

HUSSMANN®



SM / SN ***Medium and Low Temperature*** ***Spot Merchandisers***



Installation & ***Service Manual***

IMPORTANT
Keep in store
for future reference!

P/N 2400205_E
October 2013

Spanish 0531305
French 0531306

ATTENTION

Merchandise must operate for 24 hours
before loading product!

Regularly check merchandise temperatures.

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

These merchandisers are designed
for pre-frozen products only.



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

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REVISION HISTORY

REVISION E — Added Checklists Page 1-5; Added Warning Page 1-3; Cleaning Coils 4-2; Maintaining Fluorescent Lights 4-3; Added Checklist 4-5

REVISION D — JANUARY 201

1. Added Appendix A, Technical Data

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.

INSTALLATION

CERTIFICATION

These merchandisers are manufactured to meet ANSI / National Sanitation Foundation (NSF®) Standard #7 requirements. Proper installation is required to maintain certification. Near the serial plate, each case carries a label identifying the type of application for which the case was certified.

ANSI/NSF-7 Type I - Display Refrigerator / Freezer
Intended for 75°F / 55% RH Ambient Application

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

ANSI/NSF-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.

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%.

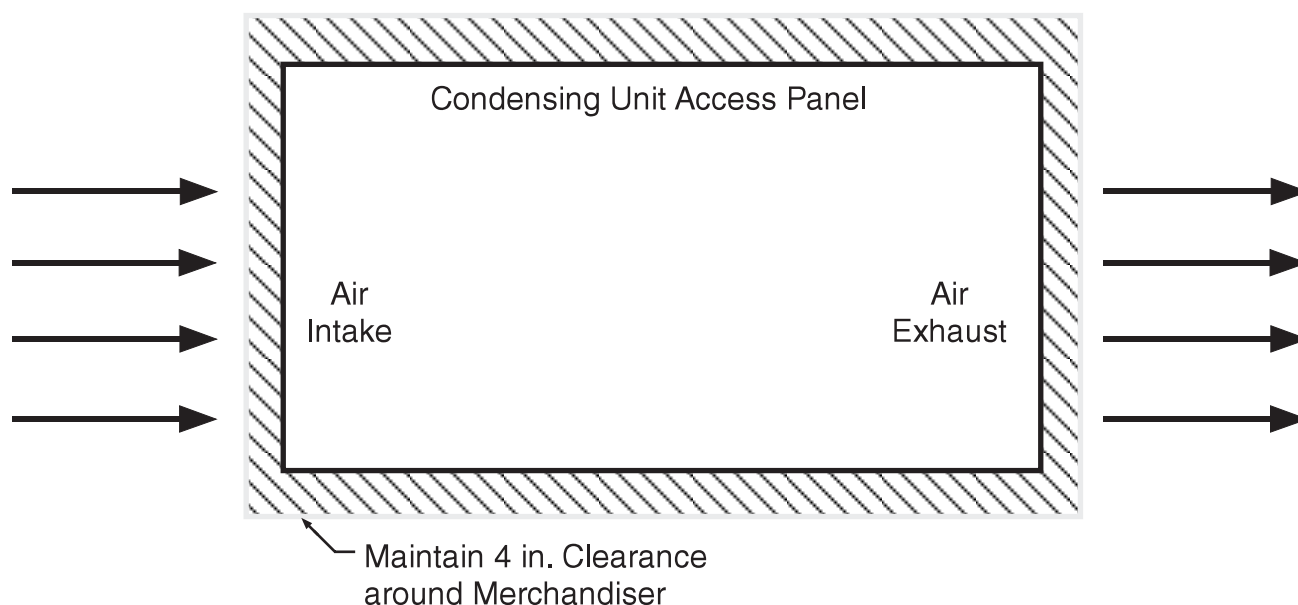
SN recommended operating ambient temperature is between 65°F (18°C) and 80°F (26.7°C). Maximum relative humidity is 55%.

SM recommended operating ambient temperature is between 65°F (18°C) and 80°F (26.7°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.

SELF CONTAINED (LOCATION)

SM / SN models have a condensing unit that draws ambient air through one side of the unit and discharges hot air out by the opposite side. In order to maintain refrigeration performance and compressor life, a minimum space of 4 inches must be maintained between the merchandiser and surrounding surfaces.



MODEL DESCRIPTION

SN models are designed for low temperature application and can be used for frozen food products. These models have glass lids with coating that maintains the lids free of condensation.

SM models are open-top merchandisers, designed for low or medium temperature operation. These models are designed with a cold wall refrigeration system. The air circulation inside the merchandiser is provided by natural convection.

UNLOADING

Unloading from Trailer:

Use a 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.



WARNING

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

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 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.

Remove the skid by raising one end of the merchandiser approximately 6 inches. Block the merchandiser securely, and remove the two skid bolts from the raised end. Replace the bolts with (provided) leg levelers. Repeat this procedure at opposing end. Once the leg levelers are secured in place, the merchandiser may be slid off the skid and placed in its final location.

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.

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



WARNING

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

MERCHANDISER LEVELING

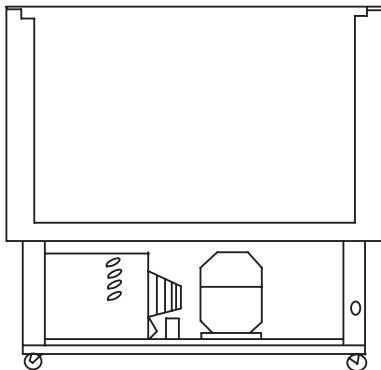
BE SURE TO POSITION MERCHANDISERS PROPERLY. Level the merchandiser by all four corners. Merchandiser(s) must be installed level to ensure proper operation of the refrigeration system.

SERIAL PLATE LOCATION

The serial plate is located on the base, next to the air intake / discharge air louvers. The serial plate contains all pertinent refrigeration and electrical information. The serial plate should not be removed for any reason.

REFRIGERATION UNIT ACCESS

The access panel on the base of the cabinet provides access to the condensing unit and electrical box.



WASTE OUTLET

The waste outlet cap must be installed during normal operation. This prevents warm air from migrating back through the drain to the inside of the merchandiser. Failure to cap the waste outlet, could result in excessive frosting of the interior walls.

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.

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.

Husmann 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.	<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:

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

1-6 INSTALLATION

NOTES:

ELECTRICAL / REFRIGERATION

MERCHANDISER ELECTRICAL DATA

Refer to Appendix A of this manual or the merchandiser's 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

SN / SM models have a power cord attached to the unit with a ground prong. The cord is rated 115V / 15 Amp.

All of these models are 60 hz, 1 ph. Connecting this unit to any electrical supply other than specified on the serial plate will void the warranty and may result in serious damage to the unit. The cabinet should be supplied with its OWN service.



WARNING

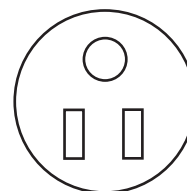
— LOCK OUT / TAG OUT —

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 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.



NEMA 5-15P Receptacle
All Models



CAUTION

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.**

REFRIGERATION

(Self Contained Models)

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.

SN / SM models have a refrigeration system that uses a hermetic compressor. SN / SM systems use a capillary tube for refrigerant control. The capillary tube is soldered to the suction line pull-out coil for proper heat exchange. **If the capillary should become plugged or damaged, it is best to replace the heat exchanger.**



WARNING

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

DEFROST

These merchandisers require manual defrost. When defrosting is necessary, disconnect electrical power to the merchandiser. Remove all products. Remove drain plug. Attach a hose, or use a pan before melting ice begins to drip out of the drain.

Do not remove frost with a pick, knife or by scraping with a sharp object. Do not allow water to drain on the floor. When the unit is finished defrosting, clean the inside. Install the plug on the drain tube, and connect the unit to the correct power supply.

TEMPERATURE CONTROL

An adjustable thermostat is provided for either medium temperature or low temperature operation. The thermostat is easily reached by removing the plastic cover located on the base. For low temperature operation, turn the screw on the thermostat clockwise. In the full clockwise position, the compressor will run 100% of the time. For medium temperature, set control screw midway between full clockwise and full counter clockwise.

HIGH PRESSURE SWITCH

A high pressure limit switch is provided on all spot merchandiser models. This switch is used to limit the discharge pressure of the compressor.

The high pressure switch will automatically cycle off the compressor and turn on a warning light on the base, when the discharge pressure in the system is too high.

If this condition occurs, first clean the condenser. Call for service if the warning light continues to illuminate.

DOOR INSTALLATION

Doors are to be installed after the merchandiser is placed at its final position. Position the doors inside of the guides to ensure a good air seal.



WARNING

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

START UP / OPERATION

START UP

Follow the electromechanical controls start up procedures as detailed in Section 2 of this manual.

- a. Inspect the refrigeration lines for visible damage or chafing.
- b. Replace access panel.
- c. Turn on the electrical power, by plugging in the merchandiser. The merchandiser must pull down in temperature. **Allow merchandiser 24 hours to operate before loading product.**

CONTROLS and ADJUSTMENTS

Refrigeration Controls		Defrost Controls			
Model	Product Application	Defrost Frequency	Type of Defrost	Temp. Termination	Failsafe Time (Minutes)
SN (Self Contained)	Low Temp. (Frozen Food)	When Required	Manual	N/A	N/A
SM (Self Contained)	Low & Med. Temp. (Frozen Food / Beverage)	When Required	Manual	N/A	N/A

1. The T-stat controller controls refrigeration temperature. This is factory installed in the control panel.

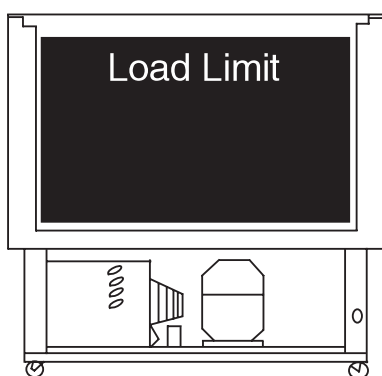
Defrosts are manual and required when a layer of ice builds up on the interior walls.

LOAD LIMITS

Each merchandiser has a load limit decal. Shelf life of perishables will be short if load limit is violated.



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



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 top and set the newest to the bottom.

THERMOMETER

The cabinet has a “pencil” type thermometer and reads from -40° F to 120° F / -40° F to 50° F on 2° increments.



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 evaporation pan, which will overflow if excess water is used in cleaning.

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.
- Solvent, oil or acidic based cleaners on any interior surfaces.
- Do not use high pressure water hoses.



WARNING

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

Do:

- Disconnect electrical power before cleaning.**
- 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.
- Thoroughly clean all surfaces with soap and hot water. **DO NOT USE STEAM OR HIGH WATER PRESSURE HOSES TO WASH THE INTERIOR.** THESE WILL DESTROY THE MERCHANDISERS' SEALING CAUSING LEAKS AND POOR PERFORMANCE.



WARNING

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

- Do NOT flood merchandiser with water. **NEVER INTRODUCE WATER FASTER THAN THE WASTE OUTLET CAN REMOVE IT.**

REMOVE DRAIN CAP, AND COLLECT WATER DURING THE CLEANING PROCESS IN A PAN. DO NOT ALLOW THE WATER TO DRAIN ON THE FLOOR.

- Allow merchandisers to dry before resuming operation.
- After cleaning is completed, turn on power to the merchandiser.

GLASS LIDS

The glass lids are made of tempered, non-heated glass. The lids slide horizontally. The lids are not self-closing. The lid tracks must be cleaned periodically to allow the lids to close freely.

**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.

CLEANING STAINLESS STEEL SURFACES

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.

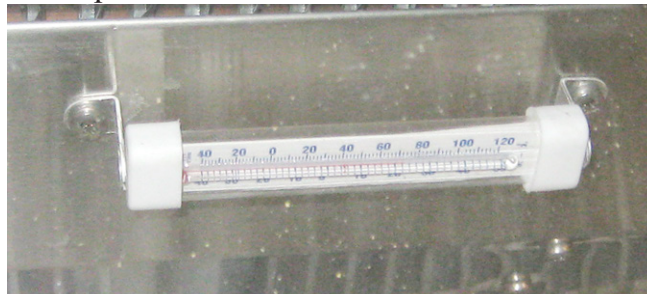
Use alkaline chlorinated or non-chlorine containing cleaners such as window cleaners and mild detergents. Do not use cleaners containing salts as this may cause pitting and rusting of the stainless steel finish. Do not use bleach.

CLEANING PENCIL THERMOMETER

SN / SM models have pencil thermometers. The thermometer is located at the top, front center of the merchandiser's cabinet interior.

To clean the thermometer:

1. Remove the two screws securing the thermometer to its mounting bracket.
2. Remove the plastic ends from the thermometer. Then, slide out the glass tube.
2. Use non-abrasive cleaning materials and a mild detergent to clean glass tube and thermometer cover.
3. Replace thermometer.



Pencil Thermometer

**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.

CLEANING COILS

Condenser coils should be cleaned at least once per month. Additional cleaning may be needed depending on the operational environment.

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

To clean fin 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 fins and dust particles. **Unplug merchandiser before servicing.**

Fin Coils



NEVER USE SHARP OBJECTS AROUND COILS. Use a soft brush or vacuum brush to clean debris from coils. **Do not puncture coils!**

Do not bend fins. Contact an authorized service technician if a coil is punctured, cracked, or otherwise damaged.

ICE in or on the coil indicates the refrigeration and defrost cycle is not operating properly. Contact an authorized service technician to determine the cause of icing, and to make adjustments as necessary. To maintain product integrity, move all product to a cooler until the unit has returned to normal operating temperatures.



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.



CAUTION

Always Wear gloves and protective eye wear when servicing. Turn off evaporation pan heater, and allow pan to cool.



WARNING

SHUT FANS OFF DURING CLEANING PROCESS.



BUMPERS AND OPTIONAL KITS

Most scratches and dings can be removed using the following procedure.

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.

3. Make sure proper cleaning procedures are followed. Lights and fans **MUST** be turned off when a case is cleaned and **MUST** be allowed to dry before turning power back on.

4. Do not use a pressure nozzle to clean inside of case.

**MAINTAINING FLUORESCENT LAMPS
(IF APPLICABLE)**

Many of the self-contained cases are equipped with LEDs. For cases with fluorescent lamps, follow these directions to ensure long-lasting life of the lights: Fluorescent lamps should not be allowed to run to failure. If a re-lamp schedule is not in place, the tubes should be inspected for signs of degradation (blackened ends). Degraded or failed tubes should be replaced.

Allowing severely degraded lamps to operate may cause a ballast failure or could expose the lamp holder to excessive heat. Replacing degraded bulbs is more cost effective than replacing ballast and lamp-holders. Traditional re-lamp programs are 18-to-24 month intervals. In the absence of a re-lamp program, a yearly inspection of the lighting system is recommended.

1. Inspect all lamp sockets and plug-receptacle connections for signs of arcing. Replace any component that shows signs of arcing.
2. Make sure all unused receptacles have their close-off covers securely installed.

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 external 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								
Clean condensate drain pan and drain line.		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									
Verify there are no visual oil or 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									

Technician Notes:

NOTES:

SERVICE**TROUBLESHOOTING GUIDE**

PROBLEM	PROBABLE CAUSE	SOLUTION
Compressor runs continuously product too warm	<ol style="list-style-type: none"> 1. Short of refrigerant 2. Dirty condenser 	<ol style="list-style-type: none"> 1. Leak check, change drier, evacuate, and recharge 2. Clean
High head pressure (High pressure switch on)	<ol style="list-style-type: none"> 1. Cabinet location too warm 2. Restricted condenser air flow 3. Defective condenser fan motor 4. Air or non-condensable gases in system 	<ol style="list-style-type: none"> 1. Relocate cabinet 2. Clean condenser to remove air flow restriction 3. Replace 4. Leak check, change drier, evacuate and recharge
Warm storage temperature	<ol style="list-style-type: none"> 1. Temperature control not set properly 2. Short of refrigerant 3. Cabinet location too warm 4. Low voltage, compressor cycling on overload 5. Condenser dirty 	<ol style="list-style-type: none"> 1. Reset control. 2. Leak check, replace drier evacuate and recharge 3. Relocate 4. Check power 5. Clean
Compressor runs continuously product too cold	<ol style="list-style-type: none"> 1. Adjust to warmer setting 2. Control feeler not in tube properly 3. Short on refrigerant 	<ol style="list-style-type: none"> 1. Replace 2. Assure proper length in tube 3. Leak check change drier, evacuate and recharge
Compressor will not start no noise	<ol style="list-style-type: none"> 1. Power disconnected 2. Defective or broken wiring 3. Defective overload 4. Defective temperature control 5. Blown fuse or breaker 	<ol style="list-style-type: none"> 1. Check service cords or wiring connections 2. Repair or replace 3. Replace 4. Replace 5. Replace fuse or reset breaker
Compressor will not start cuts out on overload	<ol style="list-style-type: none"> 1. Low voltage 2. Defective relay 3. Restriction or moisture 4. Inadequate air condenser 5. Defective condenser fan motor 	<ol style="list-style-type: none"> 1. Contact electrician 2. Replace 3. Leak check, replace drier, evacuate and recharge 4. Clean condenser 5. Replace

**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.

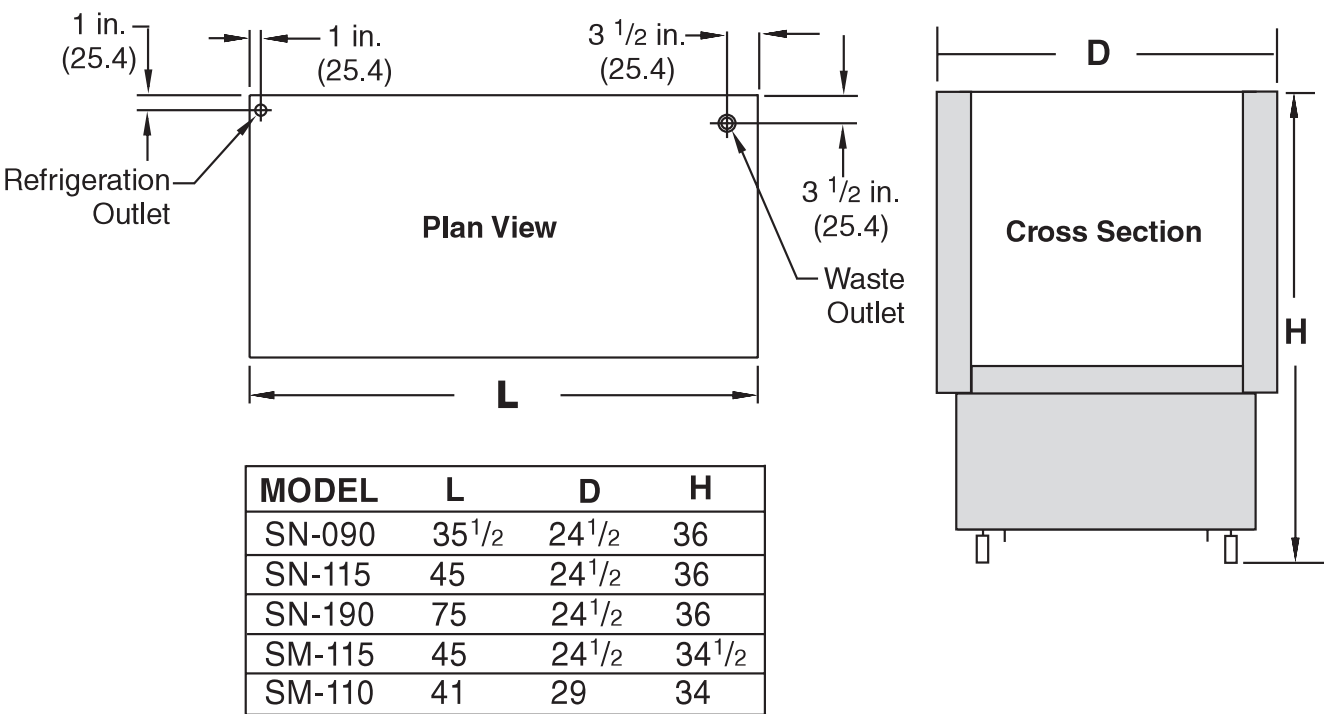
**WARNING**

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

Item Part #	Description	Item Part #	Description
Models: SN-090, SN-115, SN-190 SM-115, SM-110		SN-190 CU.4200697 Compressor	
		CO.4671534 Condenser	
		RC.4613929 Capillary Tube Assembly	
ALL MODELS CT.4482499 Refrigeration Thermostat			
EP.4482555 Power Cord / Main Harness 15 Amp, 115 V		SM-110 CU.4200697 Compressor	
CP.4482547 High Pressure Control		CO.4671533 Condenser	
BU.4481547 High Pressure Indicating Light		RC.4613931 Capillary Tube Assembly	
REFRIGERATION			
ALL MODELS MO.4410907 Condenser Fan Motor		SM-115 CU.4200708 Compressor	
FB.4780651 Condenser Fan Blade		RC.4671533 Condenser	
FI.4613274 Filter Drier		RC.4613930 Capillary Tube Assembly	
SN-090 CU.4200708 Compressor		LIDS ASSEMBLY	
CO.4671497 Condenser		SN-090 DO.4991751 Upper Lid	
RC.4613929 Capillary Tube Assembly		DO.4991752 Lower Lid	
SN-115 CU.4200708 Compressor		SN-115 DO.4991139 Upper Lid	
RC.4613929 Condenser		DO.4991140 Lower Lid	
RC.4613930 Capillary Tube Assembly		SN-190 CU.4996568 Upper Lid	
		DO.4996569 Lower Lid	

SM / SN

Dimensions shown as inches and (mm).



REFRIGERATION DATA

Models: SN-090, SN-115, SN-190
SM-115, SM-110

Thermostat

Setting CI/CO (°F)

All Models + 0.5° F / -8.5° F

Compressor (hp)

SM-115, SN-115, SN-090 1/4 hp

SM-110, SN-190 1/3 hp

Condensing Unit Capacity

SM-115, SN-115, SN-090 800

SM-110, SN-190 1238

(at -30° F evaporation and 100° F
condensing temperature)

DEFROST DATA

Frequency: Manual Defrost
(as needed)

PHYSICAL DATA

Refrigerant Charge

SM-110 15 oz 0.425 kg

SM-115 15.5 oz 1.439 kg

SN-090 14 oz 0.397 kg

SN-115 15.5 oz 0.439 kg

SN-190 17 oz 0.482 kg

Note: This data is based on store temperature and humidity that does not exceed 80°F and 55% R.H. unless otherwise stated. Schedule defrost at night while lights are off.

Electrical Data

Note: These are rated values for individual components and should not be added together to determine total merchandiser electrical load.

Condensing Unit (115V, 1Ph, 60Hz) Standard

	SM-115 / SN-115 / SN-090	SM-110 / SN-190
Compressor LRA	30.2	40
Compressor RLA	4.5	6.5

Product Data

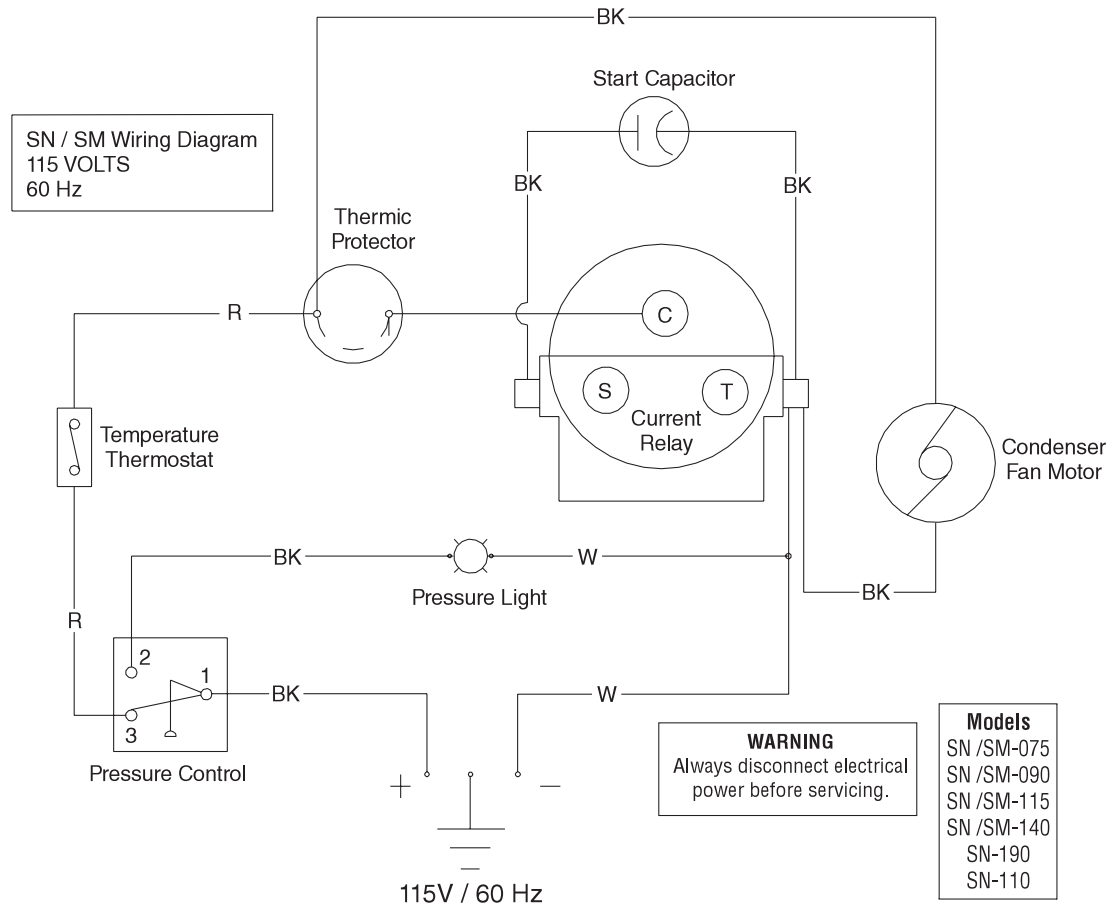
SM-110 Interior Volume (Cu FtlCase)	12 ft ³ /case (338.80 liters /case)
SM-115 Interior Volume (Cu FtlCase)	8.83 ft ³ /case (250.03 liters /case)
SN-090 Interior Volume (Cu FtlCase)	6.73 ft ³ /case (190.57 liters /case)
SN-115 Interior Volume (Cu FtlCase)	8.83 ft ³ /case (250.03 liters /case)
SN-190 Interior Volume (Cu FtlCase)	15.40 ft ³ /case (436.07 liters /case)

ESTIMATED SHIPPING WEIGHT ¹

Case	<i>SM-110</i>	<i>SM-115</i>
lb (kg)	162 (73)	178 (81)
	<i>SN-090</i>	<i>SN-115</i>
	167 (76)	190 (86)
		<i>SN-190</i>
		300 (136)

¹Actual weights will vary according to optional kits included

SN / SM



WARNING

All components must have mechanical ground, and the merchandise must be grounded.

Circled numbers = Parts List Item Numbers

R = Red Y = Yellow G = Green BL = Blue BK = Black W = White

● = 120V POWER ○ = 120V NEUTRAL ⚡ = FIELD GROUND ⏏ = CASE GROUND

THESE ARE MARKER COLORS WIRES MAY VARY.

A decorative border made of a repeating blue geometric pattern, resembling interlocking squares or a stylized knot, surrounds the entire page content.

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