

Q3 DELI VERTICAL MERCHANDISER

USER MANUAL

- Q3**
- Q3-DV-4 Vertical Case
 - Q3-DV-5 Vertical Case
 - Q3-DV-6 Vertical Case
 - Q3-DV-8 Vertical Case
 - Q3-DV-10 Vertical Case
 - Q3-DV-12 Vertical Case
 - Q3-DV-22.5IS/OS Vertical Case
 - Q3-DV-45IS/OS Vertical Case

Table of Contents

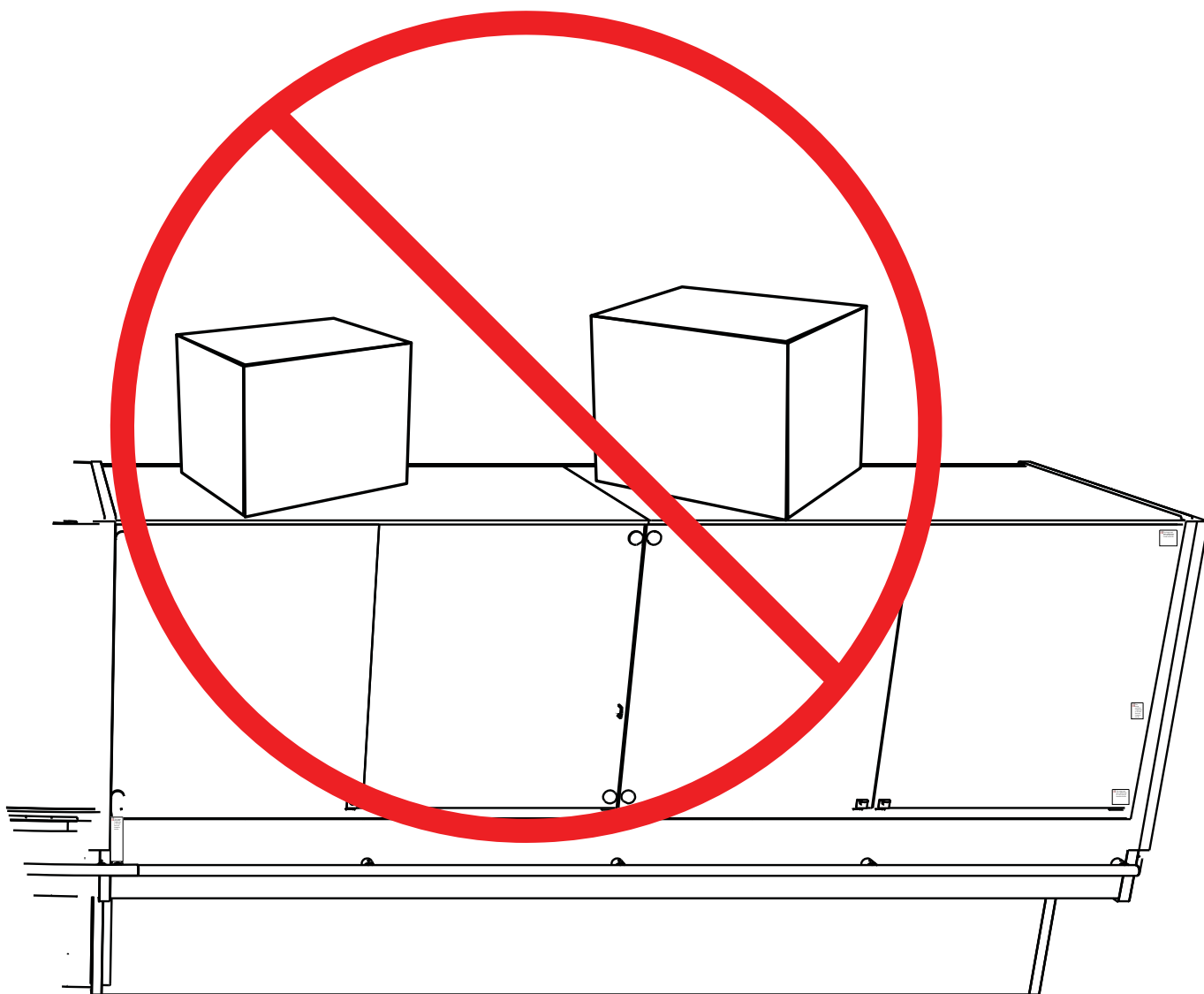
Notice	3	Electrical	20
General Information	4	Electrical Info	
Case Sections	5	Merchandiser Electrical Data	20
Installation	6	Electrical Connections	20
Unloading		Field Wiring	20
Receiving Case	6	Identification of Wiring	20
Snapping Chalk Lines	6	Remove Rear Raceway	21
Placement	7	Electrical Conduit (Electrical Box)	21
Lifting / Panels		Wiring Diagram Index	22
Q3DV Lifting and Transport Instructions	8	User Information	39
Front Body Panel Install	9	General	
Fasten Front Body Panel Install	9	Start Up	39
Fasten Rear Body Panel Install	9	Load Limits	39
Leveling		Maintenance	
Leveler Adjustment	10	Case Cleaning	40
Shim The Case	10	Exterior Surfaces	40
Joining		Interior Surfaces	40
Parts List	11	Troubleshooting	42
Q3-DV Canopy Adjustment	12		
Joining Preparation	15		
Refrigeration	18		
Piping			
Refrigerant	18		
Refrigerant piping	18		
Line Sizing	18		
Oil Traps	18		
Refrigeration Spec Sheets	19		

Notice

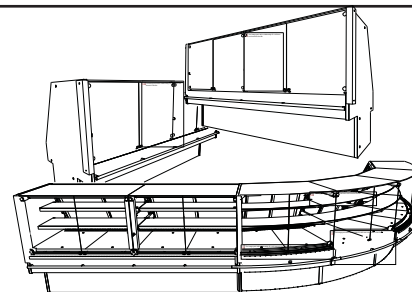


1. DO NOT overload or stand over top of case. Glass breakage may occur if precautions are disregarded.

*Broken glass can cause lacerations, cuts, and puncture wounds which may result in severed arteries or tendons, amputations, eye injuries, or exposure to disease.



General Information



Case Description:

Description: Refrigerated vertical Deli/Bakery 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. 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.

Location/Store Conditions: The Q3-DV refrigerated merchandiser has been designed for use only in air conditioned stores where temperature and humidity are maintained at 80°F and 55% relative humidity or 75°F and 55% relative humidity. DO NOT allow air conditioning, electric fans, ovens, open doors or windows (etc.) to create air currents around the merchandiser, as this will impair its correct operation.

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

HUSSMANN®/CHINO

A publication of HUSSMANN® Chino
 13770 Ramona Avenue • Chino, California 91710
 (909) 628-8942 FAX
 (909) 590-4910
 (800) 592-2060

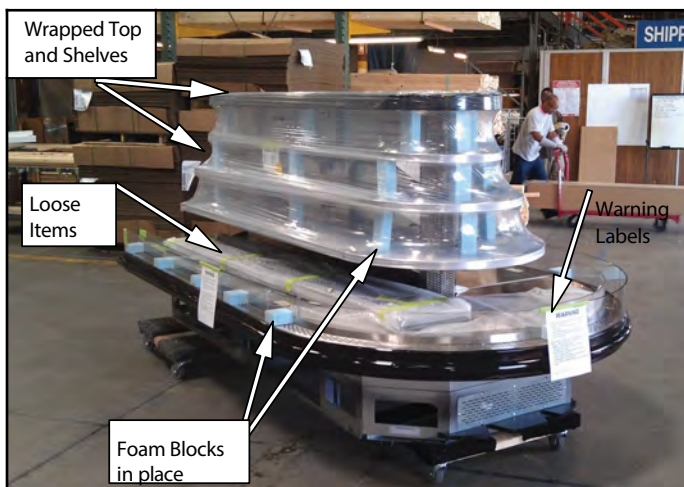


This equipment is to be installed to comply with the applicable NEC, Federal, State, and Local Plumbing and Construction Code having jurisdiction.

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.



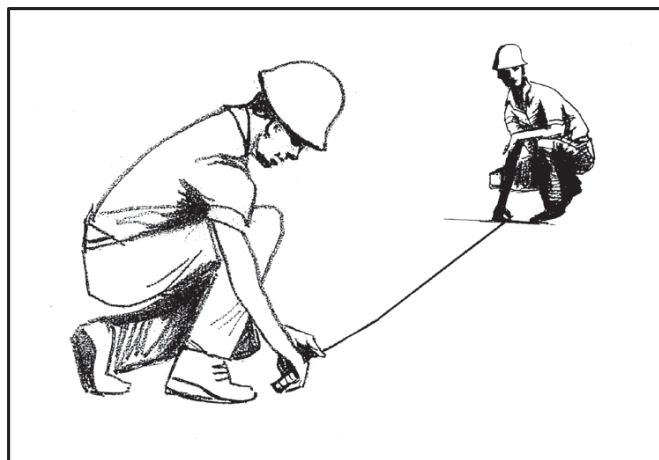
Case is to arrive at store as was shipped from factory. See reference above for proper shipment referencing. (not actual case)

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.

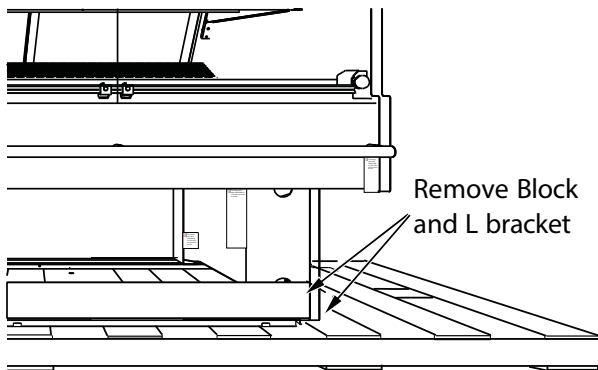


Installation (cont'd)

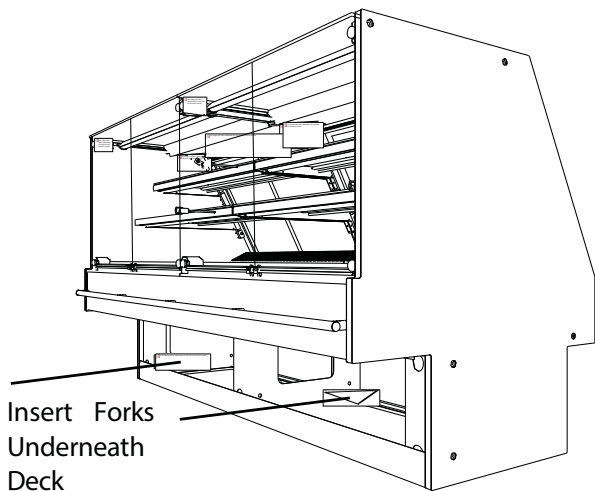
Placement

Important: See lifting instructions to properly lift case when being placed on dollies or permanent location. (See page 8 for Lifting Instructions.)

First remove Blocks and L Brackets around the case from pallet.



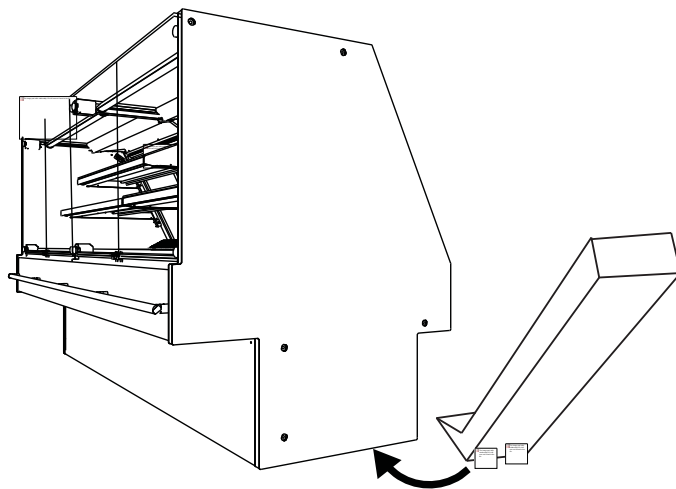
Proceed by setting forklifts under specified locations as instructed in the Lifting Instructions (pg. 8.) Be careful not to damage drains or near components when placing forks underneath case. A spotter is mandatory to ensure no damage is caused to the case. Lift case and replace with dollies, place near or in permanent location.



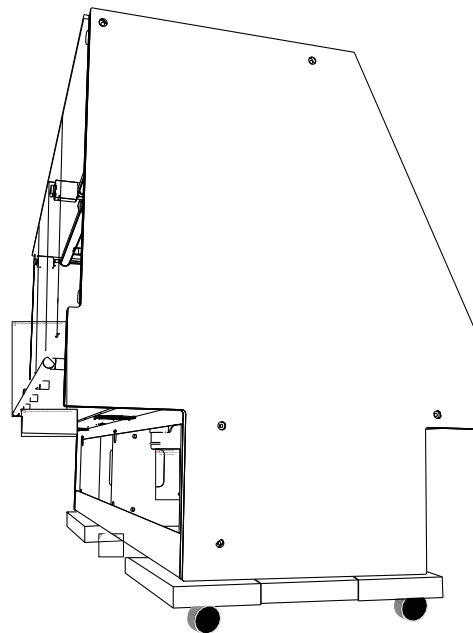
Move the fixture as close as possible to its permanent location and then remove all packaging and preparing to remove off Skid. Remove all separately packed accessories such as kits, and

panels. Check for damage before discarding packaging.

In the case a fork lift truck is not available follow the demonstration below to properly lift case using a Johnson Bar (J-Bar) to place on dollies to traffic from start point to placement area.



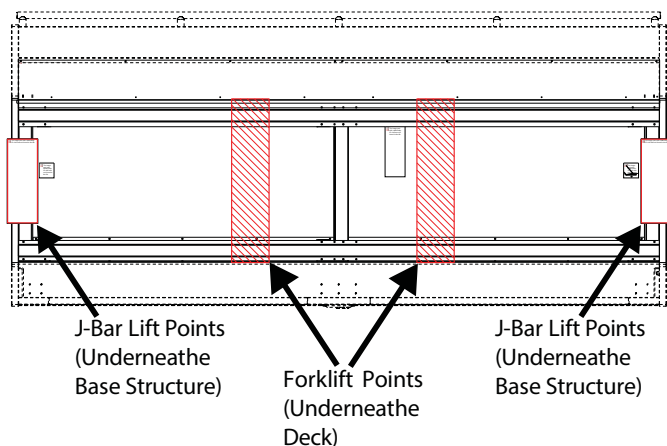
Place J-Bar underneath base of merchandiser to gain leverage, once lifted place Dollie underneath first end and slowly lower onto dolly ensuring merchandiser is placed on stable location. Proceed to opposite end and repeat.



Installation (cont'd)

Q3DV Lifting and Transport Instructions

1. The Q3-DV can be lifted by a forklift at typical lifting points.





WARNING

Improper placement of forks may damage drainage piping. Use a spotter when placing forks. Make sure that piping will not be damaged. Use J-Bars or Jacks if forks cannot be used safely

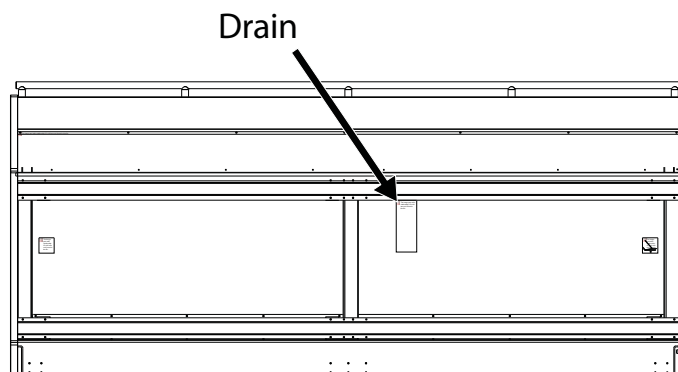
2. Ensure lower body panels are removed before lifting with a forklift. Serious damage will occur if the body panels are not removed.
3. Make sure that fork spacing and width will not damage drain or come in contact with piping, or electrical lines
4. Be sure that the forks are long enough to support beyond the center of the case but not damage near components. Check for proper balance before moving. A minimum fork length of 36" is recommended for 68" wide cases

5. The Q3-DV merchandiser can be raised at one end underneath the deck with a forklift to allow the placement of rollers or dollies.
6. Evenly support the entire base structure on rollers or dollies before attempting to move. Each Base Leg must have its own dolly to properly support the case.

Lifting Points are typical and dependent upon size of case and refrigeration application, drainage configurations will call for alterations in Lifting Zones.

Below are the following drainage configurations and lifting should be altered to the expected model.

Q3 DV Drain Location

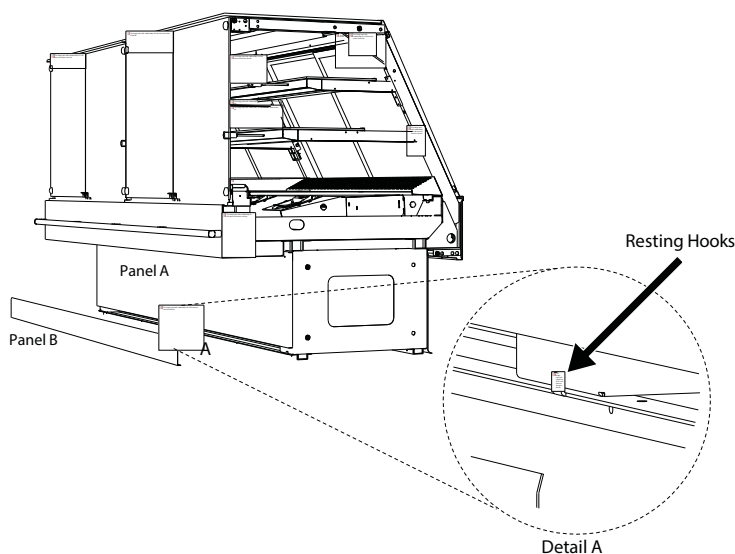


Installation (cont'd)

Front Body Panel Install

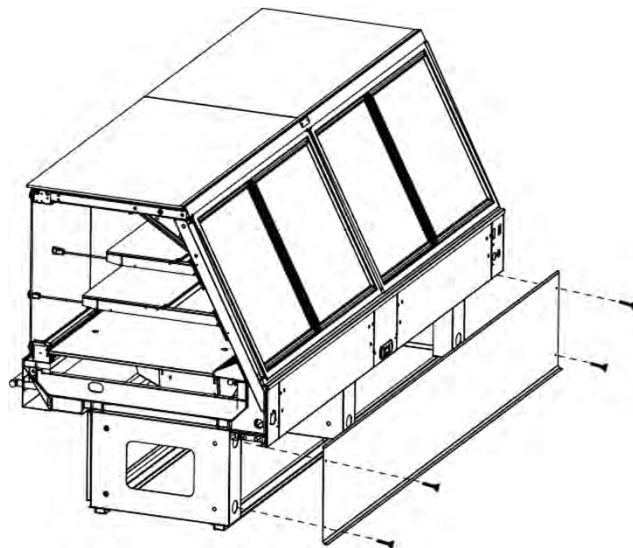
A Phillips Screw Driver/Bit will be needed to install body panels.

To begin Bottom panel assembly place panel A along side the base of the case and lower panel on to support hooks along the bottom of the base (See illustration below for details).



Fasten Rear Body Panel Install

- (1) Align pre drilled holes to base of case
- (2) Secure top and bottom of rear panel using fasteners as shown below.

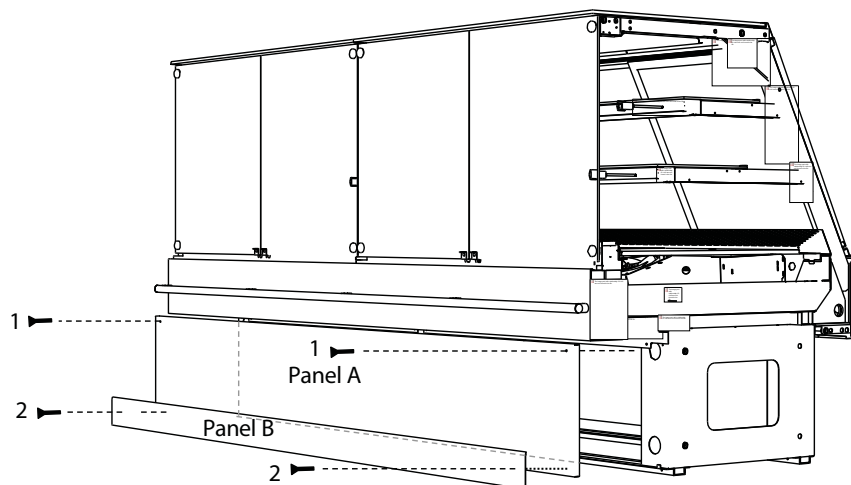


Allow front and rear body panels to slide down resting on support hooks. 2. Place L Bracket along the underside of deck to hold body panel top in place against base wall of case.

Fasten Front Body Panel Install

- (1) Secure Panel A with top fasteners only.
- (2) Overlay Panel B to bottom of Panel A as shown in illustration below

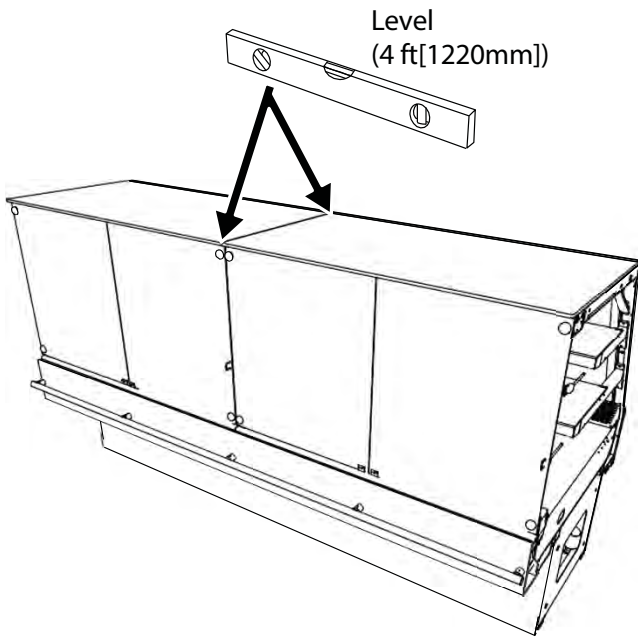
*Note Panel B will be attached freely with no pre drilled holes.



Installation (cont'd)

Leveler Adjustment

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.



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

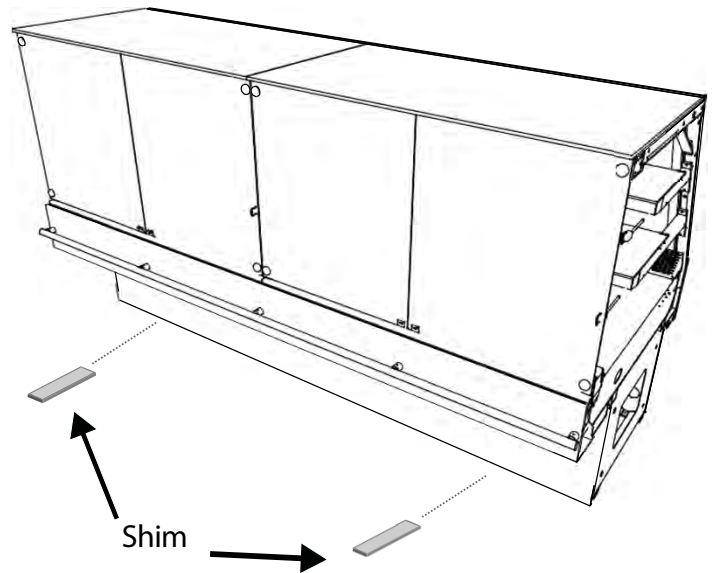
NOTICE

Longer length cases may require shims along the center portion of the case to maintain proper case performance and drainage.


Shim The Case

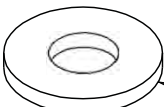
Use shims at each corner of the case to level out any discrepancies in order to optimize case performance and proper drainage.

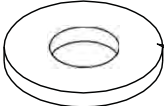
Note: Shims are not Factory supplied. Contractor should carry available components. Metal Shims are recommended for use to eliminate any deterioration from shims over time.

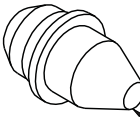



Parts List

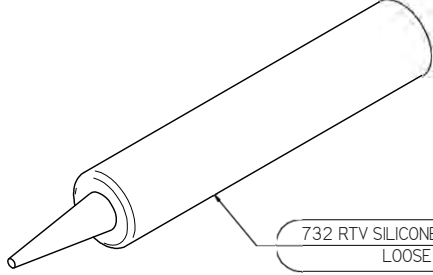
- 


3/8"-16 NUT/BOLT
LOOSE 3 PER JOINT
- 


3/8\"-0.5625\" OD WASHER
LOOSE 4 PER JOINT
- 

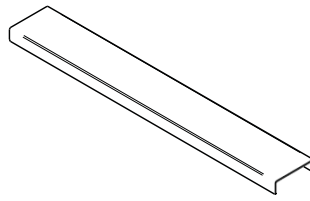
1/4\"-0.5625\" OD WASHER
LOOSE / TOP CANOPY ONLY 1 PER JOINT
- 

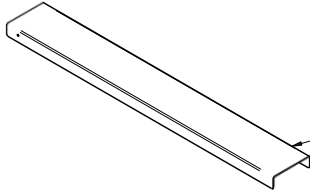
ALIGNMENT PIN
0376408 3 PER JOINT
- 

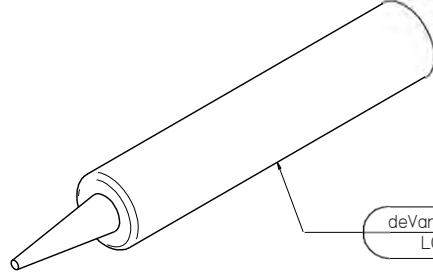
#10 SELF TAPPING SCREW
0376408 10 PER JOINT
- 

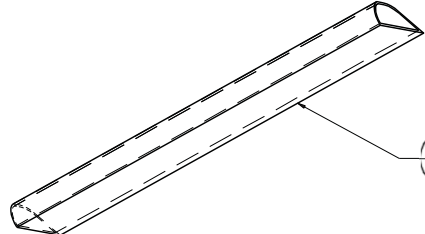
732 RTV SILICONE SEALANT
LOOSE 1 PER JOINT
- 

IH97637
Joining part 3 1 PER JOINT
- 

IH97784
Joining part 4 1 PER JOINT
- 

IH63905
Joining part 1 1 PER JOINT
- 

I43394
joining part 2 1 PER JOINT
- 

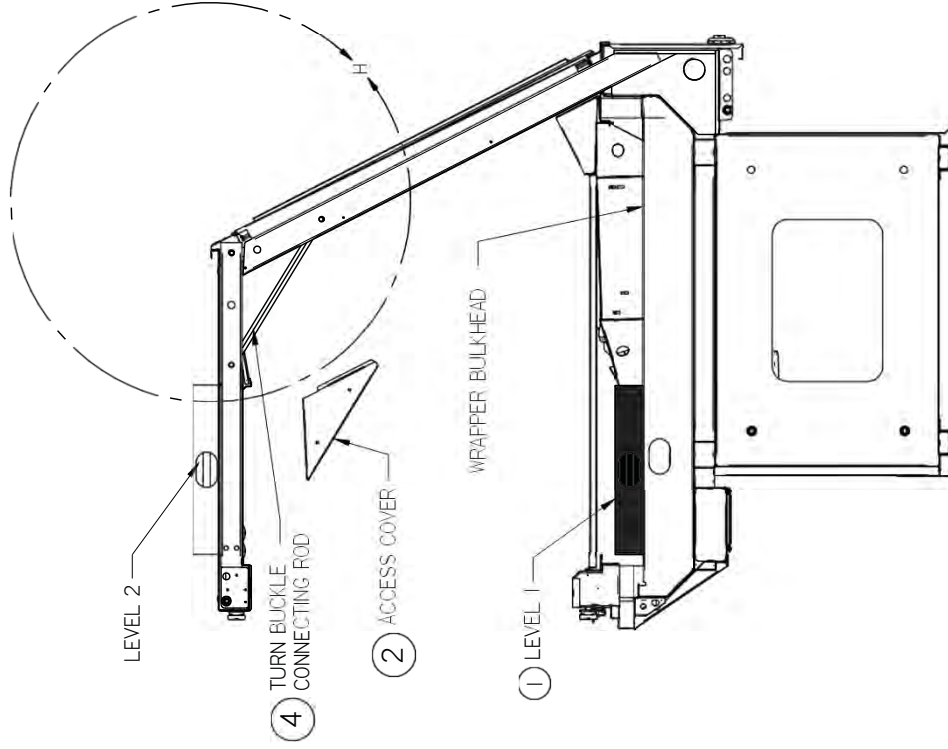
deVan - BUTYL
LOOSE 1 PER JOINT
- 

GASKET
LOOSE 10' RER CASE

Installation (cont'd)

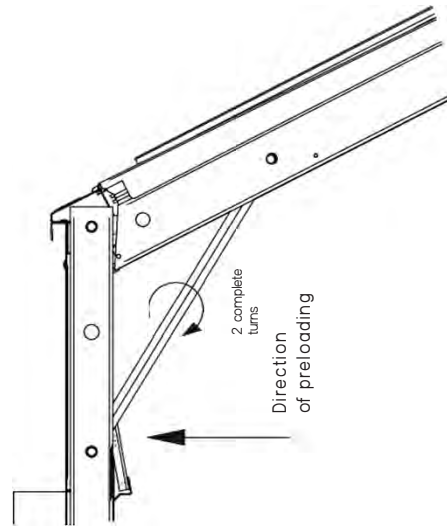
Q3 DV CANOPY ARM ADJUSTMENT PROCEDURE

- STEP 1. Ensure case is level to the ground. Check level at the bulkhead as shown (LEVEL 1).
- STEP 2. Unscrew and remove access covers.
- STEP 3. Loosen top and bottom hinge vertical adjustment screws.
- STEP 4. Place level on the top of the upper arms (LEVEL 2).
- STEP 5. Using a 1/2" open-ended wrench, turn Turn buckle connecting rod until level 2 indicates that the arm is level (Note that some turn buckles may be reverse thread.. Test turning direction by observing the effect of turn direction.)



IMPORTANT: Pre Loading Canopy Arm

- STEP 5. After reaching level (On LEVEL2) turn the connectors two full rotations in the direction that raises the canopy.



DETAIL H

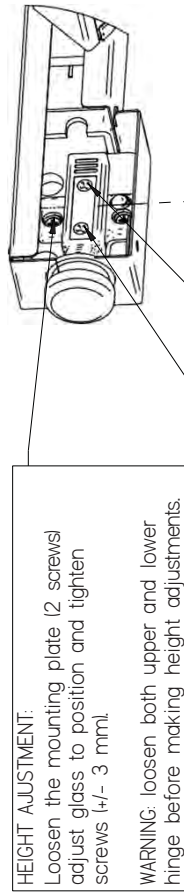
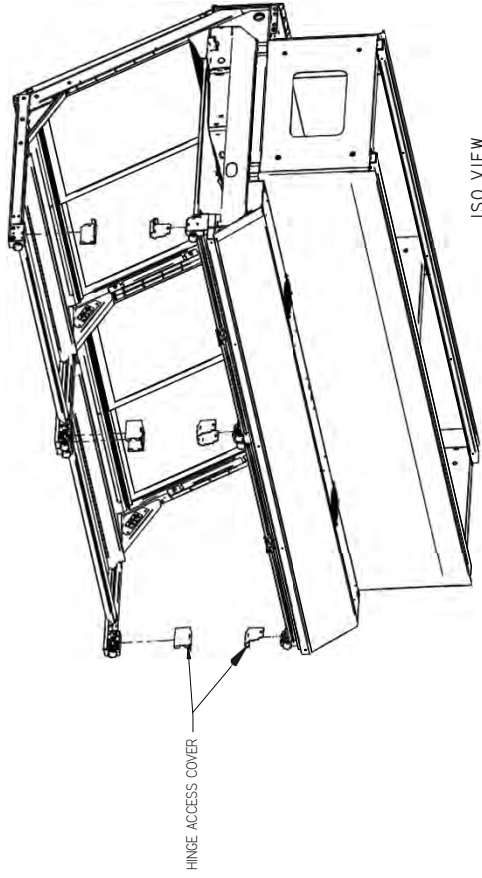
Installation (cont'd)

Q3 DV FRONT GLASS ADJUSTMENT PROCEDURE

STEP 1: Un-screw and remove all access covers from the top and bottom hinges.

STEP 2: Adjust horizontal and vertical gaps of each glass (see detail A).

STEP 3: Ensure the gaps between panel do not exceed more than 0.125" see detail B.



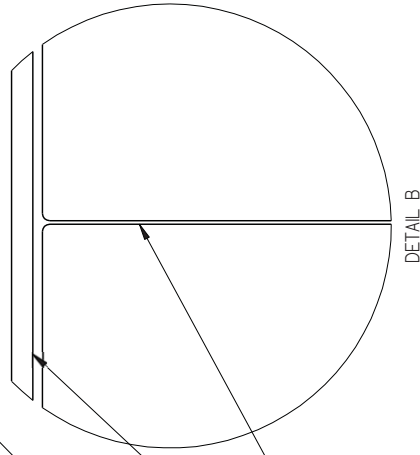
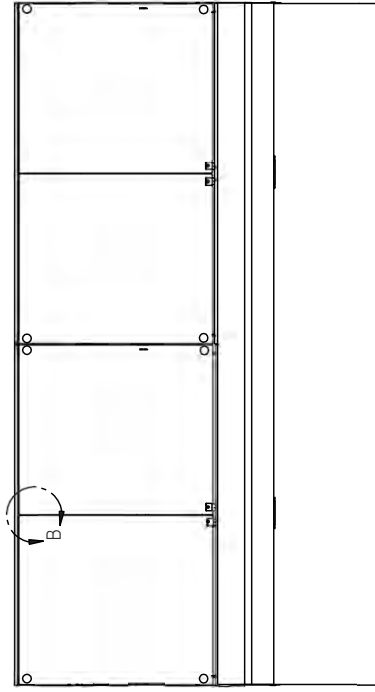
HEIGHT ADJUSTMENT:
Loosen the mounting plate (2 screws) adjust glass to position and tighten screws (+/- 3 mm).
WARNING: loosen both upper and lower hinge before making height adjustments.

HORIZONTAL ADJUSTMENT:
Rotate the front screw to increase or decrease the glass gap (1+/-2 mm)

DEPTH ADJUSTMENT:
Rotate the rear spiral tech cam to increase or decrease the glass gap (+/-3 mm).

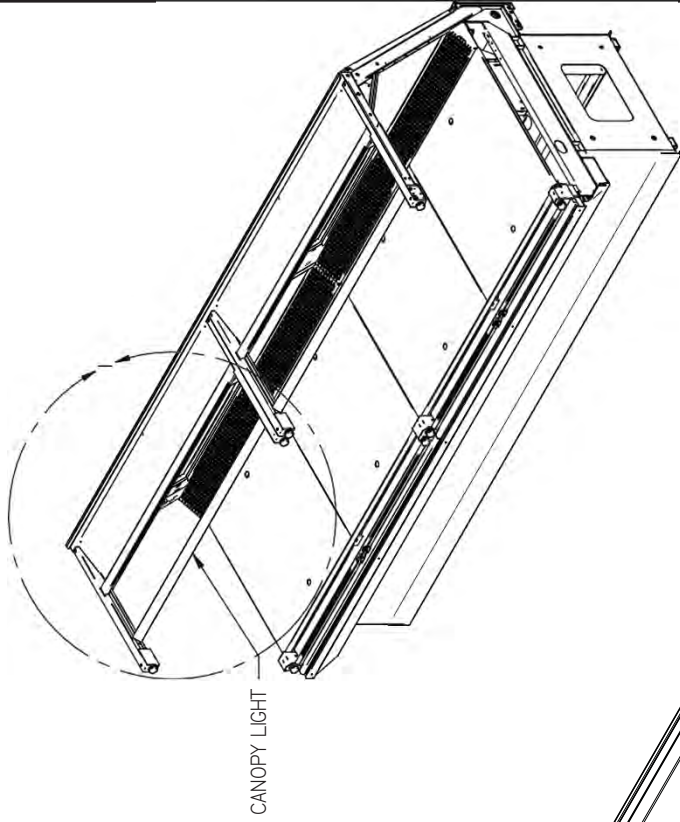
Adjust vertical gap to maximum tolerance of 0.125".

Adjust horizontal gap to maximum tolerance of 0.125".



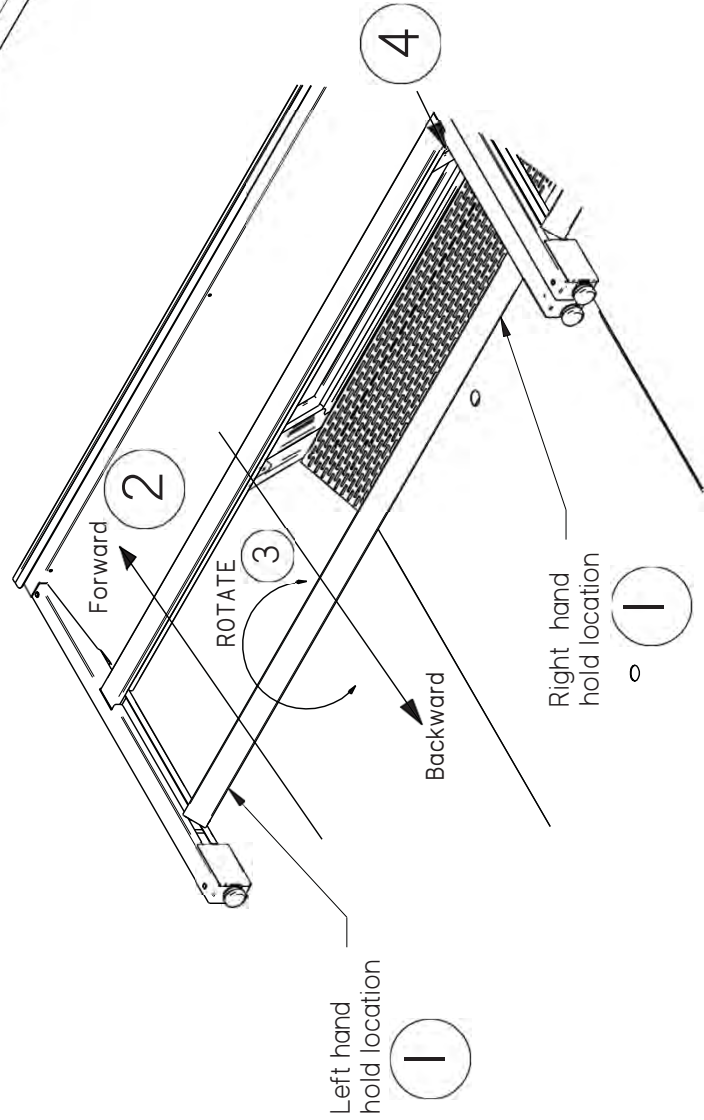
Installation (cont'd)

Q3-DV Case Joining Preparation



Q3 DV FOCAL POINT RE-POSITIONING

- STEP 1: Hold canopy light with both hands. Each hand should be as close to the end as possible (shown below).
- STEP 2: Push canopy light with equal force forward or backward to desired location.
- STEP 3: Rotate light to desired aim for application.
- STEP 4: Tuck any excess wiring through the wiring chase.



DETAIL I

NOTE: FOCAL POINT PATENT PENDING

Installation (cont'd)

Q3 DV JOINING CASE TO CASE - STEP I

Apply gasket to case area as shown
 1/2" (13 mm) gasket are applied in the recess along the top canopy frame and vertical arm.

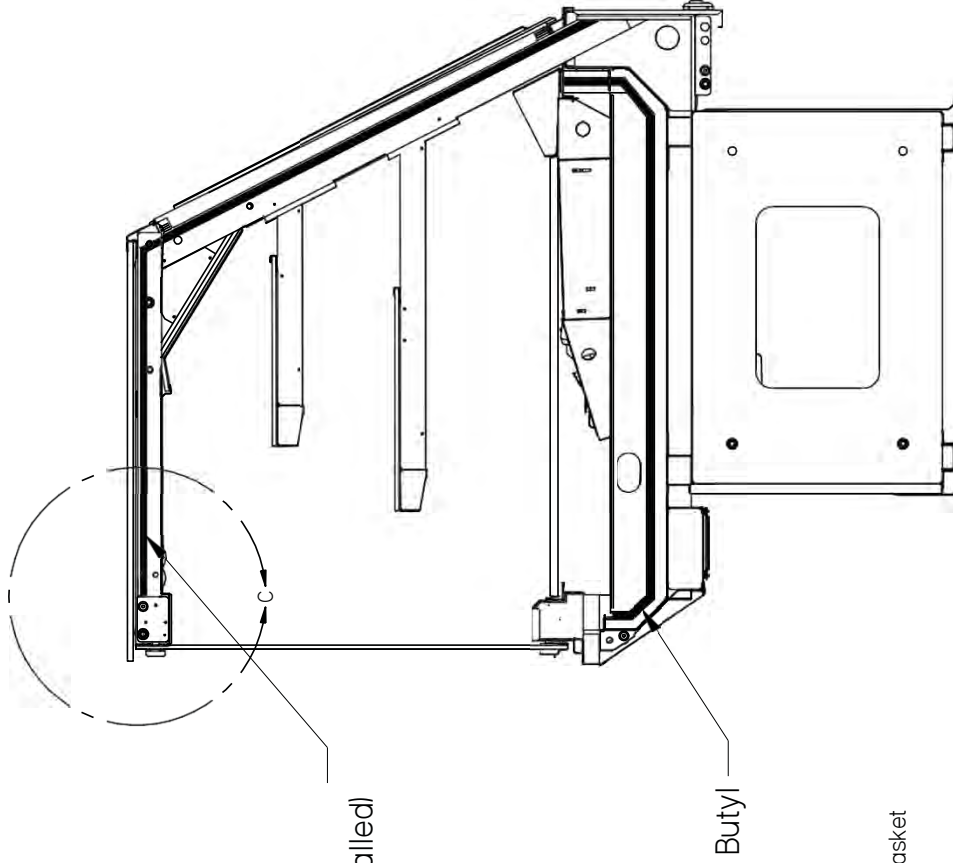
Apply butyl and silicone to case area as shown

Apply silicone application as shown to properly seal area. Ensure that beads of silicone are minimum of 1/2" to maximize adhesive joining preventing air leakage. Be sure to wipe off any excess silicone around cases.

Gaskets
 (factory installed)

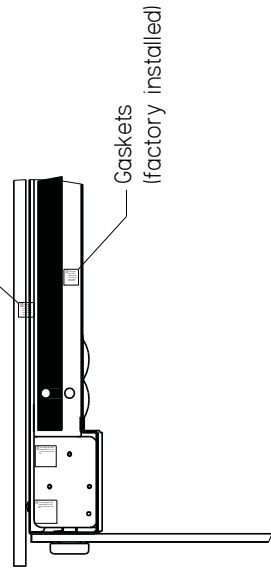
IMPORTANT

- Do not stretch gasket, especially around the corners
- Do not butt gasket, always overlap
- Remove paper backing after gasket has been applied



Butyl

Apply bead of silicone to the exterior face of gasket

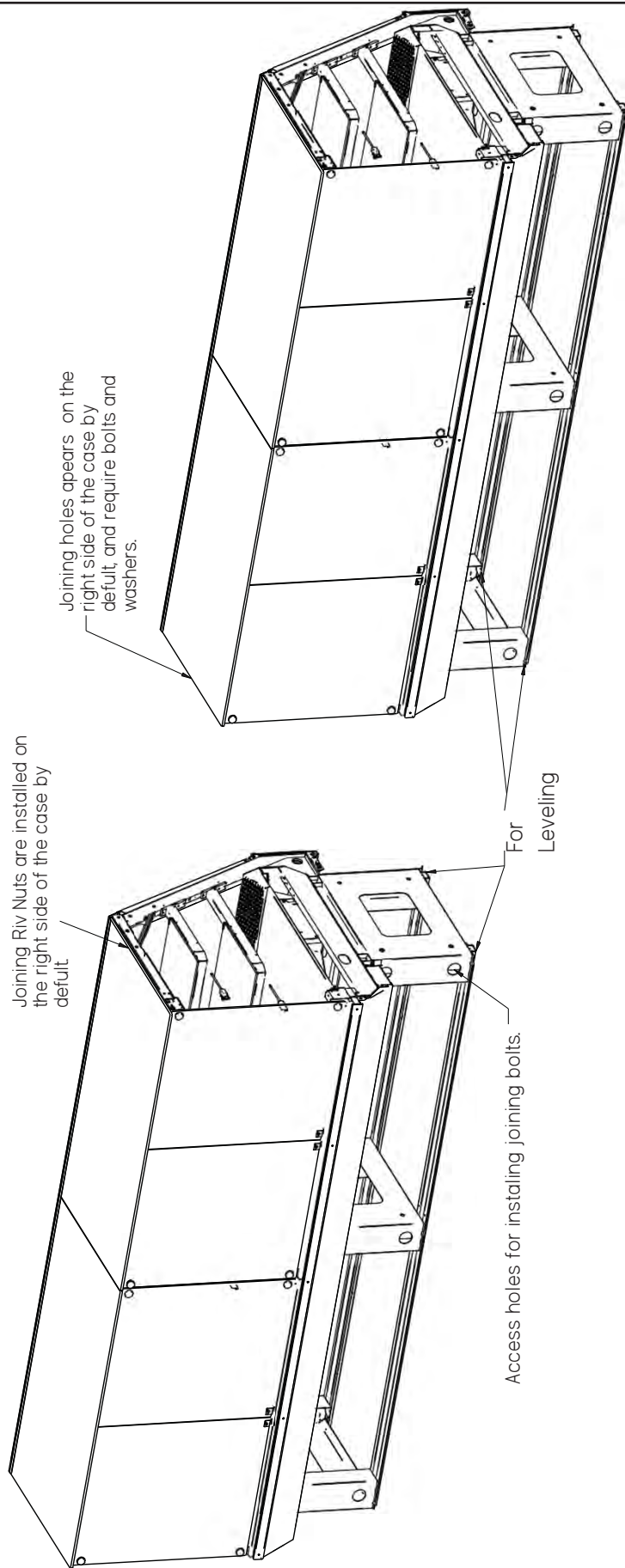


Gaskets
 (factory installed)

DETAIL C

Installation (cont'd)

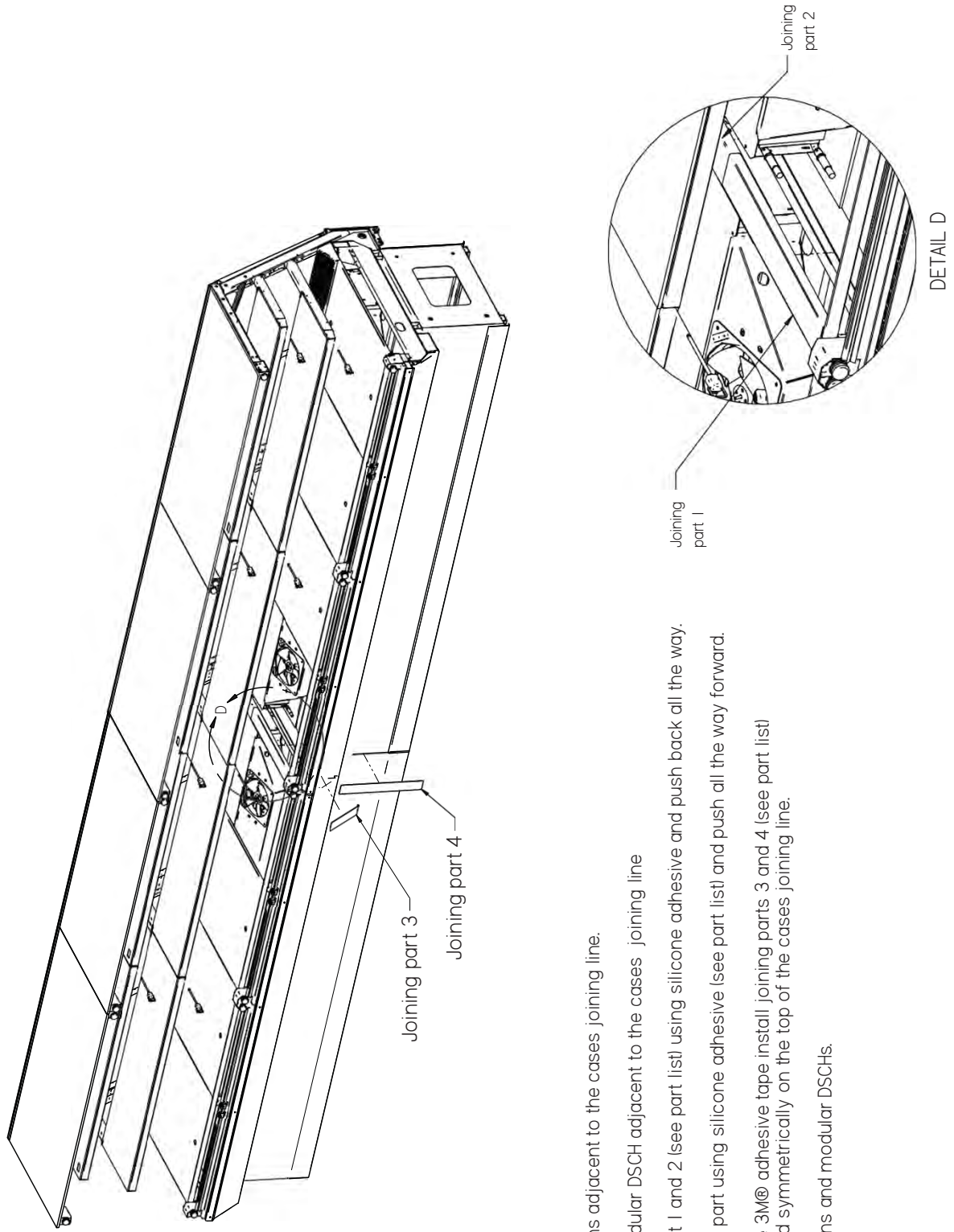
Q3 DV JOINING CASE TO CASE - STEP 2



- 1) Level case using shims at each corner of the case to level out any discrepancies in order to optimize case Performance and proper drainage. (See Q3 DV Canopy Arm Adjustment Procedure)
- 2) Push cases together until the alignment pin intrude to the assigned opposite holes.
- 4) Using 3/8" Hardware, bolt case together using washers for all five locations.

Installation (cont'd)

Q3 DV JOINING CASE TO CASE - STEP 3

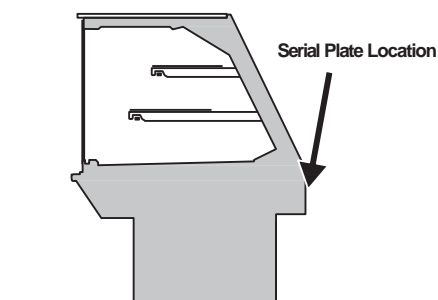


- 1) Remove deck pans adjacent to the cases joining line.
- 2) Remove rear modular DSCH adjacent to the cases joining line
- 3) Install joining part 1 and 2 (see part list) using silicone adhesive and push back all the way.
- 4) Install top joining part using silicone adhesive (see part list) and push all the way forward.
- 5) Using double side 3M® adhesive tape install joining parts 3 and 4 (see part list) and ensure aligned symmetrically on the top of the cases joining line.
- 6) Reinstall deck pans and modular DSCHs.

Refrigeration

Refrigerant

The correct type of refrigerant will be stamped on each merchandiser's serial plate. The case refrigeration piping is pressurized with a nitrogen holding charge, leak tested and factory sealed. Before making refrigeration hookups, depress universal line valve (Shraeder Valve) to ensure that coils have maintained pressure during shipment. In the case pressure was not maintained contact your Hussmann Service Tech for further assistance.



CAUTION

Refrigeration lines are under pressure. Refrigerant must be recovered before attempting to make any connections.

WARNING!

Do NOT apply thread sealer to ABS P-Trap.



Refrigerant piping

The refrigerant line connections are at the right hand end of the case (as viewed from the front) beneath the display pans. The merchandiser will beforehand ensure an earlier cut hole through the pod to exit the merchandiser for the refrigeration lines. After connections have been made, make certain to seal this outlet thoroughly if not sealed at factory already. Seal both the inside and outside. We recommend using an expanding polyurethane foam insulation.

Line Sizing

Refrigerant should be sized as shown on the refrigeration legend that is furnished for the store or according to the ASHRAE guidelines

P-traps

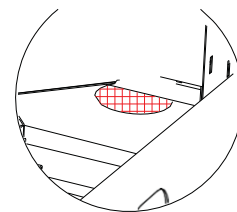
P-traps must be installed at the base of all refrigerated cases. The 1 1/2" P-TRAP and threaded adapter must be installed to prevent air leakage and insect entrance into the fixture.

Oil Traps

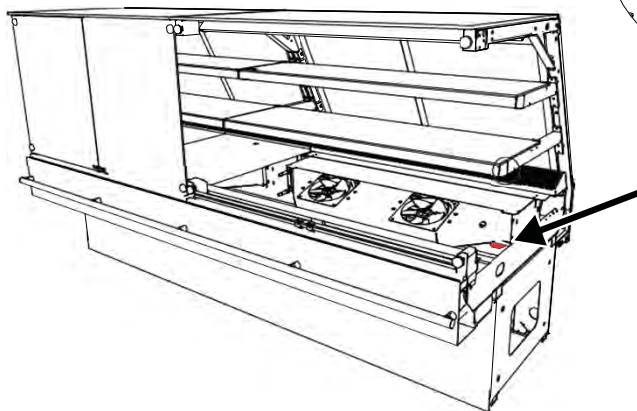
Oil traps must be installed at the base of all suction line vertical risers on refrigerated cases.



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



Piping Location



Refrigeration Spec Sheets

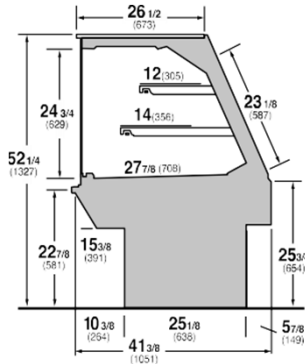


DELI / BAKERY, SERVICE CASE, VERTICAL GLASS
HUSSMANN - Q3-DV/BV (CHINO)

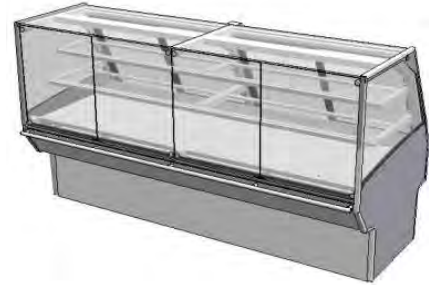
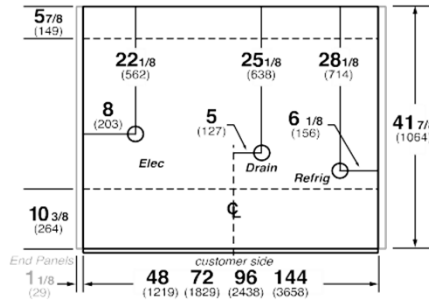
Hussmann refrigerated merchandisers configured for sale for use in the United States meet or surpass the requirements of the DOE 2017 energy efficiency standards.

REVISION DATE 04/27/18

Q3-DV Multi-Deck Service Deli Case



Q3-DV, BV



REFRIGERATION DATA:

CASE LENGTHS/ WEDGES	CASE USAGE	CAPACITY *** (BTU/HR/FT) (TOTAL FOR WEDGES)		TEMPERATURE (°F)			VELOCITY (FT/MIN)
		RATING CONDITION		EVAPORATOR		DISCHARGE AIR ** (°F)	
		NSF 7	AHRI 1200	NSF 7	AHRI 1200	NSF 7	
3',4',5',6',8',10',12'	DELI / BAKERY	390	390	24	24	30-34	225-250
22.5°OS	DELI / BAKERY	1940	1940	24	24	30-34	225-300
45°IS	DELI / BAKERY	2080	2080	24	24	26-30	225-300
45°OS	DELI / BAKERY	900	900	24	24	30-34	225-300

CASE LENGTHS	EST. REFG. CHR.G. (LBS) (R404A)	GLYCOL (20°F INLET, 6° RISE)	
		GPM	PSI
3'	0.3	0.4	0.6
4'	0.4	0.6	1.3
5'	0.5	0.7	2.1
6'	0.6	0.8	3.1
8'	0.8	1.1	1.4
10'	0.9	1.4	2.5
12'	1.3	1.6	3.0
22.5°OS	0.3	0.6	1.1
45°IS	0.2	0.7	1.2
45°OS	0.2	0.3	0.1

**FRONT DISCHARGE AIR MEASURED INSIDE AIR CURTAIN HONEYCOMB

***REFRIGERATION NOTES:

- 1) BTU'S INCLUDE CANOPY LIGHTS. ADD 10 BTUS/SHELF/FT FOR EACH SHELF (LIGHT)
- 2) AHRI 1200 RATING POINT FOR ENERGY CONSUMPTION COMPARISON ONLY
- 3) USE DEW POINT FOR HIGH GLIDE REFRIGERANTS. CARE SHOULD BE TAKEN TO USE THE DEW POINT IN P/T TABLES FOR MEASURING AND ADJUSTING SUPERHEAT. ADJUST EVAPORATOR PRESSURE AS NEEDED TO MAINTAIN THE DISCHARGE AIR TEMPERATURE SHOWN.
- 4) RATING CONDITION IS NSF TYPE I, 75°F/55% RH

REFRIGERATION DATA CONTINUED:

ELEC. THERMOSTAT / AIR SENSOR SETTINGS		DEFROST TYPE	TIME (MIN)	DEFROST FREQUENCY (#/DAY)	TERM. TEMP (°F) COIL ONLY	DRIP TIME	DEFROST WATER (LBS/DAY/FT)
USAGE	CUT IN (°F)						
DELI / BAKERY	32	OFF TIME	40	3	45	N/A	1.6

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

ELECTRICAL DATA:

STANDARD FANS, HEATERS, LED LIGHTS (115 VOLT)

CASE LENGTH	EVAPORATOR FANS				AIRSWEEP FAN			CANOPY LIGHTS LED		OPTIONAL LED SHELF LIGHTS		MAX. LED LOAD (W/ ALL OPTIONS)		ANTI-SWEAT HEATERS (ON FAN CIRCUIT)		CONVENIENCE OUTLETS (OPTIONAL)			
	# OF EVAP FANS	BLADE DIA. (IN.)	BLADE PITCH (°)	AMPS	WATTS	# OF FANS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	# OUTLETS	VOLTS	AMPS
3'	1	6.7	15	0.12	8	1	0.08	9	0.16	19	0.13	15	0.30	34	0.96	110	1	115	15
4'	1	6.7	20	0.12	8	2	0.15	18	0.30	35	0.18	21	0.48	55	0.87	100	1	115	15
5'	1	6.7	25	0.12	8	2	0.15	18	0.35	40	0.23	26	0.57	66	1.09	125	1	115	15
6'	4	6.7	15	0.48	32	2	0.15	18	0.42	49	0.26	30	0.69	79	1.30	150	1	115	15
8'	4	6.7	20	0.48	32	2	0.15	18	0.60	69	0.36	41	0.96	110	1.74	200	1	115	15
10'	4	6.7	25	0.48	32	3	0.23	26	0.70	80	0.45	52	1.15	132	2.17	250	1	115	15
12'	6	6.7	20	0.72	48	3	0.23	26	0.90	104	0.54	62	1.44	166	2.61	300	2	115	30
22.5°OS	1	6.7	15	0.12	8	1	0.08	9	0.17	19	0.13	15	0.30	35	0.87	100	N/A	N/A	N/A
45°IS	2	6.7	15	0.24	16	1	0.08	9	0.16	18	0.13	15	0.29	33	0.65	75	N/A	N/A	N/A
45°OS	1	6.7	20	0.12	8	1	0.08	9	0.09	11	0.04	4	0.13	15	0.87	100	N/A	N/A	N/A

OPTIONAL HIGH OUTPUT LED LIGHTS (115 VOLT)

CASE LENGTH	CANOPY LIGHTS H.O. LED		OPTIONAL SHELF		MAX. H.O. LED LOAD	
	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS
3'	N/A	N/A	N/A	N/A	N/A	N/A
4'	0.39	45	0.26	30	0.66	75
5'	N/A	N/A	N/A	N/A	N/A	N/A
6'	N/A	N/A	N/A	N/A	N/A	N/A
8'	0.78	90	0.53	61	1.31	151
10'	N/A	N/A	N/A	N/A	N/A	N/A
12'	1.17	135	0.79	91	1.97	226
22.5°OS	0.21	24	0.23	26	0.43	50
45°IS	N/A	N/A	N/A	N/A	N/A	N/A
45°OS	N/A	N/A	N/A	N/A	N/A	N/A

Electrical

Merchandiser Electrical Data

Technical data sheets are shipped with this manual. The data sheets provide merchandiser electrical data. Refer to the technical data sheets and merchandiser 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.

ALWAYS CHECK THE SERIAL PLATE FOR COMPONENT AMPERES

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 merchandiser's wireway cover.



WARNING

--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 COULER POUR FILS DE BOITIER NORMALISE		
COLOR DESCRIPTION	DESCRIPCION	DESCRIPTION
■ GROUND	TIERRA MASA	MASSE
■ ANTI-SWEAT	ANTICONDENSACION	ANTI-SUINTEMENT
■ 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

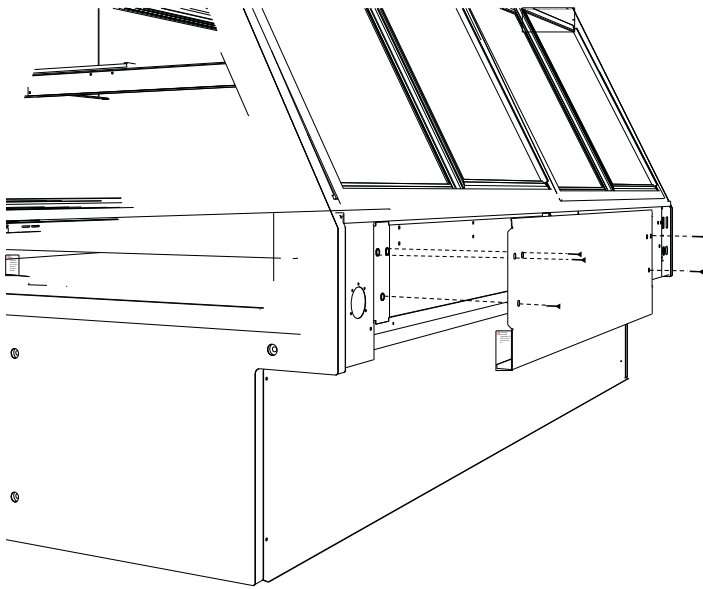
USE COPPER CONDUCTORS ONLY
UTILISEZ LES CONDUCTEURS DE CUIVRE SEULEMENT
UTILICE LOS CONDUCTORES DE COBRE SOLAMENTE
430-01-0338 R101003

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.

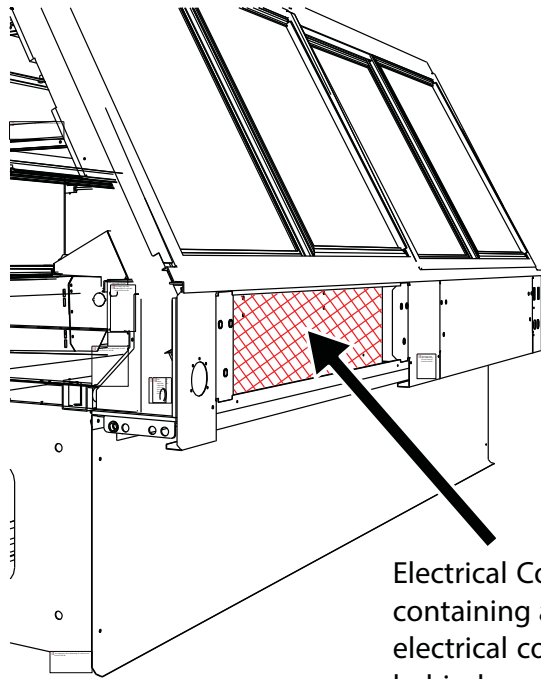
Remove Rear Raceway from rear of case.



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



Electrical Conduit containing all necessary electrical components behind rear raceway cover

Wiring Diagram Index

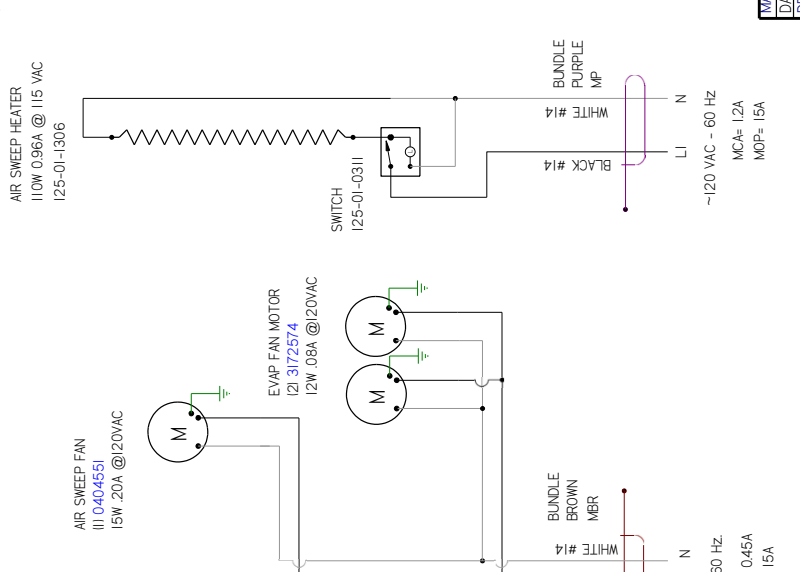
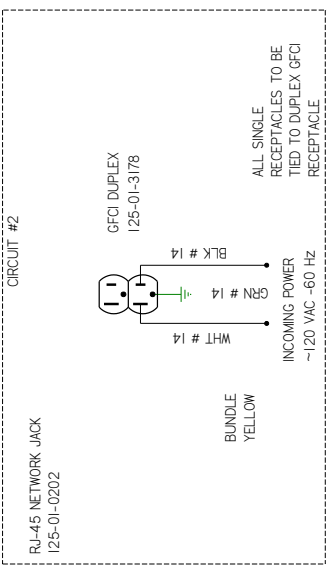
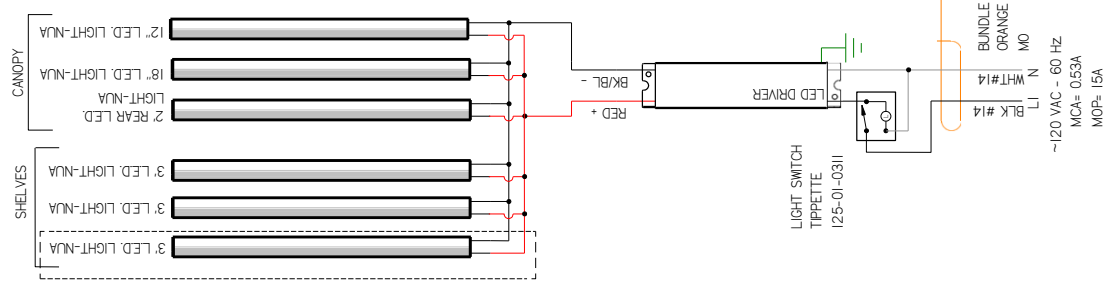
Q3-DV-3-R	3'	3010910
Q3-DV-4-R	4'	3002078
Q3-DV-5-R	5'	3044064
Q3-DV-6-R	6'	3154002
Q3-DV-8-R	8'	3154003
Q3-DV-8-R DIGITAL T-STAT 120V	8'	3154004
Q3-DV-8-R FISH	8'	3154005
Q3-DV-10-R	10'	3154006
Q3-DV-12-R	12'	3154007
Q3-DV-12-R DIGITAL T-STAT 120V	12'	3154008
Q3-DV-22.5OS-R		3154009
Q3-DV-12-R W/50 WATT HEATERS	12'	3000160
Q3-DV-22.5IS-R		3020724
Q3-DV-45I-R		3019257
Q3-DV-45O-R		3019256
Q3-DV-45IR W/OPTIONAL 3RD SHELF		3010912

CIRCUIT #1
LOADING

120V			
110			

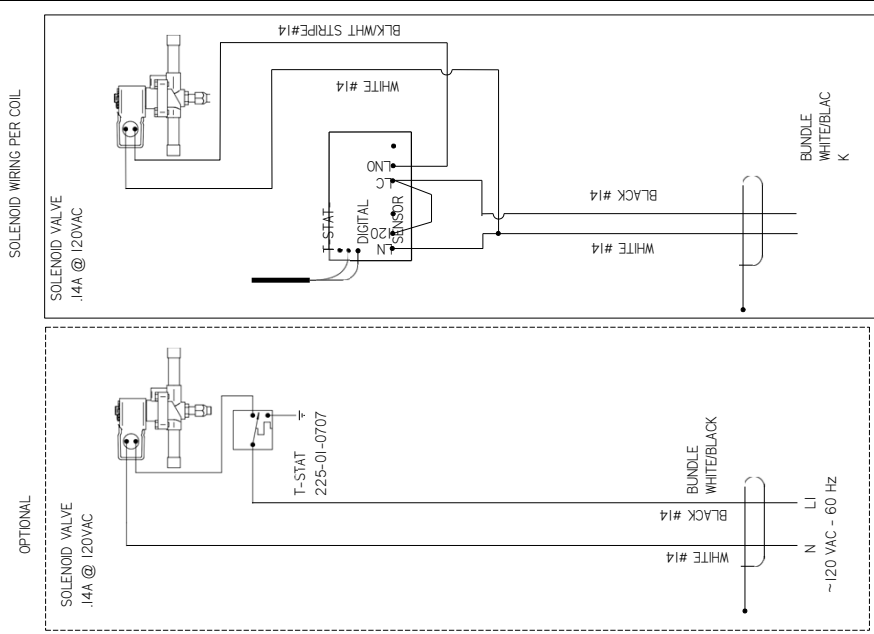
OPTIONAL 3RD SHELF

LIGHT CIRCUIT
027A 286W @ 120V



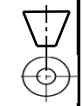
REVISION HISTORY

REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHK BY	APPR BY
A	ECN-CAP-0002752	2016/07/08	RELEASED TO PRODUCTION	CS	CS	CS
B	ECN-COD-0015686	2022/01/20	NEW LIGHTS	CS	CS	CS
C	ECN-COD-0018446	2023/06/03	CHANGED DMP FANS & LIGHTS	CS	CS	CS



HUSSMANN
DIAGRAM-03-DV-3-R

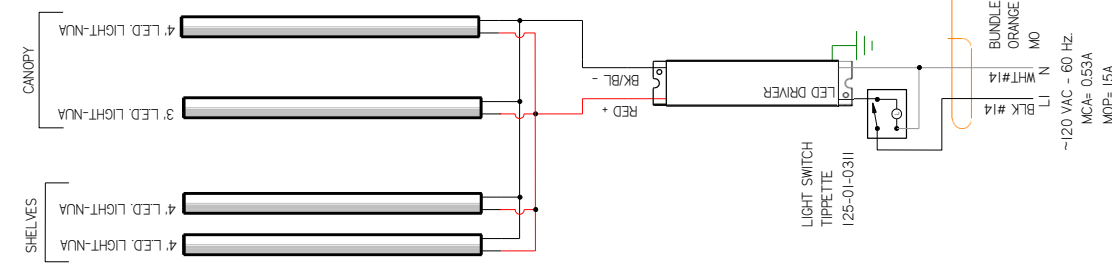
MATERIAL - N/A
DATE DRAWN - 7-8-16
DRAWN BY - CRAIG BOOREY
REVIEWED BY - CRAIG BOOREY
APPROVED BY - CRAIG BOOREY
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TO LEANING PARTS
DECIMALS .XX +03 .XXX
ANGLES ± 2°
PROJECTION
E
C



NOTES:
CASE MUST BE GROUNDED
WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

CIRCUIT #1	LOADING
120V	
1-1	
2-2	

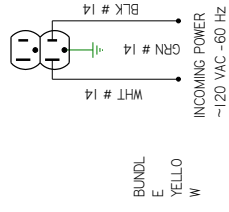
LIGHT CIRCUIT
0.32A 34.3W @ 120V



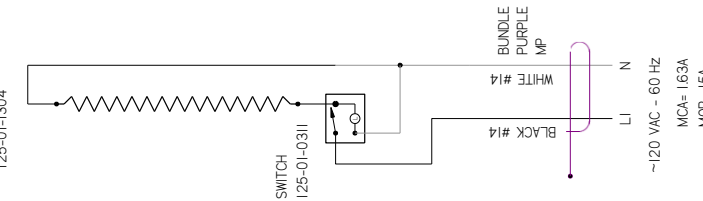
MCA= 053A
MOP= 15A

CIRCUIT #2

RL-45 NETWORK
JACK 125-01-0202

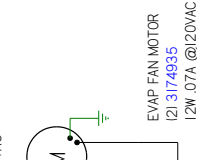


AIR SWEEP HEATER
150W 1.30A @ 115 VAC
125-01-1304



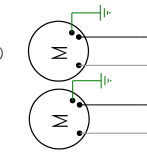
MCA= 163A
MOP= 15A

AIR SWEEP FAN
III 040455I
15W .20A @120VAC



MCA= 043A
MOP= 15A

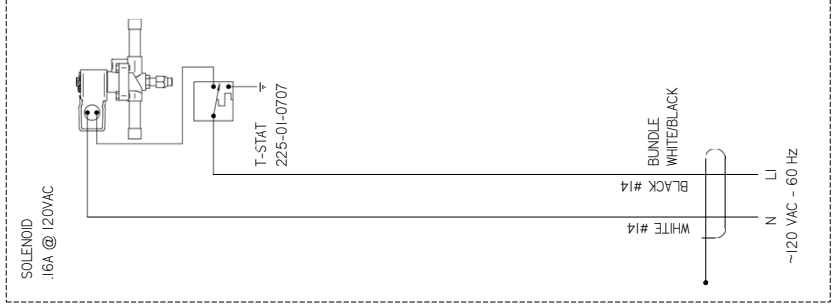
EVAP FAN MOTOR
I21 3174835
12W 07A @20VAC



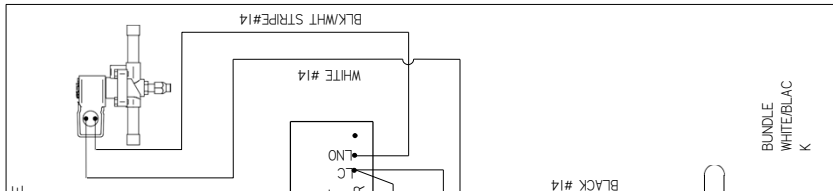
MCA= 163A
MOP= 15A

REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHK BY	APP BY
A	ECN-CAP-0000240	2016/02/16	RELEASED TO PRODUCTION	CS	CS	CS
B	ECN-CAP-0000777	2016/05/13	CHANGED AIR SWEEP HEATER	CS	CS	CS
C	ECN-COD-0015688	2022/09/20	NEW LIGHTS	CS	CS	CS
D	ECN-COD-0018446	2023/09/08	CHANGED EVAP FANS & LIGHTS	CS	CS	CS

OPTIONAL



SOLENOID VALVE
.16A @ 120VAC



SOLENOID WIRING PER COIL

MATERIAL - N/A

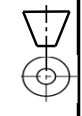
DATE DRAWN - 3-18-16
DRAWN BY - CRAIG BOOREY
REVIEWED BY - CRAIG BOOREY
APPROVED BY - CRAIG BOOREY
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
DIMENSIONS .XX +.03 .XXX
+0.0
E
PROJECTION

HUSSMANN
DIAGRAM-03-DV-4-R

ECN-CAP-0000240
REF - NEW 120 VAC - 60 HZ

DIAGRAM SHEET OF 1

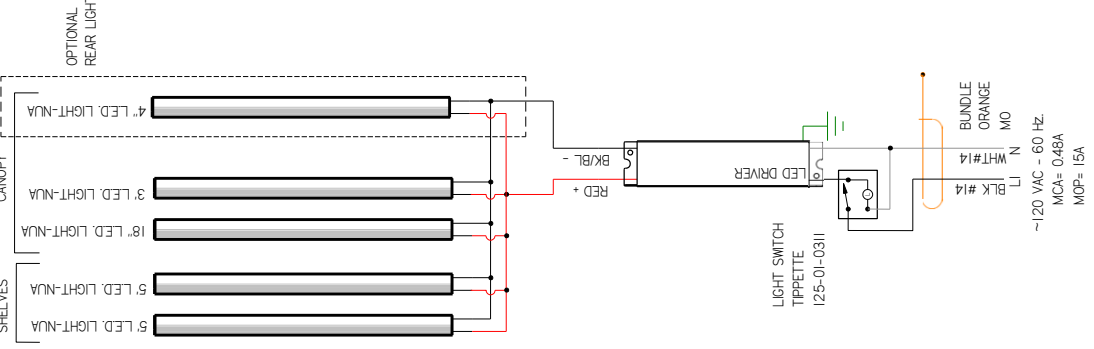
3002078 | D



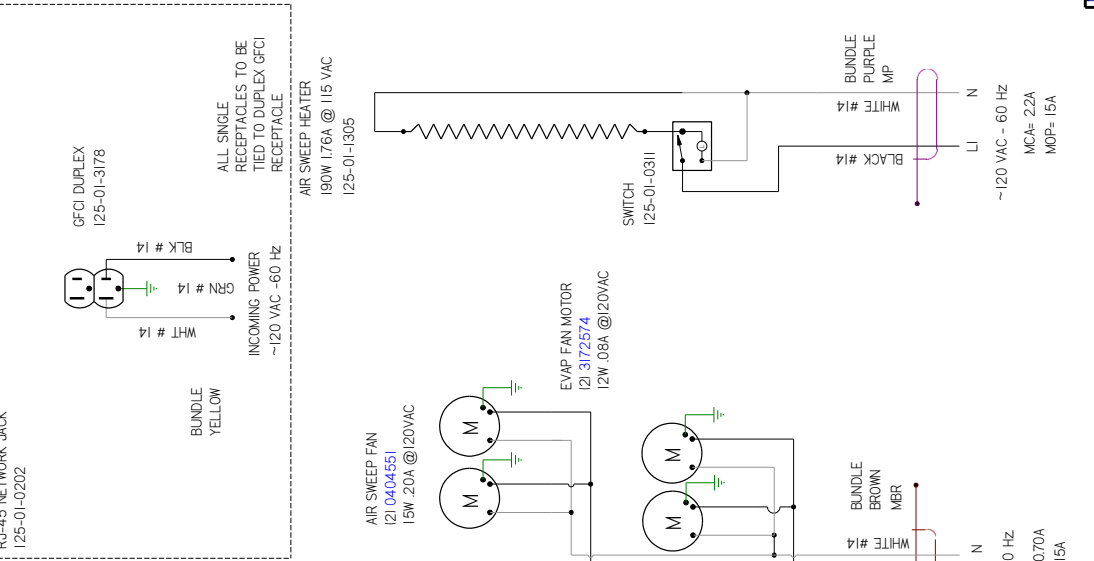
NOTES:
CASE MUST BE GROUNDED

CIRCUIT #1 LOADING	120V	208V	240V

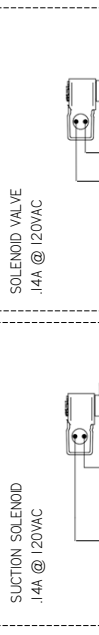
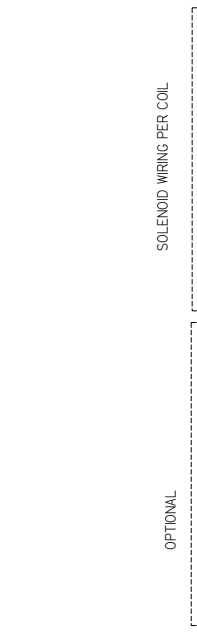
LIGHT CIRCUIT
39A 41.8W @ 120V



CIRCUIT #2



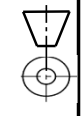
REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHK BY	APPR BY
A	ECN-CAP-0009102	20170908	RELEASED TO PRODUCTION	CB	CB	CB
B	ECN-CO-0018265	20220120	NEW LIGHTS	CB	CB	CB
C	ECN-CO-0018446	20230908	CHANGED EVAP FANS & LIGHTS	CB	CB	CB



NOTES:
CASE MUST BE GROUNDED
WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

HUSSMANN
DIAGRAM-Q3-DV-5R

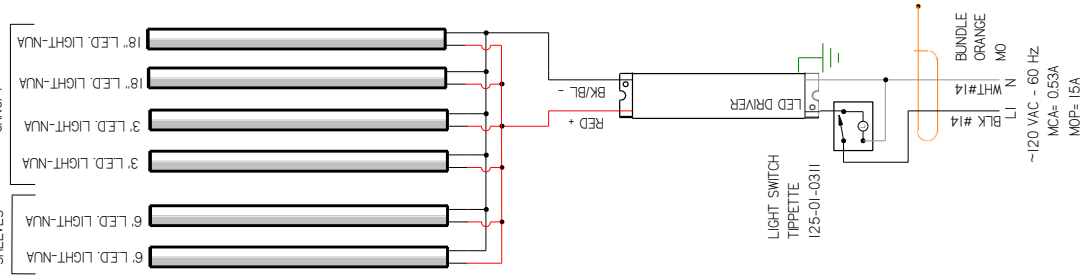
MATERIAL - N/A
DATE DRAWN - 9-8-17
DRAWN BY - CRAIG BOOREY
REVIEWED BY - CRAIG BOOREY
APPROVED BY - CRAIG BOOREY
SHEET NO. 1
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
DIMENSIONS .XX +.03 .XXX
+0.0
ANGLES ± 2°
PROJECTION
E
3044064 | D



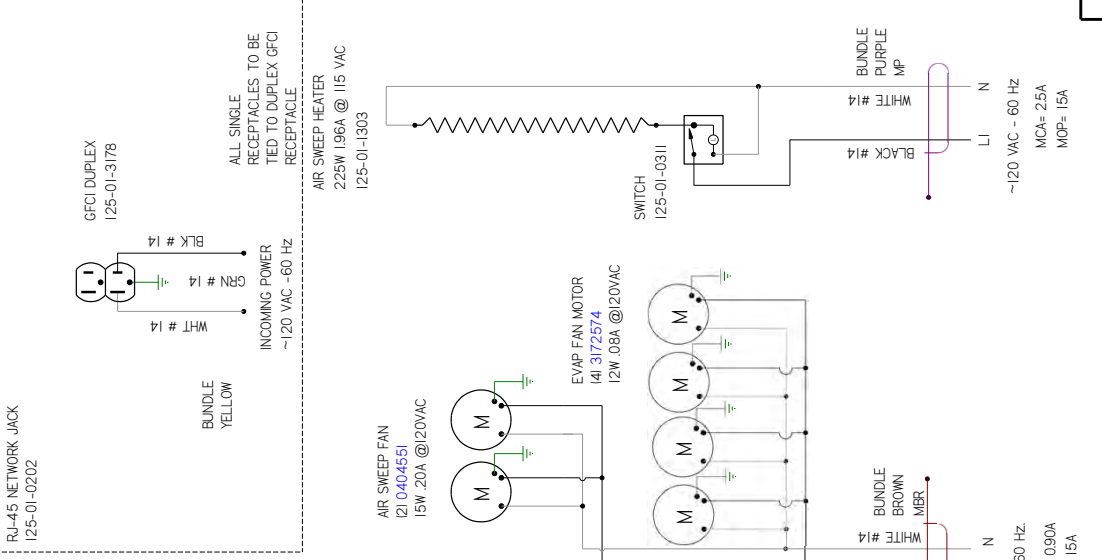
CIRCUIT #1
LOADING

120V			
10A			
32			

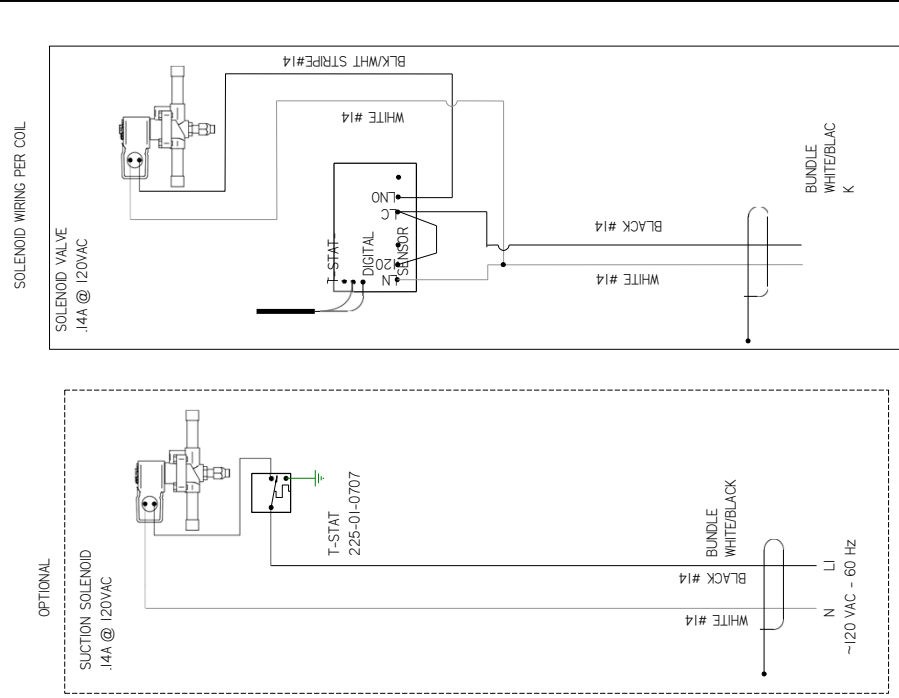
LIGHT CIRCUIT
42A 455W @ 120V



CIRCUIT #2



REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
B	ECN-C00-0015270	1-25-22	NEW LIGHTS	AL	CB	CB
C	ECN-C00-0016446	9-13-23	CHANGED EVAP FANS & LIGHTS	CB	CB	CB



WIRE MARKER COLORS/ABBREVIATIONS:

- MAROON =
- BLACK = MBK
- BLUE = MBL
- BROWN = MBR
- DARK BLUE =
- DBGREEN = MG
- LIGHT BLUE =
- MMR ORANGE =
- MO PINK = MPI
- PURPLE = MP
- RED = MR
- YELLOW = MYL

UL COLOR CODES / ABBREVIATIONS:

- RED = RD
- BLACK = BK
- BLUE = BL
- YELLOW =
- YL GRAY =
- CY
- WHITE = WT
- GREEN = GN
- BROWN = BN
- ORANGE =
- OR VIOLET =
- VT

- NOTES:**
1. PRINTED DOCUMENT REQUIRED SETTING: ALL COLORS BLACK & WHITE
 2. CASE & ANY REMOVABLE PANEL WITH ELECTRICAL PARTS MUST BE GROUNDED.
 3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

HUSSMANN

FACTORY 14GA WIRE N L

FACTORY 10GA WIRE VAC - DIAGRAM-Q3-DV-6-

FIELD WIRE - - - - -

DO NOT SCALE DRAWING

SHEET 1 OF 1

3154002

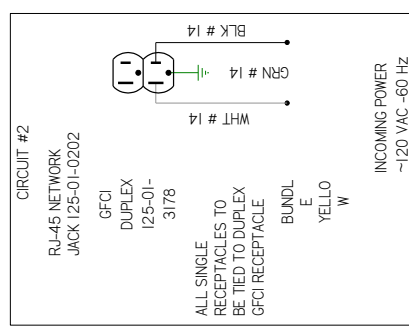
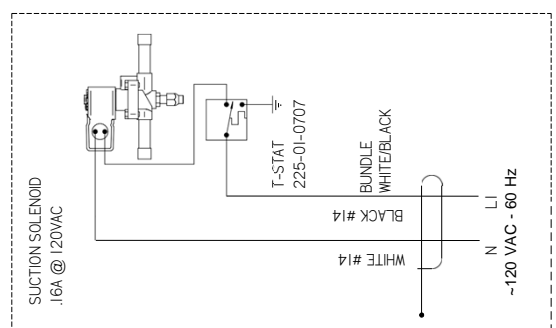
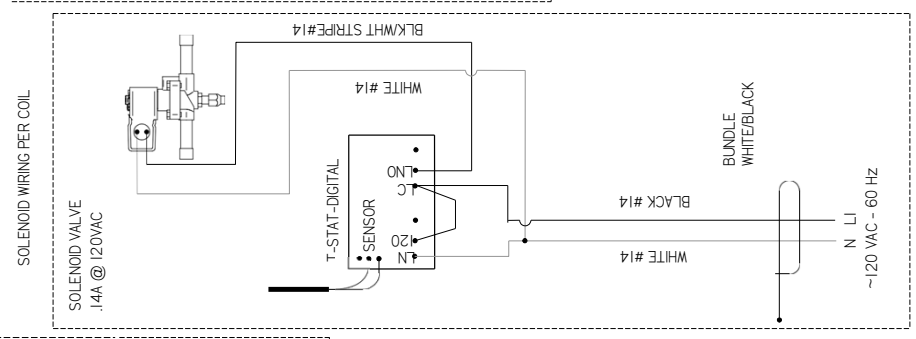
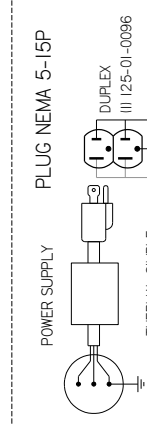
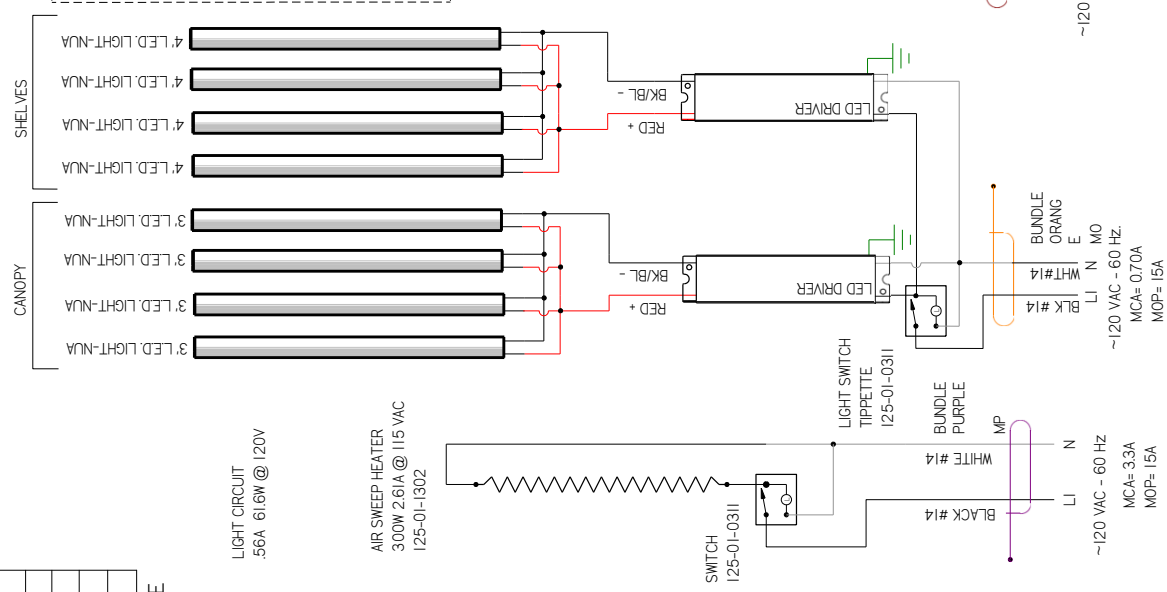
REV C

CIRCUIT #1	
	LOADING
LI	120
V	4.0

NOTE: CASE MUST BE GROUNDED

LIGHT CIRCUIT
.56A 61.6W @ 120V

AIR SWEEP HEATER
300W 2.61A @ 115 VAC
125-01-1302



HUSSMANN
DIAGRAM-Q3-DV-8-
R I-PHASE
 DO NOT SCALE DRAWING
 SHEET 1 OF 1

UL COLOR CODES / ABBREVIATIONS

RED = RD	WHITE = WT
BLACK = BK	GREEN = GN
BLUE = BL	BROWN = BN
YELLOW = YL	ORANGE = OR
GRAY = GR	OR VIOLET = OV

WIRE MARKER COLORS/ABBREVIATIONS

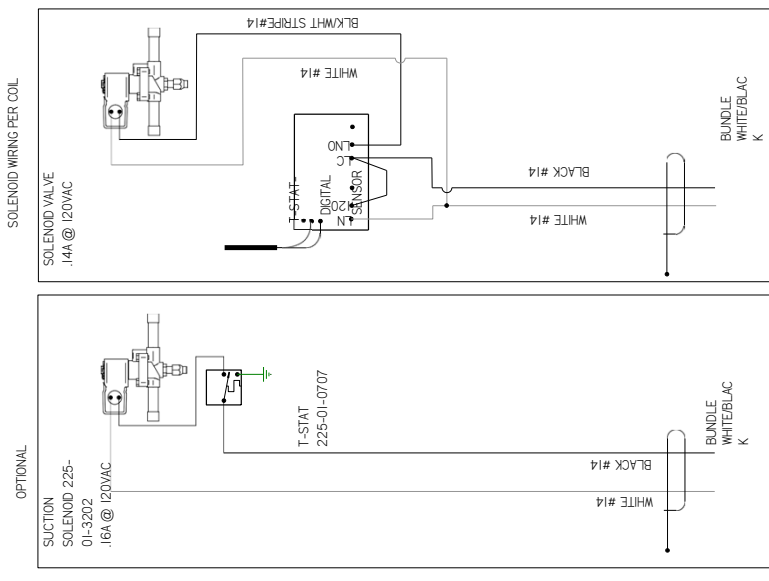
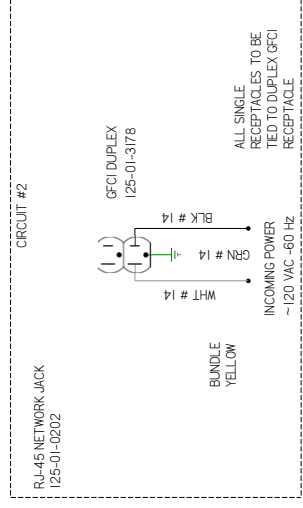
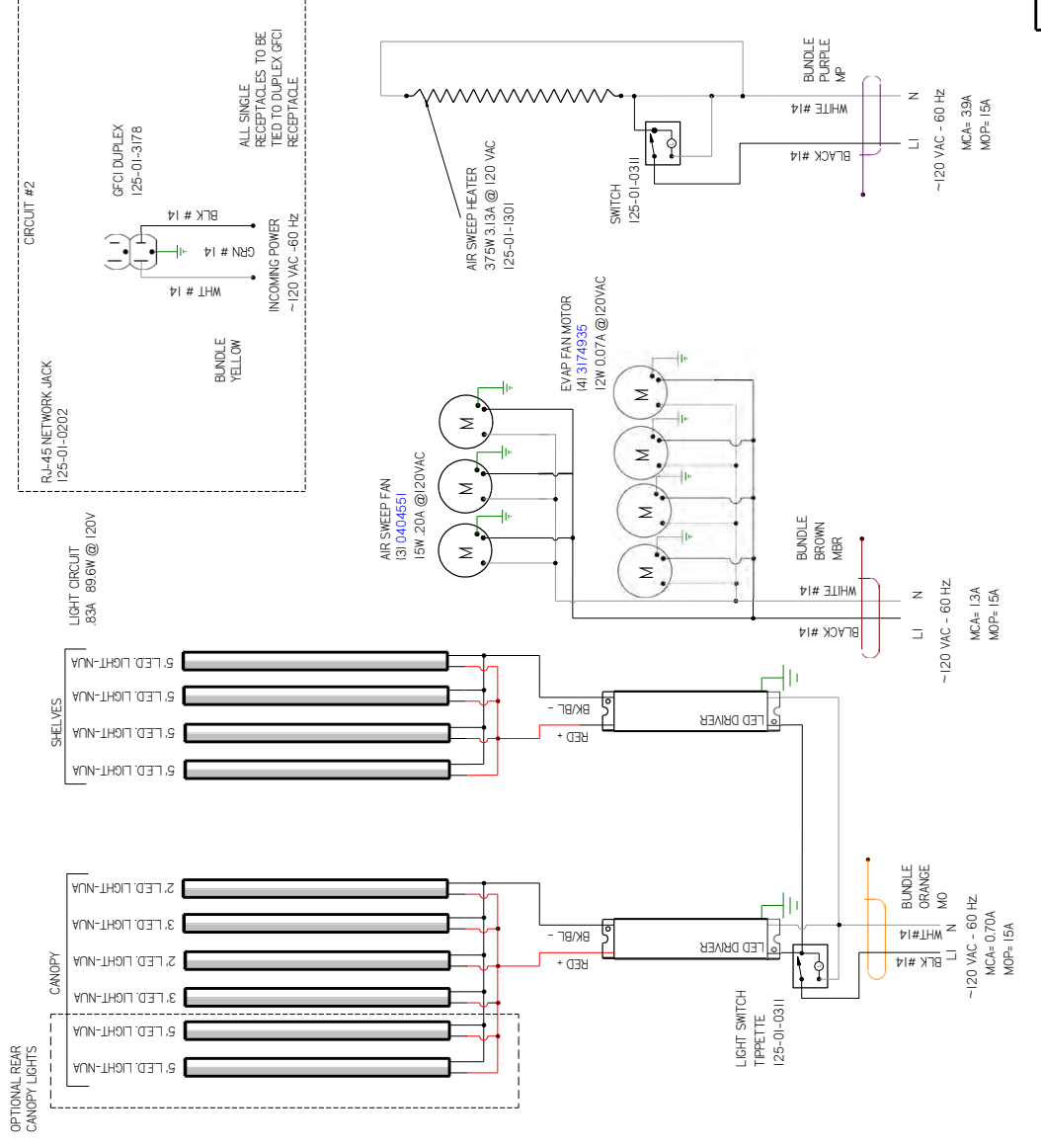
MAROON =	MAR
BLACK = MBK	MBK
BLUE = MBL	MBL
BROWN = MBR	MBR
DARK BLUE =	MBD
DBG GREEN = MG	MG
LIGHT BLUE =	MYL

- NOTES:
1. PRINTED DOCUMENT REQUIRED SETTING: ALL COLORS BLACK & WHITE.
 2. CASE & ANY REMOVABLE PANEL WITH ELECTRICAL PARTS MUST BE GROUNDED.
 3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

3154003
 D

REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
B	ECN-C00-0015270	1-26-22	NEW LIGHTS	AL	CB	CB
C	ECN-C00-0016446	9-13-23	CHANGED EVAP FANS & LIGHTS	CB	CB	CB

CIRCUIT #1	LOADING
120V	
LI	
SI	



WIRE MARKER COLORS/ABBREVIATIONS

BLACK = MBK	MAROON =
BLUE = MBL	MMR ORANGE =
BROWN = MBR	MO PINK = MPI
DARK BLUE =	MDB GREEN = MG
YELLOW = MYP	RED = MR
ORANGE =	YELLOW = MYL
RED = RD	LIGHT BLUE =
BLACK = BK	
BLUE = BL	
YELLOW =	
ORANGE =	
OR VIOLET =	
VT	

UL COLOR-CODES / ABBREVIATIONS

WHITE = WT
GREEN = GN
BROWN = BN
ORANGE =
OR VIOLET =
VT
YL GRAY =
GY

NOTES:

1. PRINTED DOCUMENT REQUIRED SETTING: ALL COLORS BLACK & WHITE
2. CASE & ANY REMOVABLE PANEL WITH ELECTRICAL PARTS MUST BE GROUNDED.
3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

HUSSMANN

FACTORY 145A-MRE/VAC - 60 HZ

DIAGRAM-Q3-DV-10-R 1-PHASE

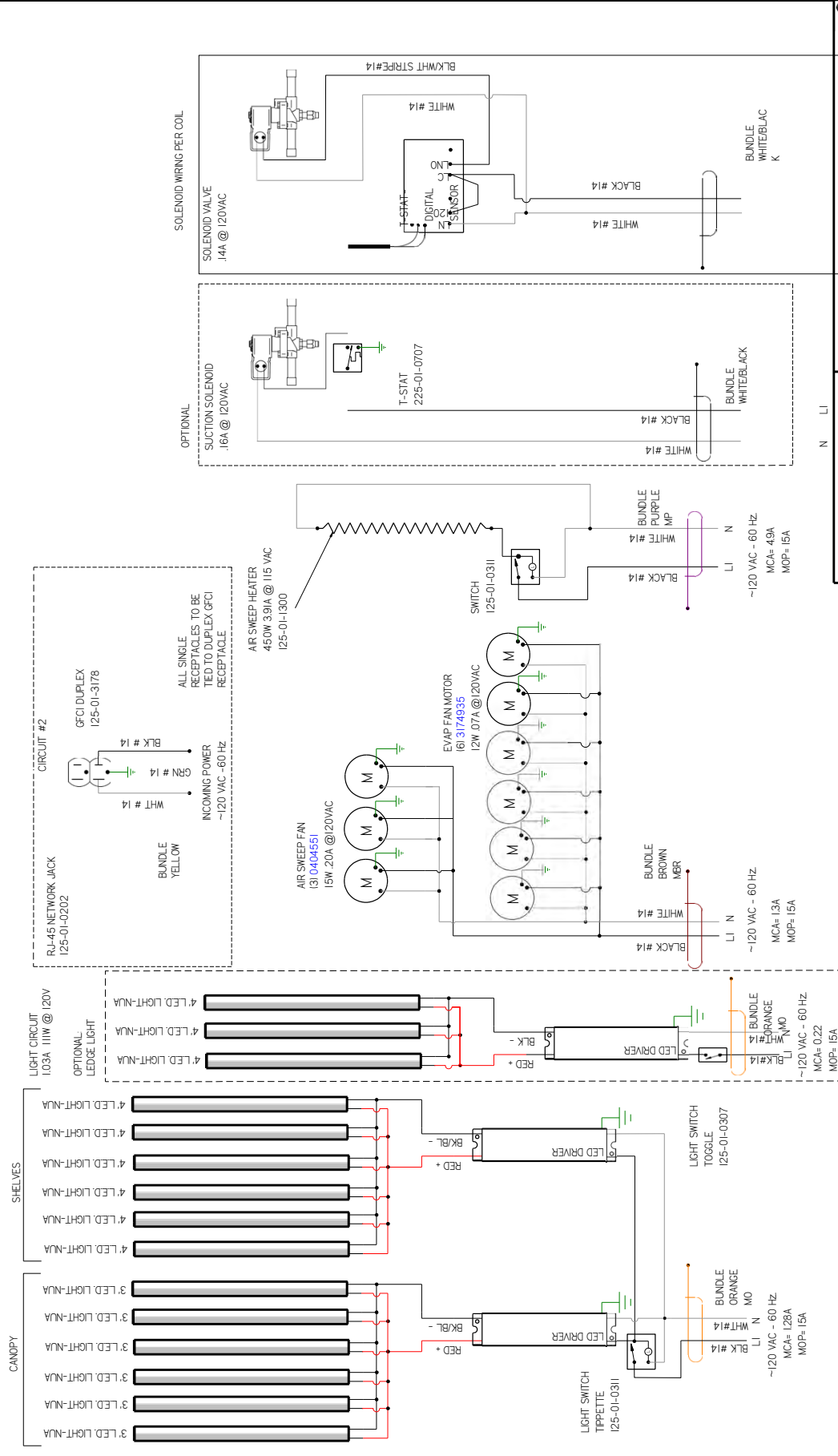
DO NOT SCALE DRAWING

SHEET 1 OF 1

3154006

CIRCUIT	
LOADING	
LI	60
V	

REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
C	ECN-C00-0016837	10-17-22	REVISED IN TEAM CENTER	CB	CB	CB
D	ECN-C00-0016446	9-13-23	REVISED EVAP FANS & LIGHTS	CB	CB	CB



HUSSMANN
 FACTORY 14GA WIRE N LI
 FACTORY 10GA WIRE
 FIELD WIRE
 DO NOT SCALE DRAWING
 SHEET 1 OF 1

UL COLOR CODES / ABBREVIATIONS

RED = RD	WHITE = WT
BLACK = BK	GREEN = GN
BLUE = BL	BROWN = BN
YELLOW = YL	ORANGE = OR
GRAY = GR	OR VIOLET = VT

WIRE MARKER COLORS/ABBREVIATIONS

MAROON = MMR	ORANGE = ON
BLACK = MBK	GREEN = MGN
BLUE = MBL	BROWN = MBN
BROWN = MBR	PURPLE = MPP
DARK BLUE = MDB	YELLOW = MYL
MDB GREEN = M MG	RED = MRR
LIGHT BLUE = MBL	YELLOW = MYL

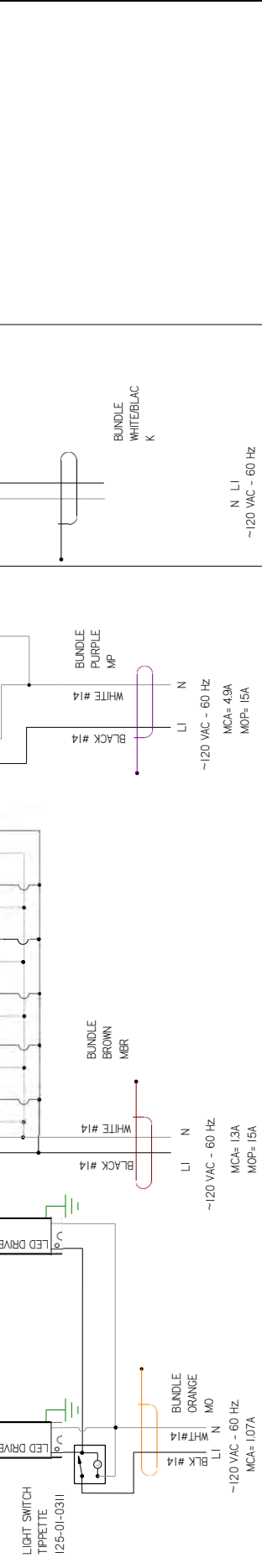
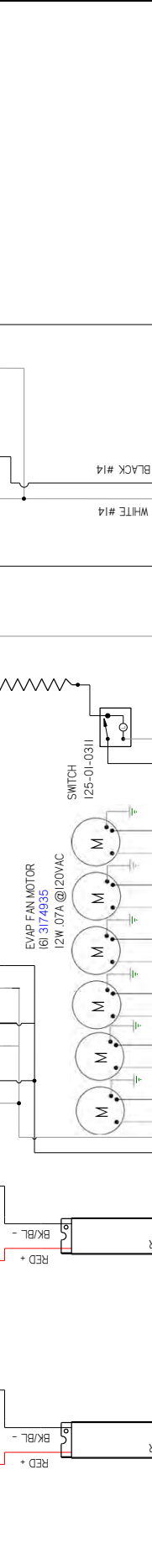
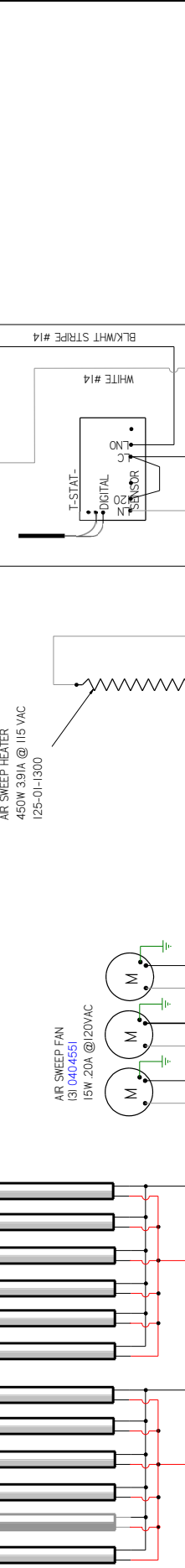
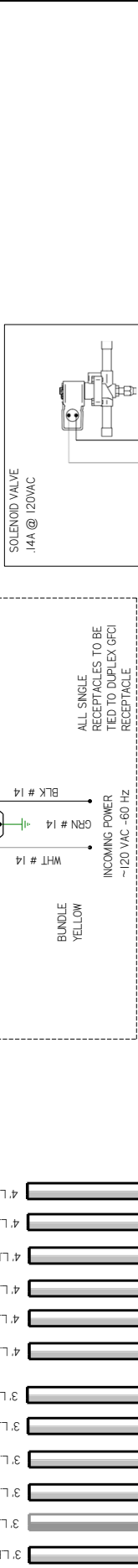
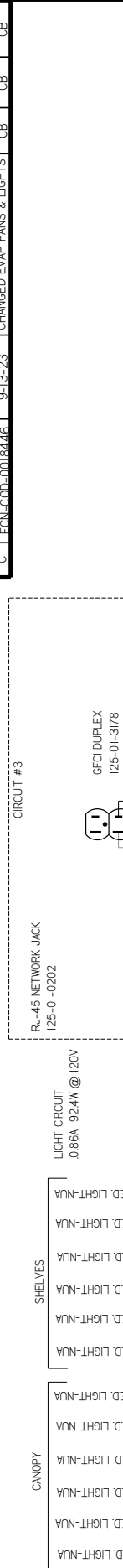
DIAGRAM-Q3-DV-12-R 1-PHASE

- NOTES:**
1. PRINTED DOCUMENT REQUIRED SETTING: ALL COLORS BLACK & WHITE
 2. CASE & ANY REMOVABLE PANEL WITH ELECTRICAL PARTS MUST BE GROUNDED.
 3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

CIRCUIT #1
LOADING

120V	
100	

REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
B	ECN-COD-0015270	1-26-22	NEW LIGHTS		CB	CB
C	ECN-COD-0018446	9-13-23	CHANGED EVAP FANS & LIGHTS		CB	CB



UL COLOR CODES / ABBREVIATIONS

RED = RD	WHITE = WT
BLACK = BK	GREEN = GN
BLUE = BL	BROWN = BN
YELLOW = YL	ORANGE = OR
YL GRAY = YL GRAY	OR VIOLET = OR VIOLET
GY	VT

WIRE MARKER COLORS/ABBREVIATIONS

BLACK = MBK	MAROON = MAROON
BLUE = MBL	MMR ORANGE = MMR ORANGE
BROWN = MBR	MO PINK = MPI
DARK BLUE = DBL	PURPLE = MP
MDG GREEN = MCG	RED = MR
LIGHT BLUE = LBL	YELLOW = MYL

HUSSMANN
DIAGRAM-Q3-DV-
I2- R W/DIGITAL T-
STAT I-PHASE
3154008

FACTORY 14GA WIRE
_FACTORY 10GA WIRE
_FIELD WIRE
_DO NOT SCALE DRAWING

SHEET 1 OF 1

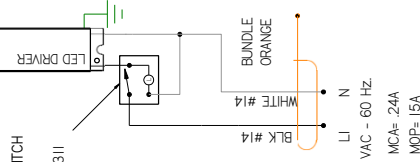
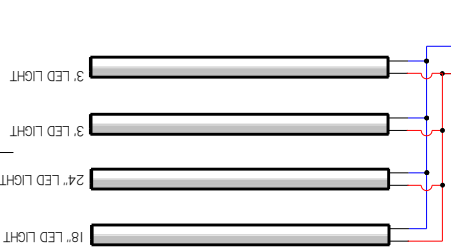
NOTES:
1. PRINTED DOCUMENT REQUIRED SETTING: ALL COLORS BLACK & WHITE
2. CASE & ANY REMOVABLE PANEL WITH ELECTRICAL PARTS MUST BE GROUNDED.
3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

CIRCUIT #1
LOADING

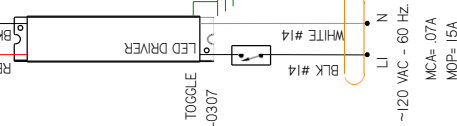
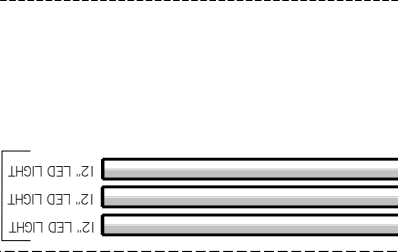
120V			
L1			
L2			

LIGHT CIRCUIT= .19A 20.4W

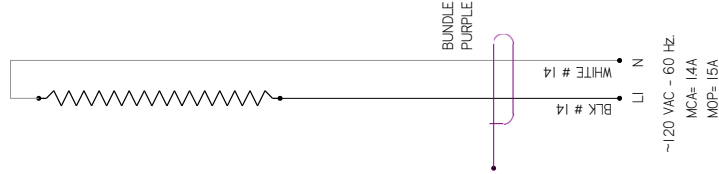
CANOPY



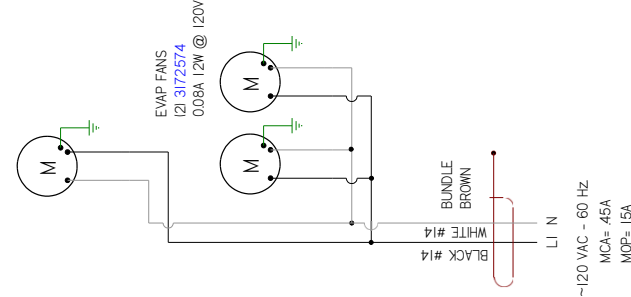
OPTIONAL:
LEDGE LIGHTS



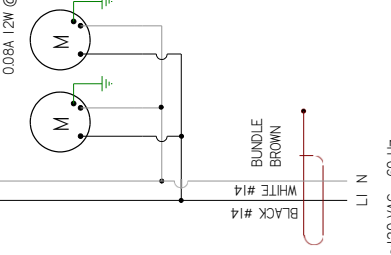
AIRSWEEP HEATER
115V 120W 11A
125-01-3033



AIR SWEEP FAN 15W
20A @ 120V
0404551



EVAP FANS
121 3172574
008A 12W @ 120V



SUCTION SOLENOID



REVISION HISTORY			
REV	ECN	DATE	REVISION DESCRIPTION
B	ECN-COD-0018446	9-14-23	CHANGED EVAP FANS
C	ECN-COD-0018716	11-1-23	NEW FAN MOTORS

REVISION HISTORY			
REV BY	CHKD BY	APPR BY	
CB	CB	CB	CB
CB	CB	CB	CB

HUSSMANN
DIAGRAM-Q3-DV-
22. 50S-R 1-PHASE

FACTORY 14GA WIRE
 _FACTORY 10GA WIRE
 _ _FIELD WIRE

DO NOT SCALE DRAWING
 SHEET 1 OF 1

UL COLOR CODES / ABBREVIATIONS:
 RED = RD
 BLACK = BK
 BLUE = BL
 YELLOW = YL
 GRAY = GR
 WHITE = WT
 GREEN = GN
 BROWN = BN
 ORANGE = OR
 PURPLE = PR
 LIGHT BLUE = LB

WIRE MARKER COLORS/ABBREVIATIONS:
 MAROON = MK
 BLUE = BL
 BROWN = BR
 DARK BLUE = DBL
 LIGHT BLUE = LBL
 MAROON = MN
 MMR ORANGE = MO
 MO PINK = MP
 PURPLE = PR
 RED = MR
 YELLOW = MYL

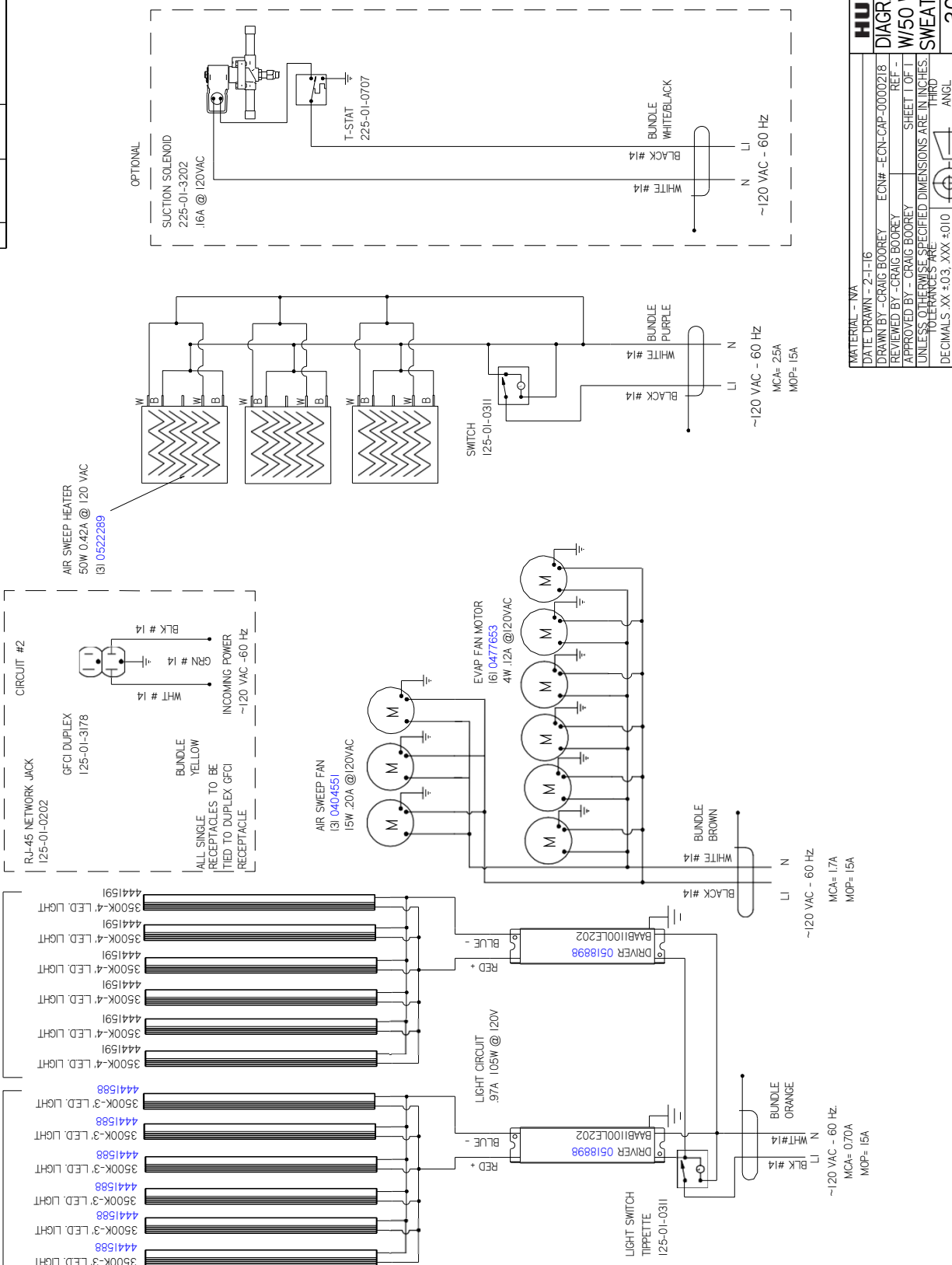
- NOTES:
1. PRINTED DOCUMENT REQUIRED SETTING: ALL COLORS BLACK & WHITE
 2. CASE & ANY REMOVABLE PANEL WITH ELECTRICAL PARTS MUST BE GROUNDED.
 3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

3154009

REV C

REVISION HISTORY			
REV	ECN	DATE	DESCRIPTION
A	ECN-CAP-0000218	2016/02/01	RELEASED TO PRODUCTION
			REV BY CHAO BY APPR BY
			CS CS CS CS

CIRCUIT #1	LOADING
120V	
11	3.6



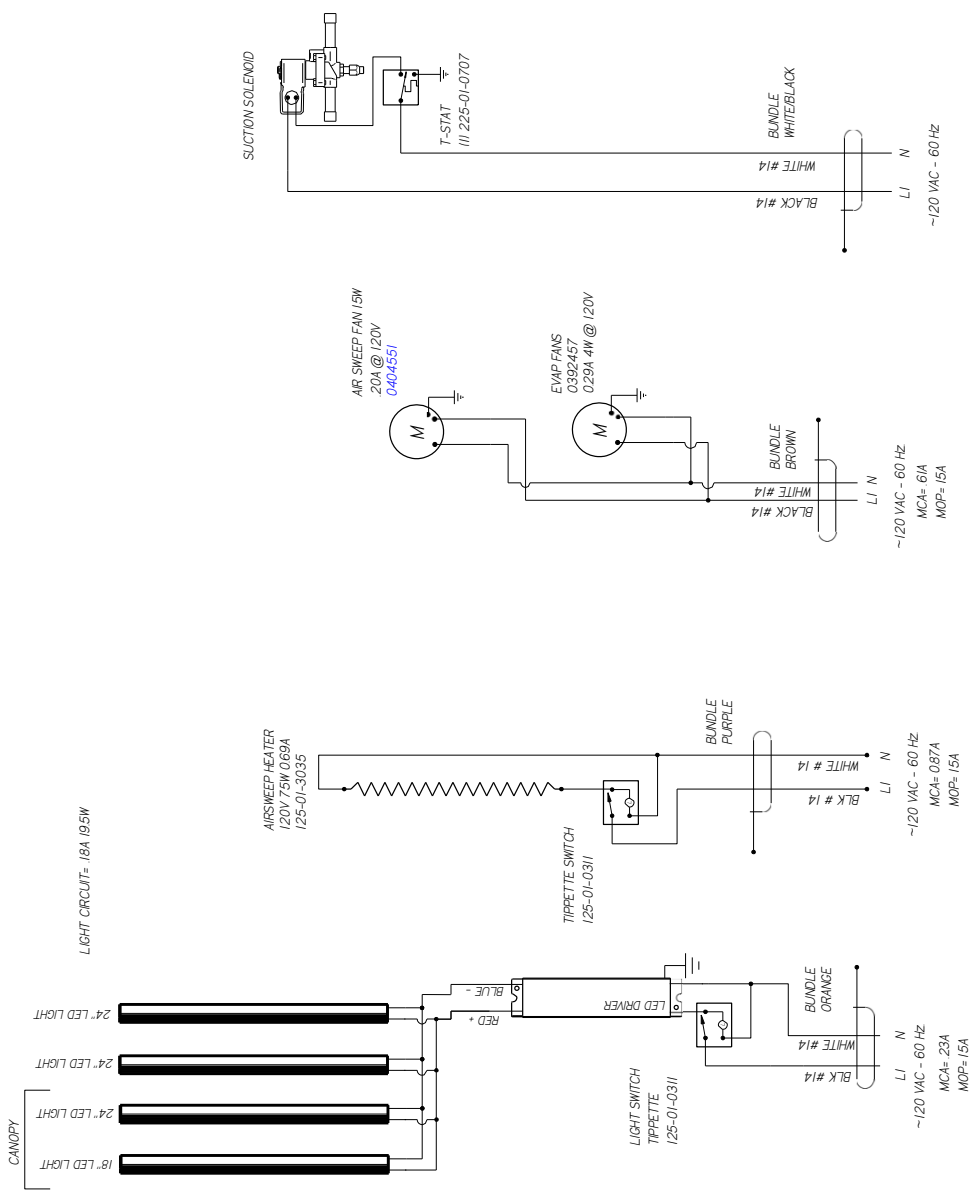
HUSSMANN
DIAGRAM-Q3-DV-I2R
W150 WATT ANTI SWEAT-HEATERS
3000160 A

MATERIAL - NA
DATE DRAWN - 2-1-16
DRAWN BY - CRAIG BOOREY ECN# - ECN-CAP-0000218
REVIEWED BY - CRAIG BOOREY REF -
APPROVED BY - CRAIG BOOREY SHEET 1 OF 1
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCES ARE:
DECIMALS .XX +0.3 .XXX +0.10
ANGLE PROJECTION
ANGLES ± 2°

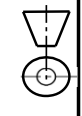
NOTES:
CASE MUST BE GROUNDED

REV	EN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	ECN-CAP-0004995	2016/02/07	RELEASED TO PRODUCTION	CB	CB	CB
B	ECN-CAP-0010311	2018/01/09	ADDED SWITCH TO HEATER	CB	CB	CB

CIRCUIT #1	WIRING	120V	1-3



HUSSMANN
 DIAGRAM-03-DV-22.5IS-R
 MATERIAL - NA
 DATE DRAWN - 12-7-16
 DRAWN BY - CRAIG BOOREY
 REVIEWED BY - CRAIG BOOREY
 APPROVED BY - CRAIG BOOREY
 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
 TOLERANCES ARE:
 THIRD ANGL
 E
 PROJECTION
 DECIMALS .XX ±0.3 .XXX ±0.10
 ANGLES ± 2°
 ECN-CAP-0004995 REF -
 SHEET 1 OF 1
 3020724 | B

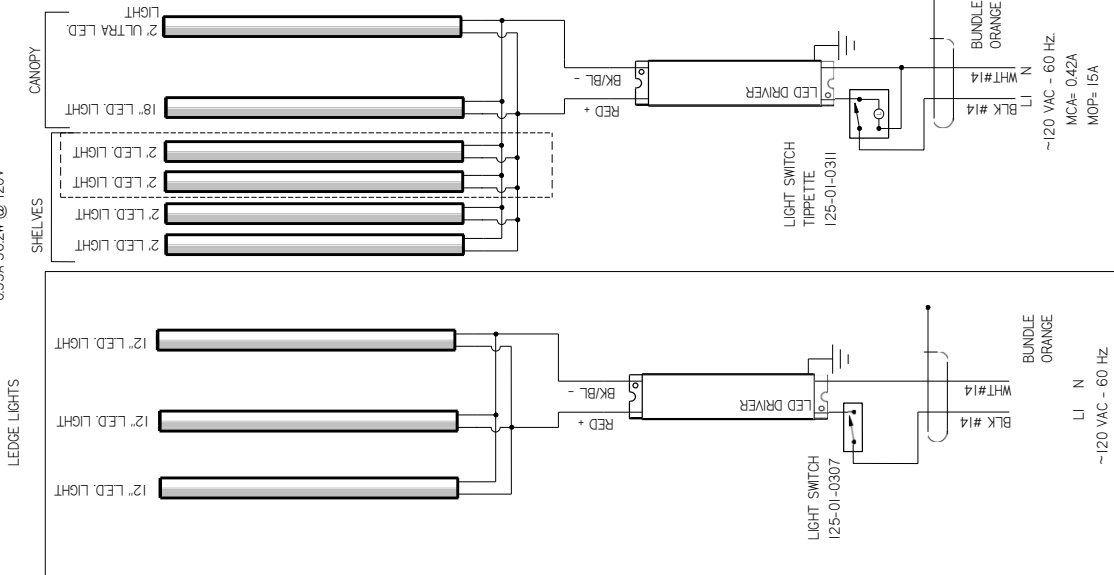


NOTES:
 CASE MUST BE GROUNDED
 WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

CIRCUIT #1
LOADING

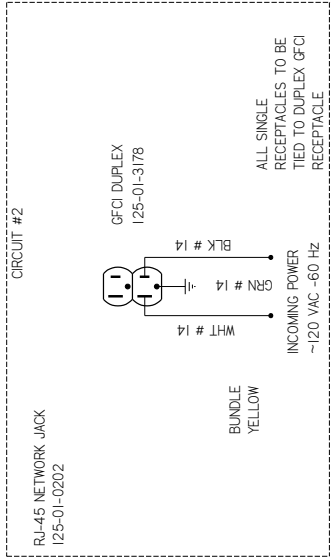
120V			
115V			

LIGHT CIRCUIT
0.33A 36.2W @ 120V

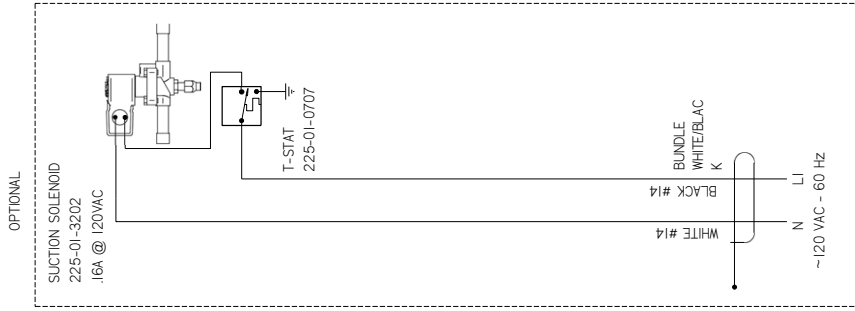


RJ-45 NETWORK JACK
125-01-0202

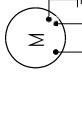
CIRCUIT #2



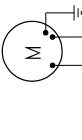
REV	EN	DATE	REVISION DESCRIPTION	REV BY	CHK BY	APPR BY
A	ECN-CAP-0004992	2016/1/14	RELEASED TO PRODUCTION	CB	CB	CB
B	ECN-CAP-0018251	2016/06/09	ADDED LEDGE LIGHTS	CB	CB	CB
C	ECN-CAP-0018253	2016/06/15	ADDED 2 ROWS OF SHELF LIGHTS	CB	CB	CB
D	ECN-CAP-0019099	2016/09/18	REDUCED EVAP FANS TO ONE	CB	CB	CB
E	ECN-COD-0027381	2017/09/25	CHANGED A.S. HEATER	CB	CB	CB
F	ECN-COD-0018446	2017/09/24	CHANGED SWAP FAN	CB	CB	CB
G	ECN-COD-0019716	2018/01/11	NEW FAN MOTOR	CB	CB	CB



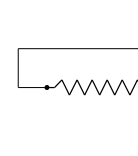
AIR SWEEP FAN
III 0404551
15W 20A @120VAC



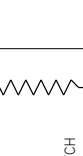
EVAP FAN MOTOR
3172574
12W 08A @120VAC



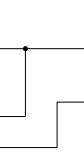
AIR SWEEP HEATER 34"
125W 1.04A @ 120 VAC
125-01-3280



SWITCH
125-01-0311



BUNDLE PURPLE
WHITE #14
BLACK #14



BUNDLE BROWN
WHITE #14
BLACK #14



BUNDLE WHITE/BLACK
WHITE #14
BLACK #14



MCA= 1.39A
MOP= 1.5A

MCA= 0.35A
MOP= 1.5A

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

MCA= 0.42A
MOP= 1.5A

MCA= 0.42A
MOP= 1.5A

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

MCA= 0.42A
MOP= 1.5A

MCA= 0.42A
MOP= 1.5A

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

MCA= 0.42A
MOP= 1.5A

MCA= 0.42A
MOP= 1.5A

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

MCA= 0.42A
MOP= 1.5A

MCA= 0.42A
MOP= 1.5A

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

MCA= 0.42A
MOP= 1.5A

MCA= 0.42A
MOP= 1.5A

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

MCA= 0.42A
MOP= 1.5A

MCA= 0.42A
MOP= 1.5A

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

MCA= 0.42A
MOP= 1.5A

MCA= 0.42A
MOP= 1.5A

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

MCA= 0.42A
MOP= 1.5A

MCA= 0.42A
MOP= 1.5A

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

MCA= 0.42A
MOP= 1.5A

MCA= 0.42A
MOP= 1.5A

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

MCA= 0.42A
MOP= 1.5A

MCA= 0.42A
MOP= 1.5A

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

MCA= 0.42A
MOP= 1.5A

MCA= 0.42A
MOP= 1.5A

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

MCA= 0.42A
MOP= 1.5A

MCA= 0.42A
MOP= 1.5A

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

MCA= 0.42A
MOP= 1.5A

MCA= 0.42A
MOP= 1.5A

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

MCA= 0.42A
MOP= 1.5A

MCA= 0.42A
MOP= 1.5A

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

MCA= 0.42A
MOP= 1.5A

MCA= 0.42A
MOP= 1.5A

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

MCA= 0.42A
MOP= 1.5A

MCA= 0.42A
MOP= 1.5A

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

MCA= 0.42A
MOP= 1.5A

MCA= 0.42A
MOP= 1.5A

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

MCA= 0.42A
MOP= 1.5A

MCA= 0.42A
MOP= 1.5A

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

MCA= 0.42A
MOP= 1.5A

MCA= 0.42A
MOP= 1.5A

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC - 60 Hz

MCA= 0.42A
MOP= 1.5A

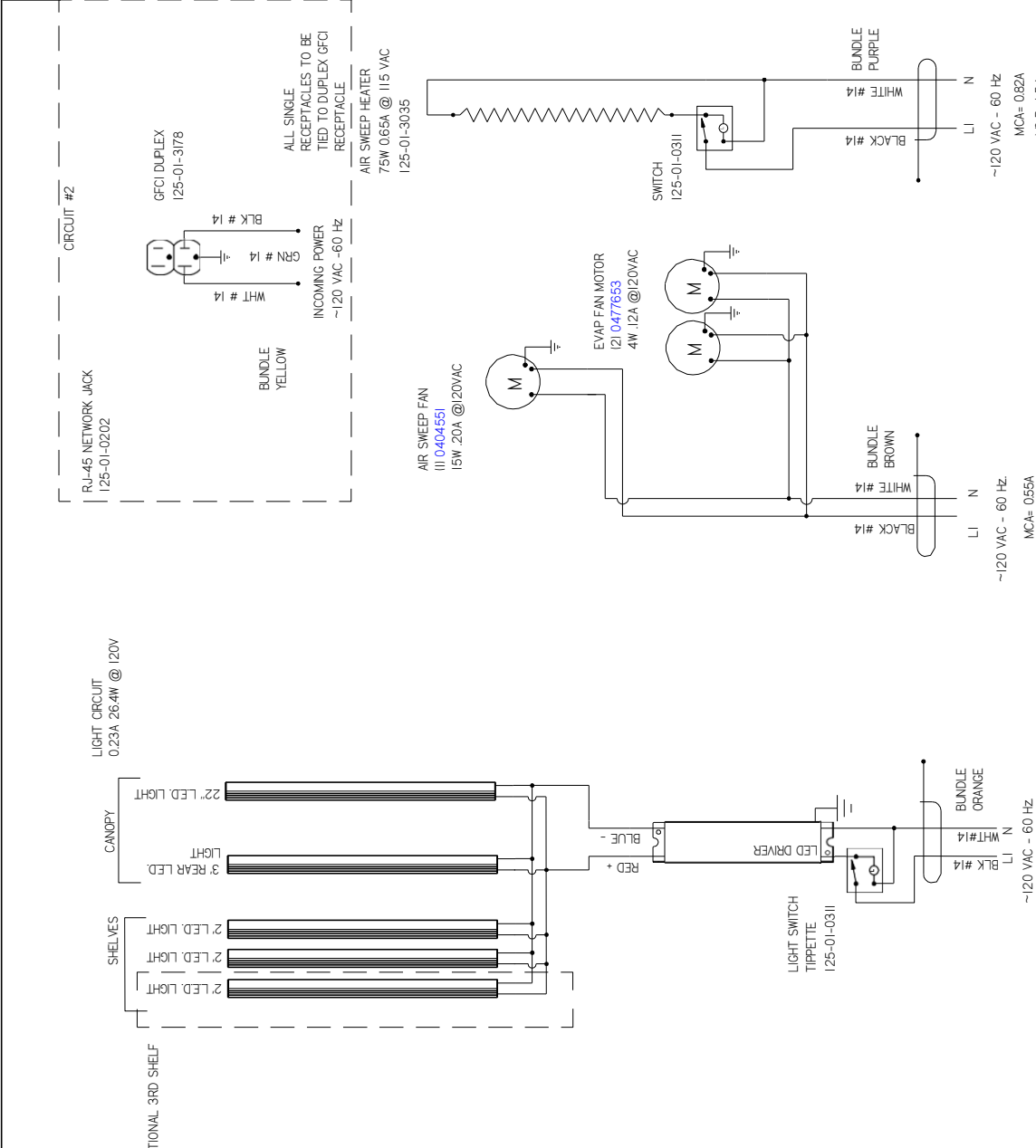
MCA= 0.42A
MOP= 1.5A

~120 VAC - 60 Hz

~120 VAC - 60 Hz

~120 VAC -

CIRCUIT #1	LOADING
120V	
14	



REVISION HISTORY	
REV	DESCRIPTION
1	ECN-CAP-0002752 2016/07/08 RELEASED TO PRODUCTION
REV BY	CHD BY / APPR BY
CB	CB

HUSSMANN
DIAGRAM-Q3-DV-451

DATE DRAWN - 7-8-16
 DRAWN BY - CRAIG BOOREY
 REVIEWED BY - CRAIG BOOREY
 APPROVED BY - CRAIG BOOREY
 SHEET 1 OF 1
 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
 TOLERANCES ARE:
 DECIMALS .XX +0.3 .XXX +0.10
 ANGLES ± 2°

MATERIAL - N/A
 ECN-CAP-0002752
 REF -
 R

3010912


PROJECTION

NOTES:
 CASE MUST BE GROUNDED
 WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

User Information

Start Up

See the merchandisers Data Sheet Set for refrigerant settings and defrost requirements. Bring merchandisers down to the operating temperatures listed on the Data Sheet.



WARNING

--LOCK OUT/TAG OUT--

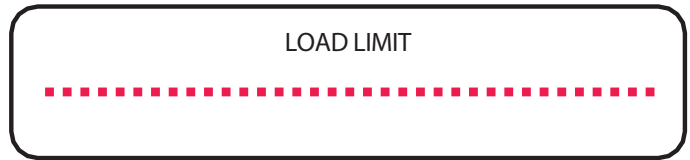
To avoid serious injury or death from electrical shock, always disconnect the electrical power at the main disconnect when servicing or replacing any electrical component. This includes, but is not limited to, such items as doors, lights, fans, heaters, and thermostats.

Load Limit

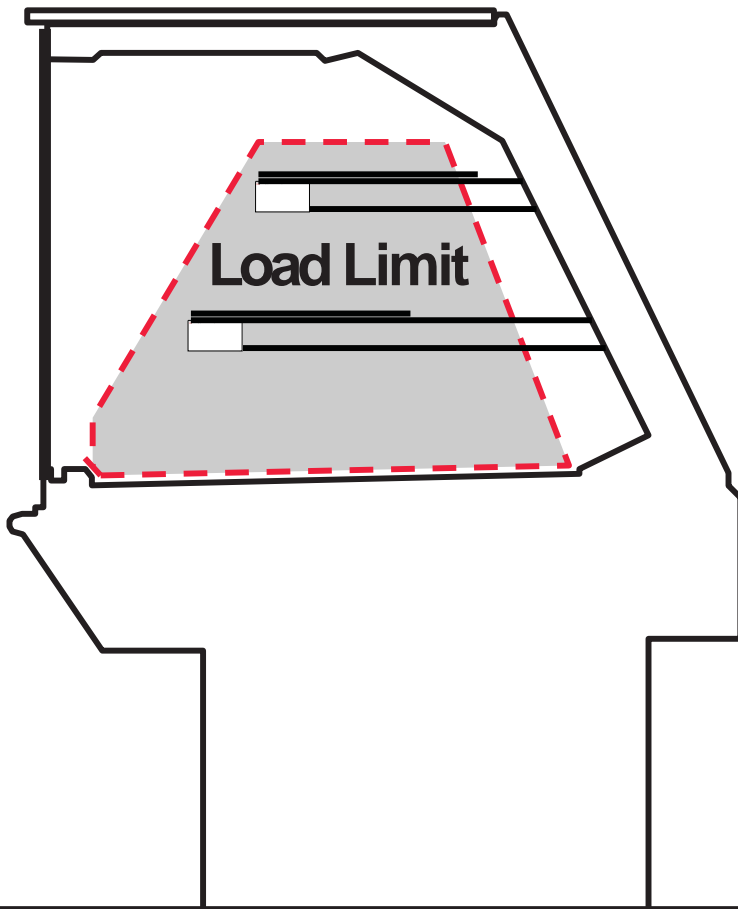
Each Merchandiser has a Load Limit. Shelf life of perishables will shorten if Load Limit is violated.

AT NO TIME SHOULD THE MERCHANDISER BE STOCKED BEYOND THE LOAD LIMITS INDICATED.

DO NOT BLOCK HONEYCOMB OR AIR RETURN GRILLE.



DO NOT OVERSTOCK MERCHANDISER



User Information Cont'd

Case Cleaning

Long life and satisfactory performance of any equipment are dependent upon the care it receives. To insure long life, proper sanitation and minimum maintenance costs, the merchandiser should be thoroughly cleaned, all debris removed and interiors washed down, weekly.



TO PREVENT INJURY ALWAYS SHUT OFF POWER DURING CLEANING PROCESS.

Exterior Surfaces

The exterior surfaces must be cleaned with a mild detergent and warm water to protect and maintain their attractive finish. **NEVER USE ABRASIVE CLEANSERS OR SCOURING PADS.**

Cleaning Bumpers

Clean Bumpers with household spray cleaners.

Cleaning Under Merchandiser

Remove lower body panels. Use a vacuum with a long wand attachment to remove accumulated dust and debris from under the merchandiser.

Cleaning Stainless Steel Surfaces

Use non abrasive cleaning materials, and always polish with grain of steel. Use warm water or add a mild detergent to the water and apply with a cloth. Always wipe dry after wetting.

Use alkaline chlorinated or non-chlorine containing cleaners such as window cleaners and mild detergents. Do not use cleaners containing salts as this may cause pitting and rusting of the stainless steel finish. Do not use bleach.

Clean frequently to avoid build-up of hard, stubborn stains. A stainless steel cleaning solution may be used periodically to minimize scratching and remove stains.

Rinse and wipe dry immediately after cleaning. Never use hydrochloric acid (muriatic acid) on stainless steel.

Interior Surfaces

The interior surfaces may be cleaned with most domestic detergents, ammonia based cleaners and sanitizing solutions with no harm to the surface.

Cleaning Coils

NEVER USE SHARP OBJECTS AROUND COILS. Use a soft brush or vacuum brush to clean debris from coils. Do not puncture Coils! Do not bend fins. Contact an authorized service technician if a coil is punctured, cracked, or otherwise damaged.

ICE in or on the coil indicates the refrigeration and defrost cycle is not operating properly. Contact an authorized Service Technician to determine the cause of icing and to make proper adjustments as necessary. To maintain product integrity, if not done so already, move all product to a cooler until the merchandiser has returned to normal operating temperatures.

Do Not Use:

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

User Information Cont'd

Do:

- Remove the product and all loose debris to avoid clogging the waste outlet.
- Store product in a refrigerated area such as a cooler during the cleaning process. Remove only as much product as can be taken to the cooler in a timely manner.
- **First Turn off Refrigeration, then disconnect electrical power to merchandiser.**
- Thoroughly clean all surfaces with soap and hot water. Do not use steam or high pressure water hoses to wash the interior. These will destroy the merchandisers' sealing causing leaks and poor performance.
- Ensure to minimize direct contact between fan motors and cleaning or rinse water.
- 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.



WARNING

Product will be degrade and may spoil if allowed to sit in non-refrigerated area.

Troubleshooting

Problem	Possible Cause	Possible Solution
Case temperature is too warm.	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.
	Discharge air temp is out of spec.	Check evaporator fan operation. Check electrical connections and input voltage.
		Fans are installed backwards. Check airflow direction.
		Fan blades are installed incorrectly. Make sure fan blades have correct pitch and are per specification.
		Check to see that fan plenum is installed correctly. It should not have any gaps.
		Check suction pressure and insure that it meets factory specifications.
	Case is in defrost.	Check defrost settings. See Technical Specifications section.
	Product load may be over its limits blocking airflow.	Redistribute product so it does not exceed load level. There is a sticker on the inside of the case indicating what the maximum load line is.
	Coil is freezing over.	Return air is blocked, make sure debris is not blocking the intake section.
Coil close-offs are not installed. Inspect coil to make sure these parts are on the case.		
Condensing coil or evaporator coil is clogged or dirty.	Clean coil.	
Case temperature is too cold.	The t-stat temp is set too low.	Check settings. See Technical Specifications section.
	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.
Condensation on glass.	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.
	Inadequate air circulation.	Check if air sweep fans are functioning, check electrical connections.
	There is not enough heat provided in the airflow.	Check if air sweep heater is functioning, check electrical connections.
	There are glass gaps on the side of the case.	See glass adjustment section.
	Glass is not completely shut.	Close glass correctly.

Troubleshooting Cont'd

Problem	Possible Cause	Possible Solution
Water has pooled under case.	Case drain is clogged.	Clear drain.
	PVC drains under case may have a leak.	Repair as needed.
	Case tub has unsealed opening.	Seal as needed.
	If the case is in a line-up, case to case joint is missing or unsealed.	Install case to case joint and seal as needed.
	Evaporator pan is overflowing (if applicable).	Check electrical connection to evaporator pan. Check float assembly, it should move freely up and down the support stem. Clear any debris.
Case is not draining properly.	Case is not level.	Level the case.
	Drain screen is plugged.	Clean drain screen and remove any debris.
	Drain or P-trap is clogged.	Clear any debris.
Frost or ice on evaporator coil.	Evaporator fans are not functioning.	Check electrical connections.
	Defrost clock is not functioning.	Case should be serviced by a qualified service technician.
	Coil is freezing over.	Return air is blocked, make sure debris is not blocking the intake section. Coil close-offs are not installed. Inspect coil to make sure these parts are on the case.
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.



HUSSMANN[®]

To obtain warranty information
or other support, contact your
Hussmann representative.
Please include the model and
serial number of the product.

Hussmann Warranty / Technical Assistance
(800) 592-2060