

HUSSMANN®



GSVM 4060F

***Low Temperature
Self Contained
Vertical
Merchandiser
with Doors***



Installation & Operation Manual

IMPORTANT
Keep in store for
future reference!

P/N 3003960_A
April 2016

MANUAL - IO SC GSVM 4060F

Spanish 3003961
French 3003962

ATTENTION

Merchandise must operate for 24 hours
before loading product!

Regularly check merchandise temperatures.

Do not break the cold chain. Keep products
in freezer 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!

12999 St. Charles Rock Road • Bridgeton, MO 63044-2483

U.S. & Canada 1-800-922-1919 • Mexico 1 800-890-2900

www.husmann.com

© 2016 Husmann Corporation

TABLE OF CONTENTS

v

ANSI DEFINITIONS vi

INSTALLATION

Certification	1-1
Husmann Product Control	1-1
Shipping Damage	1-1
Location	1-1
Self Contained Location	1-2
Model Description	1-2
Unloading	1-2
Exterior Loading	1-3
Shipping Skid	1-3
Merchandiser Leveling	1-3
Optional Legs	1-3
Serial Plate Location	1-4
Sealing Merchandiser to Floor	1-4
Refrigeration Unit Access	1-4
Checklists	1-5

ELECTRICAL / REFRIGERATION

Merchandiser Electrical Data	2-1
Field Wiring	2-1
Power Switch	2-1
Electrical Connections	2-1
Electrical Outlet	2-1
Refrigeration (Self Contained)	2-2
Safe-NET III Controller	2-3
Safe-NET Display	2-4
Safe-NET Start-Up	2-4
Sequence of Operation	2-5
Alarms and Codes	2-6
Defrost Termination Switch	2-6
Temperature Adjustment	2-7
Typical Sensor to Control Config.	2-8

START UP / OPERATION

Start-Up	3-1
Controls and Adjustments	3-1
Load Limits	3-1
Stocking	3-1
Shelf Weight Limits	3-2

MAINTENANCE

Care and Cleaning	4-1
Do NOT Use:	4-1
Do:	4-1
Cleaning Discharge Honeycomb	4-2
Cleaning Stainless Steel Surfaces	4-2
Cleaning Solar Thermometer	4-2
Cleaning Under Display Pan	4-3
Cleaning Evaporation Pan	4-3
Cleaning Coils	4-4
Removing Scratches from Bumper	4-4
Equipment Checklist	4-5

SERVICE

Replacing Fan Motors and Blades	5-1
Cleaning Coils	5-1
LED Light Replacement	5-2
GSVM Accessories	5-2
Troubleshooting Guide	5-3
Adjusting Doors	5-6

APPENDIX

Part Numbers	A-1
Plan View	A-3
Cross Sections and Refrigeration Data ..	A-4
Electrical Data	A-5
Shipping Weights and Amps	A-6
Wiring Diagram GSVM 4060F	A-6

WARRANTY

INSTALLATION

CERTIFICATION

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

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

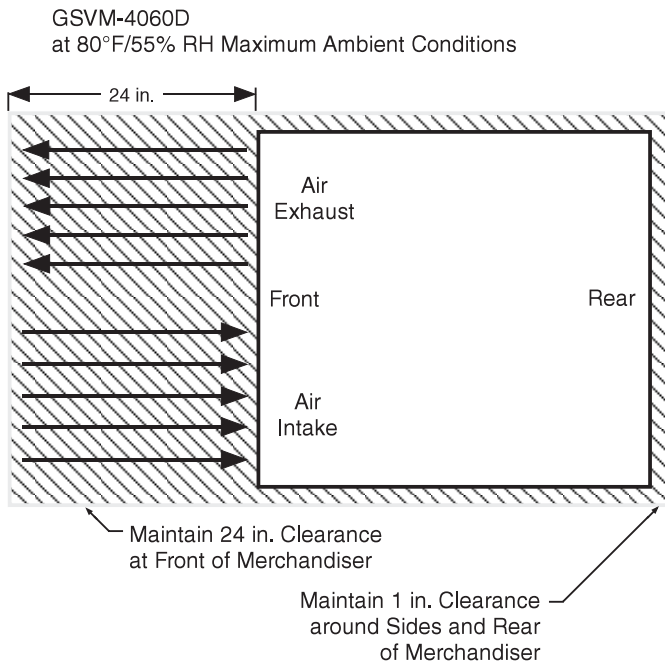
These merchandisers are designed for displaying products in air conditioned stores where temperature is maintained at or below the ANSI / NSF-7 specified level and relative humidity is maintained at or below 55%.

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.

Recommended operating ambient temperature is between 75°F(23.9°C) to 80° (26.7°C). Maximum relative humidity is 55%.

SELF CONTAINED (LOCATION)

GSVM 4060F (at 80°F/55% relative humidity, maximum ambient conditions) has front condenser air intake and discharge. Maintain a minimum clearance distance of two feet in front of the merchandiser so that air discharge and air intake is not obstructed.

**MODEL DESCRIPTION**

GSVM4060F vertical merchandisers are designed for low temperature, pre-packaged products at below freezing temperatures. Carefully read and follow the instructions prior operating the merchandiser.

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.

**CAUTION**

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

**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.

Do not remove the shipping skid until the merchandiser is near its final location. The skid provides protection for both the merchandiser and the floor.

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.

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, and to ensure proper drainage of defrost water.

OPTIONAL LEGS

NSF® approved legs replace the leg levelers if required by local health codes. The legs raise the case 6 inches for cleaning purposes. An optional skirt kit can be provided to snap on the legs.

For California Businesses:



WARNING

This product may contain chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

This warning is the result of the California State law known as the California Safe Drinking Water and Toxic Enforcement Act of 1986, which is commonly referred to as "Proposition 65."

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.

1-4 INSTALLATION

SERIAL PLATE LOCATION

The serial plate is located on the interior top, left side of the merchandiser. It contains all pertinent information such as model, serial number, amperage rating, refrigerant type and charge. This information will be needed to install, service or order parts for the merchandiser.



SEALING MERCHANDISER TO FLOOR

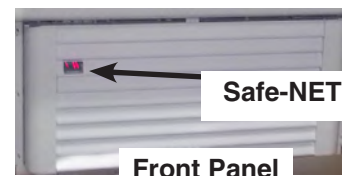
If required by local sanitary codes, or if the customer desires, merchandisers may be sealed to the floor using a vinyl cove base trim. The size needed will depend on how much variation there is in the floor, from one end of the merchandiser to the other. Sealing of the lower front and rear panels on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

REFRIGERATION UNIT ACCESS

The lower front panel may be removed by removing screw at bottom and lifting the panel straight upward and over the tabs on which it is hanging. The panel is installed by reversing the above procedure.

Ensure lower front panel is flat against the floor when installed to prevent air circulation problems for self contained merchandisers.



Lift up and out to remove access panel



Safe-NET III display is mounted on left side of access panel. Be careful not to detach Safe-NET III cable from display when removing access panel.



Safe-NET III Display

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.	<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.

NOTES:

REVISION HISTORYORIGINAL ISSUE — *APRIL 2016*

* * * * *

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.

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

POWER SWITCH

The main electrical power switch is located behind the front louvered access panel. The power switch must be turned OFF before servicing the merchandiser.

ELECTRICAL CONNECTIONS

All wiring must be in compliance with NEC and local codes. GSVM 4060F is provided with a power cord.

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.

GSVM 4060F has a factory-installed power cord that is attached at the electrical box.



NEMA 5-20R



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

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.

GSVM models have a refrigeration system that uses a hermetic compressor.

For self contained models like GSVM 4060F, this water seal drains into a electric condensate pan located beneath the merchandiser. The pan uses a float switch that senses water in the pan, adjusting the amount of heat required to evaporate the water. **Ensure the drain hose is properly trapped, and the drain area is not clogged.**

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

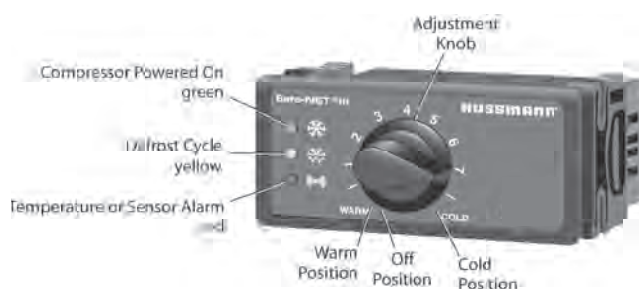
Safe-III™ TEMPERATURE AND DEFROST CONTROLLER

SAFE-NET III™ USER INSTRUCTIONS

Your refrigerated case uses a Hussmann Safe-NET™ III temperature and defrost controller to precisely maintain the temperature and prevent frost buildup on the cooling coil. LEDs indicate when the compressor or refrigeration is on, when the case is in a defrost cycle, if the temperature is outside the desired range, or if there is a sensor failure.

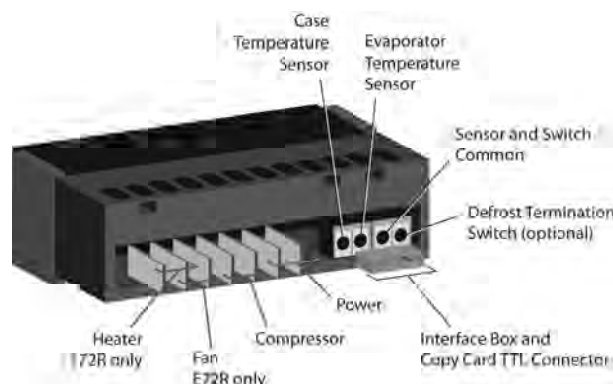
An adjustment knob allows the temperature to be set within the configured range and can power off the controller and compressor. Your controller has been custom-configured to provide the best temperature and defrost control for your chilled or frozen food.

The front of the controller has an adjustment knob and status LEDs. The back of the controller has connections for sensors and switched equipment.



The Safe-NET III controller includes the following features and connections.

- **Adjustment knob:**
Adjusts the temperature setpoint.
Turn adjustment knob to OFF to turn off refrigeration system. Unplug merchandiser from power before servicing the unit.



- **Controller LEDs:**
 - ❄️ **Compressor Powered On LED (green):**
Lights while the compressor is running or the refrigeration valve is open.
 - ❄️ **Defrost Cycle LED (yellow):**
Lights while the refrigeration coil is defrosting.
 - 🔊 **Temperature or Sensor Alarm (red):**
Lights if the temperature is too warm or too cold. Flashes if a sensor fails.

- Rear connections:
 - Case temperature sensor:
 - Typically senses the temperature of the air in the case.
 - Used by the controller to determine when to power on or power off the compressor or refrigeration.
 - Evaporator temperature sensor:
 - Senses the temperature of the refrigeration coil.
 - Terminates a defrost cycle when refrigeration coil ice melts.
 - Compressor or refrigeration relay:
 - Switches on the compressor or refrigeration valve for cooling.
 - Defrost / reversing condenser switch
 - Switches on the defrost or reversing condenser fan motor - when used with the condenser fan motor option.

DISPLAY

The display includes three red LEDs and two digits for temperature, defrost status, and error codes.

! WARNING

The optional evaporator fan remains ON when the adjustment knob is in the OFF position.



! WARNING

The OFF Position does not disconnect line voltage to the case, refrigeration unit, fan, or heater.

START-UP

1. Plug in the merchandiser.

NOTE: The 65°C Version Controller includes a **Parameter Code Number**. This number is **80** and indicates what program has been loaded into the controller. When the Controller is first powered up or is turned off and then back on a 2 digit Parameter Code Number will display for 3 seconds. Then the Self Check will Start.

2. Wait for the self check to complete. During the self check, each LED flashes for one second, then all LEDs turn on for two seconds. If the LEDs do not flash, make sure the adjustment knob is not in the Off position.
 - After the self check, all LEDs turn off until the compressor starts. **There may be a delay before the compressor starts, if the red Temperature or Sensor Alarm LED stays on after the self check.**
 - The green Compressor Powered On LED turns on when the compressor starts.

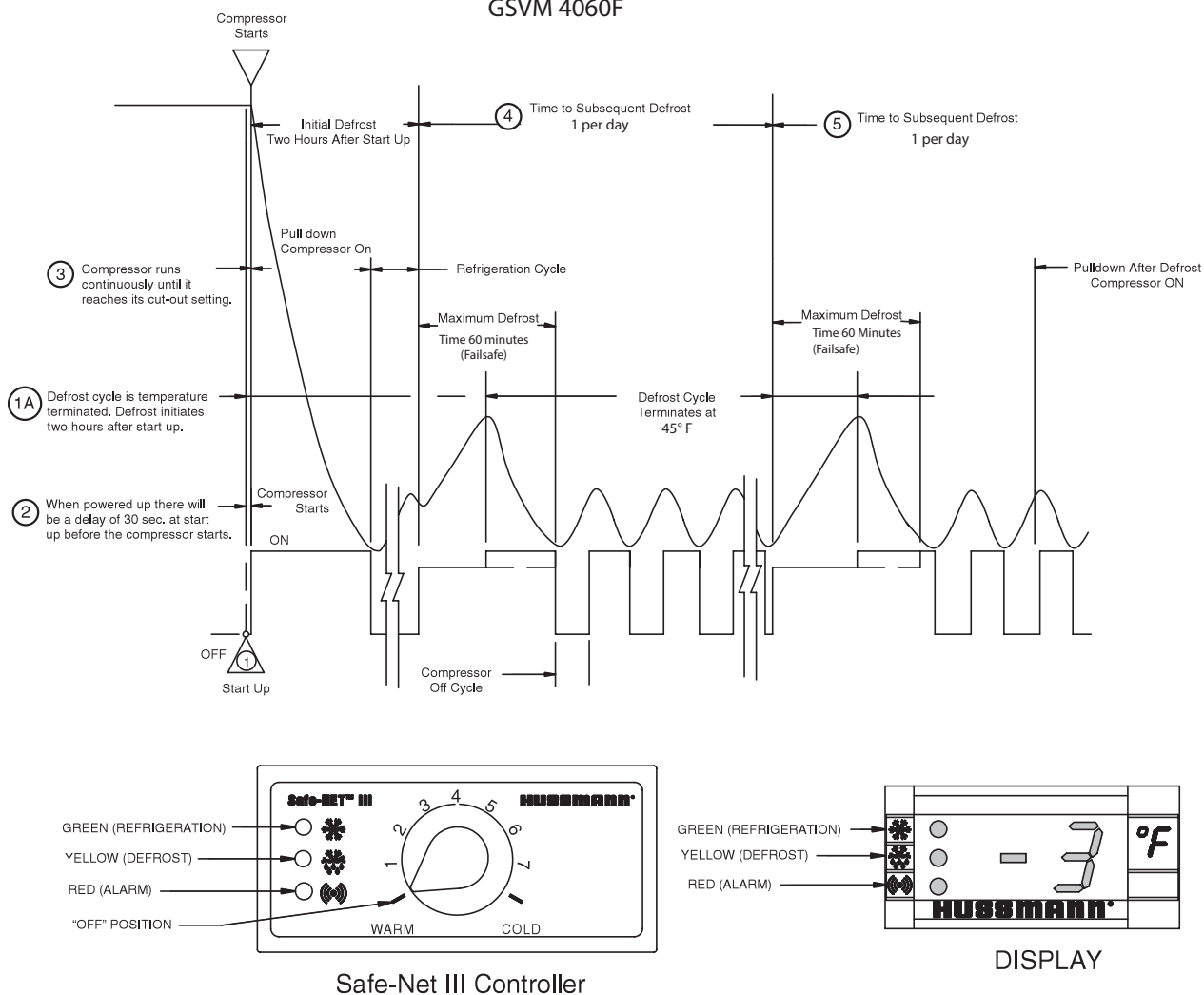
NOTE: Do NOT load product until AFTER merchandiser operates for 24 hours and reaches desired operating temperature. behavior matches the LEDs on the controller.

! WARNING

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

SEQUENCE OF OPERATION

GSVM 4060F



1. Apply power to the merchandiser. Wait for the self check to complete. During the self check, each LED flashes for one second and then all LEDs turn on for two seconds. If the LEDs do not flash, make sure the adjustment knob is not in the “OFF” position.
- 1A. The merchandiser temperature displays at startup. The initial defrost starts two hours later. The display will show the temperature at the start of defrost. This reading will remain displayed during defrost and until it times out, even though the refrigeration mode has been initiated. (The green LED will be lit.)
2. The compressor will start after a 30 second delay once power is applied.
3. The compressor will continue to run until it reaches its cut-out temperature (Pulldown).
4. The refrigeration cycle will continue for the next subsequent scheduled (24-hours) or demand defrost. The digital display will display the temperature reading for 10 minutes after defrost.
5. The above process will repeat (steps 3 and 4) until the power is interrupted.
6. If power stops, the process will start over at step 1, and the time to subsequent defrost will reset.

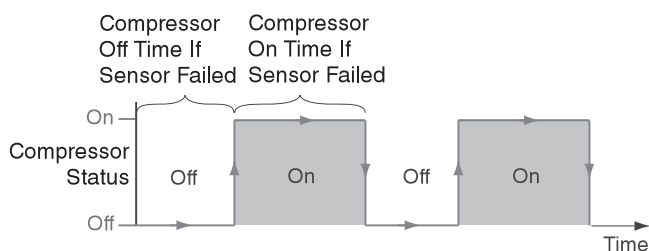
ALARMS AND CODES

FLASHING TEMPERATURE OR SENSOR ALARM LED, E1 OR E2

If the Temperature or Sensor Alarm LED (red) on the controller and display is flashing, a temperature sensor has failed. The display shows E1 if the case sensor has failed or E2 if the evaporator sensor has failed.



If the merchandiser sensor fails, the refrigeration will switch to a duty cycle operation. During duty cycle operation, the refrigeration system will cycle on and off until the sensor is serviced. The graph below shows an example of duty cycle operation during a case sensor failure.



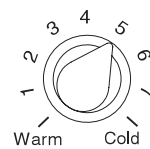
DEFROST TERMINATION SWITCH

Merchandisers may use a defrost termination switch, instead of an evaporator sensor to terminate a defrost cycle. The defrost termination switch is temperature activated and senses the completion of defrost.

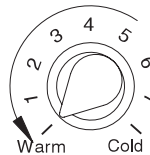
MANUAL DEFROST

Note:

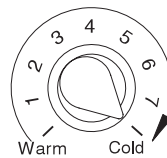
This procedure initiates a manual or forced defrost.



1. Note location of knob setting



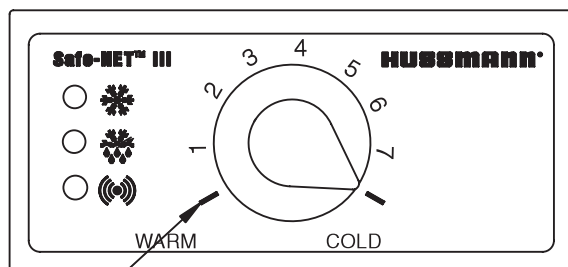
2. Rotate knob fully counterclockwise until it stops (full warm - "OFF" position)



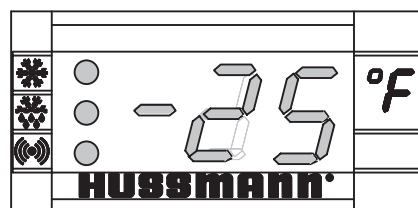
3. After 10 seconds, but before 20 seconds, rotate knob fully clockwise until it stops (full cold position)

IMPORTANT:

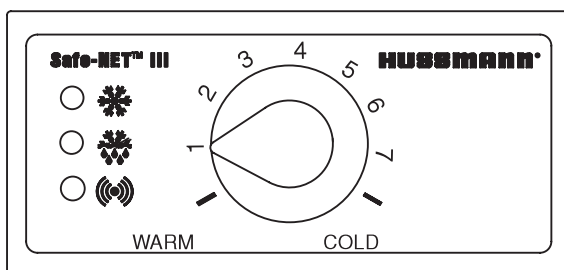
Return the control knob to its original setting (Step 1) once the manual defrost has been initiated.



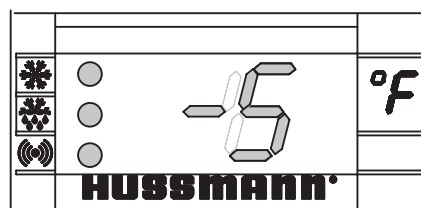
"OFF" Position — Safe-NET III Control
Set at Full Cold Position



Display - at Full Cold
Model GSVM 4060F



Safe-NET III Control
1 Position



Display - at #1 Position
Model GSVM 4060F

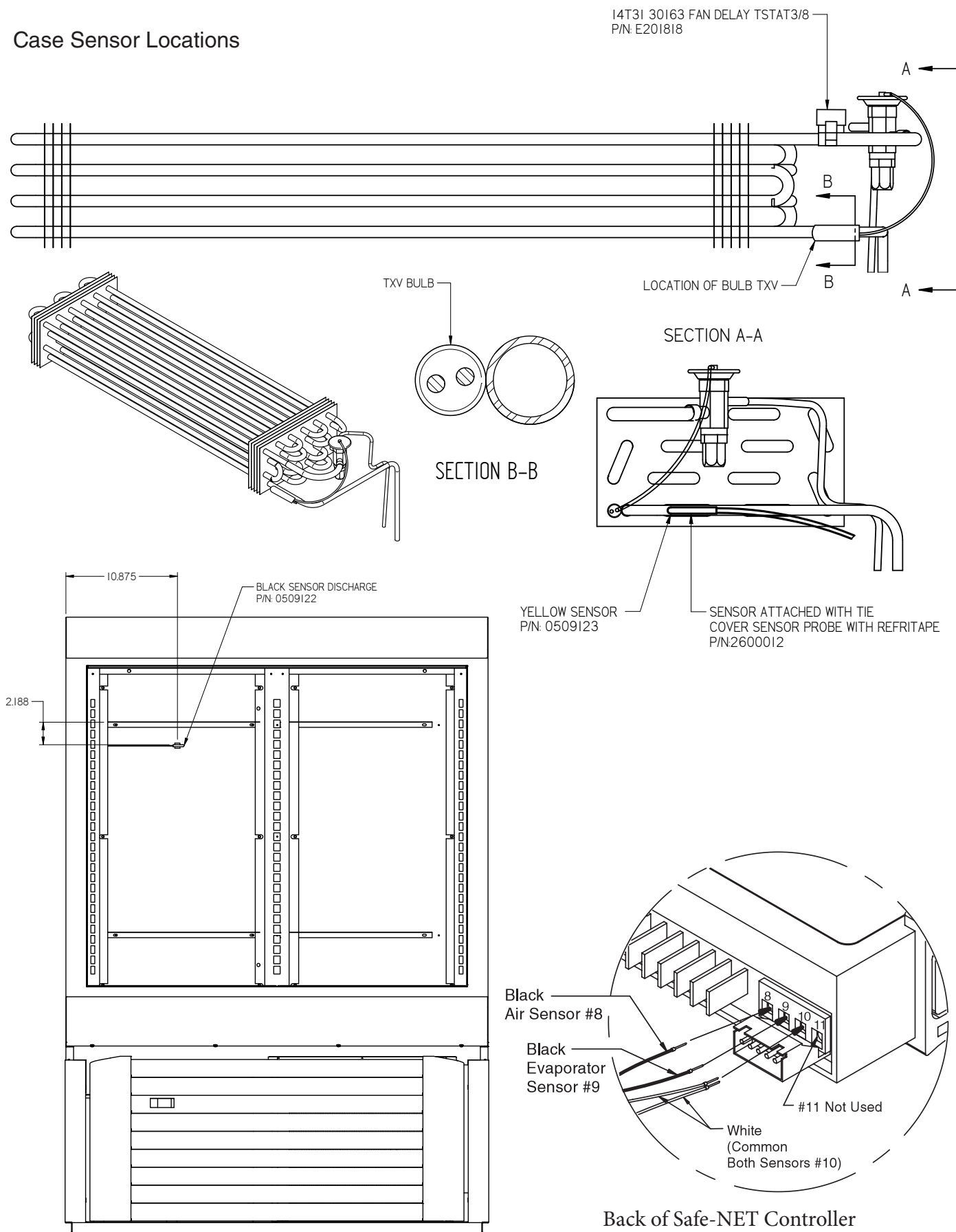
TEMPERATURE ADJUSTMENT

1. Rotate the adjustment knob counter clockwise for a warmer setpoint or clockwise for a colder setpoint.
2. While adjusting the temperature, the display shows the setpoint (cut out value). A few seconds after the temperature is set, the controller reverts to the sensed temperature in the merchandiser.
3. To verify merchandiser settings, turn the dial to warm and cold as shown above. Output readings should be within one degree of the temperatures shown above.

The dial should be set at Postition 3 for conducting DOE compliance testing.

2-8 INSTALLATION

Case Sensor Locations



START UP / OPERATION

START UP

GSVM 4060F self contained merchandiser has its own evaporator coil and a TXV.

- Check the interior cabinet thoroughly for loose nuts, bolts and electrical connections.
- Inspect the refrigeration lines for visible damage or chafing.
- Replace electrical box cover and access panel.
- Turn on the electrical power, power switch and start the merchandiser. The merchandiser must pull down in temperature.

Allow merchandiser 24 hours to operate before loading product.

CONTROLS AND ADJUSTMENTS

1. The Safe-Net III controller controls refrigeration temperature. This is factory installed in the control panel. Adjust this control knob to maintain the discharge air temperature shown. Measure discharge air temperatures at the center of the discharge honeycomb.

Defrosts are temperature controlled for self contained. The defrost setting is factory set as shown below.

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.

LOAD LIMIT

DO NOT BLOCK AIR LOUVERS.

STOCKING

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

Allow merchandiser 24 hours to operate before loading product.

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

CONTROLS and ADJUSTMENTS

Refrigeration Controls			Defrost Controls			
Model	Product Application	Discharge Air Temperature	Defrost Frequency (per day)	Type of Defrost	Temp. Termination	Failsafe Time (Minutes)
GSVM 4060F Self Contained	GSVM 4060F	-20° to -5°F	1	Electric	45°F	60

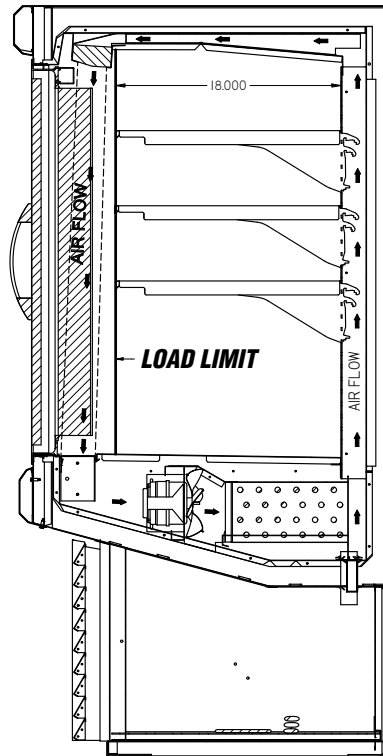
AIR DISCHARGE AND RETURN FLUES MUST REMAIN OPEN AND FREE OF OBSTRUCTION AT ALL TIMES to provide proper refrigeration and air curtain performance. Do not allow product, packages, signs, etc. to block these grilles. Do not use non-approved shelving, baskets, display racks, or any accessory that could hamper air curtain performance.

Do not allow product to be placed outside of the designated load limits in the illustration above. Air flows through the back wall, over the product on the shelves, across the face of the product (air curtain), and into the return air grille.



WARNING

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



Do not stock product past shelves

SHELF MAXIMUM WEIGHT LIMITS

Hussmann merchandiser shelves are designed to support the maximum weight load limits as indicated in the table below. Exceeding these maximum weight load limits may cause damage to the shelf or shelves, damage to the merchandiser, damage to store products, and potentially create a hazardous condition for customers and staff.

Exceeding the indicated maximum weight load limits constitutes misuse as described in the Hussmann Limited Warranty.

GSVM 4060F has 4, 18" x 18" flat shelves. Each shelf has a maximum weight limit of 125 lbs. (56.7 kg). The bottom sheet metal area has a weight limit of 250 (113.4). For wire baskets the weight limit is 100 lbs (45.4 kg)

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 freezer 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.**
- Take care to minimize direct contact between fan motors and cleaning or rinse water.
- Do NOT flood merchandiser with water. **NEVER INTRODUCE WATER FASTER THAN THE WASTE OUTLET CAN REMOVE IT.**

SELF CONTAINED MODELS EMPTY INTO AN EVAPORATION PAN THAT WILL OVERFLOW IF TOO MUCH WATER IS INTRODUCED DURING CLEANING.

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



WARNING

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



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 DISCHARGE HONEYCOMB

Discharge air honeycombs should be cleaned every six months. Dirty honeycombs will cause merchandisers to perform poorly. The honeycombs may be cleaned with a vacuum cleaner. Soap and water may be used if all water is removed from the honeycombs cells before replacing. Be careful not to damage the honeycombs.

1. Using a flat object such as a screw driver, compress the honeycomb and remove it from its retainer.
2. Clean and dry the air honeycombs.
3. After cleaning, replace in reverse order. Damaged honeycombs must be replaced.



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.

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.



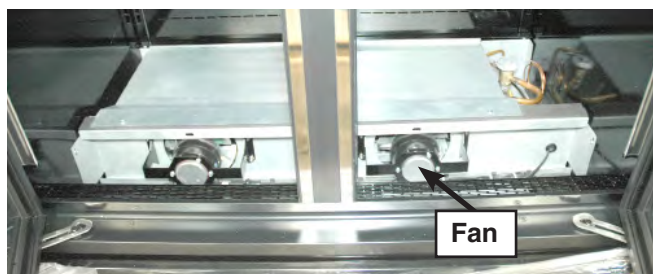
CAUTION

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 UNDER DISPLAY PAN

Remove all product from the merchandiser and place in cooler. Always disconnect electrical power before cleaning.

1. Remove the display pan
2. Use non-abrasive cleaning materials and a mild detergent to clean display pan.
3. Wipe down the insides of the merchandiser with a mild detergent, and replace display pan. Allow merchandiser to pull down in temperature before loading product.



CLEANING EVAPORATION PAN

The condensate water outlet for self contained models empties into a limited capacity evaporation pan.

Debris or dirt accumulation inside the condensate evaporation pan or on the heater coil will reduce the pan's evaporation capacity and cause premature heater failure. The evaporation pan waste water will overflow and spill onto the floor if the heater is not properly operating.

Remove accumulated debris from the evaporation pan. Wipe down heater coil with a cloth and warm water. Be sure to remove any dirt, debris or liquids from the heater coil.

Water introduced during cleaning will cause the evaporation pan to overflow.

WARNING

Evaporation Pan is Hot!
and poses risk of bodily injury – Always wear gloves and protective eye wear when servicing. Turn off evaporation pan heater, and allow pan to cool.

CLEANING 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.



PRECAUTION CLEANING PRECAUTIONS

When Cleaning:

- Do not use high pressure water hoses
- Do not introduce water faster than waste outlet can drain
- NEVER INTRODUCE WATER ON SELF CONTAINED UNIT WITH AN EVAPORATION PAN
- NEVER USE A CLEANING OR SANITIZING SOLUTION THAT HAS OIL BASE (these will dissolve the butyl sealants) or an AMMONIA BASE (this will corrode the copper components of the merchandiser)
- TO PRESERVE THE ATTRACTIVE FINISH:
 - Use a water and a mild detergent for the exterior only
 - Do NOT use a chlorinated cleaner on any surface
 - Do NOT use abrasives or steel wool scouring pads (these will mar the finish)

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 freezer until the unit has returned to normal operating temperatures.

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

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.

REMOVING SCRATCHES FROM BUMPER

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.



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



WARNING

**SHUT FANS OFF DURING
CLEANING PROCESS.**

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

REPLACING FAN MOTORS AND BLADES

Should it ever be necessary to service or replace the fan motors or blades be certain that the fan blades are reinstalled correctly. **THE BLADES MUST BE INSTALLED WITH RAISED EMBOSING (PART NUMBER ON PLASTIC BLADES) POSITIONED AS INDICATED ON THE PARTS LIST.**

For access to these fans:

1. Remove product and place in a refrigerated area. Disconnect electrical power.
2. **Disconnect fan from wiring harness.**
3. If it is determined that fan motor needs to be replaced, remove fan motor brackets.
4. Replace fan motor and/or blades.
6. Install brackets to fan motor and motor bracket to the fan plenum.
7. Reconnect fan motor to wiring harness.
8. Turn on power.
9. Verify that motor is working and blade is turning in the correct direction.
10. Reinstall display pans. Bring merchandiser to operating temperature before restocking.



WARNING

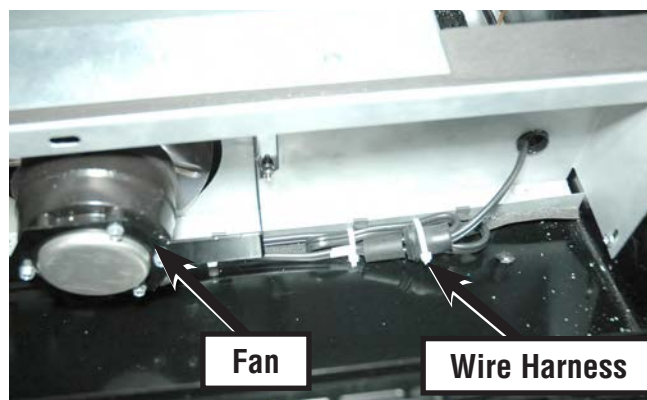
Product will be degraded and may spoil if allowed to sit in a non-refrigerated area.



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.



CLEANING COILS

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

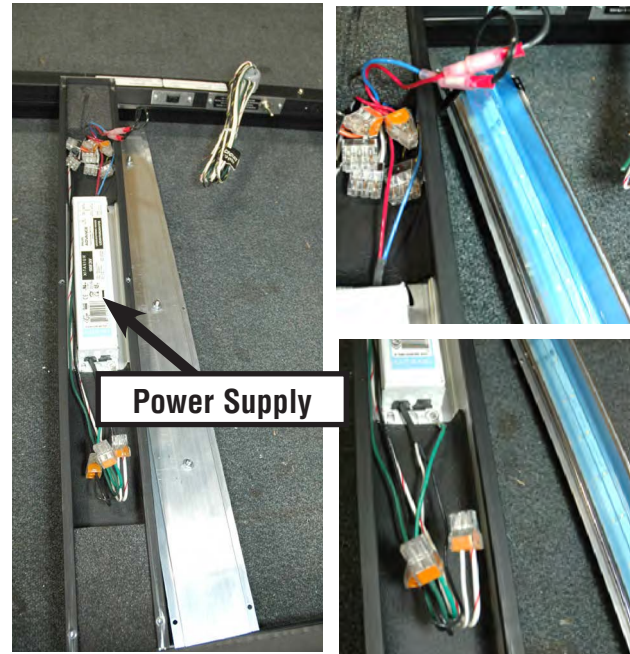
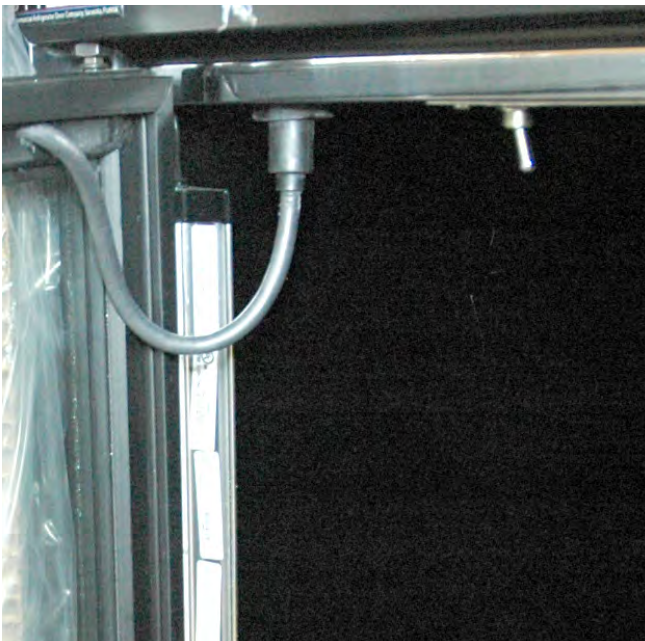
Do not bend fins. Contact an authorized service technician if a coil is punctured, cracked, or otherwise damaged.

ICE in or on the coil indicates the refrigeration and defrost cycle is not operating properly. Contact an authorized service technician to determine the cause of icing and to make adjustments as necessary.

To maintain product integrity, move all product to a cooler until the unit has returned to normal operating temperatures.

LED LIGHT REPLACEMENT

1. Turn lights off at the switch.
2. LED lamps are held in place with clips along the outside of the doors at each side.
3. Unplug the wire harness from the LED.
4. Replace with like LED fixture.
5. Turn light switch back on.



LED POWER SUPPLY REPLACEMENT

Turn off and unplug case.

LED power supply is located in the center mullion.

1. Remove sheet metal backing plate from back of center mullion (6 screws).
2. Replace with similar Hussmann power supply.
3. Reassemble.

GSVM ACCESSORIES

The following is a description of the various accessories available for the GSVM.

Leveling Guides— 6" adjustable legs screw into the welded corner plates in the case base. These legs have a threaded stud.

Colored Accent Panel — This panel can be (a.) the top front panel over the product, (b.) the panel behind the bumper, or (c.) the access panel below the bumper panel, or any combination of these.

Wire Product Stop Kit — This kit consists of a 2 in. high chrome plated open wire stops for the standard shelf. This stop is mounted under tension and should not be confused with the wire front in the partition kit.

TROUBLESHOOTING GUIDE

PROBLEM	PROBABLE CAUSE	SOLUTION
Compressor will not start. (no noise)	<ol style="list-style-type: none"> 1. Power disconnected 2. Blown fuse or breaker 3. Defective or broken wiring 4. Defective overload 5. Defective temperature control 	<ol style="list-style-type: none"> 1. Check service cord or wiring connection 2. Replace fuse or reset breaker 3. Repair or replace 4. Replace 5. Replace
Compressor will not start; cuts out on overload.	<ol style="list-style-type: none"> 1. Low voltage 2. Defective compressor 3. Defective relay 4. Restriction (pinched cap tube) 5. Restriction (moisture) 6. Condenser blocked with dust and dirt 7. Defective condenser fan motor 	<ol style="list-style-type: none"> 1. Cabinet voltage must not be more than 5% below rating 2. Replace 3. Replace 4. Repair or replace 5. Leak check, replace drier evacuate and recharge 6. Clean condenser 7. Replace
Warm storage temperature	<ol style="list-style-type: none"> 1. Temperature control not set properly 2. Short or refrigerant 3. Cabinet location too warm 4. Refrigerant over-charge 5. Low voltage, compressor cycling on overload 	<ol style="list-style-type: none"> 1. Reset control. Rotate knob Clockwise 2. Leak check, replace drier evacuate and recharge 3. Move to cooler location or correct excessive heat source 4. Purge system, evacuate and recharge 5. Compressor voltage must not be more than 5% below rating
Compressor runs continuously; product too warm.	<ol style="list-style-type: none"> 1. Short of refrigerant 2. Inefficient compressor 3. Coil iced up 	<ol style="list-style-type: none"> 1. Leak check, replace drier, evacuate and recharge 2. Replace 3. Force manual defrost
Compressor runs continuously; product too cold	<ol style="list-style-type: none"> 1. Defective control 2. Control sensing element not in positive contact 3. Short on refrigerant 	<ol style="list-style-type: none"> 1. Replace 2. Assure proper contact 3. Leak check, replace drier evacuate and recharge

TROUBLESHOOTING LIGHT GUIDE

PROBLEM	SOLUTION
Lights won't start	<ol style="list-style-type: none"> 1. Check light switch 2. Check continuity to ballast / Power Supply 3. Check to see if bulbs are inserted properly in sockets 4. Check voltage

TROUBLESHOOTING DOOR GUIDE

Problem	Possible Cause(s)	Solution/Corrective Action
Door Do Not Close (gaskets do not seal)	No tension on door	<ol style="list-style-type: none"> 1. Set door tension in accordance with the installation instruction. 2. If you cannot set the tension the bushing is likely stripped or cracked. 3. Remove the door. 4. Replace the bushing. 5. Reinstall the door.
	Gasket does not make contact with the stainless	<ol style="list-style-type: none"> 1. Inspect the gaskets condition and replace if torn. 2. Make sure the gasket dart is fully inserted into the door vinyl. 3. Make sure there is a magnet in the gasket. 4. Make sure the gasket is not rolled over on the hinge side. 5. Inspect the door to make sure it is not warped (racked). 6. Verify the frame has been installed correctly: <ul style="list-style-type: none"> • Shim should have been used at all frame-mounting screws to prevent the frame from being twisted during installation. Loosen the mounting screws and install shims. Re-tighten screws. • Verify both ends of the frame are plumb. If not reset the frame.
	Nylon washer at the bottom hinge pin is missing	<ol style="list-style-type: none"> 1. Install new nylon washer.
	Hold open cam bent	<ol style="list-style-type: none"> 1. If hold open cam is bent then replace.
Doors Do Not Stay Open	Missing hold open cam or bottom slide pin	<ol style="list-style-type: none"> 1. Replace the hold open cam. 2. Replace the bottom slide pin (if backer-plate stripped then replace backer-plate).
	Hold open cam or bottom slide pin are not to specs	<ol style="list-style-type: none"> 1. Replace.
	Damaged hold open cam or bottom slide pin	<ol style="list-style-type: none"> 1. Replace.

TROUBLESHOOTING DOOR GUIDE CONTINUED

Problem	Possible Cause(s)	Solution/Corrective Action
Condensation Between Panes of Glass	Failed glass unit	1. Replace door.
Condensation on Unheated Doors	Store conditions (condensation on several doors of multiple frames)	1. The store is too cold: <ul style="list-style-type: none"> • Correct the store conditions. 2. The store is too humid: <ul style="list-style-type: none"> • Correct the store conditions. 3. The temperature in the box is too cold: <ul style="list-style-type: none"> • Correct the temperature inside the box. 4. Evaporator fans blowing on the back of the door: <ul style="list-style-type: none"> • Stock the shelves or redirect the air.
	Defective door (condensation on one door)	1. Replace the door.
	Hold open cam bent	1. If hold open cam is bent then replace.
Condensation on High Humidity Heated Doors	Store conditions (condensation on several doors of one or more frames)	1. The temperature in the box is too cold: <ul style="list-style-type: none"> • Correct the temperature inside the box.
	No heat to the door (condensation on one door)	1. Check that the door cord is connected and screwed to the receptacle. 2. Check for power to the door: <ul style="list-style-type: none"> • Unplug the door cord. • Confirm 115 Voltage at the receptacle in the frame (center of the three contacts is ground). • If there is no Voltage reading then proceed to step 3. • If 115 Voltage reading then proceed to step 2. 3. Check for ohm reading on the door: <ul style="list-style-type: none"> • Determine ohm reading between the two outside pins. • Compare to the ohm reading on another door that is free of condensation. • If no reading, then replace the door heat, or • Repair the door heat. 4. Open mullion cover. 5. Check for 115 Voltage on black/yellow and white wires. 6. Check for loose connections on black/yellow and white wires. 7. Trace the power back to the building source to determine the point of open circuit and repair. Check for door heat.

ADJUSTING SELF-CLOSING DOORS

Door may be adjusted if it is found that when the door self-closes, doors do not have enough tension.

1. Using a 5/16" wrench, turn and hold the top hinge pin one full arc toward the handle of the door as shown below.



2. While holding the 5/16" wrench and hinge pin in place, tighten the jam nut with a 11/16" wrench as shown below.



3. For more tension – a faster, harder door close - hold the hinge pin with the 5/16" wrench in a starting position to sustain tension while loosening the jam nut with the 11/16" wrench.

4. Repeat Step 1 and 2 as needed for each door.

NOTE: The typical tension needed for self-closing of the door when the door is released from a point approximately 6" to 7" open.

NOTE: Do not completely remove both the hinge pin and the slide pin at the same time.

ADJUSTING SAWTOOTH

To fix the alignment of the doors: This adjustment is needed only when the non-hinge side top corner is lower than the hinge side top corner, therefore causing the doors to appear unlevelled.

1. Door alignment can be completed by loosening the bottom hinge pin and sliding the pin with the 3/4" wrench supplied and sliding the bottom of the door left or right as shown below.

2. Retighten the hinge pin and slide pin as shown below.

NOTE: Preventive maintenance program should include checking and tightening - if necessary - of the hinge and slide pins.



CAUTION

Risk of injury. Pinching hazard due to potential pre-loaded pressure.

DOE 2012
Energy Efficiency
Compliant

Husmann refrigerated merchandisers configured for sale for use in the United States meet or surpass the requirements of the DOE 2012 energy efficiency standards.

Parts List

Model GSVM4060F	
Standard Parts	
Description	Part Number
Evaporator Fan Motor	0477653
Evaporator Fan Blade	0519568
Evaporator Fan Motor Bracket	0210201
Evaporator Fan Harness	0517365
Air Sensor (Black) 1500MM	0509122
Defrost Sensor (Yellow) 1500MM	0509123
Safe-Net III Controller 65C	0557343
Safe-Net III Display (F°) 65C	H159052
Safe-Net III Display Interface Cable	0509783
Safe-Net III Control Harness	0513058
Compressor Relay (T92P7A22-120)	0459304
Condensate Pan Heater Relay (SPDT NC 120V)	0342598
Power Switch	03S422
Shelf 18 X 18 (Black)	0561548
Power Cord - 125V 20A	19S63612
Honeycomb (White)	0557115
Honeycomb (Black)	0556927
Leg Leveler kit	RB30
Black rubber Drain Hose (32")	18S063
Bottom Deck PTM - Product Stop	RJ03

Refrigeration	
Description	Part Number
Condensing Unit Assy	0557342
Compressor	0556924
Condenser	2100214
Condenser Fan Motor	1804579
Condenser Fan Blade	0500354
Condenser Fan Mounting	0210135
Drier	17S332
Pull out coil assy	0528964
Expansion Valve	0416740
Evaporator Coil	0556923
High pressure switch	1700549000

Parts List

Continued

Condensate Pan	
Description	Part Number
Electric Condensate Pan Assy (350W)	0528492
Condensate Pan (Only)	0528496
Condensate Heater (350W)	19S678
Float	1804342

Sheet Metal Replacement Parts Painted	
Description	Part Number
Front Louvered Access Panel (white)	291434
Bottom Deck Pan (Black)	0557116
Bottom Deck Pan (White)	0560129
Rear lower Panel (Black)	0529114

Frame/ Door /Lighting system	
Description	Part Number
Silver Color	0559944
Black Color	0556944

Dimensions - see next page for Plan Views of the Case

General

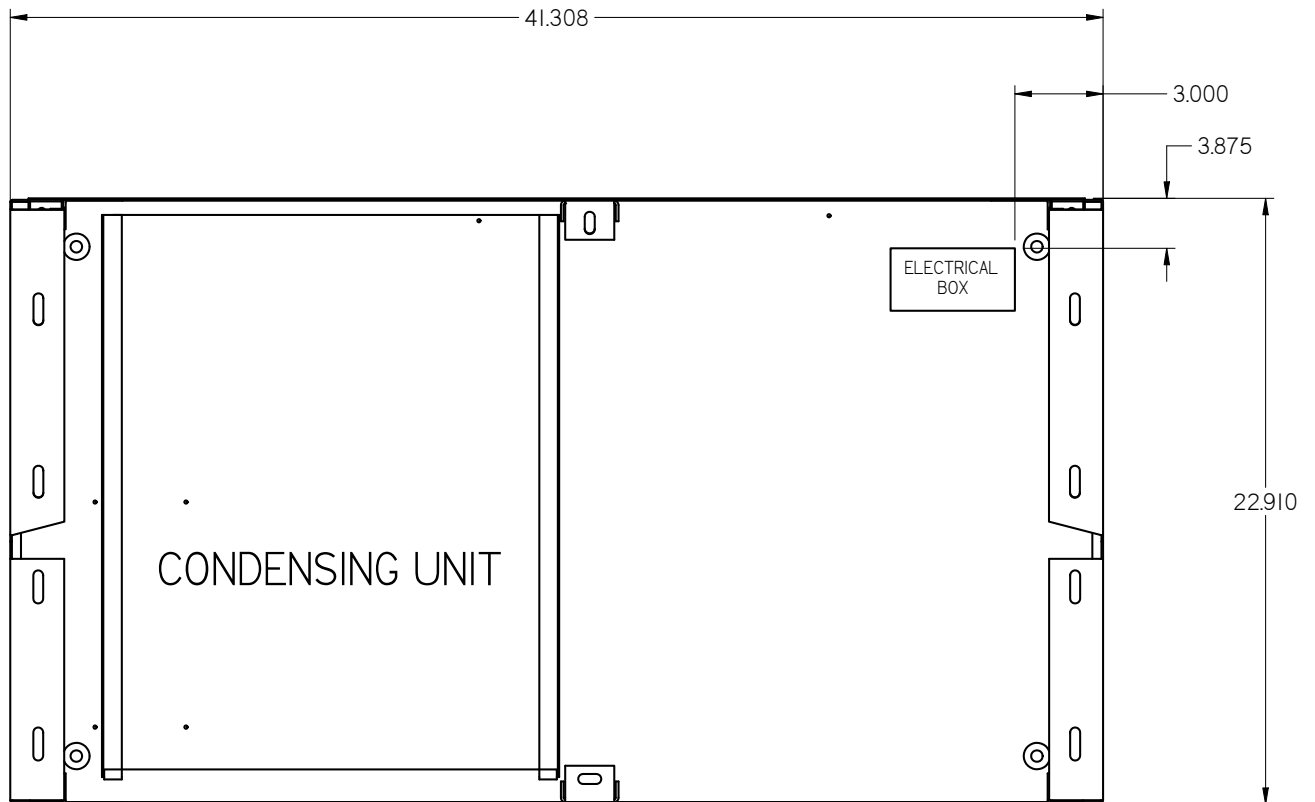
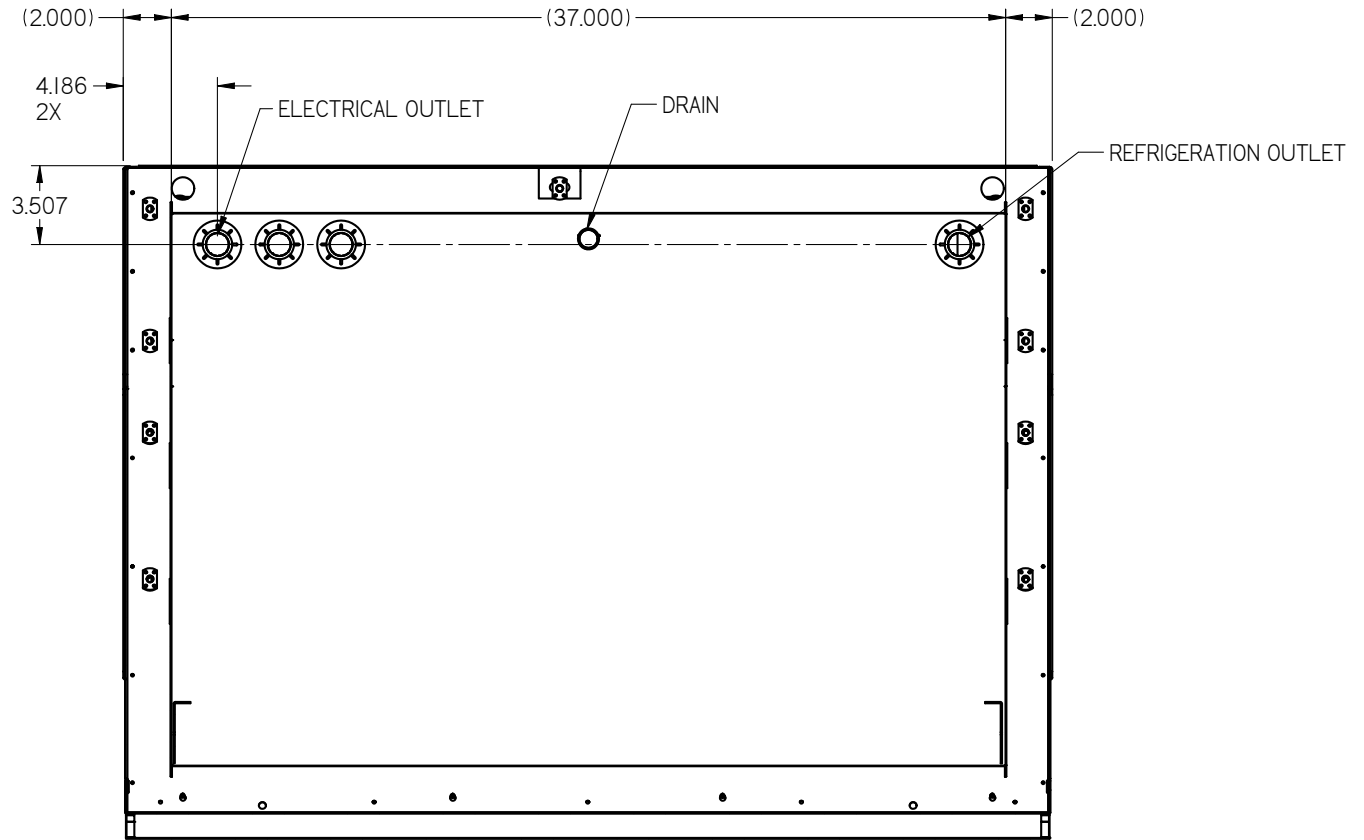
GSVM 4060F

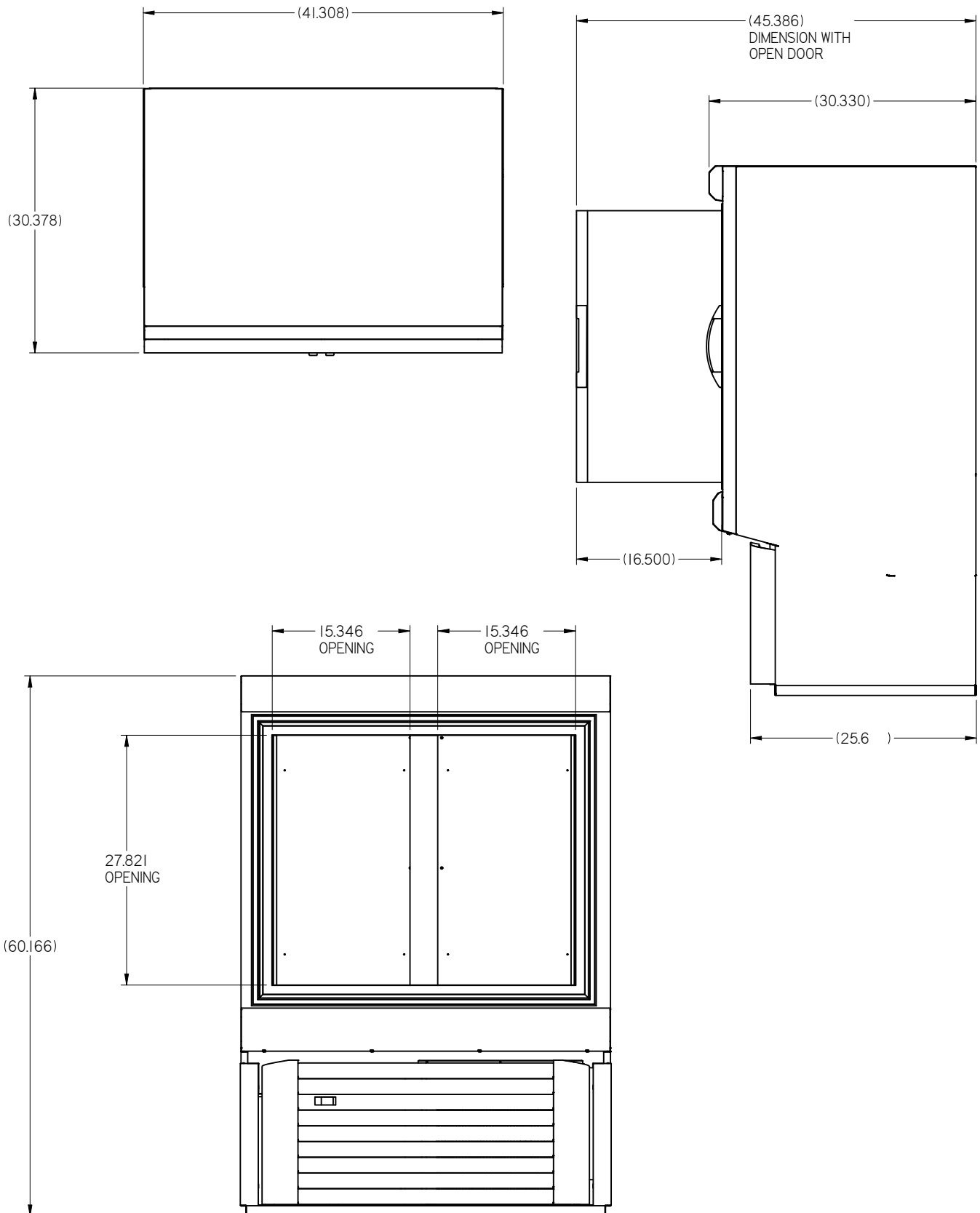
Case Length (<i>Note: Includes One Pair Ends</i>)	41 ³ / ₈ in. (1051 mm)
Optional End Bumpers (<i>One Pair</i>)	2 in. (51 mm)

Waste Outlet

LH end of case (<i>from outside of End Assembly</i>) to center of waste outlet	20 ¹ / ₂ in. (520.7 mm)
---	---

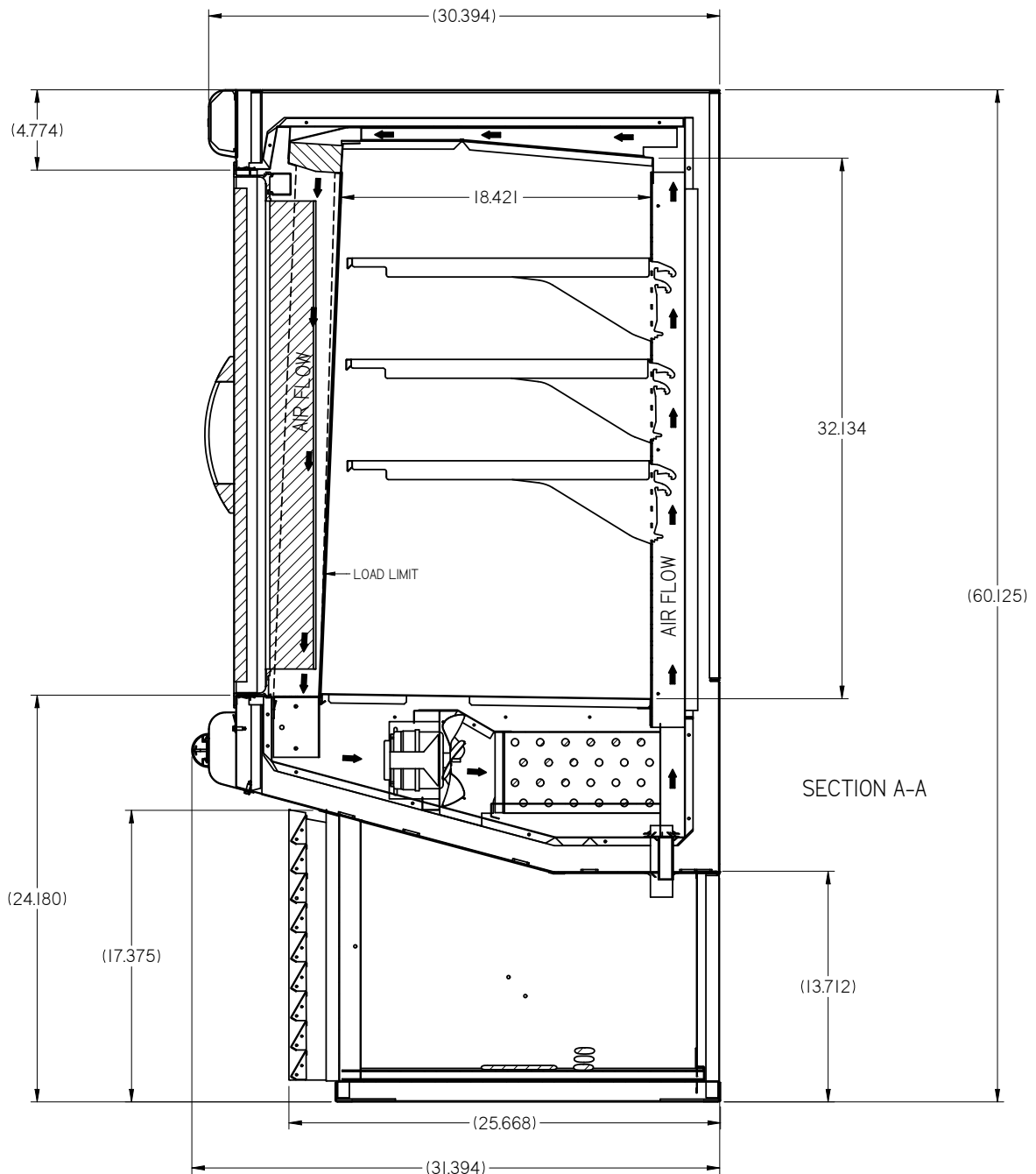
GSVM-4060F





Dimensions shown as inches and (mm).

GSVM-4060F



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.

GSVM 4060F

Number of Fans – 4W (open shell)	2	
	Amperes	Watts
Evaporator Fans 115V 60Hz	0.12	4
Condensate Pan Heaters (115V) GSVM-4060F	3	350
Defrost Heaters (2)	2.6	300
Door Heater	1.51	174
LED Fixture Condensing Unit (115V, 1Ph, 60Hz) Standard	0.13	15
GSVM 4060F		
Compressor LRA	54.5	
Compressor RLA	7.9	

Product Data

GSVM 4060F

*ARI Total Display Area*¹ (Sq Ft/Case) 5.93 ft² /case (0.55 m² /case)

¹ Computed using AHRI 1200 standard methodology:
Total Display Area, ft² [m²] / Unit of Length, ft [m]

	Refrigerant Type	Volts	Run Amps	Nema Plugs	Fuse Amps	Hz/Ph
GSVM 4060F	404A	115	12.7	5-20P	20	60/1

REFRIGERATION DATA

GSVM-4060F

Thermostat

Setting CI/CO (°F)

	Position:	#1	#7
GSVM 4060F		5/-5	-15/-25

Condensing Unit

Capacity

GSVM 4060F 2678
(Btu per hour at std. rating
conditions)

Discharge Pressure

Nominal Range

185-220 psig

Suction Pressure

5-15 psig

DEFROST DATA

Frequency (hour)

GSVM 4060F 24 (1 per day)

OFFTIME

Failsafe (minutes)

GSVM 4060F 60

Defrost Termination

Temperature Terminated

PHYSICAL DATA

Refrigerant Charge

GSVM 4060F (R404A) 18 oz 0.510 kg

ESTIMATED SHIPPING WEIGHT ²*Self Contained**Case**with Shipping Crate**End***GSVM 4060F****434 lb (197kg)****493 lb (223.6kg)**

Included

² Actual weights will vary according to optional kits included.



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

HUSSmann®

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

Husmann Corporation

12999 St. Charles Rock Road
Bridgeton, MO 63044-2483
www.husmann.com