

HUSSMANN[®]/Chino

CR3HTO-HTB

Hot Top w/ Self Service Heat or Refrig.

Installation
& Operation
Manual

Rev. 1104



HUSSMANN[®]

CR3HTO-HTB

Hot Counter-Top Service Case

INSTALLATION & OPERATION GUIDE

General Instructions

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THIS BOOKLET CONTAINS INFORMATION ON:
CR3HTB-HTO: Hot Countertop Service Case available in 3, 4, and 5 foot lengths.

SHIPPING DAMAGE

All equipment should be thoroughly examined for shipping damage before and during unloading.

This equipment has been carefully inspected at our factory and the carrier has assumed responsibility for safe arrival. If damaged, either apparent or concealed, claim must be made to the carrier.

APPARENT LOSS OR DAMAGE

If there is an *obvious loss or damage*, it must be noted on the freight bill or express receipt and signed by the carrier's agent; otherwise, carrier may refuse claim. The carrier will supply necessary claim forms.

CONCEALED LOSS OR DAMAGE

When loss or damage *is not apparent until after equipment is uncrated*, a claim for concealed damage is made. Make request in writing to carrier for inspection within 15 days, and retain all packaging. The carrier will supply inspection report and required claim forms.

SHORTAGES

Check your shipment for any possible shortages of material. If a shortage should exist and is found to be the responsibility of Hussmann Chino, *notify Hussmann Chino*. If such a shortage involves the carrier, *notify the carrier immediately*, and request an inspection. Hussmann Chino will acknowledge shortages within ten days from receipt of equipment.

HUSSMANN CHINO PRODUCT CONTROL

The serial number and shipping date of all equipment has been recorded in Hussmann's files for warranty and replacement part purposes. All correspondence pertaining to warranty or parts ordering must include the serial number of each piece of equipment involved, in order to provide the customer with the correct parts.

The Hussmann warranty is printed on the back of this guide.



GLASS BREAKAGE MAY OCCUR!

Retighten glass along clamshell after leveling and first time case is brought to full operating temperature!

DANGER



ATTENTION INSTALLER

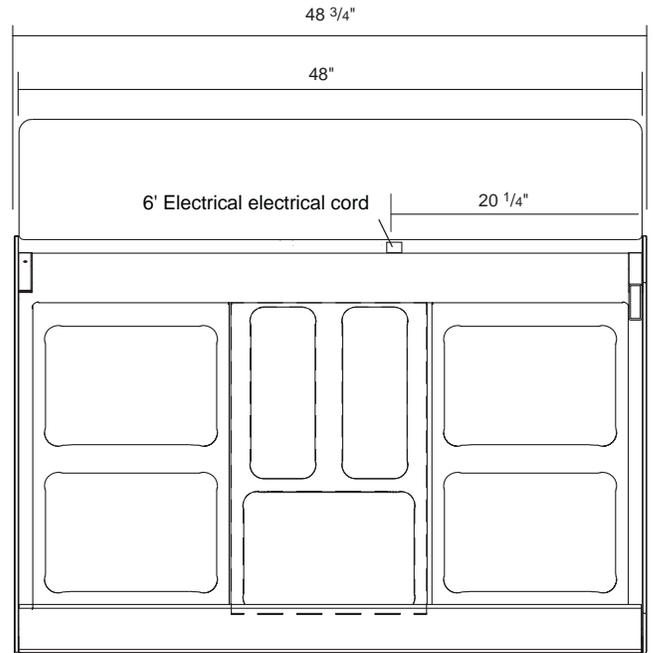
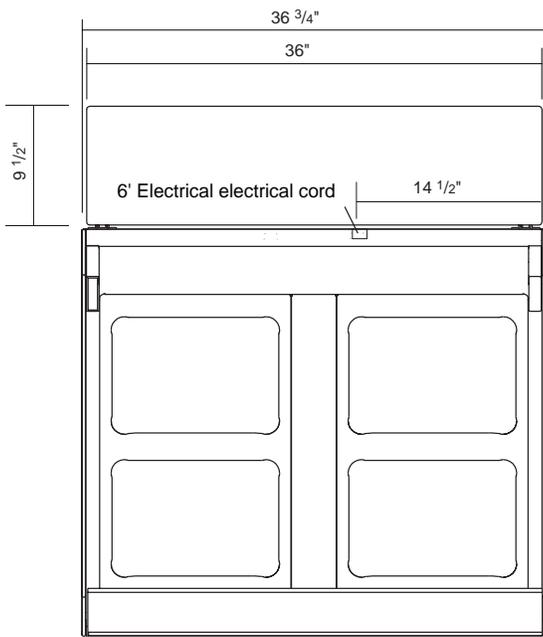
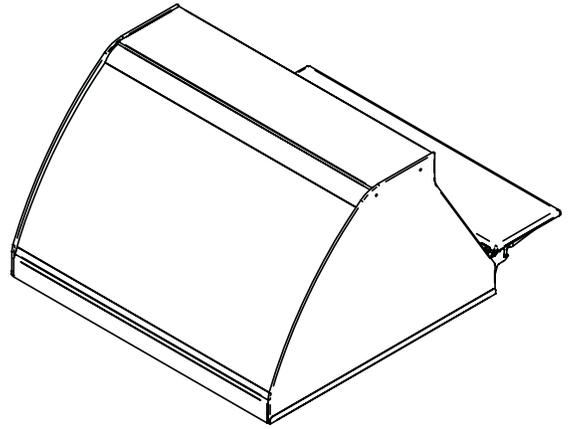
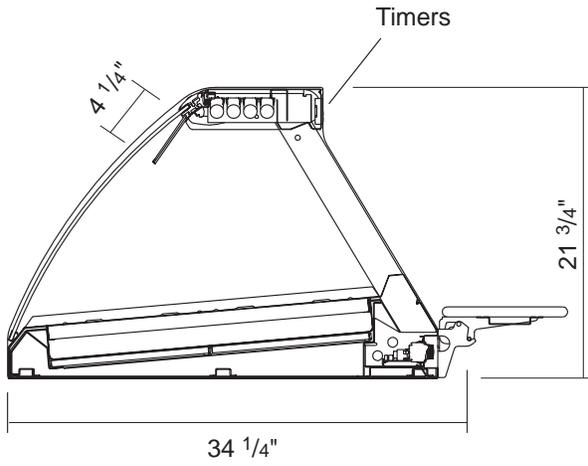
This equipment is to be installed to comply with the applicable NEC, Federal, State, and Local Plumbing and Construction Code having jurisdiction.

Keep this booklet with the case at all times for future reference.

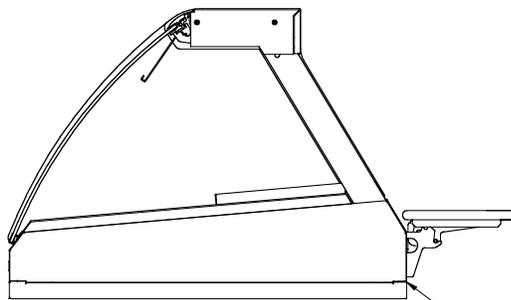
HUSSMANN®/Chino

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Case Drawings



NSF Installation Note



LOCATION

The merchandisers have been designed for use only in air conditioned stores where temperature and humidity are maintained at or below 75°F and 55% relative humidity. DO NOT allow air conditioning, electric fans, open doors or windows (etc.) to create air currents around the merchandiser, as this will impair its correct operation.

Product temperature should always be maintained at a constant and proper temperature. This means that from the time the product is received, through storage, preparation and display, the temperature of the product must be controlled to maximize life of the product.

UN-CRATING THE STAND

Place the fixture as close to its permanent position as possible. Remove the top of the crate. Detach the walls from each other and remove from the skid. Unbolt the case from the skid. The fixture can now be lifted off the crate skid. Lift only at base of stand!

EXTERIOR LOADING

These models have **not** been structurally designed to support excessive external loading. Do not walk on their tops; This could cause serious personal injury and damage to the fixture.



**GLASS BREAKAGE
MAY OCCUR!**

Retighten glass along clamshell after leveling and first time case is brought to full operating temperature!

GLASS ADJUSTMENT

During shipment, the lubricant inside the cylinders may have settled. This settling may cause excessive or uneven tension on the glass - to the point of breakage. To avoid any damage, please follow these three easy steps:

1. Slowly raise and lower each glass section 6 times to a height of 6 inches.
2. Increase the height to 12 inches, and raise and lower the glass 6 more times.
3. Finally raise the glass to its full extension, and lower.

These steps should release any settled lubricant within the cylinders and prevent any stress on the front glass.

LEVELING

IMPORTANT! It is imperative that cases and supporting counters be leveled from front to back and side to side prior to joining. A level case is necessary to insure proper operation, water drainage, and plexiglass alignment.

- NOTE: A. To avoid removing concrete flooring, begin lineup leveling from the highest point of the store floor.
 B. When wedges are involved in a lineup, set them first.

Installation

All cases were tested at a level state before shipping. When joining, use a carpenters level and shim enclosing or supporting cabinet accordingly.

1. Make sure the cabinet you are installing the FC4H CINNABON on is level.
2. Wire unit according to local codes.

Electrical

WIRING COLOR CODE

L1	BLACK
L2	ORANGE
L3	BLUE
NEUTRAL	WHITE

NOTE: High Leg Connection Orange Only

CASE MUST BE GROUNDED

NOTE: Refer to label affixed to case to determine the actual configuration as checked in the "TYPE INSTALLED" boxes.

ELECTRICAL CIRCUIT IDENTIFICATION

Standard lighting for all models will be full length fluorescent lamps located within the case at the top.

The switch controlling the lights, the plug provided for digital scale, and the thermometer are located at the rear of the case mullion.

The receptacle that is provided on the exterior back of these models is intended for computerized scales with a five amp maximum load, not for large motors or other high wattage appliances. It should be wired to a dedicated circuit.

ELECTRICAL SERVICE RECEPTACLES

(When Applicable)

The receptacles located on the exterior of the merchandiser are intended for scales and lighted displays. They

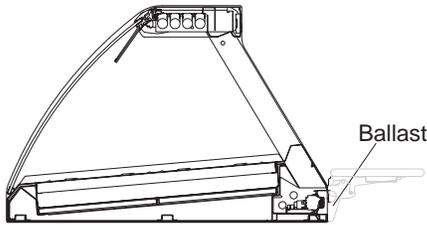
are not intended nor suitable for large motors or other external appliances.



BEFORE SERVICING

Always disconnect Electrical Power at the Main Disconnect when servicing or replacing any electrical component.

This includes (but not limited to) Fans, Heaters, Thermostats, and Lights.



FIELD WIRING & SERIAL PLATE AMPERAGE

Field Wiring must be sized for component amperes printed on the serial plate. Actual ampere draw may be less than specified. Field wiring from the refrigeration

control panel to the merchandisers is required for refrigeration thermostats. Most component amperes are listed in the "Case Specs" section, but always check the serial plate.

Ballasts are located within the access panel that runs the length of the rear of the case. Refer to diagram below.

Maintenance

PLEXIGLASS & ACRYLIC CARE

Improper cleaning not only accelerates the cleaning cycle but also degrades the quality of this surface. Normal daily buffing motions can generate static cling attracting dust to the surface. Incorrect cleaning agents or cleaning cloths can cause micro scratching of the surface, causing the plastic to haze over time.

CLEANING

Hussmann recommends using a clean damp chamois, or a paper towel marked as dust and abrasive free with **210® Plastic Cleaner and Polish** available by calling Sumner Labs at **1-800-542-8656**. Hard, rough cloths or paper towels will scratch the acrylic and should not be used.

ANTISTATIC COATINGS

The **210®** has proven to be very effective in not only cleaning and polishing the Plexiglass surface, but also providing antistatic and anti-fog capabilities. This product also seals pores and provides a protective coating.



PRECAUTION

CLEANING PRECAUTIONS

WHEN CLEANING:

- Never Use a Cleaning or Sanitizing Solution that has an OIL BASE (these will dissolve the butyl sealants) or AMMONIA BASE (this will corrode the copper components of the case)

TO PRESERVE THE ATTRACTIVE FINISH:

- Do Use Water and a Mild Detergent for the Exterior Only!
- Do Not Use Abrasives or Steel Wool Scouring Pads (these will mar the finish)

CLEANING GLASS & MIRRORS

Only use a soft cloth and mild glass cleaner for cleaning any glass or mirrored components. Be sure to rinse and/or dry completely.

Never use hot water on cold glass surfaces! It may shatter and cause serious injury! Allow glass surfaces to warm

GLASS

The non-glare glass supplied in your case has a specialized Anti-Reflective coatings on the surface of the glass. These coatings reduce the glare from lighting so that the products in your display are more visible to your customers.

While the anti reflective coatings are durable, they are susceptible to scratching if abrasive materials or liquids are used for cleaning. Once the glass surface is damaged, it is IMPOSSIBLE to restore it to the original finish. The following materials are recommended for routine cleaning:

Specialized cleaning cloths

- Scotch Brite @ High performance Cloth - manufactured by 3M and available in most grocery stores. This cloth is washable and may be reused as long as the cloth stays clean and free from solvents.
- Spontex® Microfibre Cleaning Cloth - distributed by Spontex® and available in most grocery stores under the same name. This cloth is washable and may be reused as long as the cloth stays clean and free from solvents.

The cleaning cloths named above will usually remove

dust, grease, oil, and fingerprints without the need for cleaning fluids. A light spray of the cleaning fluids listed above will reduce the time required for cleaning. These materials have been tested and proven to clean the non glare glass without scratching or damaging the Anti-reflective coating.

Cleaning solvents - for more difficult cleaning jobs, these products are recommended for the cleaning of glass. Care must be taken where they are used. The solvents are tested for use on the outside of the glass. No solvent should be applied directly to food product and food should be protected from overspray unless they carry the USDA-A1 ranking.

The food should be covered or the solution should be sprayed on a cleaning cloth away from the case if it is to be used inside the case with product present.

The following products will not damage the non-glare coating on the glass:

- Windex®
- Glass-Plus®
- Exceed™ Multi Surface Glass Cleaner - from Kay Chemical Company, Greensboro, NC
- Warm water

Under no circumstances should the following be used for cleaning glass:

- Coarse paper towels
- Souring Pads or Powders
- Steel wool or steel fiber materials
- Blades
- Acidic or highly Alkaline detergents
- Fluorine based detergents

Lift-up Glass Maintenance

At Installation and after replacement:

The top cylinders, which allow the raising and lowering of the glass, have been carefully tested for proper tension. However, during shipment, the lubricant inside may have settled. This settling may cause excessive or uneven tension on the glass - to the point of breakage.

Before opening the glass for the first time and after installing new cylinders, it is advisable to perform these three easy steps before completely raising the front glass.

1. Slowly raise and lower each glass section 6 times, to a height of 6".
2. Increase the height to 12", and raise and lower the glass 6 more times.

3. Finally, raise the glass to it's full extension. This should release any settled lubricant in the cylinders, and prevent any stress on the front glass.

After the case is brought to operating temperature the first time, **recheck the Allen screws on the glass once the case once the case is in full operation and brought to temperature.**

Temperature changes can affect the size and shape of the materials involved, and can cause changes in the secure fit of the glass and the clamp.



CAUTION

Cylinders are a wear item. They are designed:

- **To support the glass when fully open**
- **to allow the glass to close slowly**

Have your Service Contractor replace the cylinders when required.



WARNING

Glass is heavy and can cause bodily damage. Check support cylinders for periodic maintenance

Periodic Inspection and Maintenance

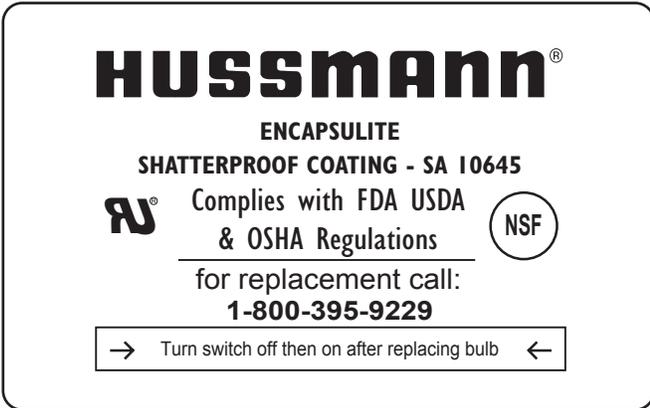
Piston cylinders are a wear item. They are designed to support the glass when fully open and to allow the glass to close slowly. Glass is heavy and can cause bodily damage.

Check support cylinders as a part of periodic maintenance. Have your Service Contractor replace the cylinders if they show signs of weakness or when

otherwise indicated.

REPLACING FLUORESCENT LAMPS

Fluorescent lamps are furnished with a shatterproof protective coating. The same type of lamp with protective coating must be used if replaced.



TIPS & TROUBLESHOOTING

Before calling for service, check the following:

1. Check electrical power supply to the equipment for connection.
2. Check fixture loading. Overstocking case will affect its proper operation.
3. If frost is collecting on fixture and/or product, check that no outside doors or windows are open—allowing moisture to enter store. These merchandisers were designed for use in stores where temperature & humidity does not exceed 75° F and 55% H.

User Information

Food Handling and Hot Food Equipment

These hot tables are for short-term holding and display of precooked hot foods. They are not intended to cool or reheat food. The temperature of the food should be approximately 160°F when first put into the hot table.

These hot tables are best suited when used in a cafeteria type application where the food is held and served rapidly, within a few hours. Any attempt to use the hot table to display large amounts of food for long periods of time will result in dehydrated, overcooked and unsafe food. The quality of food will progressively worsen as the length of time increases.

The deterioration of product quality is a function of time and temperature. All products are affected even though in a gravy or other liquid. They may appear to withstand the temperature better than “dry” foods such

as fried chicken but this is not necessarily true. ALL foods will continue to be affected by prolonged exposure to elevated temperatures.

The following guidelines are provided only as a general guide for the use of this equipment. The local health agency for your area can provide specific temperature requirements.

Critical attention must be given to the heat controls for these hot tables. Both the upper and lower heat controls must be adjusted to achieve proper food temperatures. Hot foods should be held at a minimum temperature of at least 140°F (60°C) according to 1995 FDA Food Code. However, increasing the temperature too high will also cause the food to overcook, dry out, lose its flavor, texture and color. Food held for prolonged periods at high temperatures will also lose some of their nutritional value.

Different foods will require different control settings. The type of food, the quantities of food and length of time that it is to remain in the hot table must be considered when establishing control settings. Therefore, it must be the user’s responsibility to establish the correct control settings to maintain the food at the safest, tastiest and most saleable condition.

Food temperatures can be accurately determined only through the use of food thermometers!

IMPORTANT OPERATION TIPS:

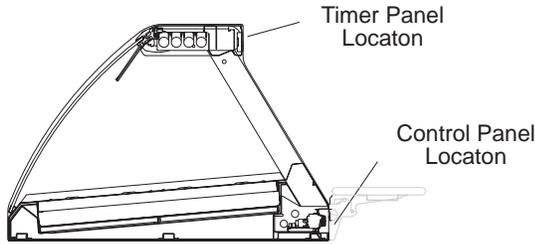
- * Preheat case 30 minutes before loading product using higher settings.
- * Never place food directly into warmer. Always use an inset and pan.
- * **Using thermometer**, check product before loading in case (135°).
- * Stir sauces often to keep foods uniformly heated and prevent scorching.
- * At start, set wells to "4". After loading, recheck temperature every 1/2 hour to see that unit is operating properly. Adjust the thermostat (a higher number for hotter and a lower number for cooler) to maintain product temperature of 135°F+ (57°C-) minimum. Be sure to test product temperature with a thermometer frequently for good product maintenance.
- * Food must always be placed into a display pan over the well, never directly into the well.
- * Food should not be stacked above the top of the pan. Food above the top of the pan will dry out rapidly.

- * If practical, the food should be covered during slack sale periods to reduce dehydration.
- * At end of the day, remove product and let case cool. Then clean with soap and water (use oven cleaner on the difficult spots). Polish and clean glass with a good glass cleaner.

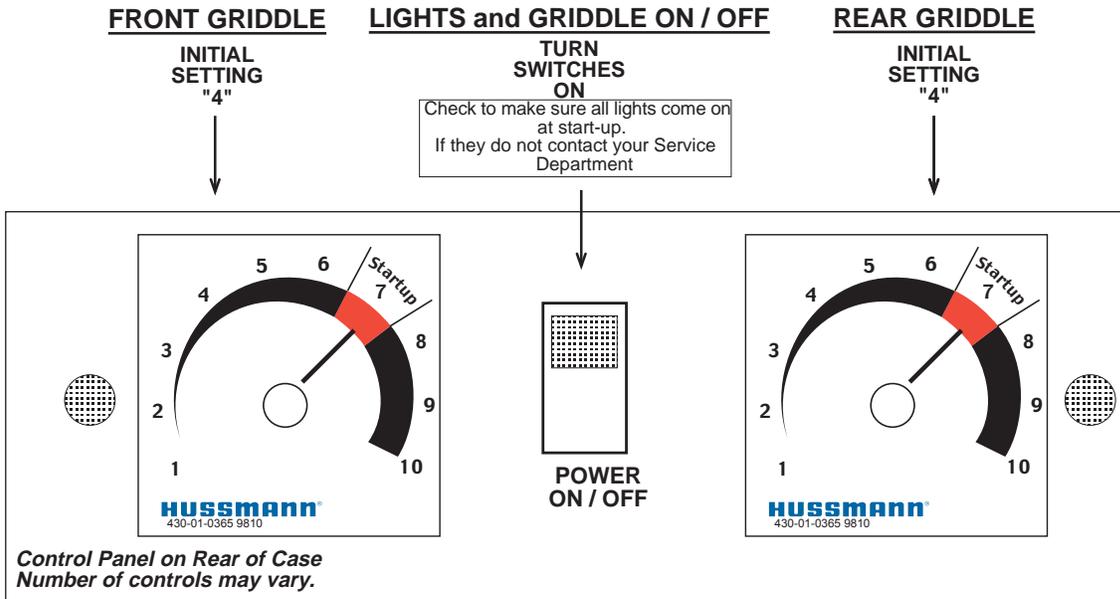
Case Startup

CONTROLS

The controls are located at the rear of the case.



Parts of the case exterior, shelves and light bulbs become extremely hot when in use.
USE EXTREME CAUTION!



Temperature Adjustment

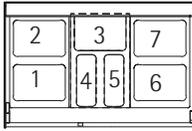
Allow case preheat for 45 minutes prior to loading **NOTE:** This equipment is not designed to heat-up or cook food. Food should be slightly higher temperature than desired holding temperature when put in display.

1. Measure **PRODUCT temperature hourly** by inserting a food thermometer into the food. Proper holding temperature is 135°.
2. To change temperature, increase or decrease Overhead Heat by one number at a time. Adjust the griddle temperature as necessary. Measure product temperature again in one hour. Readjust if necessary.

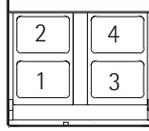
Timer Operation



Numbered product keys above correspond to FC4H-Cinnabon pans 1-7 below



Numbered product keys above correspond to FC3H-Cinnabon pans 1-4 below



NOTE: The colon will flash if the unit is in hours / minutes mode and be on constant in minutes / seconds mode.

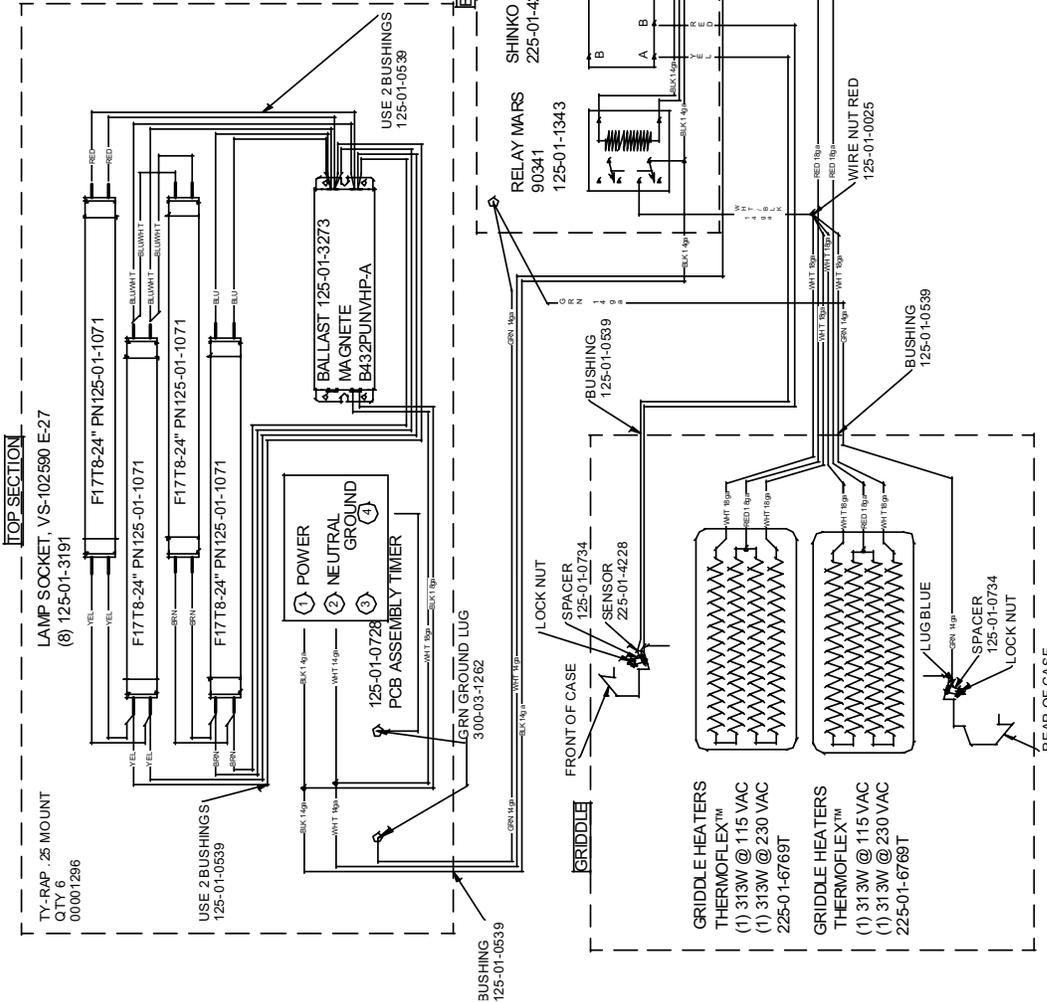
- To enter programming from '---', press the ©(FAST.) key for three seconds. The display will change to "PROG".
- To change a time, press the desired product / pan number key. The display will change to the existing set time. Press the up or down arrow keys to change to the desired time. To change another key press that product key and follow the same procedure.
- To exit programming mode, press the ©(FAST.) key and the timer will return to the operating mode '---'.
- To cancel a product / pan cycle, press and hold that product key.
- To view the remaining time on a product key, press the SCAN key. Continue to press the SCAN key to toggle through all active times.

For Service Call 1-800-243-9271

Electrical Specifications

LENGTH	13" x 9" Openings	13" x 5"	VOLTS	CIRCUIT 1 PHASE	Amps
	QTY.				
3'	4	0	115	1Ø	7.3
4'	5	2	115	1Ø	9.3

Parts List	
PN	Qty Description
125-01-3273	1 BLST B432PUNVHP-A
125-01-0539	8 BUSHING HEYCO #2053 1/2"
125-01-0728	1 PCB 4 BUTTON ASSY 216-70068-01
125-01-0729	1 PCB 4 BUTTON ASSY ADD ON
125-01-0731	1 OVERLAY 8 BUTTON ZAP TIMER
125-01-0734	9 FAST TIMER 1/4"L MITG.SPACER
125-01-0733	4 FAST TIMER 3/8"L MITG.SPACER
125-01-3191	8 (S)SKT FLR T8T12 VS-109346
00001296	9 TIES TY38M.7-7/8" ZIP PUSH MT
300-03-1262	2 SCREWHEX 8/32X1/2" GRN
125-01-0736	1 FAST TIMER INSTRUC. STICKER
125-01-0311	1 (S)SWTCH TIPETE SGL POLE 3XC59
225-01-4228	1 SENSOR #6 X 60" LEAD #07105
225-01-4229	1 T-STAT ELECTRONIC HOT SHINKO
125-03-1071	4 (S)LMP FLR F17T19/SPX30 24"
225-01-6799T	2 HTR FLEX-SLON 30"X11" W/TRAY
125-01-0063	1 FITTING HEYCO #1184 SR 6W-1
125-01-1343	1 RELAY MARS 90341 - DPDT 115V
125-01-0025	1 WIRE NUT RED 452
125-01-0462A	1 PANDUIT DNFR 14-250FI BLU FLAG
125-01-0475	5 TERMINL 14-10-RC BLU EYE
300-03-0250	2 SCREW MAC FH PHIL 8-32X1/2"
300-03-1318	2 WASHER STAR 10



LOADING	
L1	6.7
L2	0.0
L3	0.0
L1	0.0
L2	0.0
L3	

NOTE: CASE MUST BE GROUNDED

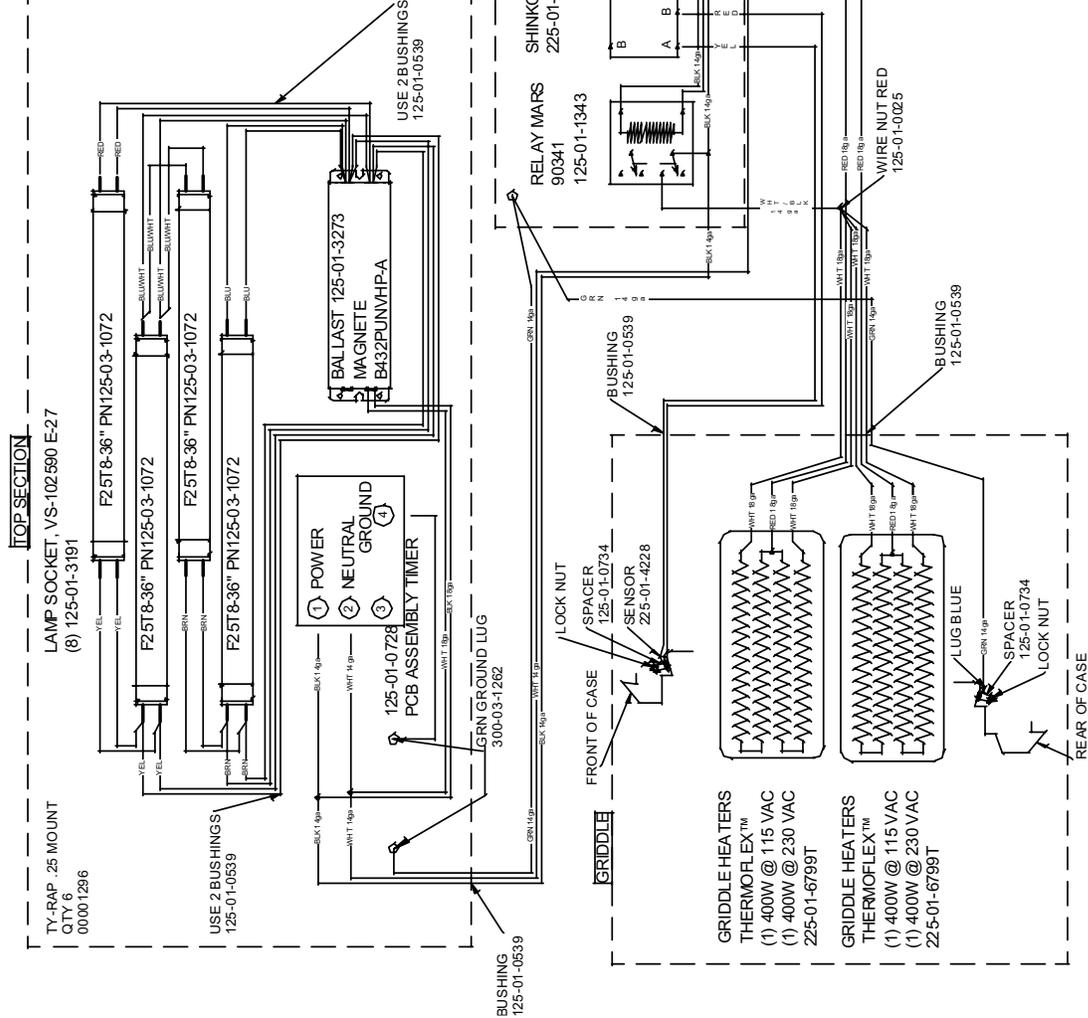
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HUSMANN
 HUSMANN CORPORATION
 13770 RAMONA AVENUE
 CHINO, CA 91710
 (909) 590-4810 Lic.# 644-406

LOADING	L1	L2	L3
115V	8.2	0.0	0.0
	0.0	0.0	0.0
	0.0	0.0	0.0

NOTE: CASE MUST BE GROUNDED

PN	Qty	Description
125-01-3273	1	BLST B432PUNVHP-A
125-01-0539	8	BUSHING HEYCO #2053 1/2"
125-01-0728	1	PCB 4. BUTTON ASS 216-70068-01
125-01-0729	1	PCB 4. BUTTON ASSY ADD ON
125-01-0731	1	OVERLAY 8 BUTTON ZAP TIMER
125-01-0734	9	FAST TIMER 1/4" L. MTG. SPACER
125-01-0733	4	FAST TIMER 3/8" L. MTG. SPACER
125-01-3191	8	(S)SKT FLR T&T 12 VS-108346
00001296	9	TIES, TY-38M, 7-7/8", ZIP PUSH MT
300-03-1262	2	SCREW HEX 8/32X1/2" GRN
125-01-0736	1	FAST TIMER INSTRUC. STICKER
125-01-10311	1	(S)SWTCH TIPETE SGL POLE 3XC59
125-01-4228	1	SENSOR #6 X 60" LEAD #Q7105
225-01-4229	1	T-STAT ELECTRONIC HOT SHINKO
125-03-1072	4	(S)IMP FLR F25/T8/SPX30 36"
225-01-6799T	2	HTR FLEX-SLON 42"X11" W/TRAY
125-01-0063	1	FITTING HEYCO #1184 SR 6W-1
125-01-1343	1	RELAY MARS 90341 - DPDT 115V
125-01-0025	1	WIRE NUT RED 452
125-01-0462A	11	PANDUIT DNFR 14-250FI BLU FLAG
125-01-0475	5	TERMINL 14-10-HRC BLU EYE
300-03-0250	2	SCREW MAC F/H PHIL 8-32X1/2"
300-03-1318	2	WASHER STAR 10



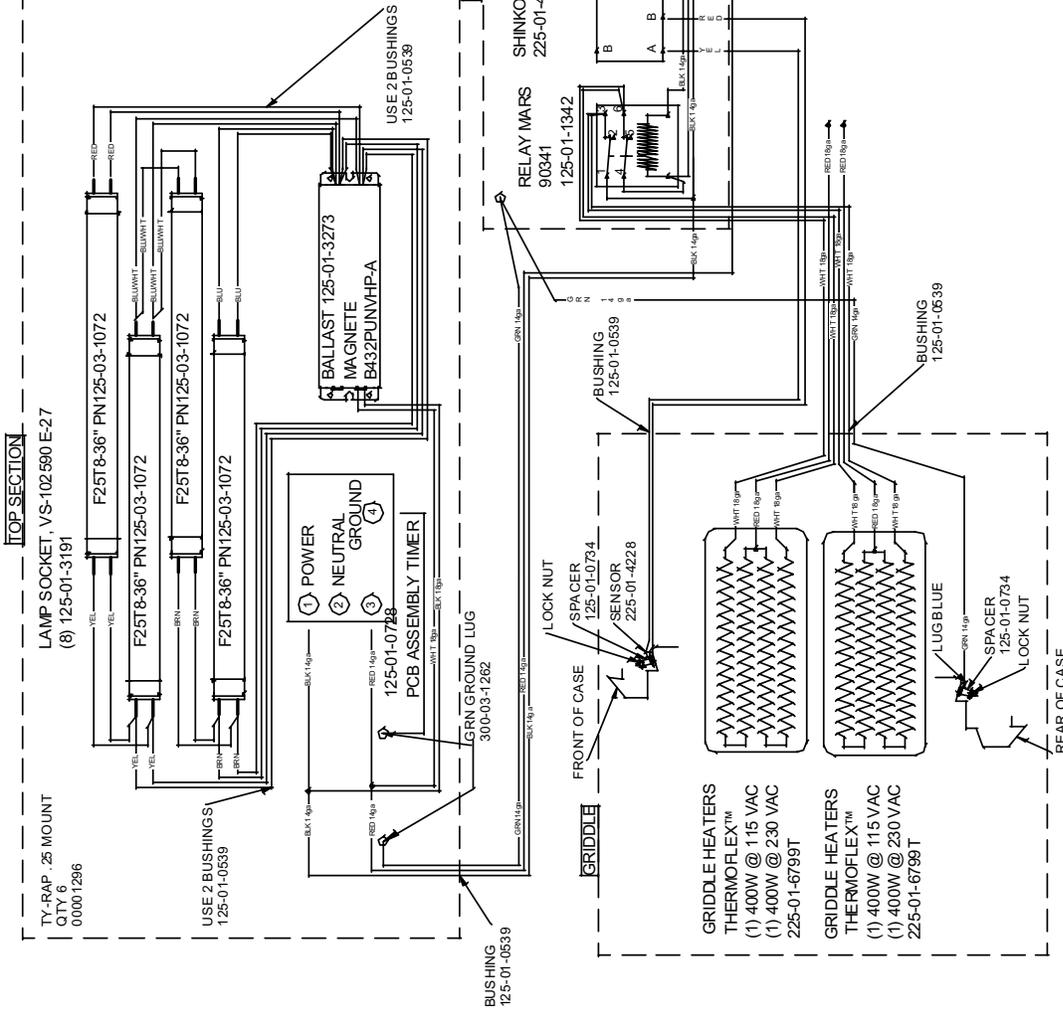
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#3							

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 13770 RAMONA AVENUE
 CHINO, CA 91710
 (909) 390-9310 Lic# 644406

220 V	LOADING	L1	4.1
		L2	4.1
		L3	

NOTE: CASE MUST BE GROUNDED

Parts List	
PN	Qty Description
125-01-3273	1 BLST B432PUNVHP-A
125-01-0639	8 BUSHING HEYCO #2063 1/2"
125-01-0728	1 PCB 4 BUTTON ASS 216-70068-01
125-01-0729	1 PCB 4 BUTTON ASSY ADD ON
125-01-0731	1 OVERLAY 8 BUTTON ZAP TIMER
125-01-0734	9 FAST TIMER 1/4" L MTG SPACER
125-01-0733	4 FAST TIMER 3/8" L MTG SPACER
125-01-3191	8 (S)CKT FLR T8T12 VS-106346
00001296	9 TIES TY38M, 7-7/8" ZIP PUSH MT
300-03-1262	2 SCREW HEX 8/32X1/2" GRN
125-01-0736	1 FAST TIMER INSTRUC. STICKER
125-01-0311	1 (S)WITCH TIPETE SGL POLE 3XCS9
125-01-4228	1 SENSOR #6 X 60" LEAD #Q7105
225-01-4229	1 T-STAT ELECTRONIC HOT SHINKO
125-03-1072	4 (S)IMP FLR F25T8/SPX30 36"
225-01-6798T	2 HTR FLEX-SLON 42"X11" W/TRAY
125-01-0063	1 FITTING HEYCO #1184 SR 6W-1
125-01-0025	1 WIRE NUT RED 452
125-01-0462A	11 PANDUIT DNER 14-250FIBLU FLAG
125-01-0475	5 TERMINL 1/4-10-RC BLU EYE
300-03-0250	2 SCREW MAC FH PHIL 8-32X1/2"
300-03-1318	2 WASHER STAR 10

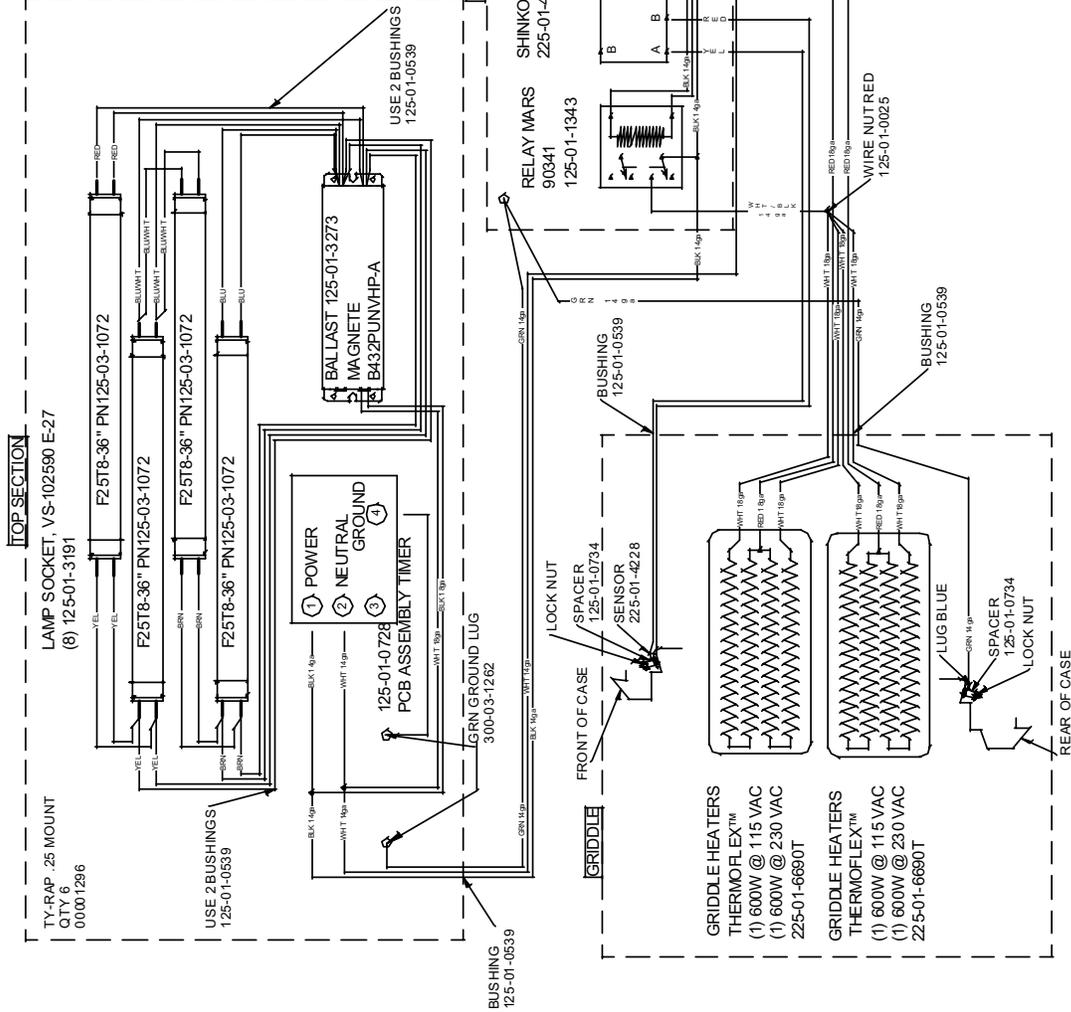


REVISIONS:		DATE:	BY:	RTwoty	PROJECT TITLE:	DWG #:
1	DESCRIPTION	11-11-04	JR	NON HAZ HOT CASE	W5000321	
2	TEXT REVISION			DRAWING TITLE:		
3				FILE LOCATION:		
				HAWIRESCHEMATICS/NEW WIRING	CR3HTO-4-HTB MOD2 220-240V 50/60HZ	PAGE 1 OF 1

LOADING	L1	L2	L3
>	11.7	0.0	0.0
↳	0.0	0.0	0.0
↳	0.0	0.0	0.0
↳	0.0	0.0	0.0

NOTE: CASE MUST BE GROUNDED

Parts List	
PN	Description
125-01-3273	1 BL ST B432PUNVHP-A
125-01-0539	8 BUSHING HEYCO #2083-1/2"
125-01-0728	1 PCB 4.BUTTON ASS 216-70068-01
125-01-0729	1 PCB 4.BUTTON ASSY ADD ON
125-01-0731	1 OVERLAY 8 BUTTON ZAP TIMER
125-01-0734	9 FAST TIMER 1/4"L MITG SPACER
125-01-0733	4 FAST TIMER 3/8"L MITG SPACER
125-01-3191	8 (S)SCKT FLR 1/8"X12 VS-109346
00001296	1 TIES TY-38M.7-7/8" ZIP PUSH MT
300-03-1262	2 SCREW HEX 8/32X1/2" GRN
125-01-0736	1 FAST TIMER INSTRUC. STICKER
125-01-0311	1 (S)SWTCH TIPETE SGL POLE 3XC59
225-01-4228	1 SENSOR #6 X 60" LEAD #Q7.105
225-01-4229	1 T-STAT ELECTRONIC HOT SHINKO
125-03-1072	4 (S)IMP FLR F25/T8/SPX30.36"
225-01-6690T	2 HTR FLEX-SLGN 57"X11"W/TRAY
125-01-0063	1 FITTING HEYCO #1184.SR 6W-1
125-01-1343	1 RELAY MARS 90341 - DPDT 115V
125-01-0025	1 WIRE NUT RED 452
125-01-0462A	11 PANDUIT DNFR 14-250F/BLU FLAG
125-01-0475	5 TERMMNL 14-10-RC/BLU EYE
300-03-0250	2 SCREW/MAC F/H PHIL 8-32X1/2"
300-03-1318	2 WASHER STAR 10



REVISONS:	DATE:	BY:	DESCRIPTION:
1	11-11-04	JR	TEXT REVISION
2			
3			

DRAWN BY: M.kimura	PROJECT TITLE: NON HAZ HOT CASE	DWG #: W5000343
CHECKED BY: ---	DATE: 8/10/04	
PRODUCTION ORDER #: *****	FILE LOCATION: H:\WIRESCHEMATICS\NEW\WIRING	
CR3HTO-5-HTB MOD2 115V 60HZ		

APPENDICES

APPENDIX A. – Temperature Guidelines

I.0 Hot cases are tested to maintain all hot food at 140° - 150°.

These cases are not designed to heat up or cook food. It is the user's responsibility to stock the hot food cases immediately after the cooking of the food with a pulp temperature of at least 150° to 160°.

APPENDIX B. – Application Recommendations

I.0 The installer should perform a complete start-up evaluation prior to the loading of food into the hot food case, which includes such items as:

- a) Initial temperature performance, Griddles and Hot Wells.
- b) Observation of outside influences such as drafts, radiant heating from the ceiling and from lamps. Such influence should be properly corrected or compensated for.
- c) Complete start-up procedures should include :
 1. Heat / display lamps are lighting
 2. Indicator lamps on control panel(s) are working
 3. Auto-fill is functioning properly (Service cases)
 4. Hot Griddles are functioning.

APPENDIX C. – Field Recommendations -

I.0 The most consistent indicator of display hot case performance is temperature of the product itself.

NOTE: Public Health will use the temperature of the product in determining if the hot case will be allowed to display potentially hazardous food. For the purpose of this evaluation, product temperature above the FDA Food Code 1993 temperature for potentially hazardous food will be the first indication that an evaluation should be performed. It is expected that all hot cases will keep food at the FDA Food Code 1993 temperature to prevent the sale of potentially hazardous food.

I.1 The following recommendations are made for the purpose of arriving at easily taken and understood data which, coupled with other observations, may be used to determine whether a display refrigerator is working as intended:

- a) **INSTRUMENT** – A stainless steel stem-type thermometer is recommended and it should have a dial a minimum of 1 inch internal diameter. A test thermometer scaled only in Celsius or dually scaled in Celsius and Fahrenheit shall be accurate to 1°C (1.8°F). Temperature measuring devices that are scaled only in towel.

10. When “freshening” foods such as macaroni and cheese with added water, heat the water in a clean container until it is 10° to 20°F above the desired holding temperature of the food. This will keep the food at a safe serving temperature. Depending on the amount of water, the temperature can drop 10° to 20° in as little as five minutes.

11. When transferring hot foods in the heated merchandiser to clean pans, preheat the clean pan. Transferring hot foods to room temperature pans can cause the temperature of the food to drop 20° or more thus causing food to be at an unsafe serving temperature.
12. Clean spills as they happen simply by wiping with a cloth. Be sure to use a dry cloth on very hot surfaces to prevent steam burns.
13. Turn the equipment off and allow to cool before cleaning.
14. To remove “baked-on” splatter from Stainless Steel, the following may be used

Grade F Italian Pumice	Scour or rub with a damp cloth
Liquid Nusteel	Scour with a small amount of a dry cloth
	Paste NuSteel
Household Cleaners	Rub with a damp cloth
Coopers Stainless Steel Cleaner	
Allen Stainless Steel Polish	

Fahrenheit shall be accurate to 2°F. The thermometer should be checked for proper calibration. (It should read 32°F when the stem is immersed in an ice water bath).

- b) **LOCATION** – The thermometer must be inserted into the food itself to acquire proper food pulp temperature.
- c) **READING** – The thermometer reading should be made only after it has been allowed to stabilize, i.e., maintain a constant reading.
Loading Product: Cases should be allowed to heat up for one hour before product is loaded.
Temperature adjustments: Allow 4 hours after adjustment has been made before testing pulp temperature of product.
- d) **OTHER OBSERVATIONS** – Other observations should be made which may indicate operating problems, such as unsatisfactory product, feel/appearance.

APPENDIX D. – Recommendations to user

I.0 Hussmann should provide instructions and recommendations for proper periodic cleaning. The user will be responsible for such cleaning, including the cleaning of equipment within the compartment and the hot area(s). Cleaning practices, particularly with respect to proper refrigerator unloading and warm-up, must be in accordance with applicable recommendations.

1. Allow the case to preheat for one hour prior to loading.
2. Hot foods should enter the case directly after cooking or no lower than 150° - 160°F. The Hot Cases are not designed to heat up or cook food.
3. Self Service - be sure to display product in single layer in direct contact with heating surface and/or wire rack.
4. All griddle type units are designed to maintain temperatures above the FDA guideline of 140°F. This is product temperature, not air or griddle temperature. Due to the open design of these units, they must be loaded with product for proper

operation. When units are empty, they experience rapid rise of heated air from air outside the case. This action gives empty units a false, lower than desired, temperature reading. Loading the case traps the air at the griddle, raising temperatures to the 165°F to 185°F range, keeping product well above the FDA guidelines. Remember, these units must be loaded with product to maintain safe product temperature.

5. Check the food pulp temperature frequently with a thermometer to make sure it is at the proper holding temperature. Hot foods should be at 140°. The thermometer must be inserted into the food itself for the proper temperature.
6. Do not display more food than will be sold within a 4 hour period.
7. When restocking, bring older food to the front, and stock fresher food on top.
8. Clean spills as soon as they happen.
9. Fingerprints and food splatter will drastically shorten bulb life. Clean splatter off the bulbs immediately with a soft cloth. When handling bulbs, wear cotton gloves or use a cotton rag /

HUSSMANN®

Limited Warranty

This warranty is made to the original user at the original installation site and is not transferable.

Hussmann merchandisers are warranted to be free from defect in material and workmanship under normal use and service for a period of one (1) year from the date of original installation (not to exceed fifteen (15) months from the date of shipment for the factory). **Hussmann Impact Modular Coils are warranted for a total of five (5) years based upon the above criteria.** Hussmann's obligation under this warranty shall be limited to repairing or exchanging any part or parts, without charge F.O.B. factory or nearest authorized parts depot within said period and which is proven to the satisfaction of the original manufacturing plant warranty group to be thus defective.

Hussmann covers the entire case or refrigeration product and all its components (except for lamps, driers, fuses, and other maintenance type replacement parts) for the one (1) year warranty period.

Additionally, Hussmann warrants for a total period of three (3) years all sealed, multi-glass assemblies except those used in sliding doors on closed meat display cases. If within three (3) years from the date of installation (not to exceed thirty-nine (39) months from the date of shipment from factory), it shall be proven to the satisfaction of the originating factory warranty group that there is impaired visibility through the multi-glass assemblies thereof caused by moisture between the glasses, the multi-glass assembly will be replaced free of charge, F.O.B. factory. This additional warranty excludes accident, misuse, or glass breakage.

On Hussmann manufactured self-contained display cases, Hussmann agrees to repair or exchange, at its option, the original motor/compressor unit only with a motor/compressor of like or of similar design and capacity if it is shown to the satisfaction of Hussmann that the motor/compressor is inoperative due to defects in factory workmanship or material under normal use and service as outlined in Hussmann's "Installation Instructions" which are shipped inside new Hussmann equipment. Hussmann's sole obligation under this warranty shall be limited to a period not to exceed five years from date of factory shipment.

On Hussmann refrigeration systems, an additional (4) year extended warranty for the motor/compressor assembly is available, but must be purchased prior to shipment to be in effect. Hussmann reserves the right to inspect the job site, installation and reason for failure.

The motor/compressor warranties listed above do not include replacement or repair of controls, relays, capacitors, overload protectors, valve plates, oil pumps, gaskets or any external part on the motor/compressor replaceable in the field, or any other part of the refrigeration system or self-contained display case.

THE WARRANTIES TO REPAIR OR REPLACE ABOVE RECITED ARE THE ONLY WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, MADE BY HUSSMANN WITH RESPECT TO THE ABOVE MENTIONED EQUIPMENT, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS, AND HUSSMANN NEITHER ASSUMES NOR AUTHORIZES ANY PERSON TO ASSUME FOR IT, ANY OTHER OBLIGATION OR LIABILITY IN CONNECTION WITH THE SALE OF SAID EQUIPMENT OR ANY PART THEREOF.

THIS WARRANTY SHALL NOT APPLY TO LOSS OF FOOD OR CONTENTS OF THE EQUIPMENT DUE TO FAILURE FOR ANY REASON. HUSSMANN SHALL NOT BE LIABLE:

- For payment of labor for any removal or installation of warranted parts;
- For any repair or replacements made without the written consent of Hussmann, or when the equipment is installed or operated in a manner contrary to the printed instructions covering installation and service which accompanied such equipment;
- For any damages, delays, or losses, direct or consequential which may arise in connection with such equipment or part thereof;
- For damages caused by fire, flood, strikes, acts of God or circumstances beyond its control;
- When the equipment is subject to negligence, abuse, misuse or when the serial number of the equipment has been removed, defaced, or altered;
- When the equipment is operated on low or improper voltages
- When the equipment is put to a use other than normally recommended by Hussmann (i.e. deli case used for fresh meat);
- When operation of this equipment is impaired due to improper drain installation;
- For payment of refrigerant loss for any reason;
- For costs related to shipping or handling of replacement parts.

Hussmann Corporation, Corporate Headquarters: Bridgeton, Missouri, U.S.A. 63044 August 1, 1998

Service Record

Last service date: By:

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_____	_____
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The *MODEL NAME* and *SERIAL NUMBER* is required in order to provide you with the correct parts and information for your particular unit.

They can be found on a small metal plate on the unit. Please note them below for future reference.

MODEL: _____

SERIAL NUMBER: _____