HUSSMANN®

Medium Temperature Air-Cooled

Open Vertical Merchandiser with R-290 Refrigerant

Installation & Operation Manual

WARNINGS:

- If the information in these instructions are not followed exactly, a fire or explosion may result, causing property damage, personal injury or death.
- Installation and service must be performed by a qualified installer or service agency.
- **READ THE ENTIRE MANUAL BEFORE INSTALLING OR USING THIS EQUIPMENT.**
- The unit uses R-290 gas as the refrigerant. R-290 is flammable and heavier than air. It collects first in low areas but can be circulated by the fans. If propane gas is present or even suspected, do not allow untrained personnel to attempt to find the cause. The propane gas used in the unit has no odor. The lack of smell does not indicate a lack of escaped gas. If a leak is detected, immediately evacuate all persons from the store, and contact the local fire department to advise them that a propane leak has occurred. Do not let any persons back into the store until the qualified service technician has arrived and that technician advises that it is safe to return to the store. No open flames, cigarettes, or other possible sources of ignition should be used inside or in the vicinity of the units.
- **FAILURE TO ABIDE BY THIS WARNING COULD RESULT IN AN EXPLOSION, DEATH, INJURY AND PROPERTY DAMAGE.**

MD14, MD10 MERCHANDISERS

May 2024
P/N 3196825_B
Spanish P/N 3196824_B
MANUAL - SELF CONTAINED R290 MD I/O

BEFORE YOU BEGIN
READ THESE INSTRUCTIONS COMPLETELY AND CAREFULLY.

This manual was written in accordance with originally prescribed equipment that is subject to change. Hussmann reserves the right to change or revise specifications and product design in connection with any feature of our products.

SAFETY INSTRUCTIONS

Personal Protection Equipment (PPE) is required. Wear safety glasses, gloves, protective boots or shoes, long pants, and a long-sleeve shirt when working with this equipment and while handling glass.

SAFETY INSTRUCTIONS

The safety of our customers and employees is paramount. The precautions and procedures described in this manual are intended as general methods for safe use of this equipment. Please be sure to comply with the precautions described in this manual to protect you and others from possible harm.

1. If the information in these instructions are not followed exactly, a fire or explosion may result, causing property damage, personal injury or death. Observe all precautions on tags, stickers, labels and literature attached to this equipment.
2. Installation and service must be performed by a qualified installer or service agency.
3. This unit is designed only for use with R-290 gas as the designated refrigerant.

⚠WARNING

THE REFRIGERANT LOOP IS SEALED. ONLY A QUALIFIED TECHNICIAN SHOULD ATTEMPT TO SERVICE!

- Propane is flammable and heavier than air.
- It collects first in the low areas but can be circulated by the fans.
- If R-290 is present or even suspected, do not allow untrained personnel to attempt to find the cause.
- The propane gas used in the unit has no odor.
- The lack of smell does not indicate a lack of escaped gas.
- If a leak is detected, immediately evacuate all persons from the store, and contact the local fire department to advise them that a pro pane leak has occurred.
- Do not let any persons back into the store until the qualified service technician has arrived and that technician advises that it is safe to return to the store.
- A hand-held propane leak detector (“sniffer”) shall be used before any repair and/or maintenance.
- No open flames, cigarettes or other possible sources of ignition should be used inside the building where the units are located until the qualified service technician and/or local fire department determines that all propane has been cleared from the area and from the refrigeration systems.
- Component parts are designed for propane and non-incendive and non-sparking. Component parts shall only be replaced with identical repair parts.

FAILURE TO ABIDE BY THIS WARNING COULD RESULT IN AN EXPLOSION, DEATH, INJURY AND PROPERTY DAMAGE.

ANSI Z535.5 DEFINITIONS

The definitions below are used to clarify the magnitude and urgency of harm and damage, considering problems arising from misuse. Relative to their potential danger, the definitions are divided into five parts according to ANSI Z535 Series.

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE is used to address practices not related to personal injury.

SAFETY INSTRUCTIONS (or equivalent) signs indicate specific safety-related instructions or procedures.

REVISION HISTORY

Revision A - Original Issue
Revision B - Updated Return Air Sensor.

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

WARNING

- Excessive ambient conditions may cause condensation and therefore sweating of doors. Facility operators should monitor doors and floor conditions to ensure safety of persons.
- Keep clear of obstruction all ventilation openings in the appliance enclosure or in the structure for build-in.
- 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 fans, heaters, thermostats and lights.
- Do not use mechanical devices or other means to accelerate the defrosting process.
- Do not use electrical appliances inside the food storage compartments of the case(s).
- Do not store items or flammable materials atop the unit. Do not walk on case.
- Do not damage the refrigerating circuit.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Children should be supervised to ensure that they do not play with the appliance.

TABLE OF CONTENTS

INSTALLATION

REGULATIONS

These merchandisers, at the time they are manufactured, meet all federal / provincial regulations.

HUSSMANN PRODUCT CONTROL

The serial number and shipping date of all equipment is 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. This is to ensure the customer is provided with the correct parts.

SHIPPING DAMAGE

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 and/or claim forms.

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.

Concealed Loss or Damage
When loss or damage is not apparent until after equipment is uncrated, retain all packing materials and submit a written response to the carrier for inspection within 15 days.

LOCATION

These merchandisers are designed for displaying products in air conditioned stores where temperature is maintained at or below the ANSI / NSF-7 specified level and relative humidity is maintained at or below 55%.

Recommended operating ambient temperature is 75°F (24°C) maximum Relative Humidity is 55%.

Placing refrigerated merchandisers in direct sunlight, near hot tables or near other heat sources could impair their efficiency. Like other merchandisers, these merchandisers are sensitive to air disturbances. Air currents passing around merchandisers will seriously impair their operation. Do NOT allow air conditioning, electric fans, open doors or windows, etc. to create air currents around the merchandiser.

MODEL DESCRIPTION

MD merchandisers are medium temperature self-contained cabinets, designed for the display of dairy products, deli items and beverages.

SELF CONTAINED (LOCATION)

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

These models have vented base panels to allow air circulation through the condensing unit.

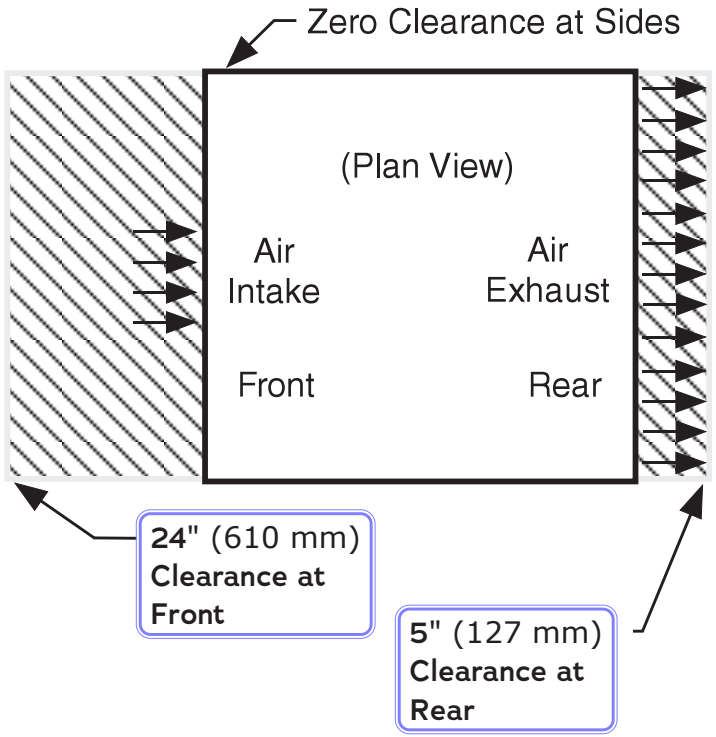
MD units take in air from the front of the case and exhaust air through the rear of the case.

Allow for a minimum 24 inch (610 mm) clearance in the front and a 5 in. (127 mm) clearance at the rear.

Be sure to position self contained merchandisers properly.

Blocking or restricting air flow will adversely affect performance and may damage the refrigeration system.

Model MD



UNLOADING

Unloading from Trailer:

Lever Bar (also known as a Mule, Johnson Bar, J-Bar, Lever Dolly, or Pry Lever)

Move the merchandiser as close as possible to its permanent location and remove all packaging. Check for damage before discarding packaging. Remove all separately packed accessories such as kits and shelves.

Improper handling may cause damage to the merchandiser when unloading. To avoid damage:

1. Do not drag the merchandiser out of the trailer. Use a Johnson bar (Mule).
2. Use a forklift or dolly to remove the merchandiser from the trailer.

EXTERIOR LOADING

Do NOT walk on top of the merchandiser or damage to the merchandisers and serious personal injury could occur.

Merchandisers are not structurally designed to support excessive external loading such as the weight of a person. Do not place heavy objects on the merchandiser.

Shipping Skid

Each merchandiser is shipped on a skid to protect the merchandiser's base and to make positioning the case easier.

⚠WARNING

Do NOT remove shipping crate until the merchandiser is positioned for installation.

Remove the top of the crate and detach walls from each other (if applicable). Lift crate from the skid. Unscrew the case from the skid. The merchandiser can now be lifted off the crate skid. Lift only at base of skid! Remove any braces and/or skids attached (blanket wrapped merchandiser may have skids).

Do not tilt merchandiser on its side or end when removing skid.

Once the skid is removed, the merchandiser must be lifted —NOT PUSHED— to reposition. To remove the skid, remove screws attaching skid to the merchandiser.

Check floor where merchandisers are to be set to if it is a level area. Determine the highest part of the floor.

CABINET LEVELING

Be sure to position merchandisers properly. Level the merchandiser by all four corners. Merchandiser(s) must be installed level to ensure proper operation of the refrigeration system, and to ensure proper drainage of defrost water.

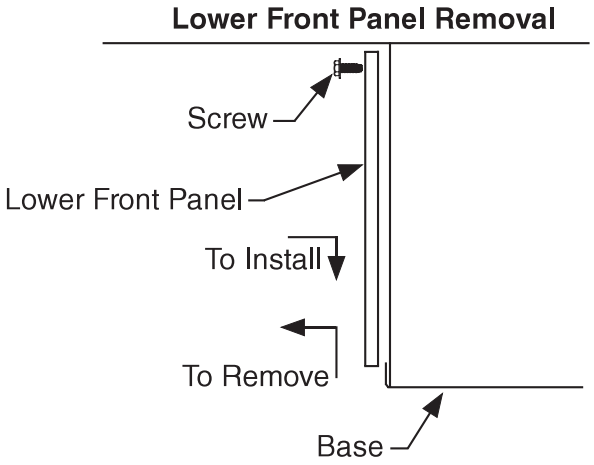
This merchandiser must be installed level (from back to front, and side to side) to allow maximum draining of the condensate water as well as proper door alignment and operation. Choose a level area to install case.

SERIAL PLATE LOCATION

The serial plate is located at the interior top left end. It contains all pertinent information such as model, serial number, amperage rating, refrigerant type and charge.

REFRIGERATION UNIT ACCESS

The lower front panel may be removed by lifting the panel straight upward and over the tabs on which it is hanging. In a self contained merchandiser, two screws will have to be removed from either end of the panel. The panel is installed by reversing the above procedure. Ensure lower front panel is flat against the floor when installed to prevent air circulation problems on self contained merchandisers.



SEALING MERCHANDISER TO FLOOR

If required by local sanitary codes, or if the customer desires, merchandisers may be sealed to the floor using a vinyl cove base trim. The size needed will depend on how much variation there is in the floor, from one end of the merchandiser to the other. Sealing of the lower front and rear panels on self contained models may hamper their removal for servicing or maintenance of the condensing unit.

NOTE

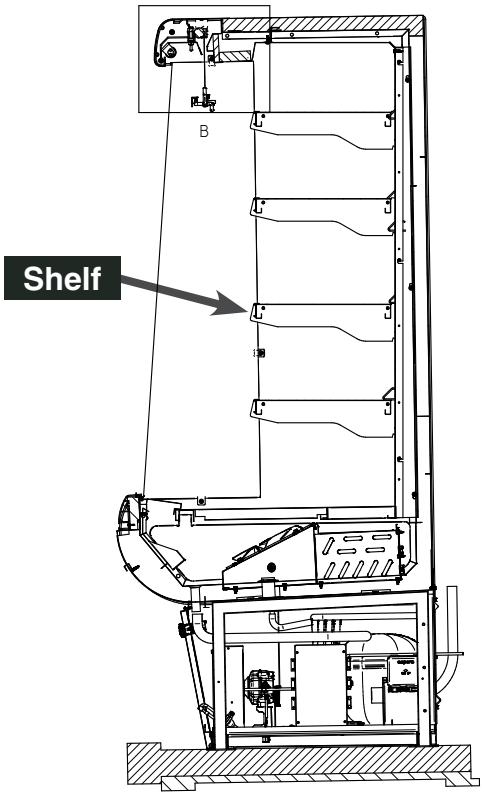
Do not allow trim to cover any intake or discharge grilles located in the lower front panel.

SHELF INSTALLATION

• After the cabinet is leveled, the shelves may be installed.

MD models are equipped with four shelves. Heights are adjustable in one-inch increments. Product shelves should be loaded so that the product does not extend over the front edge of the shelf. Product loaded over the edge will interfere with air circulation in the cabinet. It is also desirable to leave a small space between the rear interior wall and the product on the shelves, to allow air to enter the cabinet interior through the perforations in the rear wall. The shelves are rated for 130 pounds (59 kg) each load capacity.

Install the shelf support brackets first to the desired height before installing each shelf. Place the rear of the bracket in the desired slot. Raise the front of the brackets towards the rear of the cabinet. Once the ends are in the slot, rotate the bracket forward, locking it in place. Place the shelf on the bracket. The shelves are not to be slanted. They must remain in the horizontal position.



ATTENTION

Merchandiser must operate for 24 hours before loading product!

Regularly check merchandiser temperatures.

Do not break the cold chain. Keep products in cooler before loading into merchandiser.

These merchandisers are designed for only pre-chilled products.

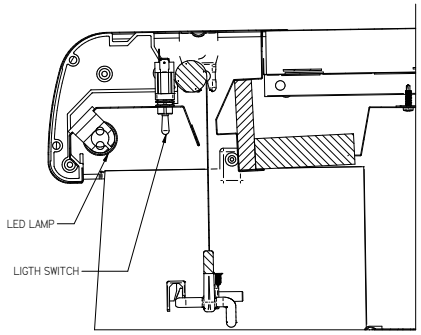
⚠WARNING

Shelves are designed to support a maximum load of 130 lbs. (59 kg). Exceeding this load can cause damage to the shelves, case, damage to store products, and potentially create a hazardous condition for customers and store personnel.

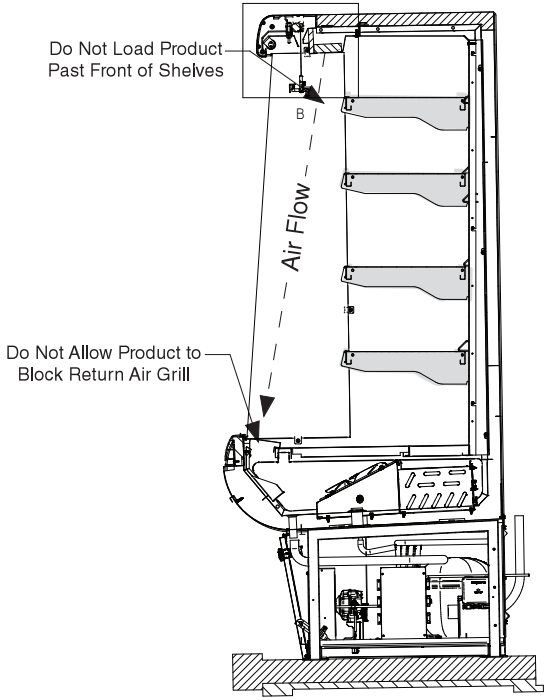
LOAD LIMITS

Product must be within designated load limit to ensure proper refrigeration and air curtain performance.

Do not violate the load limit lines of MD cases. Product will block the cold air flow.



Location of LED Lamp and Light Switch



Do Not Block Merchandiser Air Flow

Load Limit for MD Merchandisers

STOCKING

Product should not be placed inside the merchandisers until merchandisers are at proper operating temperature.

Allow merchandiser 24 hours to operate before loading product.

Proper rotation of product during stocking is necessary to prevent product loss. Always bring the oldest product to the front and set the newest to the back.

Air discharge and return flues must remain open and free of obstruction at all times to provide proper refrigeration and air curtain performance. Do not allow product, packages, signs, etc. to block these grilles. Do not use non-approved shelving, baskets, display racks, or any accessory that could hamper air curtain performance.

LAMPS

Led lighting is standard for MD case models. LEDs are held in place with clips. The protective light shield is a single piece.

The light switch for the lamps is located at the top of the fan plenum on the righthand side as shown in the upper left picture. The switch controls the display lighting and interior lighting.

OPTIONAL NIGHT COVER

All MD models may be ordered with an optional night curtain. The handle for the cover is located near the lamp. Grasp the handle and pull downward until enough of the cover has been exposed, allowing the handle to be placed over the retainer located on the lower panel. If a night cover must be replaced, follow these steps: disconnect power to the cabinet. On the top exterior of the cabinet, there is a perforated metal cover. Lower the lamp fixture as if you were replacing the power supply. Lift the left retainer. Pull the night cover towards you, and slide to left. Install the new cover in reverse order.

SELF-CONTAINED REFRIGERATION EQUIPMENT START-UP CHECKLIST

Step	Startup Activity	Check
1	Locate, read and maintain install/operation manual in a safe place for future reference.	☐
2	Examine unit. Confirm there is NO damage or concealed damage.	☐
3	Level the unit, side to side and front to rear.	☐
4	Remove all shipping brackets/compressor straps/bolts etc.	☐
5	Unit must be run on a dedicated electrical circuit without the use of an extension cord.	☐
6	Ensure that the proper electrical requirements for the equipment are supplied.	☐
7	Verify field electrical connections are tight.	☐
8	Verify all electrical wiring is secured and clear of any sharp edges or hot lines.	☐
9	Verify the condensate drain line is properly trapped and pitched.	☐
10	Verify all required clearances on the sides and back of unit.	☐
11	Verify there are no air disturbances external to the unit. Heat and air registers, fans, and doors etc.	☐
Advise owner/operator that merchandiser must operate at temperature for 24 hrs prior to loading with product.		

LEGAL DISCLAIMER

Hussmann shall not be liable for any repair of replacement made without the written consent of Hussmann, or when the product is installed or operated in a manner contrary to the printed instructions covering installation and service which accompanied such product.

Please note that failure to follow this start up document may void your factory warranty.

⚠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.

ELECTRICAL / REFRIGERATION

PLUG

The plug cord is 90 inches (2.2 meters) long and is located on the right hand rear of the merchandiser. Disconnect power before servicing. MD merchandisers require a dedicated electrical circuit with ground. 12AWG is the minimum sized acceptable wire.

- **MD models require a dedicated 20 AMP/208-230V circuit with a grounded wall receptacle (NEMA 6-20P).**
- **Always use a dedicated circuit with the amperage stated on the unit.**
- **Plug into an outlet designed for the plug.**
- **Do not overload the circuit.**
- **Do not use long or thin extension cords. Never use adapters.**
- **If in doubt, call an electrician.**

6-20P

MD10 and MD14

Nominal Voltage	Minimum Voltage	Maximum Voltage
208	200	230

⚠WARNING

» If the supply cord is damaged, it must be replaced by the manufacturer, its service agents or similarly qualified persons in order to avoid hazard.

» Merchandiser must be grounded.

» Do not remove the power supply cord ground.

BEFORE BEGINNING ANY SERVICE OR REPAIR:

Use a hand-held propane leak detector ("sniffer") to ensure no propane is present in the immediate area, the inside of the display case and the inside of the refrigeration system. R-290 is an odorless refrigerant. Keep the area clear of all customers and non-essential or unauthorized personnel.

Verify that all repair parts are identical models to the ones they are replacing. Do not substitute parts such as motors, switches, relays, heaters, compressors, power supplies or solenoids. Failure to do so can result in an explosion, death, injury and property damage. Parts used on hydrocarbon cases must meet specific UL certification for non-incendive or non-sparking components. Use only Hussmann approved parts approved through the Hussmann Performance Parts Website. https://parts.hussmann.com/

Brazing must not begin before all propane has been cleared from the immediate area — the inside of the displays case and the inside of the refrigeration system.

If a leak is detected, follow store safety procedures. It is the store's responsibility to have a written safety procedure in place. The safety procedure must comply with all applicable codes such as local fire department's codes.

At minimum, the following actions are required:

- **Immediately evacuate all persons from the store, and contact the local fire department to advise them that a propane leak has occurred.**
- **Call Hussmann and/or a qualified service agent and inform them that a propane sensor has detected the presence of propane.**
- **Do not let any persons back into the store until the qualified service technician has arrived and that technician advises that it is safe to return to the store.**
- **The propane gas used in the unit has no odor. The lack of smell does not indicate a lack of escaped gas.**
- **A hand-held propane leak detector ("sniffer") should be used before any repair and/or maintenance is attempted. All repair parts must be identical models to the ones they are replacing.**
- **No open flames, cigarettes or other possible sources of ignition should be used inside the building where the units are located until the qualified service technician and/or local fire department determines that all propane has been cleared from the area and from the refrigeration systems.**

REPLACING REFRIGERATION SYSTEM COMPONENTS

⚠ DANGER

» Only Hussmann service technicians or technicians qualified to handle R-290 (propane) refrigerant should service or repair this R-290 (propane) equipment.

» Failure to follow instructions can result in an explosion, death, injury and property damage.

STEPS TO RECOVER REFRIGERANT

1. Make sure you are in a well ventilated area before making any service or repair to the refrigeration system.
2. Disconnect all power sources from the system. Some systems may have more than one plug or power supply.
3. Tap system with line tap valves, attaching gauges to the high and low sides of the system.

Refrigeration Line Tapping Valve

4. Connect hose to an evacuated recovery tank. Open refrigeration gauges and recovery tank.
5. With the suction valve in vacuum, the refrigerant will be recovered into the recovery tank.
6. Once recovered, close the tank valve and remove the guage from the tank and connect nitrogen tank to the system to purge it with nitrogen.
7. Pull vacuum to a minimum of 200 microns or lower.

CHARGING

A calibrated scale with +/-2 gram accuracy must be used to charge the system. The charge amount is shown on the serial plate. Only R-290 grade refrigerant can be used. Standard propane does not meet the purity/moisture content of R-290, and therefore cannot be used to charge cases.

No gas charge adjustments are allowed. When connecting hoses between the refrigeration system, manifold gauges, and refrigerant cylinder, ensure that the connections are secure and there are no potential sources of ignition nearby. Ensure that contamination of different refrigerants does not occur when using charging equipment.

Use dedicated hoses to service R-290 (propane) refrigeration systems. Hoses or lines should be as short as possible to minimize the amount of refrigerant contained in them.

Ensure that the refrigeration system is properly grounded prior to charging the system with refrigerant, to avoid the potential for static build-up.

⚠WARNING

» Component parts shall be replaced with like components, and servicing shall be done by factory authorized service personnel only, so as to minimize the risk of possible ignition due to incorrect parts or improper service.

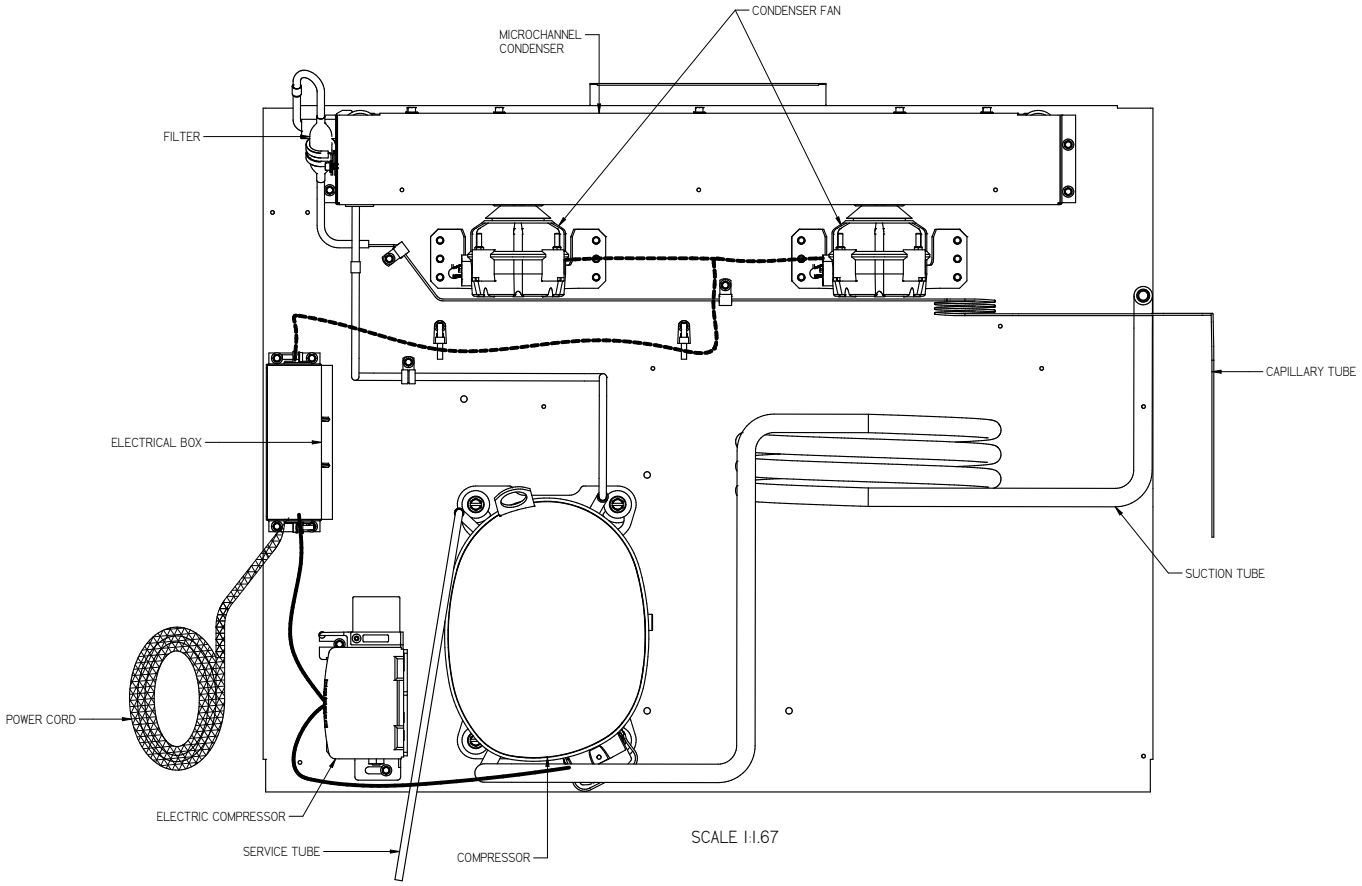
Extreme care must be taken not to overfill the refrigeration system. After charging, carefully disconnect the hoses, attempting to minimize the quantity of refrigerant released. Further leak check the service ports, hoses, refrigerant tanks. The service ports shall be checked for leaks using a hydrocarbon leak detector with a sensitivity of 3 grams/ year (0.106 Oz/year) leak rate.

Thoroughly leak check the service ports. If no leak is present, use a pinch-off tool to close the ends of the service tubes before brazing them shut. If a Schrader valve is used on the compressor service tube, it must be removed and the previous steps followed in order to braze the service tube shut.

⚠WARNING

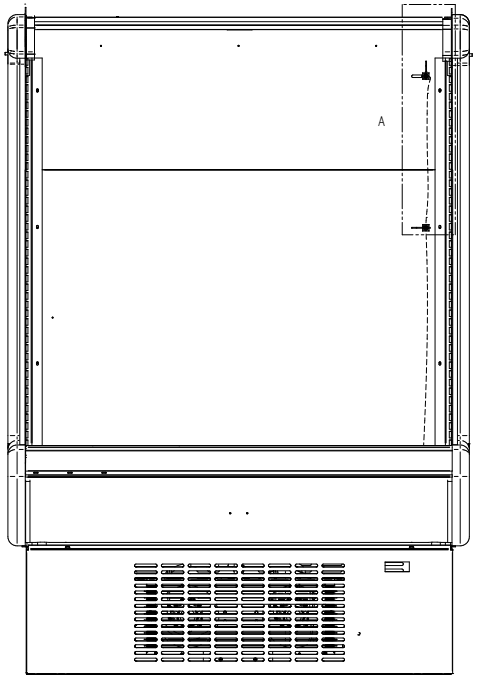
— LOCK OUT / TAG OUT —

» 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.

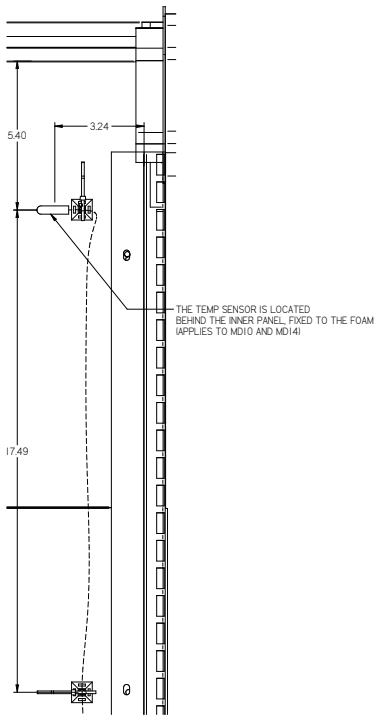


Top of view of model without condensate pan.

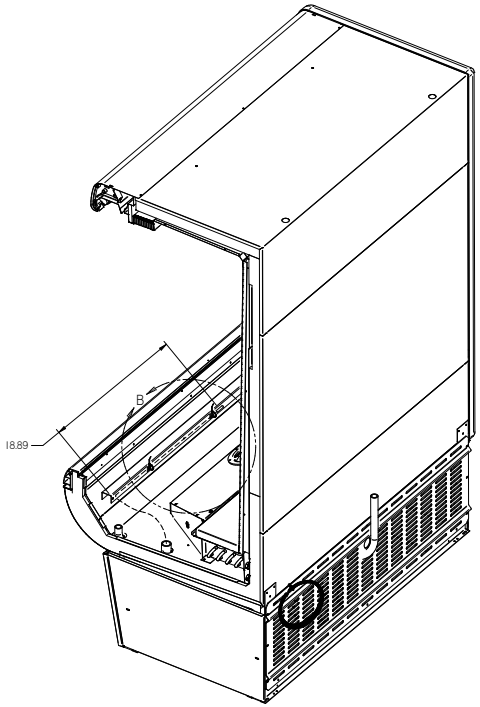
TYPICAL SENSOR TO CONTROL CONFIGURATION

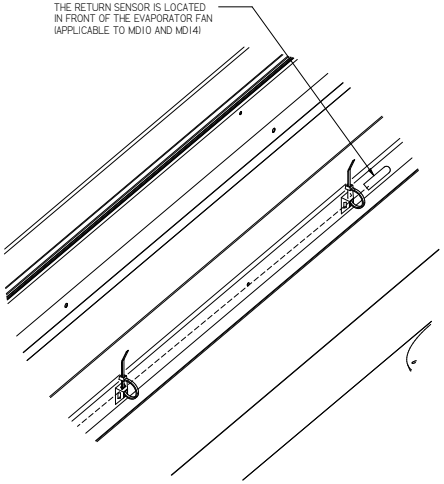


FRONT VIEW



DETAIL A
LOCATION OF THE TEMP SENSOR





DETAIL B
LOCATION OF THE RETURN AIR SENSOR

Hussmann Controller Operation

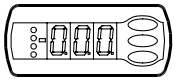
The controller controls refrigeration temperature. This is factory installed in the control panel. Defrosts are time initiated by time and terminated by time for this system.

1. Plug the merchandiser plug into its receptacle.
   a. The controller display will illuminate.
   b. The interior light will illuminate.
2. After the control preprogrammed time delay of up to 6 minutes, the compressor and evaporator fan(s) will start if the control is calling for cooling.
3. The control will cycle the compressor but may also cycle evaporator fan(s) on and off determined by the Set-Point and Differential temperatures.
   a. The Set-Point is the adjustable preprogrammed temperature.
   b. The Differential is the non-adjustable pre programmed temperature.
   c. The Control is designed to read and display a cabinet temperature not a product temperature.

This cabinet temperature may reflect the refrigeration cycle of the Set-Point and it's Differential. The most accurate temperature on a cabinets operation is to verify the product temperature.

Operation

Display
The values will be shown with three digits, and with a setting you can determine whether the temperature are to be shown in °C or in °F.



Light-emitting diodes (LED) on front panel
HACCP = HACCP function is active
The other LED's on the front panel will light up when the belonging relay is activated.

= Refrigeration
= Defrost
= Fan running

The light-emitting diodes will flash when there is an alarm.
In this situation you can download the error code to the display and cancel/sign for the alarm by giving the top knob a brief push.

Defrost
During defrost a –d- is shown in the display. This view will continue up till 15 min. after the cooling has resumed.
However the view of –d- will be discontinued if:
- The temperature is suitable within the 15 minutes
- The regulation is stopped with "Main Switch"
- A high temperature alarm appears

The buttons
When you want to change a setting, the upper and the lower buttons will give you a higher or lower value depending on the button you are pushing. But before you change the value, you must have access to the menu. You obtain this by pushing the upper button for a couple of seconds - you will then enter the column with parameter codes. Find the parameter code you want to change and push the middle buttons until value for the parameter is shown. When you have changed the value, save the new value by once more pushing the middle button.

Examples

Set menu
1. Push the upper button until a parameter r01 is shown
2. Push the upper or the lower button and find that parameter you want to change
3. Push the middle button until the parameter value is shown
4. Push the upper or the lower button and select the new value
5. Push the middle button again to freeze the value.

Cutout alarm relay / receipt alarm/see alarm code
• Push short the upper button
If there are several alarm codes they are found in a rolling stack. Push the uppermost or lowermost button to scan the rolling stack.

Set temperature
1. Push the middle button until the temperature value is shown
2. Push the upper or the lower button and select the new value
3. Push the middle button again to conclude the setting.

Reading the temperature at defrost sensor
• Push short the lower button

Manuel start or stop of a defrost
• Push the lower button for four seconds.
(Though not for application 4).

See HACCP registration
1. Give the middle button a long push until h01 appears
2. Select required h01-h10
3. See value by giving the middle button a short push

Get a good start

With the following procedure you can start regulation very quickly:

1 Open parameter r12 and stop the regulation (in a new and not previously set unit, r12 will already be set to 0 which means stopped regulation.)

2 Select electric connection based on the drawings on page 6

3 Open parameter o61 and set the electric connection number in it

4 Now select one of the preset settings from the table on page 22.

5 Open parameter o62 and set the number for the array of presettings. The few selected settings will now be transferred to the menu.

6 Open parameter r12 and start the regulation

7 Go through the survey of factory settings. The values in the grey cells are changed according to your choice of settings. Make any necessary changes in the respective parameters.

8 For network. Set the address in o03 and then transmit it to the gateway/system unit with setting o04.

MAINTENANCE

CARE AND CLEANING

Long life and satisfactory performance of any equipment is dependent upon the care it receives. To ensure long life, proper sanitation and minimum maintenance costs, this unit should be thoroughly cleaned, all debris removed and the interiors washed down. Cleaning often will control or eliminate odor buildup. Frequency of cleaning is dependent on usage and local health requirements.

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 cleaners or scouring pads. Never use caustic soda, kerosene, gasoline, thinner, solvents, detergents, acids, chemicals or abrasives. Do not use ammonia-based cleaners on acrylic parts.

⚠WARNING

- To reduce the risk of fire, electrical shock or injury when cleaning this merchandiser:
- Unplug the merchandiser before cleaning;
- Keep all liquids away from electrical and electronic components;
- Do not use any mechanical device or other means to speed the defrost process, except as recommended by the manufacturer.

INTERIOR SURFACES

Do not use ammonia-based products to clean light shields. Never use abrasive cleansers or scouring pads.

The interior surfaces may be cleaned with most domestic detergents and sanitizing solutions with no harm to the surface. Always read and follow the manufacturer's instructions when using any cleaning product.

Inspect all LED connections and plug/ receptacles for signs of arcing. Replace any component that shows signs of arcing. Make sure all unused receptacles have close-off covers securely attached.

CLEANING UNDERNEATH THE CASE

The case can be moved to facilitate cleaning. Unplug the merchandiser, and move it out if the way in order to sweep and mop the area underneath the case. Brush away all dirt and litter from the area. Ensure there is no dirt build up around the bottom of the case or near the intake or exhaust.

⚠WARNING

» Do NOT use HOT water on cold glass surfaces. This can cause the glass to shatter and could result in personal injury. Allow glass fronts, to warm before applying hot water.

Do Not Use:

- Abrasive cleansers and scouring pads, as these will mar the finish.
- Coarse paper towels on coated glass.
- Ammonia-based cleaners on acrylic parts.
- A hose on lighted shelves or submerge the shelves in water.
- Solvent, oil or acidic based cleaners on any interior surfaces.
- A hose on rail lights, canopy lights or any other electrical connection.

Do:

- First turn off refrigeration, then disconnect electrical power.
- Remove product and loose debris.
- Thoroughly clean all surfaces with soap and hot water. Do not use steam or high water pressure hoses to wash the interior. These destroy merchandiser's sealing causing leaks and poor performance.
- Take care to minimize direct contact between fan motors and cleaning or rinse water.
- Rinse with hot water, but do not flood.
- Allow merchandiser to dry before resuming operation.
- Wipe down lighted shelves with a damp sponge or cloth so that water does not enter the light channel. Do not use a hose or submerge shelves in water.
- After cleaning is completed, restore power and turn on the merchandiser.

CLEANING SHELVES

Shelves and shelf clips are easily removed for cleaning the interior as well as the shelves themselves.

⚠WARNING

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

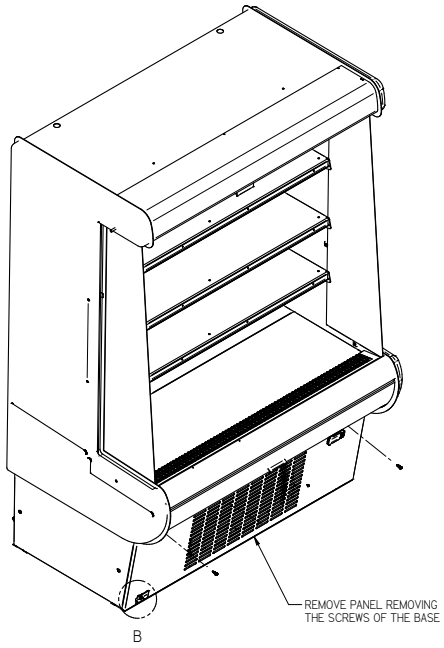
⚠WARNING

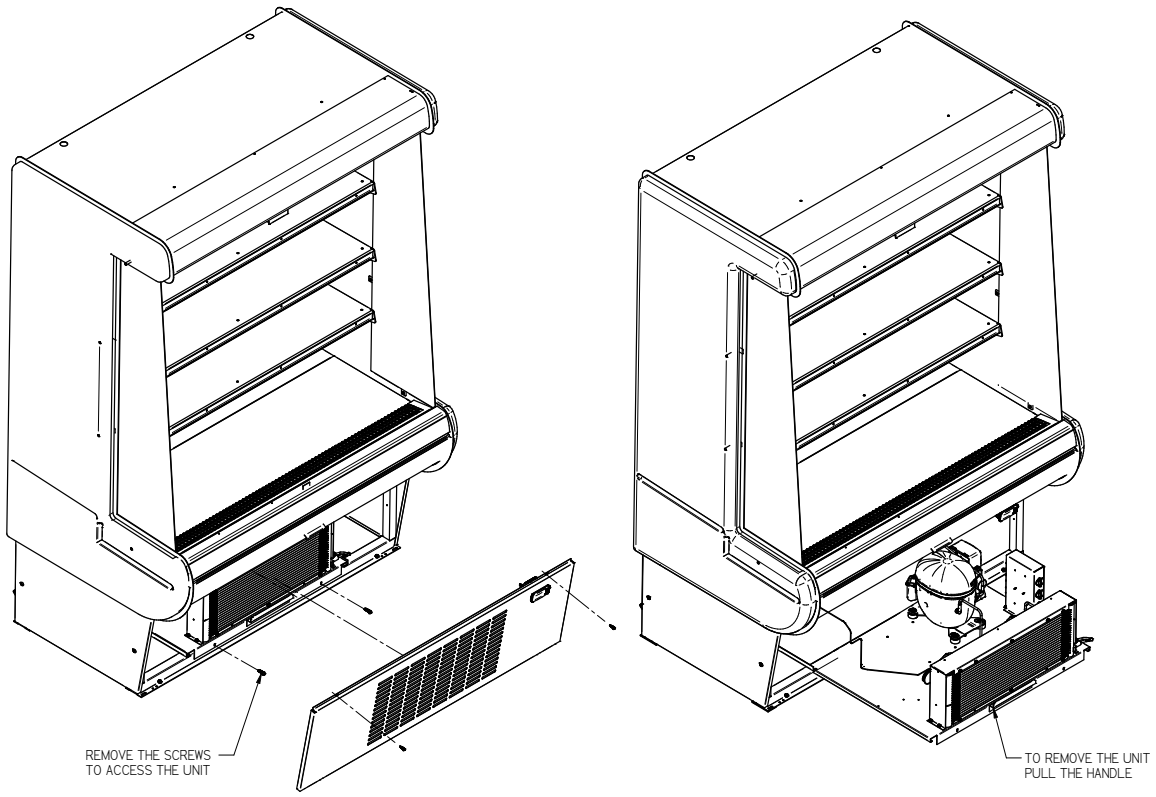
» Always wear gloves and protective eye wear when servicing.

CLEANING CONDENSER COILS

To maintain peak operating efficiency, the coil should be cleaned at least once each month. A dirty coil slows product cooling significantly and increases energy consumption by as much as 20%. Dirt buildup on coils can also cause the compressor to lock up damaging the condenser unit. All MD models have the same access panel design for commonality between merchandisers.

1. Remove the lower panel screws.
2. Remove the holding screw to release the condensing unit base. Once the condensing unit base is free, you can slide it out for service. Use base handle to pull out the condensing unit. Pulling on refrigeration lines or others parts will cause damage to the unit.
3. Use a soft hand brush attachment on a vacuum to remove accumulated dust and debris.





TIPS AND TROUBLESHOOTING

Consult an authorized service technician if more extensive cleaning is needed.
If the refrigeration unit is damaged, it can be replaced with a new unit.

There are a few simple things to check before calling for service:

1. Product not cold?

   Refrigeration unit requires 24 hours at initial startup to cool down to operating temperature with no product loaded in merchandiser. Ask when merchandiser was stocked, and what the usage has been. It may take 30 minutes or more for product to chill following stocking.

2. Power Supply:

   Is the unit plugged in? Yes/No

   Is there power to the unit? Yes/No

3. Location:

   What are the ambient conditions — temperature and humidity, direct sun, nearby source of heat, such as oven or grill? Is the unit level? Has the unit been moved recently?

4. Shelves and Stocking:

   Are the standard shelves in the correct places? Is the product stocked properly? Is the bottom shelf at the proper location?

5. Is the case in defrost? Confirm that the defrost schedule is properly set.

IMPORTANT INFORMATION

For prompt service when contacting the factory, be sure to have the case model and serial number from the case serial plate.

Self-Contained Refrigeration Equipment Maintenance Check List

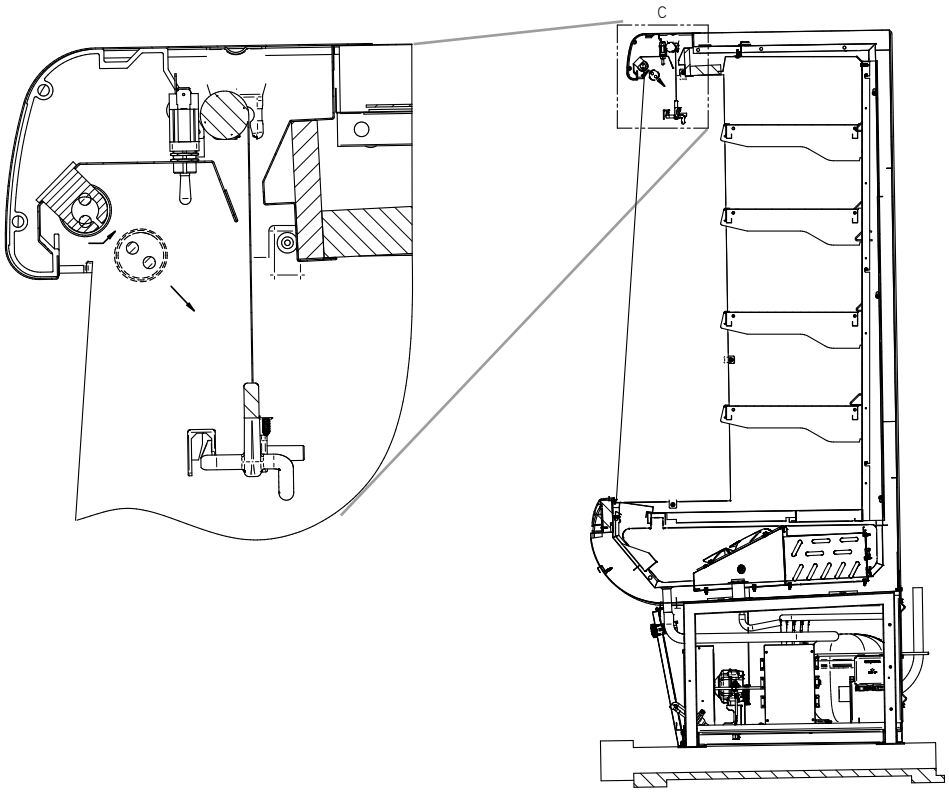
***** Warranty does not cover issues caused by improper installation or lack of basic preventative maintenance. *****

Record starting date	
Store Name and Number	
Store Address	
Unit Model Number	
Unit Serial Number	
Contractor/Technician	

	Technician									
	PM date									
PM activity-For visual inspection items, denote "ok or complete" in the column to right when PM has been performed. For measured data requested, record data requested in the appropriate column to the right)	Quarterly	Semi-Annually	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Check in with store manager, record any complaints or issues they have with unit.	X									
Look unit over for any damage, vibrations or abnormal noise.	X									
Verify unit is level side to side and front to rear.	X									
Confirm refrigerant lines properly are secured and not touching or rubbing other lines, wires or frame work.	X									
Verify fan motors and motor mounts are tight.	X									
Confirm fan blade/s are tight and not rubbing or hitting.	X									
Make sure all electrical connections, factory and field, are tight.	X									
Verify electrical connections at lamps are they secure and dry.	X									
Check for and replace any frayed or chaffed wiring.	X									
Check all electrical wiring make sure it is secured and not on any sharp edges or hot lines.	X									
Check for air disturbances externall to the unit. Heat and air registers, fans, and doors etc.	X									
Check for water leaks.	X									
Clean evaporator coil/s and fan blade/s. Do not use an acid base cleaner. Rinse off any cleaner residue.		X								
Clean discharge air honeycombs or grilles. Do not use an acid base cleaner. Rinse off any cleaner residue.		X								
Clean condenser coil/s and fan blade/s. Do not use an acid base Cleaner. Rinse off any cleaner residue.		X								
Verify condensate drain lines are clear and functioning.		X								
Record voltage reading at unit with unit off?		X								
Verify condenser and evaporator fans are working.	X									
Record condenser air inlet temperature	X									
Record condenser air outlet temperature	X									
Is condenser air inlet or air exhaust restricted or recirculating?	X									
Use a handheld propane leak detector ("sniffer") to check for refrigerant leaks.	X									
Record voltage reading with unit running.		X								
Record compressor amp draw.		X								
Record defrost heater voltage and amp draw.		X								
Record anti-sweat heater voltage and amp draw.		X								
Record case product temperature.	X									
Record unit discharge air temperature.	X									
Record unit return air temperature.	X									
Record ambient conditions around unit (wet Bulb temperature and dry bulb temperature).	X									
Check product loading, do not load beyond the units load limits.	X									
Verify clearances on sides/back of unit.	X									
Check unit controller for proper operation. See controller or 1/0 Manual for proper controller operation.		X								
Confirm door switches function.	X									
Verify unit doors and lids work and are sealed correctly.	X									
Verify that all the panels, shields and covers are in place.	X									

REPLACING CANOPY LAMPS

1. Disconnect power to the merchandiser. The LED fixtures are located in the canopy zone.
2. Remove the screws and disconnect the LED fixture from the merchandiser.
3. Replace the LED with like fixture.
4. Return power to the merchandiser.



LED Location

REPLACING EVAPORATOR MOTORS

Should it ever be necessary to service or replace the fan motors be certain that the fan blades are reinstalled correctly. The blades must be installed with raised embossing (part number on plastic blades) positioned as indicated on the parts list.

Unplug power cords before servicing.

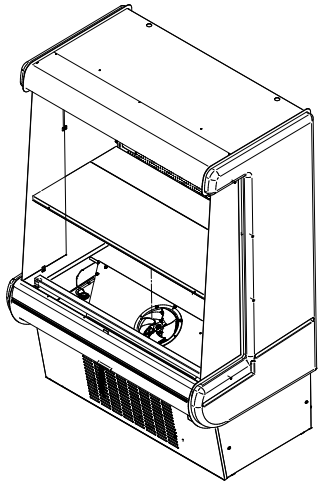
E-mail: contact.center@hussmann.com
Call: México 800-890-2900

Required Tools:

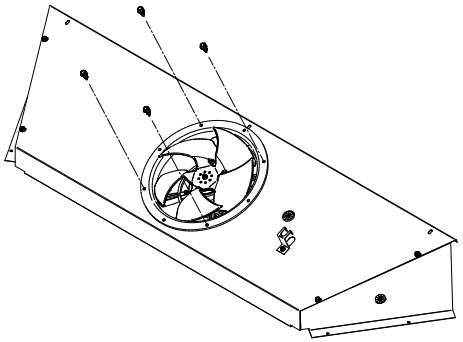
- Screwdriver
- 3/8" Allen Wrench

For access to these fans:

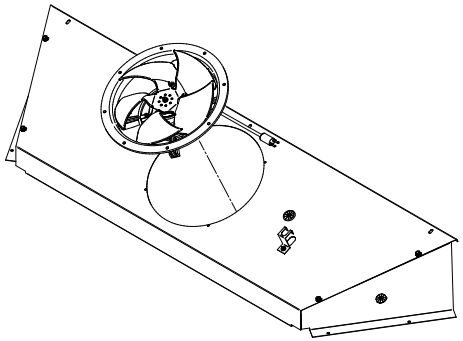
1. Remove product and place in a refrigerated area. Make sure the power is off to the case.
2. Make sure there is no voltage in the refrigerator. Remove pan displays to have access to the evaporation section as shown below.



3. Remove motor screws as shown below.



4. Take off motors from assembly and disconnect harness.



5. Replace new motors and reverse the process. Make sure everything is hand-tight and is working correctly.

⚠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.

REPLACING COMPRESSOR

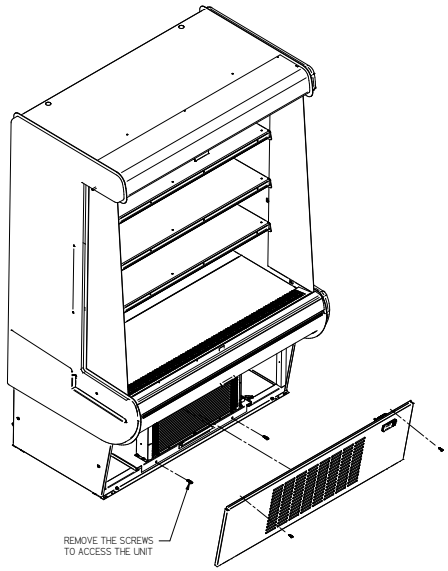
Unplug the power cords before servicing.

E-mail: contact.center@hussmann.com
Call: México 800-890-2900

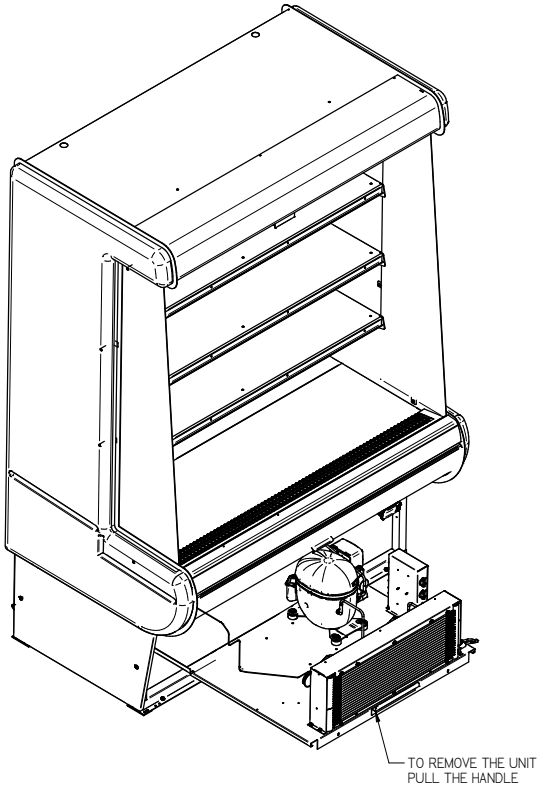
Required Tools:

- Screwdriver / Philips Tip
- 1/4" Allen Wrench
- Copper Tubing Cutter
- Blow Torch

1. Remove product and place in a refrigerated area. Make sure the power is off to the case.
2. Make sure there is no voltage in the refrigerator. Remove lower panels.

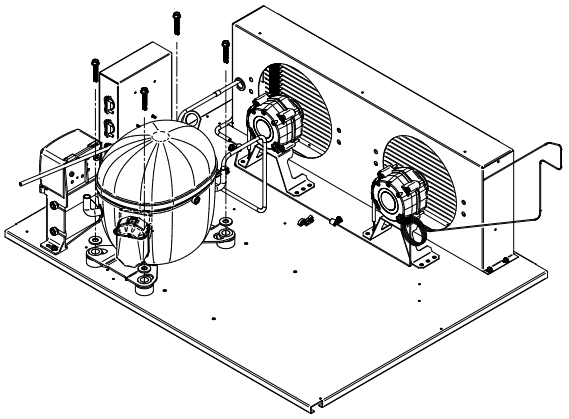


3. Make sure there is no refrigerant left in the system. Refer to Page 2-3 - Steps to Recover Refrigerant.
4. Remove welded joints that connect the condensing units and the evaporator.
5. Slide out the condensing unit completely. Be careful using the condensing unit base to pull it out. Make sure not to stress or interfere with other parts.



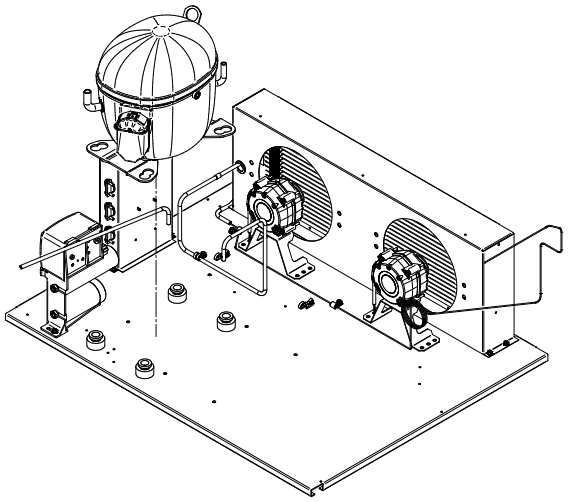
6. Disconnect all wires and harness from the compressor.

7. Take off compressor screws.



MD Condensing Unit Shown

8. Remove welded joints to the compressor and replace with new compressor.



MD Condensing Unit Shown

9. Reverse the process and make sure everything is in place.

REPLACING CONDENSER MOTOR

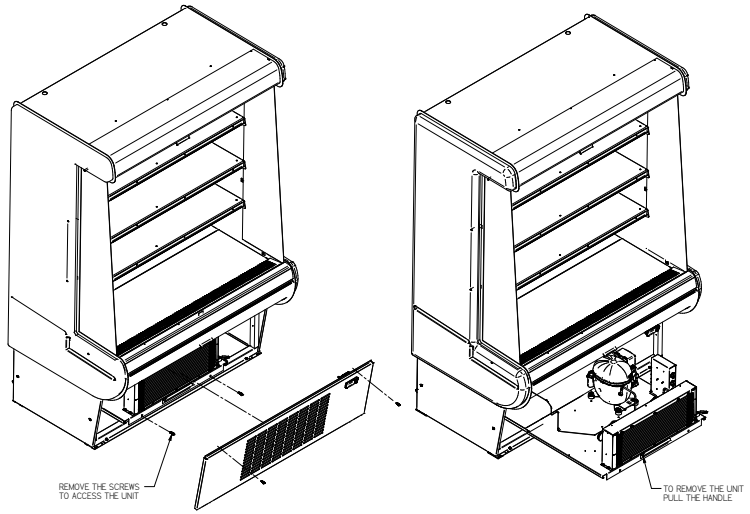
Unplug the power cord before servicing.

E-mail: contact.center@hussmann.com
Call: México 800-890-2900

Required Tools:

- Screwdriver / Philips Tip
- 1/4" Allen Wrench

1. Remove product and place in a refrigerated area. Make sure the power is off to the case.
2. Make sure there is no voltage in the refrigerator. Remove rear lower panel as shown in the illustration.
3. Slide out the condensing unit. Be careful using the condensing unit base to pull it out. Make sure not to stress or interfere with other parts.



4. Disconnect condenser motor harness.

5. If a flexible extension is used, skip Step 6.

6. Release screws to partially remove venturi assembly.

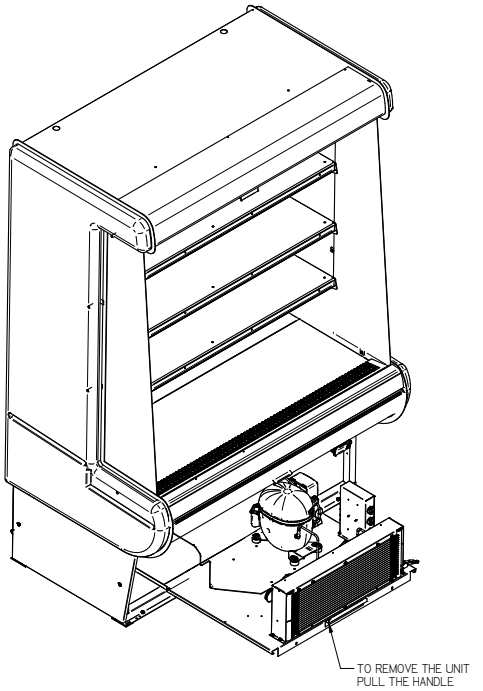
7. Release screws to remove condenser fan assembly.

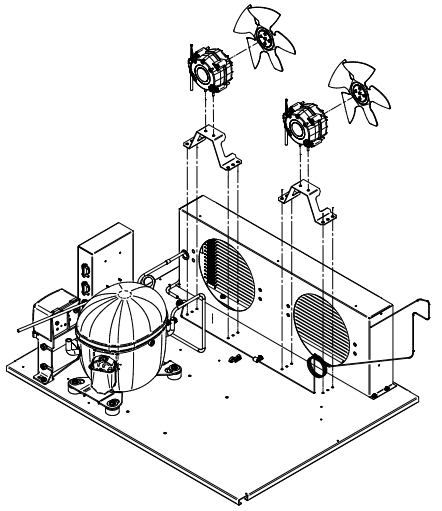
8. Release motor screws to get to motor / blade assembly.

9. Change failed part.

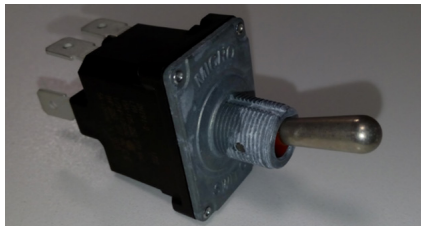
10. If the only damaged part is the motor, remove blade.

11. Reverse the process and make sure everything is in place and working.

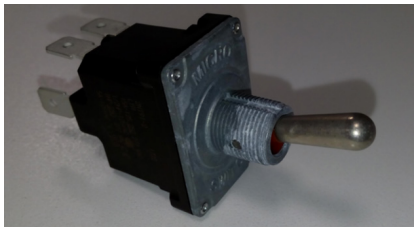




Visual Description of R290 Replacement Parts



Main Switch



Light Switch

Control Display AK-CC 210

Solid State Relay 25 Amp

⚠WARNING

» Component parts are specifically chosen for propane exposure and therefore non-incendive and non-sparkling. Component parts shall be replaced with identical components, and servicing shall be done by factory authorized service personnel only, so as to minimize the risk of possible ignition due to incorrect parts or improper service.

HUSSMANN®

To obtain warranty information or other support, contact your Hussmann representative or visit: https://www.hussmann.com/services/warranty. Please include the model and serial number of the product.

For questions about your equipment please contact our Technical Support Team: México 800-890-2900
For General Support or Service Calls contact our Customer Support Call Center: México 800-890-2900
For ordering Aftermarket Warranty Parts call: México 800-890-2900 or email: contact.center@hussmann.com