

HUSSMANN®

microSC™



DOE 2017
Energy Efficiency
Compliant

MDN (120V)

Medium Temperature Self Contained Open Vertical Merchandiser

with R-290 Refrigerant

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.**

IMPORTANT

Keep in store for future reference!



Installation & Operation Manual

P/N 9FQ6P11007900_B

June 2023

Spanish P/N 9FQ6P11008200



BEFORE YOU BEGIN

Read these instructions completely and carefully.



PERSONAL PROTECTION EQUIPMENT (PPE)

Personal Protection Equipment (PPE) is required whenever installing or servicing this equipment. Always wear safety glasses, gloves, protective boots or shoes, long pants, and a long-sleeve shirt as required when installing or servicing this equipment.






1. If the information in these instructions are not followed exactly, a fire or explosion may result, causing property damage, personal injury or death.
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.

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 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.
- 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.

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.



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WARRANTY

IMPORTANT
KEEP IN STORE FOR FUTURE REFERENCE
Quality that sets industry standards!

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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, and follow OSHA standards for safety.

The definitions at right 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 four parts according to ANSI Z535 Series.



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.

REVISION HISTORY

REVISION B

Updated California Warning and ANSI/NSF References

ORIGINAL ISSUE — NOVEMBER 2021

HUSSMANN CORPORATION • BRIDGETON, MO 63044-2483 U.S.A.

ANSI Z535.5 DEFINITIONS

-  • **DANGER** – Indicate[s] a hazardous situation which, if not avoided, will result in death or serious injury.
-  • **WARNING** – Indicate[s] a hazardous situation which, if not avoided, could result in death or serious injury.
-  • **CAUTION** – Indicate[s] a hazardous situation which, if not avoided, could result in minor or moderate injury.
- **NOTICE** – Not related to personal injury – Indicates[s] situations, which if not avoided, could result in damage to equipment.

 **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.

All installation and operating instructions concerning the handling, moving, and use of these merchandisers must be carefully followed to avoid either damaging the refrigerant tubing, or increasing the risk of a leak.

Case ventilation openings must be clear of any obstructions. Do not damage the refrigerant circuit.

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.

Open Vertical Merchandisers

INSTALLATION

UL LISTING

These merchandisers are manufactured to meet ANSI/ UL 471 standard requirements for safety. Proper installation is required to maintain the listing.

FEDERAL / STATE REGULATION

These merchandisers at the time they are manufactured, meet all federal and state/provincial regulations. Proper installation is required to ensure these standards are maintained. Near the serial plate, each merchandiser carries a label identifying the environment for which the merchandiser was designed for use. This model is Type II as described below.

**NSF/ANSI 7 Type II – Display Refrigerator / Freezer
Intended for 80°F / 55%RH Ambient Application**

**NSF/ANSI 7 – Display Refrigerator
Intended for Bulk Produce**

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.

Recommended operating ambient temperature is between 60°F (16°C) to 80°F (27°C). Maximum relative humidity is 55%.

LOCATION

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

 **WARNING**

Do NOT stand or walk on top of merchandiser. Do not store items or flammable materials atop the unit.

1-2 INSTALLATION

LOCATION (Continued)

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.

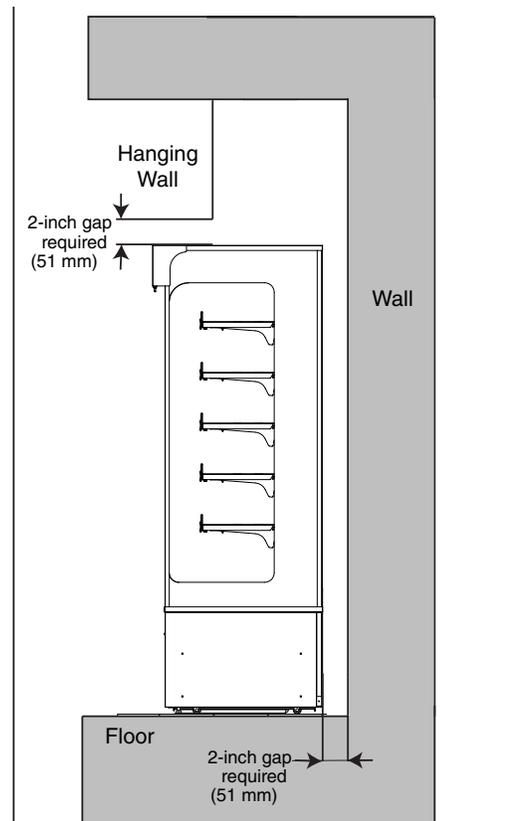
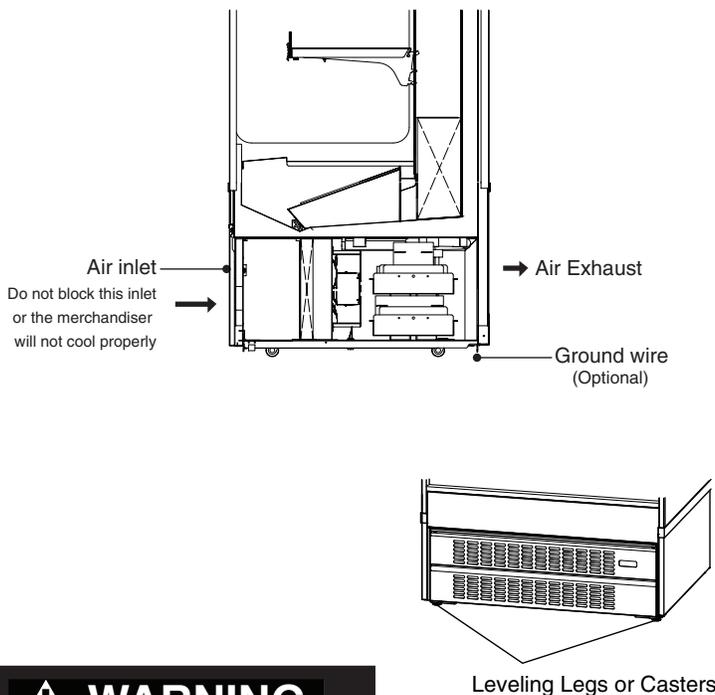
BE SURE TO POSITION SELF CONTAINED MERCHANDISERS PROPERLY.

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

Allow for a minimum of 2 inches of clearance from walls, merchandisers, and any other large objects near the merchandiser's vented base panels. A minimum space of 2 inches should be left above the case. Blocking or restricting air flow will adversely affect performance and may damage the refrigeration system.

If the merchandiser is used or stored in a hot spring or coastal area, it may be damaged (due to sulfur or salt). If the intention is to install the merchandiser in any of the above areas or locations, contact the supplier or dealer where you purchased the merchandiser. Do not lay the case sideways to move the case. This may cause damage. Case should be installed on a flat, level floor.

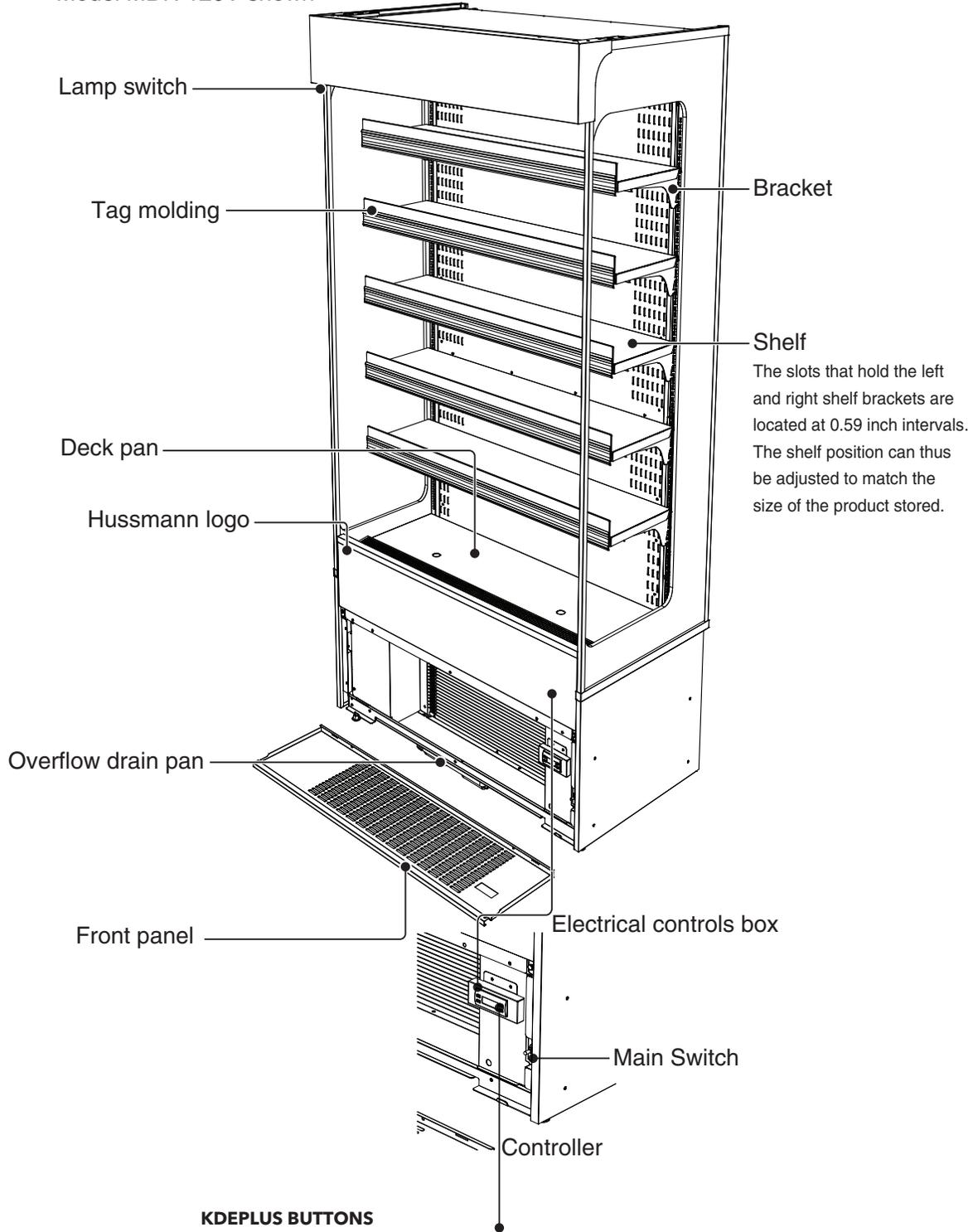
After installation, fix the case in place with the leveling legs (case option) to make sure that it does not move. Or if the case has casters, lock the casters.



⚠ WARNING
Do not store items or flammable materials atop the unit.

Part names

Model MDN 120V shown



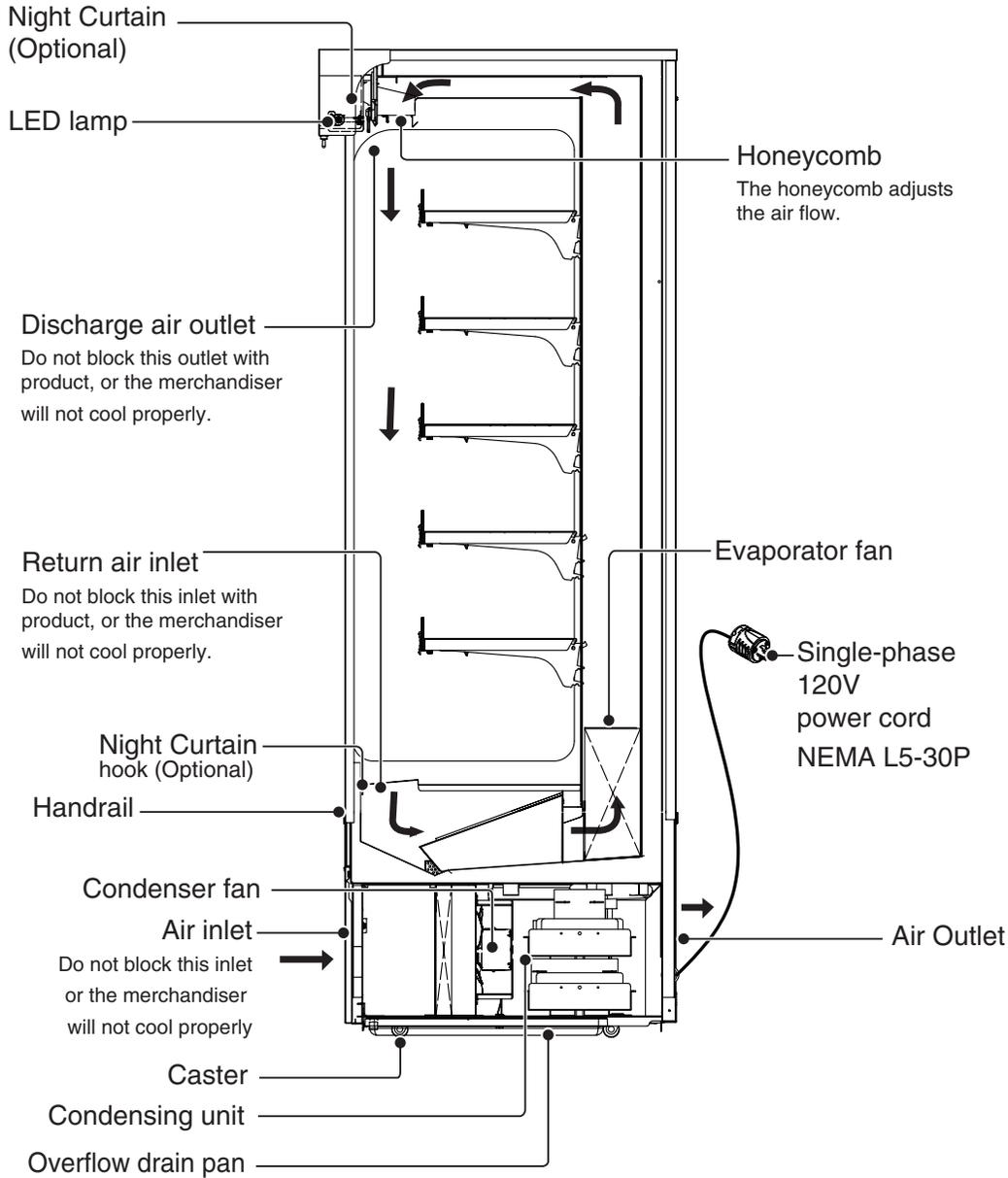
KDEPLUS BUTTONS

The KDEplus keyboard has 4 keys, as shown in the illustration:



Part names

Model MDN 120V shown



Additional parts

Name	Appearance	Quantity
Overflow drain pan		1
Thermometer		1

MODEL DESCRIPTION

The MDN models are open, vertical, medium temperature display merchandisers. They are self contained merchandisers with their own condensing unit. Each self contained model has a condensing unit that is factory installed beneath the display area of the case. The unit is ready for operation when electrical service is connected. See Section 2 for electrical information before starting the case.

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.

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.



EXTERIOR LOADING

Do NOT walk on top of merchandisers 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 or flammable materials 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. Remove the top of the crate, and detach walls from each other. Lift crate from the skid. Unscrew the case from the skid. The fixture can now be lifted off the crate skid. **Lift only at base of skid!** Remove any attached braces and/or skids.

DO NOT TILT MERCHANDISER ON ITS SIDE OR END WHEN REMOVING SKID.

The case is equipped with casters for ease of installation and transportation inside store. Check floor where cases are to be set to see if it is a level area. Determine the highest part of the floor.



THERMOMETER

The cabinet has a “pencil” type thermometer and reads from -40° F to 120° F / -40° F to 50° F on 2° increments. The thermometer is located in the packout kit inside of the merchandiser. It should be placed and left inside the bottom front interior compartment during normal operation of the merchandiser.

Hussmann Self-Contained Refrigeration Equipment Start Up Check List

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

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

Form HSCW01 Rev. 30MAY12 P/N 0525209_B

LEGAL DISCLAIMER:

Hussmann shall not be liable for any repair or replacements 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.

ELECTRICAL / REFRIGERATION

MERCHANDISER ELECTRICAL DATA

Refer to merchandiser serial plate for electrical information.

FIELD WIRING

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

ALWAYS CHECK THE SERIAL PLATE FOR COMPONENT AMPERES

ELECTRICAL CONNECTIONS

All wiring must be in compliance with NEC and local codes. Self contained models are electrical cord connected at the electrical box. Ensure ground pin is attached. For any questions, contact the supplier or dealer where you purchased the product or licensed service provider.

This unit uses a powercord with NEMA (L5-30P) plug.

The powercord is rated for 30A/120V.



ELECTRICAL OUTLET

Before the merchandiser is connected to any wall circuit, use a voltmeter to check that the outlet is at 100% of the rated voltage. The wall circuit must be dedicated for the merchandiser. Failure to do so voids the warranty. **Do not use an extension cord.** Never plug in more than one merchandiser per electrical circuit.

- 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.

Ensure ground pin is attached.

For any questions, contact the supplier or dealer where you purchased the product or licensed service provider.

WARNING

Risk of Electric Shock. If cord or plug becomes damaged, replace only with a cord and plug of the same type.

WARNING

Merchandiser must be grounded. Do not remove the power supply cord ground.

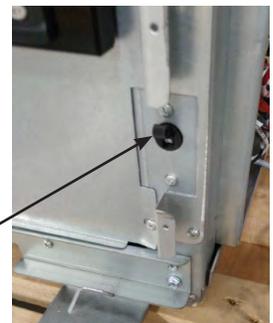
POWER SWITCH

The main ON/OFF switch is located on the front control on the bottom, righthand-side of merchandiser.



Front Grille

Remove front grille. Power switch is located on the righthand side of the merchandiser, behind front grille.



Power Switch

Open Vertical Merchandisers

REFRIGERATION

Each self-contained model is equipped with its own condensing unit and control panel located beneath the display area. The correct type of refrigerant will be stamped on each merchandiser's serial plate. The merchandiser refrigeration piping is leak tested. The unit is charged with refrigerant, and shipped from the factory with all service valves open.


WARNING

**Refrigeration lines are under pressure.
Refrigerant must be recovered before
attempting any connection or repair.**



**It is the contractor's responsibility to
install merchandiser(s) in accordance with
all local building and health codes.**

WATER OUTLET AND WATER SEAL

The condensate water outlet is located at the front of the liner bottom under deck pan. The outlet has a factory installed, external water seal.

For self contained models, this water seal drains into the condensate evaporator pan located beneath the merchandiser.

NOTE: All lower base panels must be in place when the refrigerator is operating. If not, airflow from the condenser will be directed over the evaporator pan and defrost water in the pan may overflow.


WARNING

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


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.**

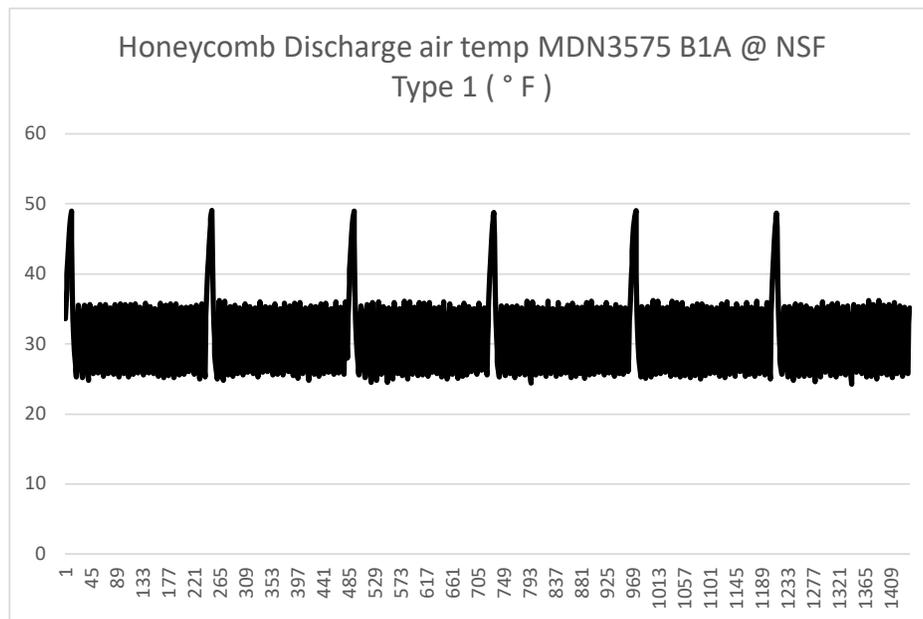
CONTROLS AND ADJUSTMENTS

The controller controls refrigeration temperature. The controller is factory installed in the control panel mounted on the merchandiser’s fascia.

Discharge air temperatures should be measured at the center of the honeycomb. Defrosts are time initiated and temperature terminated for these models. The defrost setting is set in the factory. The product application is factory set for Med. Temp. - NSF7 as shown below.

Model	Product Application	Discharge Air Temperature (Avg Ref mode)	Controller Set Point (°F)	Defrost Frequency (per day)	Type of Defrost	Temp. Termination	Failsafe time (min)
MDN4775B1A/S1A	Med Temp - DOE	25 ° F - 27 ° F (-4 °C to -3 °C)	23 ° F (- 5 ° C)	6	Off Time	45 ° F (7 ° C)	50
	Med Temp - NSF 7 Type 1		19 ° F (- 7 ° C)				
MDN3575B1A/S1A	Med Temp - DOE	25 ° F - 27 ° F (-4 °C to -3 °C)	28 ° F (- 2 ° C)				
	Med Temp - NSF 7 Type 1		25 ° F (- 4 ° C)				

Note: The cases are shipped out from factory with controller settings to comply with NSF 7 requirements.



2-4 ELECTRICAL / REFRIGERATION

CONTROLLER OPERATION

The electronic controller is located in the cassette compartment. The controller comes factory set, and is ready for use. The front grille must be removed in order to access this control. When removing the grille for this operation or for condenser cleaning, care must be taken not to damage the display interface cable. It may be unplugged during this task.

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 preprogrammed temperature.
 - c. The Control is designed to read and display a cabinet temperature not a product temperature.

DISPLAY CONTROL



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

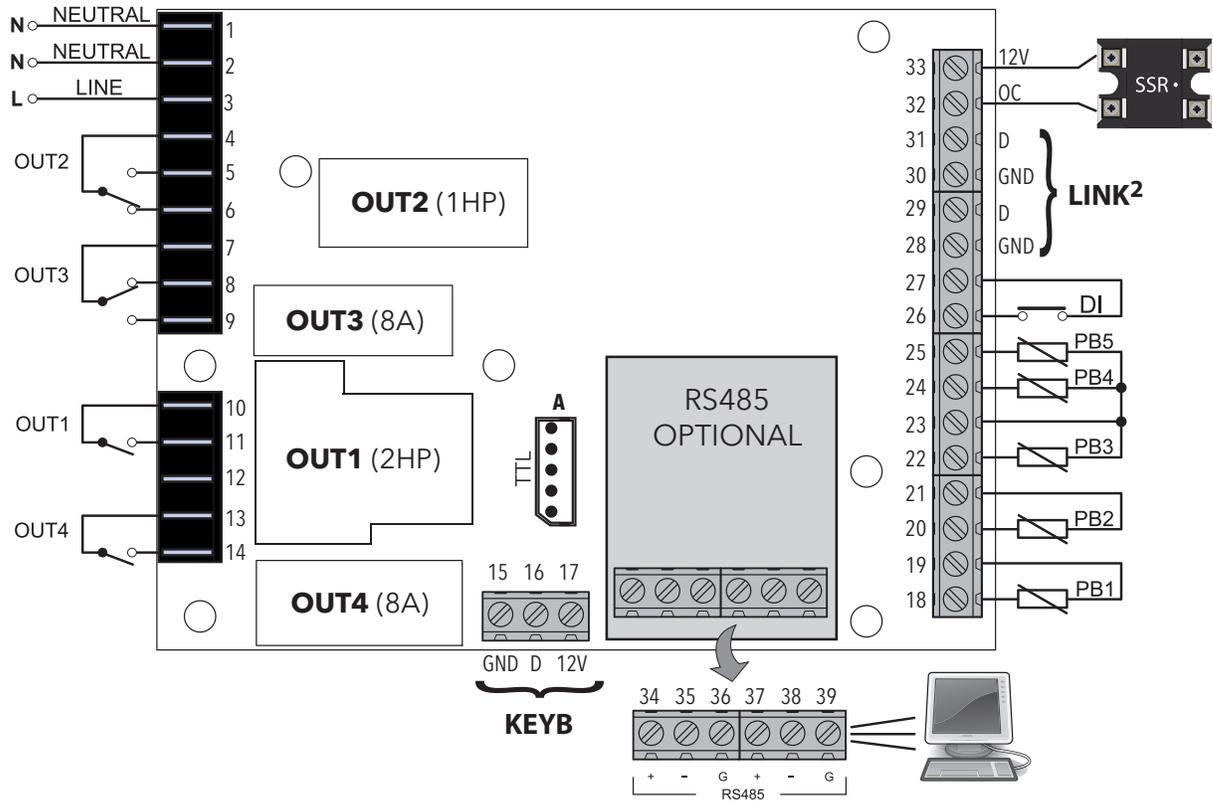
Main Features:

- Panel-mounted
- Energy saving algorithms and optimized defrost control
- 8 preloaded applications
- Defrost at single / double evaporator
- Frame Heater
- Local network auto-configuration
- Direct load connection (up to 2 HP)
- Supply voltage control LVD
- Presence of an open collector output



CONNECTIONS

TERMINALS



* **N.B.:** analogue inputs PB1...PB5 can also be configured as Digital Inputs DI.

TERMINALS	
1-2	NEUTRAL. These are power supply terminals.
3	LINE. These are power supply terminals.
4	OUT2 Shared Terminal
5	N.O. OUT2
6	N.C. OUT2
7	OUT3 Shared Terminal
8	N.C. OUT3
9	N.O. OUT3
10	OUT1 Shared Terminal
11	N.O. OUT1
12	Not Used
13	OUT4 Shared Terminal
14	N.O. OUT4
15-16-17	Connection to KDEPlus or KDWPlus external keyboard or ECPlus echo module.
19-18	PB1 probe connection.
21-20	PB2 probe connection.
23-22	PB3 probe connection.
23-24	PB4 probe connection.
23-25	PB5 probe connection.
27-26	Digital input (DI).
28-29	LINK ² . Connection 1 - local area network.
30-31	LINK ² . Connection 2 - local area network.
32-33	Open Collector Output (OC).
A	TTL Unicard/DMI/Multi Function Key connection
34-35-36	RS485. Connection 1 - Supervision Gateway.
37-38-39	RS485. Connection 2 - Supervision Gateway.

KDEPLUS BUTTONS

The **KDEPlus** keyboard has 4 keys, as shown in the illustration:



Each key has a different function depending on whether it is:

- Pressed and released
- Pressed for at least 5 seconds
- Pressed and held at start-up
- Pressed in combination with another key.

KEYS

The following table summarizes the function of each key:

No	Key	Action		
		Pressed and released	Press for at least 5 secs	Start-up
1		<ul style="list-style-type: none"> • Scrolls through menu items • Decreases values 	Activates the Manual Defrost function (from outside menus).	---
2		<ul style="list-style-type: none"> • Scrolls through menu items • Decreases values 	Function can be configured by the user (from outside menus). (see parameter H32)	---
3		<ul style="list-style-type: none"> • Returns to the previous menu level • Confirms parameter value 	Activates the Stand-by function (from outside menus).	---
4		<ul style="list-style-type: none"> • Displays any alarms (if active) • Opens Machine Status menu • Confirms commands 	Opens the Programming Menu (User and Installer parameters)	When pressed during start-up it enables the user to select the application to be loaded.



WARNING

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



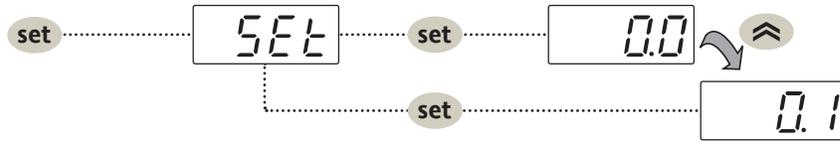
CAUTION

Do NOT allow cleaning agent or cloth to contact food product.

SETPOINT: SETTING AND EDIT LOCK

To display the Setpoint value, press the **set** key to enter the "Machine Status" menu, then press the **set** key again when the "SEt" label is displayed.

The Setpoint value appears on the display. To change the Setpoint value, press the **UP** and **DOWN** keys within 15 seconds. Press **set** to confirm the modification.



It is possible to disable the keypad on this device.

The keypad can be locked by programming the "LOC" parameter appropriately.

With the keypad locked, you can still access the "Machine Status" menu by pressing **set** to display the Setpoint, but you cannot edit it. To disable the keypad lock, repeat the locking procedure.

DISPLAY PROBES VALUE

To display the value read by probes connected to the device, press the **set** key and enter the "Machine Status" menu, then press the key again when one of the probe-related labels "Pb1...Pb5" press the **set** key again. The value measured by the associated probe will appear on the display.

NOTE: The displayed value is read-only and cannot be modified.

KDEPLUS BUTTONS

The **KDEPlus** keyboard has 4 keys, as shown in the illustration:



KEY-ACTIVATED FUNCTIONS

All models have the **UP** key set to enable the "Manual Defrost" function.

The **DOWN** and **ESC** keys can also be set to activate any other function required by the user.

The parameters for configuring the two keys are:

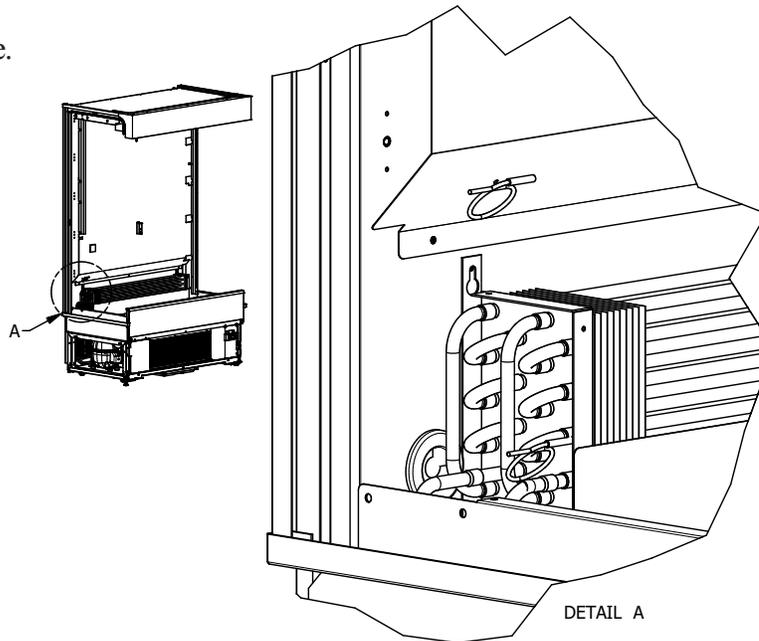
- **H11** = DOWN key configuration
- **H33** = ESC key configuration

The values that can be set apply to both keys and the functions that can be activated are:

H32/H33 value	Function to enable
0	disabled
1	defrost
2	reduced set
3	Light
4	Energy saving
5	AUX
6	Stand-by
7	Deep cooling cycle
8	Start/end defrost

DEFROST SENSOR LOCATION

The defrost sensor (orange color) is installed on the 3rd turn, on the coil. Make sure the sensor is touching the copper metal surface. The sensor is held in place with a tie wrap.

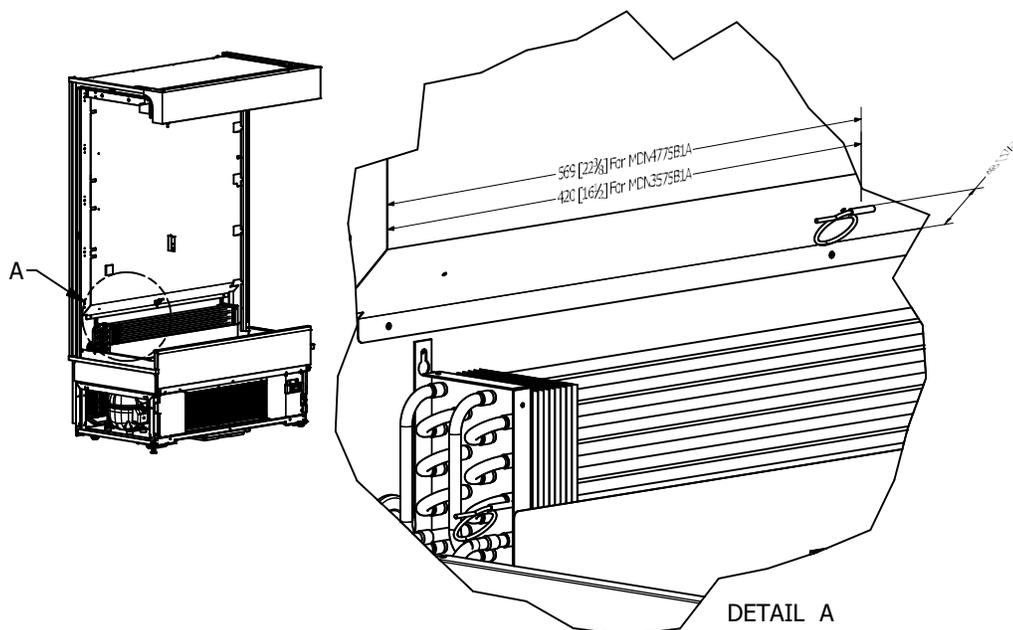


NOTE:

It is critical for merchandiser operating performance to have the sensors in this location. If for any reason, the sensors are removed, they need to be placed in the original location.

DISCHARGE AIR SENSOR LOCATION

The discharge air sensor (green color) is installed above the coil on the burring mark. Avoid touching the metal surface with the sensor tip. Ensure there is a turn of wiring.



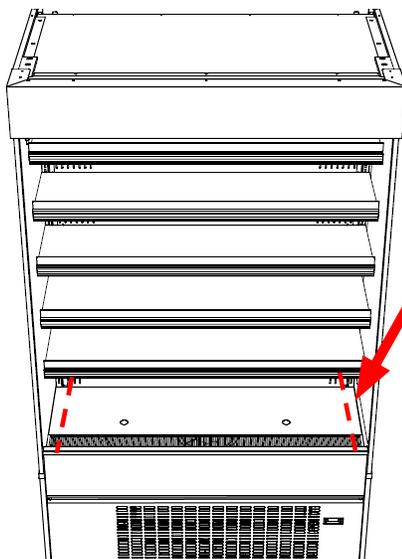
SHELVES

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.

- Display items in such a way that will not protrude from the shelf / deck pan.
- Display the items uniformly on shelf / deck pan.
- Do not place items more than 155 lbs on deck pan and shelf.
- After removing the items, adjust the height and angle of the shelf.
- Adjust height and angle according to the product.
- The shelf height can be adjusted at 0.59 inch intervals.
- Change the angle of the shelf with the hook as the fulcrum.

STOCKING

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



A clearance of 2.5 inches is needed near the ends in order to maintain air flow and proper cooling performance.

Do not block the discharge air outlet and return air inlet with products.

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 the air inlet and air outlet.

Do not use unapproved shelving, baskets, display racks, or any accessory that could hamper air curtain performance. Contact your Hussmann representative for more information.

DRAIN WATER

If the evaporation mechanism is attached, drainage work is unnecessary if the outside air temperature is 80°F, the humidity is 55% RH, and the ambient wind speed is less than 47.2 FPM.

During the summer and on high-humidity days, check the overflow drain pan at the bottom of the case, and throw out any excess water (See location illustration on Page 1-3).

RE-START

Leave the product in the case for at least 5 minutes before re-starting the case.

If the merchandiser is re-started immediately after stopping, the overload protection unit or a breaker for wiring may trip, or an excessive load may be applied to the compressor, which will result in failure.

For energy savings:
Please turn off the lights at night and at the time of closing the store. When night curtains are provided, pull them down during off hours to enhance product quality.

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.



WARNING

Only Hussmann or factory trained technicians should service or repair this R-290 (propane) equipment.

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

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 gauge 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.



2-12 ELECTRICAL / REFRIGERATION

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.

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. Remove all service ports. 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

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.



WARNING

Refrigeration lines are under pressure. Refrigerant must be recovered before attempting any connection or repair.



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.

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, these merchandisers should be thoroughly cleaned, all debris removed and the interiors washed down, weekly.

Exterior Surfaces

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

Interior Surfaces

The interior surfaces may be cleaned with most domestic detergents, ammonia based cleaners and sanitizing solutions with no harm to the surface. Self contained models empty into a limited capacity drain pan, which will overflow if excess water is used in cleaning.

Do NOT Use:

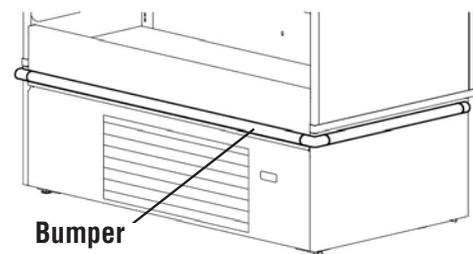
- Steel Wool, abrasive cleansers and scouring pads, as these will mar the finish.
- Coarse paper towels on coated glass.
- Ammonia-based cleaners on acrylic parts.
- Solvent, oil or acidic based cleaners on any interior surfaces.
- Do not use steam or high pressure water hoses to wash the interior. These will destroy the merchandisers' sealing causing leaks and poor performance.
- Never introduce water on self-contained units with an evaporator pan.

Do:

- Remove the product and all loose debris to avoid clogging the waste outlet.
- Store product in a refrigerated area such as a cooler. Remove only as much product as can be taken to the cooler in a timely manner.
- Disconnect electrical power before cleaning.
- Thoroughly clean all surfaces with soap and hot water.
- Take care to minimize direct contact between fan motors and cleaning or rinse water.
- Allow merchandisers to dry before resuming operation. After cleaning is completed, turn on power to the merchandiser.

REMOVING SCRATCHES FROM (OPTIONAL) BUMPER

1. Use steel wool to smooth out the surface area of the bumper.
2. Clean area.
3. Apply vinyl or car wax and polish surface for a smooth glossy finish.



⚠ WARNING

 Refers to something you MUST NOT do.

 Refers to something you MUST DO.

■ Installation, relocation and storage

 **DO NOT**
Prohibition

- Do not apply strong force against, or impact the glass surfaces when moving the merchandiser.

 **DO**

- Unplug the merchandiser and empty the accumulated water from the overflow drain pan before moving and/or storing.
- Be sure to wear appropriate personal protection equipment (PPE) when installing or moving the merchandiser.
- Remove all products and shelving from the merchandiser prior to moving.
- Contact Hussmann Customer Service for assistance when relocating the merchandiser.

■ Electrical work

 **Contact a licensed service provider.**

- Electrical work includes :
 - Installation of a high-speed electric leakage breaker.
 - Installation of a breaker for wiring.
 - Installation of dedicated socket with a ground.
 - Make sure to complete grounding work for any grounded outlet.
 - Follow all appropriate standards, laws and regulations regarding electrical installation

(Failure may cause a fire or electric power leakage.)

MDN
120V / 1 60Hz, 30A

■ During use

 **DO NOT**
Prohibition

- Do not throw products into the merchandiser.
- Do not put hands, apply strong force /impact, or throw products against the glass surfaces.
- Do not place any items that exceed the specified weight onto the shelves.
- Do not overload the shelves with product
- Do not let the nightshade go until it has been securely fastened, or rolled up.

 **DO**

- Install the shelf as directed in this manual.

■ Installation

 **DO NOT**
Prohibition

⟨Or may cause electric shock or leak⟩

- Do not use the merchandiser outdoors.
- Do not install the merchandiser in a place where it can easily come into contact with water

 **DO**

⟨Or may cause fire or electric shock⟩

- Contact a licensed service provider for installation service.

⟨Or may cause injury⟩

- Place the product securely on a strong and level floor.
- Take necessary measures to prevent the merchandiser from tipping over.

■ Maintenance, service and check up

 **DO NOT**
Prohibition

⟨Or may cause electric shock⟩

- Do not clean the machine compartment.
- Do not clean the water-drainage channel.
- Do not replace or inspect the LED lights.
- Do not clean the moisture-wicking plates

 **DO**

⟨Or may cause electric shock⟩

- Contact a licensed service provider to clean the machine compartment and/or water-drainage channel.

For details, please contact Hussmann Customer Service

 **In case of abnormalities or unit failure during operation, immediately stop use and unplug from outlet electrical outlet.**

⟨Danger of smoke, fire or electric shock⟩
 Examples of abnormalities/unit failure

- You smell something burning or hear an abnormal noise.
- The power cord or plug becomes very hot.
- The unit is flooded in water
- You feel an electric current

● Please contact Hussmann immediately.

■ Storage and disposal

 **DO**

⟨Or may cause electric power leakage and/or electric shock⟩

- Keep the product away from rainwater.
- Empty the overflow drain pan completely when removed.
- Contact a licensed service provider for disposal of the merchandiser.

For details, please contact Hussmann Customer Service

 **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.

⚠ WARNING

 <p>Refers to something you MUST NOT do.</p>	 <p>Refers to something you MUST do.</p>
--	--

■ During use

 **DO NOT**
Prohibition <Or may cause fire, electric shock or injury>

- Do not store explosive substances such as aerosol cans with a flammable propellant in this merchandiser.
- Do not use a flammable spray near the merchandiser or put any flammable items on the merchandiser.
- Do not spray water outside or inside the merchandiser directly, and do not wash the merchandiser with water.
- Do not touch the control panel with a wet hand.
- Never disassemble, repair or reconfigure the product.
- Do not insert any screws into the surface of the merchandiser
- Never insert fingers, sticks, etc. into the cold air outlet, cold air inlet, air intake opening, air discharge opening, or any moving parts.

<Or may cause injury due to collapse, tipping, or damage of the unit>

- Do not step on the unit.
- Do not place anything on the unit.

<Or may cause flame or explosion>

- Do not use any electric appliances inside the merchandiser.

<Risk of damage to health>

- Never keep any medicines in the merchandiser.

 **DO**
 <Or may cause flame or explosion>

- Use the unit only to display and merchandise food and beverages. (Use for other purposes could result in a deterioration in quality of the displayed merchandise)
- In the event of a gas leak, open a window for ventilation, and do not touch the unit or electrical plug.

 In case of abnormalities or unit failure during operation, immediately stop use and unplug from outlet electrical outlet.

<Danger of smoke, fire or electric shock>
 Examples of abnormalities/unit failure

- You smell something burning or hear an abnormal noise.
- The power cord or plug becomes very hot.
- The unit is flooded in water
- You feel an electric current

● Please contact Hussmann immediately.

 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.

 The expected lifespan of the moisture wicking plates will differ in accordance with the operating environment, absorption will deteriorate with dust, oil, and other forms of soiling. The wicking plate should be replaced at least once per year.

CLEANING STEEL SURFACES

(available only with stainless steel models)

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

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

**CAUTION****DO NOT FLOOD!**

Use only enough water necessary to clean surface. Water must not drip down the case!

Never use ammonia based cleansers, abrasive cleansers, or scouring pads.

**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.

**CAUTION**

Shut Fans Off during cleaning process. Do NOT use HOT water on cold glass surfaces. This can cause the glass to shatter and could result in personal injury. Allow glass surface to warm before applying hot water.

CLEANING CONDENSER COILS

Condenser coils should be cleaned at least once per month. Additional cleaning may be needed depending on the operational environment. A dirty condenser blocks normal airflow through the coils.

Airflow blockage increases energy consumption and reduces the merchandiser's ability to maintain operating temperature.

Disconnect the power cord.

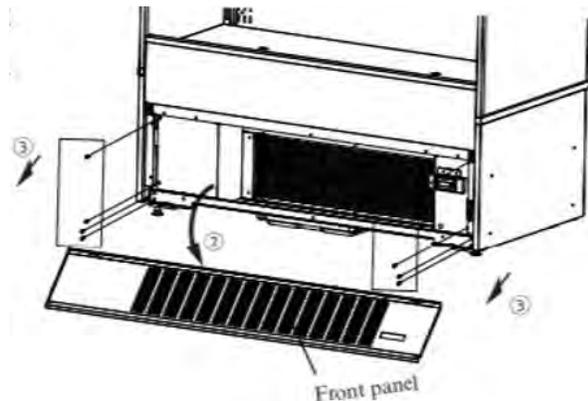


Unplug

Remove the two screws of the front panel, then pull out the panel.

Remove the 8 screws in the area shown by the figure.

To clean the coils, use a vacuum cleaner with a wand attachment and a soft (non-metallic) brush to remove dirt and debris. Do not bend coil fins. Always wear gloves and protective eye wear when cleaning near sharp coil fins and dust particles.



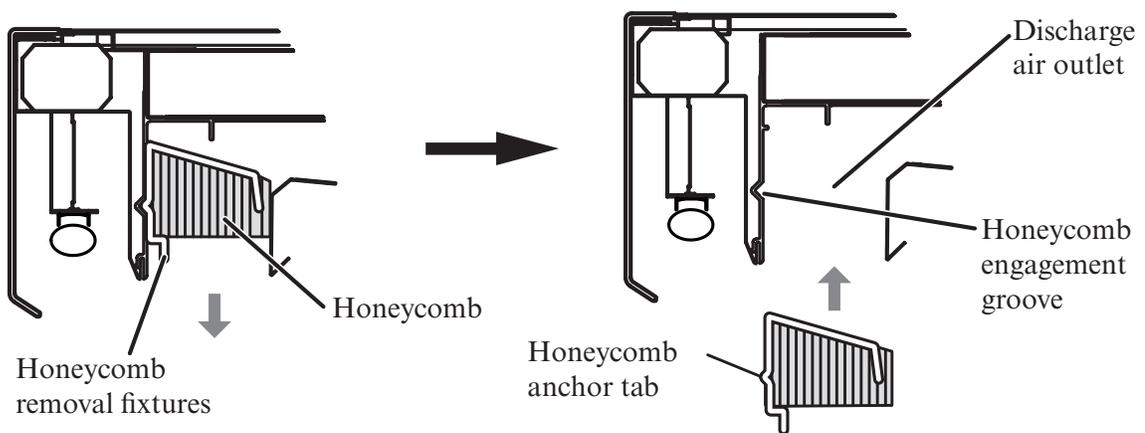
CLEANING HONEYCOMB

Clean periodically once a month.

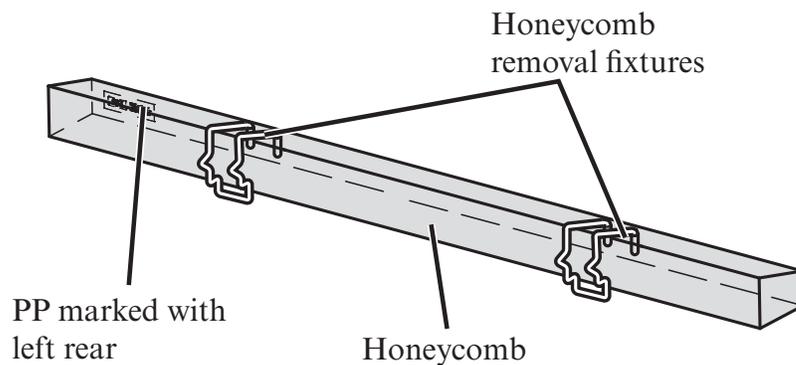
If the honeycomb is not too dirty, tap honeycomb lightly to remove the dust.

If the honeycomb is filthy, rinse off with water. Take care not to bend or mark the honeycomb. To remove the honeycomb, pull the honeycomb removal fixtures (two per honeycomb) down, and pull the honeycomb down and out.

To secure the honeycomb, push the entire honeycomb into the discharge air outlet, beginning from the end, position it horizontally, and push the anchor tabs on the honeycomb removal fittings until they are aligned with the honeycomb engagement groove. The honeycomb is at its optimum position when the groove and tab positions are aligned properly.)



Condition of being removed



CLEANING POWER PLUG



Unplug

Remove the power plug from the power socket and clean off the dust and dirt on the terminals. Also clean off the dust and dirt on the power cord and the surrounding. After cleaning, wait 5 minutes before plugging the power plug back into the power socket. Check to ensure cord is not damaged or cracked. Contact Hussmann for a replacement cord, or a licensed service provider.

**CAUTION**

Dust or dirt may accumulate within a short period depending on the conditions of the installation place or the environment for use. Check when cleaning. Wicking plate MUST be changed at least once a year.

**WARNING**

Evaporation System may be Hot!
and pose risk of bodily injury – Always Wear gloves and protective eye wear when servicing. Turn off power and allow to cool before servicing.

CLEANING DRAIN EVAPORATION SYSTEM



Cleaning the system requires disassembly. This merchandiser has an evaporation device that consists of 2 evaporation trays, and upper tray, and lower tray. Drain water goes to the upper tray first to evaporate, and any remaining water that does not evaporate will flow to the lower tray. The waste water then flows to the overflow drain pan.

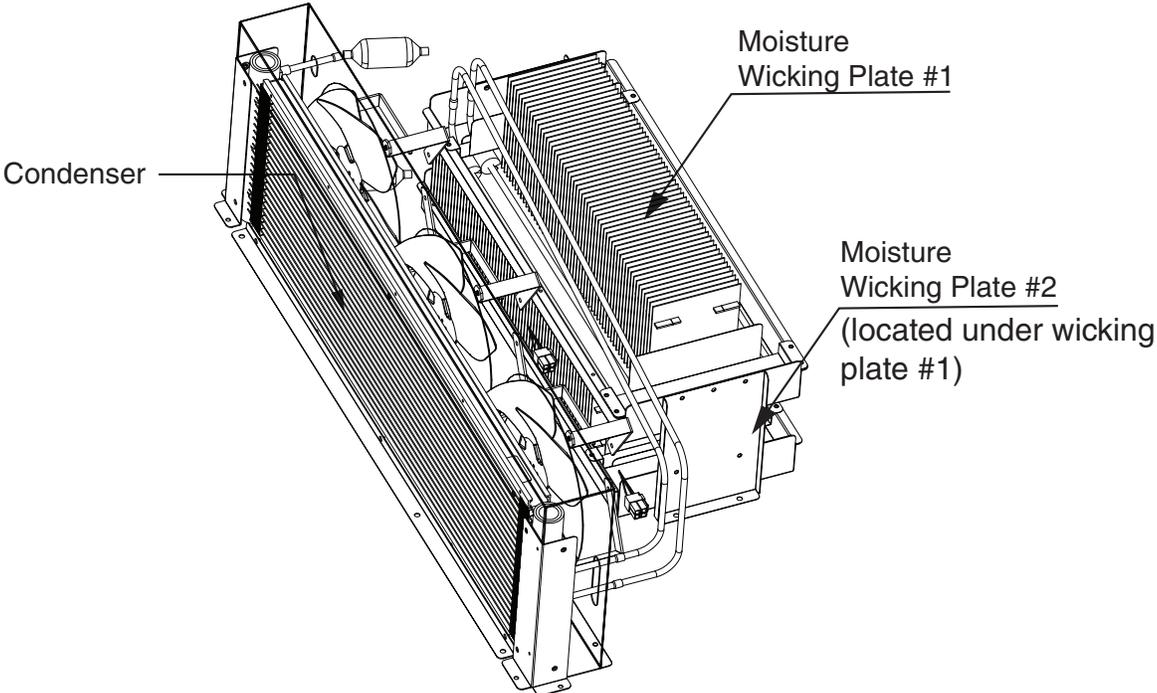
Remove accumulated debris from the evaporation pan.

Debris or dirt accumulation inside the trays or on the condenser will reduce evaporation capacity. Details of the evaporation system unit are shown on the next page.

CHANGING MOISTURE WICKING PLATES

Wicking plates must be replaced at least once per year. The expected life span of the moisture wicking plates will differ in accordance with the installation environment, but absorption capabilities will deteriorate with dust, oil and other forms of soiling. The wicking plates are shown in the illustration on the next page.

Contact your Hussmann representative for replacement parts.



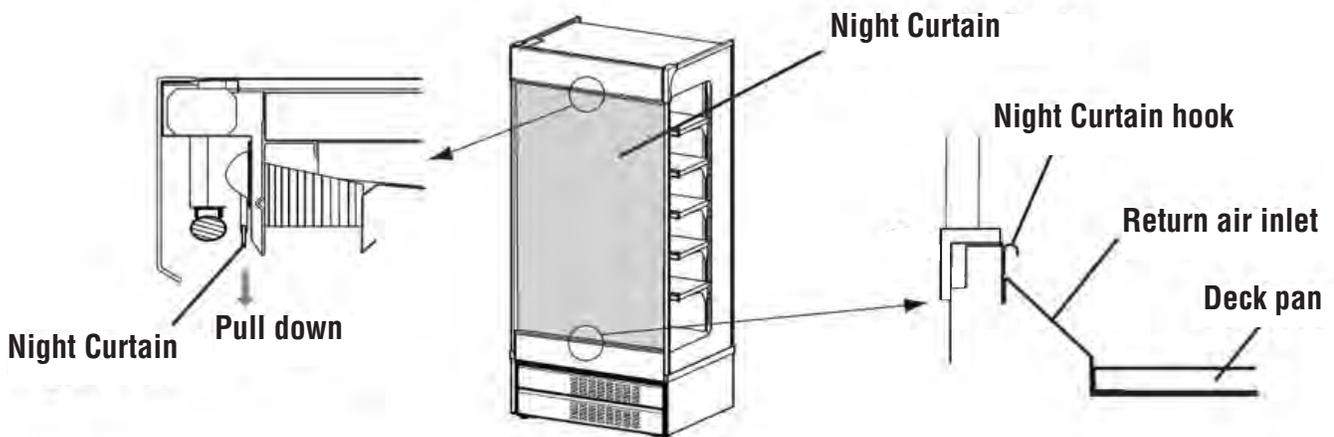
NIGHT CURTAIN (Optional)

Use the night curtain after business hours and during non-business days to save energy.

To use the night curtain:

1. Grasp the handle and pull downward. Hook the handle over the night curtain hook located on the backside of handrail.

2. Avoid the night curtain sheet touching the price tag molding or items placed inside the case.



SERVICE

IN CASE OF THE FOLLOWING:

LED Lamp does not work:

Contact your Hussmann representative to replace LED lamp fixtures. Fixtures must be replaced with like fixtures.

When not using the merchandiser for a long period of time:

Remove all items from the merchandiser, and the power plug from the power socket. Clean the inside of the cabinet, and wipe away any moisture. Make sure not to store the unused case in a place where children can play.

Damage to the power cord or plug:

If the cord is damaged, unplug the cord, and contact your Hussmann representative for replacement. Do not allow the wheels of the merchandiser to rest on the cord.

Water on the floor:

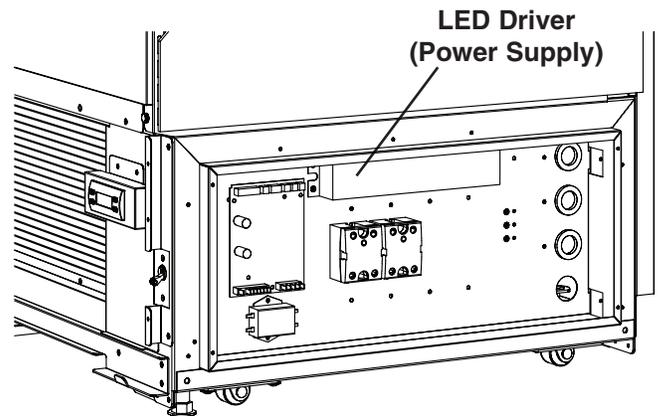
If there is water around the merchandiser, check overflow drain pan underneath the case, and dispose of any accumulated water or dirt in the pan. Wicking plates may need replacement.

When moving the case a long distance:

Use a trolley. Caution must be observed when moving the case to prevent it from toppling over if it is tilted more than necessary.

LED POWER SUPPLY LOCATION

The LED driver delivers DC power to the LED Lamp. The power supply is located behind the panel on the righthand side of the case. If it is determined that the power supply is not working and needs to be replaced, replace it with like components. Failure to place with a similar rated power supply will cause the LED lamp to be damaged or not work properly.



⚠ 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.

⚠ WARNING

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

TROUBLESHOOTING

INVESTIGATE TROUBLE ACCORDING TO THE FOLLOWING TABLE:

Try performing the check points and actions to solve the problem. If the merchandiser does not work correctly, or you hear an abnormal noise, smell something abnormal or smoky, immediately stop using the merchandiser and remove the plug from the power socket. Remove all items from the merchandiser, and then inform the “necessary information” to the supplier or dealer where you purchased the merchandiser or a licensed service provider.

Symptom	Check points	Actions
The case can not get cold at all	The power plug is disconnected.	Insert the power plug in securely.
	The power supply is cut off.	Confirm the recovery.
	The breaker for wiring is operated. The electric leakage breaker was operated.	Contact the supplier or dealer where you purchased the merchandiser or a licensed service provider.
The case is not cold enough	The wind is hitting the merchandiser.	Keep the wind speed less than 47.2 FPM (0.2 mps).
	The ambient temperature, humidity excessively high.	Refer to Page 1-1 for recommended operating ambient temperatures.
	The merchandiser is installed in direct sunlight, or near an oven or stove.	Move the location of the installation. Refer to “Location” on page 1-1 and 1-2.
	The setting of the temperature is high.	Refer to “Controls and Adjustments” on page 2-3.
	The items are inserted without pre-cooling.	Refer to Page 1-1 for location requirements.
	The items close off the discharge air inlet or discharge air outlet.	
	The items are placed at the air inlet opening or air outlet opening of the condenser.	Do not place items hindering ventilation.
	The condenser is clogged.	Refer to “Cleaning Drain Evap. System” on Page 3-6.
	The drain pan tray is dirty.	Clean periodically as needed.
The case is making an odd or loud noise.	The case is installed on an unstable floor.	Place the merchandiser securely on a strong and level floor.
	The case does not stand up correctly.	
	The rear of the case is touching a wall.	Move the merchandiser away from a wall.
	For a while after starting the case, you may hear some noise from the compressor. However, it will decrease soon.	
Dew formation outside of the case.	<p>On hot summer days, or depending on the location of the installation, a dew may stick to the outer surface of the merchandiser (especially the glass surface). In case of high humidity, a dew is formed by touching cold objects to the moisture in the air, so it is not a malfunction. When the dew is attached, wipe off with a dry cloth. These case models are designed for operation in Type II or below environments.</p>	

DIRECT DRAIN

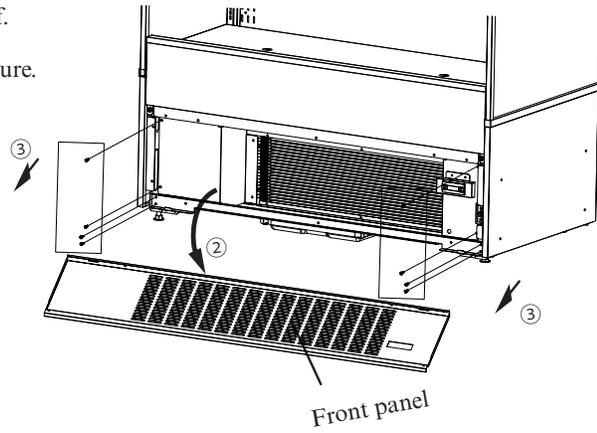
The evaporation system can be modified for a direct floor drain.

- ① Disconnect the power cord.
- ② Remove 2 screws of the front panel, then the panel itself.
- ③ Remove 8 screws in the area shown by  in the figure.

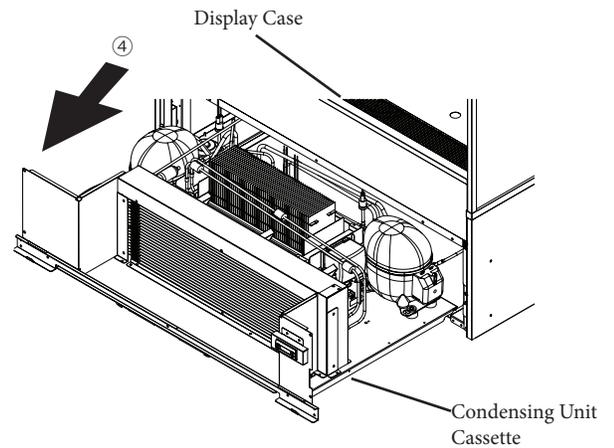
Step ①



Unplug

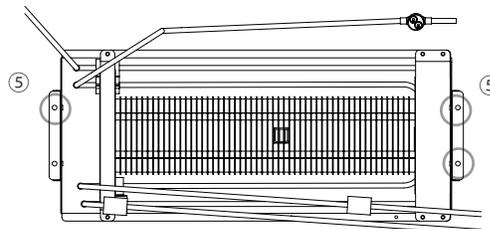


- ④ Pull out the unit.



- ⑤ Remove 3 screws attached to the evaporation tray

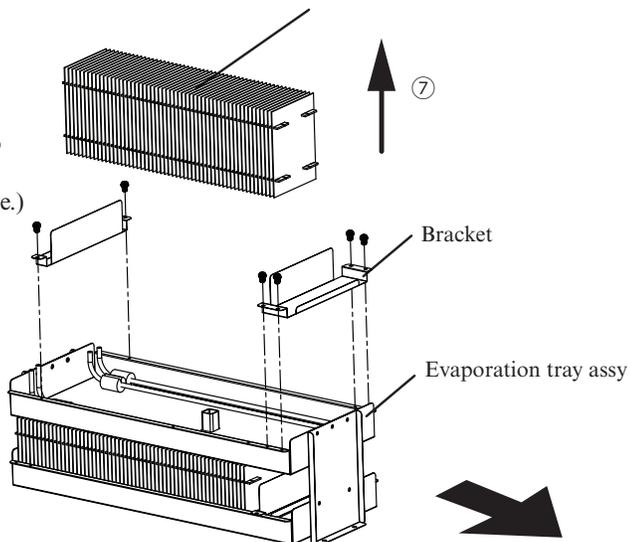
(Marked with  in the figure at right.)



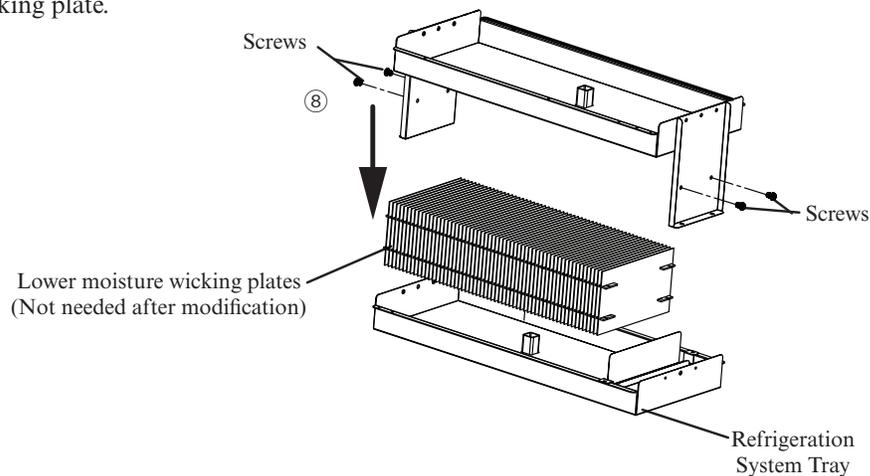
- ⑥ Remove upper moisture wicking plates.

Upper moisture wicking plates
(Not needed after modification)

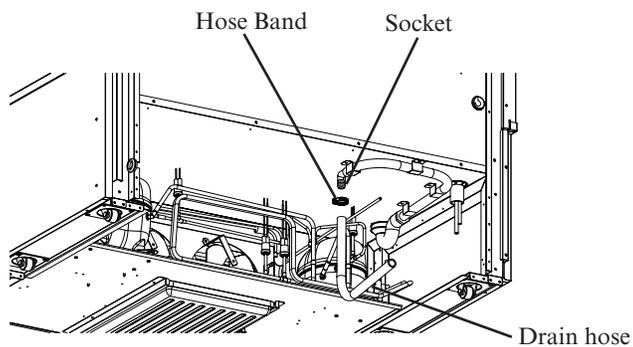
- ⑦ Remove 6 screws from the 2 brackets that attach to the evaporation pipe. Then remove evaporation tray assembly. (Do not remove the evaporation pipe.)



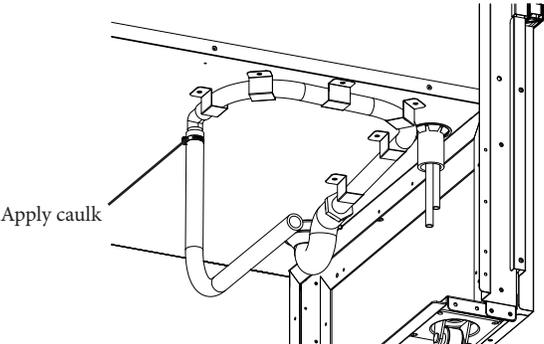
- ⑧ Remove 4 screws that attach to the lower evaporation tray and lower moisture wicking plate. Then remove the tray assembly and the moisture wicking plate.



- ⑨ Attach a drain hose to the socket on the upper evaporation tray. Then apply a hose band to fix.



⑩ Apply caulking on drain hose connection to prevent water leaks.



MDN Visual Depiction on Non-Incendive Replacement Parts



Main Switch



Light Switch



Solid State Relay



Control RTN400



Control Display KDE

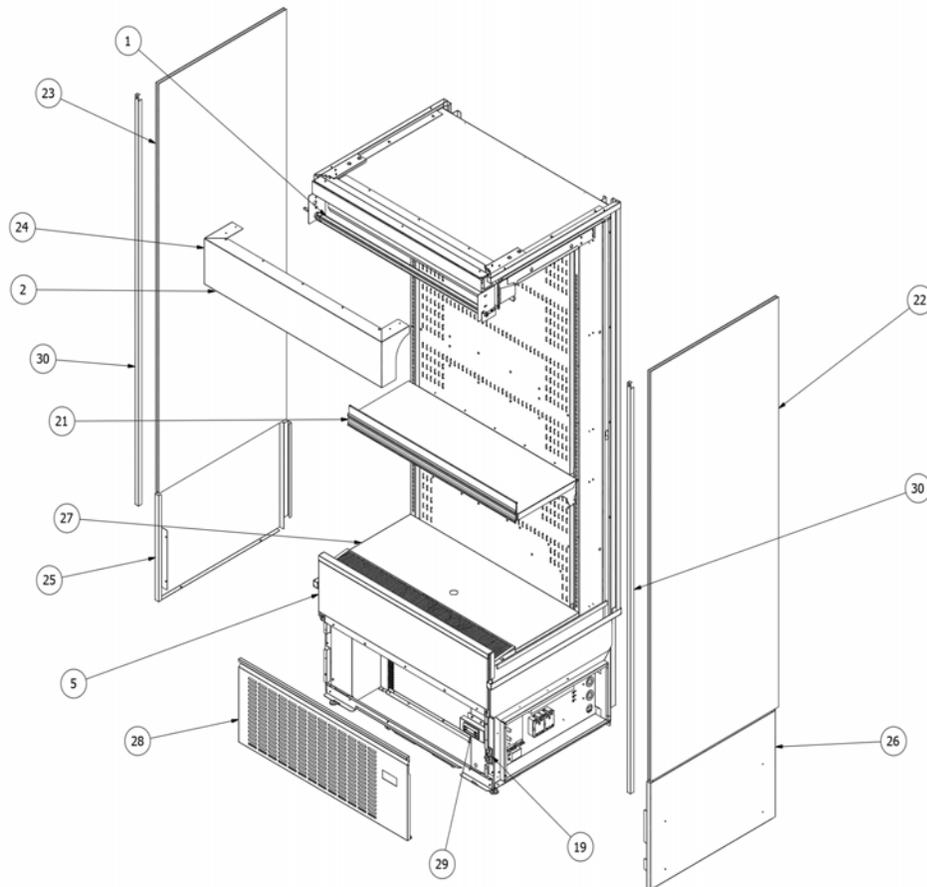
WARNING

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.

MDN 3575 Replacement Parts List

Item	Part Number	Description	Qty per case
1	3089733	LED-ES ULTRA CNPY 36IN 4000K	1
2	3074549	SWITCH-TGL SPST 15A 125V mfg.1NT91-2	1
3	3132257	COIL MDN35 4384724.5	1
4	9FQ2433061100	TUBE-CAPILLARY ID 0.08IN X 170IN	1
5	9FQ2136054302	EXTER PANEL FTN MDN 3FT	1
6	3037477	CONDENSER 24 IN X 8.5 IN	1
7	3119618A	FILTER DRIER R-290 0.25 ODF	1
8	3082149A	BLADE-FAN 8 IN CCW	2
9	3082147	MOTOR-13W 70-264V NSC	2
10	4FL2422022600	EVAPORATOR	2
11	9FQ2460068500	COMPRESSOR NT2210U 120V R290 1.25HP	1
12	3117868A	POWER SUPPLY - 4A 24V 96W	1
13	3023537B	CONTROL-ELIWELL RTN400	1
14	3023554B	SENSOR-NTC 4 METER GREEN	1
15	3031571A	SENSOR-NTC 4 METER ORANGE	1
16	3023553D	CONNECTOR-5 MTS CABLE CO000227	1
17	9FQ4F30002000	EMC FILTER RSEL2002A	1
18	9FQ4S20001900	RELAY DPDT 30ANO 10aNC 230VAC	1
19	9FQ4S22002200	MAIN SWITCH CIRCUIT BREAKER AA 1-BO-44-630-1D1-1 30	1
20	9FQ0423036300A	FAN PACK CONNECTOR AS	1
21	9FQ0039014902	BLACK PAINTED SHELF KIT ASSY	5
22	9FQ2224009302	INNER GLASS BLACK	1
23	9FQ2224009402	INNER GLASS BLACK	1
24	9FQ2140058602	PAINTED BLACK EXTER TOP MDN 35	1
25	9FQ2129060202	PAINTED BLACK EXTER COVER MDN L	1
26	9FQ2129070302	PAINTED BLACK EXTER COVER R B1A	1
27	9FQ0022030902	PAINTED BLACK DECK PAN ASSY MDN 3FT	1
28	9FQ2136047902	BLACK EXTER PANEL R290	1
29	3023552B	CONTROL-DSPL KDE	1
30	9FQ2180004702	PAINTED BLACK TRIM	2

⚠ 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.

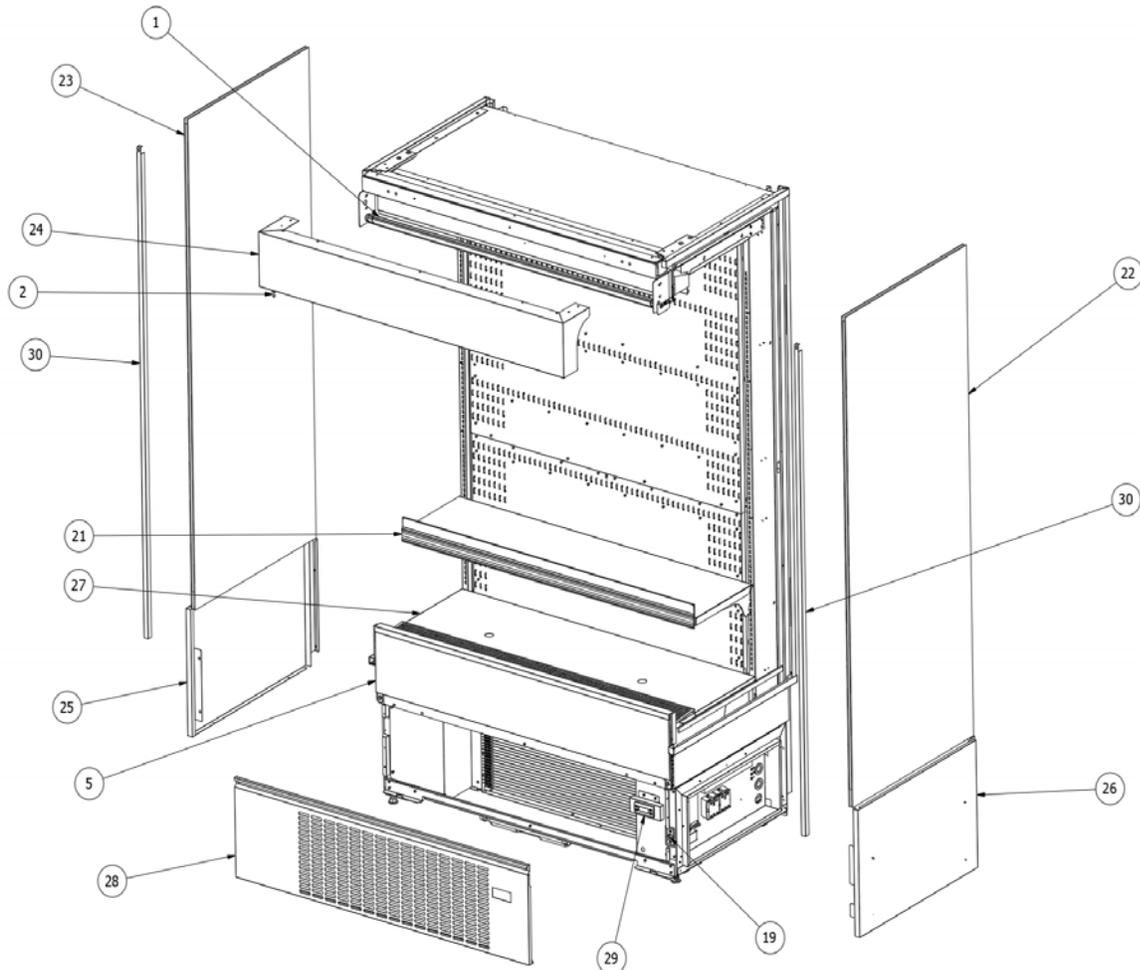


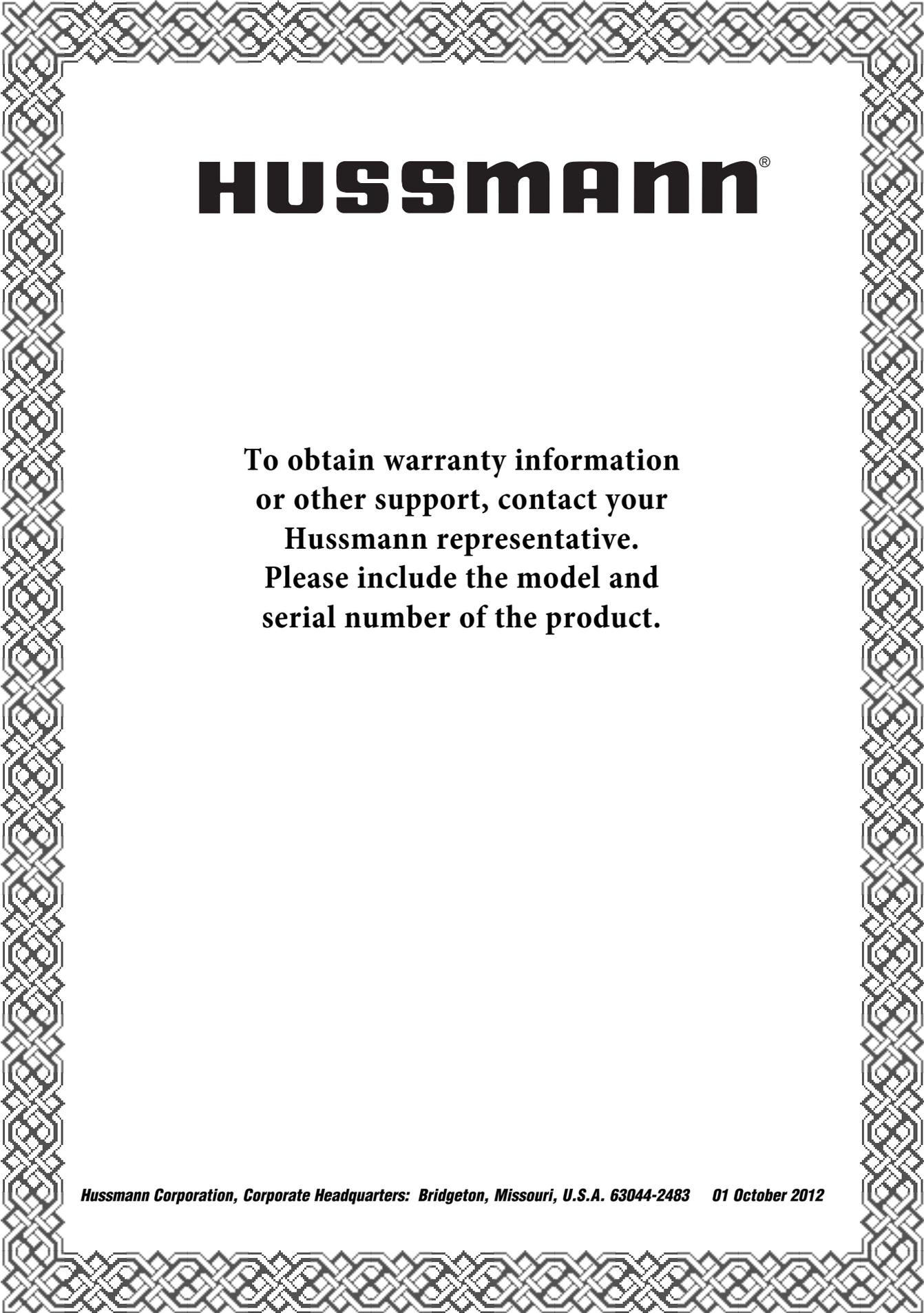
MDN4775 Replacement Parts List

Item	Part Number	Description	Qty per case
1	3089734C	LED-ES ULTRA CNPY 48IN 4000K	1
2	3074549	SWITCH-TGL SPST 15A 125V mfg.1NT91-2	1
3	9FQ0422034100	COIL-MDN47 438-4-6-36.5	1
4	3037649A	CAPILLARY-TUBE.054INIDX130INLG	2
5	9FQ2136058302	PAINTED BLACK EXTER PANEL MDN 47	1
6	9FQ0413034200	CONDENSER 30IN X 8.5IN DOUBLE C	1
7	3119618A	FILTER DRIER R-290 0.25 ODF	2
8	3082149A	BLADE-FAN 8 IN CCW	3
9	3082147	MOTOR-13W 70-264V NSC	3
10	4FL2422022000	EVAPORATOR	1
11	4FL2422022500	EVAPORATOR	1
12	3117868A	POWER SUPPLY - 4A 24V 96W	1
13	3023537B	CONTROL-ELIWELL RTN400	1
14	3023554B	SENSOR-NTC 4 METER GREEN	1
15	3031571A	SENSOR-NTC 4 METER ORANGE	1
16	3023553D	CONNECTOR-5 MTS CABLE CO000227	1
17	9FQ4F30002000	EMC FILTER RSEL2002A	1
18	9FQ4S20001900	RELAY DPDT 30ANO_10aNC 230VAC	2
19	9FQ4S22002200	MAIN SWITCH CIRCUIT BREAKER AA 1-BO-44-630-1D1-1 30	1
20	9FQ0423036300A	FAN PACK CONNECTOR AS	1
21	9FQ0039012102	SHELF BLACK KIT ASSY	5
22	9FQ2224009302	INNER GLASS BLACK	1
23	9FQ2224009402	INNER GLASS BLACK	1
24	9FQ2140062402	PAINTED BLACK PAINTED EXTER TOP	1
25	9FQ2129060202	PAINTED BLACK EXTER COVER MDN L	1
26	9FQ2129070302	PAINTED BLACK EXTER COVER R B1A	1
27	9FQ0022030802	PAINTED BLACK DECK PAN ASSY MDN 45	1
28	9FQ2136048202	PAINTED BLACK EXTER PANEL 4FT R290	1
29	3023552B	CONTROL-DSPL KDE	1
30	9FQ2180004702	PAINTED BLACK TRIM	2
31	3093957B	COMPRESSOR-R290 115 V 2168U	2

⚠ WARNING

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

Hussmann Corporation, Corporate Headquarters: Bridgeton, Missouri, U.S.A. 63044-2483 01 October 2012

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