

January 2006

HUSSmann®

**INSTALLATION & SERVICE
INSTRUCTIONS
FOR**

**LBN MODELS
Low Temperature – Self Contained Merchandiser
For
Pre-Packaged Ice Cream, Ice Cream Novelties and Frozen Foods**

HUSSmann®

First Call for help (US and Canada):

1-800-922-1919

Soporte Técnico y Asistencia (México):

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**P/N OII – LBN
January 2006**

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The **LBN** series are low temperature, self-contained cabinets designed for pre-packaged ice cream, ice cream novelties, and frozen food at below freezing temperatures. Design features include non-heated glass lids; efficient foamed in place non-CFC insulation, interior mirror reflectors, front-air discharge condensing unit, (except LBN-10) and a balanced refrigeration system for energy saving performance.

There are also a number of options available for the LBN series. See **ACCESSORIES & OPTIONS** section in back of this booklet.

**LOCATION – CLEARANCE
AND
INITIAL SET-UP and START-UP
AND
BTU'S – ELECTRICAL – DIMENSIONS**

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 the cabinet for “concealed” damage. If damage is found, contact the delivering 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 cabinet where direct sunlight would shine into the fixture or where drafts from air conditioning grills, fans, and open doors could effect it operation.

Because the condensing unit is located at the bottom of the cabinet, a two (2) 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.

The LBN-10 must also maintain a two- (2) inch clearance at the rear of the cabinet because, unlike the other LBN models, it is not front air discharge.

INITIAL SET-UP

SKID –

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

LEVELING - 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.



Silicone Sealant Floor

Shimming under the cabinet base frame may level the cabinet. A slight pitch from front to back is desirable. The cabinet back should never be higher than the front. Once level the cabinet should be approved material such as General Electric RTV-102 silicone sealer or an equivalent.

ACCESS PANEL REMOVAL

The louvered panel on the lower right front of the cabinet provides access to the condensing unit and electrical box.

There is also a back panel that covers the rear of the condensing unit compartment that can be removed to again access to the back of the compartment. The drain trap should be filled with water. This prevents warm air from migrating back through the drain to the evaporator coil. Failure to fill the trap with water, could result in excessive frosting of the evaporator coil.

Access to the trap is achieved by removing the back panel that

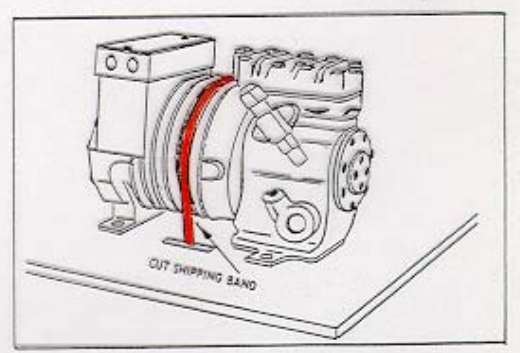
covers the rear of the compressor compartment .

On the LBN-10 this back panel is a wire grill that allows the discharge air to flow through the condensing unit compartment.

Before removing this panel, make sure the power supply to cabinet is disconnected.

COMPRESSOR

The compressor is banded for



shipping. Remove the two bolts holding the compressor bar in place, then you can pull out the condensing unit.

Cut the steel band, which holds down the compressor during shipping. The compressor should now float freely on the mounting springs. **DO NOT LOOSEN NUTS.**

ELECTRICAL CONNECTIONS

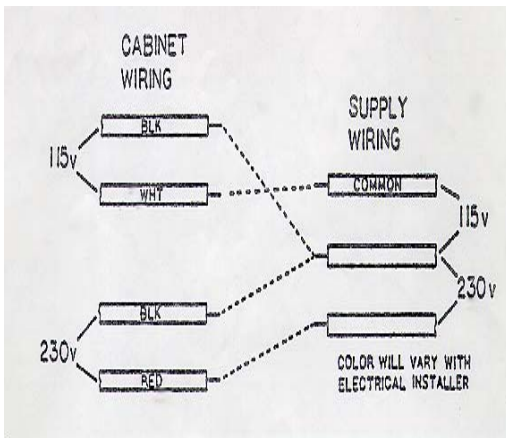
The LBN-4, 5, 6, 7 and 8 models have a power cord attached to the unit with a ground prong. Do not remove the grounding prong under any circumstances. The cord is rated 115v/15 amp. The LBN-7,

and –8 also require a circuit breaker or a time delay fuse rated at 15 amps for the circuit being run to them.

The LBN-10 requires conduit connections of both 115v and 208-230v with an amperage rating of 15 amps for each circuit. Marked leads are provided for these connections in the field.

If wiring the LBN-10 to a “3-wire” system is preferred, a 20amp, 208-230 v circuit needs to be provided.

See the diagram below concerning a “3-wire” system.



All of these models are 60hz, 1ph. If another voltage, hertz, or phase is required, please consult the factory.

IT IS VERY IMPORTANT TO YOU AND YOUR CUSTOMERS TO HAVE THE CABINET PROPERLY GROUNDED. A qualified electrician in accordance with the National Electrical Code and/or local codes should do the electrical installation.

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.

SERIAL PLATE INFO.

The serial plate is located on the left-hand end of the case interior, and a second one in the condensing unit compartment. It has all the pertinent information needed for proper electrical installation. The serial plate should not be removed for any reason.

INITIAL START UP AND LOADING

- ◆ Set the defrost timer for the correct time of day, making sure the defrost pins are secure in the face of the clock. The LBN-4 through –8 models are factory set for one (1) defrost period in 48 hrs. @ 12 a.m. and LBN-10 is factory set for one (1) defrost period in 24 hrs. @ 12 a.m.
- ◆ Check the cabinet thoroughly for loose nuts and bolts and electrical connections. Inspect the refrigeration lines for any visible damage or chafing.
- ◆ Replace the louvered access panel.

- ◆ Start the cabinet and allow to pull down to operating temperature before loading.

BTU CAPACITIES

	BTU/HR	RATINT TEMPS °F		
		EVAP	COND	AMB
LBN-4	2380	-25	110	90
LBN-5	2830	-25	110	90
LBN-6	3325	-25	110	90
LBN-7	3990	-25	110	90
LBN-8	4600	-25	110	90
LBN-10	5410	-25	110	90

ELECTRICAL

	UNIT			RUN	FUSE	SHIP
	H.P.	HZ/PH	VOLTS	AMPS	SIZE	WT.
LBN-4	½	60/1	115*	10.2	15	515
LBN-5	½	60/1	115*	10.2	15	585
LBN-6	½	60/1	115*	10.2	15	663
LBN-7	¾	60/1	115*	11/5	11+	745
LBN-8	¾	60/1	115*	12.0	15+	815
LBN-10	1	60/1	115	2.7	15	967
			208-230	7.0	15	

* 115V/15amp grounded power cord included

+ 15 amp time delay fuse or circuit breaker required

DIMENSIONS

	Cu. Ft. Cap.	Exterior			Interior		
		L	W	H	L	H	W
LBN-4	9.5	48 1.2	31 ½	39 ¾	44 ¼	21	26
LBN-5	13.2	60	31 ½	39 ¾	55 7/8	21	26
LBN-6	16.8	72	31 ½	39 ¾	67 7/8	21	26
LBN-7	20.5	84	31 ½	39 ¾	79 7/8	21	26
LBN-8	24.9	95 5/8	31 ½	39 ¾	91 ½	21	26
LBN-10	31.8	118 7/8	31 ½	39 ¾	114 ¾	21	26

GENERAL UPKEEP, CLEANING AND ROUTINE MAINTENANCE

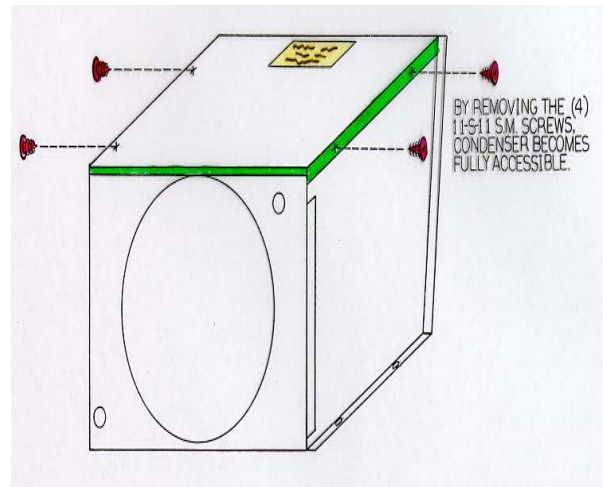
CARE AND CLEANING

To insure good sanitation, appearance, and minimum maintenance, the cabinet should be cleaned and washed regularly as use demands. Clean with 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.
- ◆ Check operation of condenser fan motor. Fan blade must turn freely.
- ◆ The condenser is of bare-tube construction on the LBN-4 through -8 to reduce the amount of maintenance required, and fin-and-tube construction on the LBN-10. To keep the cabinet at top efficiency, periodic cleaning is required. To ease in the cleaning of the bare-tube condenser, the top of the

condenser shroud is removable. Slit the upper corners of the gasket on the front of the condenser, remove the screws holding the shroud top into the shroud ends, and remove the top to gain full access to the condenser.



- ◆ The glass lids are made of tempered, non-heated glass. The lids slide up to open and can be locked open for product loading. The lids are not self-closing. The lids will close easily by hand and with the assistance of gravity. There is a nylon glide on the edge of the glass to assist in closing. The lid tracks must be cleaned periodically to allow the lids to close freely.
- ◆ Manually defrost cabinet as usage dictates. The LBN series

are gravity-cooled cabinets. The sidewalls have refrigeration tubing in them to cool the lower portion of the interior and there is an upper evaporator that drops cold air down onto the product. The upper coil is equipped with defrost heaters that defrost the coil. **THE SIDE WALLS OF THE CABINET WILL BUILD UP FROST AND ICE ON THEM OVER TIME AND DO NEED TO BE MANUALLY DEFROSTED AS USAGE AND BUILD UP DEMANDS.**

- ◆ The interior of the cabinet has load line markings showing how high product can be loaded. Loading product above these lines is above the refrigerated area in the case and will adversely affect the product in this area.
- ◆ Clean the cabinet with mild detergent. This will insure good sanitation, and minimize maintenance. Never use an abrasive as this could mar the finish.

OPERATION AND MAINTENANCE

POWER SWITCH

The power switch is located at the electrical box that is behind the front, louvered access panel. A slot in one of the louvers allows access to the switch. The switch will shut off all power to the cabinet on the LBN-4 through -8 and shut off the 208-230 circuit on the LBN-10.

TEMPERATURE CONTROL

- ◆ The temperature control is located between the electrical box and condenser behind the bottom louvered access panel. The temperature control does not have an “OFF” position. Turn the adjustment knob on the face of the control to make adjustments. Turning it clockwise will give colder temperatures while counter-clockwise will give warmer temperatures. It is not good practice to operate the case with the temperature control at the coldest position, as it will shorten compressor life.
- ◆ The control is factory set for approximately -15°F . The temperature should be checked with a thermometer other than the cabinet thermometer after it is running to insure that the cabinet is running at the proper temperature for the product. Ice cream should be kept at –

10°F to -15°F . Frozen food should be kept at 0°F to -5°F .

- ◆ If it should become necessary to replace the temperature control, the sensing control capillary will need to be pulled out of the control well. When doing this, mark the length of capillary pulled out of the control well so that the same amount can be replaced (approx. $19 - 19 \frac{1}{2}$ ”), otherwise the temperature control will not react properly and cabinet temperature will be adversely affected.

THERMOMETER

The cabinet has a thermometer located on the left-hand end of the nose screen that is just below the upper mirror reflector and light fixture. The thermometer is a “pencil” type and reads from -40°F to $+80^{\circ}\text{F}$ on 2° increments. To replace, remove the two screws and install the replacement.

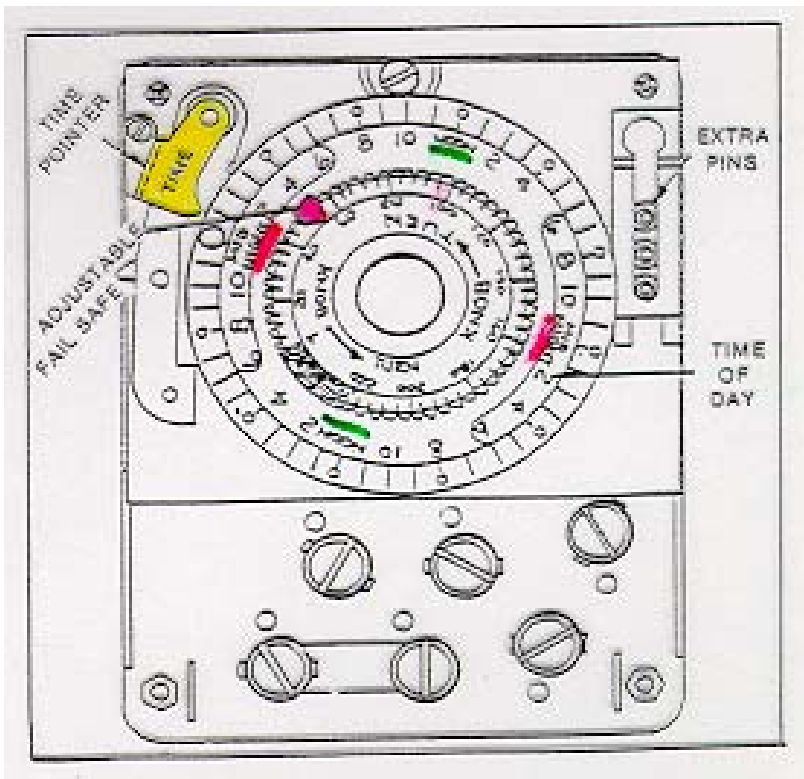
ELECTRICAL BOX

The electrical box contains the defrost time clock, terminal boards, and power switch. The box is capable of sliding out for servicing convenience and access is gained by removing the cover. **THE CABINET SUPPLY BREAKERS**

SHOULD BE DISCONNECTED BEFORE REMOVING THE ENCLOSURE COVER.

DEFROST TIME CLOCK

- ◆ The timer is factory pre-set for one (1) defrost cycle per 48 hours on the LBN-4 through -8 and for one (1) defrost cycle per 24 hours on the LBN-10 at 12:00 a.m. with a 40 minute failsafe.
- ◆ 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 knob in the center of the dial face counter-clockwise until the time indicator corresponds with the correct time of day.



- ◆ The defrost pins should be checked for tightness. The timer will require re-adjusting 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, **do not put a defrost during the middle of the day**. Put any additional defrosts during the night or at a time when the cabinet has the lowest usage.
- ◆ 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.

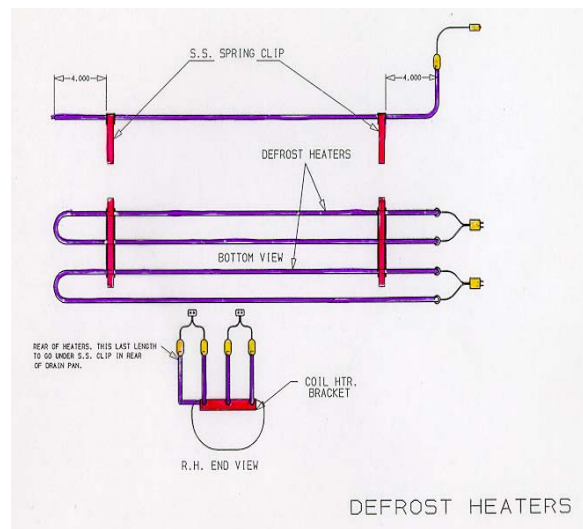
DEFROST THERMOSTAT

- ◆ The defrost thermostat is located on its mounting plate which is located on the right hand end of the evaporator coil attached to the air scoop which is a right angle piece of metal running in front of the evaporator behind the nose screen. The thermostat is a bi-metal thermostat that is tied in series with the defrost time clock solenoid to end defrost when the temperature has been satisfied which is 85°F.

- ◆ To remove the thermostat if it needs replacing, disconnect power. Remove the nose screen from in front of the evaporator.
- ◆ Remove the stainless steel mirror reflector over the light fixture.
- ◆ Consult the wiring diagram for the wiring terminations for the thermostat and disconnect.
- ◆ Remove the air scoop which is in front of the evaporator coil and has the defrost Thermostat mounting plate attached to it. Remove the thermostat and disconnect wires.
- ◆ Reverse the procedure to reinstall the new thermostat.
- ◆ Remove the stainless steel reflector. Remove the nose screen in front of the evaporator area.
- ◆ The heaters are held up against the evaporator by spring clips.
- ◆ Press the heaters down and pull up on the front edge of the heater clips. The heaters can be pulled forward.
- ◆ When replacing be sure the back pass of the rear defrost heater goes into the retaining clip at the back of the drain pan. This is necessary to prevent ice build up in the drain pan.

DEFROST HEATER REPLACEMENT

- ◆ The cabinet is equipped with two (2) defrost heaters which are wired in parallel, except for the LBN-4 through -8, 220 volt which are wired in series. Wiring them this way allows for lower wattage which increases the life of the heater. **The drain pan does not have to be removed to replace the heaters.**
- ◆ The heaters are equipped with plug-in connections that plug into the underside of the light fixture. Disconnect the power supply



LIGHTING

- ◆ Cool white fluorescent bulbs located on the underside of the stainless steel mirror reflector provide interior lighting. The bulbs 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 located on the right hand end, inside the cabinet, behind the mirror reflector. This switch only controls the lights. The 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. The lights should always be left on to prevent moisture from forming on the mirror reflector, which is especially possible in high humidity applications.
- ◆ The light ballast is located in the light fixture. To gain access remove the mirror reflector.

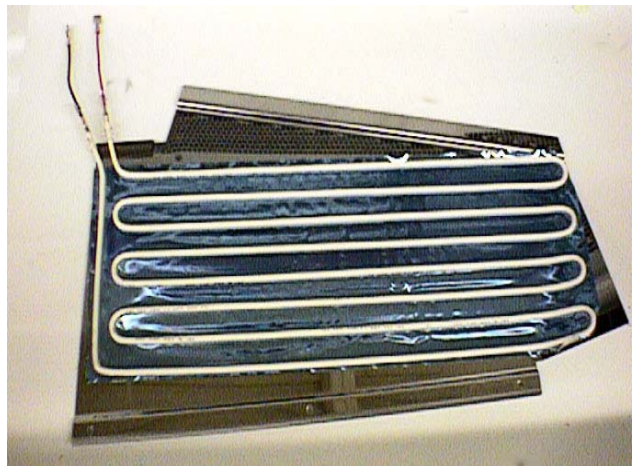
CONDENSATE HEATERS

There are condensate heaters behind the stainless steel end panels, around the front glass, and behind the nose screen. These heaters are thermostatically controlled in case the cabinet malfunctions and the thermostat senses above 101°F at which time the heaters will shut off. At normal ambients and cabinet operation the heaters will remain on.

END PANEL HEATERS

The end panel heaters are located behind the end panel stainless steel reflectors. They can be removed by removing the screws on the bottom edge of the panel and pulling down on the bottom edge.

The heater is on adhesive foil on the backside of the panel.

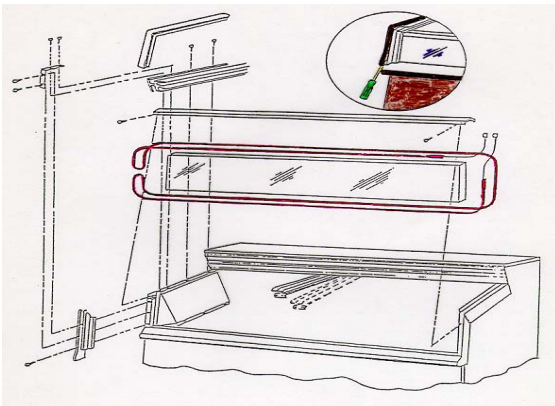


FRONT GLASS HEATER

The front glass heater surrounds the perimeter of the front glass. The purpose of the heater is to keep the aluminum trim surrounding the glass free of condensation. If the cabinet is located in a high humidity environment, the center of the glass may have a trace of condensation across it.

TO REPLACE THE HEATER

- ◆ Disconnect power to cabinet. Remove the cabinet top by removing the screws that hold it into the back of the cabinet, and on each end.
- ◆ Lift the top off the cabinet.
- ◆ Remove the lids.
- ◆ Remove the screws holding the backs of the lid tracks to the galvanized sub-top and the screws holding the center tracks to the aluminum rail on top of the front glass.



- ◆ Remove the plastic arm trim breakers in the end aluminum trim pieces to expose the screws in them. Remove screws and remove end trim.
- ◆ Remove the trim from the top of the front glass.
- ◆ Pull the front glass up and out exposing the wires at the right hand end of the glass and disconnect.
- ◆ Take note of the heater layout on the glass with reference to where the connectors are, and then replace heater.
- ◆ Reverse procedure to reassemble.

NOSE HEATER

The nose heater is located behind the nose screen that is in front of the evaporator. Remove the nose screen and replace heater.

CONDENSATE HEATER LIMIT THERMOSTAT

- ◆ The condensate heater limit thermostat is a safety feature that will shut off the condensate heaters just discussed when the thermostat senses 101°F.
- ◆ The thermostat is located on the defrost thermostat mounting bracket which is on the air scoop behind the nose screen in front of the evaporator. To

replace see the procedure described under “Defrost Thermostat”.

REFRIGERATION

- ◆ As stated previously, the LBN series are self-contained. They feature semi-hermetic compressors, a bare tube, front-air discharge condenser, combination cold wall tubing with upper evaporator coil, and capillary tube.
- ◆ The exception is the LBN-10, which has a fin-and-tube condenser and horizontal, straight through air discharge.
- ◆ If it should become necessary to leak test the system, please adhere to the following notice:

NOTICE:

Because of the CFC atmospheric considerations being taken today, we ask that leak testing be done with refrigerant 22 mixture 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

- ◆ 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 leaks 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 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 following procedure:

- ◆ 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.
- ◆ 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.

- ◆ 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.
- ◆ 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 the LBN series based on lab tests, and may vary under field operating conditions.

Amb. Temp.	75°F
Head Press	230-250 psi
Suct. Press	6-8 psi
*Discharge Temp.	-25°F

*Discharge temperature is the temperature taken off the lower half of the nose screen.

REFRIGERANT CONTROL

Refrigerant flow to the evaporator is controlled through the use of a capillary tube. The capillary tube is soldered for a specified length to the suction line, forming one integral piece to assure proper heat exchange.

Because the suction line capillary tube assembly, sometimes referred to as heat exchanger or pullout coil, has no moving parts, it very rarely if ever needs servicing.

However, should a leak occur in the system, it is possible that dirt, dust, or moisture may collect in the capillary tube causing the system to go into a vacuum. Should this occur, it is recommended that dry nitrogen or a dry refrigerant be forced through the system to clear the blockage.

If attempts to clear the restriction by this method are unsuccessful, the ENTIRE ASSEMBLY, NOT THE CAPILLARY TUBE ONLY, should be replaced with a new factory ordered replacement.

CRANKCASE PRESSURE REGULATOR

- ◆ The LBN series employ a crankcase pressure regulator in the suction line and is considered part of the heat exchanger. 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 cabinet must be warm such as after a defrost cycle or from an initial warm cabinet 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, counterclockwise 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 SHOOTING

SYMPTON	PROBABLE CAUSE (S)	POSSIBLE SOLUTION
Compressor runs continuously product too warm	<ol style="list-style-type: none"> 1. Short of refrigerant 2. Inefficient compressor 3. Dirty condenser 4. Evaporator oil logged 	<ol style="list-style-type: none"> 1. Leak check, change drier, evacuate, and recharge 2. Replace 3. Clean 4. Blow oil out of evaporator
High Head Pressure	<ol style="list-style-type: none"> 1. Cabinet location too warm 2. Restricted condenser air flow 3. Defective condenser fan motor 4. Air or non-condensable gases in system 	<ol style="list-style-type: none"> 1. Relocate cabinet 2. Clean condenser to remove air flow restriction 3. Replace 4. Leak check, change drier, evacuate, and recharge
Warm storage temperatures	<ol style="list-style-type: none"> 1. Temperature control not set properly 2. Short of refrigerant 3. Cabinet location too warm 4. Too much refrigerant 5. Low voltage. Compressor cycling on overload 6. Condenser dirty 	<ol style="list-style-type: none"> 1. Reset control 2. Leak check, change drier, evacuate, and recharge 3. Relocate 4. Change drier, evacuate, and recharge 5. Check power 6. Clean

SYMPTON	PROBABLE CAUSE (S)	POSSIBLE SOLUTION
Compressor runs continuously product too cold	1. Defective control	1. Replace
	2. Control feeler not in tube properly	2. Assure proper length in tube
	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 temperature 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 condenser
	6. Defective condenser fan motor	6. Replace
	7. CRO not set properly	Reset to 10 psi.

SYMPTON	PROBABLE CAUSE (S)	POSSIBLE SOLUTION
Icing condition in drain pan under evaporator	<ol style="list-style-type: none"> 1. Low voltage 2. Cabinet not level 3. Defective defrost heater 4. Drain trap does not have water in it 	<ol style="list-style-type: none"> 1. Check voltage at compressor 2. Check front to rear leveling 3. Replace 4. Pour water down drain
Low suction pressure Low head pressure	<ol style="list-style-type: none"> 1. CPR not set properly 2. Defective CPR 3. Cap tube blocked due to moisture or dirt 4. Short of refrigerant 	<ol style="list-style-type: none"> 1. Reset to 10 psi 2. Replace 3. Change drier, evacuate, and recharge 4. Leak check, change drier, evacuate, and recharge
Pressures normal - cabinet warm	<ol style="list-style-type: none"> 1. Top coil blocked with frost 2. Evaporator oil logged 	<ol style="list-style-type: none"> 1. Check defrost system 2. Blow oil out of evaporator

LIGHT PROBLEMS / SOLUTIONS

Lights won't work

1. Check light switch
2. Check continuity to ballast
3. Check to see if bulbs inserted properly in sockets
4. Check voltage

LIGHTS - Con't

Lights flicker

1. Allow lamps to warm up
2. Check lamp sleeve for cracks
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

ACCESSORIES & OPTIONS

COUNTERTOP

The cabinet is provided with a metal countertop as standard but, a 16" and 20" wooden countertop can be provided. The 16" one is flush mount to the back of the cabinet while the 20" one is wider than the cabinet to provide a larger working surface if needed.

STAINLESS STEEL TOP

Like the countertops, the stainless steel top replaces the standard metal countertop for those who need a highly durable working surface.

SUPERSTRUCTURE WITH LIGHTED CANOPY

The cabinet can be provided with a superstructure, which has two shelves, and a lighted canopy that attaches to the back of the cabinet.

The superstructure allows for the storage of dry goods without the need for additional floor space.

SUPERSTRUCTURE WITHOUT LIGHTED CANOPY

The superstructure can also be provided without the lighted canopy. It is still supplied with two shelves.

PRODUCT SHELF KIT

The interior of the LBN series has a raised step over the condensing unit compartment. The product shelf kit is a false bottom that makes the bottom of the cabinet level with the raised step.

BAG RACK

A bag rack can be provided to store various size checkout bags. The

rack attaches to the back of the cabinet.

DIAL THERMOMETER

The cabinet can be provided with a two inch dial thermometer rather than the standard pencil type thermometer. *THIS TYPE MUST BE FACTORY INSTALLED.* It is located in the left end of the upper stainless steel reflector above the light fixture.

LID LOCK KIT

For product security, a lid lock kit can be provided. Each kit secures two lids.

CASTER KIT

If the cabinet needs to be moved quite often or for additional health code regulations, the caster kit raises the cabinet approximately 4 ½". The wheel on the caster itself is 3".

NOVELTY BASKET

For the storage and display of novelty ice cream items, the novelty basket is ideal. The basket is white epoxy-coated for that clean look and it is 10" x 12" x 6 ½" high. Basket dividers are also available.

WARRANTY, ELECTRICAL COMPONENTS WIRING DIAGRAMS

ORDERING REPLACEMENT PARTS

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

WARRANTY PARTS PROCEDURE

- ◆ First three steps same as ordering replacement parts.
- ◆ 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 for instructions on returning in-warranty parts.
- ◆ Warranty parts must be returned to the factory within 30 days of date of failure to assure proper disposition.
- ◆ Lack of any of the 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 your 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 too partially offset the invoice for the replacement.

- ◆ After March 16, 1991 when all cases have the five-year warranty as standard, the following procedure applies:

FORWARD TO YOUR NEAREST HUSSMANN DISTRIBUTOR:

- a) The cabinet model and serial number
- b) A copy of the wholesaler's invoice, along with a copy of the salvage value credit.

INTERNAL LEAK WARRANTY POLICY

- ◆ The LBN series are warranted from the date of factory shipment for five years for an internal leak. An internal leak not only includes the cold-wall tubing but the upper evaporator as well on these models.
- ◆ If it is felt that there is an internal leak in the cabinet, care should be taken to actually determine that there is a leak.
- ◆ To do this properly, the cabinet's evaporator section must be isolated from the condenser section.
- ◆ Unbrazed the tubes going into the back of the cabinet at the end of the heat exchanger.
- ◆ Pinch or cap the larger tube and braze shut.

- ◆ Add a schrader valve to the smaller tube.
- ◆ Attach the high side gauge of a compound gauge to the valve and pressurize the cabinet with nitrogen or otherwise suitable gas.
- ◆ There should be at least 300 psi on the system.
- ◆ Mark the pressure on the gauge and leave it, returning 24 hours later.
- ◆ Note the pressure. If it has fallen more than 150-200 psi then the system may have an internal leak.
- ◆ If it only drops a small amount this does not mean that you have an internal leak but that the gas in the cabinet is cooler and has reduced its pressure because of this.
- ◆ If the cabinet has an internal leak contact the nearest Hussmann distributor or the factory to receive authorization to return the cabinet to the factory.

**NO CABINET WILL BE
ACCEPTED AT THE FACTORY
WITHOUT A LETTER OF
AUTHORIZATION FOR
RETURN.**

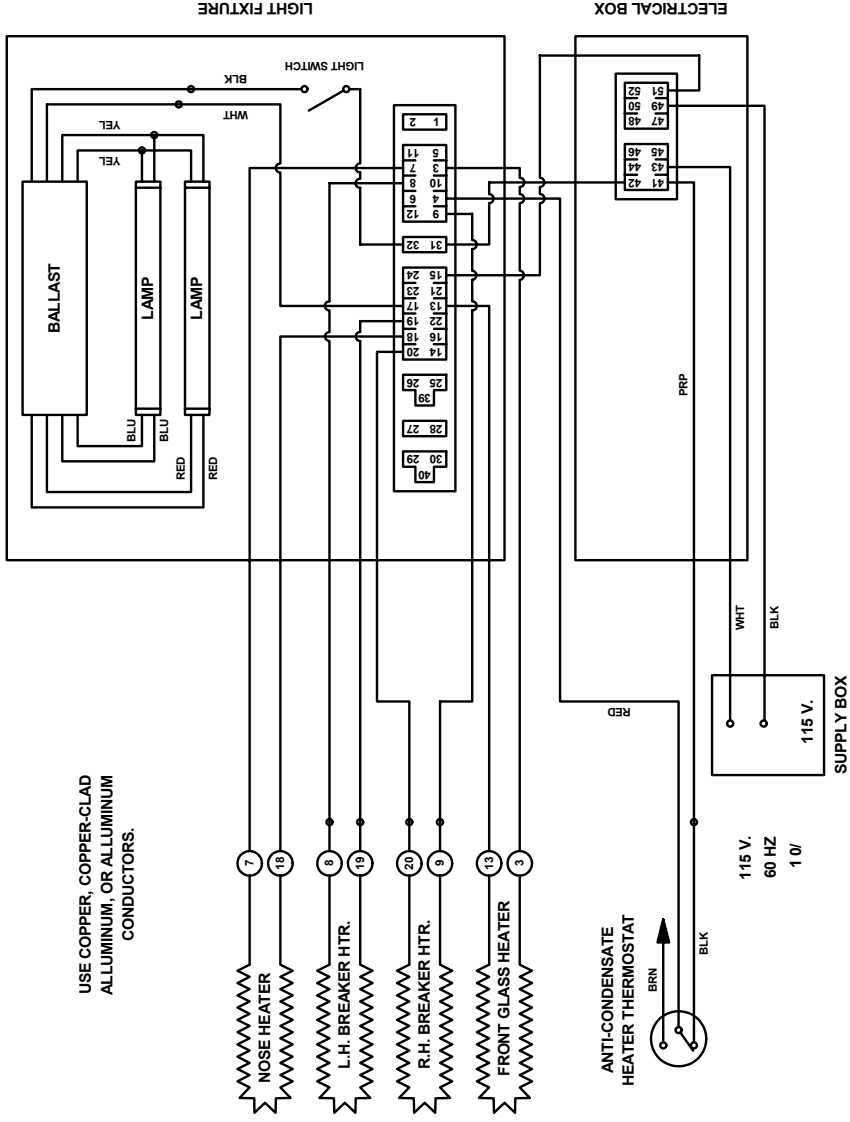
ELECTRICAL COMPONENTS REPLACEMENT LIST

	LBN-4	LBN-5
Compressor (R-404A) Hermetic as of 11/03	KAGB-005E-IAA J2212GK	KAGB-005E-IAA
Condenser Fan Motor	EMS ESPL25EM1	EMS ESPL25EM1
Light Ballast	8G3706	8G3706
Fluorescent Lamp	F30T8CW	F40T12CW
Lamp Starter	FS4	FS4
	LBN-6	LBN-7
Compressor (R-404A) (Compressors are Copeland)	KAGB-005E-IAA	KAAB-007E-CAA
Condenser Fan Motor	EMS ESPL25EM1	EMS ESPL25EM1
Light Ballast	8G3706	(2) 8G3706
Fluorescent Lamp	F40T12CW	(2) F30T8CW
Lamp Starter	(1) FS4	(2) FS4
	LBN-8	LBN-10
Compressor (R-404A) (Compressors are Copeland)	KAAB-007E-CAA	KALB-010E-CAV
Condenser Fan Motor	EMS ESPL25EMI	EMS ESPL25EM2
Light Ballast	(2) 8G3706	8G1024
Fluorescent Lamp	(1) F40T12CW (1) F30T8CW	(2) F40T12CW
Lamp Starter	(2) FS4	

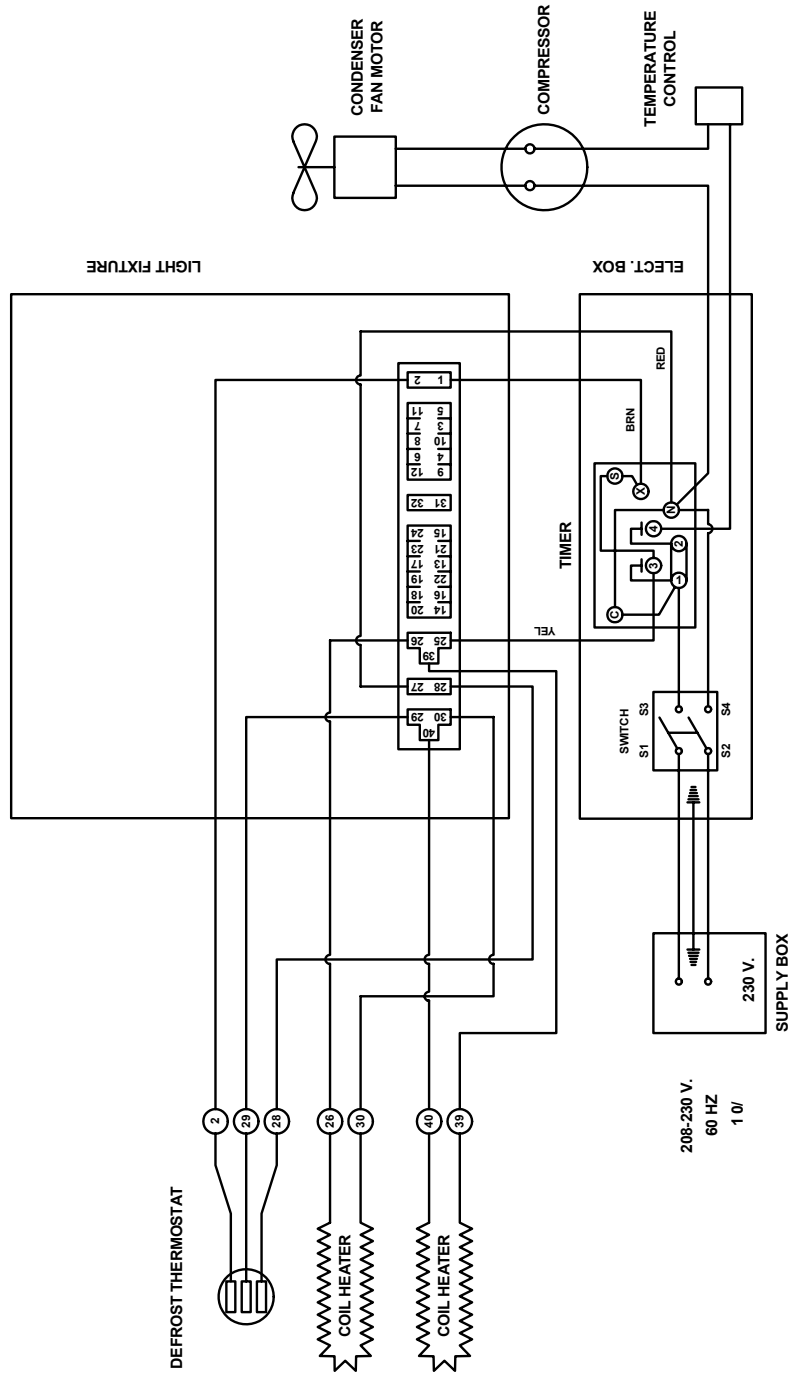
R-404A compressor (models with “E”) require the use of a polyol ester oil, made by Mobil under part No. EAL ARCTIC 22 CC. An acceptable alternate if this is not available is ICI EMKARATE RL 32S. Do not use any other oil in these compressors. The polyol ester oil is very susceptible to absorbing moisture, so every effort should be made to keep systems closed during repair, as well as during the handling of the oil itself.

USE COPPER, COPPER-CLAD
ALUMINUM, OR ALUMINUM
CONDUCTORS.

115 V. ELECTRICAL CIRCUIT



208-230 V. ELECTRICAL CIRCUIT

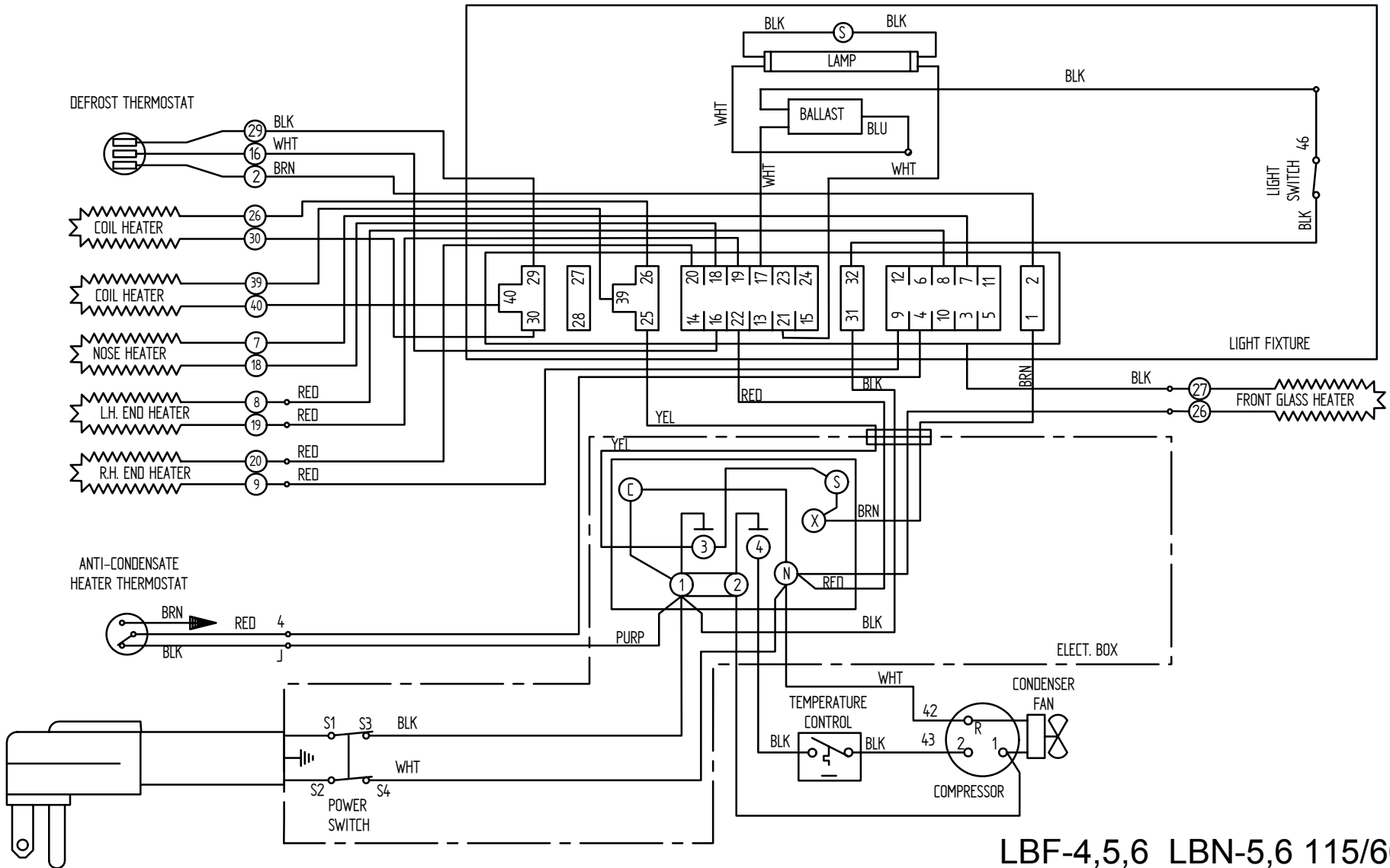


LBF-10 STANDARD

Gower Park, PA 15025

TOLERANCES UNLESS OTHERWISE SPECIFIED:		SHEET SIZE		MATERIAL:																
FRACTIONAL	± .125"	C		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>REV.</td> <td>DATE</td> <td>BY</td> <td>E.C.N.</td> <td>DE. NO.</td> </tr> <tr> <td>B</td> <td>10-88</td> <td>M.L.</td> <td>4570</td> <td></td> </tr> <tr> <td>A</td> <td>07-88</td> <td>S.S.</td> <td>4558</td> <td></td> </tr> </table>		REV.	DATE	BY	E.C.N.	DE. NO.	B	10-88	M.L.	4570		A	07-88	S.S.	4558	
REV.	DATE					BY	E.C.N.	DE. NO.												
B	10-88					M.L.	4570													
A	07-88	S.S.	4558																	
DECIMAL	± .031"	SIZE																		
ANGULAR	± .031°																			
POSITION	± .10"																			
SCALE:	1.0 = 1.0																			
FINISH:																				

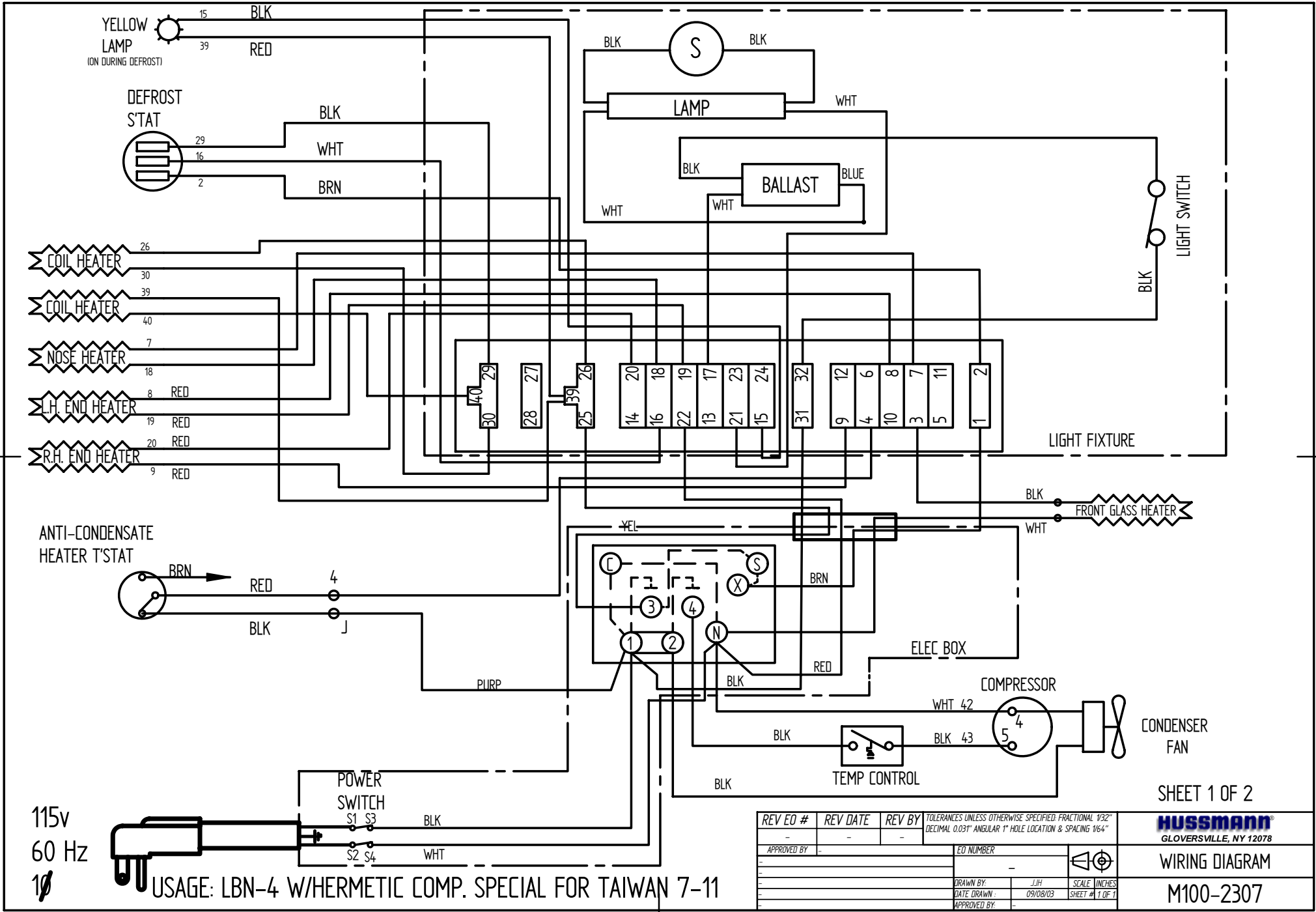
LBF-10 WIRING DIAGRAM			
TYPE CODE	DATE	DWG. NUMBER	REV.
E	10-88	M100-1450	B



115V
60 Hz
1Ø

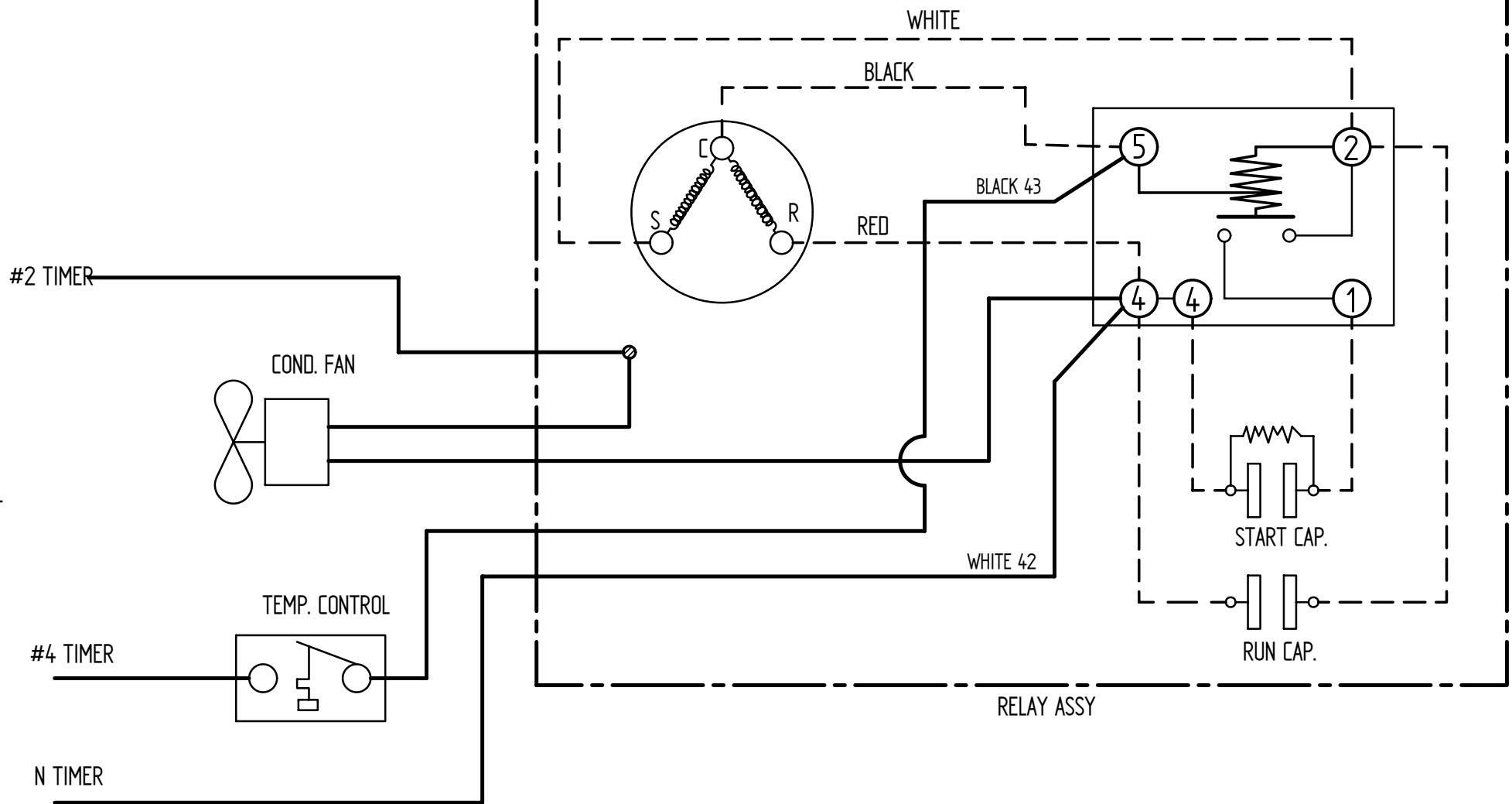
LBF-4,5,6 LBN-5,6 115/60/1

REV E O #	REV DATE	REV BY	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL 1/32" DECIMAL 0.031" ANGULAR 1° HOLE LOCATION & SPACING 1/64"	 GLOVERSVILLE, NY 12078
ECN 5095	REV E 9-24-01	JJH		
APPROVED BY:			ED NUMBER	 WIRING DIAGRAM
-REV D BY JWJ 1-12-99 ADDED LBN			ECN 5095-REV E	
-REV E CHANGED BALLAST WIRING & LAMP HOLDER WIRING			DRAWN BY: JWJ	
			DATE DRAWN: 3/5/91	
			SCALE: INCHES	 SHEET # 1 OF 1
			APPROVED BY:	
				M100-1436 E



SHEET 1 OF 2

REV	EO #	REV DATE	REV BY	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL 1/32" DECIMAL 0.031" ANGULAR 1° HOLE LOCATION & SPACING 1/64"	HUSMANN® GLOVERSVILLE, NY 12078	
-	-	-	-	-	WIRING DIAGRAM	
APPROVED BY:				ED NUMBER		SCALE: INCHES SHEET # 1 OF 1
DRAWN BY: J.J.H.				DATE DRAWN: 09/08/03		
DATE DRAWN: 09/08/03				APPROVED BY:		
M100-2307						



SHEET 2 OF 2

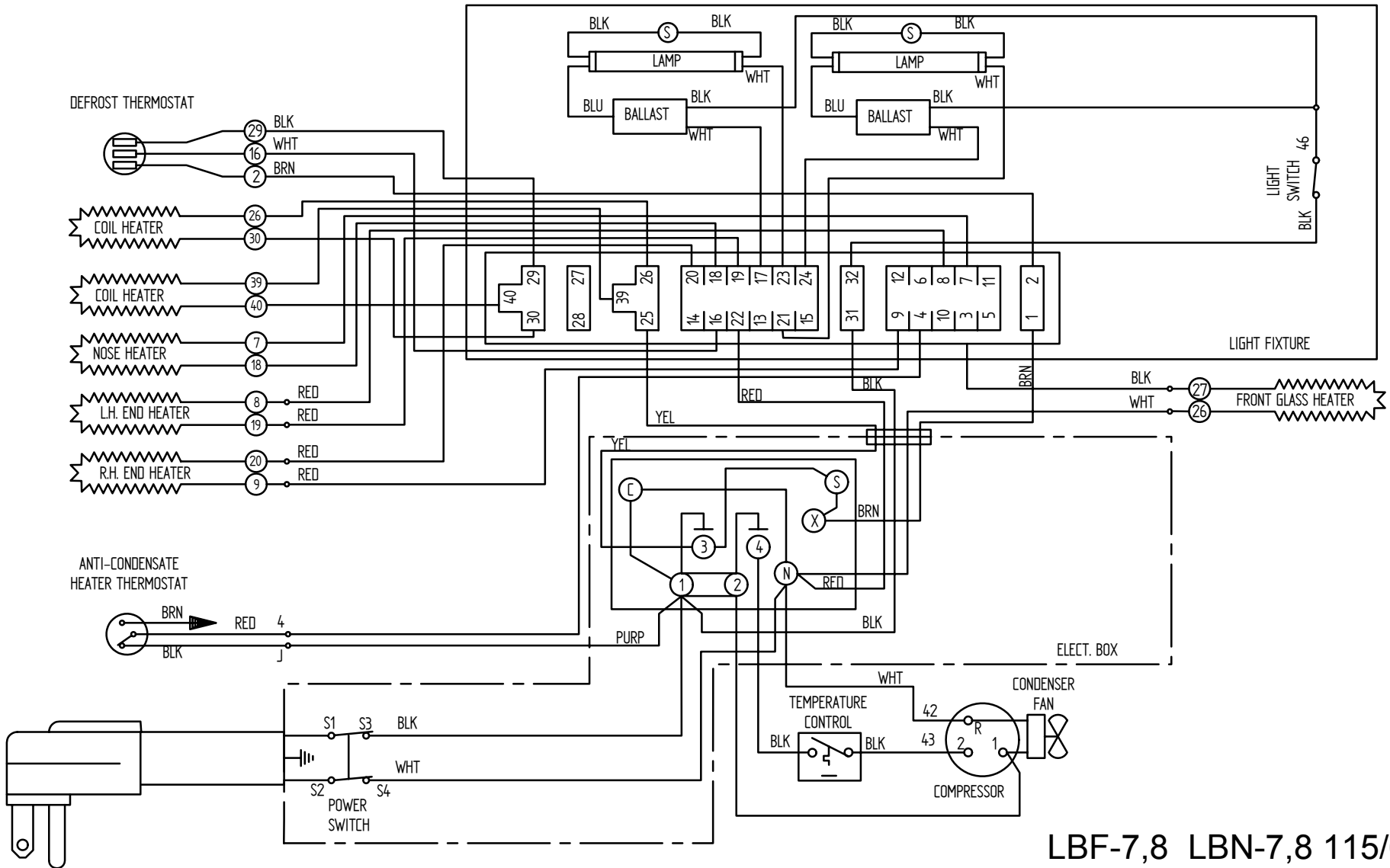
HUSSMANN
GLOVERSVILLE, NY 12078

WIRING DIAGRAM

M100-2307

REV E.O. #	REV DATE	REV BY	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL 1/32" DECIMAL 0.031" ANGULAR 1° HOLE LOCATION & SPACING 1/64"
-	-	-	
APPROVED BY			E.O. NUMBER
			-
DRAWN BY			JJH
DATE DRAWN			09/08/03
APPROVED BY			-
			SCALE INCHES SHEET # 1 OF 1

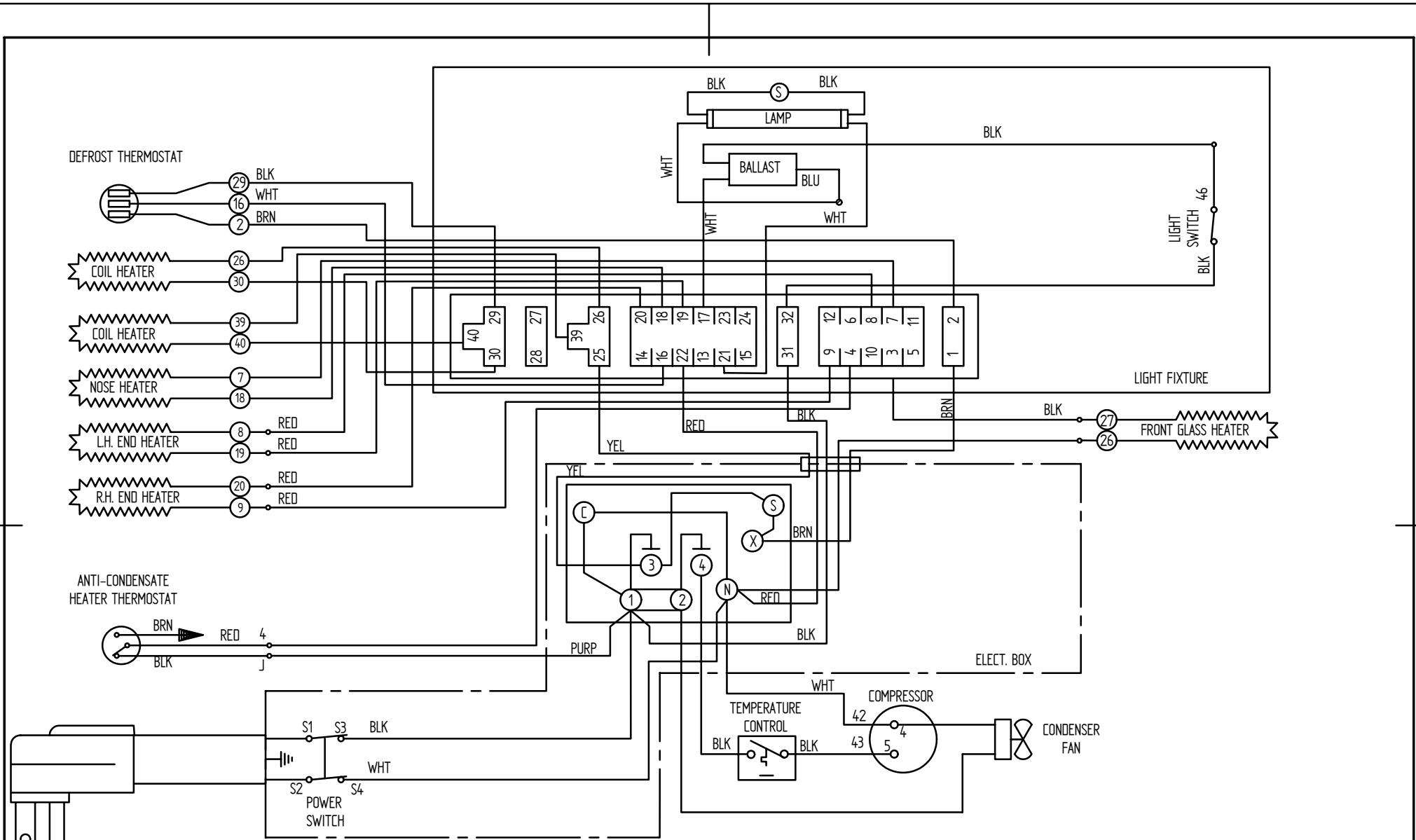
USAGE: LBN-4 W/HERMETIC COMP. SPECIAL FOR TAIWAN 7-11



LBF-7,8 LBN-7,8 115/60/1

REV	EO #	REV DATE	REV BY	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL 1/32" DECIMAL 0.031" ANGULAR 1° HOLE LOCATION & SPACING 1/64"	 GLOVERSVILLE, NY 12078
	D	1/12/93	JWL		
APPROVED BY:				EO NUMBER	 SCALE INCHES SHEET # 1 OF 1
DRAWN BY: JWL					
DATE DRAWN: 3/5/91					
7/15/99 ADDED LBN				APPROVED BY:	


115V
60 Hz
1Ø

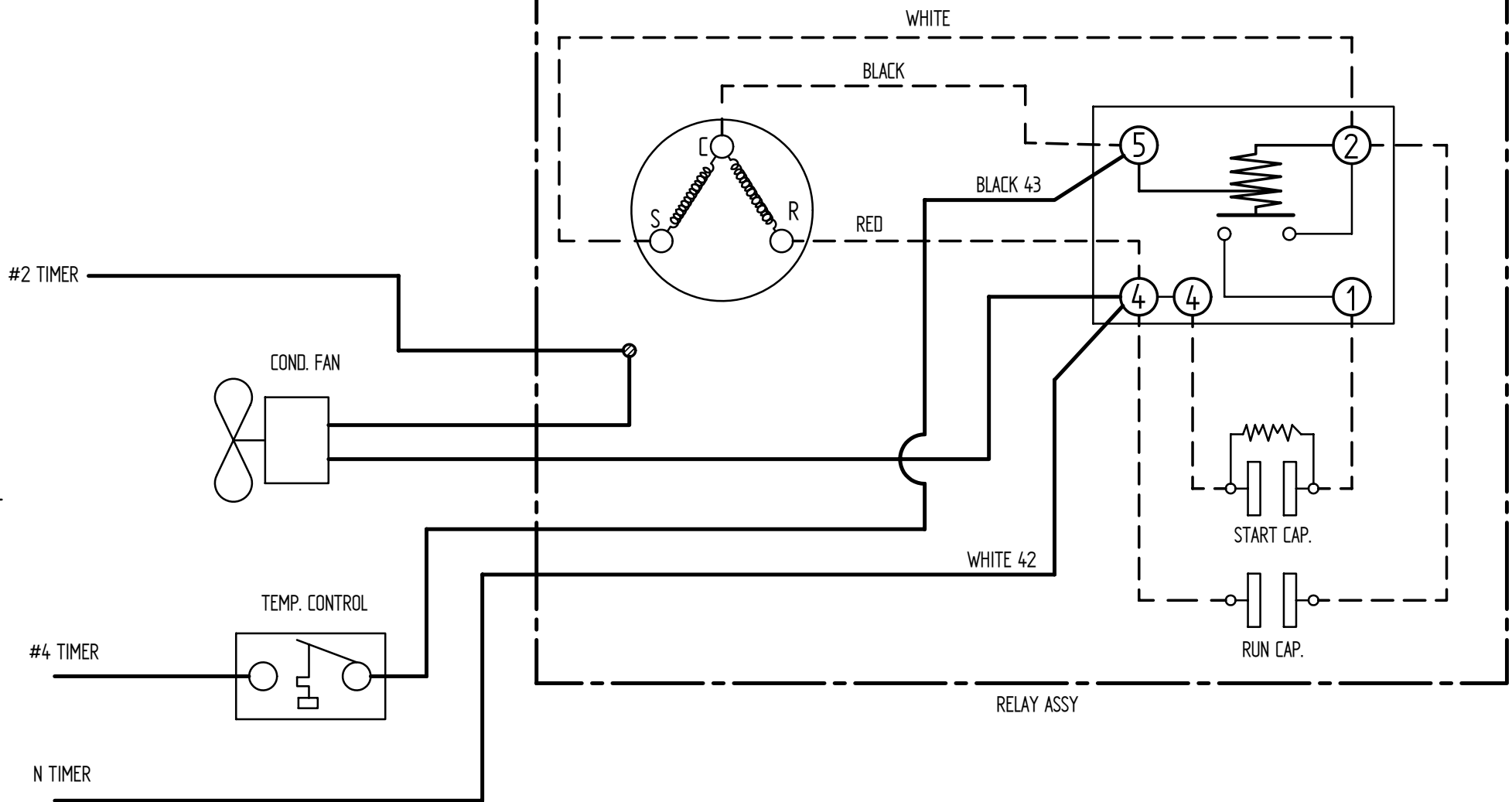


115V
60 Hz
1Ø


SHEET 1 OF 2

LBN- 4 HERMETIC 115/60/1

REV E.O. #	REV DATE	REV BY	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL 1/32" DECIMAL 0.031" ANGULAR 1° HOLE LOCATION & SPACING 1/64"	HUSMANN® GLOVERSVILLE, NY 12078
APPROVED BY:			E.O. NUMBER	 WIRING DIAGRAM M100-2305
			DRAWN BY: JJH	
			DATE DRAWN: 08/19/03	
			APPROVED BY: -	
			SCALE: INCHES SHEET # 1 OF 1	



LBN- 4 HERMETIC 115/60/1

REV E.O. #	REV DATE	REV BY	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL 1/32" DECIMAL 0.031" ANGULAR 1° HOLE LOCATION & SPACING 1/64"	HUSMANN® GLOVERSVILLE, NY 12078	
APPROVED BY	ED NUMBER		 WIRING DIAGRAM M100-2305		
DRAWN BY: JJH	SCALE: INCHES				
DATE DRAWN: 08/19/03	SHEET # 1 OF 1				
APPROVED BY: -					