January 2006

HUSSMANN®

INSTALLATION & SERVICE INSTRUCTIONS FOR

GIM LOW TEMPERATURE SELF-CONTAINED

FOR

Pre Packaged Ice Cream and Ice Cream Novelties

HUSSMANN®

First Call for help (US and Canada):

1-800-922-1919

Soporte Tècnico y Asistencia (Mèxico):

01-800-522-1900

For a Service Network Locator and other Information visit us at

www.hussmann.com

select Worldwide Locations

P/N OII – GIM
January 2006

HUSSMANN - GLOVERSVILLE

TABLE OF CONTENTS

TABLE OF CONTENTS CONT'D

INTRODUCTION –

The Gim-6 is a low temperature, self-contained cabinet designed for pre-packaged ice cream or ice cream novelties at below freezing temperatures. Design features include self-closing glass doors, efficient foamed in place non-CFC insulation, low rail height, from both sides, and a balanced refrigeration system for energy saving performance

INSPECTION –

Upon receipt of the cabinet, carefully examine the crating for damage. If crate is damaged, make a note on the delivery ticket before signing. Carefully remove shipping crate and examine cabinet for "concealed" damage. If damage is found, contact the delivery carrier immediately and have his agent prepare an inspection report for the purpose of filing a claim. THIS IS YOUR RESPONSIBILITY.

LOCATION –

Avoid locating the case where direct sunlight would shine into the fixture or where drafts from air conditioning grills, fans, and open doors could effect its operation.

CLEARANCE –

Because this condensing unit is located at the bottom of the cabinet, a three (3) foot clearance should be allowed in front of the louvered access panel to provide free air movement to and from the condenser for maximum operating efficiency.

INSTALLATION and START-UP –

SKID –

The skid should be left on the unit until it is near its final location. The skid provides protection for both case and floor. The skid is removed by removing the bolts holding the skid clamps to the case base, then sliding the case off the skid. A "mule" bracket is built in the end of the cabinet base frame for this purpose.

LEVELING and SEALING –

Proper drainage of the evaporator condensate water requires the cabinet to be properly leveled. This means left to right as well as front to back.

The case can be leveled using the leveling screws in the bottom of the case or by shimming under the cabinet base frame. The self-closing doors require the cabinet to be properly leveled. End to end leveling will make the doors close with uniform speed and tightness. Once level the case should be sealed to the floor as shown in the following drawing, using an NSF approved material such as General

Electric RTV-102 silicone sealer or an equivalent.

Silicone Sealant
Floor

BOTTOM LOUVERED PANEL REMOVAL –

The louvered panel provides access to the condensing unit and the electrical box. The panel is secured with screws to prevent injury.

COMPRESSOR –

The compressor is banded for shipping. THE BAND MUST BE REMOVED. The mounting bolts on the compressor are factory pre-set to allow the compressor to float freely on the mounting springs. DO NOT LOOSEN NUTS.

CABINET DRAIN –

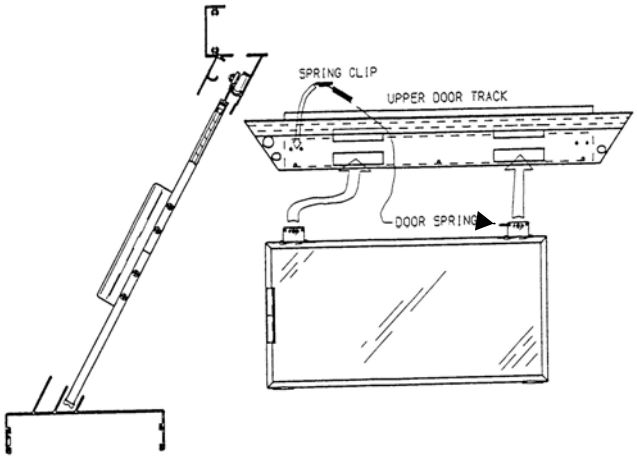
A positive pitched drain tube is factory-installed which runs to a drain pan in the condensing unit area from the evaporator section to handle defrost water. No piping to a floor drain is necessary but the tube should be checked to make sure the tube has not become plugged with items such as pricing stickers, and is over the pan so water does not run onto the floor.

GLASS DOORS –

The doors are made of tempered, heat reflective glass. The doors mount in the aluminum top canopy. The bottom tracks are provided with wipe outs for cleaning purposes.

The doors are self-closing and are supported by rollers that ride on the upper track. The upper track has cut out areas to insert the door rollers up into. The door spring is then slipped over a clip at the end of the track. Prior to November, 1997 the upper track also has a 'bounce back' spring mounted to each end to assist the door in sealing when it closes. There is a thumbscrew on the end of the spring that allows for adjustment of the amount of 'bounce back'. Turning the screw 'in' will allow for more 'bounce back'.

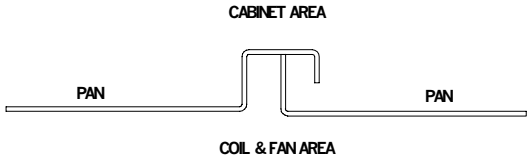
Cases produced starting November 1997 eliminate the spring back mechanism and have rubber channels in the end frames to grab and seal the door upon closing. As always, proper cleaning of door rollers and tracks is required for proper door operation.



SHELVES –

The five solid shelves that set over the evaporator section must be installed as shown below otherwise the air will not flow through the case and the novelty baskets will not set in the case correctly.

Example in the diagram below



AIR DISTRIBUTION AND PRODUCT

If desired an optional kit utilizing twenty-one baskets in place of the fifteen baskets supplied with the cabinet may be ordered. This kit consists of baskets (which are different size than the fifteen standard ones supplied with the cabinet) and two shelf covers. The shelf covers, when properly installed over the five solid metal shelves, create a smooth flat surface allowing the use of additional baskets. When utilizing this kit, the five solid shelves must be left properly installed as shown above, and the optional covers placed over the shelves with the formed edges down. If all shelves and covers are not properly installed, interior airflow and temperature in the cabinet will be affected.

AIR DISTRIBUTION AND PRODUCT and LOADING

The GIM-6 is a 'forced-air" cabinet employing a state-of-the-art honeycomb air discharge system. Air is discharged from the honeycomb, flows over the top of the product, and is returned through the return air duct.

The interior of the cabinet has load line markings showing how high product can be loaded in the cabinet without affecting the air curtain. White, epoxy-coated, wire baskets are provided for the product and they are designed to fit below the load line. DO NOT LOAD PRODUCT ABOVE THE LOAD LINE AS IT WILL ADVERSELY AFFECT CABINET TEMPERATURE.

ELECTRICAL CONNECTIONS –

It is very important for safety to you and your customers to have the cabinet properly grounded.

The electrical installation should be done by a qualified electrician in accordance with the National Electrical Code and/or local codes.

> **NOTE: Connecting this unit to any electrical supply other than specified on the serial plate will void the warranty and may result in serious damage to the unit. The cabinet should be supplied with its own service.**

Prior to performing any service or maintenance on this cabinet, be sure to disconnect the power supply to the cabinet. Failure to do so may result in electrical shock and/or serious injury.

SERIAL PLATE INFORMATION –

The serial plate is located in the upper left hand corner of the case interior. It has all the pertinent information needed for proper electrical installation. The serial plate should not be removed for any reason.

START UP PROCEDURE –

- After the wiring has been completed, set the defrost timer for the correct time of day, making sure the defrost pins are secure in the face of the clock. The GIM-6 is factory set for 2 defrost periods in a 24 hour span. (6 a.m. and 6 p.m.)
- Cut the band holding the compressor in place during shipping.
- Check the cabinet thoroughly for loose nuts and bolts and electrical connections. Inspect the refrigeration lines for any visible damage or chafing.
- Replace the electrical box cover.
- Start the cabinet and allow to pull down to operating temperature before loading.

DIMENSIONS –

	CU FT	EXTERIOR		
MODEL	CAP.	L	W	H
GIM-6	8.8	72"	40"	48 3/4"

ELECTRICAL –

	UNIT		
MODEL	H.P.	HZ/PH	VOLTS
GIM-6	3/4	60/1	115*

RUN AMPS	FUSE SIZE	SHIP WT
12.0	20 AMP	800

* 115V/20 AMP GROUNDED POWER CORD INCLUDED

BTU CAPACITY –

		RATING TEMPS Fº		
MODEL	BTU/HR	EVAP	COND	AMB
GIM-6	4600	-25	110	90

Cases use R-502 refrigerant prior to 6/8/95. After this date they were changed to R-404a. Check the serial plate for specific refrigerant used.

CARE AND CLEANING –

To insure good sanitation, appearance, and minimum maintenance, the cabinet should be cleaned and washed regularly as use demands. Clean with a mild detergent and warm water. DO NOT USE AN ABRASIVE CLEANER OR STEEL WOOL AS THEY WILL MAR THE FINISH.

ROUTINE MAINTENANCE –

Under normal conditions, after the cabinet is installed and running, very little maintenance should be required. However, the following list of housekeeping practices will assure trouble-free operation.

1. Check operation of condenser fan motors. Fan blades must turn freely.
2. Check drain pan to prevent accidental overflow. Check alignment of drain stub going into pan.
3. Make sure doors are closing properly and that the doors seal.
4. Make sure all evaporator fan motors are running.
5. Keep the honeycomb and return grill free of ice. The honeycomb is removable for cleaning. A condensate heater is installed above the discharge honeycomb, effective Nov. 1997 to prevent ice build-up.

OPERATION AND MAINTENANCE –

POWER SWITCHES –

The power switch is located at the electrical box behind the bottom louvered panel. The switch will shut off all power to the cabinet.

TEMPERATURE CONTROL –

The temperature control is located in the electrical box behind the bottom louvered panel. The temperature control does not have an 'OFF' position. Adjustments may be made by the use of a screwdriver in the slot provided in the face of the control. Turning it clockwise will give warmer temperatures while counter-clockwise will give colder temperatures. There is also an adjustable temperature differential (the difference between the cut-in temperature and the cut-out temperature) located next to the dial face.

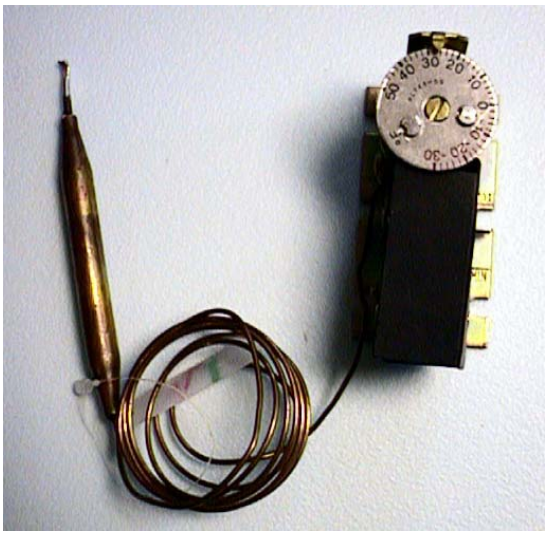
The control has a range of –10ºF to +50ºF with a differential of 5º to 20º. It is factory set for approximately –10ºF with a 5ºdifferential. The temperature should be checked with a thermometer other than the case thermometer after it is running to insure that the case is running at the proper temperature for the product.

THERMOMETER –

The thermometer is located in one of the interior corners of the cabinet. The thermometer will probably need resetting to reflect the proper case temperature. Using a separate thermometer located on a shelf in the case, compare this temperature to that on the case thermometer. If the case thermometer needs to be adjusted, remove the clear protective cover by popping it off with a small screwdriver and turning the small adjustment screw on the face of the thermometer.

The thermometer will also warm up rather rapidly when the case door is held open for a time such as when the case is being restocked or a shopper is making a decision on a product. After the door is closed it will take some time for the thermometer to pull back down to the case temperature.

Penn A19-AHA-2D



Replacing or cleaning of the thermometer is accomplished by removing the three screws securing the thermometer to its bracket. Remove the screws holding the lower edge of the return air grill. Remove the product and product trays. Lift up and remove the panel that grill was secured to. The RTV caulking in the corner may have to be removed first.

Loosen the screw to the clamp holding thermometer sensing element. Remove the element. Assemble in reverse order making sure to thread the sensing lead of the new thermometer through mounting bracket first.

<u>ELECTRICAL BOX</u> –

The electrical box contains the defrost time clock, temperature control, power switch, and terminal board. The box is capable of sliding out of the condensing unit compartment for servicing convenience.

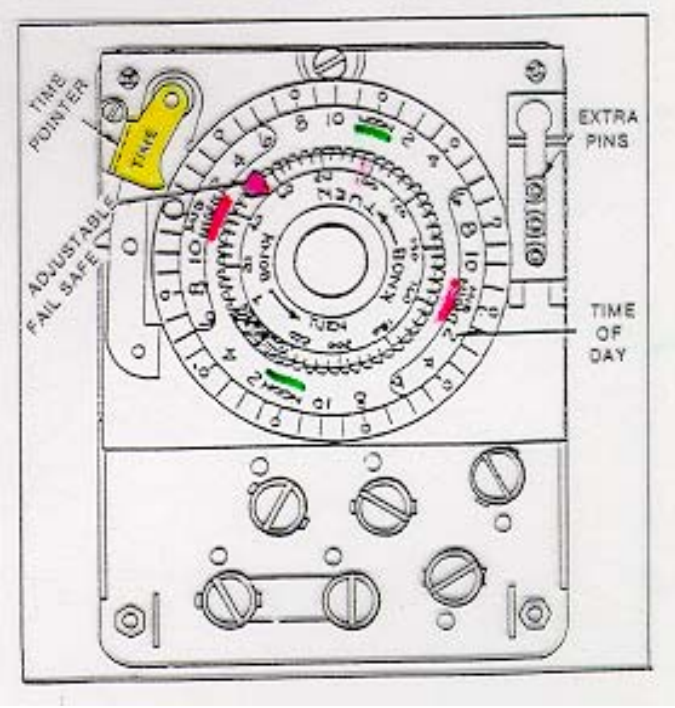
Access is gained by removing the bottom louvered panel and the electrical box cover. The cabinet supply breakers should be disconnected before removing the cover.

<u>DEFROST TIME CLOCK</u> –

The timer is factory pre-set for two defrost cycles per 24 hours at 6:00 a.m. and 6:00 p.m. with a 40 minute failsafe. This means there are 4 pins in the time face.

The timer must be adjusted to the proper time of day when the cabinet is started. The timer is adjusted by turning the knurled adjustment know in the center of the dial face counter-clockwise until the timer indicator corresponds with the correct time of day.

The defrost pins should be checked for tightness. The timer will require readjusting after a power failure or the cabinet supply is turned off for extended periods of time. If an additional defrost is required due to ambient or cabinet usage conditions, *<u>DO NOT PUT A DEFROST DURING THE MIDDLE OF THE DAY.</u>* Put any additional defrost during the night.



Defrost is time initiated and temperature terminated.

If the thermostat should fail, the

timer is equipped with a failsafe set at 40 minutes that will allow defrost to terminate on time.

DEFROST HEATER THERMOSTAT –

The defrost heater thermostat is clamped to the evaporator outlet tube. It is bi-metal thermostat that is tied in series with the evaporator fans for a delay and with defrost time clock solenoid to end defrost when the temperature has been satisfied. The evaporator fans will not come on until the thermostat senses 32ºF and defrost will terminate when the stat senses 58ºF.

The fans DO NOT operate during defrost.

DEFROST HEATER REPLACEMENT -

The defrost heaters are held in place on the underside of the evaporator with spring clips. To remove the heater, remove all the spring clips.

The new heater should have all the spring retaining clips in place to assure heater retention.

LIGHTING –

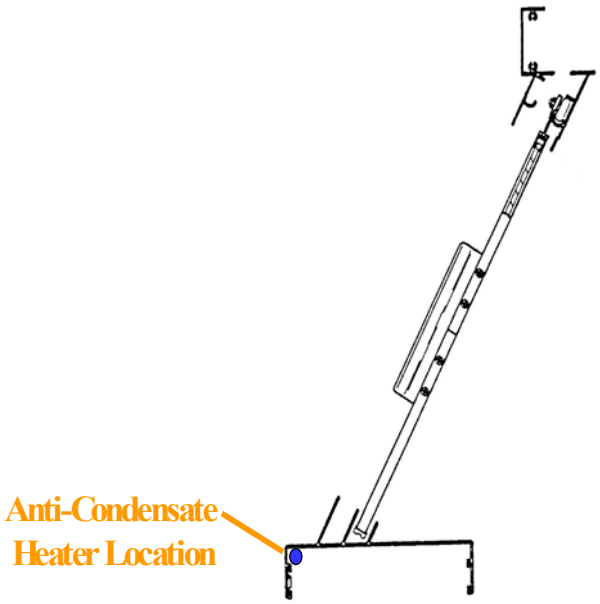
Interior lighting is provided by cool white fluorescent bulbs located on the underside of the upper canopy. The tubes are sleeved to maintain proper heat around the bulb for maximum light intensity and to protect the product in case of breakage. The tubes can be replaced without removing the doors. To replace, twist the bulb and slide the prongs clear of the lampholder. When reinstalling this type of bulb be sure the prongs on the bulb twist and lock into place.

There is a convenient ON/OFF switch so lights may be turned off to conserve energy during hours when the store is closed. The switch is located inside the cabinet on the light fixture. This switch only controls the lights. 115 volt power must be shut off at the main power supply source located within the store prior to starting any service or maintenance work.

CONDENSATE HEATERS –

There is a condensate heater located on the underside of the base frame of the top canopy. The heater is on continually.

To replace this heater the screws in each corner of the canopy base that hold it down to the main cabinet body need to be removed and the canopy raised.



Additionally, effective November 1997 there is a condensate heater above the discharge air honeycomb. To access heater, remove the screws supporting the honeycomb and remove this sub assembly. This heater is also "on" continuously.

EXPANSION VALVE ADJUSTMENT –

Expansion valve must be adjusted to fully feed the evaporator. Before attempting to adjust the valve make sure the evaporator is either clean or only lightly covered with frost, and that the cabinet is within 10º of its expected operation temperature. Adjust the expansion valve as follows:

Attach two sensing probes to the evaporator, one under the clamp holding the expansion valve sensing bulb and the other securely taped to one of the return bends two thirds of the way through the evaporator circuit.

Some "hunting" of the expansion valve is normal. The valve should be adjusted so that during the hunting the greatest difference between the two probes is 3º to 5ºF. Remove valve stem cover and turn valve stem counterclockwise to decrease temperature difference between the probes.

To increase temperature difference of probes, turn the valve stem clockwise. With this adjustment, during a portion of the hunting the temperature differences between the two probes may be less than 3ºF, or at times as low as 0ºF. Make adjustments of no more than one half turn of the valve stem at a time and wait for at least fifteen adjustments. Replace and tighten cover of the valve stem.

REFRIGERATION –

As stated previously, the GIM-6 is self-contained featuring a semi-hermetic compressor and thermostatic expansion valve. The condenser is fin-and tube construction and SHOULD BE PERIODICALLY CLEANED TO MAINTAIN EFFICIENT OPERATION.

If it should become necessary to leak test the system, please adhere to the following notice:

> **NOTICE: Because of the CFC atmospheric consideration being taken today, we ask that leak testing be done with refrigerant 22 mixed with nitrogen. If the condensing unit nameplate designates a refrigerant other than R-22 remove all R-22 from the immediate area to avoid confusion after leak testing and evacuating the unit. Recharge the unit with proper refrigerant.**

LEAK TESTING –

********** CAUTION **********

The test gas cylinder must be equipped with a pressure gauge and regulator so that system test pressures do not exceed maximum allowable limits. Do not ever use anything other than an R-22/

nitrogen mixture for leak testing.

Attach a refrigerant test gas cylinder to your service manifold and connect the manifold to the charging port on the liquid line valve. Charge an R-22/Nitrogen mixture into the system, raising the pressure to the remote unit's nameplate for the low side and high side pressures. Using an electronic detector, carefully check the entire system for leaks. Take special care to inspect all brazed and flare connections.

EVACUATION –

After the system is proven leak tight, thoroughly evacuate the system according to the follow procedure:

1. Discharge the refrigerant-nitrogen mixture, allowing it to blow from the system as rapidly as possible, into an empty cylinder. Be sure that all service valves and solenoid valves are open to allow all of the mixture to be discharged.

2. Connect a deep-drain vacuum pump to both the high and low side of the system. Pull a vacuum on the system to at least 1500 microns.

3. Break the vacuum by adding refrigerant into the system until the pressure is above 0 PSIG. Always charge the refrigerant line into the system through a new drier in the charging manifold line. A 16 cubic inch drier is sufficient for this purpose.

4. Repeat steps 2 and 3 two more times, the third time evacuating the system to 500 microns.

OPERATIONAL DATA –

The following is typical data for GIM-6 based on lab tests, and may vary under field operating conditions.

	R502	R404A
AMBIENT TEMP	75ºf	75ºf
HEAD PRESSURE	225 PSI	235 PSI
SUCTION PRESS	3.5 PSI	7-8 PSI
DISCHARGE AIR	-25ºF	-25ºF
RETURN AIR	-10ºF	-10ºF

COMPRESSOR –

The compressor is mounted on springs and banded for shipping purposes and this band needs to be cut upon installation. Do not loosen the compressor mounting bolts as these are factory pre-set for proper riding on the springs.

CONDENSER FAN MOTORS –

There are two condenser fan motors on the GIM-6, one cycles with the compressor during its off cycle while the other runs continuously. This is to allow the compressor and condenser to cool even further during the off cycle, thus reducing the head pressure while the cabinet is running and reducing the amperage draw of the compressor.

RECEIVER –

The receiver is located behind the condenser.

CRANKCASE PRESSURE REGULATOR –

The GIM-6 employs a crankcase pressure regulator in the suction line. The CPR is set for 10 psi. The purpose of the valve is to maintain a low suction pressure on start-up so that the compressor will start properly. On start-up, the valve will hold the suction pressure at the desired setting until the suction pressure has dropped below the setting, then the valve will open.

If it becomes necessary to check or reset the setting, the case must be warm such as after a defrost cycle or from an initial warm case condition. Put a suction compound gauge on the compressor suction valve, start the compressor. If the pressure needs to be reduced turn the adjustment screw clockwise or, counter-clockwise to raise the pressure. DO NOT SET THE VALVE BASED ON THE NAMEPLATE AMPERAGE RATING AS THE PRESSURE SETTING WILL BE TOO HIGH AND THE COMPRESSOR WILL NOT START PROPERLY.

TROUBLE SHOOT CHARTS

TROUBLE	PROBABLE CAUSE	SOLUTION
Compressor runs continuously. Product too warm	1. Short of refrigerant	1. Leak check, change drier, evacuate and recharge
	2. Inefficient compressor	2. Replace
	3. Dirty condenser	3. Clean
High head pressure	1. Cabinet location too warm	1. Relocate cabinet
	2. Restricted condenser air flow	2. Clean condenser to remove air flow restriction
	3. Defective condenser fan motor	3. Replace

	4. Air or non-condensable gasses in system	**4. Leak check, change drier, evacuate, and recharge.**
Warm storage temperatures	**1. Temperature control not set properly**	**1. Reset control**
	2. Short of refrigerant	**2. Leak check, change drier, evacuate, and recharge**
	3. Cabinet location too warm	**3. Relocate**
	4. Too much refrigerant	**4. Change drier evacuate, and recharge**
	5. Low voltage compressor cycling on overload	**5. Check power**
	6. Condenser dirty	**6. Clean**
	7. Honeycomb iced up	**7. Clean**
Compressor runs continuously product too cold	**1. Defective control**	**1. Replace**
	2. Control feeler tube not in positive contact	**2. Assure proper contact**
	3. Short on refrigerant	**3. Leak check, change drier, evacuate, and recharge**
Compressor will not start no noise	**1. Blown fuse or breaker**	**1. Replace fuse or reset breaker**
	2. Defective or broken wiring	**2. Repair or replace**
	3. Defective overload	**3. Replace**
	4. Defective temp control	**4. Replace**
	5. Power disconnected	**5. Check service cord or wiring connections.**

Compressor will not start, cuts out on overload	**1. Low voltage**	**1. Contact electrician**
	2. Defective compressor	**2. Replace**
	3. Defective relay	**3. Replace**
	4. Restriction or moisture	**4. Leak check, replace drier, evacuate and recharge**
	5. Inadequate air over condenser	**5. Clean plugged condenser**
	6. Defective condenser	**6. Replace**
	7. CRO not set properly	**7. Reset to 12 psi**
Icing condition in drain pan under evaporator	**1. Low voltage**	**1. Check voltage at compressor**
	2. Cabinet not level	**2. Check front to rear leveling, adjust legs accordingly**
	3. Defective defrost heater	**3. Replace**

ELECTRICAL COMPONENTS

Compressor	**KAA2-0075-IAA R-502**	**KAAB-007E-CAA R-404a**
Condenser Fan Motor	**EMS ESPL25EM1**	
Evaporator Fan Motor	**Morrill SPB5M1**	
Light Ballast	**6G1042 or 89G482**	
Fluorescent lamp	**F25T12CW33**	
Lamp Starter	**FS 25**	

TROUBLE SHOOTING FOR LIGHTING SYSTEM

PROBLEM	SOLUTION
Lights won't start	**1. Check light switch** **2. Check continuity to ballast** **3. Check to see if bulbs inserted properly in sockets** **4. Check voltage**
Lights flicker	**1. Allow lamps to warm up** **2. Check lamp sleeve for crack** **3. Check sockets for moisture and proper contact** **4. Bulb replacement may be necessary** **5. Check voltage** **6. New bulbs tend to flicker until used**
Ballast hums	**1. Check voltage** **2. Replace ballast**

<u>WARRANTY AND PARTS INFORMATION</u> –

PLEASE READ CAREFULLY TO ASSURE PROMPT AND ACCURATE SERVICE.

<u>ORDERING REPLACEMENT PARTS</u> –

1. **Contact your nearest Hussmann Distributor.**
2. **Always specify model and serial number of cabinet.**
3. **If correct part number is not known, give a clear description of part itself and its function in the cabinet or remote unit.**

WARRANTY PARTS PROCEDURE –

Same as Items 1, 2, and 3 from previous page

Give original installation date of cabinet and, if possible, forward a copy of the original invoice or delivery receipt.

All shipments of in-warranty replacement parts will be invoiced from the factory until such time as the defective part is returned and proved to be defective by our Quality Control Department.

Contact your Hussmann Distributor of instructions on returning in-warranty parts.

In case of a compressor failure, see instructions below.

Warranty parts must be returned to the factory within 30 days of date of failure to assure proper disposition.

Lack of any of the above information may result in the shipment of the wrong part, or a delay in shipment.

COMPRESSOR REPLACEMENT PROCEDURE –

Replacement compressors will not be shipped from the Hussmann factory. They may be obtained from you nearest Copeland Wholesaler.

Your wholesaler will replace, free of charge, any compressor found to be defective within twelve months of installation, not to exceed twenty months from the date of manufacture – as determined by the compressor serial number on the compressor serial plate.

For any defective compressor beyond the twelve or twenty month time period, a salvage value credit will be given to partially offset the invoice for the replacement.

To obtain reimbursement forward to: Hussmann Corporation
140 East State Street
Gloversville, NY
12078
the following information:

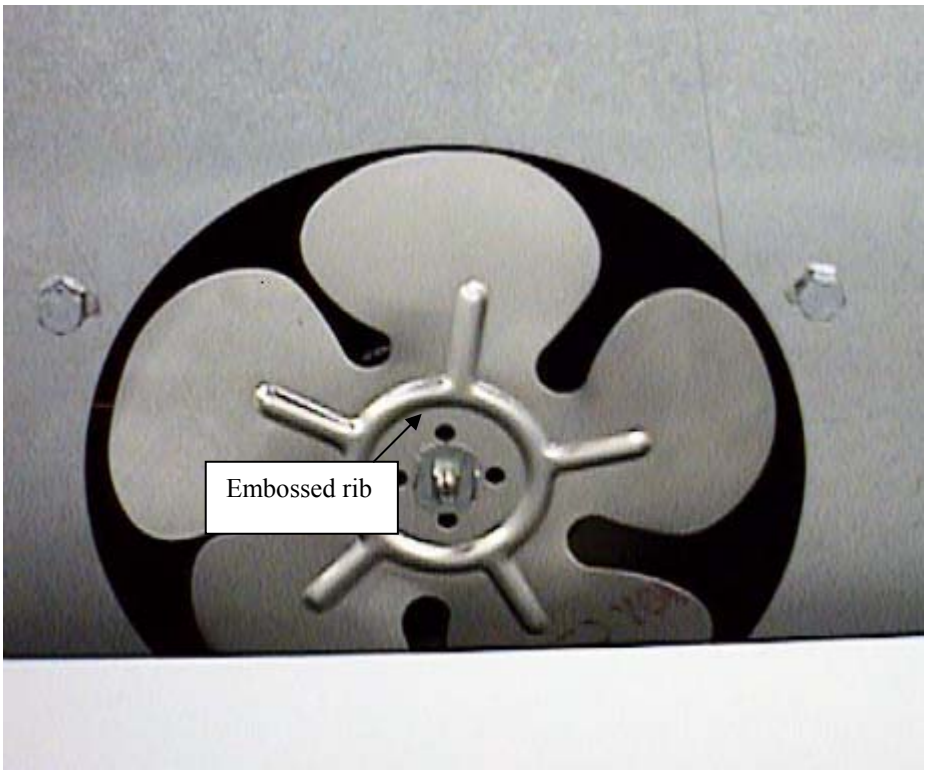
1. **The cabinet model and serial number**

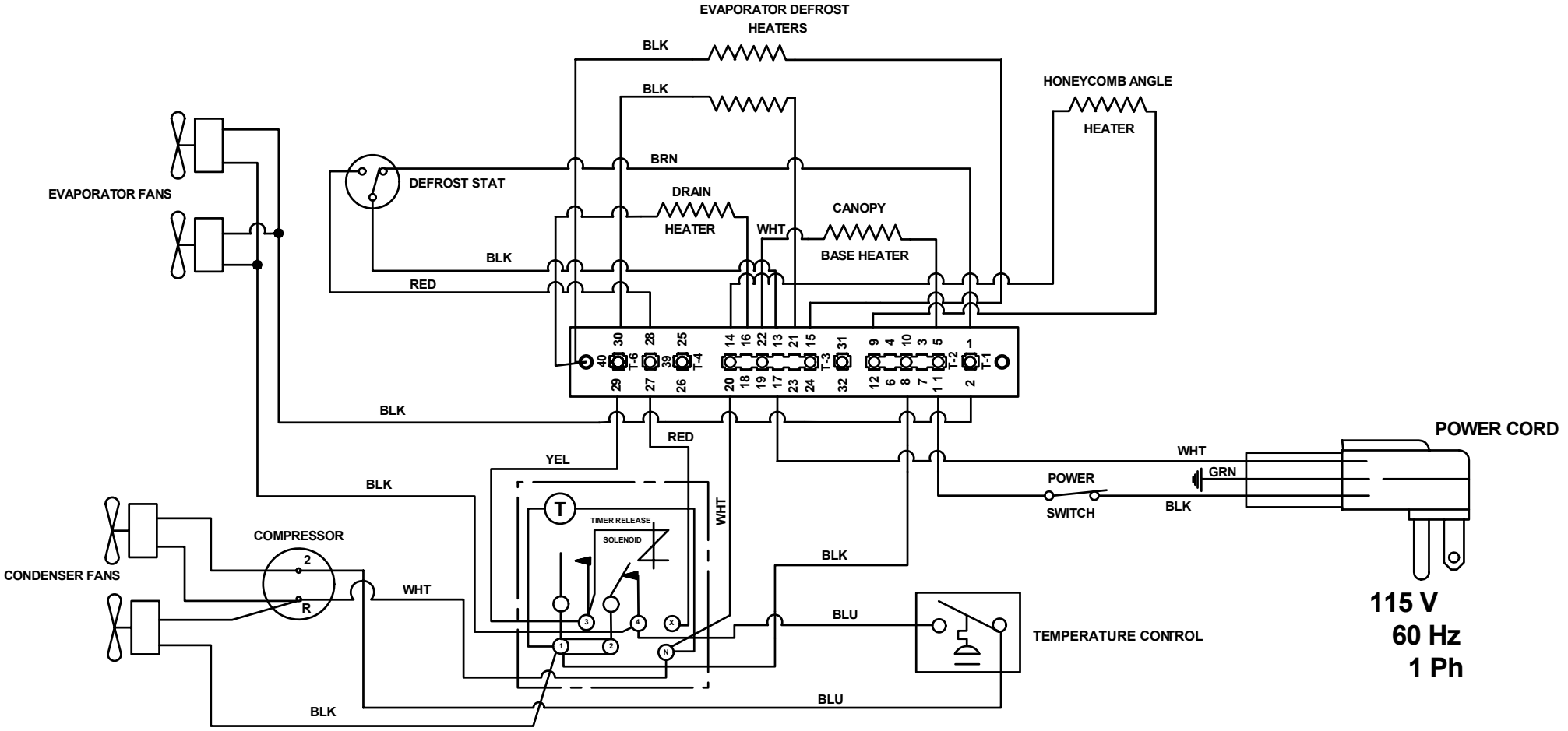
2. **A copy of the wholesaler's invoice, along with a copy of the salvage value credit.**

ADDENDUM

To ensure proper air flow in the display area, and to maintain p[roper suction pressure, it is important that the evaporator fan blades are mounted as shown in the illustration below.

When properly mounted, the embossed rib should be facing out as you look at the blade. The words Face To You in red ink should also be visible as you look at the blade.





GIM-6 WITHOUT LIGHTED CANOPY

REV.	DATE	BY	E.C.N.
A	10/97	JLS	4957

MATERIAL:

FINISH:

SHEET SIZE: B

TOLERANCES UNLESS OTHERWISE SPECIFIED.
FRACTIONAL ± 1/32"
DECIMAL ± 0.031 "
ANGULAR ± 3°
HOLE LOCATION & SPACING ± 1/64"

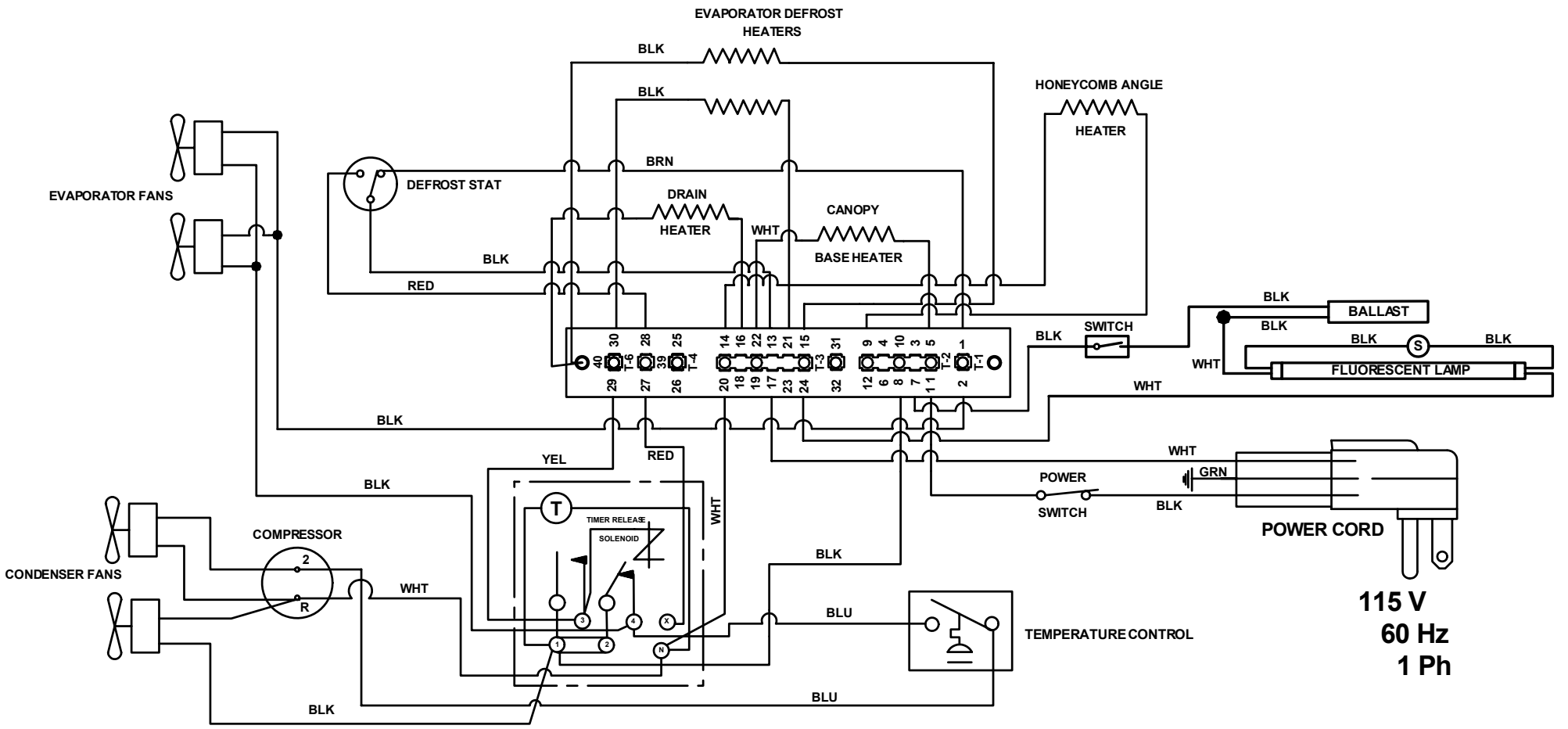
SCALE: NONE

USE: GIM-6

HUSSMANN®
Gloversville,N.Y. 12078

TITLE: WIRING DIAGRAM

			DWG. NUMBER	REV.
DESIGN	JLS	10/97	M100-2100	A
DRAWN	JLS	10/97		
CHECKED				



REV.	DATE	BY	E.C.N.
E	10/97	JLS	4957

MATERIAL:

FINISH:

SHEET SIZE: B

TOLERANCES UNLESS OTHERWISESPECIFIED.
FRACTIONAL ± 1/32"
DECIMAL ± 0.031 "
ANGULAR ± 3°
HOLE LOCATION & SPACING ± 1/64"

SCALE: NONE

USE: GIM-6

HUSSMANN®
Gloversville, N.Y. 12078

TITLE: **WIRING DIAGRAM**

			DWG. NUMBER	REV.
DESIGN	JLS	10/97	M100-1543-1	E
DRAWN	JLS	10/97		
CHECKED				