

HUSSmann®/CHINO Q-HV Hot Food Family SINGLE-DECK SERVICE HOT	Installation & Operation Manual
	REV. 0322

HUSSmann®

Q-HV Hot Food Family
SINGLE-DECK SERVICE HOT
FOOD CASE

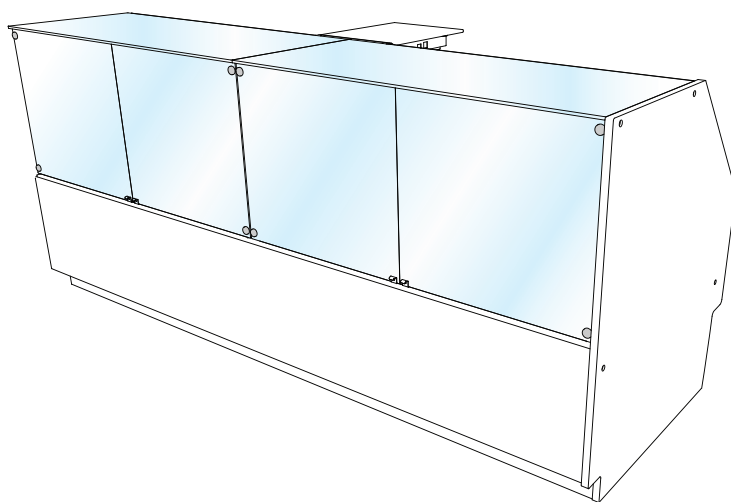
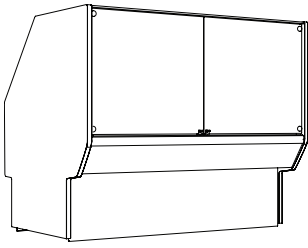


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General Information



Case Description: ***Single deck service hot food merchandiser***

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 immediately.

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 all 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 (See Parts List page 11). 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 have 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.

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

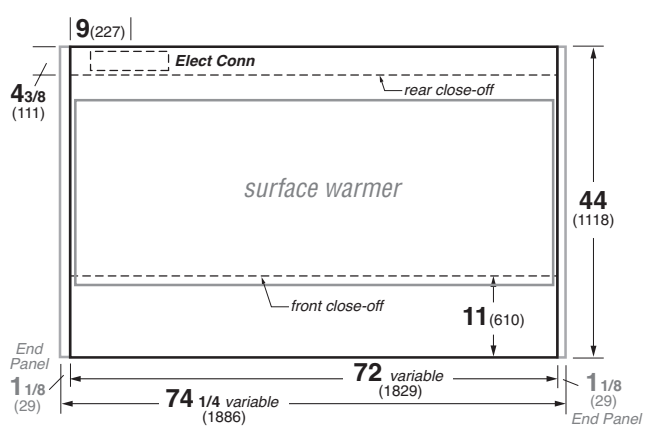
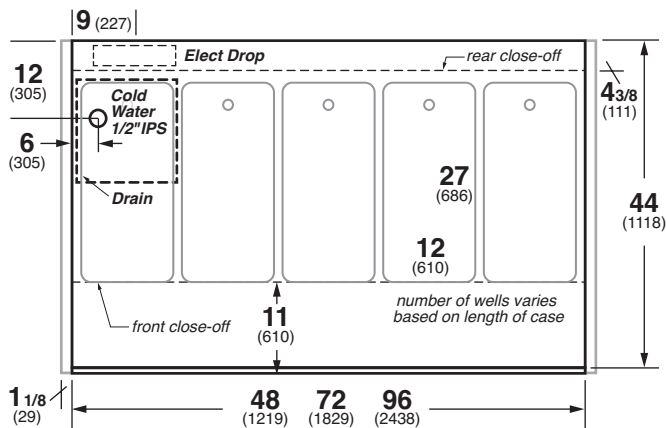
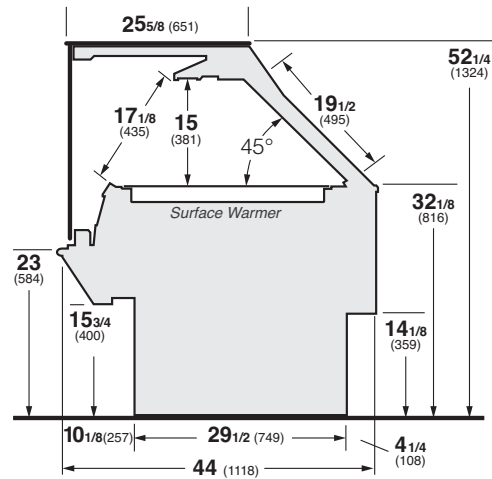
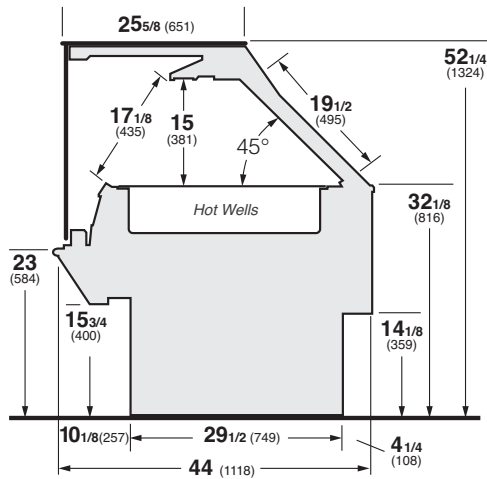
HUSSMANN®/CHINO

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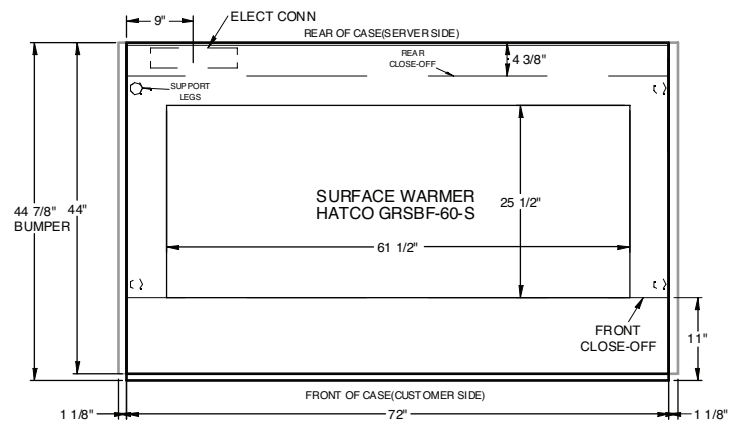
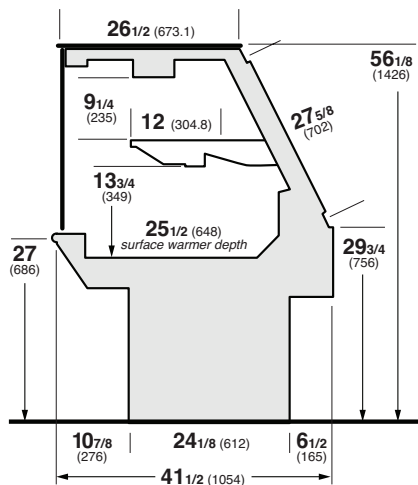


This equipment is to be installed to comply with the applicable NEC, Federal, State, and Local Plumbing and Construction Code having jurisdiction.

Case Sections



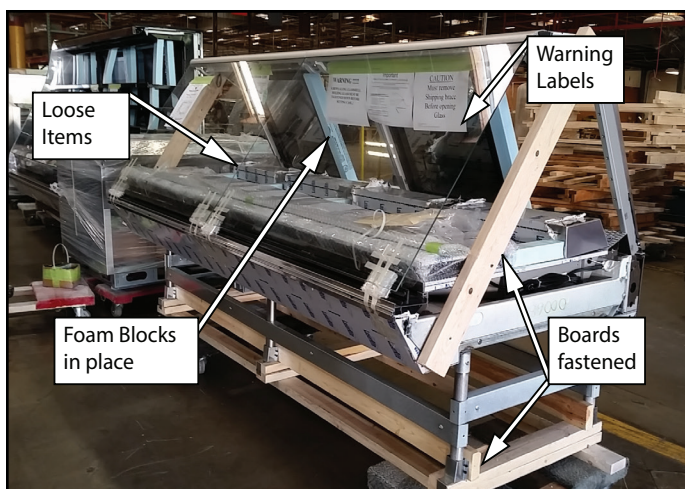
Q3-HV
Vertical Glass Hot Case



Installation

NOTICE

Do NOT remove Foam Blocks from shelves and glass until the merchandisers are positioned for installation. Shelves or merchandising glass may be damaged.



Case is to arrive at store as was shipped from factory. See reference above for proper shipment referencing. (Not actual case)

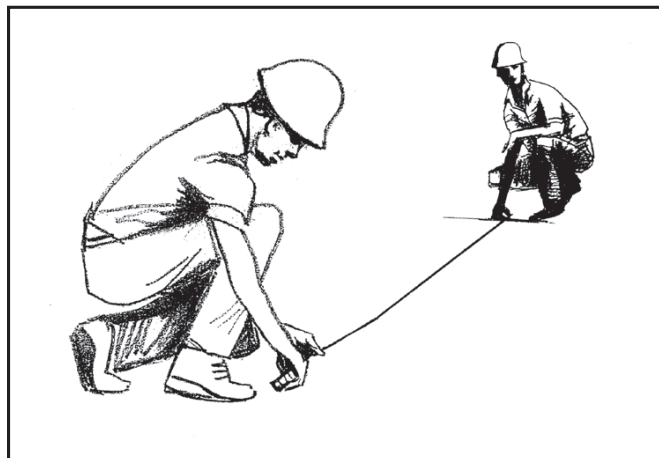
Receiving Case

Upon receiving your new Hussmann Case all equipment should be thoroughly examined for shipping damage before and during unloading. This equipment has been carefully inspected at our factory. Any claim for loss or damage must be made to the carrier. The carrier will provide any necessary inspection reports/ or claim form.

If there is 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.

Snapping Chalk Lines

Prepare permanent positioning by marking floors with Chalk snap lines where cases are to be located. Chalk lines are to run along the base or legs of cases.



Do NOT remove shipping braces until the merchandisers are properly anchored to the floor. Merchandisers are top heavy and could tip over causing serious injury. Merchandisers must be braced before removing the lag bolts.



**IMPORTANT
INFORMATION**

Please read these instructions completely before beginning case installation

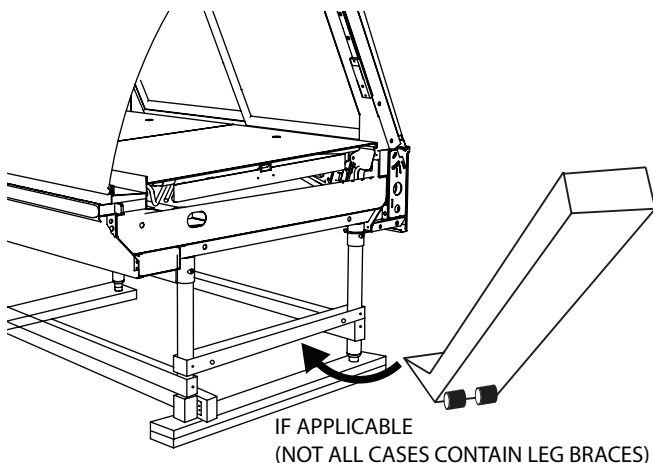
Installation (cont'd)

Placement

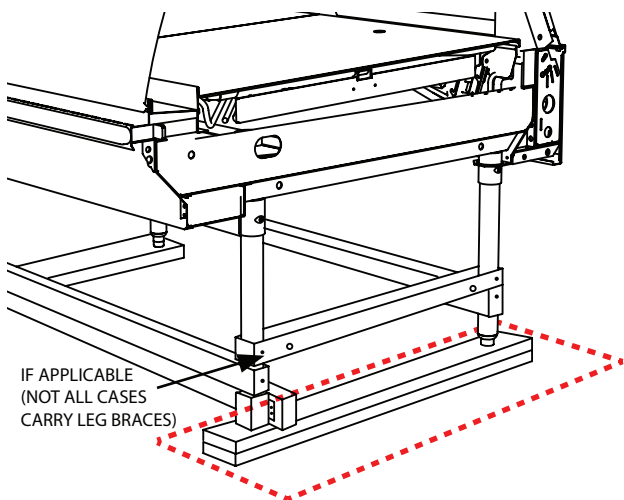


Failure to follow this caution may result in potential personal injury, death and/or property damage. Forklifts may not be used to lift and or transport cases. Use of such equipment may result in unstable lifting. The ability to properly perform service on this equipment requires certain expertise, mechanical skills, tools, and equipment. If you do not possess these, do not attempt to perform any service on this equipment other than those procedures recommended in the User's Manual.

Leave all hardware and fittings in place until case is located at or near its preferred location. Using a J-Bar lift the case from the 2x4 boards and placing dollies underneath each Base Leg, proceed to moving the case to its designated location if not done so already.

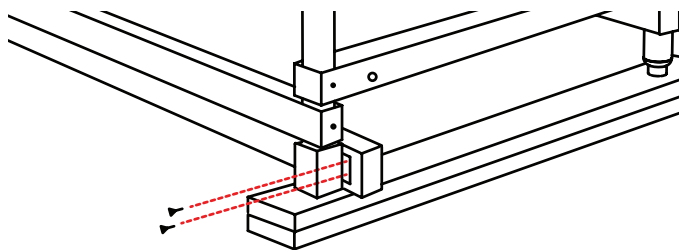


The Illustration Below demonstrates perfect placement of a dolly per 1 side for both Base Legs of the merchandiser.

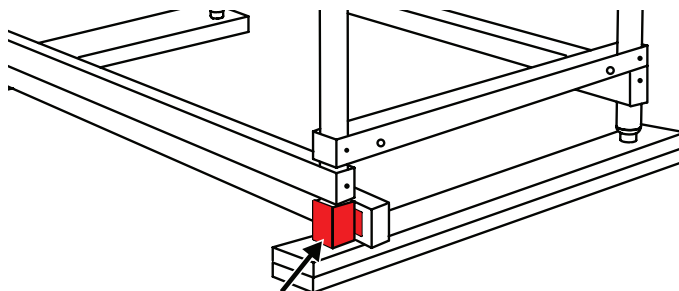


Move the fixture as close as possible to its permanent location and then remove all packaging and prepare to remove off Skid. Remove all separately packed accessories such as kits, and panels. Check for damage before discarding packaging.

Remove screws as well as fastened plates bolted to each 2x4 board at each base leg.

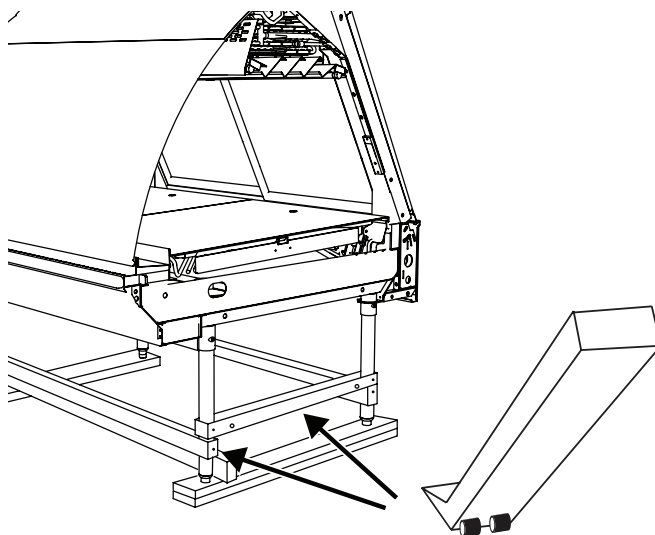


Remove fastened plates only upper Brace Legs are to remain fastened onto case.



Fastened plate

Once the fastened plates are removed a J-Bar can be used to lift at each end of the Leg Braces to remove the below 2x4 boards.

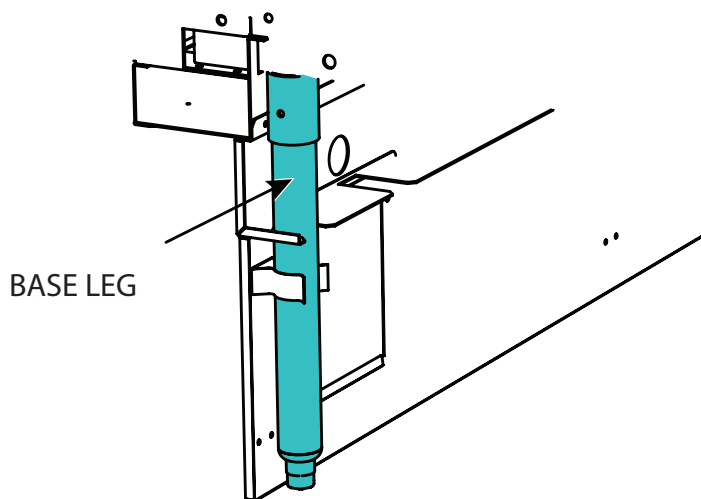
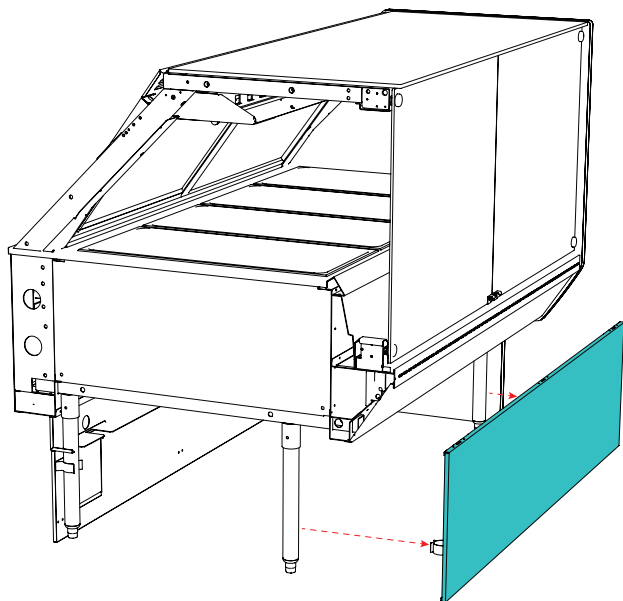


Installation (cont'd)

Lower Body Panel Install

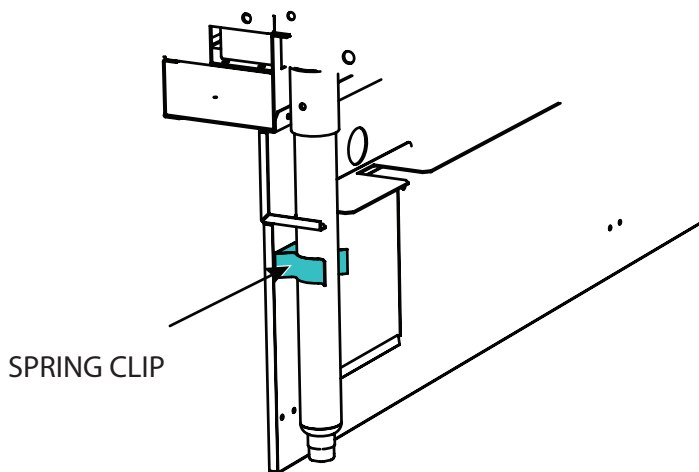
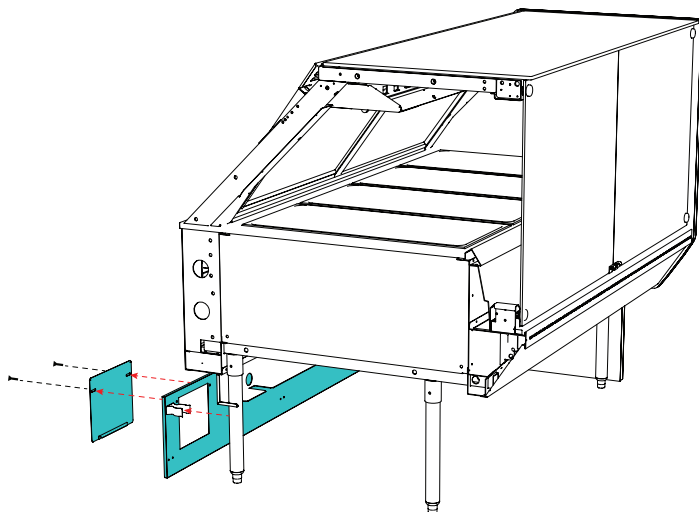
No tools will be needed to install body panels.

To begin Bottom panel assembly place the front panel along in front of the case and align the base legs just underneath the lower sections of the case. Snap in spring clips to the base legs of the case.



Rear Body Panel Install

1. Align clips of rear panel to Base Legs of case
2. Secure top and bottom clips of rear panel to Base Legs as shown below.



Installation (cont'd)

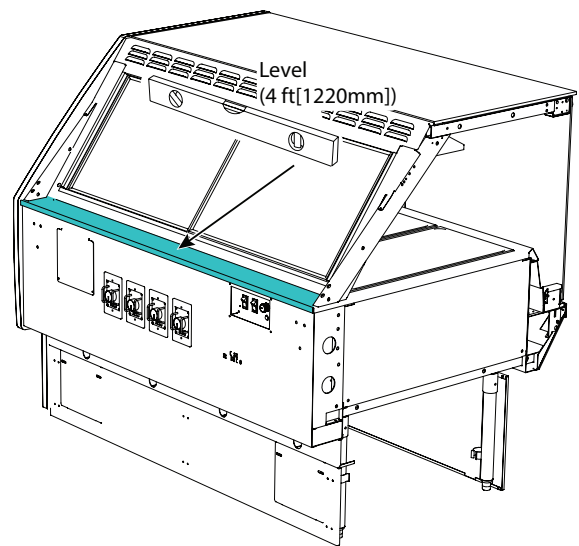
Levelling Adjustment

Check floor where cases are to be set to see if it's level then determine where the highest part of the floor is. Cases will be shimmed off this point. Using case blueprints, measure off and mark on floor the exact dimensions of the case footprint. Snap chalk line for front and back position of base rail. Mark location of each joint front and back. Use a transit to find the highest point along both lines.

Position the case at the highest point. Set a long magnetized level (4ft [1220 mm] or more) on either underneath the deck or on top of the case. Ensure to level case from front to back and side to side.

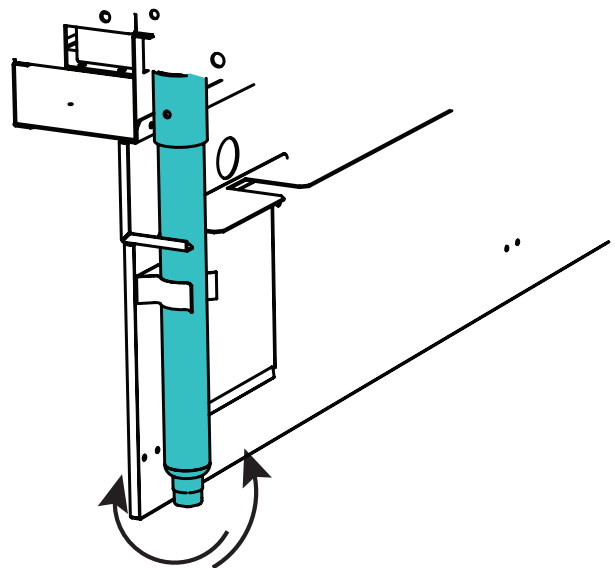
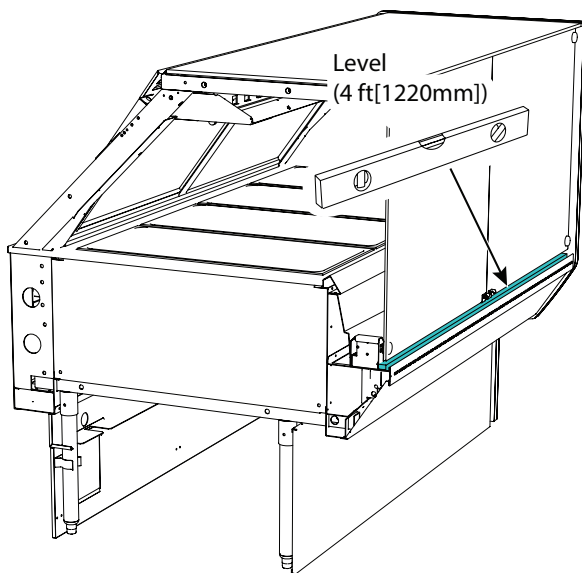
IMPORTANT: It is imperative that cases be leveled front to back and side to side prior to joining. A level case is necessary to ensure proper operation, water drainage, glass alignment, and operation of the hinges supporting the glass. Leveling the case correctly will solve most hinge operation problems.

Note: To avoid removing concrete flooring, begin line up levelling from the Highest point of the store floor.



Leg Adjustment

Adjust the legs at each corner and center (6' or larger cases) of the case to level out any discrepancies in order to optimize case performance and proper drainage.



A wrench or pliers may be used to adjust each base leg.

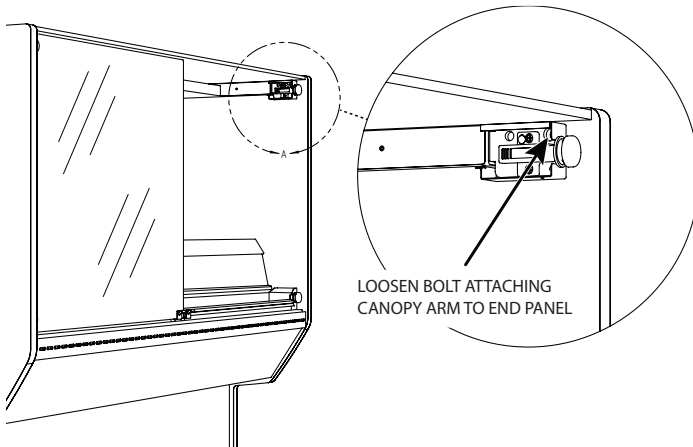
- Turning the base of each leg clockwise will raise the height of the case.
- Turning the base of each leg counterclockwise will lower the height of the case.

Installation (cont'd)

Arm Adjustment

STEP1. Ensure case is level to the ground. Check level at the front and rear of case(pg. 8)

STEP2. Loosen bolting fasteners attaching end panel to case by way of canopy arms.

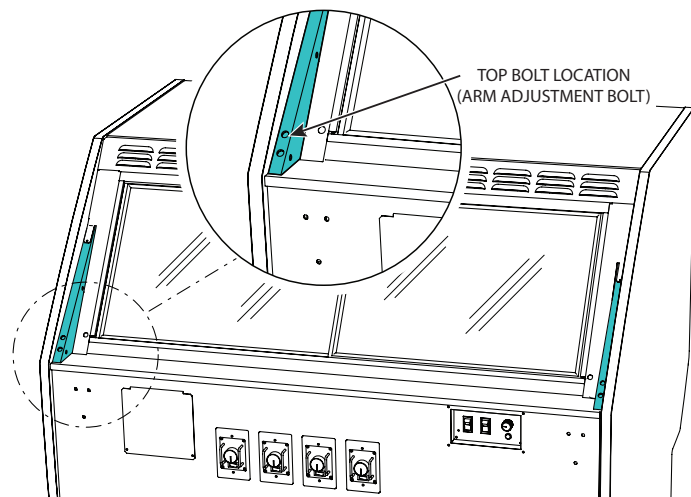


STEP3. Loosen top and bottom hinge vertical adjustment screws.(refer to Front Vertical Glass Adjustment on pg11)

NOTE: To properly adjust the height of the glass requires that all hinge arms of each section be loosened before attempting to change the arm position.

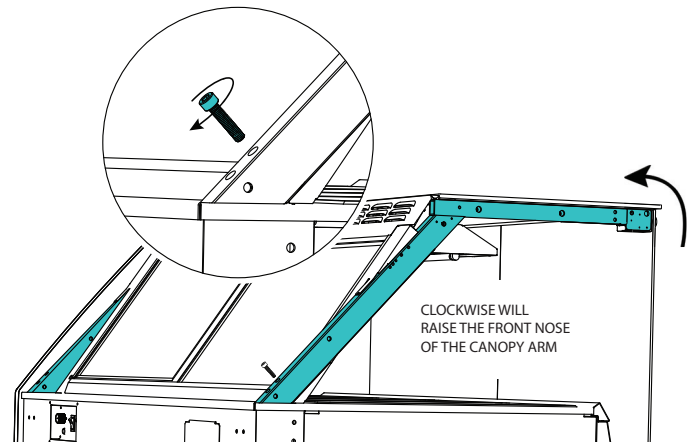
STEP4. Place level on the top of the upper arms in order to gauge levelling while adjusting canopy arm.

STEP5. Locate the top bolt location at the rear of the case on the canopy arms shown below.

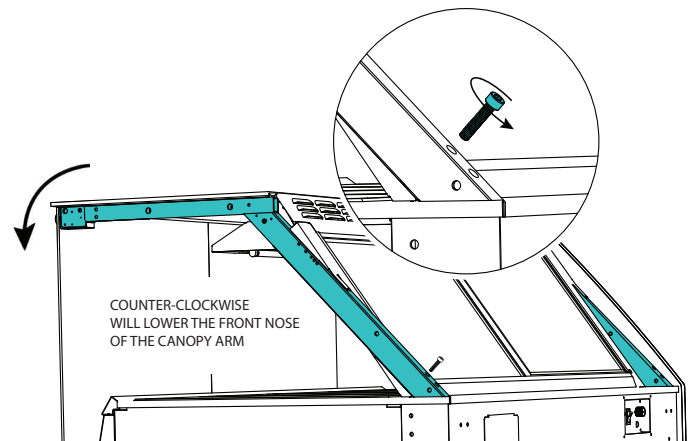


STEP6. Raising and lowering the Canopy Arms

- Raising the canopy arms



- Lowering the Canopy Arms



Installation (cont'd)

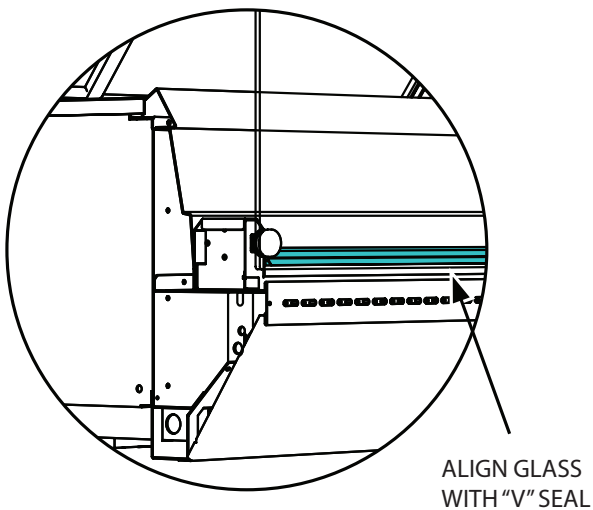
IMPORTANT: Preloading the Canopy Arm

After reaching level (on Level 2) turn the connectors two full rotations clockwise to raise the canopy.

After all the glass height has been adjusted, tighten all the lock screws previously loosened.

Glass must be parallel to ledge when viewed from front. Glass height should be centered on "V" glass seal as demonstrated below

IMPORTANT: Attempting to compensate for poor installation practices by manipulating the canopy hardware will result in unsatisfactory workmanship and possibly cause hardware failure and/or injury.



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



FOR PROMPT SERVICE

When Contacting the Factory for support, Be sure to have the CASE MODEL and SERIAL NUMBER Handy.

This Information is on a plate located on the case itself.



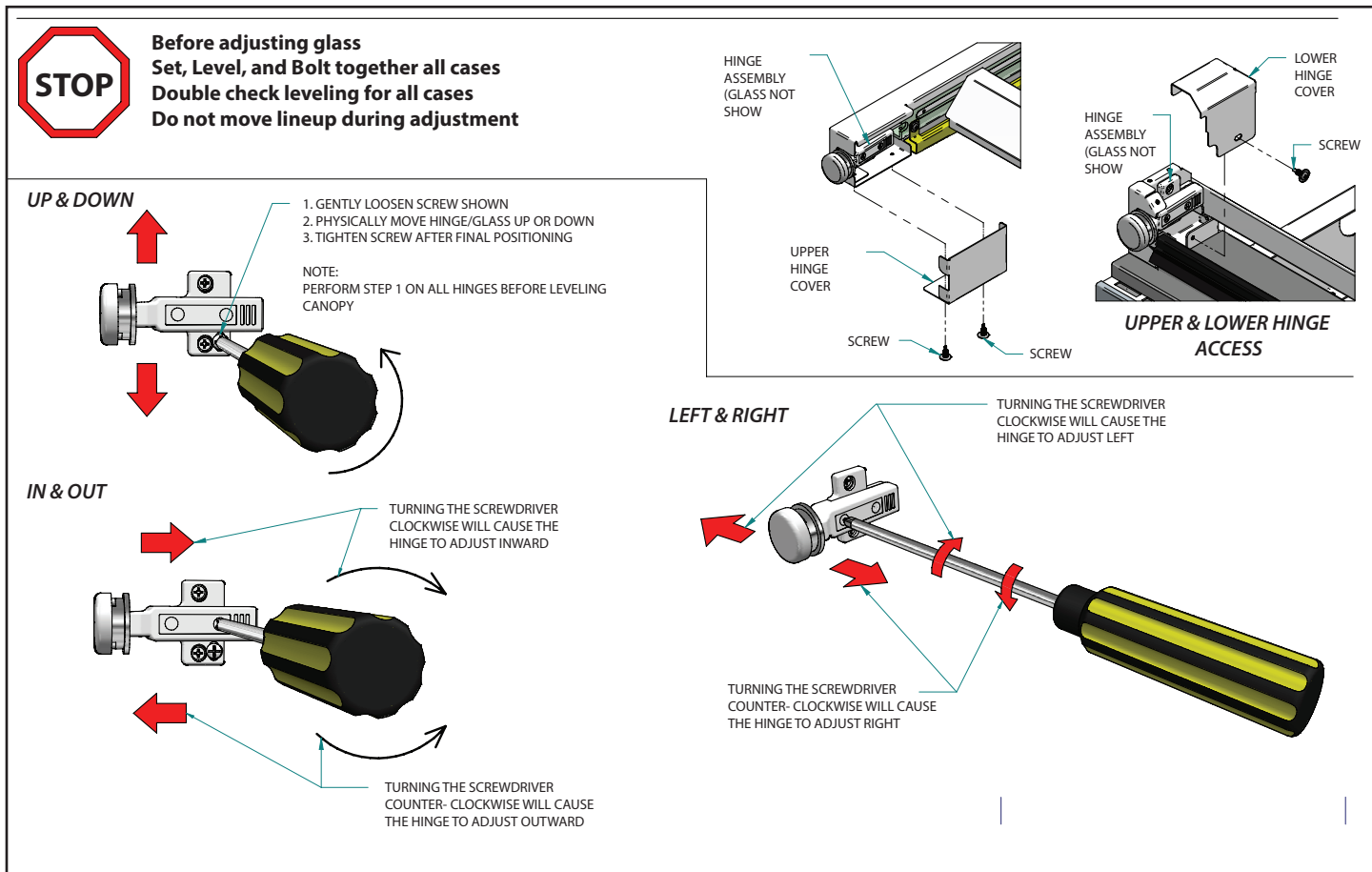
**ATTENTION
INSTALLER**

It is the contractor's responsibility to install case(s) according to local construction and health codes.

Installation (cont'd)

Front Vertical Glass Adjustment

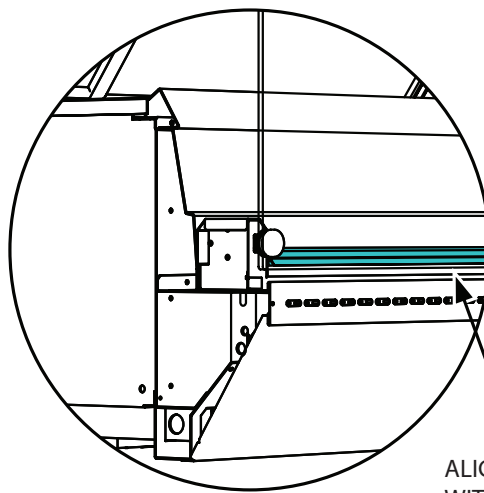
Follow these steps accordingly to properly and safely adjust the positioning of the front glass.



WARNING

Glass can cause bodily damage. Check support hinges for periodic maintenance. Opening adjacent glass simultaneously could result in but not limited to glass breakage, damage to merchandiser, serious injury or death. To prevent injury, when glass is open, take adequate safety measures to protect shoppers.

Glass must be parallel to front ledge when viewed from front. Glass height should be centered on "V" Glass Seal as demonstrated below.



ALIGN GLASS WITH "V" SEAL

Installation (cont'd)

Setting and Joining

The sectional construction of these models enable them to be joined in line to give the effect of one continuous display.

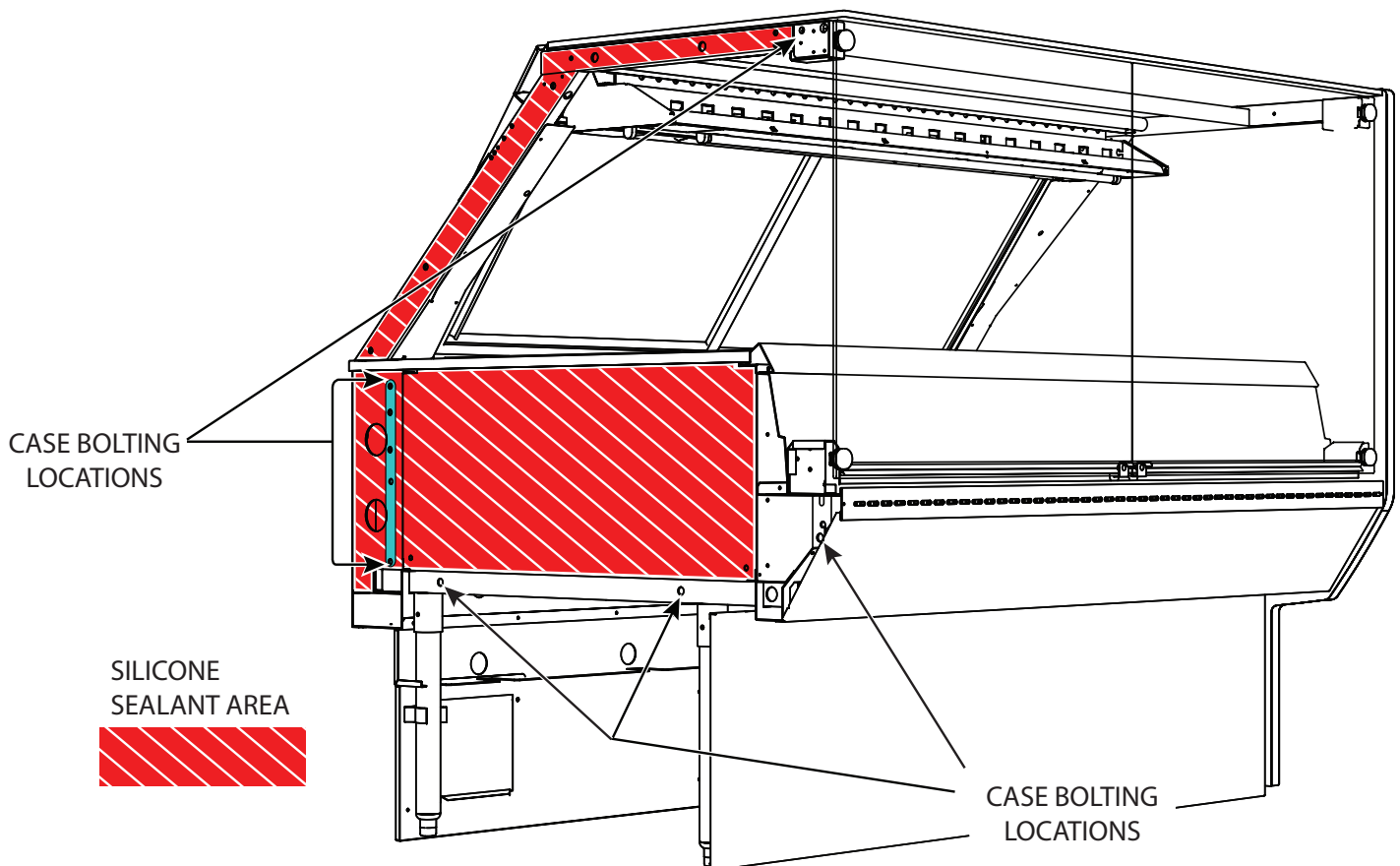
Bolting locations which join like cases together are displayed below.

Leveling

IMPORTANT! IT IS IMPERATIVE THAT CASES BE LEVELED FROM FRONT TO BACK AND SIDE TO SIDE PRIOR TO JOINING. A LEVEL CASE IS NECESSARY TO INSURE PROPER OPERATION, WATER DRAINAGE, GLASS ALIGNMENT AND OPERATION OF THE HINGES SUPPORTING THE GLASS. LEVELING THE CASE CORRECTLY WILL SOLVE MOST HINGE OPERATION PROBLEMS.

1. Using case blueprints, measure off and mark on the floor the exact dimensions of where the cases will sit. Snap chalk line for front and back positions of base rail or pedestal. Mark the location of each joint front and back. Find the highest point throughout the lineup. **FLOORS ARE NORMALLY NOT LEVEL!** Determine the highest point of the floor; cases will be set off this point. All cases in the entire lineup must be brought up to the highest level of the case sitting at the highest point in the lineup.

2. Set first case over the highest part of the floor and adjust legs so that case is level.



Installation (cont'd)

3. Set second case within one foot (1') of the first case. Keep the supports along the length of the case and far end of case. Level case to the first using the instructions in step one.

4. Apply liberal bead of case joint sealant (butyl) to first case. Sealant area is shown using a dotted line in illustration. Apply heavy amount to cover entire shaded area.

5. Apply liberal bead of case joint sealant (butyl) to first case. Sealant area is shown using a striped line in illustration in page 12. Apply heavy amount to cover entire shaded area.

6. Slide second case up to first case snugly. Then level second case to the first case so glass front, bumper and top are flush.

7. To compress butyl at joint, use two Jurgenson wood clamps. Make sure case is level from front to back and side to side on inside bulkheads at joint.

8. Attach sections together via the bolts pictured in the illustration below.



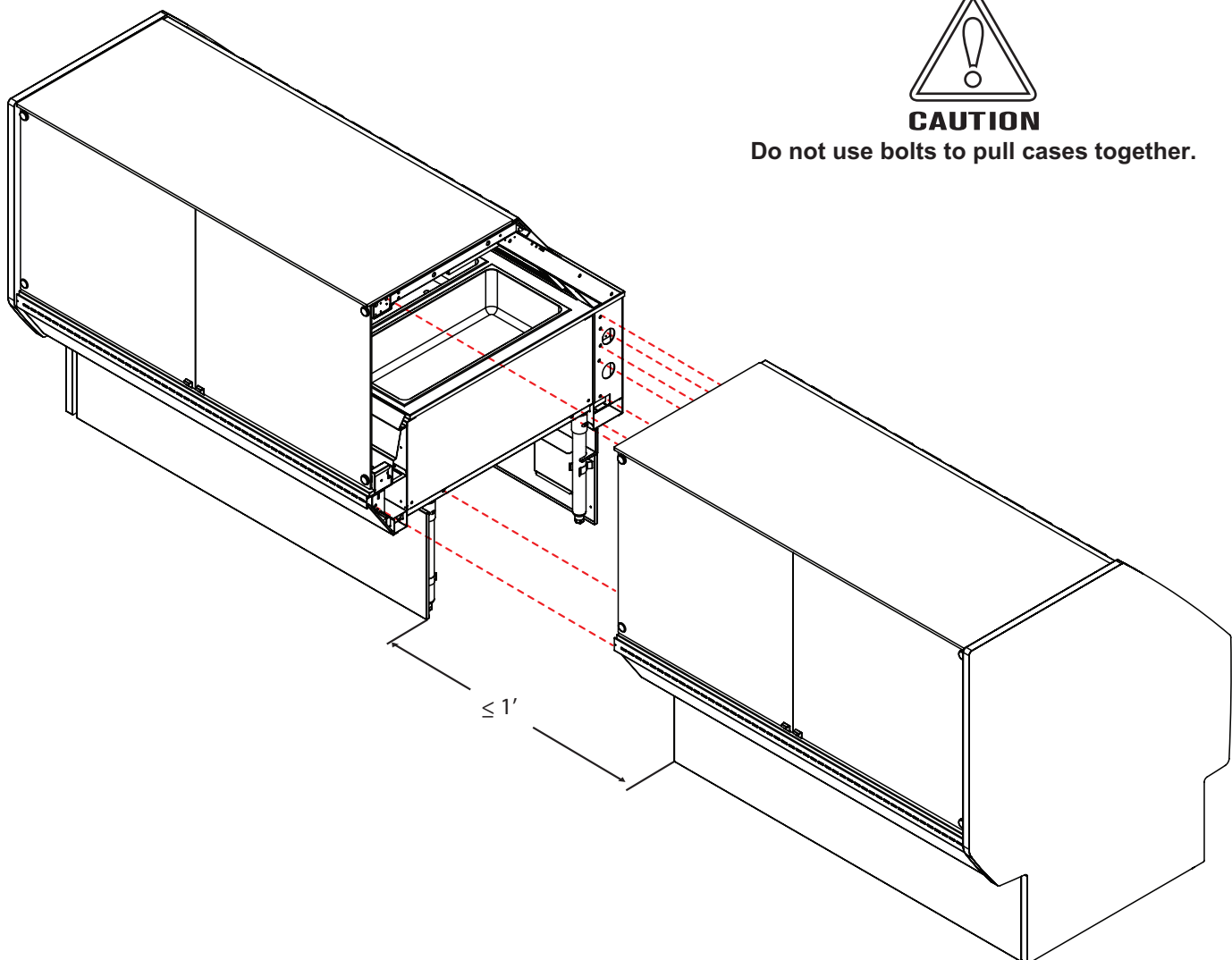
**ATTENTION
INSTALLER**

It is the contractor's responsibility to install case(s) according to local construction and health codes.



CAUTION

Do not use bolts to pull cases together.



Plumbing/Heating Units

Heating Unit

The Q-HV merchandiser's will come equipped with a Hatco Modular/Ganged Hot-Well(s) or Surface Warmer. The Hatco's Drop-In Modular/Ganged Hot Food Well is an insulated full-sized steam well, grouped together in a modular fashion with better quality construction, which keeps hot foods at more accurate temperatures for longer periods of time.

The Hatco Flush Top Aluminum Heated Surface Warmer Shelf is a flush top heated shelf that has a hardcoated aluminum surface and a blanket-type foil element for uniform heat distribution across the entire surface.

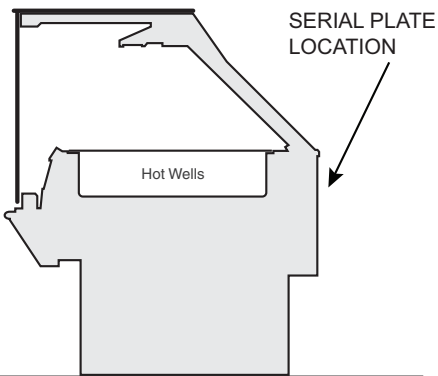
Waste Outlet

The waste outlet is located under the hot wells and can be accessed from the back. Drain is 1" PEX Tubing with PEX connectors, a strong and flexible design made from cross-linked tubing. Drain must be run in a material that will withstand a 150°F (66°C) (or more) temperature, such as PEX Tubing.



PRECAUTION

THE DRAIN AND WATER SEAL ARE FACTORY INSTALLED. DO NOT USE THREAD SEALANT OR OVER-TIGHTEN THESE PARTS. DO NOT TWIST WATER SEAL. DAMAGE TO THE DRAIN FITTING OR WATER SEAL MAY OCCUR



Waste Supply Connection

For a quick preheat time, the customer may want to pipe in hot water. If hot water is piped into the case, temperature of water supply must not exceed 150°F (66°C). In areas where water contains a heavy mineral content, it may be a good idea to install a cartridge-type water filtration system.

Proper water depth is 1". These cases come equipped with an auto-fill system designed to slowly feed in water to maintain the proper water level, and prevent damage incurred when cold water is fed too fast into a hot well.

Water Supply Specs (Auto-Fill Units)

	Minimum	Maximum
Water Pressure	25 psi (172k Pa)	100 psi (689 kPa)
Water Temperature	35°F (2°C)	110°F (43°C)

Unit Operation

Ensure all operators have been properly instructed on the safe use of the Hatco Units in the merchandiser.

Hazards

Some exterior surfaces on unit will get hot. Use caution when touching these areas.

Drain water may reach temperatures in excess of 200°F (93°C). Use appropriate plumbing materials when installing/adjusting drain.

DO NOT clean unit while it contains any food product. Remove food product and allow unit to cool completely before servicing/cleaning.



ATTENTION INSTALLER

It is the contractor's responsibility to install case(s) according to local construction and health codes.

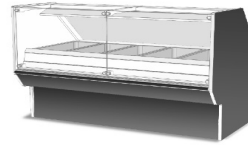
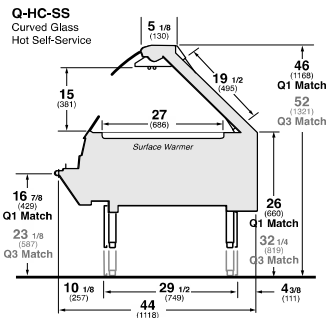
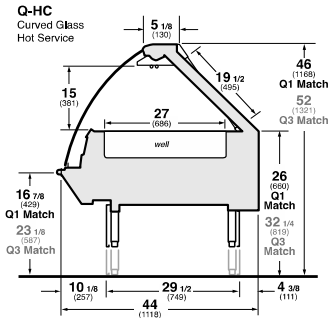
Spec Sheets



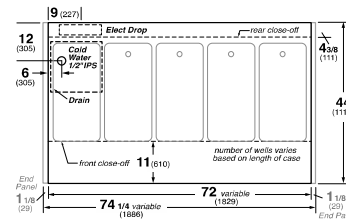
SINGLE DECK HOT CASE

HUSSMANN - Q-HC, Q-HV, Q-HC-SS, Q-HS, Q-HS-SS (CHINO)

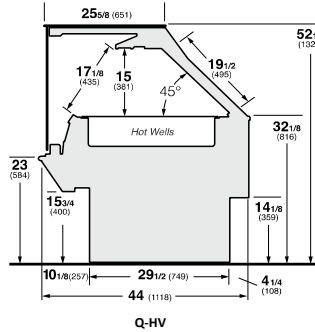
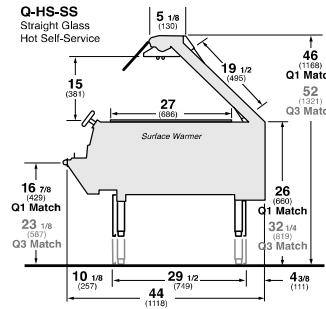
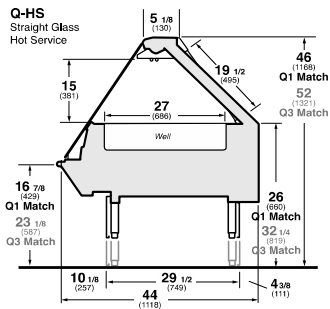
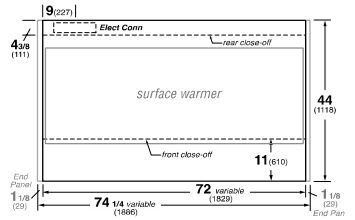
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QHC, QHS Q-Series Hot Merchandisers

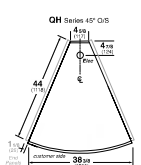


QH-SS Q-Series Hot Merchandisers



SERVICE CASE W/WELLS

SELF-SERVICE CASE W/SURFACE WARMERS



ELECTRICAL DATA:

SURFACE WARMER		VOLTS	PH	HZ	TOTAL WELLS	WATTS	AMPS	FANS / CASE	TOTAL FANS		WIRES **
									AMPS	WATTS	
4'	HOT	240	1	60	NA	3048	12.7	2	0.28	24	4
5'	HOT	240	3	60	NA	4350	18.1	3	0.42	36	5
6'	HOT	240	3	60	NA	4359	18.2	3	0.42	36	5
8'	HOT	240	3	60	NA	5812	24.2	4	0.56	48	5
10'	HOT	240	3	60	NA	8700	36.2	6	0.84	72	5
12'	HOT	240	3	60	NA	8718	36.3	6	0.84	72	5
22.5° O/S		240	1	60	NA	2313	9.64	N/A	N/A	N/A	4
45° O/S		240	TBD	60	NA	TBD	TBD	TBD	TBD	TBD	TBD

CANOPY LIGHTS T-5		OPTIONAL LEDGE LIGHTS T-5		TOTAL LIGHTS T-5	
AMPS	WATTS	AMPS	WATTS	AMPS	WATTS
0.39	42	0.26	28	0.65	70
0.52	56	0.32	35	0.84	91
0.65	70	0.39	42	1.04	112
0.78	84	0.52	56	1.30	140
1.04	112	0.65	70	1.69	182
1.17	126	0.78	84	1.95	210
0.26	28	TBD	TBD	TBD	TBD
TBD	TBD	TBD	TBD	TBD	TBD

LEGEND		
N/A -	AVAILABLE	
TBD -	DETERMINED	
SBO -	SUPPLIED BY OTHERS	
EXTERNAL END PANEL WIDTH KEY		
# OF END PNLS	END PNL WIDTH (IN.)	TOTAL ADDED LENGTH (IN.)
1	1.125	1.125
2	1.125	2.25

HOT WELLS		VOLTS	PH	HZ	TOTAL WELLS	WATTS	AMPS	FANS / CASE	TOTAL FANS		WIRES **
									AMPS	WATTS	
4'	HOT	240	3	60	3	3600	15.0	2	0.28	24	5
5'	HOT	240	3	60	4	4800	20.0	3	0.42	36	5
6'	HOT	240	3	60	5	6000	25.0	3	0.42	36	5
8'	HOT	240	3	60	6	7200	30.0	4	0.56	48	5
10'	HOT	240	3	60	8	9600	40.0	6	0.84	72	5
12'	HOT	240	3	60	9	10800	45.0	6	0.84	72	5

CANOPY LIGHTS T-5		OPTIONAL LEDGE LIGHTS T-5		TOTAL LIGHTS T-5	
AMPS	WATTS	AMPS	WATTS	AMPS	WATTS
0.39	42	0.26	28	0.65	70
0.52	56	0.32	35	0.84	91
0.65	70	0.39	42	1.04	112
0.78	84	0.52	56	1.30	140
1.04	112	0.65	70	1.69	182
1.17	126	0.78	84	1.95	210

COMBINATION WARMERS / WELLS		VOLTS	PH	HZ	TOTAL WELLS	WATTS	AMPS	FANS / CASE	TOTAL FANS		WIRES **
									AMPS	WATTS	
8'	HOT	240	3	60	TBD	TBD	TBD	4	0.56	48	5
10'	HOT	240	3	60	TBD	TBD	TBD	6	0.84	72	5
12'	HOT	240	3	60	TBD	TBD	TBD	6	0.84	72	5

CANOPY LIGHTS		OPTIONAL LEDGE LIGHTS		TOTAL LIGHTS	
AMPS	WATTS	AMPS	WATTS	AMPS	WATTS
0.78	84	0.52	56	1.30	140
1.04	112	0.65	70	1.69	182
1.17	126	0.78	84	1.95	210

** INCLUDES GROUND WIRE

OPTIONS/NOTES:

- NOTE: CASES MUST BE GROUNDED
- NOTE: LED LIGHTS ARE NOT AVAILABLE ON HOT CASES AT THIS TIME.

Electrical

Merchandise Electrical Data

Technical data sheets are shipped with this manual. The data sheets provide merchandise electrical data. Refer to the technical data sheets and merchandise serial plate for electrical information.

Electrical Connections

All wiring must be in compliance with NEC and local codes. All electrical connections including both supply circuits are to be made in the electrical J-Box.

Field Wiring

Field wiring must be sized for component amperes stamped on the serial plate (refer to pg 16 for location). Actual ampere draw may be less than specified.

Identification of Wiring

Leads for all electrical circuits are identified by colored plastic bands. These bands correspond to the color code sticker (shown below) located inside the merchandise's wireway cover.

**ALWAYS CHECK THE SERIAL PLATE FOR
COMPONENT AMPERES**



ELECTRIC SHOCK HAZARD: Plug unit into a properly grounded electrical receptacle of the correct voltage, size, and plug configuration. If plug and receptacle do not match, contact a qualified electrician to determine and install proper voltage and size electrical receptacle



--LOCK OUT/TAG OUT--

To avoid serious injury or death from electrical shock, always disconnect the electrical power at the main disconnect when servicing or replacing any electrical component. This includes, but is not limited to, such items as doors, lights, fans, heaters, and thermostats.

STANDARD CASE WIRE COLOR CODE CODIGO DE COLORES DE LOS ALAMBRES PARA LAS VITRINAS ESTANDAR CODE COULEUR POUR FILS DE BOITIER NORMALISE

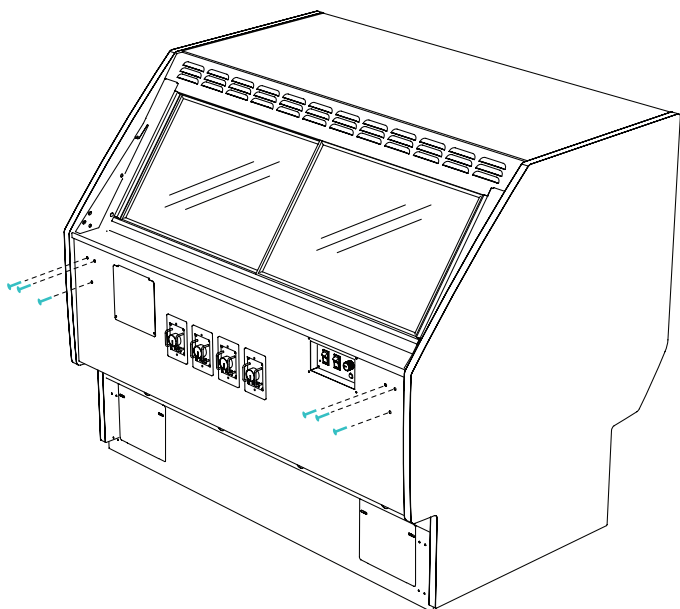
COLOR DESCRIPTION	DESCRIPCION	DESCRIPTION
■ GROUND	TIERRA MASA	MASSE
■ ANTI-SWEAT	ANTICONDENSACION	ANTI-SUITEMENT
■ LIGHTS	LUCES	ECLAIRAGE
■ RECEPTACLES	ENCHUFES	PRISE DE COURANT
■ T-STAT/SOLENOID 230VAC	TERMOSTATO/SOLENOIDE (230VAC)	SOUPAPE A SOLENOID (230 VAC)
■ T-STAT/SOLENOID 115VAC	TERMOSTATO/SOLENOIDE (115VAC)	SOUPAPE A SOLENOID (115 VAC)
■ T-STAT/SOLENOID 24VAC	TERMOSTATO/SOLENOIDE (24VAC)	SOUPAPE A SOLENOID (24 VAC)
■ FAN MOTORS	VENTILADORES	VENTILATEUR
BLUE CONDENSING UNIT	UNIDAD DE CONDENSACION	UNITE DE CONDENSATION

**USE COPPER CONDUCTORS ONLY
UTILISEZ LES CONDUCTEURS DE CUIVRE SEULEMENT
UTILICE LOS CONDUCTORES DE COBRE SOLAMENTE
430-01-0338 R101003**

Electrical Cont'd

Remove Rear Raceway

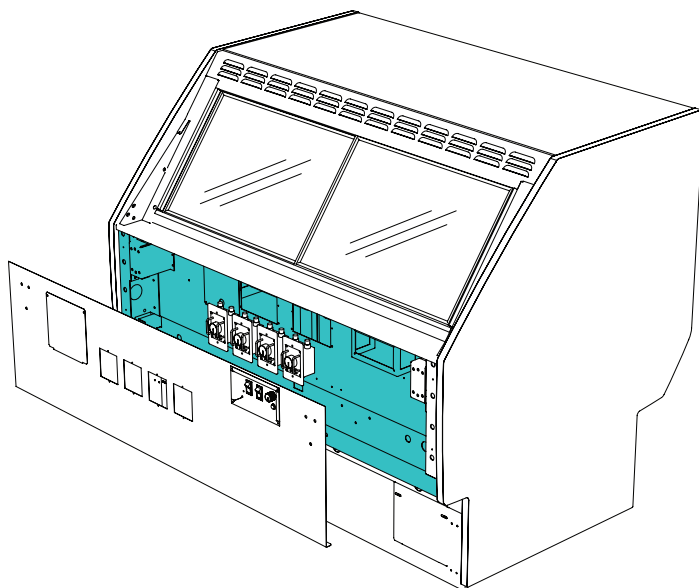
The Merchandisers Electrical access is located at the rear of the case. Fasteners must be removed in order to gain access. See illustration below in order to remove rear raceway from case.



Electrical Conduit (Electrical Box)

The Merchandisers Electrical conduit can be found inside the compartment at the rear. Removing the raceway will gain access to the electrical components inside the J-Box allowing any maintenance necessary.

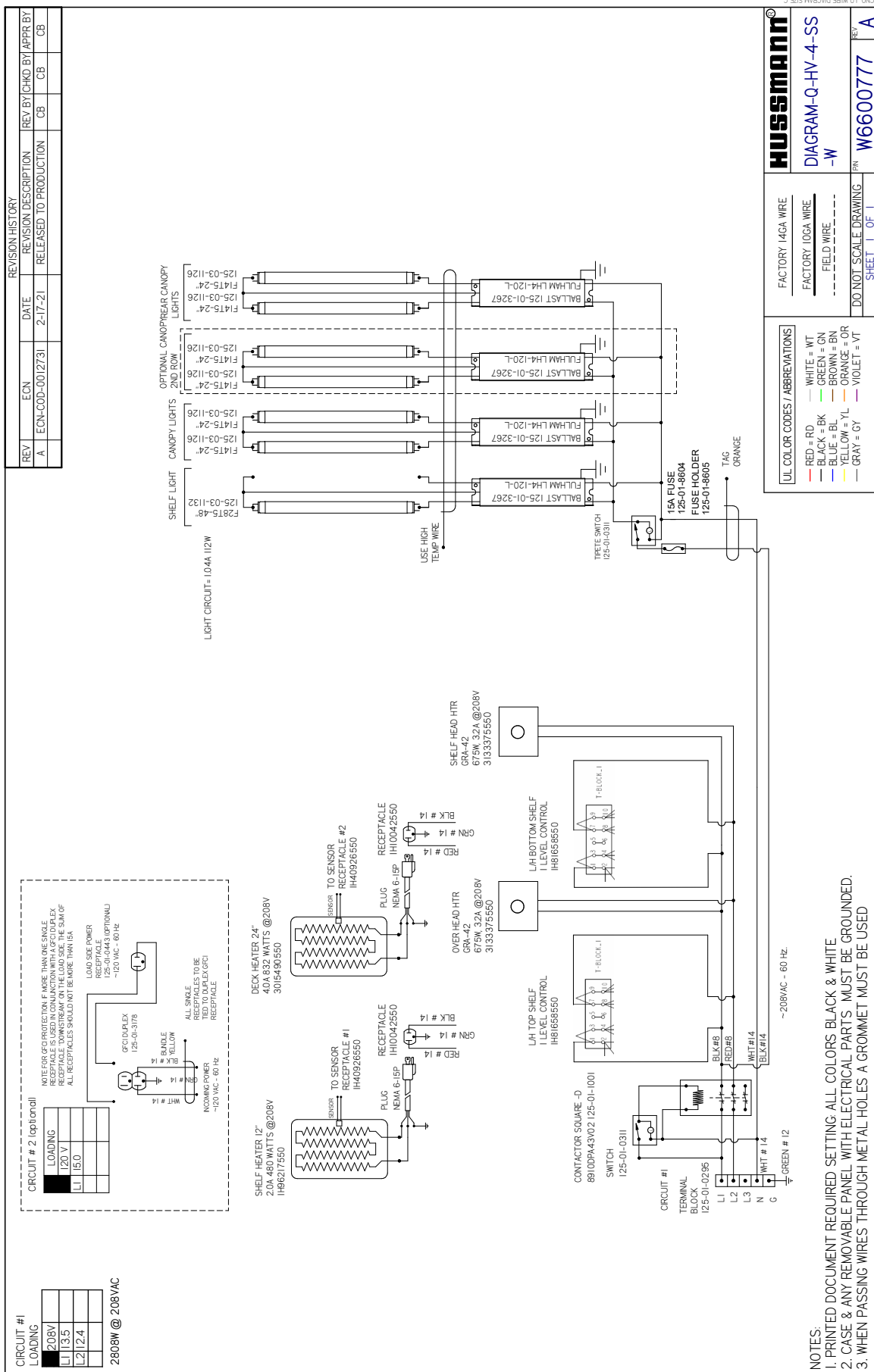
Electrical Conduit containing all necessary electrical components including but not limited to Digital T-Stats are located behind the rear raceway covers of the merchandiser.



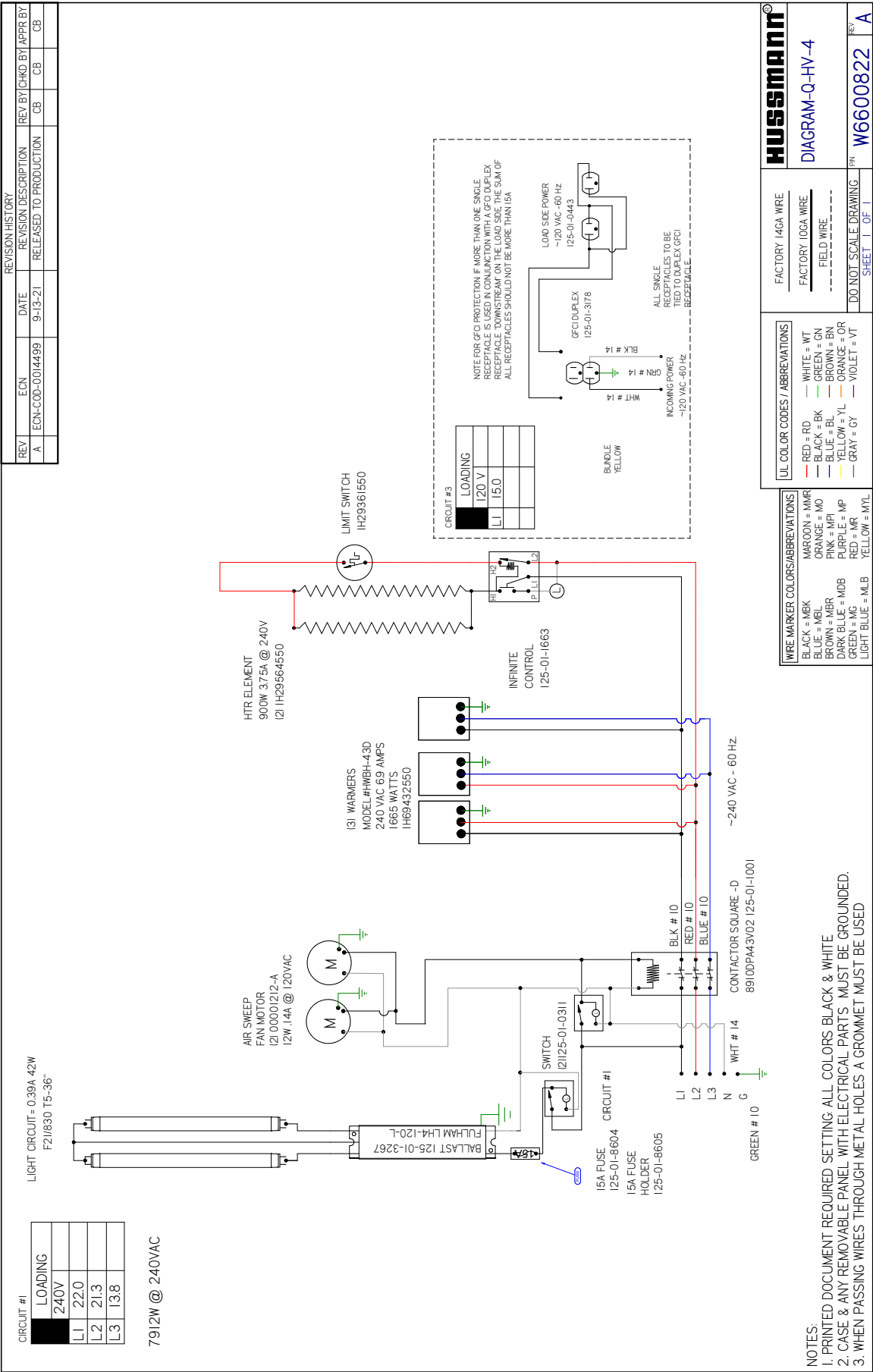
Wiring Diagram Index

<i>Model</i>	<i>Tier</i>	<i>Description</i>	<i>Size</i>	<i>Diagram #</i>
Q-H	Q-HV	Q-HV-4-SS-W	4'	W6600777
		Q-HV-4	4'	W6600822
		Q-HV-6	6'	W6600337
		Q-HV-6	6'	W6600593
		Q-HV-6	6'	W6600671
		Q-HV-6	6'	W6600678
		Q-HV-6	6'	W6600803
		Q-HV-8	8'	W6600705
		Q-HV-8	8'	W6600728
		Q-HV-8	4'	W6600193
		Q-HV-8	6'	W6600226
		Q-HV-8	8'	W6600793
		Q-HV-8	10'	W6600808
		Q-HV-10	10'	W6600595
		Q-HV-10	10'	W6600675
		Q-HV-10	10'	W6600833
		Q-HV-12	12'	W6600689
		Q-HV-12	12'	W6600670

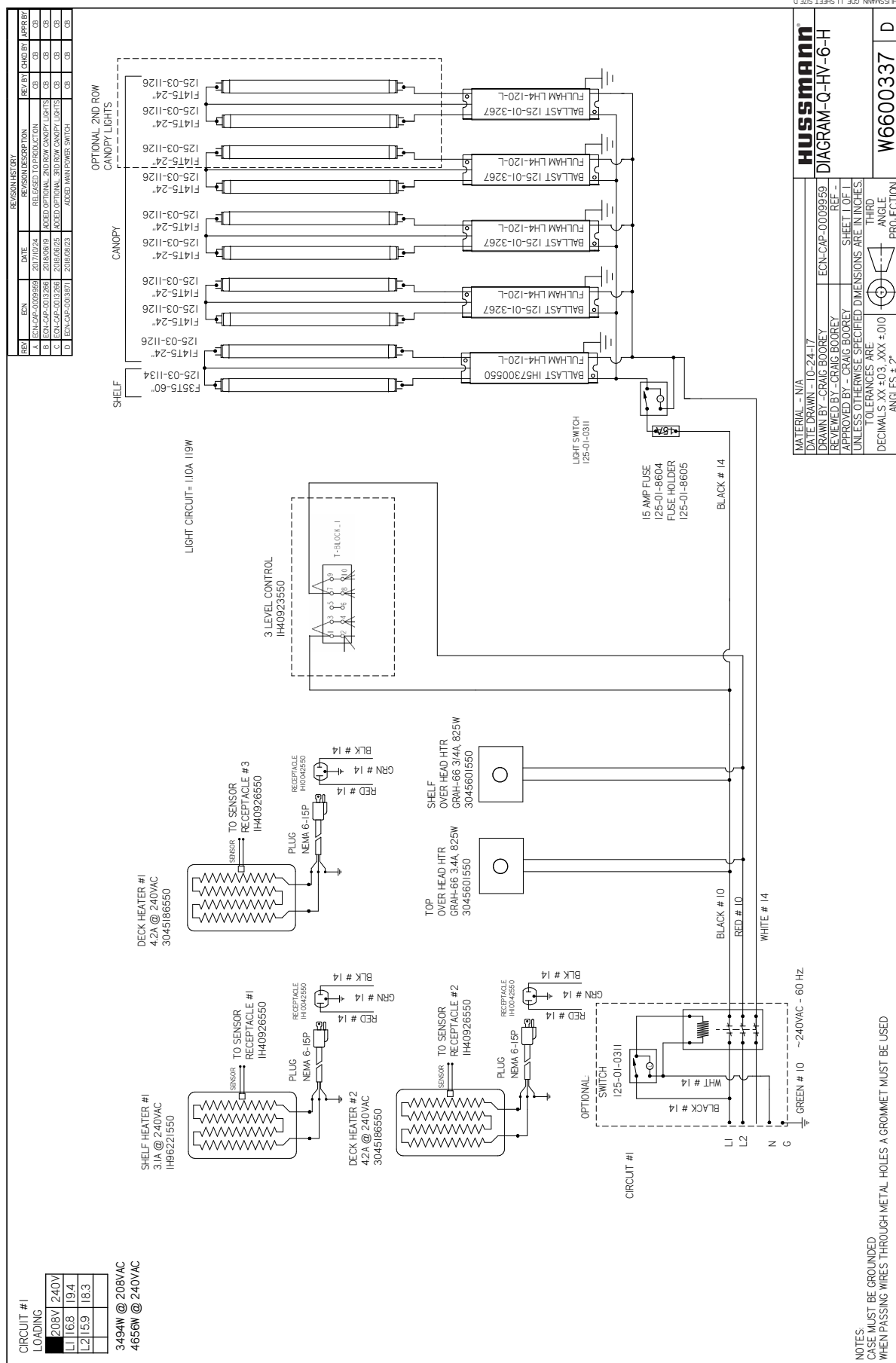
Electrical Wiring Diagram



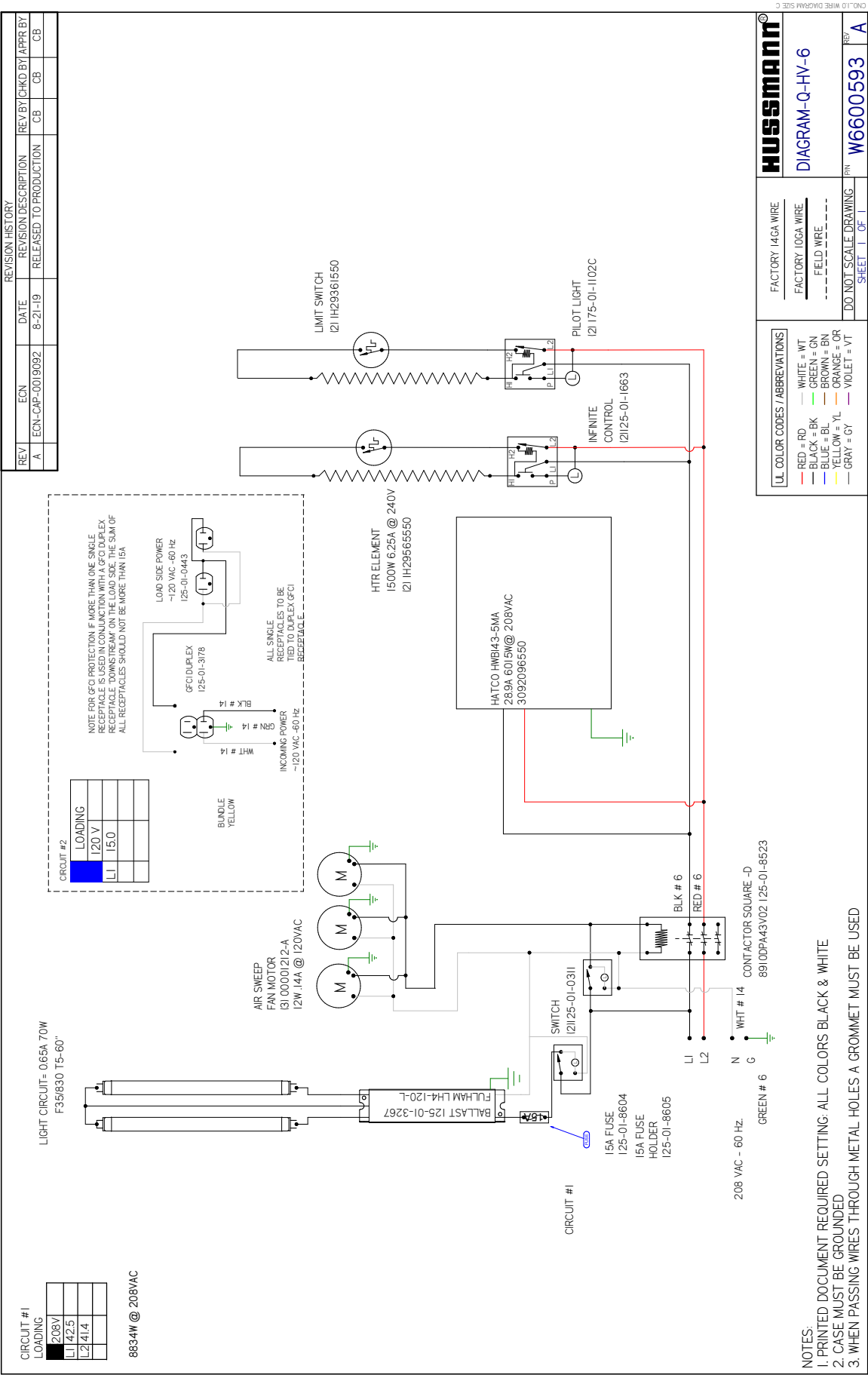
Electrical Wiring Diagram (Cont'd)



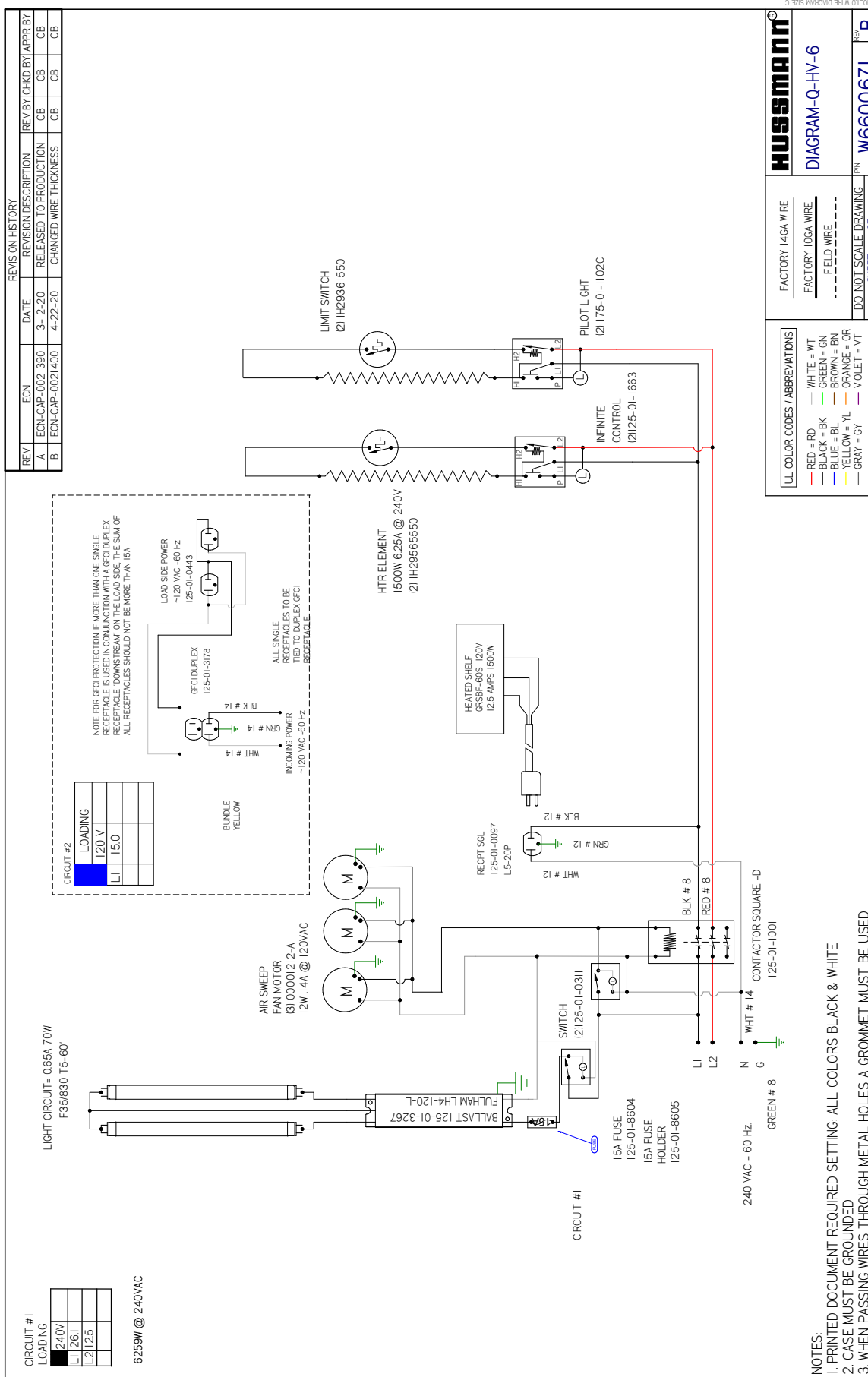
Electrical Wiring Diagram (Cont'd)



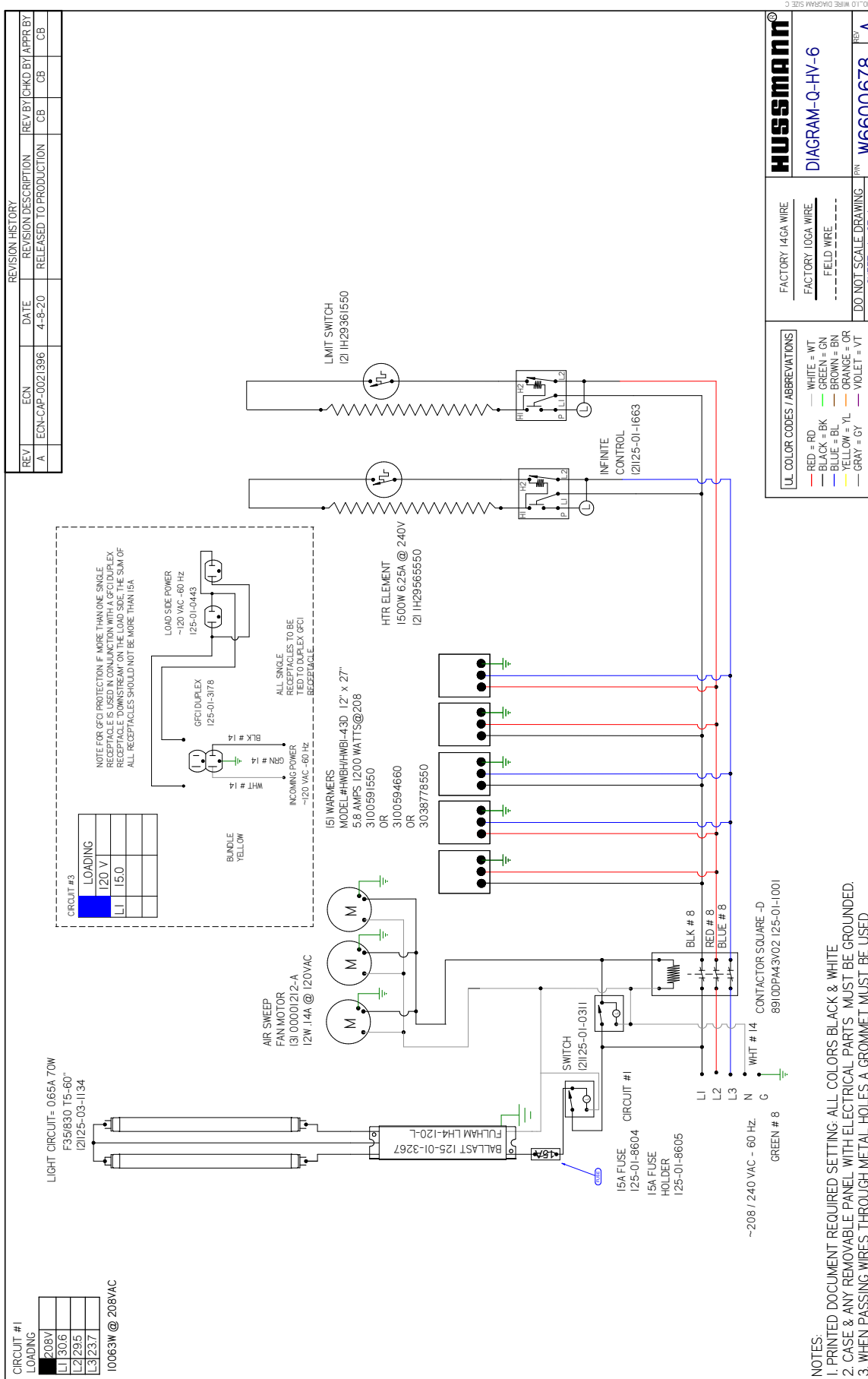
Electrical Wiring Diagram (Cont'd)



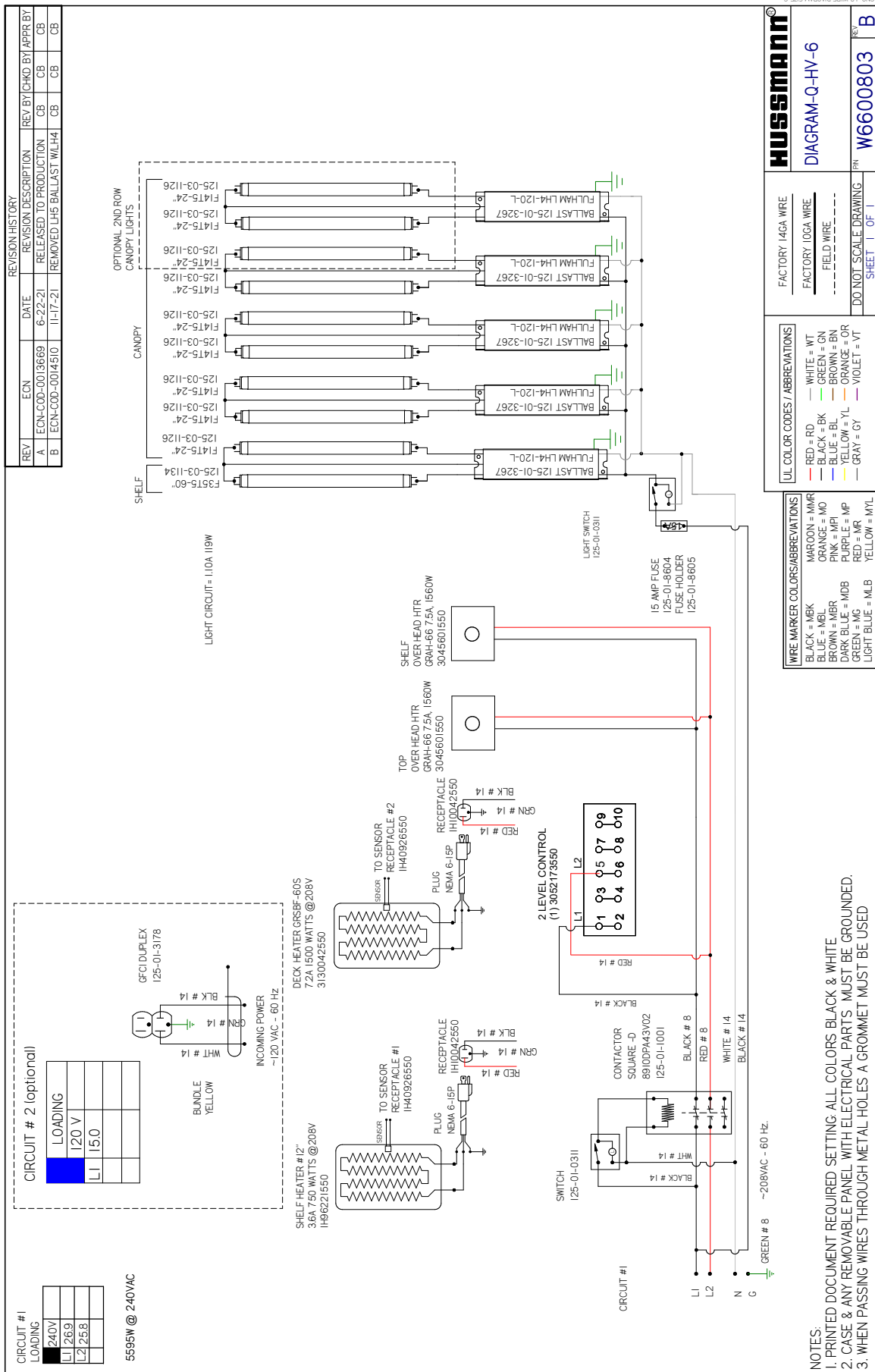
Electrical Wiring Diagram (Cont'd)



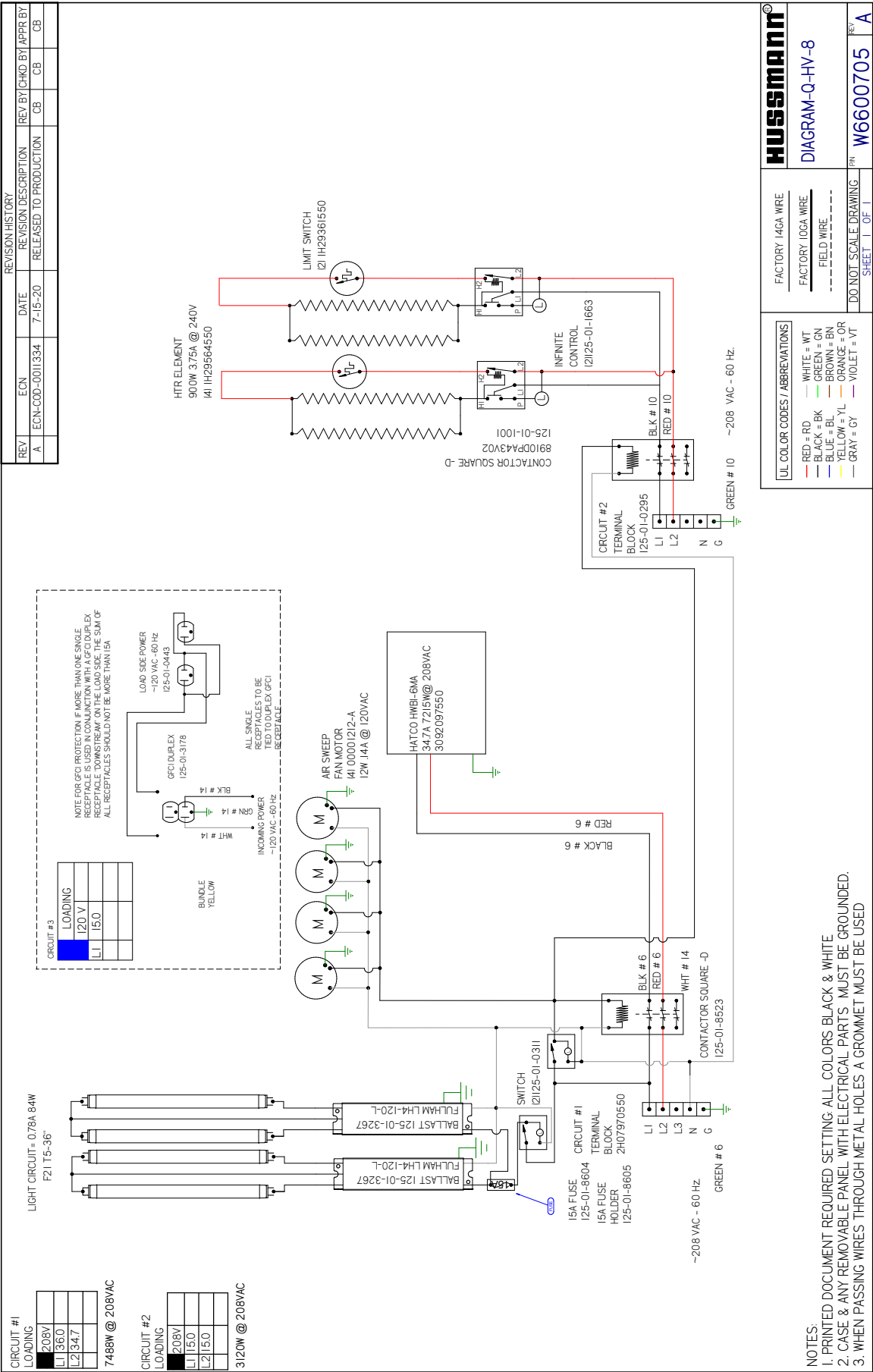
Electrical Wiring Diagram (Cont'd)



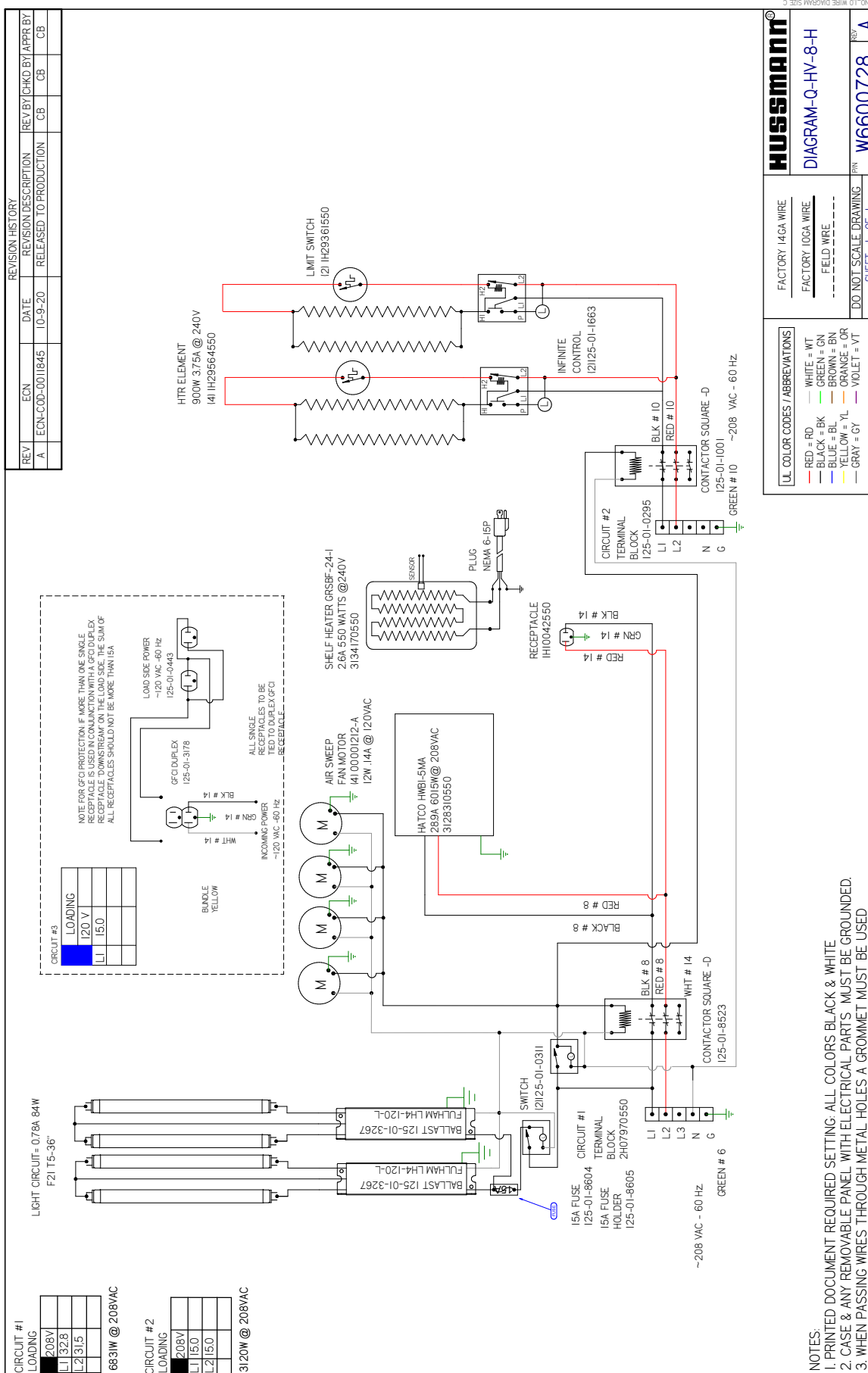
Electrical Wiring Diagram (Cont'd)



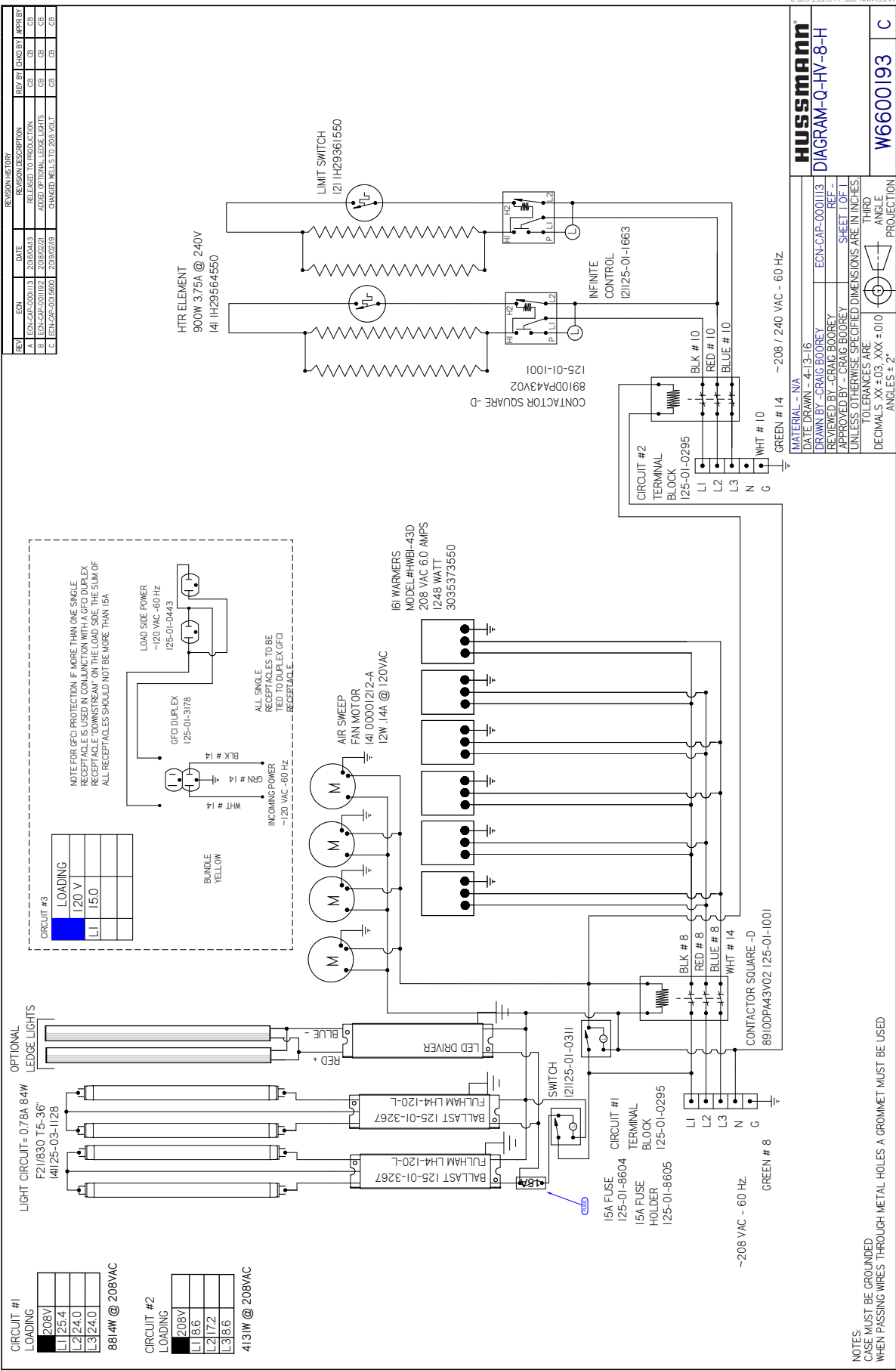
Electrical Wiring Diagram (Cont'd)



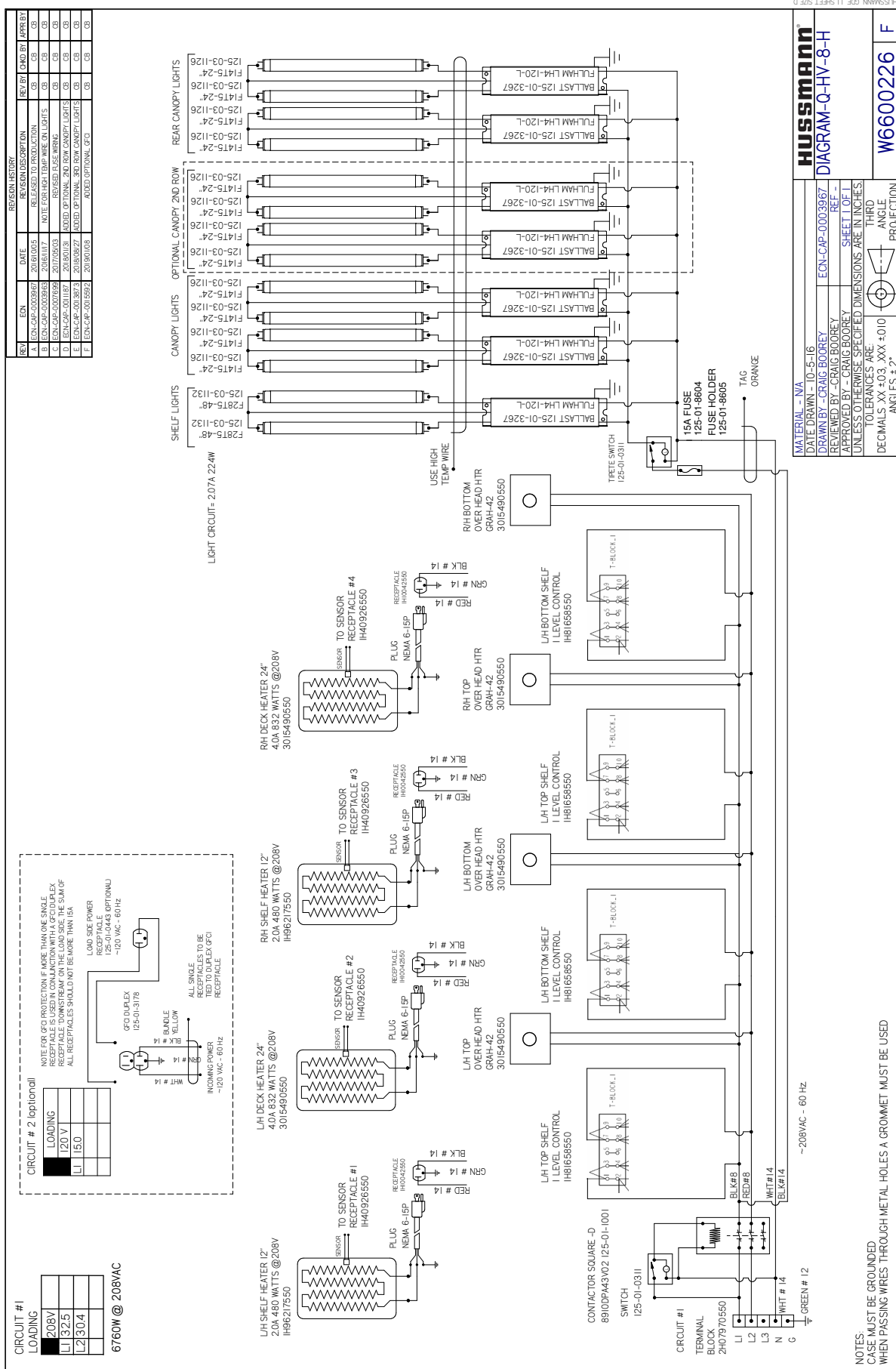
Electrical Wiring Diagram (Cont'd)



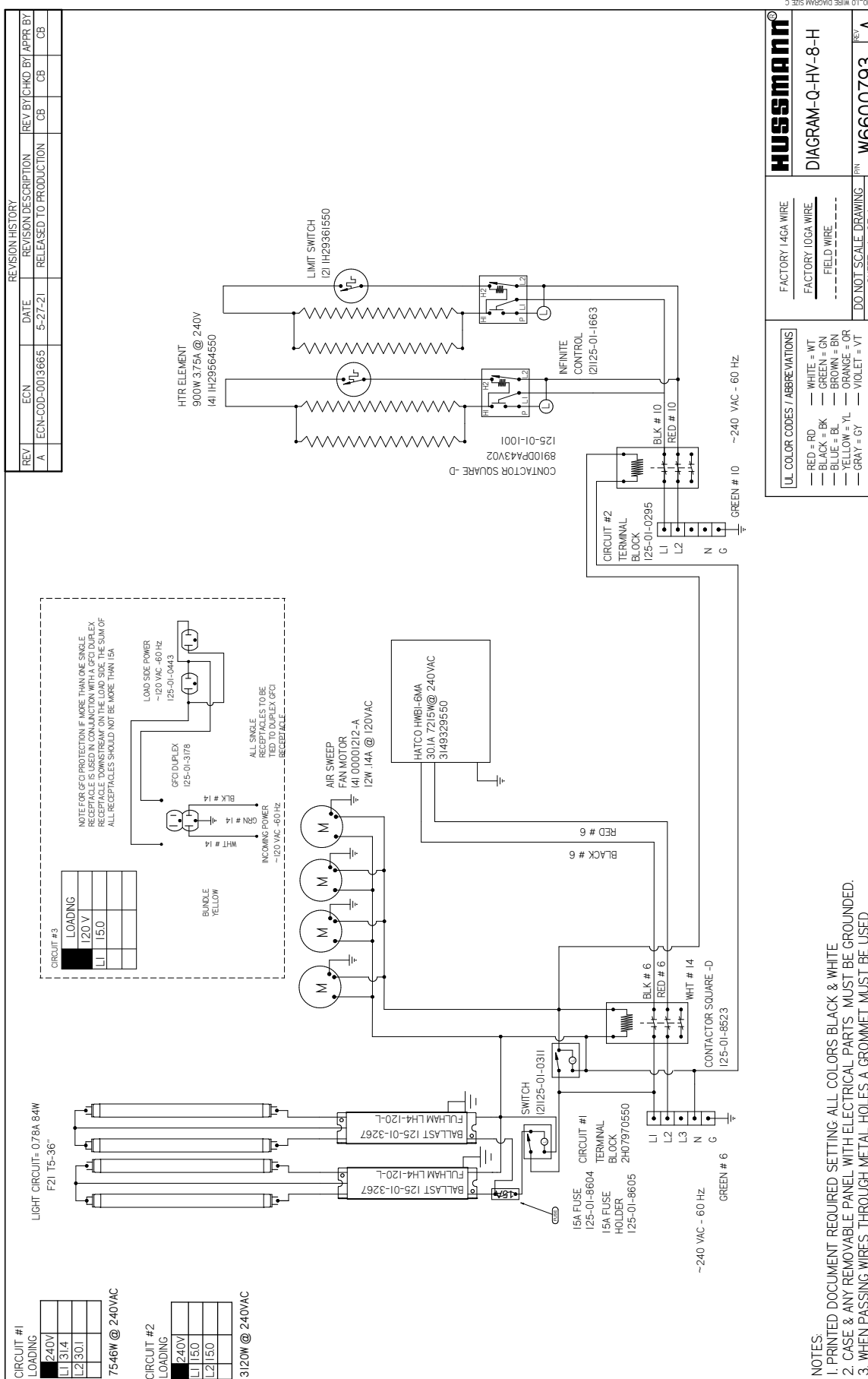
Electrical Wiring Diagram (Cont'd)



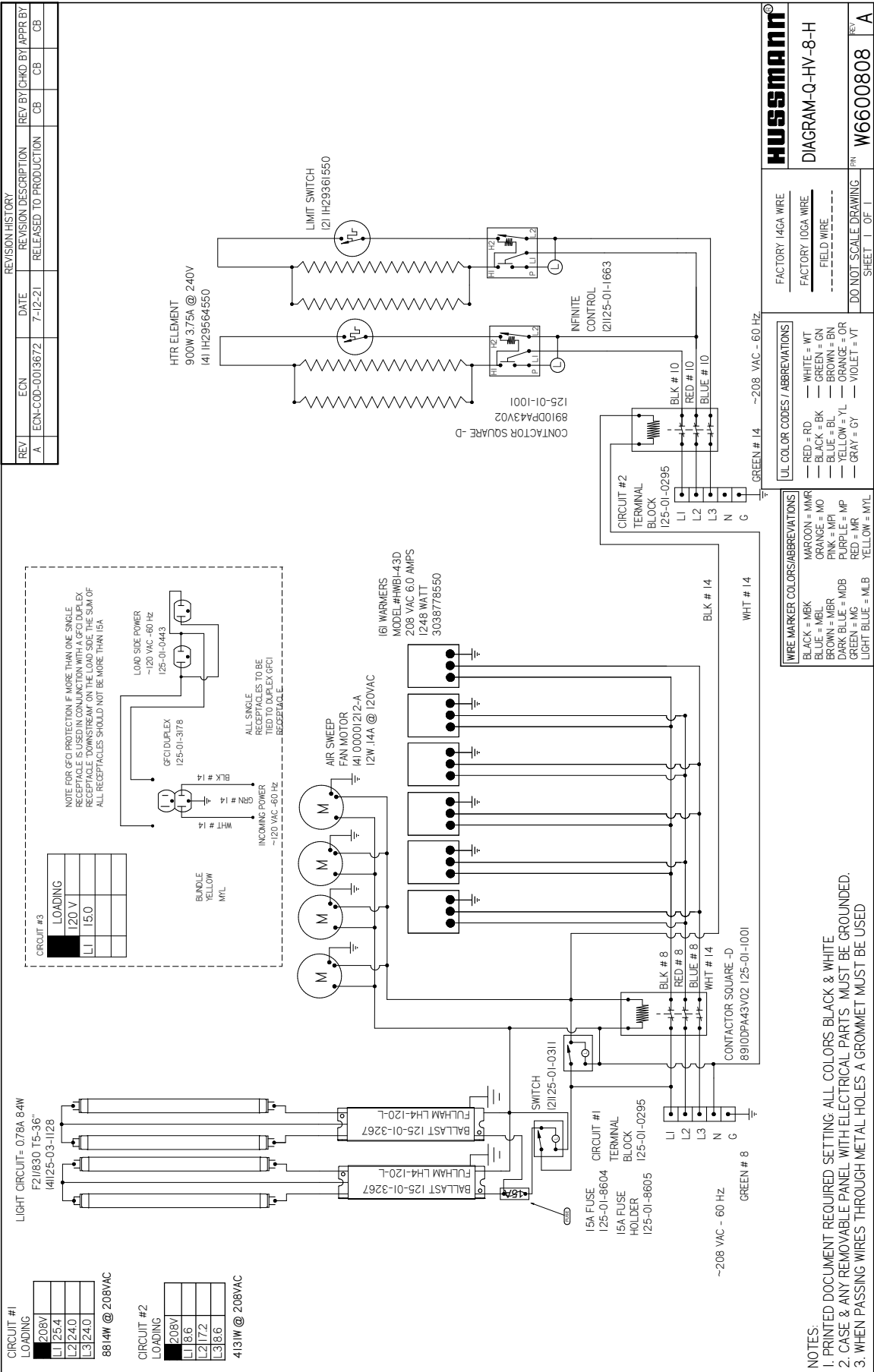
Electrical Wiring Diagram (Cont'd)



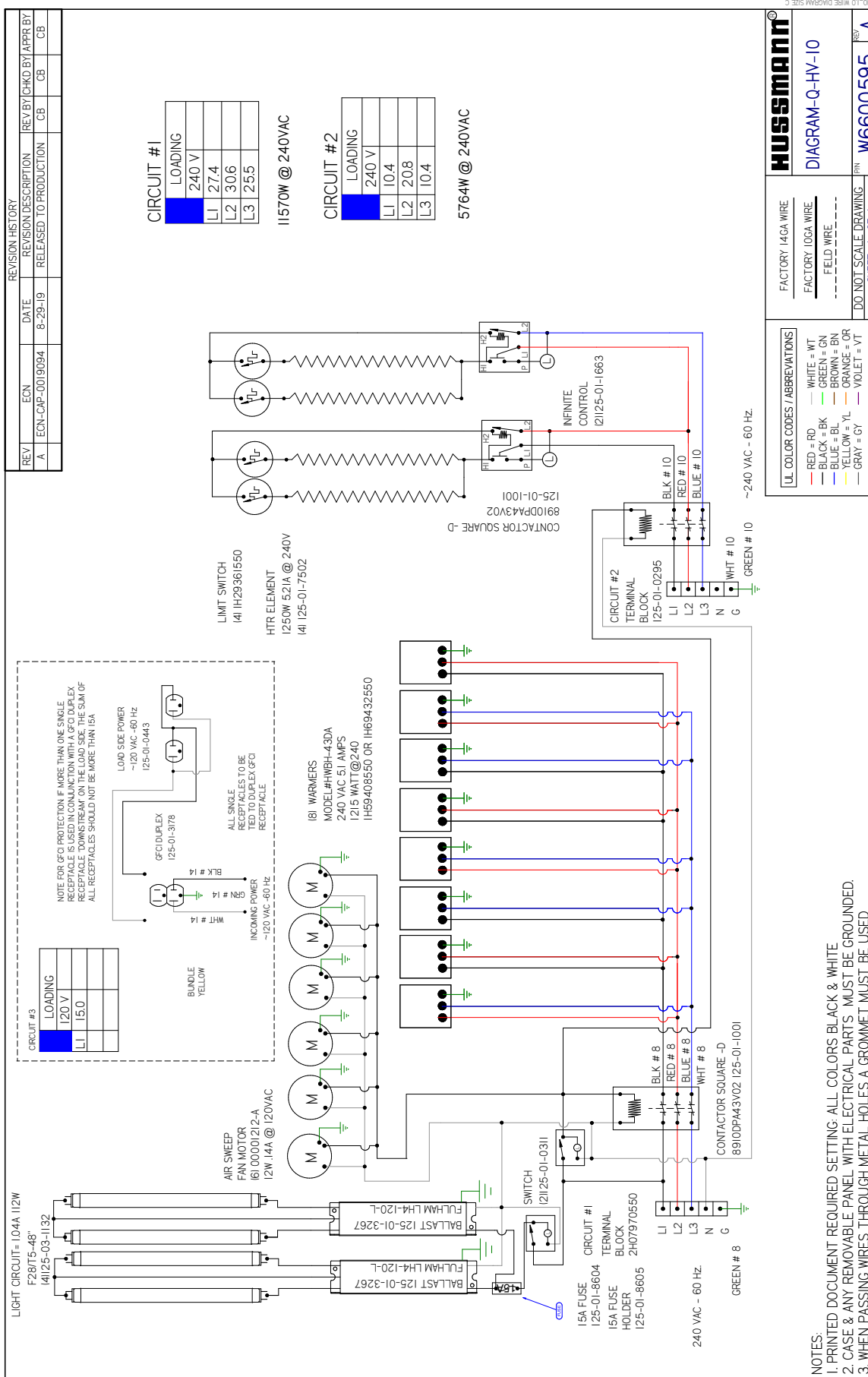
Electrical Wiring Diagram (Cont'd)



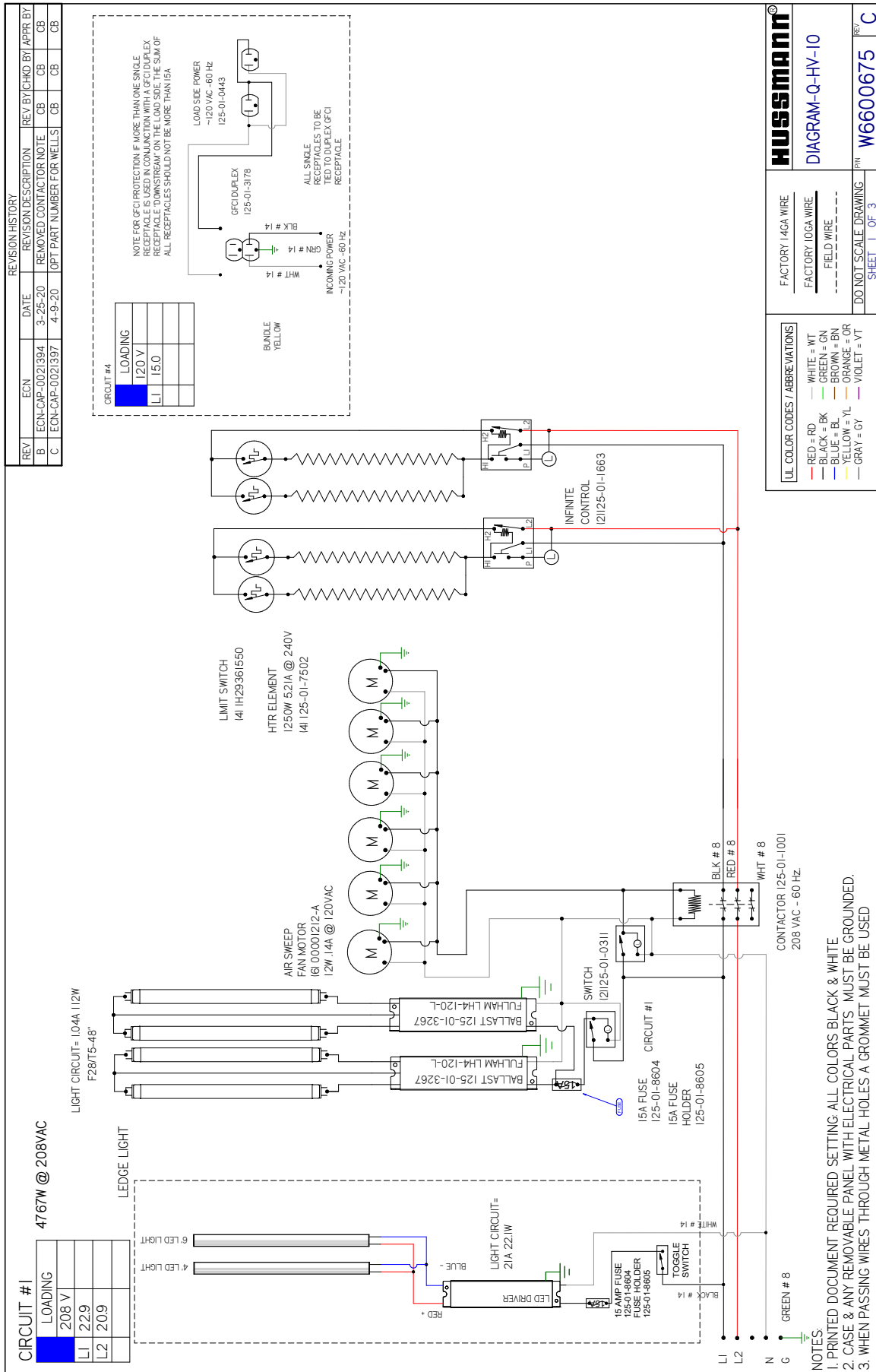
Electrical Wiring Diagram (Cont'd)



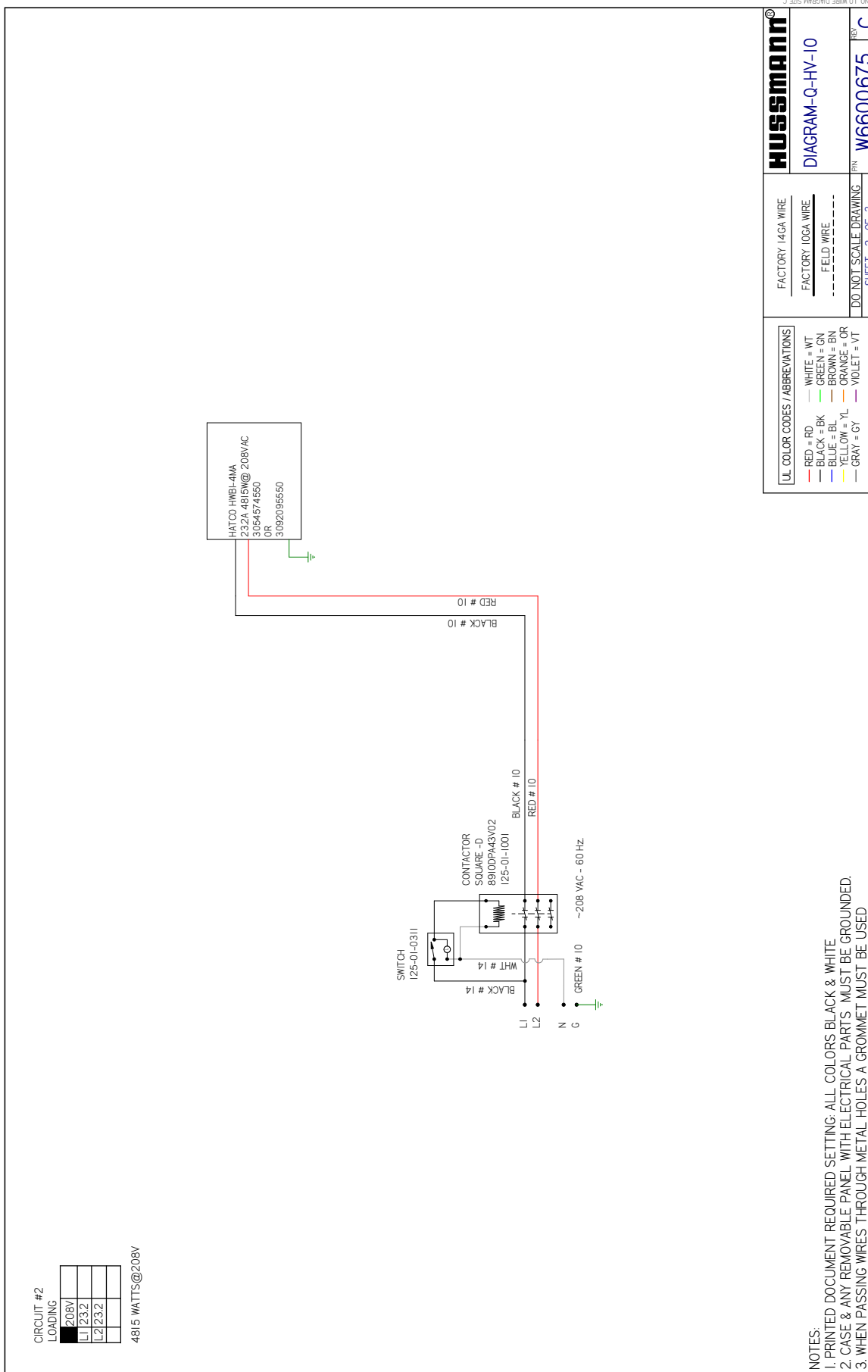
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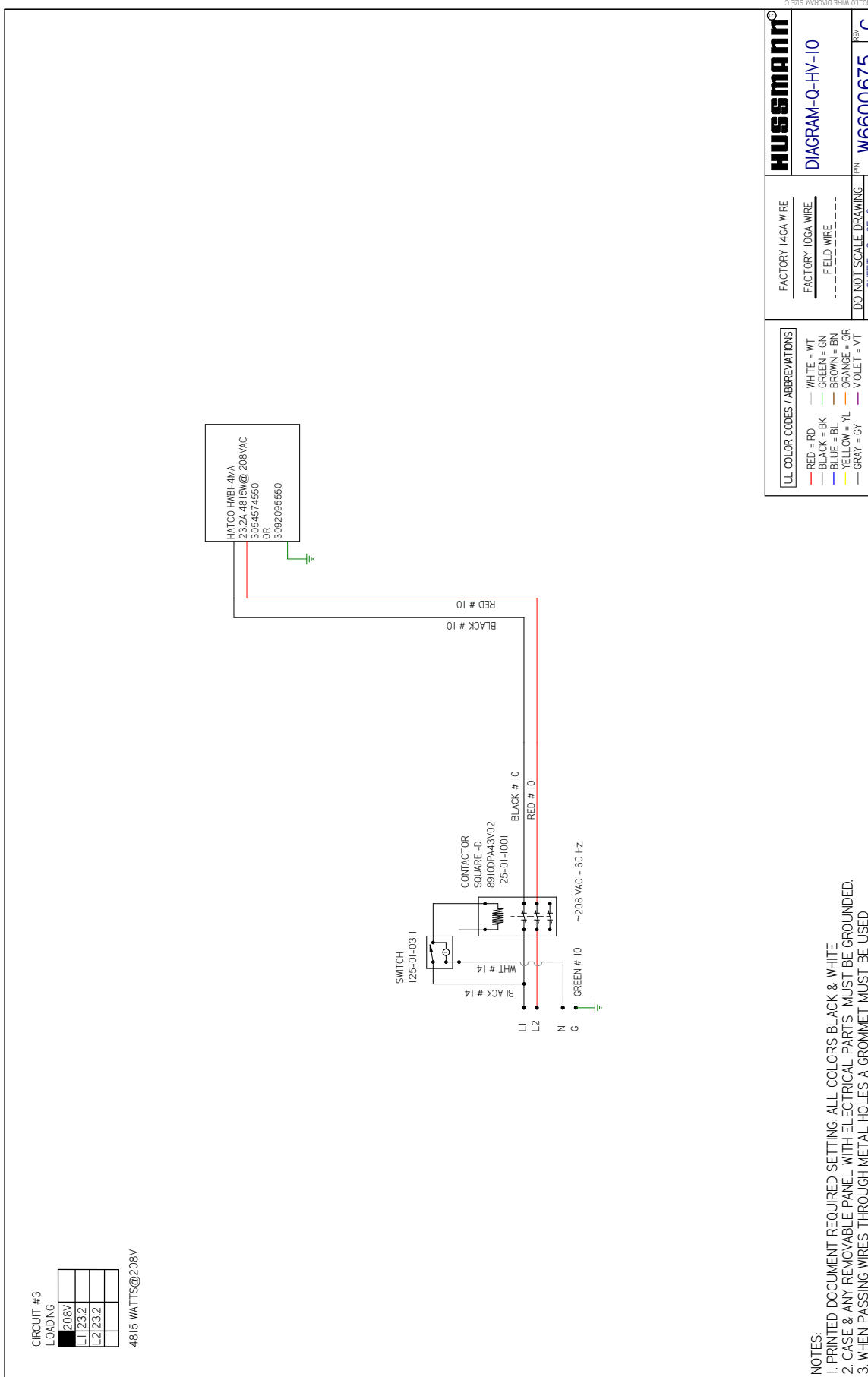
Electrical Wiring Diagram (Cont'd)



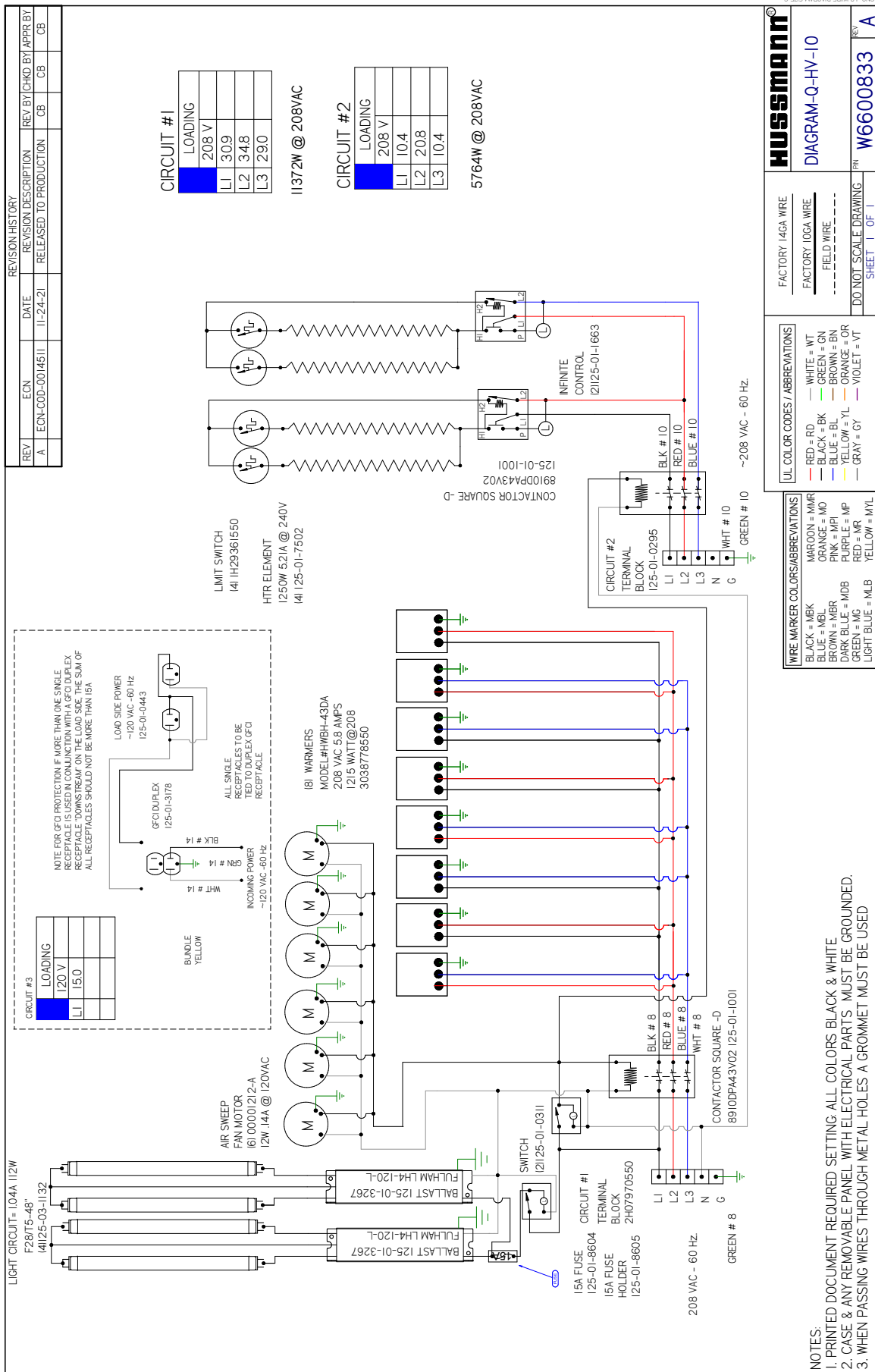
Electrical Wiring Diagram (Cont'd)



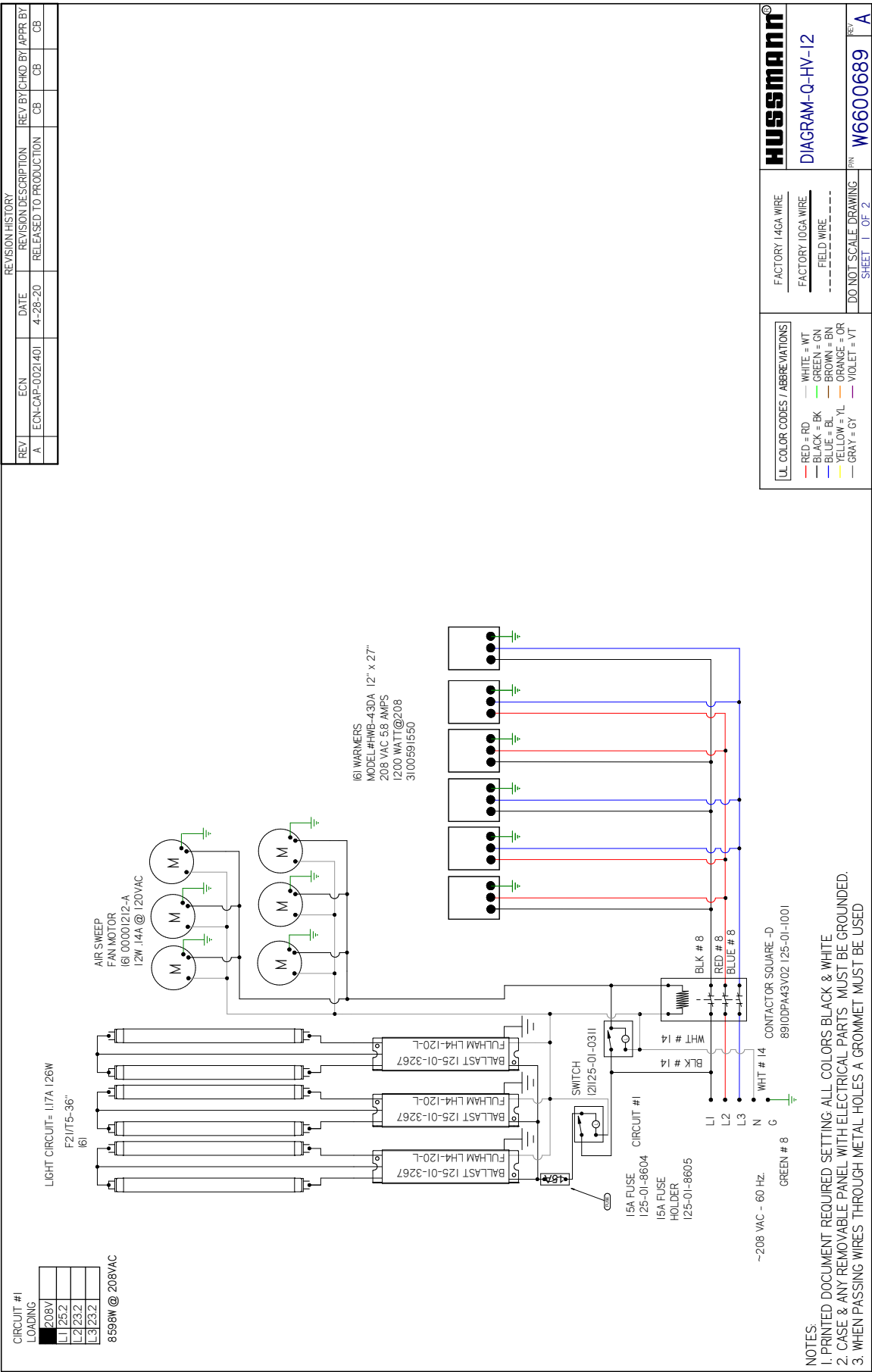
Electrical Wiring Diagram (Cont'd)



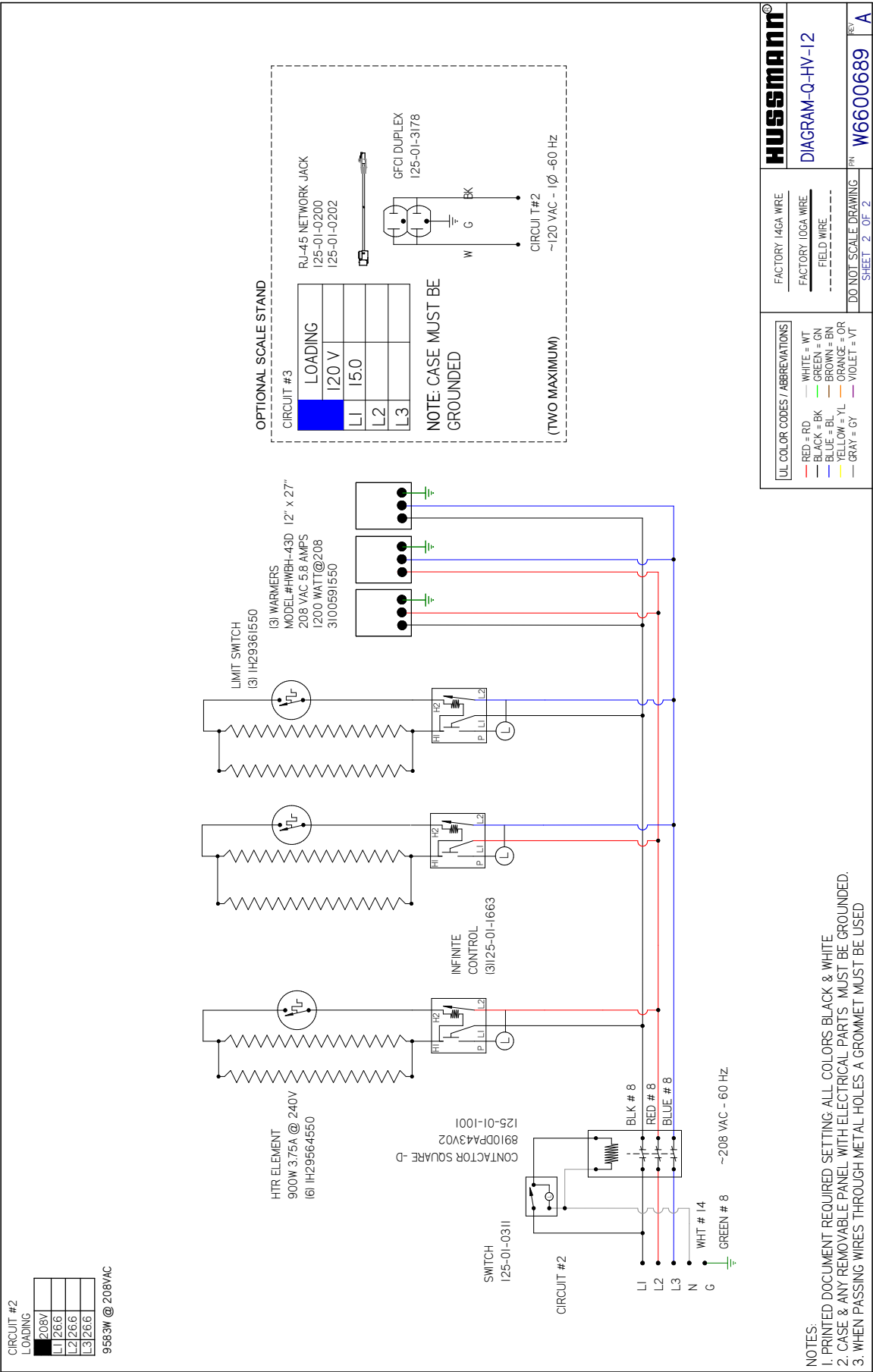
Electrical Wiring Diagram (Cont'd)



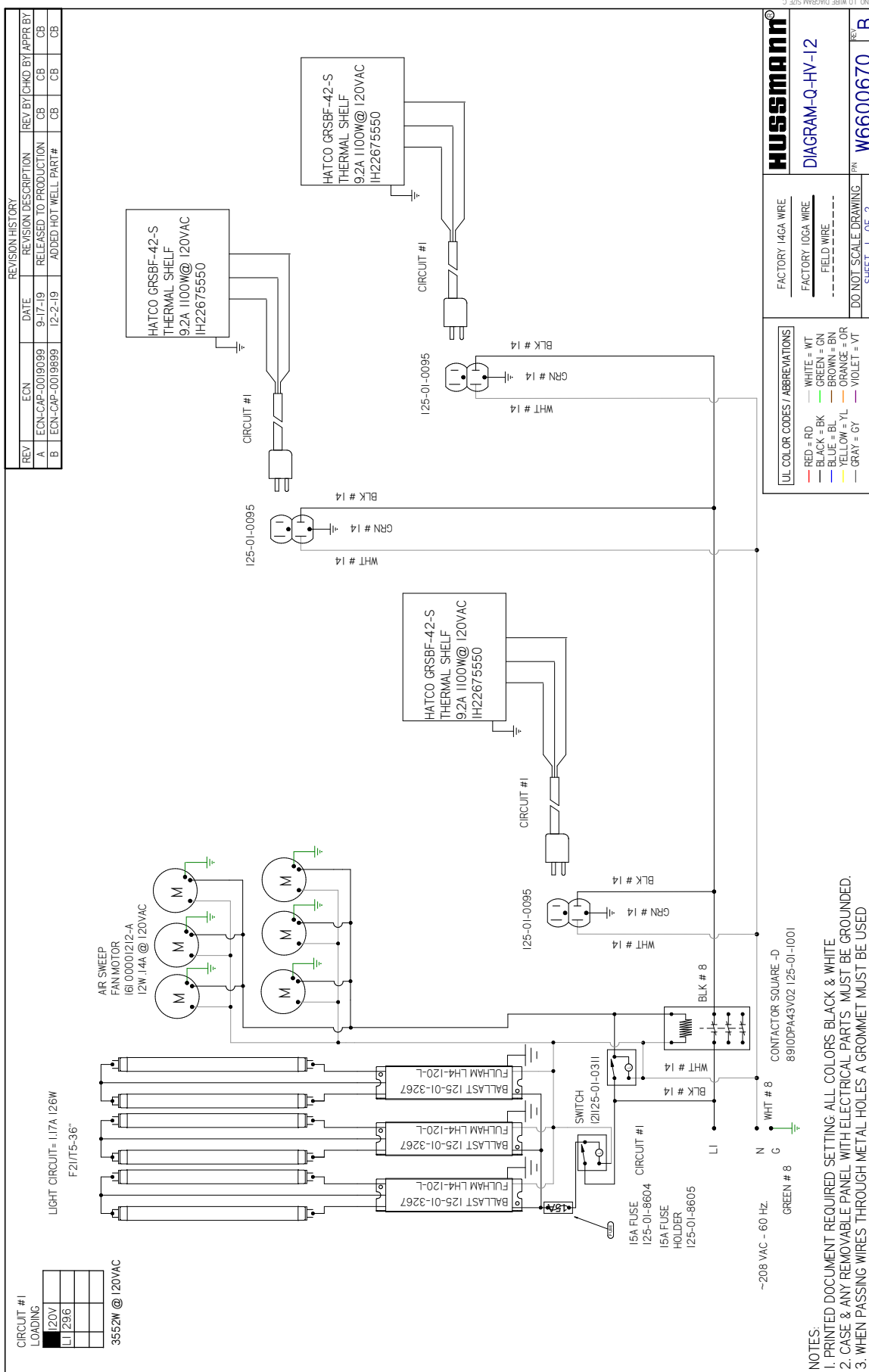
Electrical Wiring Diagram (Cont'd)



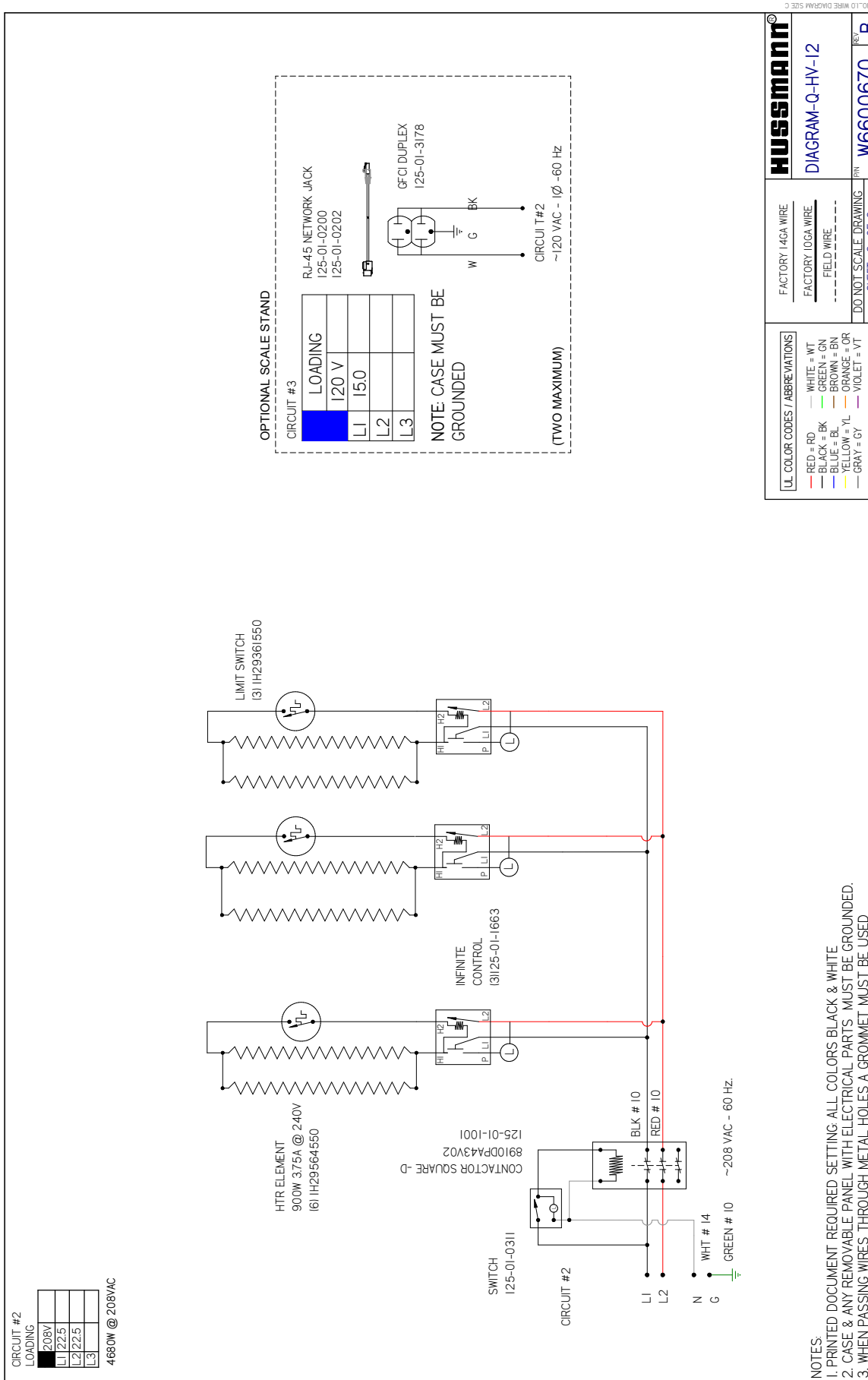
Electrical Wiring Diagram (Cont'd)



Electrical Wiring Diagram (Cont'd)



Electrical Wiring Diagram (Cont'd)



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.

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.
- Never pour water into a dry preheated warmer. This may damage the unit. Always pour water into warmer BEFORE preheating.
- Too much water or too much heat will cause excessive condensation on the front glass, decreasing visibility.
- Make sure all pans are in the well units no matter the configuration.

Using thermometer, check product before loading in case (150°-160°F).

- Always use warmer in wet operation when warming thick food items.
- Stir thick foods such as chili, fudge and chowders often to keep foods uniformly heated and prevent scorching.
- At start, set wells to “7”, and overhead heat to “5”. 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 140°F+ (60°C) minimum. The setting will depend on the type of product being displayed and how much there is in the well. Be sure to test product temperature with a thermometer frequently for good product maintenance.
- Keep cover(s) on insets to maintain food quality and temperature.
- 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.
- Food juice or gravy should be stirred frequently and any meats should be basted with the gravy. Stir and rotate foods as needed. Wipe up spills immediately for eye appeal now, and easier cleaning later.
- Food should be rotated periodically from the bottom to top.
- If practical, the food should be covered during slow 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.

Controls

The controls to regulate the temperature of the well heaters, griddle, and the overhead heat are located at the rear of the case.

Overhead Heating System

Tubular heating units are located above each well to provide top heat. To obtain the proper food temperatures, the well heaters, griddles, and heat lamps must be adjusted. Maximum limits should be avoided to prevent overcooking or drying out food.

Well Heating System

The heating well is thermostatically controlled with an indicator light showing when the heater has cycled on and is heating. The pilot lamp beside the control knob indicates when the well heater is heating.

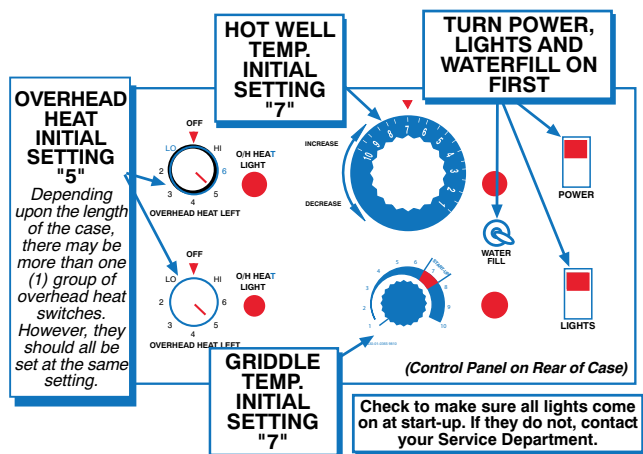
User Information (cont'd)

Auto-Fill Operation

Husmann hot cases are equipped with an internal auto fill system that allows automatic filling of the heating pans. The water level is preset and automatically regulate. Fill to tdepth of 1 inch. (Float System)

Start-up

1. Close drain valve.
2. Turn all black toggle switches (Water, Fill, Lights) on. The well will begin to fill approximately 15 seconds after the switch is turned on.
3. Turn all overhead heat to the "5" position.
4. After the well has begun to fill, turn the well heater and griddle dial to the "7" position.
5. Place empty pans in the case to help the case preheat faster. Allow approximately 45 minutes to preheat. It is also important that the small pan divider bars are installed properly between each pan. These dividers provide a seal around each individual pan and are necessary to maintain the proper temperature of the food products. Extra dividers should be stored outside of the case.



Shutdown

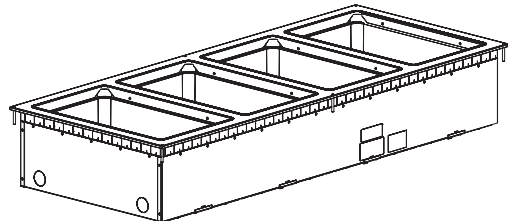
1. Remove all usable food from the hot table.
2. Turn off all heat and light controls.
3. Turn well heater control to off.
4. Open water drain to drain water from the well. In its open position, the valve handle will point in the same direction as the drain pipe.
5. Thoroughly clean all stainless steel surfaces by washing them down with a mild soapy solution with a bacteria killing agent.

NOTE: When cleaning hot well area, pay special attention to the auto-fill sensor. It should be kept clean or the water in the well could possibly fill to capacity and overflow. Clean occasionally with a mild cleaning solution. Wiping it dry will help ensure that the sensor operates properly.

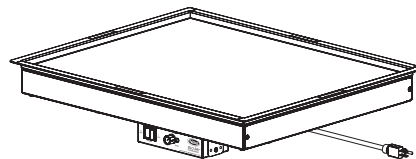
6. Wipe down non-glass areas on the outside of the case.

Hatco Operation

DROP-IN MODULAR/GANGED HEATED WELL HWBI



DROP-IN SURFACE WARMER



Heated Wells Operation

OPERATION

English

General

Use the following procedures to operate the Modular Built-In Heated Wells.



Read all safety messages in the Important Safety Information section before operating this equipment.

ELECTRIC SHOCK HAZARD:

- **DO NOT** use unit to melt or hold ice. Doing so may cause condensation, creating an electrical hazard and causing personal injury and/or damage to unit. Damage caused by condensation is not covered by warranty.
- For units without Auto-Fill, turn off unit when filling with water and avoid splashing.

NOTICE

Standard and approved manufacturing oils may smoke up to 30 minutes during initial startup. This is a temporary condition. Operate unit without food product until smoke dissipates.

Unit must be allowed to cool down to room temperature before changing from wet-to-dry or dry-to-wet operation. Allowing unit to run dry during wet operation or adding water during dry operation will damage unit.

Hatco Modular Built-In Heated Wells are designed for WET or DRY operation. Hatco recommends wet operation for consistent food heating. If the unit is operating wet and runs dry, turn it off and allow to cool before adding water.

Startup

1. Prepare the heated wells for operation.
 - If using the wells for dry operation, make sure the wells are clean and dry.
 - If using the wells for wet operation without Auto-Fill, make sure the drain valve is closed (if equipped) and manually fill the wells with hot tap water until the water is a maximum of 1-1/4" (32 mm) deep.
 - If the unit is equipped with the Auto-Fill option, make sure the drain valve is closed and go to step 2 in this procedure.
2. Place an empty pan in the well or cover the well with a lid. This step is recommended to speed up pre-heating and reach operating temperature.

3. Move the Power I/O (on/off) switches to the **I** (on) position. The indicator light on each switch glows when it is on.

- If the unit is equipped with the Auto-Fill option, the far left Power I/O (on/off) switch will activate the Auto-Fill system when it is moved to the **I** (on) position. The wells will fill with water until the water reaches the water level sensor in the far left well. During operation, the Auto-Fill system will maintain the water level automatically using the water level sensor.

NOTE: For 4, 5, and 6 well units equipped with Auto-Fill, turn on the left-hand control first, then turn on the right-hand control.

4. Turn the Temperature Control Knobs to the desired safe food temperature.



Hatco Corporation is not responsible for actual food product serving temperature. It is the responsibility of the user to ensure that food product is held and served at a safe temperature.

5. Allow the unit to preheat for approximately 30 minutes.



BURN HAZARD: Some exterior surfaces on the unit will get hot. Use caution when touching these areas.

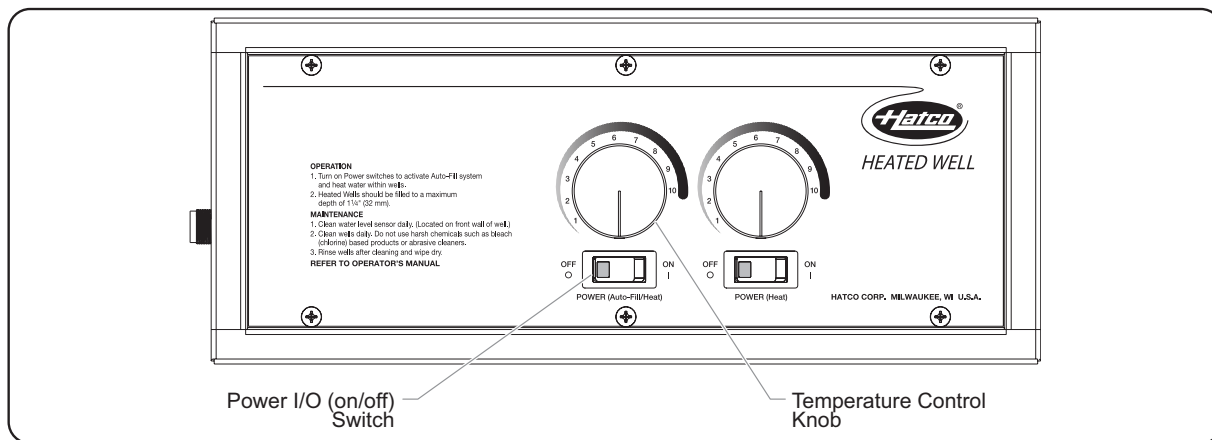
Food Warming

Place the appropriate size food pans with pre-heated food product into the heated wells.

- Always use a food pan. Do not place food directly into the heated well.
- Stir thick food items frequently to keep food heated uniformly.
- Keep pans covered to maintain food quality and temperature.

Shutdown

1. Move the Power I/O (on/off) switches to the **O** (off) position. The indicator light on the switches will shut off and the Auto-Fill system will be deactivated (if equipped).



HWBI-2DA Control Enclosure (unit with drains and Auto-Fill)

User Information (cont'd)

Surface Warmer Operation

English

OPERATION

General

Use the following procedure to turn on and operate the GRS, GRSB, and GRSBF units.

⚠ WARNING

Read all safety messages in the **IMPORTANT SAFETY INFORMATION** section before operating this equipment.

1. Plug unit into a properly grounded electrical receptacle of the correct voltage, size, and plug configuration. Refer to the SPECIFICATIONS section in this manual for details.
2. Move the Power On/Off (I/O) switch to the On (I) position.

⚠ CAUTION

BURN HAZARD: Some exterior surfaces on unit will get hot. Use caution when touching these areas.

3. Turn the thermostat control to the desired temperature setting.

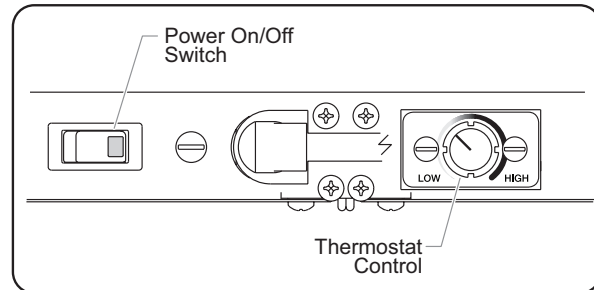
NOTE: Turning the thermostat control knob clockwise will increase the temperature setting. Turning the thermostat control knob counterclockwise will decrease the temperature setting.

4. Allow the unit 30 minutes to reach operating temperature

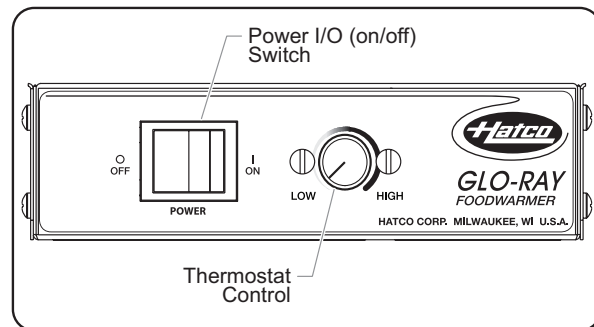
NOTICE

Do not slide pans across hardcoat surface, use rough-bottomed pans, or drop anything on hardcoat surface. Scratching may occur. Damage to hardcoat surface caused by misuse is not covered under warranty.

NOTE: Refer to the OPTIONS AND ACCESSORIES section for installation and operation information for GRSB and GRSBF units equipped with a flush-style remote mounted control enclosure.



Control Panel — GRS Model



Control Panel — GRSB and GRSBF Models

Maintenance

Care and Cleaning

Long life and satisfactory performance of any equipment is dependent upon the care it receives. With this in mind, all of the exposed work surfaces of these hot tables have been made entirely of easy to clean stainless steel.

Stainless steel is one of the easiest materials to clean and keep clean. Normally it is just a matter of wiping spills off the surface when they happen followed by a thorough cleaning with soap and water at the end of the day. Frequent and regular cleaning will prevent the buildup of baked on difficult to remove spills. Many types of cleansers are available and safe to use on stainless steel. However, ordinary steel wool and steel brushes should not be used. Small particles of the steel may become imbedded into the stainless steel surfaces that will eventually rust and stain.

General Cleaning Rules

1. Allow surfaces to cool before handling.
2. Clean frequently and regularly.
3. Rinse thoroughly after cleaning.
4. Remove surface spills immediately with a damp cloth.

Cleaning Cases

1. Turn temperature control knob to OFF position.
2. Remove insets and adapters (if used).
3. Allow unit to cool completely.
4. Drain water from wells using large hand valve. It is not necessary to read just the water level plate.
5. Wipe entire unit with clean cloth and mild detergent.

The **EXTERIOR** surfaces of these hot tables must be cleaned with a mild detergent and warm water to protect and maintain their attractive finish. Never use abrasive cleaners or scouring pads.



CAUTION

Fluorescent Lamps contain mercury vapor. Mercury exposure at high levels can harm the brain, heart, kidneys, lungs and immune system of people of all ages. Do not break or puncture fluorescent lamps. Dispose of, or store, all fluorescent lamps in accordance with Federal (40 CFR 273), State and local hazardous waste requirements. Refer to <http://www.epa.gov/mercury/about.htm>

To Remove Lime Deposits

Use a de-liming agent so deposits do not build up. If your area's water has a high mineral content, it may be wise to install a cartridge type filtration system to minimize buildup.

DO NOT USE ANY HIGHLY CAUSTIC CLEANERS ON WARMERS. USE OF THESE MAY CAUSE DAMAGE OR CORROSION TO THE UNIT.

Do not allow ammonia to stand in warmer. Doing so may cause damage or corrosion.

IMPORTANT! Rinse unit thoroughly with vinegar and water. The vinegar will neutralize any detergent residue.

Close drain valve and allow water to refill. Due to the small diameter feed line, this water fills at an extremely slow rate, so it is advisable to begin refilling immediately after cleaning - a number of hours before heating and loading with product. Water will automatically fill to the same level it was when it was drained.

Plexiglass and Acrylic Care

Clean with plenty of nonabrasive soap (or detergent) and lukewarm water, using the bare hand to feel and dislodge any caked-on dirt. A soft, grit-free cloth, sponge, or chamois may be used, but only as a means of carrying the water to the plastic. Dry with a clean damp chamois or clean soft cloth such as cotton flannel. Hard, rough cloths paper towels will scratch the acrylic, and should not be used.

Waxing

If after removing dirt and grease, the acrylic can be waxed with a good grade commercial wax. This will improve the appearance of the surface by filling in most minor scratches. Wax should be applied in a thin even coat, and brought to a high polish by rubbing lightly with a dry clean soft cloth, such as a cotton flannel. Excessive rubbing may cause scratching and/or buildup an electrostatic charge, which attracts dust and dirt to the surface. Blotting with a clean damp cloth is recommended to remove charge.

Maintenance Cont'd

Do Not Use:

- Abrasive cleaners and scouring pads, as these will damage the finish.
- A hose on lighted shelves or submerge lighted shelves in water.
- Solvent, oil or acidic based cleaners on any interior surfaces.
- A hose on any electrical component.

Do:

- Remove the product and all loose debris to avoid clogging the waste outlet.
- Rinse with hot water, but DO NOT flood. Never introduce water faster than the waste outlet can drain.
- Allow merchandiser to completely dry before resuming operation.
- LED lights are magnetized to each shelf and can be removed easily for any shelf cleaning.
- After cleaning has been completed, remember to restore power back to merchandiser.

Prop 65 (CA Only)



This warning does not mean that Hussmann products will cause cancer or reproductive harm, or is in violation of any product-safety standards or requirements. As clarified by the California State government, Proposition 65 can be considered more of a 'right to know' law than a pure product safety law. When used as designed, Hussmann believes that our products are not harmful. We provide the proposition 65 Warning to stay in compliance with California state law. It is your responsibility to provide accurate Proposition 65 Warning labels to your customers when necessary. For more information on Proposition 65, please visit the California State government website.

Troubleshooting

Problem	Possible Cause	Possible Solution
Product not holding temperature.	Ambient conditions may be affecting the case operation.	Check case position in store. Is the case located near an open door, window, electric fan or air conditioning vent that may cause air currents? Case must be located minimum 15 Ft away from doors or windows. Cases are designed to operate at 55% Relative humidity and a temperature of 75°F.
	Heat settings too low	Adjust shelf control setting.
	Product not hot when placed in case.	Place prepackaged hot food in case. Measure food temperature when placed in case. Internal product temperature must be 160°F or greater when placed in case.
	Incorrect product packaging	Some product packaging may impact the ability to hold product temperature. Use only approved containers.
	Product not placed correctly in case.	Load product in single layer, in direct contact with shelves. Also see Merchandising Do's and Don'ts (pg. 12)
	Unit not preheated.	Preheat case before loading product.
	Low voltage.	Using volt meter make sure line voltage matches serial plate voltage.
	Product held too long	Hold product for recommended time.
	Convection fan not on	Check to see if convection fan is at "Medium" setting. Raise or lower fan speed per instructions on pg. 12
	Cold ambient air infiltration	Check to see there is no cold air infiltrating the case. Ensure all edges and corners are properly sealed to manufacturing recommendations.
No shelf heat.	Faulty shelf heater.	Check and call Hatco to replace if necessary.
	Faulty control.	Check and call Hatco to replace if necessary.
	Loose wiring on heater.	Check wiring/electrical connections.
	Temperature setting "Off".	Increase shelf heat setting.
Main Power switch on but case is inoperative.	Open Circuit.	Check to see that cord is plugged in if plug is provided.
		Check wiring/electrical connections for hard wired cases.
		Check line voltage.
		Check power switch and replace if defective.
Lights do not come on.	Ballast/light socket wiring.	Check electrical connections. See Electrical Section and check wiring diagram.
	Ballast needs to be replaced.	Case should be serviced by a qualified service technician. See Electrical Section.
	Lamp socket needs to be replaced.	Case should be serviced by a qualified service technician.
	Lamp needs to be replaced.	See Maintenance Section.
	Light Switch needs to be replaced.	Case should be serviced by a qualified service technician.

Troubleshooting Cont'd

Problem	Possible Cause	Possible Solution
Heated wells not hot enough.	Temperature Control set too low.	Adjust Temperature Control to a higher setting.
	Heating element not working.	Dispatch Hatco authorized service agent
	Temperature Control not working properly	Dispatch Hatco authorized service agent
	Voltage supplied is incorrect.	Dispatch Hatco authorized service agent
Heated wells too hot.	Temperature Control set too high.	Dispatch Hatco authorized service agent
	Temperature Control not working properly.	
	Voltage supplied is incorrect.	
No heat.	Unit turned off.	Move the Power I/O (on/off) switches to the I (on) position
	Circuit breaker tripped.	Reset circuit breaker. If issue not resolved, dispatch Hatco authorized service agent
	Temperature Control not working properly.	Dispatch Hatco authorized service agent
	Heating element not working.	
	Power I/O (on/off) switch not working.	
Auto-Fill system not working.	Water level sensor is dirty and not "sensing" properly	Perform the "Cleaning" procedure in the Maintenance section with special focus on the water level sensor
	Water not supplied to fill valve.	Verify water supply is correctly installed.
	Water fill valve malfunctioning.	Dispatch Hatco authorized service agent
	Left-hand well not turned on.	Turn on well.
Unit is overfilling with water.	Water level sensor is not "sensing" minerals in the water supply. This is typically due to reverse osmosis water or similar filtration process.	Auto-fill units supplied with water from a reverse osmosis (RO) system (or similar water filtration system) must be installed with an operating re-mineralization system to assure proper operation. Failure to do so may cause the unit to overfill. Damage caused by overfilling is not covered under warranty
Food product not holding hot enough.	Well being operated as a dry unit.	Allow unit to cool and fill with the appropriate amount of water for wet operation. Wet operation promotes consistent hot food holding.
Temperature control knobs heat wrong well.	Control enclosure installed incorrectly.	Dispatch Hatco authorized service agent

Troubleshooting Cont'd

Problem	Possible Cause	Possible Solution
Unit is turned "On" but there is no heat.	No power to unit.	Check circuit breaker and reset as necessary.
	Switch is defective.	Contact authorized Service agent or Hatco for assistance.
	Wiring is open.	Contact authorized Service agent or Hatco for assistance.
	Heating element defective.	Contact authorized Service agent or Hatco for assistance.
Heat is inadequate.	Unit mounted too high above target area.	Lower unit, putting effective heat closer to target.
	Excessive air movement around strip heater target area.	Restrict or redirect air movement (air conditioning duct or exhaust fan) away from unit.
	Incorrect power supply (low).	Check power supply to unit, making sure it matches rating on the unit. If power supply is incorrect, change to match rating on unit.
Heat is excessive.	Unit mounted too close to target area.	Check to see that installation is within specifications for type/ model. Increase mounting height if too close.
	Voltage supply too high.	Check power supply to unit, making sure it matches rating on unit. If power supply is incorrect, change to match rating.
Control switches burn out.	Unit mounted improperly.	Move the unit the proper distance away from walls, counters, and/or pass-through shelves. Refer to the INSTALLATION section for guidelines.
	Remote control enclosure is mounted too close to the heat zone.	Move remote control enclosure away from the heat zone.
	Switches used are not HATCO supplied.	Genuine Hatco Parts are specified to operate safely and properly in the environment in which they are used. Contact authorized Service agent or Hatco to replace switches with Genuine Hatco Replacement Parts.

Appendices

Appendix A. - Temperature Guidelines

- 1.0 Hot cases are tested to maintain all hot food at 140°F - 150°F. 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°F to 160°F.

Appendix B. - Application Recommendations

- 1.0 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.
 - 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

- 1.0 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 1995 temperature for potentially hazardous food will be the first indication that an evaluation should be performed. It is expected that all hot case will keep food at the FDA Food Code 1995 temperature for potentially hazardous food.

- 1.1 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 hot case 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 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 1 hour 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. - User Recommendations

- 1.0 Hussmann has provided 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.
 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.

Appendices Cont'd

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°F. 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.
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/towel.
10. When "freshening" foods such as macaroni and cheese with added water, heat the water in a clean container until it is 10°F 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°F to 20°F 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°F 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	

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