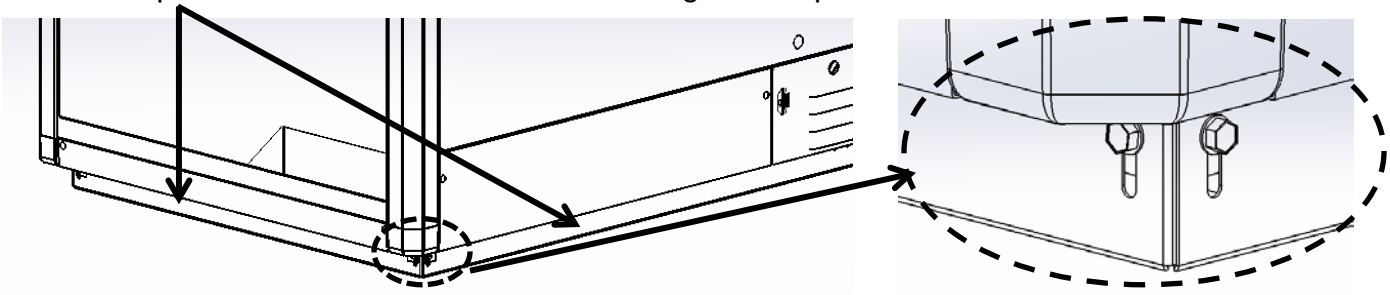
If smoke travels upward, then the air curtain is present.

If smoke travels into showcase the air curtain is not functioning correctly.

To insure the NIC doesn't roll, lower the leveling legs to lift the NIC up off the casters, and level the NIC.

If your facility is equipped with a floor drain, connect the drain hose on the bottom of the cabinet to the drain, or position the NIC so condensation will flow into the drain from the drain hose.

Install four panels next to the floor as shown using screws provided.



Plug unit into 208-220 VAC single phase 60 Hz grounded outlet to match the plug supplied with the NIC. If this outlet is not available, have one installed by a qualified electrician.

REFRIGERATION INSTALLATION (NIC183R01 only)

Have a qualified refrigeration technician connect the condensing unit to the NIC's refrigeration connection lines. Refer to the condensing unit manufacturer's installation instructions. Caution: lines are pressurized with nitrogen. Suction line 1/2", liquid line 3/8".

Route the insulated refrigeration lines up from below the NIC if possible. Otherwise, route the refrigeration lines through one of the side panels and notch the panel so it can be reinstalled.

Utilizing proper refrigeration practices, connect the refrigerant lineset to the NIC refrigerant valves using long radius fittings. Trim the line set length to keep from creating oil traps in the lines. Connect line set to the remote mounted condensing unit. Turn on power to the NIC to open liquid line solenoid.

ALL brazing should be done under a low pressure nitrogen purge. After brazing, pressurize system with nitrogen and check brazed joints for leaks. After leak checking, release the nitrogen and evacuate the system to 400 microns or below. Verify the system holds this vacuum before weighing in the refrigerant charge. Break vacuum with liquid refrigerant through the HIGH side access port at the condensing unit. Turn power on to the condensing unit and continue charging through the LOW side port using a metering device such as a "Quik Charge" or Uniweld's "VaporVue". Stop charging when sight glass clears and check for required superheat of 10 ºF to 12ºF. Weigh in an additional two (2) pounds of refrigerant to insure proper sub cooling.

System operates with a controller set point and solenoid valve (pump down). The condensing unit must have a low pressure switch.

NIC183R01: 11,800 BTU/hour, evaporating temp: 15ºF @ 80°F dry bulb, 68°F wet bulb

START-UP & OPERATING INFORMATION

START-UP AND PERFORMANCE CHECK

Step 1: Turn on power switch located on the front of the power control box. Start the condensing unit (NIC183R01 only) per manufacturer's instructions. Insure evaporator fans are operating. The control system is factory preset and does not need adjustment.

Step 2: Verify that there is a flow of cold air from the outlet louvers, located on the side of the cabinet.

Step 3: Observing the controller display, monitor the cabinet temperature, and verify that unit cools to below 0°F within 1 hour.

Step 5: Verify that all cover panels are installed. The NIC is ready to be loaded with frozen product.

OPERATING GUIDELINES

1. For best results, stock the NIC only with frozen product.
2. Load products only after the NIC has cooled below 0°F.
3. For proper air curtain operation, do not stack products above the top rim of the baskets.

CONTROLLER OPERATION AND ERROR CODES

NIC controller button functions:

F1 - Scroll Up
F2 - Return / Escape
F3 - Scroll Down
F4 - Enter / Set

Alarms:

Item	Display		Condition
Case Temp	SrCA	AL01	Disconnected
Case Temp	SrCA	AL02	Out of range
Evaporator coil	SrCA	AL03	Disconnected
Evaporator coil / cool down	SrCA	AL04	Out of range
Condenser Temperature	SrCA	AL05	Disconnected

Condenser / Filter	SrCA	AL06	Out of range
Condenser insufficient air flow	-	COnd	Above 109°F for >15 minutes (NIC183S01 only)
Drain Alarm	-	drPn	Drain pan full (open contact)
Fan Alarm	SrCA	AL09	Below set point rpm
Fan Alarm	SrCA	AL10	Below set point rpm
High Temperature Alarm	SrCA	AL11	Case temperature > 5°F for more than 2 hours

Display normally shows temperature. For alarms needing service, the display will alternate between "SrCA" (Service Call) and the error (such as AL02). For alarms the store can fix, the display alternates between "drPn" (Drain Pan is full) or "COnd" (need to clean the condenser) and the temperature.

To show firmware version: Press and hold F2 for 5 seconds. The version will show for 5 seconds.

GENERAL MAINTENANCE

PERIODIC CLEANING AND DEFROSTING

In order to maintain peak operating performance, 2 to 4 times per year, remove product, turn off the power, and remove the baskets and deck panels to allow any possible accumulations of ice to melt. During this time, clean the baskets and deck panels in running water. Also remove the drip pan, clean or discard and replace the sponge (remote only 1250892), and reinstall the drip pan. Clean the inside and outside of the NIC with a damp cloth.

STORING THE CABINET

Step 1: After removing product, disconnect the unit from its power source.

Step 2: Wipe the interior of the NIC with a damp cloth.

Step 3: Cap off refrigeration connection lines (NIC183R01 only).

Step 4: Unit must be stored indoors in a clean, dry place. Do not choose a location where the unit will be exposed to direct sunlight, high temperature, or high humidity.

TROUBLESHOOTING

Before calling your Service Technician, please make these simple checks:

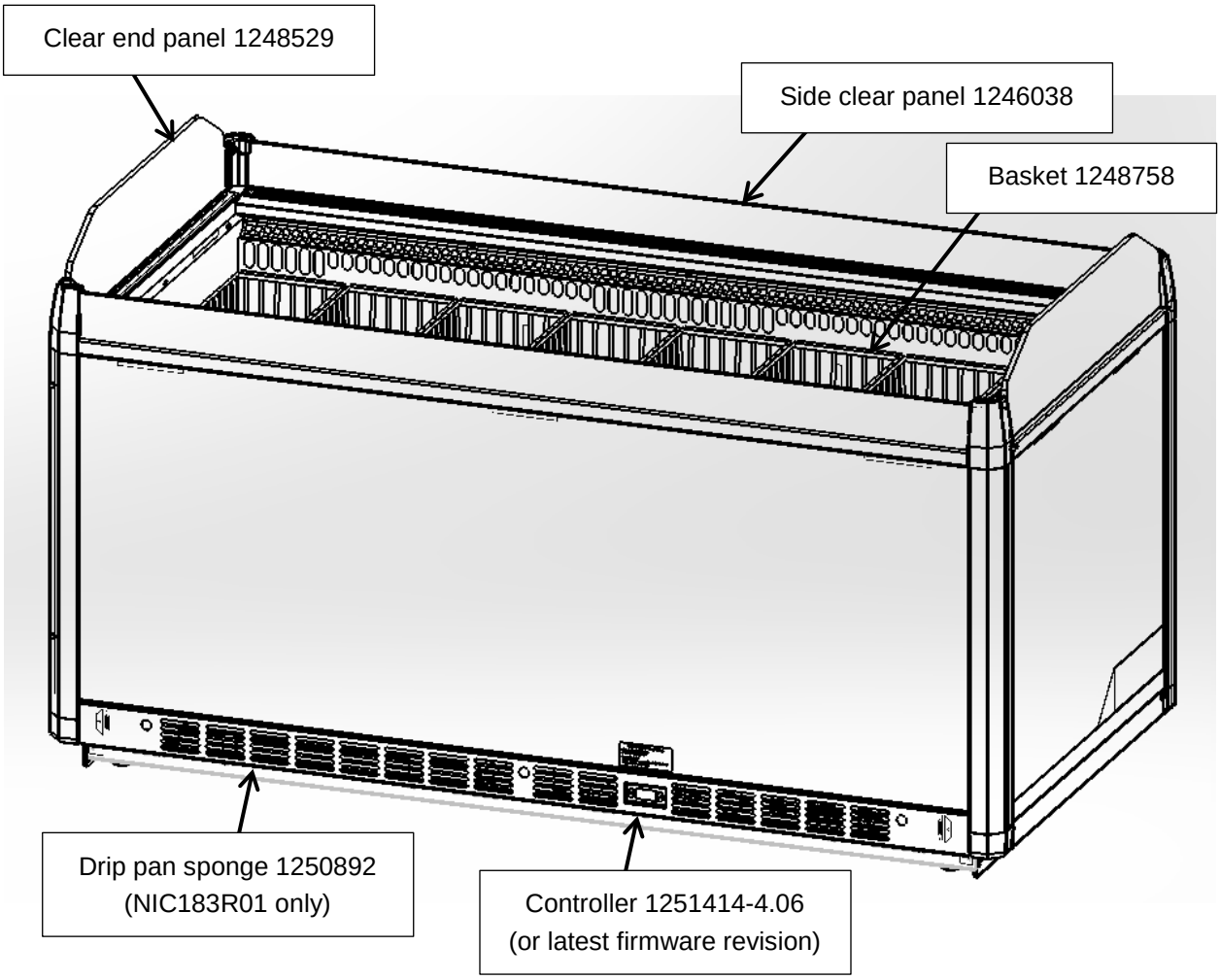
If the unit is not operating:

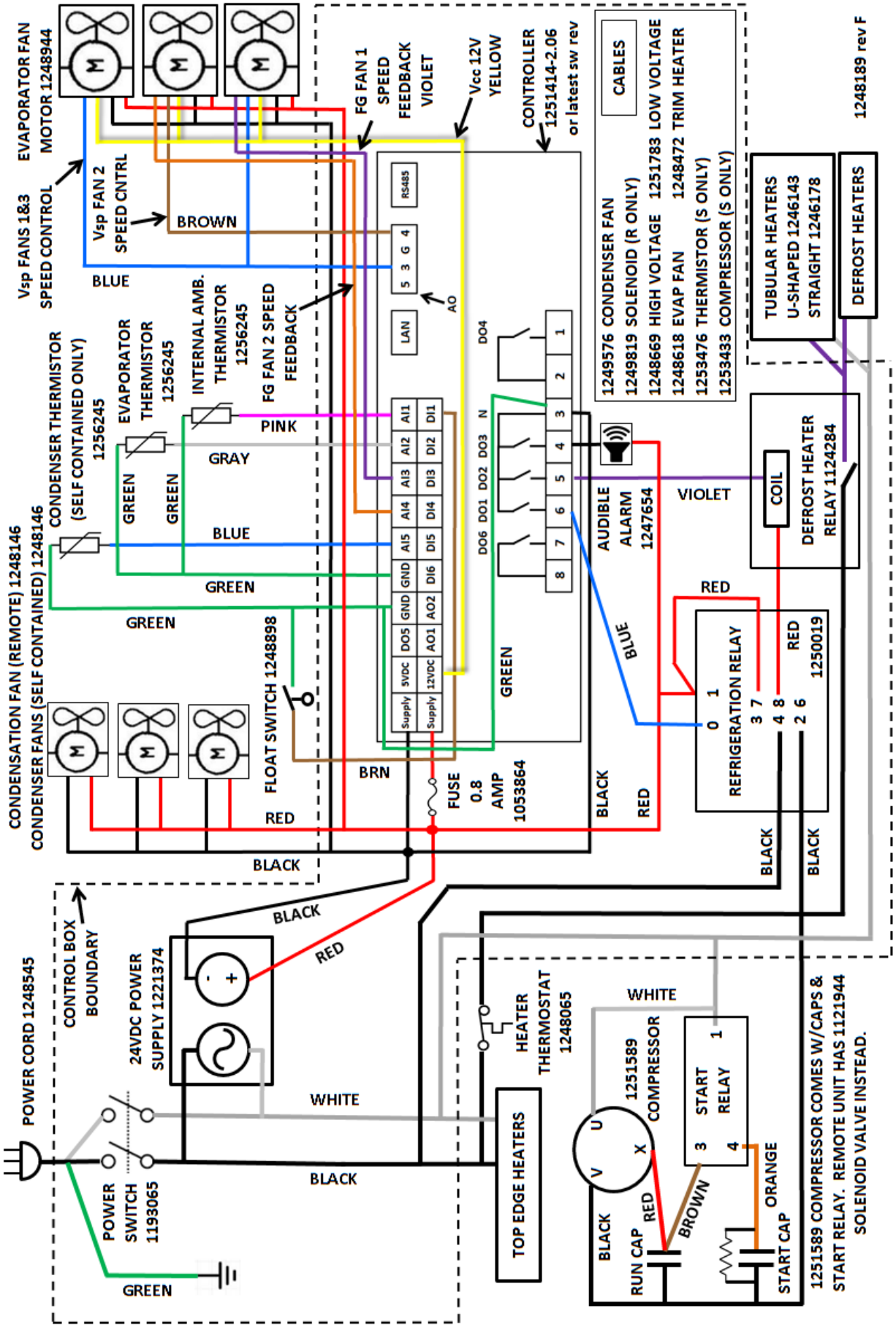
1. Is there 208 to 230 VAC power to the unit?
2. Is there a tripped breaker or blown fuse?
3. Has the refrigeration unit cycled off, because it is at the designated operating temperature?

If the cabinet temperature is too warm:

1. Is the controller set point set correctly?
2. Is the cabinet located in direct sunlight?
3. Is the cabinet located in a strong air-flow path?
4. Is the product above the fill limit line?
5. Is the air temperature around the cabinet above 80°F?
6. Is there reduced air flow, or no air flow, from the cold air outlet vent?

SERVICE PARTS and ELECTRICAL SCHEMATIC




EVAPORATOR FAN MOTOR 1248944
Vsp FANS 1&3 SPEED CONTROL
Vsp FAN 2 SPEED CNTRL
BROWN
BLUE
FG FAN 1 SPEED FEEDBACK VIOLET
Vcc 12V YELLOW
CONTROLLER 1251414-2.06 or latest sw rev
CABLES
1249576 CONDENSER FAN
1249819 SOLENOID (R ONLY)
1248669 HIGH VOLTAGE
1251783 LOW VOLTAGE
1248618 EVAP FAN
1248472 TRIM HEATER
1253476 THERMISTOR (S ONLY)
1253433 COMPRESSOR (S ONLY)
TUBULAR HEATERS U-SHAPED 1246143 STRAIGHT 1246178
DEFROST HEATERS
1248189 rev F
INTERNAL AMB. THERMISTOR 1256245
FG FAN 2 SPEED FEEDBACK
EVAPORATOR THERMISTOR 1256245
CONDENSER THERMISTOR (SELF CONTAINED ONLY) 1256245
PINK
GRAY
GREEN
GREEN
BLUE
GREEN
GREEN
CONDENSATION FAN (REMOTE) 1248146
CONDENSER FANS (SELF CONTAINED) 1248146
FLOAT SWITCH 1248898
BRN
RED
BLACK
FUSE 0.8 AMP 1053864
GREEN
AUDIBLE ALARM 1247654
VIOLET
BLUE
BLACK
RED
COIL
DEFROST HEATER RELAY 1124284
RED
REFRIGERATION RELAY
RED 1250019
BLACK
BLACK
RS485
LAN
AO
AI1 AI2 AI3 AI4 AI5 GND GND DO5 5VDC 12VDC Supply Supply
DI1 DI2 DI3 DI4 DI5 DI6 AO2 AO1
DO4 DO3 DO2 DO1 DO6 N
1 2 3 4 5 6 7 8
POWER CORD 1248545
CONTROL BOX BOUNDARY
24VDC POWER SUPPLY 1221374
BLACK
RED
WHITE
BLACK
POWER SWITCH 1193065
GREEN
HEATER THERMOSTAT 1248065
TOP EDGE HEATERS
WHITE
1251589 COMPRESSOR
U V X
START RELAY
1 3 4
BLACK
RUN CAP
RED
BROWN
ORANGE
START CAP
1251589 COMPRESSOR COMES W/CAPS & START RELAY. REMOTE UNIT HAS 1121944 SOLENOID VALVE INSTEAD.