

E4073-20
Rev A 10/8/25



The Signature of Quality®

INSTALLATION & OPERATIONS INSTRUCTIONS
*VFSS Vision Flexible Hot -Cold
Self-Contained*






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(1) INTRODUCTION

Thank you for purchasing a Federal Industries display case. This manual contains important instructions for installing and servicing your new display case. A repair parts list and wiring diagram are also included in the manual. Read all these documents carefully before installing or servicing your case.

| | |
|--|--|
|  | <p>NOTICE</p> <p>Read this manual before installing your case. Keep this manual and refer to it before doing any service on the equipment. Failure to do so could result in personal injury or damage to the case.</p> |
|  | <p>NOTICE</p> <p>Installation and service of the electrical components in the case must be performed by a licensed electrician.</p> <p>The portions of this manual covering components contain technical instructions intended only for persons qualified to perform electrical work.</p> |
|  | <p>DANGER</p> <p>Improper or faulty hookup of electrical components in the case can result in severe injury or death.</p> <p>All electrical wiring hookups must be done in accordance with all applicable local, regional, or national standards.</p> |

1.1 SERIAL NUMBER

Record the model and serial numbers of the case for easy reference. Always refer to both model and serial numbers in your correspondence with Federal regarding the case.

Case Model _____ Serial Number _____

This manual cannot cover every installation, use, or service situation. If you need additional information, call or write us:


WARRANTY/TECHNICAL SERVICE DEPARTMENT

Parts Town
1200 Greenbriar Dr.
Addison, IL 60101
Toll Free: (833) 238-8168

Email: techservice@partstown.com



(2) WARNING LABELS & SAFETY INSTRUCTIONS

| | |
|---|---|
|  | <p>This is the safety-alert symbol. When you see this symbol on your case or in the manual, be alert to the potential for personal injury or damage to your equipment.</p> |
|---|---|

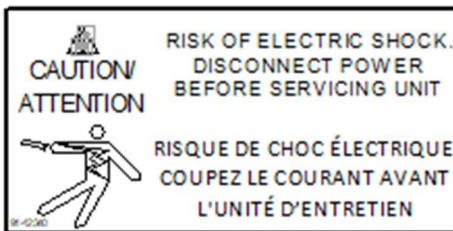
Be sure you understand all the safety messages and always follow recommended precautions and safe operating procedures.

| | |
|---|--|
|  | <p>NOTICE TO EMPLOYERS:</p> <p>You must make sure that everyone who installs, uses, or services your case is thoroughly familiar with all safety information and procedures.</p> |
|---|--|

Important safety information is presented in this section and throughout the manual. The following signal words are used in the warning and safety messages:

| | |
|----------|---|
| DANGER: | Severe injury or death will occur if you ignore the message. |
| WARNING: | Severe injury or death can occur if you ignore the message. |
| CAUTION: | Minor injury or damage to your case can occur if you ignore the message. |
| NOTICE: | This is important installation, operation, or service information. If you ignore the message, you may damage your case. |

The warning and safety labels shown throughout this manual are placed on your Federal Industries case at the factory. Follow all warning label instructions. If any warning or safety labels become lost or damaged, call our customer service department at (800) 356-4206 for replacements.



This label is located behind the removable base deck panels display and under deck pans.



This label is located under display

| | |
|--|--|
| <p>DANGER – Risk of fire or explosion. Flammable refrigerant used. Consult repair manual/owner's guide before attempting to service this product. all safety precautions must be followed</p> <p style="text-align: right; font-size: small;">91 21814</p> | <p>DANGER — Risque d'incendie ou d'explosion. Fluide frigorigène utilisé. Consulter le guide propriétaire ou le manuel de réparations avant du d'essayer d'installer ou de réparer ce produit. Toutes les précautions de sécurité doivent être suivies.</p> <p style="text-align: right; font-size: small;">91 21814</p> |
|--|--|

This label is located by condensing unit

(3) REFRIGERATION WARNING

INSTALLATION-REPAIR-DECOMMISSIONING



This is the Danger-Flammable symbol. When you see this symbol on your case or in the manual, be alert to the potential for risk of fire or explosion.

Be sure you understand all the safety messages and always follow recommended precautions and safe operating procedures.

DANGER



Risk of fire or explosion. Flammable refrigerant used. To be repaired only by trained service personnel. Do not puncture refrigerant tubing. Dispose of properly in accordance with federal or local regulations

Consult repair manual/owner's guide before attempting to service this product. All safety precautions must be followed.

Follow handling instructions carefully in compliance with national regulations.

Auxiliary devices which may be ignition sources shall not be installed in the ductwork, other than auxiliary devices listed for use with the specific appliance.

Do not store explosive substances (such as aerosol cans with a flammable propellant) in this case.

Do not use an electrical appliance INSIDE the food storage compartments unless its type is recommended by manufacturer.

Flammable refrigerant type specified on case nameplate is on the serial label.

APPLIES TO R290 REFRIGERANT MODELS ONLY! Contains a charge of R290 refrigerant with a lower flammability limit (LFL) of .038kg/m³. See table for amount of charge.

WARNING

- Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
- The appliance shall be stored in a room without continuously operating ignition sources
For example: open flames, an operating gas appliance or an operating electric heater.
- Do not pierce or burn.
- Be aware that refrigerants may not contain an odor.

MISE EN GARDE

- Ne pas utiliser de moyens autres que ceux recommandés par le fabricant pour accélérer le processus de dégivrage ou pour nettoyer l'appareil.
- L'appareil doit être entreposé dans un local ne contenant pas de sources d'inflammation permanentes (flammes nues, appareil à gaz ou dispositif de chauffage électrique en fonctionnement, par exemple).
- Ne pas percer ou brûler.
- Attention, les fluides frigorigènes peuvent ne pas dégager d'odeur.

3. Qualification: All refrigeration and electrical maintenance, service, and repair must be performed by a Certified Technician that is trained in the required flammable refrigerants safety procedures. Technicians must read the entire section "REFRIGERATION WARNINGS SECTION" of this manual.

Including but not limited to the following:

- a) breaking into the refrigerating circuit.
- b) opening of sealed components.
- c) opening of ventilated enclosures.

4. Checks to Area: Prior to beginning work on systems containing FLAMMABLE REFRIGERANTS, safety checks are necessary to ensure that the risk of ignition is minimized prior to conducting work on the system.

- Capacitors are discharged: this shall be done in a safe manner to avoid the possibility of sparking.
- No live electrical components and wiring are exposed while charging, recovering or purging the system.
- Continuity of earth bonding.
- Work shall be undertaken under a controlled procedure to minimize the risk of a flammable gas or vapor being present while the work is being performed.

-All maintenance staff and others working in the local area should be instructed on the nature of the work being carried out. Work in confined spaces shall be avoided.

-The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially toxic or flammable atmospheres.

Ensure that the leak detection equipment being used is suitable for use with all applicable refrigerants, i.e., non-sparking, adequately sealed, or intrinsically safe.

-If any hot work is to be conducted on the refrigerating equipment or any associated parts, appropriate fire extinguishing equipment shall be available on hand. A dry chemical or CO2 fire extinguisher should be adjacent to the charging area.

-No person carrying out work in relation to a REFRIGERATING SYSTEM which involves exposing any pipe work shall use any sources of ignition in such a manner that it may lead to the risk of fire or explosion. All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which refrigerant can possibly be released to the surrounding space. Prior to work taking place, the area around the equipment shall be surveyed to make sure that there are no flammable hazards or ignition risks. "No Smoking" signs shall be displayed.

-Ensure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any hot work. A degree of ventilation shall continue during the period that the work is carried out. The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.

-Where electrical components are being changed, they shall be fit for the purpose and to the correct specification so as to minimize the risk of possible ignition due to incorrect parts. At all times, the manufacturer's maintenance and service guidelines shall be followed. If in doubt, consult the manufacturer's technical department for assistance. The following checks shall be applied to installations using flammable refrigerants:

a) the actual REFRIGERANT CHARGE is in accordance with the room size within which the refrigerant containing parts are installed.

b) The ventilation machinery and outlets are operating adequately and are not obstructed.

c) Markings of the equipment continue to be visible and legible. Markings and signs that are illegible shall be corrected.

d) Refrigerating pipes or components are installed in a position where they are unlikely to be exposed to any substance which may corrode refrigerant containing

-Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately but it is necessary to continue operation, an

An adequate temporary solution should be used. This shall be reported to the owner of the Initial safety checks shall include:

5. Repairs to sealed components

-During repairs to sealed components, all electrical supplies shall be disconnected from the equipment being worked upon prior to any removal of sealed

covers, etc. If it is necessary to have an electrical supply to equipment during servicing, then a permanently operating form of leak detection shall be located at the most critical point to warn of a potentially hazardous situation.

-Particular attention shall be paid to the following to ensure that by working on electrical components, the casing is not altered in such a way that the level of protection is affected. This shall include damage to cables, excessive number of connections, terminals not made to original specification, damage to seals, incorrect fitting of glands, etc. Ensure that the apparatus is mounted securely.

Ensure that seals or sealing materials have not degraded to the point that they no longer serve the purpose of preventing the egress of flammable atmospheres. Replacement parts shall be in accordance with the manufacturer's specifications.

-Do not apply any permanent inductive or capacitance loads to the circuit without ensuring that this will not exceed the permissible voltage and current permitted for the equipment in use.

NOTE The use of silicon sealants can inhibit the effectiveness of some types of leak detection equipment. Intrinsically safe components do not have to be isolated prior to working on them.

8. Detection of flammable refrigerants: Under no circumstances shall potential ignition sources be used in the searching for or detection of refrigerant leaks. A halide torch (or any other detector using a naked flame) shall not be used.

The following leak detection methods are deemed acceptable for all refrigerant systems:

-Electronic leak detectors may be used to detect refrigerant leaks but, in the case of

FLAMMABLE REFRIGERANTS, the sensitivity might not be adequate or might need recalibration. (Detection equipment shall be calibrated in a refrigerant-free area.) Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used. Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed, and the appropriate percentage of gas (25 % maximum) is confirmed.

-Leak detection fluids are also suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine can react with the refrigerant and corrode the copper pipework.

NOTE Examples of leak detection fluids are

– bubble method,

– fluorescent method agents.

If a leak is suspected, all naked flames shall be removed/extinguished.

If a leakage of refrigerant is found which requires brazing, all the refrigerants shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak.

9. Removal and Evacuation: When breaking into the refrigerant circuit to make repairs-or for any other purpose-conventional procedures shall be used. However, for flammable refrigerants it is important that the best practice be followed, since flammability is a consideration. The following procedure shall be adhered to:

E3980 VISION R290

- a. Safely remove refrigerant following local and national regulations.
- b. Purge the circuit with inert gas.
- c. Evacuate (optional for A2L).
- d. Purge with inert gas (optional for A2L).
- e. Open the circuit by cutting or brazing.

The refrigerant change shall be recovered into the correct recovery cylinders if venting is not allowed by local and national codes. For appliances containing flammable refrigerants, the system shall be purged with oxygen-free nitrogen to render the appliance safe for flammable refrigerants. This process might need to be repeated several times. Compressed air or oxygen shall not be used for purging refrigerant systems. For appliances containing flammable refrigerants, refrigerant purging shall be achieved by breaking the vacuum in the system with oxygen-free nitrogen and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum (optional for A2L). This process shall be repeated until no refrigerant is within the system (optional for A2L). When the final oxygen-free nitrogen change is used, the system shall be vented down to atmospheric pressure to enable work to take place. Ensure that the outlet for the vacuum pump is not close to any potential ignition sources and that ventilation is available.

10. Charging procedures: In addition to conventional charging procedures, the following requirements shall be followed.

- a. Ensure that contamination of different refrigerants does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimize the amount of refrigerant contained in them.
- b. Cylinders should be kept in an appropriate position according to the instructions.
- c. Ensure that the REFRIGERATING SYSTEM is earthed prior to charging the system with refrigerant.
- d. Label the system when charging is complete (if not already).
- e. Extreme care shall be taken not to overfill the REFRIGERATING SYSTEM.

11. Decommissioning: Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its details. It is recommended good practice that all refrigerants are recovered safely. Prior to the task being carried out, an oil and refrigerant sample shall be taken in case analysis is required prior to re-use of recovered refrigerant. It is essential that electrical power is available before the task commences.

- a. Become familiar with the equipment and its operation.
- b. Isolate the system electrically.
- c. Before attempting the procedure, ensure that:
 - i. Mechanical handling equipment is available, if required, for handling refrigerant cylinders.
 - ii. All personal protective equipment is available and is being used correctly.
 - iii. The recovery process is always supervised by a competent person.
 - iv. Recovery equipment and cylinders conform to the appropriate standards.
- d. Pump down the refrigerant system, if possible.
- e. If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.

- f. Make sure that the cylinder is situated on the scales before recovery takes place.
- g. Start the recovery machine and operate in accordance with instructions.
- h. Do not overfill cylinders (no more than 80% volume liquid charge).
- i. Do not exceed the maximum working pressure of the cylinder, even temporarily.
- j. When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from the site properly and all isolation valves on the equipment are closed off.
- k. Recovered refrigerant shall not be charged into another refrigerating system unless it has been cleaned and checked.

12. Labeling: Equipment shall be labeled stating that it has been de-commissioned and emptied of refrigerant. The label shall be dated and signed. For appliances containing flammable refrigerants, ensure that there are labels on the equipment stating the equipment contains flammable refrigerant.

13.Recovery: When removing the refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely.

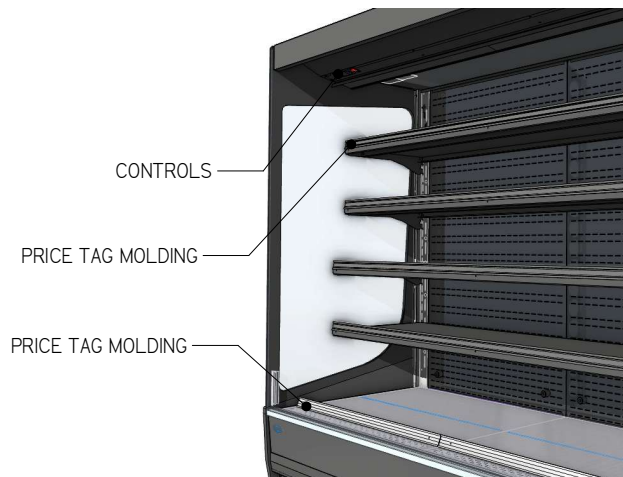
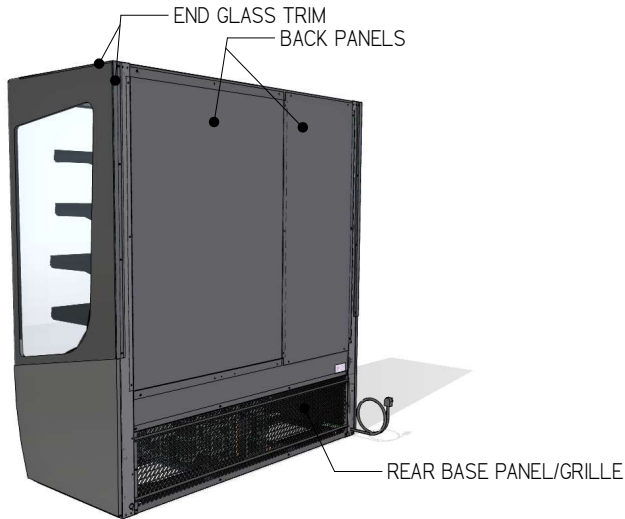
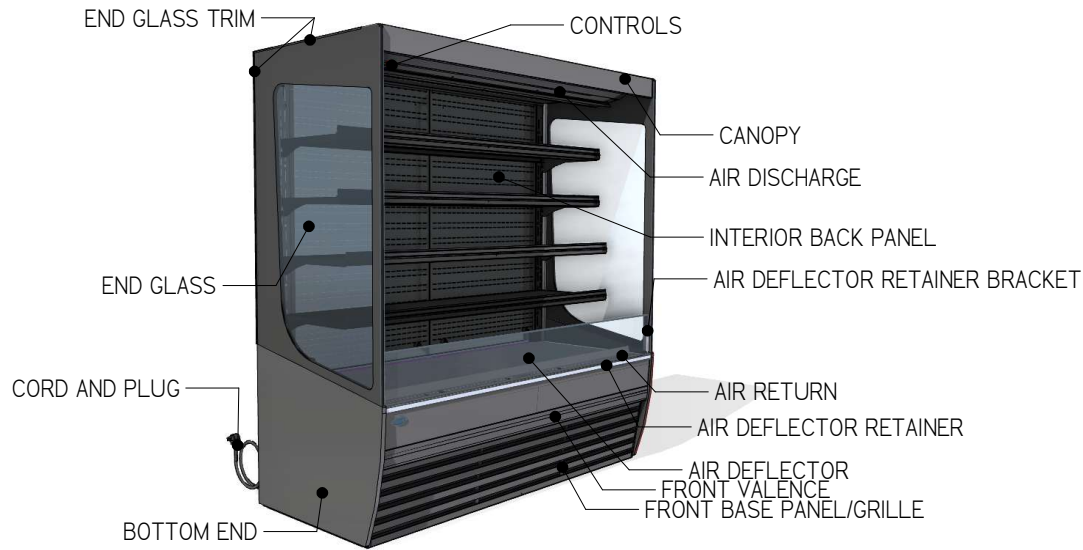
When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct number of cylinders for holding the total system charge is available. All cylinders to be used are designated for the recovered refrigerant and labeled for that refrigerant (i.e., special cylinders for the recovery of refrigerant). Cylinders shall be complete with pressure-relief valve and associated shut-off valve in good working order. Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.

The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of all appropriate refrigerants including, when applicable, FLAMMABLE REFRIGERANTS. In addition, a set of calibrated weighing scales shall be available and in good working order. Hoses shall be complete with leak-free disconnect coupling and in good condition. Before using the recovery machine, check that it is in satisfactory working order, has been properly maintained and that any associated electrical components are sealed to prevent ignition in the event of refrigerant release. Consult manufacturer if in doubt.

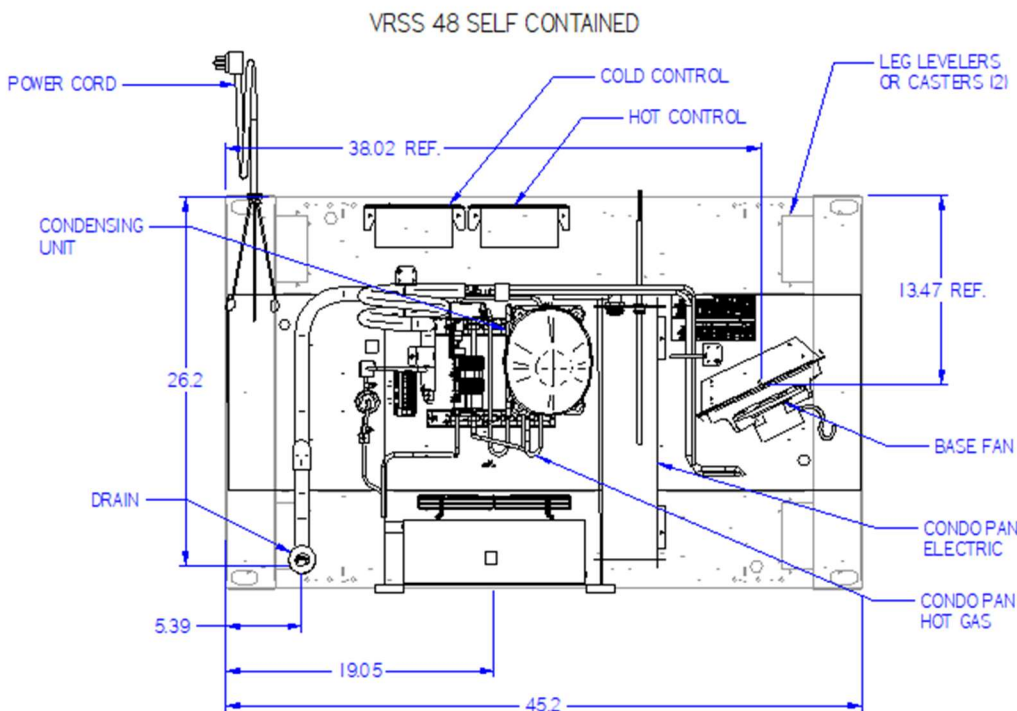
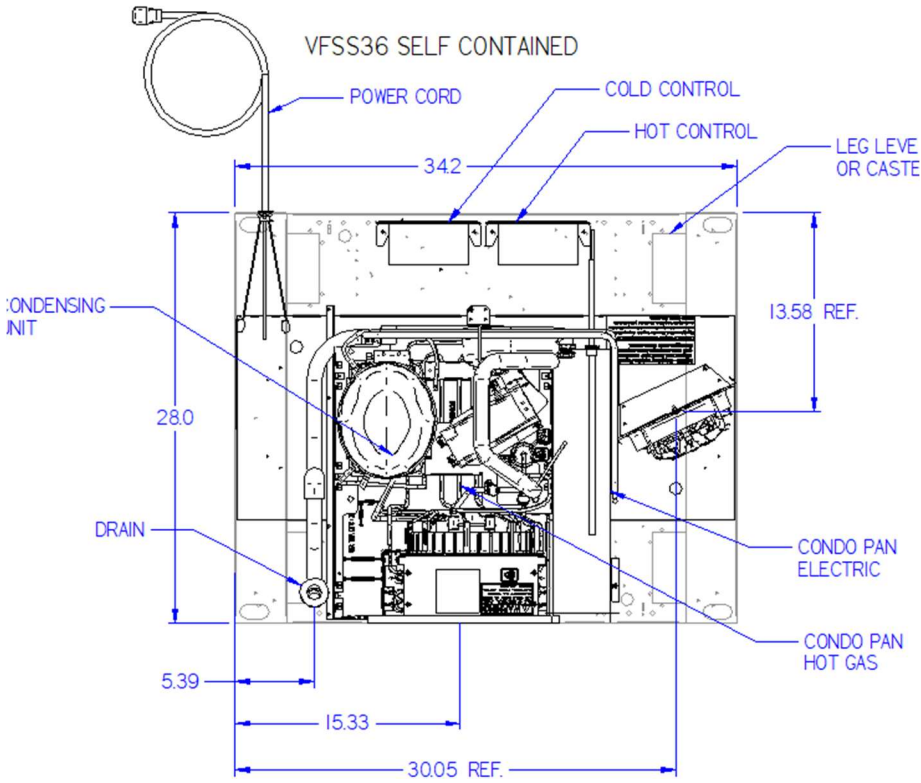
The recovered refrigerant shall be returned to the refrigerant supplier in the correct recovery cylinder, and the relevant waste transfer note arranged. Do not mix refrigerants in recovery units and especially not in cylinders.

If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that FLAMMABLE REFRIGERANT does not remain within the lubricant. The evacuation process shall be carried out prior to returning the compressor to the suppliers. Only electric heating to the compressor body shall be employed to accelerate this process. When oil is drained from a system, it shall be carried out safely.

(4) FEATURE IDENTIFICATION



(5) BASE COMPONENT LAYOUTS



(6) PANEL REMOVAL

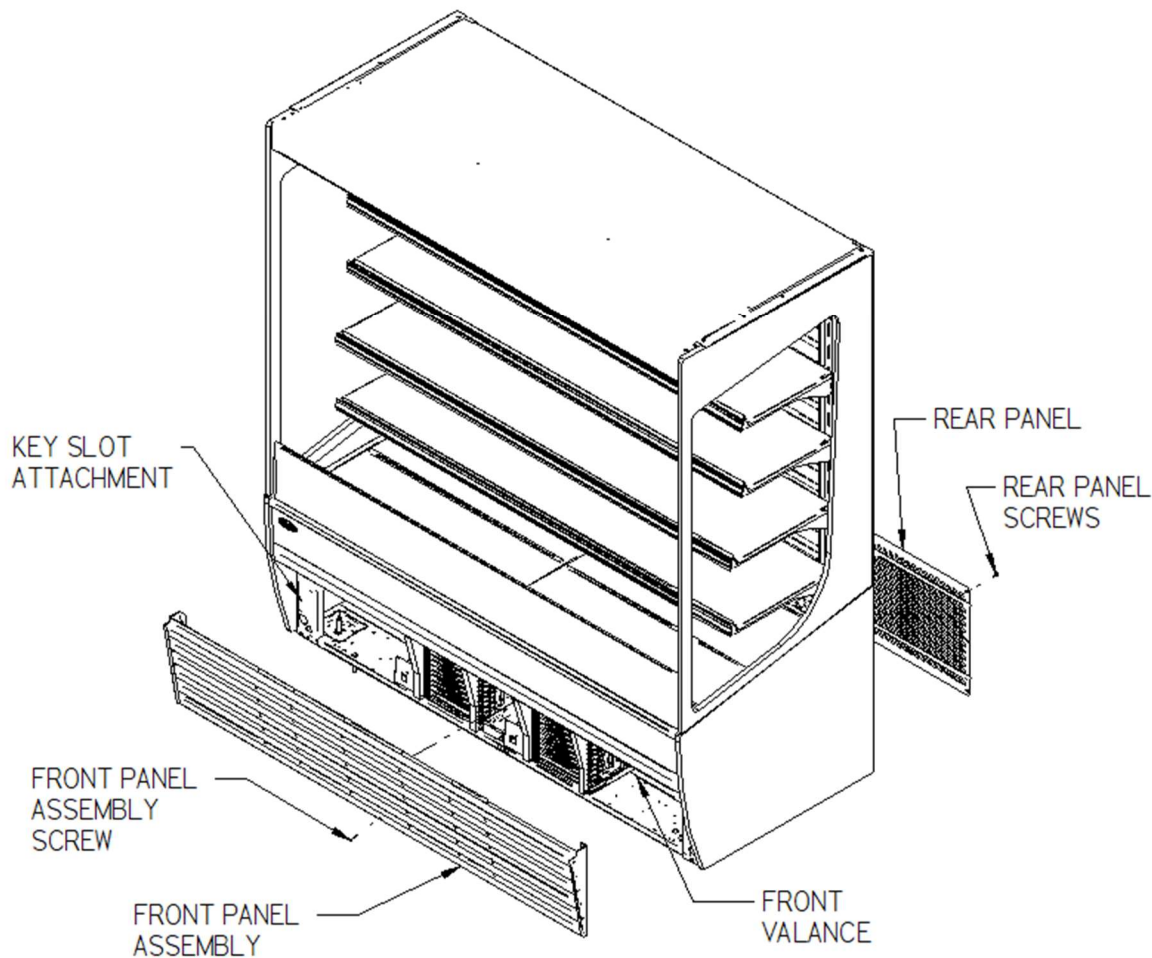
On these models the condenser and condensate pan are in the bottom base compartment. The Front & rear panels can be removed to service and access components.
Disconnect Power before Removing any Panels.

Front Panel Removal:

- Remove center screw from bottom of front panel.
- Lift Front Panel Assembly Up slightly to unhook panel assembly from Key Slots.
- pull bottom of Front Panel outward from under front Valance.
- Reinstall in reverse order, be sure to hook all (4) key slots on panel on to screws.

Rear Panel Removal:

- Remove the rear panel screws located around the perimeter of the Rear Panel.
- Remove rear panel.
- Reinstall in reverse order



(7) PRIOR TO UNPACKING EQUIPMENT!

Inspect for shipping damage.


You are responsible for filing all freight claims with the delivery truck line. Inspect all cartons and crates for damage as soon as they arrive. If damage is noted to shipping crates, cartons, or if a shortage is found, note this on the bill of lading (all copies) prior to signing.

If damage is discovered when the case is uncrated, immediately call the delivery truck line and follow-up the call with a written report indicating concealed damage to your shipment. Ask for an immediate inspection of your concealed damaged item. Crating material must be retained to show the inspector from the truck line.

(8) INSTALLATION INSTRUCTIONS

IMPORTANT: Read this Section of this manual located on page 5.
“REFRIGERATION WARNING & INSTALLATION-REPAIR-DECOMMISSIONING”
All refrigeration and electrical work must be performed by certified technicians.

8.1 LOCATING THE DISPLAY CASE

| | |
|---|--|
|  | <p>NOTICE</p> <p>This refrigerated display case is designed to operate in a maximum environment of 80 DEG. F and 55% relative humidity. Exceeding these limits will cause poor case performance and sweating.</p> |
|---|--|

This case when in Refrigerated Mode is designed for a class 3 environment.

| <u>Test room climate class</u> | <u>Dry bulb temperature [°F]</u> | <u>Relative Humidity [%]</u> | <u>Dew point [°F]</u> | <u>Water vapor mass in dry air [lbm water/lbm air]</u> | <u>Required Test Lab Temperature [°F]</u> |
|--------------------------------|----------------------------------|------------------------------|-----------------------|--|---|
| 3 | 77.0 | 60 | 62.06 | .012 | 89.6 |

NSF TYPE 1 Temperature cannot exceed 75 deg F and 55% humidity.

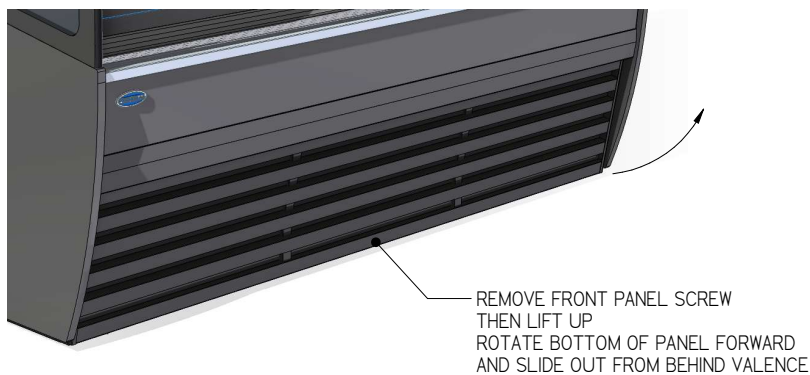
The case(s) should be located where it is not subjected to the direct rays of the sun, heating ducts, grills, radiator, or ceiling fans, nor should it be located near open doors or main door entrances. Also, avoid locations where there is excessive air movement or air disturbances and avoid high humidity locations such as near cases with water misting or fogging devices. Failure to locate this case as stated will reduce the performance of your display and will affect the temperature of interior of case and product.

If this case or cases are to be located against a wall there should be at least 6” between the case and the wall and 18” from top to ceiling to allow air circulation. Failure to give adequate space may cause poor performance and exterior surfaces to sweat.

8.2 REMOVING CASE FROM SHIPPING SKID

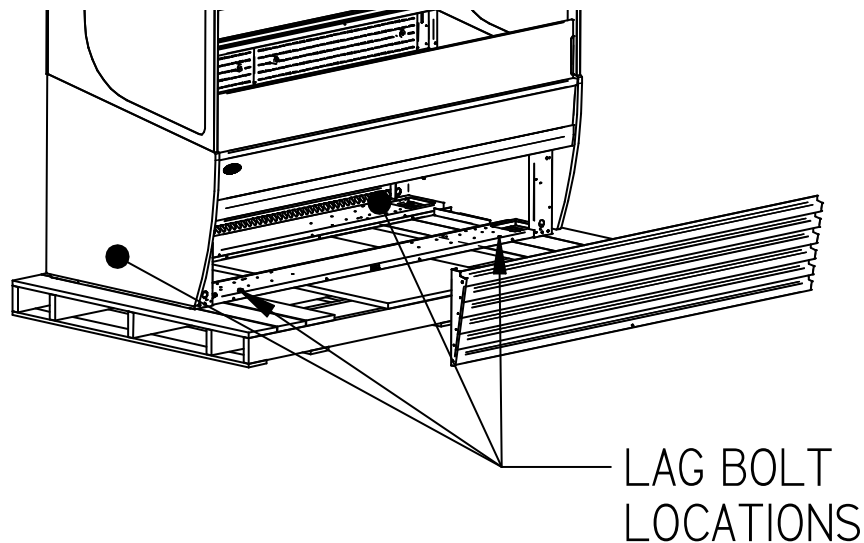
Be sure to leave shelf packaging material intact for this step.

First remove the base front and rear panels



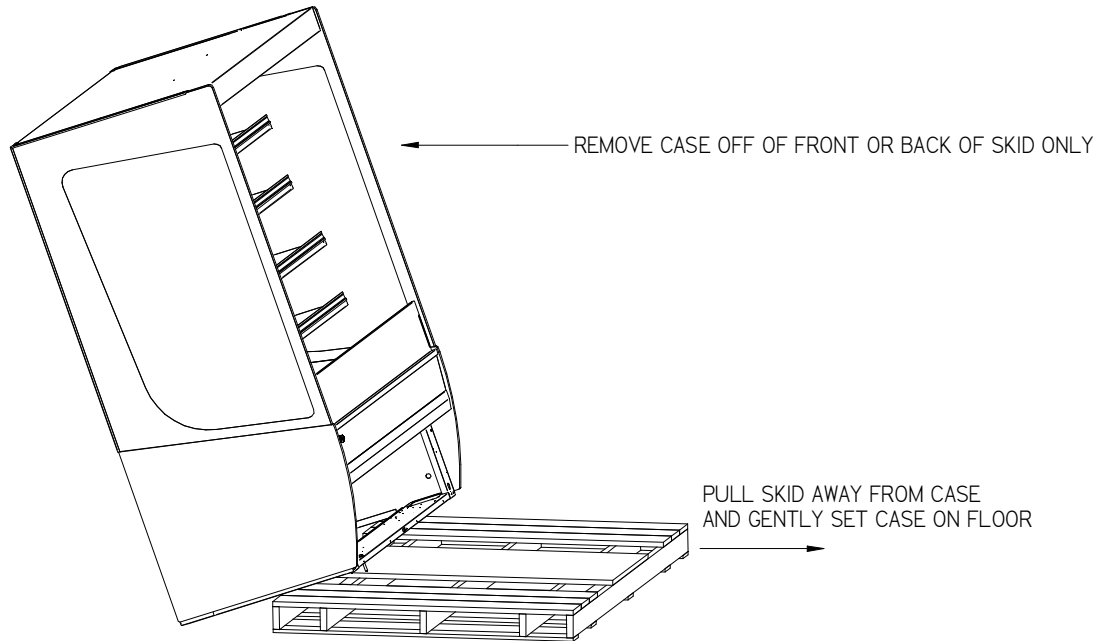
Two or more people should be involved in moving the unit from the pallet onto the ground.

Remove the (4) 1/4" screws that secure the case to the skid. These screws are in the front and rear corners of the base rails. Base front and rear panels must be removed to access these bolts.



Once all the bolts are removed, slide the unit off the back of the shipping pallet, and tilt it so the rear corner touches the ground. Someone must move the pallet out from under the case and gently tilt the case forward until it touches the floor.

NOTE: see page 20 for removal of slide-in cases from pallet



8.2.1 Removing Packaging Material

Remove bubble wrap and packing material for all shelves and panel, brackets, etc. If it is necessary to remove tape residue from plastic materials, use cleaning compounds recommended in the cleaning section of this manual. "Lifting and Moving the Case"



Caution:

Do not push or pull against the glass air deflector on front of case. Doing so can cause the glass to break. Do not push or pull on the side glass or pull on the base panel. Doing so will break glass or pull out the panel mounting screws. Care must be taken not to damage the case when removing it from the skid or moving the case.

8.3 SINGLE CASE INSTALLATION (STAND ALONE UNITS)

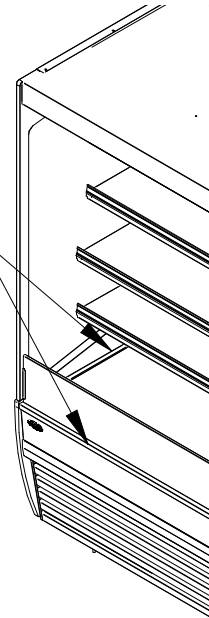
Leveling the Case:

It is important that the case is level. This will allow for proper drainage of condensate water from evaporator coil. A wrench is included to aid in adjusting the leg levelers.

Check the left-to-right level of the case along front of plastic air deflector retainer.

Check the front-to-rear level of the case along the interior ends of the case.

LEVEL CASE USING THESE SURFACES



Adjust the (4) outside leg levelers as needed to level the case in each direction.

NOTE: If necessary, use a wood or plastic shim under each leg leveler to avoid scratching the tile floor.

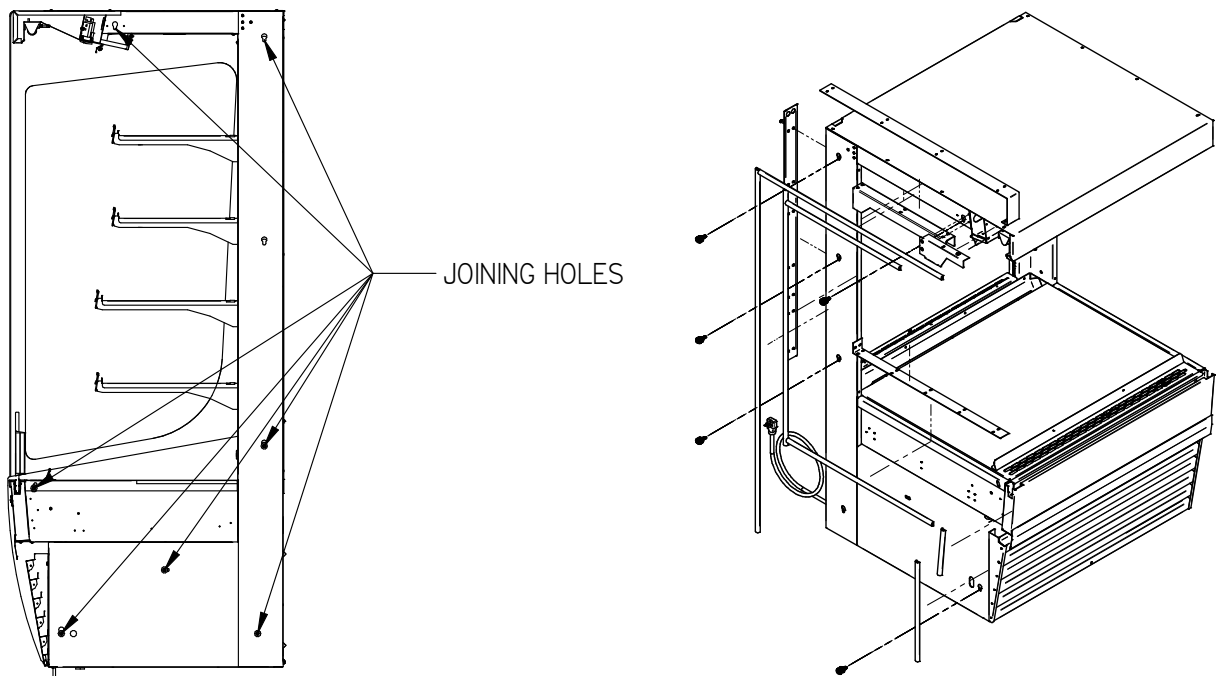
Sealing Unit to The Floor

After the unit is positioned and the leg levelers are turned out, the unit needs to be sealed to the floor for NSF approved installation.

8.4 INSTALLATION FOR JOINED CASES (LINEUPS)

8.4.1 Join refrigerated to refrigerated

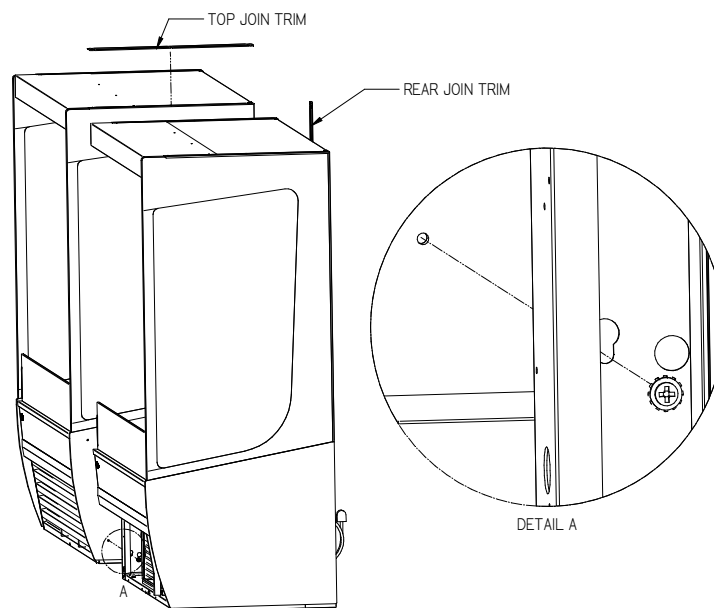
1. Remove all Shelves, display deck, interior back panel(s), exterior back(s), front and rear base panel, and loosen honeycomb (see cleaning section for honeycomb removal) material on the unfinished end to expose the holes used to bolt units together.
2. Position the right or left most unit in the desired position for the lineup to start, and level this case.
3. Push the 2nd case next to the 1st and line them up as closely as possible.
4. Adjust the leveling legs of the 2nd case until the units and joining holes align with each other.
5. Using (7) holes noted below, bolt units together with the supplied hardware, and attach joining trim to remove the gap between the decks in the joined units. Re-use the screws in the uprights, as well as the self-drilling screws provided with the kit.
6. Replace all panels that were previously removed and re-insert honeycomb



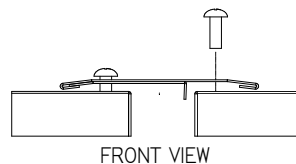
8.4.2 Join units with glass divider, or join refrigerated too non-refrigerated

For this joining configuration, one unit will come with a lower end panel preinstalled with glass. Five bolt holes will be exposed on the outside of this panel and are the locations that will be used to join the units together. This kit also comes with top and rear exterior trim, but no interior trim.

1. Remove all Shelves, display deck, interior back panel(s), exterior back(s), front and rear base panel, and loosen honeycomb (see cleaning section for honeycomb removal) material on the unfinished end to expose the holes used to bolt units together.
2. Position the right or left most unit in the desired position for the lineup to start, and level this case.
3. Push the 2nd case next to the 1st and line them up as closely as possible.
4. Adjust the leveling legs of the 2nd case until the bolt holes align with the mating holes in the joining case.
5. Push the units together so that the bolts go through the case to be joined.
6. Using the hardware provided (1/4-20 screw, washer, lock washer), screw the 2nd case with the unfinished end into the first case.



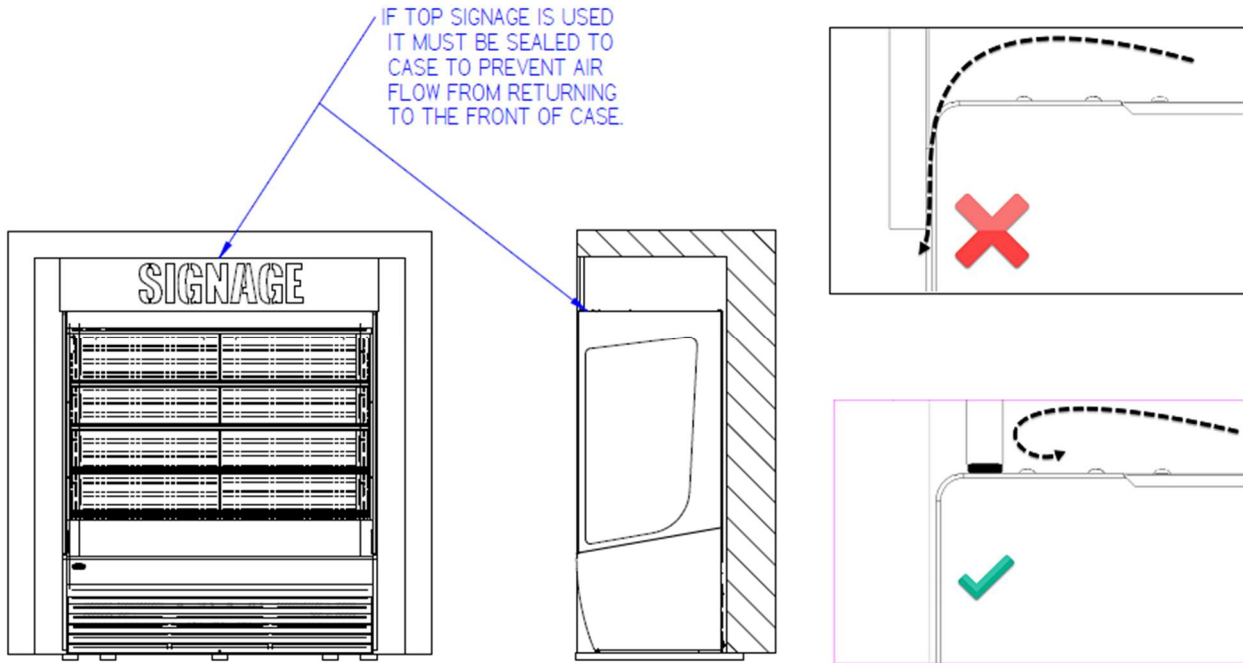
7. Finish the joining process by loosening the glass trim on the case to slide the joining trim over the existing trim and secure with the existing fasteners. Do this for both the top trim and the rear trim.



8. Replace any panels previously removed. Units are now joined.

8.5 INSTALLATION IN AN ALCOVE

When installing a case in an alcove make sure any signage above the case is sealed to prevent airflow from returning into the case.



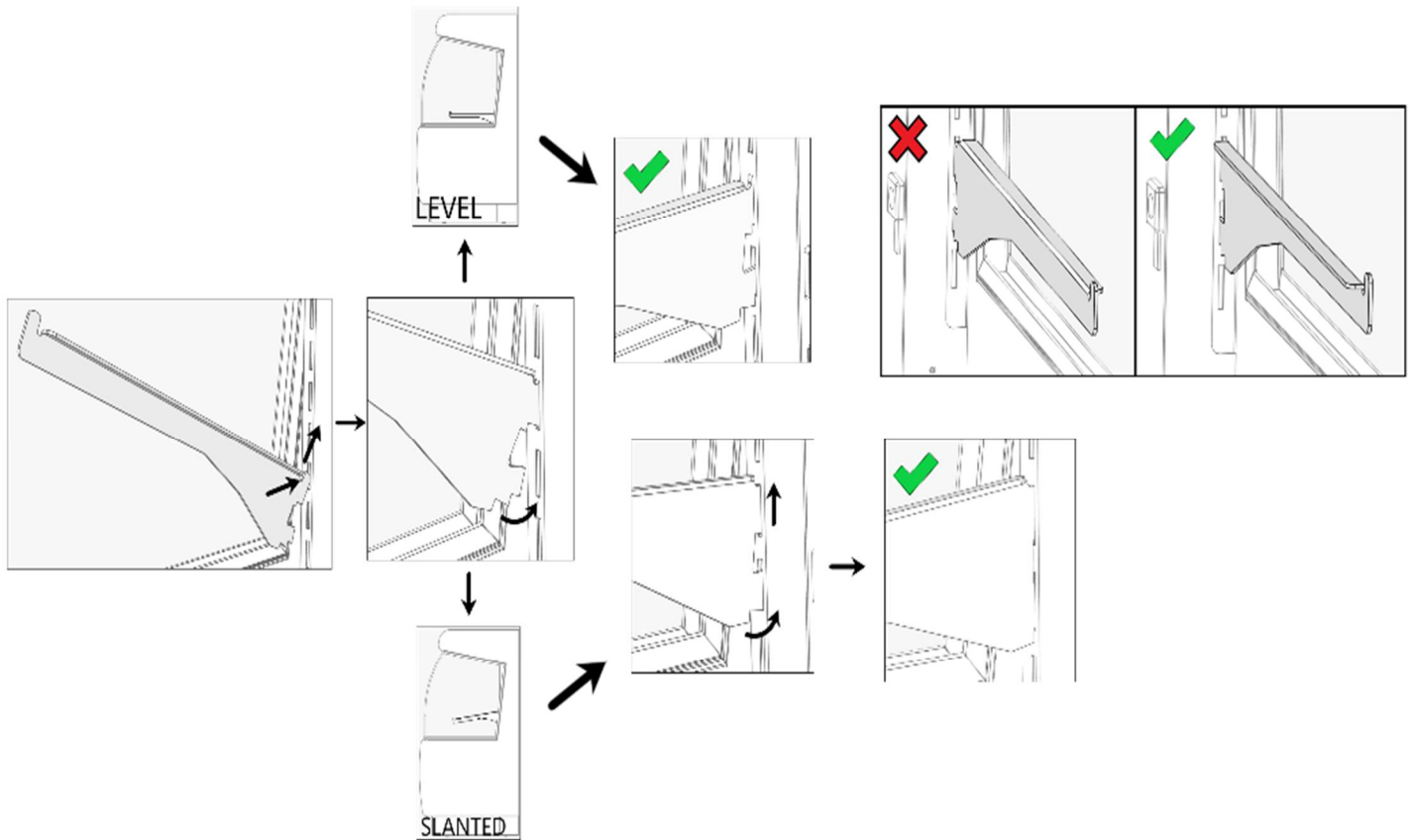
(9) SHELVING INSTALLATION AND REMOVAL

9.1 SHELF BRACKETS AND SUPPORTS

Follow the instructions shown in the diagram below to install shelf brackets. Follow the “LEVEL” path if you want shelves to have no tilt or follow the “SLANTED” path if you want shelves with tilt. Ensure brackets are well seated and face the proper direction.

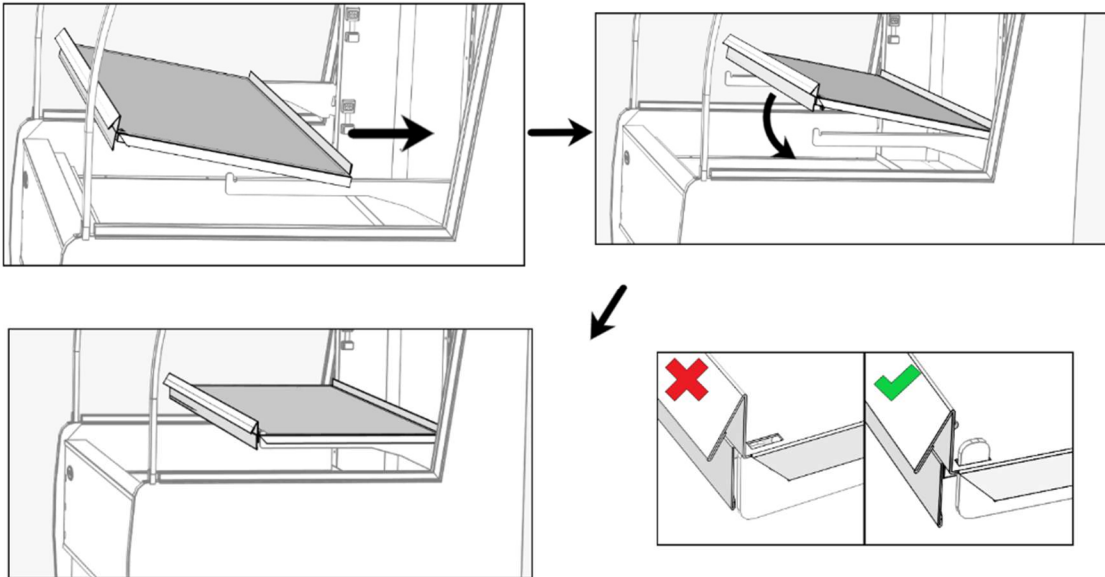
- Determine desired shelving location.
- Allow a minimum of 2” between top of product and bottom of next shelf up.
Note: Product will need to be removed to readjust shelf location

| | |
|--|---|
| | <p>DANGER: Shelves will be hot when in heated hot mode, allow case to cool before attempting to move shelves.</p> <p>Shelves may be wet and slippery when in refrigerated cold mode. Dry shelves before attempting to move shelves.</p> |
|--|---|



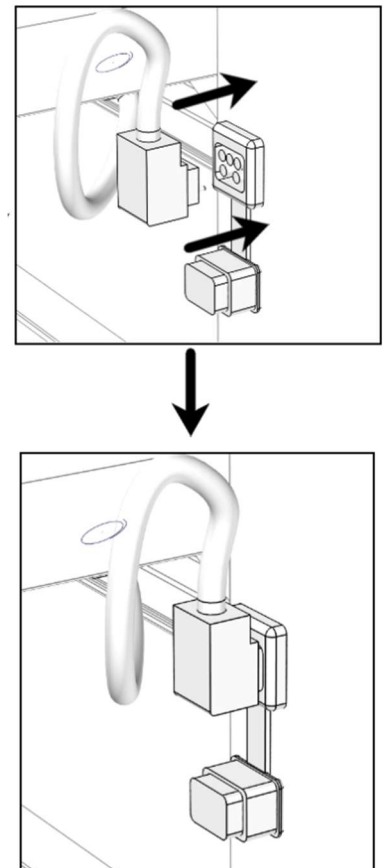
9.2 SHELVES

Lay back of shelf across both brackets. Slide it to the rear and then lay the front of the shelf down. Check that the retaining tab of the shelf brackets protrudes through the slot in the shelf.



Make the heater connections from the back of the shelf into the receptacle of the vertical frame of the unit. Remove the receptacle cap and push the heater cord (the heater cord comes out of the left side of the shelf) into the nearest heater receptacle. The cord will only insert in one direction as shown below.

Once power is applied to the display case you will be able to check if the cord connection has been adequately made.

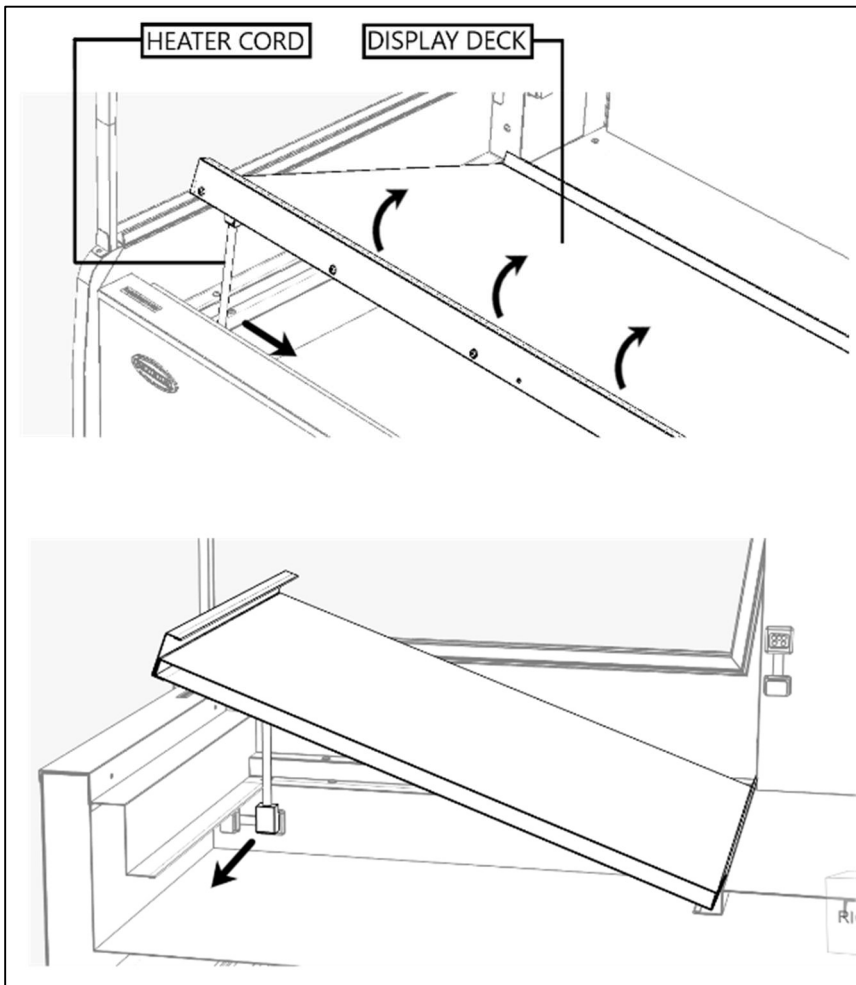


9.3 DISPLAY DECK



DANGER: The Hot-Cold selector switch located at top front of case must be in center-off position before connecting or disconnection deck power plug. Potential for personal injury or damage to your equipment may occur

To remove the deck simply lift and rotate the front of the deck upward. Hold the assembly in place and use your other hand to disengage the heater cord from the tub. Then simply lift the deck from the unit. Installation is the reverse of removal.



9.4 INSTALLING SHELF LIGHT CORDS (OPTIONAL SHLF LIGHTS)



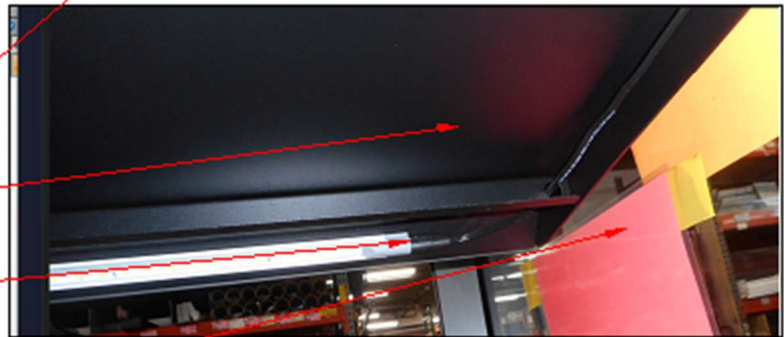
CORD HOOKS IN SLOT ON
BACK FLANGE OF SHELF

PUSH EXCESS SHELF CORD
BACK INTO GROMMET

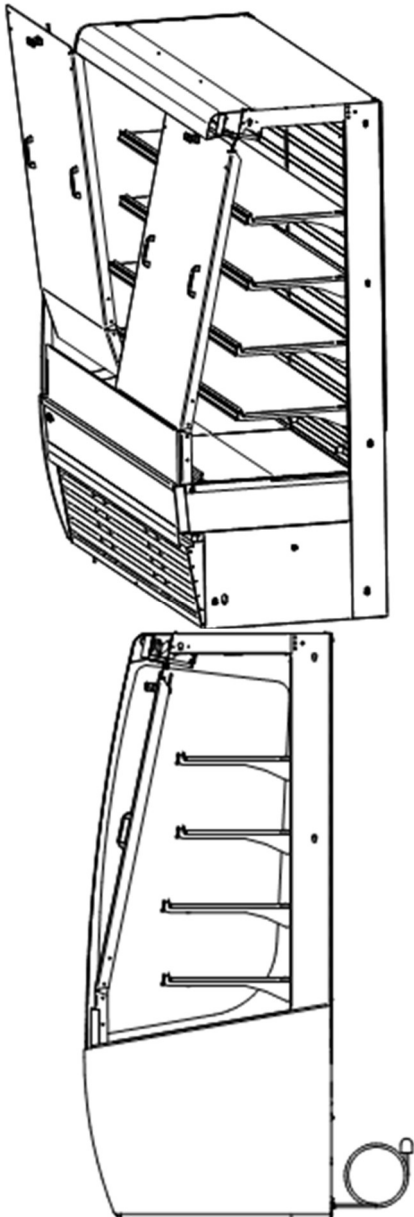
CORD GOES THRU HOLE
IN SHELF SUPPORT

PLUG CORD INTO END OF LED
LIGHT STRIP

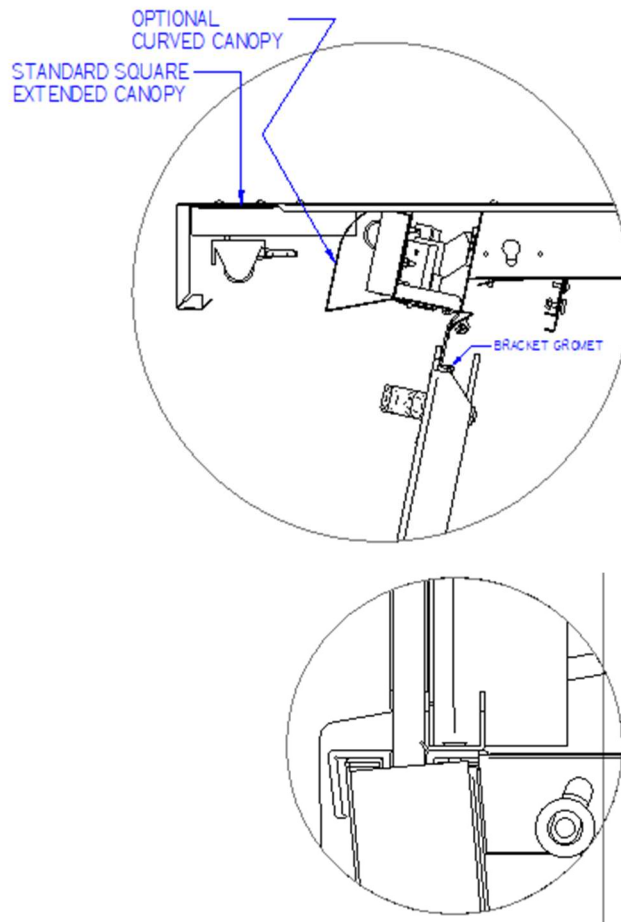
CORD GOES THRU HOLE IN SHELF SUPPORT



(10) SECURITY NIGHT COVER (OPTIONAL)



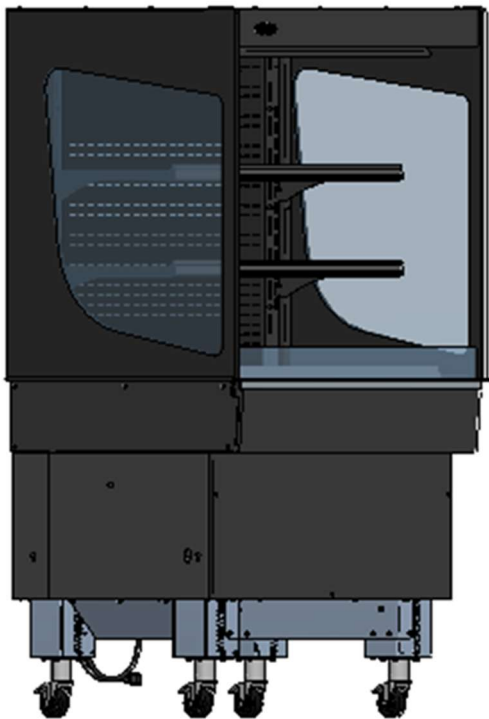
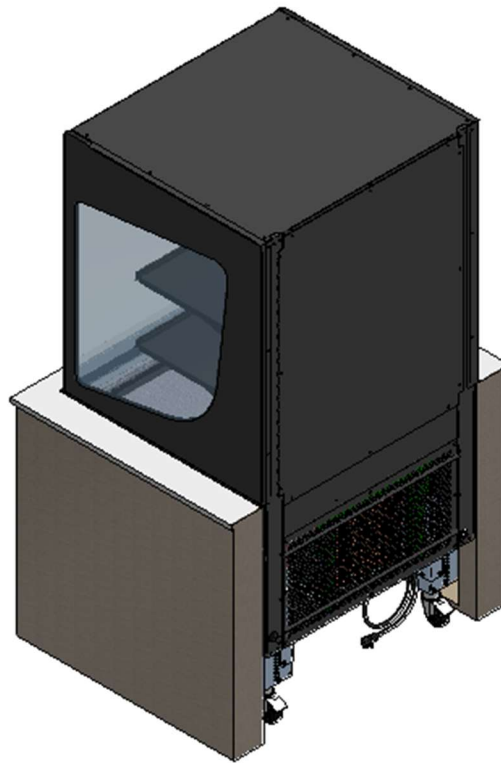
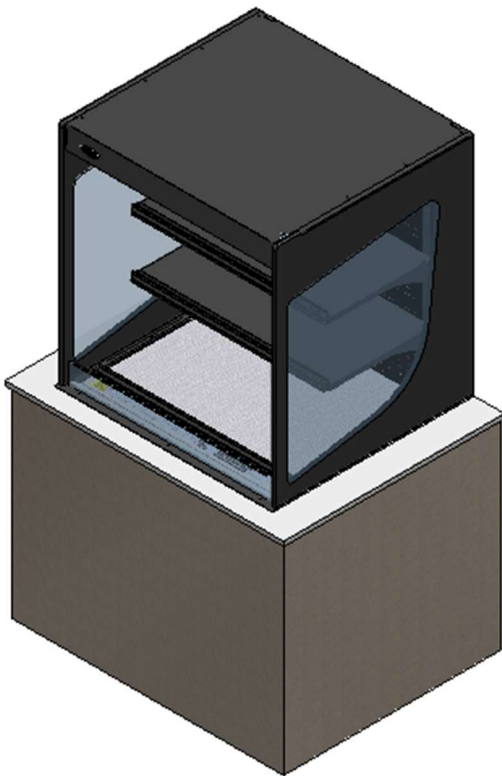
1. Install the security cover into the preinstalled retaining brackets by first inserting the bottom with the top of the cover tilted out.
2. Insert the bottom of the security cover into the lower u-clip retainer by rotating the top of the assembly toward the case and dropping the cover down into place.
3. The top of the cover will sit against the upper retainer bracket.
4. Once the cover is in position, lock the latch using the key in the t-handle of the security cover panel.



When installing the security cover panel, ensure that the bottom of the panel is seated in the lower u-clip, and that the latch fully engages behind the upper retaining bracket.

5. Install the security cover into the preinstalled retaining brackets by first inserting the bottom with the top of the cover tilted out.
6. Insert the bottom of the security cover into the lower u-clip retainer by rotating the top of the security cover assembly toward the case and dropping the cover down into place.
7. The top of the cover will sit against the upper retainer bracket.
Once the cover is in position, lock the latch using the key in the t-handle of the security cover panel.

(11) Slide-In Models -Leg & Caster Adjustments



Slide In Models

Designed to slide/roll into a counter with an open back.

Refrigerated cases are available with rear condenser air intake and discharge only.

Case counter height is set at 34" from the factory.

Leg assemblies are adjustable in 1/4" increments.

Adjustable casters have 1" of upward adjustment to fine tune height to match counter surfaces.

The caster lock will lock both the swivel and roll directions.

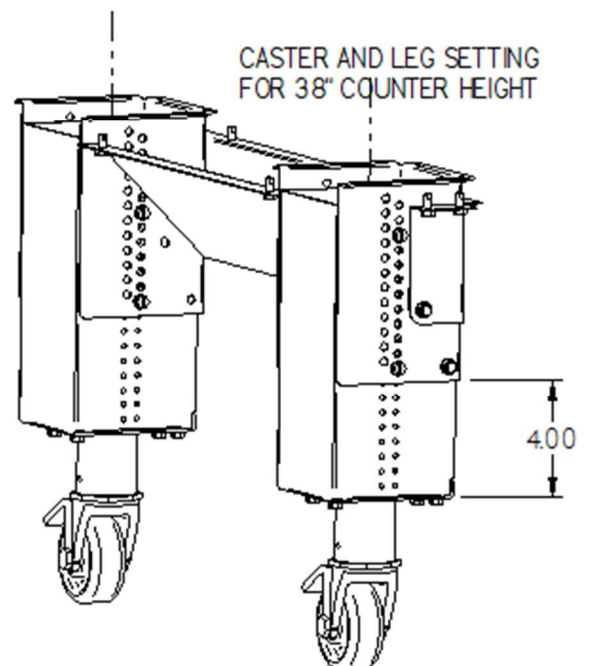
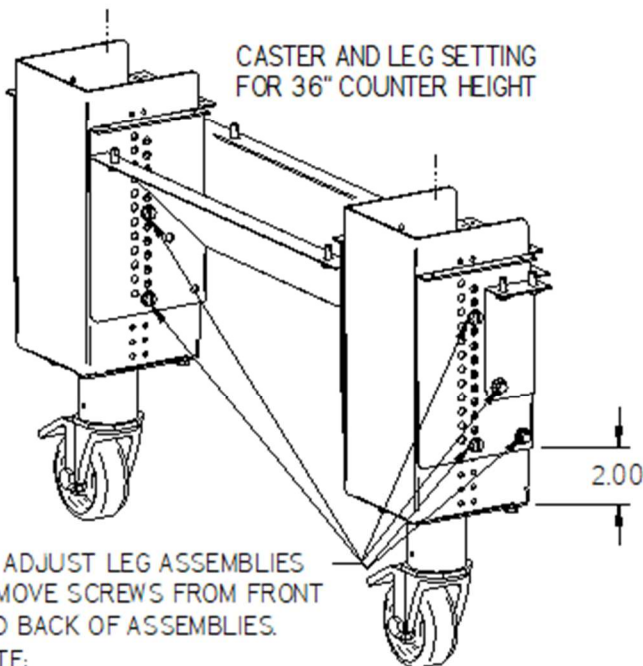
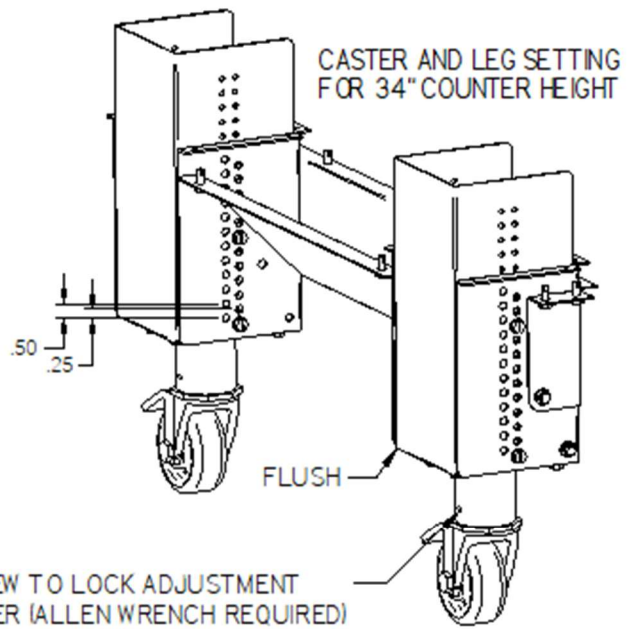
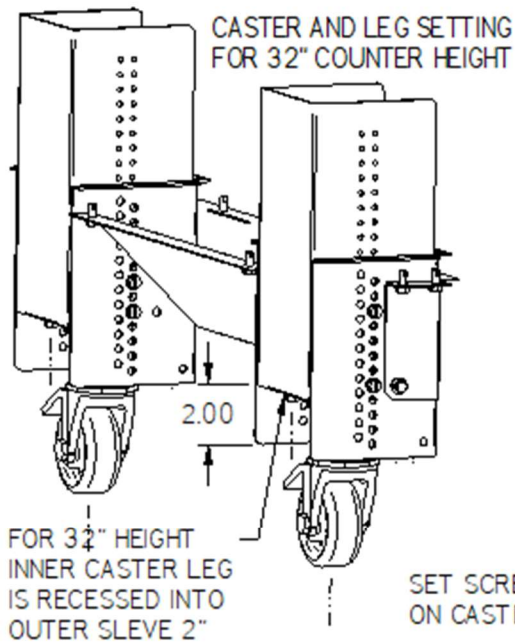
The next page shows common counter height adjustments.

*****IMPORTANT*****

CASE MUST BE LIFTED AND SECURED TO ADJUST CASTER/LEG ASSEMBLIES.

*****WARNING*****

FAILURE TO DO SO CAN CAUSE SEVERE INJURY OR DEATH.



TO ADJUST LEG ASSEMBLIES REMOVE SCREWS FROM FRONT AND BACK OF ASSEMBLIES.

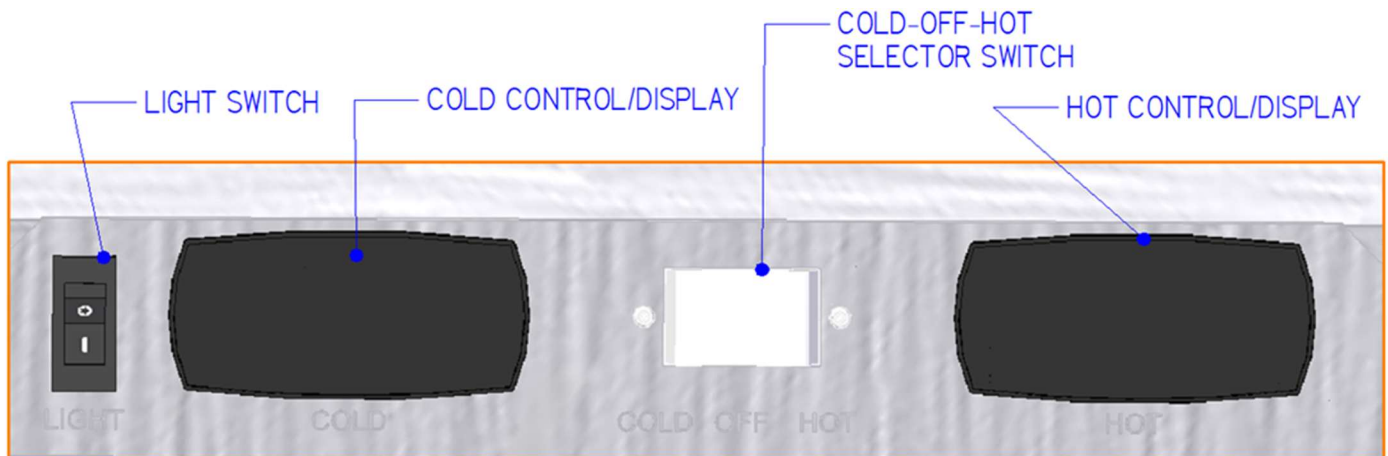
NOTE:
LEG ASSEMBLIES ARE ADJUSTABLE IN 1/4" INCREMENTS
CASTERS HAVE 1" OF UPWARD ADJUSTMENT.

IMPORTANT
CASE MUST BE LIFTED AND SUPPORTED WHEN ADJUSTING CASTER LEG ASSEMBLIES.

WARNING
FAILURE TO DO SO CAN CAUSE INJURY OR DEATH

NOTE: Most leg adjustments can be made before the case is removed from the pallet.

(12) CONTROL OPERATION



12.1 CONTROL DESCRIPTION

Controls are located in the upper left side of the case above the display case opening.

12.1.1 Light Switch

The unit has a light switch that turns on and off the interior lights of the unit. The lights can be used in all modes of operation.

12.1.2 Electronic Cold Temperature Control/display

The Cold electronic temperature control allows the user to adjust the cold temperature and displays control information when in cold operation. The interior temperature will be read on display.

12.1.3 Cold-Off-Hot Selector Switch

The unit has a 3-position selector switch that selects between Cold operation, off (Ambient), and Hot operation.

- Push Left side of switch completely down for cold operation, (Cold temperature control will light)
- Push Right side of switch completely down for hot operation. (Hot temperature control will light)
- Switch in center position for Off (Ambient temperature operation).
(In this position both Cold and Hot temperature controls will be off and NOT light)

12.1.4 Electronic Hot Temperature Control/display

The Hot electronic temperature control allows the user to adjust the hot temperature and displays control information when in Hot operation.

(13) ELECTRONIC TEMPERATURE CONTROL (REFRIGERATED UNITS ONLY)



Key:
 1 display
 2 icons/backlit buttons
 3 icons

Backlit buttons/Icons

| Button/icon | Description | On | Flashing |
|-------------|--------------------|--|---|
| | Set point/Up arrow | <ul style="list-style-type: none"> Increase value Scroll menu Direct access to change set point | - |
| | Program | Pressed briefly: <ul style="list-style-type: none"> enter menu branch Save value and return to the parameter code Pressed and held (3 s): <ul style="list-style-type: none"> enter programming mode return to the previous level | - |
| | On-Off/Down arrow | <ul style="list-style-type: none"> Unit ON Decrease value Scroll menu Switch unit on and off | - |
| | Defrost | Active/ Can be deactivated from the keypad | Waiting/ Can be activated from the keypad |
| | Compressor | Active | Waiting |

13.1.1 Control Overview

In refrigerated mode the control will display temperature of the cabinet probe located in the upper-left-rear corner of the display area. The refrigerated controller has only one zone of operation with 9 setpoints to adjust the temperature of the display area.

In heated mode, there are 4-5 zones each capable of being individually set. The control will not indicate any cabinet temperature as it does not correlate to product temperature. The display will cycle through each zone, first displaying the name of the zone and then the setpoint of that zone (e.g. “HS1”..... “7”..... “HS2”..... “5”).

13.1.2 Control Power





It is recommended that controls are not turned off. Instead use the mode selector switch to turn one or both controls off.

To turn refrigeration control power on, press and release the key. Navigate the menu until “ESC” is displayed and press . Navigate until “ESC” is displayed again and press again. Press the key.

To turn control power off or on, press and hold “” for approx. three seconds. When the control powers off the display will flash “OFF”. When refrigeration control is in the off-mode cabinet lights and







evaporator fans will still operate, but the compressor will not turn on causing the case to gradually reach room temperature.

13.1.3 Adjusting the set point - Refrigerated

The set point is what determines how cold or hot the display case will hold food and beverage. To adjust the set point press the  key twice. Then press “” key to increase the set point number (colder) or press the “” key to decrease the set point number (warmer). There are nine (9) available set points numbers, the higher the number of the set point, the colder the display case will run, with setting “9” being the coldest and setting “1” being the warmest. Once you have chosen your desired setting press the  key again to confirm your choice.

After 20s the control will revert back to the default display mode.

13.1.4 Adjusting the set point – Heated

The set point is what determines how cold or hot the display case will hold food and beverage. To adjust the set point use the  or  keys to navigate to the zone you would like to adjust, press the  key two times, Then press “” key to decrease the set point number (colder) or press the “” key to increase the set point number (warmer). Once you’ve chosen a setpoint, press the  key again. You can now select a different zone, press the program key and select a setpoint for that zone. Once you’ve finished setting up the zones, the control will go back to it’s default display mode after 20s of no user interaction.

13.1.5 Entering manual defrost mode (Refrigerated Mode Only)

The control is programmed to automatically initiate a defrost by two different methods, involving time and temperature, as outlined in the “Defrost Cycle” section (Pg.) of “ELECTRONIC CONTROL PARAMETERS AND EXPLANATION OF OPERATION.” While it is uncommon that the automatic defrost cycles would insufficiently defrost the case, a user is able to manually put the unit into a defrost mode.

Note: The control will not allow the initiation of a manual defrost within 30 minutes of completion of another defrost cycle, manual or automatic.

To initiate the manual defrost simply turn the mode selector switch to the center position for 5 seconds, and then turn it back to the refrigerated position. When the control powers back on, it will power up in defrost mode. While in defrost mode the display will read “dEF” When the defrost has completed due to temperature or time, the compressor will turn back on and the control display will then return to reading the cabinet temperature.

13.1.6 Error codes

It is possible for error codes to be displayed on the control screen. In the event of a malfunction an error code starting with “E” will flash on the display. An error code or codes will flash intermittently on the display. If there are multiple codes, the display will continuously cycle through them.

When the fault is remedied, the control will return to normal operation and will automatically clear the codes from the display.



















| <u>Display</u> | <u>Description</u> | <u>Refrigerated Location:</u> | <u>Heated Location</u> | <u>Cause</u> | <u>Resolution</u> |
|----------------|-------------------------|--|------------------------|--|---|
| "E1" | Failure to read probe 1 | Air Discharge | Deck | Probe signal is interrupted or short-circuited | <ul style="list-style-type: none"> • Check to ensure probe wires and quick disconnect are secure in control. • Check probe resistance to table below. If 0 resistance is present, check wiring insulation. If infinite resistance is present, check for breaks in wiring (meter will likely read overload or very high in the mega-ohm range). • Ensure that probes are wired per the wiring diagram provided. Replace probe if other remedies fail, or if probe resistance deviates from "Table 3" below. |
| "E2" | Failure to read probe 2 | Evaporator Coil | Shelf 1 (Bottom) | | |
| "E3" | Failure to read probe 3 | Cabinet temp – upper left corner of display area | Shelf 2 | | |
| "E4" | Failure to read probe 4 | No 4 th probe | Shelf 3 | Same as above. If present on the refrigerated unit this is a control configuration error | Same as above. If present on the refrigerated unit, the control parameters will need to be updated to the current version. |
| "E5" | Failure to read probe 5 | No 5 th probe | Shelf 4 if applicable | | |

| TEMPERATURE PROBE COMMON RESISTANCE CHART - REFRIGERATED | | | |
|---|--------------------------------|-------------------------------|--------------------------------|
| Probe Temp | Maximum Resistance [kΩ] | Normal Resistance [kΩ] | Minimum Resistance [kΩ] |
| 32°F(0°C) | 27.83 | 27.28 | 26.74 |
| 77°F(25°C) | 10.1 | 10 | 9.9 |
| 212°F(100°C) | 1 | 0.97 | 0.94 |

| TEMPERATURE PROBE COMMON RESISTANCE CHART - HEATED | | | |
|---|--------------------------------|-------------------------------|--------------------------------|
| Probe Temp | Maximum Resistance [kΩ] | Normal Resistance [kΩ] | Minimum Resistance [kΩ] |
| 77°F(25°C) | 50.5 | 50 | 49.5 |



(14) INITIAL STARTUP

|  | <p>NOTICE (REFRIGERATED COLD OPERATION) CASE MUST BE STOCKED WITH PRE-CHILLED PRODUCT 38° OR COLDER. NOTICE</p> <p>This refrigerated display case is designed to operate in a maximum environment of 80 DEG. F and 55% relative humidity. Exceeding these limits will cause poor case performance and sweating.</p> | | | | | | | | | | | | |
|--|---|--|--|--------------|---------------|---|----------------------------|---|---------------------------|---|--------------------|---|--------------------------|
|  | <p>NOTICE (HEATED HOT OPERATION)</p> <p>Load items at 170°F or warmer. At time of loading, items stocked in unit MUST be pre-heated at 170°F or warmer.</p> <p>Not all packaging is compatible with this merchandiser. Any packaging material with a rating of less than 250°F should not be used.</p> <p>Typically, polypropylene (recycle code 5) works well, but check with the manufacturer first to get an accurate assessment of the application</p> <p>Materials listed in the table below will not survive the high temperature conditions of this merchandiser.</p> <table border="1" data-bbox="462 984 1344 1625"> <tr> <td colspan="2" data-bbox="462 984 1344 1066">  <i>DO NOT USE</i> the following packaging materials: </td> </tr> <tr> <th data-bbox="462 1066 630 1157">Recycle Code</th> <th data-bbox="630 1066 1344 1157">Material Name</th> </tr> <tr> <td data-bbox="462 1157 630 1276">  </td> <td data-bbox="630 1157 1344 1276">Polyethylene terephthalate</td> </tr> <tr> <td data-bbox="462 1276 630 1396">  </td> <td data-bbox="630 1276 1344 1396">High-density polyethylene</td> </tr> <tr> <td data-bbox="462 1396 630 1516">  </td> <td data-bbox="630 1396 1344 1516">Polyvinyl chloride</td> </tr> <tr> <td data-bbox="462 1516 630 1625">  </td> <td data-bbox="630 1516 1344 1625">Low-density polyethylene</td> </tr> </table> |  <i>DO NOT USE</i> the following packaging materials: | | Recycle Code | Material Name |  | Polyethylene terephthalate |  | High-density polyethylene |  | Polyvinyl chloride |  | Low-density polyethylene |
|  <i>DO NOT USE</i> the following packaging materials: | | | | | | | | | | | | | |
| Recycle Code | Material Name | | | | | | | | | | | | |
|  | Polyethylene terephthalate | | | | | | | | | | | | |
|  | High-density polyethylene | | | | | | | | | | | | |
|  | Polyvinyl chloride | | | | | | | | | | | | |
|  | Low-density polyethylene | | | | | | | | | | | | |
|  | <p>NOTICE</p> <p>This merchandiser is designed to be used with pre-packaged product only. All food items placed in the merchandiser must be packaged. No foods should be placed in the merchandiser without packaging.</p> | | | | | | | | | | | | |



1. Prior to initial startup be sure to clean the case as described in the “Weekly Cleaning” section of the manual.
2. Be sure that the display deck(s) and shelves are in the desired locations.
3. Be sure all plug connections on lights, shelves and deck are securely plugged in to receptacles. Note the deck plug is located under the deck.
4. Be sure front and rear base panels are in place and secured.
5. Plug in the unit to the appropriate wall outlet and turn unit’s power switch (marked “POWER”) to the on or “I” position.

Select desired operation Cold-off (ambient)-or Hot. Warning Be sure case reaches desired temperature before placing pre chilled (cold) or pre heated (Hot) product into case.

▲ NOTICE ▲

When changing selection mode product must be removed immediately from case. The case must be allowed to 2 hours for start-up or to transition between modes of operation and reach correct temperature. Interior surfaces may sweat during this temperature transition.

6. Use the switch labeled “LIGHT” to turn on all top/shelf lights.

For more detailed information on controls operation see the section “Electronic Temperature Control”

At start up it is recommended that the selected temperature control is set to a mid-setting, such as 5. After the unit has gone through several cycles, adjust the control to a warmer or colder setting, if necessary, to maintain desired product temperature. Allow refrigerated models to run for at least two hours before placing pre-chilled product into display area.

14.1.1 Placing Product into Case

- Do not exceed 150 pounds of weight per shelf. Heavy products should be distributed evenly across the entire shelving area.
- The shelving must be placed in the desired location before selecting Cold or Hot mode or turning powering on to case. Product must be removed to readjust shelf location.
- Allow refrigerated models to run for at least two hours before placing pre-chilled (38°F or less) product into the case.
- Allow Heated models to run for at least 1 hour before placing pre-heated (170°F minimum) product into the case.
- When placing the product into case:
 - Allow a minimum of 2” between top of product and bottom of next shelf up.
 - Do not overhang the front or rear of the shelves with product. Improper clearance in front and rear of the shelf will block the refrigerated airflow and will cause product loss.
 - Do not block the slots along the front and rear air discharge slots. Covering these slots will block the refrigerated airflow and could cause product loss.

(15) CONDENSATE EVAPORATOR (IN REFRIGERATED MODE)

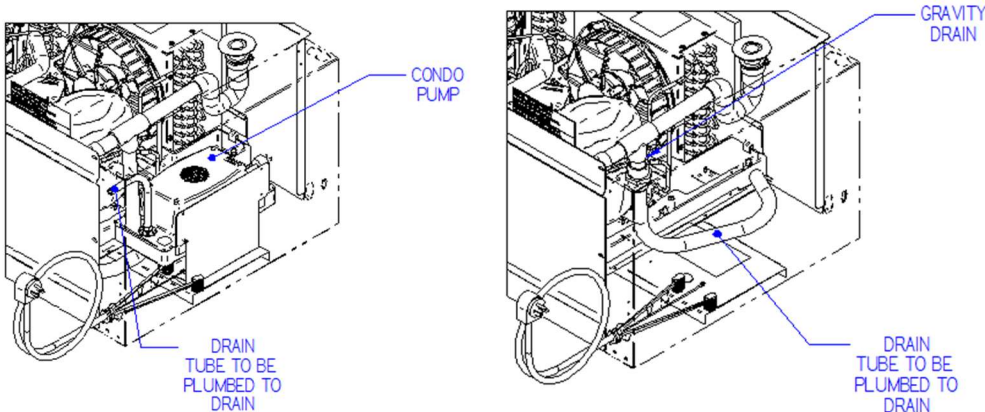


NOTICE: Steam from the condensate evaporator may be visible around the base of the merchandiser during normal operation. Always check that drain tubes have not been dislodged during shipping.

This merchandiser is furnished with an electric condensate evaporator, and no plumbing connections are required. This is an open merchandiser and can produce a large amount of condensate water. To ensure that an adequate evaporator capacity is available, a high wattage heater is used.

If the merchandiser is supplied with either an optional electric condensate pump or optional floor drain, the drain hose will need to be routed to the nearest drain.

If desired the condensate drain tubes can be changed to bypass the condensate system and run directly to drain. Bypassing the Factory condensate system must be performed by a qualified plumber and electrician.







Inspect condensate pan and drain tubes to be sure nothing has become dislodged during shipment and that nothing is leaking. Tightening or adjusting clamps or hoses may be required.

(16) CLEANING INSTRUCTIONS

16.1 DAILY CLEANING

The case should be cleaned thoroughly, as described in the weekly cleaning section before it is used for the first time.

| | |
|---|--|
|  | <p>NOTICE: Avoid splashing or soaking any electrical components with water to prevent electrical damage to the case.</p> |
|  | <p>NOTICE: Shut off lights, disconnect power and remove all products from case. Allow sufficient time for the unit to reach room temperature before proceeding with cleaning.</p> |
|  | <p>NOTICE: Remove all products from the case before proceeding with cleaning procedure.</p> |
|  | <p>NOTICE: This case is not designed to be cleaned by flushing.</p> |





Note: For major spills or foreign material buildup perform the weekly cleaning instructions.

Note: Detergents are not recommended and do not use abrasive cleaners or pads to prevent scratching of surfaces.

1. Clean all foreign materials from the door opening.
2. Completely wipe the interior of both the upper & lower areas of case using a damp cloth.
3. The remaining exterior surface should be wiped down using any ammoniated cleaners or soapy warm water.


16.2 WEEKLY CLEANING

This procedure is recommended on a weekly basis. It may need to be performed more often if necessary to maintain a clean, sanitary case. The case should be cleaned to the following procedure before using case for the first time.

| | |
|---|--|
|  | <p>NOTICE: Avoid splashing or soaking any electrical components with water to prevent electrical damage to the case.</p> |
|  | <p>NOTICE: Shut off lights, disconnect power and remove all products from case. Allow sufficient time for the unit to reach room temperature before proceeding with cleaning.</p> |
|  | <p>NOTICE: Remove all products from the case before proceeding with cleaning procedure.</p> |
|  | <p>NOTICE: This case is not designed to be cleaned by flushing.</p> |

1. Side, and rear door glass can be cleaned with common window cleaners.
2. Remove interior shelving and display deck from unit as described in the “Shelving Installation and Removal” section of this manual.
3. Clean all shelves, shelf supports, shelf light deflectors, shelf brackets, shelf standards using warm soapy water and a brush. Rinse thoroughly and allow it to dry.
4. Remove the display deck and clean using warm soapy water and a brush. Rinse thoroughly and allow it to dry.
5. Clean the entire interior of the case using warm soapy water. Wipe off all soapy water with a damp cloth and allow it to dry. (DO NOT use solvents such as Acetone, Benzene, Carbon Tetrachloride, and Lacquer Thinners)
6. Reassemble all components in reverse order.
7. The exterior surfaces should be wiped down using any ammoniated cleansers or warm soapy water.

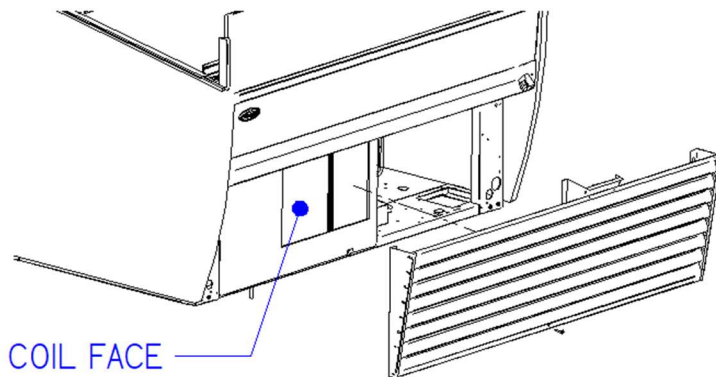
16.3 CLEANING CONDENSER COIL

| | |
|---|---|
|  | <p>NOTICE:</p> <p>Condenser coil must be inspected/cleaned at regular intervals defined below to ensure proper refrigeration performance and prevent compressor failure. In some environments, it may be necessary to clean more frequently. FAILURE TO CLEAN CONDENSER COIL WILL VOID COMPRESSOR WARRANTY.</p> |
|---|---|

See last page of this manual for condenser coil cleaning and inspection form.

The condenser must be cleaned from the front of the condenser coil. The front of coil could be either on the front or back of the display case.

1. Disconnect power to the unit.
2. Depending on the model, remove either the front panels located on the base or Top Rear panel to expose condenser fins.
3. Carefully vacuum the front surface of condenser coil. Take care not to bend coil fins with vacuum cleaner nozzle.
4. Reinstall all panels and retaining screws and reconnect power.



16.3.1 Standard Condenser fan

It is very important that the Condenser coil is cleaned twice monthly to ensure proper refrigeration performance and to prevent compressor failure. Failure to clean condenser coil will void condenser warranty. ***In environments where deep fat fryers and grills are used, a short cleaning schedule may be necessary. This may require the use of a no rinse coil cleaning agent.***

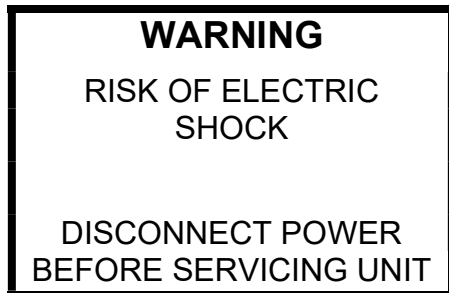
16.3.2 Optional Self-cleaning Reversing fan

The procedure to clean the evaporator coil is the same as the above procedure except cleaning interval is extended. The coil should be inspected and cleaned within ***1 month from the initial install*** and inspected and cleaned at a minimum of every 3 months. Cleaning frequency may need to be adjusted, based on the findings of each inspection. ***In environments where deep fat fryers and grills are used, a shorter cleaning schedule may be necessary. This may require the use of a no rinse coil cleaning agent.***

(17) SERVICE

IMPORTANT: Read this Section of this manual located on page 5.
“REFRIGERATION WARNING & INSTALLATION-REPAIR-DECOMMISSIONING”
All refrigeration and electrical work must be performed by certified technicians.

Service Information



**Before any service work is performed
on the case, make sure all power is
disconnected to the case.**

**To find a service company in your area, please visit our website at
<https://federalind.com/support-service/service-rep-locator>. There you can also find self-
service tools to help you get the answers you need faster!**

**For warranty service requests and all technical support, including compressors and other
service parts please contact:**

- Phone: (833) 238-8168
- Email: techservice@partstown.com



**Federal Industries has partnered with Parts Town for ALL Non-Warranty Part Identification,
Pricing, Lead Times, Orders & Freight Quotes. Please contact Parts Town directly if you need
parts:**

- Website: PartsTown.com
- Email: CustomerService@PartsTown.com
- Phone: 833-809-8188

(18) SALE & DECOMMISSIONING

IMPORTANT: Read this Section of this manual located on page 5.

“REFRIGERATION WARNING & INSTALLATION-REPAIR-DECOMMISSIONING”

All

refrigeration and electrical work must be performed by certified technicians

OWNER RESPONSIBILITY

If you sell or give away your Federal Industries case, you must make sure that all safety labels and the Installation-Service Manual are included with it. If you need replacement labels or manuals, Federal Industries will provide them free of charge. Contact the customer service department at Federal Industries at (800) 356-4206.

The customer service department at Federal Industries should be contacted at the time of sale or disposal of your case so records may be kept of its new location. Electrical and refrigeration specs

If you sell or give away your Federal Industries case, you should evacuate the refrigerant charge before shipment.



Refrigerant Recovery/Recycling/Disposal

When recycling or discarding case, refrigerants **MUST BE** handled according to local, state and federal codes, requirements and regulations.

If disposing of a refrigerated case that uses ozone depleting chemicals in its refrigeration system, make sure the refrigerant is removed by a qualified service technician and properly disposed of.

If you intentionally release refrigerant into the atmosphere, you may be subject to fines or other penalties (under regulation mandated by environmental regulators and/or legislative edict.)

(19) ELECTRICAL AND REFRIGERATION INFORMATION

| | |
|---|---|
|  | <p>WARNING:</p> <p>Improper or faulty hookup of electrical components in the display case can result in severe injury or death.</p> |
|  | <p>CAUTION</p> <p>Risk of Electric Shock. If the cord or plug becomes damaged, replace only with a cord and plug of the same type.</p> |

IMPORTANT: Read this Section of this manual located on page 5.

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Cord Connected (STANDARD)

- A factory installed power cord is properly sized to the amperage requirements of the case. See the electrical data plate as location shown in the “FEATURE IDENTIFICATION” section of this manual for the proper circuit size for each case.
- The cord is factory installed protruding from the rear corner of the case.
- A separate circuit for each display case is required to prevent other appliances on the same circuit from overloading the circuit and causing malfunction.

Refrigerated Permanent Connected (REMOTE REFRIGERATED MODELS ONLY)

IMPORTANT: Read this Section of this manual located on page 5.

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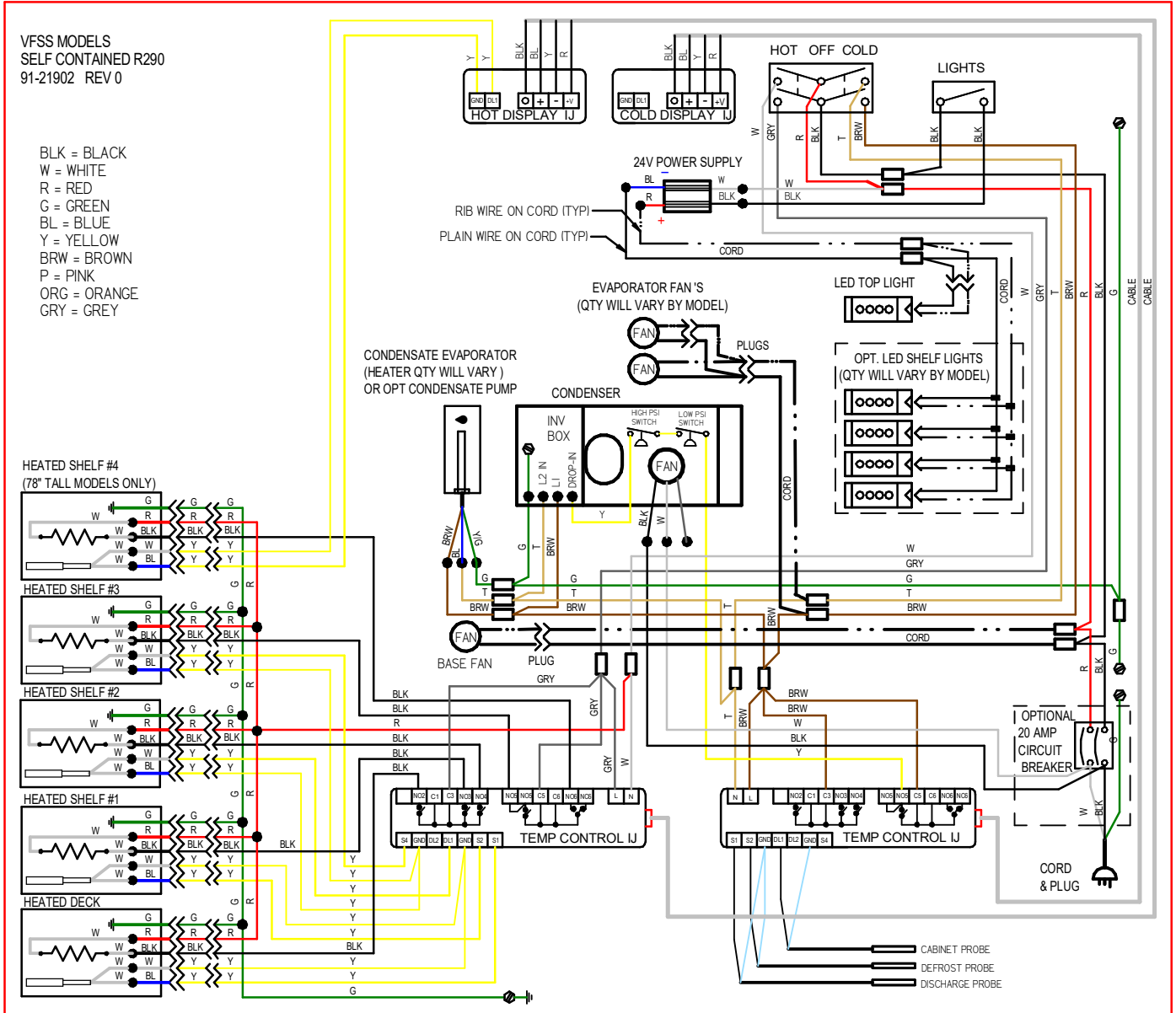
- Only a licensed electrician must perform all case electrical connections.
- All electrical wiring hookups must be done in accordance with all applicable local, regional, or national electrical standards.
- A separate circuit for each display case is required to prevent other appliances on the same circuit from overloading the circuit and causing malfunction.
- The electrical service must be grounded upon installation.
- See the electrical data plate located at the rear of the case for proper circuit size and wire ampacity.
- The electrical connection box is accessible from the rear of the case with rear grill removed. See grill removal section of this manual for grill removal procedure.

(20) WIRING DIAGRAM

VFSS Self Contained R290

VFSS MODELS
SELF CONTAINED R290
91-21902 REV 0

- BLK = BLACK
- W = WHITE
- R = RED
- G = GREEN
- BL = BLUE
- Y = YELLOW
- BRW = BROWN
- P = PINK
- ORG = ORANGE
- GRY = GREY



(21) SERVICE PARTS

| <u>ELECTRICAL COMPONENTS</u> | PART# | QTY | QTY | QTY | QTY |
|---|----------------|-------------|-------------|-------------|-------------|
| | | 3678 | 4878 | 3660 | 4860 |
| POWER CORD, 240V REFR NEMA 6-20 | 43-19457 | 1 | 1 | 1 | 1 |
| CONTROL MODULE COLD 240V(NON-REVERSING FAN) | 32-21808-27 | 1 | 1 | 1 | 1 |
| CONTROL MODULE COLD 240V (REVERSING FAN) OPT | 32-21808-27R | 1 OPT | 1 OPT | 1 OPT | 1 OPT |
| CONTROL MODULE HOT 240V | 32-21808-16 | 1 | 1 | 1 | 1 |
| DISPLAY CONTROLLER | 32-21809 | 2 | 2 | 2 | 2 |
| TEMPERATURE PROBE 10' | 32-19094 | 2 | 2 | 2 | 2 |
| TEMPERATURE PROBE 20' | 32-19866 | 1 | 1 | 1 | 1 |
| SWITCH,ROCKER DPDT SELECTOR | 41-21795 | 1 | 1 | 1 | 1 |
| SWITCH,ROCKER LIGHT | 41-1066 | 1 | 1 | 1 | 1 |
| HARNESS,SHELF LIGHTS OPT. | 43-21333 | 1 OPT | 1 OPT | 1 OPT | 1 OPT |
| POWER SUPPLY 24V 60W | 39-20986 | 1 | 1 | 1 | 1 |
| TOP LIGHT | 42-20871-30C35 | 1 | --- | 1 | --- |
| " | 42-20871-42C35 | --- | 1 | --- | 1 |
| SHELF LIGHTS | 42-20871-25C35 | 4 | --- | 2 | --- |
| " | 42-20871-38C35 | --- | 4 | --- | 2 |
| LED MOUNTING CLIP | 67-20869-30 | 4 | 4 | 2 | 2 |
| TAPE,LED TOP LIGHT,DOUBLE SIDED (QTY PER LED) | 90-20985 | 4' | 6' | 4' | 6' |

| <u>REFRIGERATION COMPONENTS</u> | PART# | QTY | QTY | QTY | QTY |
|--|---------------|-------------|-------------|-------------|-------------|
| | | 3678 | 4878 | 3660 | 4860 |
| FAN MOTOR, BLADE, CORD, AND VENTURI | 41-21237-14 | 2 | --- | 2 | 2 |
| FAN MOTOR, BLADE, CORD, AND VENTURI | 41-21237-16 | --- | 2 | --- | --- |
| BASE FAN MOTOR, BLADE, CORD, AND VENTURI | 41-21237-20 | 1 | 1 | 1 | 1 |
| FAN HARNESS DOUBLE SPLIT | 43-21501 | 1 | 1 | 1 | 1 |
| TXV (SELF CONTAINED) | 32-21749 | --- | 1 | --- | 1 |
| TXV (SELF CONTAINED) | 32-21750 | 1 | --- | 1 | --- |
| COIL,EVAPORATOR,36IN | 33-21288-21 | 1 | --- | 1 | --- |
| COIL,EVAPORATOR,48IN | 33-21288-22 | --- | 1 | --- | 1 |
| FILTER DRIER (REPLACEMENT) | 32-12391 | 1 | 1 | 1 | 1 |
| COMPRESSOR | 30-21754-COMP | 1 | --- | 1 | --- |
| COMPRESSOR | 30-21766-COMP | --- | 1 | --- | 1 |
| CONDENSING UNIT | 30-21754 | 1 | --- | 1 | --- |
| CONDENSING UNIT | 30-21766 | --- | 1 | --- | 1 |
| CONDENSATE HEATER 600W 230V | 40-19392 | 1 | 1 | 1 | 1 |

| <u>HEATED COMPONENTS</u> | PART# | QTY | QTY | QTY | QTY |
|------------------------------------|--------------|-------------|-------------|-------------|-------------|
| | | 3678 | 4878 | 3660 | 4860 |
| SHELF ASSEMBLY | SA6035-1S | 3 | | 3 | |
| " | SA6035-2S | | 4 | | 4 |
| DECK ASSEMBLY | SA6226-1S | 1 | | 1 | |
| " | SA6226-2S | | 1 | | 1 |
| LEFT SHELF BRACKET | 67-21204-L | 4 | 4 | 3 | 3 |
| RIGHT SHELF BRACKET | 67-21204-R | 4 | 4 | 3 | 3 |
| CAUTION HOT STICKER | 91-10207 | 10 | 8 | 10 | 8 |
| WIRE HARNESS,HEATER & PROBE SINGLE | 43-21424 | 5 | 5 | 4 | 4 |
| HARNESS,RECEPTACLE | 43-21100 | 5 | 5 | 4 | 4 |
| HARNESS,CORD SHELF | 43-21101 | 5 | 5 | 4 | 4 |

| MISC COMPONENTS | PART# | QTY | QTY | QTY | QTY |
|--|--------------|-------------|-------------|-------------|-------------|
| | | 3678 | 4878 | 3660 | 4860 |
| LEG LEVELER,1/2-13 X 2.5 | 65-21273 | 4 | 4 | 4 | 4 |
| AIR DIFFUSER, 36IN | W11823-1 | 1 | --- | 1 | --- |
| AIR DIFFUSER, 48IN | W11823-2 | --- | 1 | --- | 1 |
| PVC FITTING (FOR COPPER AND ELECTRICAL) | 84-21557 | 2 | 2 | 2 | 2 |
| PVC FITTING NUT (FOR COPPER AND ELECTRICAL) | 84-21558 | 2 | 2 | 2 | 2 |
| PVC FITTING GASKET (FOR COPPER AND ELECTRICAL) | 84-21559 | 2 | 2 | 2 | 2 |
| SPRAY FOAM SEALANT (FOR COPPER AND ELECTRICAL) | 22-21574 | 1 | 1 | 1 | 1 |
| DRAIN ASSY,TUBE,RAID REAR AIR IN/OUT | SA6228-1 | --- | --- | --- | --- |
| THERMOPLASTIC DRAIN | 84-70225 | 1 | 1 | 1 | 1 |
| DRAIN WASHER | M-6229 | 1 | 1 | 1 | 1 |
| AIR DEFLECTOR | 51-21305-1 | 1 | --- | --- | --- |
| " | 51-21305-2 | --- | 1 | --- | --- |
| " | 51-21305-11 | --- | --- | 1 | --- |
| " | 51-21305-12 | --- | --- | --- | 1 |
| AIR DEFLECTOR FOR CASES W/ROLL COVER | 51-21305-5 | 1 | --- | --- | --- |
| " | 51-21305-6 | --- | 1 | --- | --- |
| " | 51-21305-15 | --- | --- | 1 | --- |
| " | 51-21305-16 | --- | --- | --- | 1 |
| AIR DEFLECTOR SLIDE-IN CASES ONLY | 51-21305-21 | --- | --- | 1 | --- |
| " | 51-21305-22 | --- | --- | --- | 1 |
| AIR DEFLECTOR SLIDE-IN W/ROLL COVER | 51-21305-25 | --- | --- | 1 | --- |
| " | 51-21305-26 | --- | --- | --- | 1 |
| NIGHT CURTAIN | 65-19300 | 1 | --- | 1 | --- |
| " | 65-21374 | --- | 1 | --- | 1 |
| SECURITY COVER (OPTIONAL) KIT | 800-9611-BK | --- | --- | 1 | --- |
| " | 801-9611-BK | 1 | --- | --- | --- |
| " | 802-9611-BK | --- | --- | --- | 1 |
| " | 803-9611-BK | --- | 1 | --- | --- |
| BASE FRONT GRILLE ASSEMBLY BLACK, FRONT IN OUT | SA6266-11B | 1 | --- | 1 | --- |
| " | SA6266-12B | --- | 1 | --- | 1 |
| BASE FRONT PANEL SLIDE-IN BLACK | SA6294-1B | --- | --- | 1 | --- |
| " | SA6294-2B | --- | --- | --- | 1 |
| DECAL, CAUTION ELECTRICAL SHOCK | 91-12340 | 1 | 1 | 1 | 1 |
| LOGO,FEDERAL | 91-72523 | 1 | 1 | 1 | 1 |

| SHELF LIGHT KITS | |
|-------------------------|---------------|
| LED Shelf Lights | Kit# |
| VRSS/VNSS3660 | 800-9200-LEDK |
| VRSS/VNSS3678 | 801-9200-LEDK |
| VRSS/VNSS4860 | 802-9200-LEDK |
| VRSS/VNSS4878 | 803-9200-LEDK |



| END PANELS | | |
|--|--------------|--------------|
| END PANELS USED WITH GLASS UPPER | | |
| | LEFT | RIGHT |
| BLACK (STANDARD) | 68-21300-1LB | 68-21300-1RB |
| WHITE | 68-21300-1LW | 68-21300-1RW |
| STAINLESS | 68-21300-15L | 68-21300-15R |
| LAMINATED END PANELS USED WITH GLASS UPPER | | |
| | LEFT | RIGHT |
| BLACK | 68-21300-2LB | 68-21300-2RB |
| WHITE | 68-21300-2LW | 68-21300-2RW |
| SOLID END STRAIGHT PROFILE, 60IN HEIGHT | | |
| | LEFT | RIGHT |
| BLACK | 68-21331-23L | 68-21331-23R |
| WHITE | 68-21331-26L | 68-21331-26R |
| SOLID END STRAIGHT PROFILE, 78IN HEIGHT | | |
| | LEFT | RIGHT |
| BLACK | 68-21331-13L | 68-21331-13R |
| WHITE | 68-21331-16L | 68-21331-16R |
| SLIDE IN MODEL,SOLID UPPER SQUARE PROFILE 60"HEIGHT | | |
| | LEFT | RIGHT |
| BLACK | 68-21623-23L | 68-21623-23R |
| WHITE | 68-21623-26L | 68-21623-26R |
| LAMINATE COLOR MUST BE SPECIFIED FOR LAMINATED PANELS | | |

| GLASS END PANELS VISION | | |
|--|---------------|---------------|
| | LEFT | RIGHT |
| END GLASS PANELS SQUARE CLEAR 60" TALL | | |
| BLACK | 50-21330-2B | 50-21330-2B |
| END GLASS PANELS SQUARE REFLECTIVE 60" TALL | | |
| BLACK | 50-21330-12LB | 50-21330-12RB |
| END GLASS PANELS SQUARE CLEAR 78" TALL | | |
| BLACK | 50-21330-1B | 50-21330-1B |
| END GLASS PANELS SQUARE REFLECTIVE 78" TALL | | |
| BLACK | 50-21330-11LB | 50-21330-11RB |

| GLASS END PANELS SLIDE-IN | | |
|---|---------------|---------------|
| | LEFT | RIGHT |
| END GLASS PANELS SQUARE CLEAR | | |
| BLACK | 50-21605-2B | 50-21605-2B |
| END GLASS PANELS SQUARE REFLECTIVE | | |
| | 50-21605-12LB | 50-21605-12RB |



| Description | PART# | QTY/CASE |
|---|------------------|----------|
| LEG LEVELER ASSEMBLY | SA4368-1 | 4 |
| LEG LEVELER | 65-21273 | 4 |
| HOUSING | SA4295 | 4 |
| 6" LEG ASSEMBLY | SA4368-2 | 4 |
| 6" LEG | 65-12886 | 4 |
| SCREW, 1/4-20 | 75-10948 | 16 |
| HOUSING | SA4295 | 4 |
| 4" CASTER ASSEMBLY | SA4368-3 | 4 |
| 4" CASTER | 65-10675 | 4 |
| SCREW, 1/4-20 | 75-10948 | 16 |
| HOUSING | SA4295 | 4 |
| 2.5" CASTER ASSEMBLY | SA4368-20 | 4 |
| 2.5" CASTER | 65-15185 | 4 |
| SCREW, 1/4-20 | 75-10948 | 16 |
| HOUSING | SA4295 | 4 |
| RECESSED CASTER ASSEMBLY | SA4368-4 | 4 |
| 2.5" CASTER | 65-17352 | 4 |
| SCREW, 1/4-20 | 75-10948 | 16 |
| HOUSING | M15895-2 | 4 |
| 6" SEISMIC LEG ASSEMBLY | SA4368-13 | 4 |
| 6" SEISMIC LEG | 65-19069 | 4 |
| SCREW, 1/4-20 | 75-10948 | 16 |
| HOUSING | SA4295 | 4 |
| SLIDE -IN ADJUSTABLE CASTER ASSEMBLY | | 4 |
| ADJUSTABLE CASTERS SLID | 65-21657 | 4 |
| SCREW, 1/4-20 | 75-10948 | 64 |
| INNER SLIDE HOUSING | M21799 | 4 |
| OUTER SLIDE HOUSING | M21798 | 4 |
| BRACE SLIDE HOUSING | M21814 | 2 |



