



# HOSHIZAKI

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## Service Manual

### Counter Showcase

#### Models

HNC-120BA-L/R-SLH

HNC-150BA-L/R-SLH

HNC-180BA-L/R-SLH

HNC-210BA-L/R-SLH



[hoshizakiamerica.com](http://hoshizakiamerica.com)

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**⚠ WARNING**

Only qualified service technicians should install and service the appliance. To obtain the name and phone number of your local Hoshizaki Certified Service Representative, visit [www.hoshizaki.com](http://www.hoshizaki.com). No service should be undertaken until the technician has thoroughly read this Service Manual. Failure to service and maintain the appliance in accordance with this manual will adversely affect safety, performance, component life, and warranty coverage. Proper installation is the responsibility of the installer. Product failure or property damage due to improper installation is not covered under warranty.

Hoshizaki provides this manual primarily to assist qualified service technicians in the maintenance and service of the appliance.

Should the reader have any questions or concerns which have not been satisfactorily addressed, please call, send an e-mail message, or write to the Hoshizaki Technical Support Department for assistance.

Phone: 1-800-233-1940; (770) 487-2331

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Peachtree City, GA 30269

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Web Site: [www.hoshizaki.com](http://www.hoshizaki.com)

**NOTE:** To expedite assistance, all correspondence/communication **MUST** include the following information:

- Model Number \_\_\_\_\_
- Serial Number \_\_\_\_\_
- Complete and detailed explanation of the problem.

**IMPORTANT**

This manual should be read carefully before the appliance is serviced. Read the warnings and guidelines contained in this manual carefully as they provide essential information for the continued safe use, service, and maintenance of the appliance. Retain this manual for any further reference that may be necessary.

**CONTENTS**

Important Safety Information ..... 3

I. Construction and Refrigeration Circuit Diagram ..... 6

    A. Model Name ..... 6

    B. Construction..... 7

    C. Refrigeration Circuit Diagram ..... 8

II. Operating Instructions and Service Diagnosis..... 9

    A. Operating Instructions..... 9

    B. Service Diagnosis ..... 10

III. Refrigeration Circuit and Component Service Information ..... 11

    A. Refrigeration Circuit Service Information (R600a)..... 13

    B. Component Service Information ..... 17

    C. Constant Pressure Expansion Valve ..... 19

IV. Preparing the Appliance for Periods of Non-Use..... 21

V. Disposal..... 22

VI. Technical Information ..... 23

    A. Specifications..... 23

    B. Dimensions ..... 24

    C. Wiring Diagrams ..... 32

## Important Safety Information

Throughout this manual, notices appear to bring your attention to situations which could result in death, serious injury, damage to the appliance, or damage to property.

<b>⚠ DANGER</b>	Indicates a hazardous situation that, if not avoided, will result in death or serious injury.
<b>⚠ DANGER</b>	Indique un risque imminent qui causera la mort ou de graves blessures, s'il n'est pas évité.
<b>⚠ WARNING</b>	Indicates a hazardous situation which could result in death or serious injury.
<b>NOTICE</b>	Indicates a situation which could result in damage to the appliance or property.
<b>IMPORTANT</b>	Indicates important information about the installation, use, and care of the appliance.

### **⚠ DANGER**

#### **Risk of Fire or Explosion Flammable Refrigerant Used**

- Follow handling instructions carefully in compliance with U.S. government regulations.
- Do not use mechanical devices to defrost.
- Do not puncture refrigerant tubing. Risk of fire or explosion due to puncture of refrigerant tubing; follow handling instructions carefully.
- Component parts shall be replaced with like components.
- Servicing shall be done by factory authorized service personnel to minimize the risk of possible ignition due to incorrect parts or improper service.
- Consult instruction manual/service manual before attempting to install or service this product. All safety precautions must be followed.
- Dispose of properly in accordance with federal or local regulations.
- Do not place any potential ignition sources in or near the appliance.


#### **Risque De Feu Ou D'Explosion Le Frigorigène Est Inflammable**

- Suivre attentivement les instructions de manipulation conformément à la réglementation gouvernementale.
- Ne pas utiliser d'appareils mécaniques pour dégivrer le réfrigérateur.
- Ne pas perforer la tubulure contenant le frigorigène. Risque de feu ou d'explosion si la tubulure contenant le frigorigène est perforée; suivre les instructions de manutention avec soin.
- Les pièces des composants doivent être remplacées par des pièces et accessoires équivalents.
- L'entretien doit être effectué par le personnel de service autorisé par le fabricant afin de minimiser les risques d'inflammation attribuables à l'installation d'une pièce inadéquate ou à la mauvaise exécution du service.
- Consulter le manuel du propriétaire/guide de réparation avant de tenter une réparation. Toutes les mesures de sécurité doivent être respectées.
- Éliminer conformément aux règlements fédéraux ou locaux.
- Ne placez aucune source d'inflammation potentielle dans ou près de l'appareil.

## WARNING

The appliance should be destined only to the use for which it has been expressly conceived. Any other use should be considered improper and therefore dangerous. The manufacturer cannot be held responsible for injury or damage resulting from improper, incorrect, and unreasonable use. Failure to install, operate, and maintain the appliance in accordance with this manual will adversely affect safety, performance, component life, and warranty coverage.

**To reduce the risk of death, electric shock, serious injury, or fire, follow basic precautions including the following:**

- Only qualified service technicians should install and service the appliance.
- Wear appropriate personal protective equipment (PPE) when servicing the appliance.
- The appliance must be installed in accordance with applicable national, state, and local codes and regulations.
- Appliance is heavy. Use care when lifting or positioning. Work in pairs when needed to prevent injury or damage. Do not lift using the top section.
- To reduce the risk of electric shock, do not touch the plug with damp hands.
- Unplug the appliance before servicing.
- The appliance requires an independent power supply of proper capacity. See the nameplate for electrical specifications. Failure to use an independent power supply of proper capacity can result in a tripped breaker, blown fuse, damage to existing wiring, or component failure. This could lead to heat generation or fire.
- **THE APPLIANCE MUST BE GROUNDED.** The appliance is equipped with a NEMA 5-15 three-prong grounding plug  to reduce the risk of potential shock hazards. It must be plugged into a properly grounded, independent 3-prong wall outlet. If the outlet is a 2-prong outlet, it is your personal responsibility to have a qualified electrician replace it with a properly grounded, independent 3-prong wall outlet. Do not remove the ground prong from the power cord and do not use an adapter plug. Failure to follow these instructions may result in death, electric shock, or fire.
- Do not use an extension cord.
- Do not use an appliance with a damaged power cord. The power cord should not be altered, jerked, bundled, weighed down, pinched, or tangled. Such actions could result in electric shock or fire. To unplug the appliance, be sure to pull the plug, not the cord, and do not jerk the cord.
- The GREEN ground wire in the factory-installed power cord is connected to the appliance. If it becomes necessary to remove or replace the power cord, be sure to connect the power cord's ground wire.
- Do not splash, pour, or spray water directly onto or into the appliance. This might cause short circuit, electric shock, corrosion, or failure.
- Do not make any alterations to the appliance. Alterations could result in electric shock, injury, fire, or damage to the appliance.
- The 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.

**⚠ WARNING, continued**

- Children should be properly supervised around the appliance.
- Do not climb, stand, or hang on the appliance or allow children or animals to do so. Do not climb into the appliance or allow children or animals to do so. Death or serious injury could occur or the appliance could be damaged.
- Be careful not to pinch fingers when opening and closing the doors. Be careful when opening and closing the doors when children are in the area.
- Open and close the doors with care. Opening the doors too quickly or forcefully may cause injury or damage to the appliance or surrounding equipment.
- Do not use combustible spray or place volatile or flammable substances in or near the appliance. They might catch fire.
- Keep the area around the appliance clean. Dirt, dust, or insects in the appliance could cause harm to individuals or damage to the equipment.
- Do not throw anything into the unit. The glass parts could be broken, which may result in injury.
- The appliance is designed only for temporary display of food. Employ sanitary methods. Use for any other purposes (for example, storage of chemicals or medical supplies such as vaccine and serum) could cause deterioration of stored items.
- Do not block air inlets or outlets, otherwise cooling performance may be reduced.
- Do not tightly pack the unit. Allow some space between items to ensure good cooling performance. Also allow space between items and interior surfaces.
- Do not put warm or hot foods in the unit. Store only pre-refrigerated items, or they will raise the interior temperature and could deteriorate other foods in the unit or overload the appliance.
- Food display and handling must comply with applicable codes and regulations.
- All foods should be wrapped in plastic film or stored in sealed containers. Otherwise foods may dry up, pass their smells onto other foods, cause frost to develop, result in poor appliance performance, or increase the likelihood of cross-contamination. Certain dressings and food ingredients, if not stored in sealed containers, may accelerate corrosion of the evaporator, resulting in failure.
- Do not store items in contact with the interior bottom or the evaporator at the interior top. Otherwise, items may freeze up and crack or break causing a risk of injury or contamination of other food.

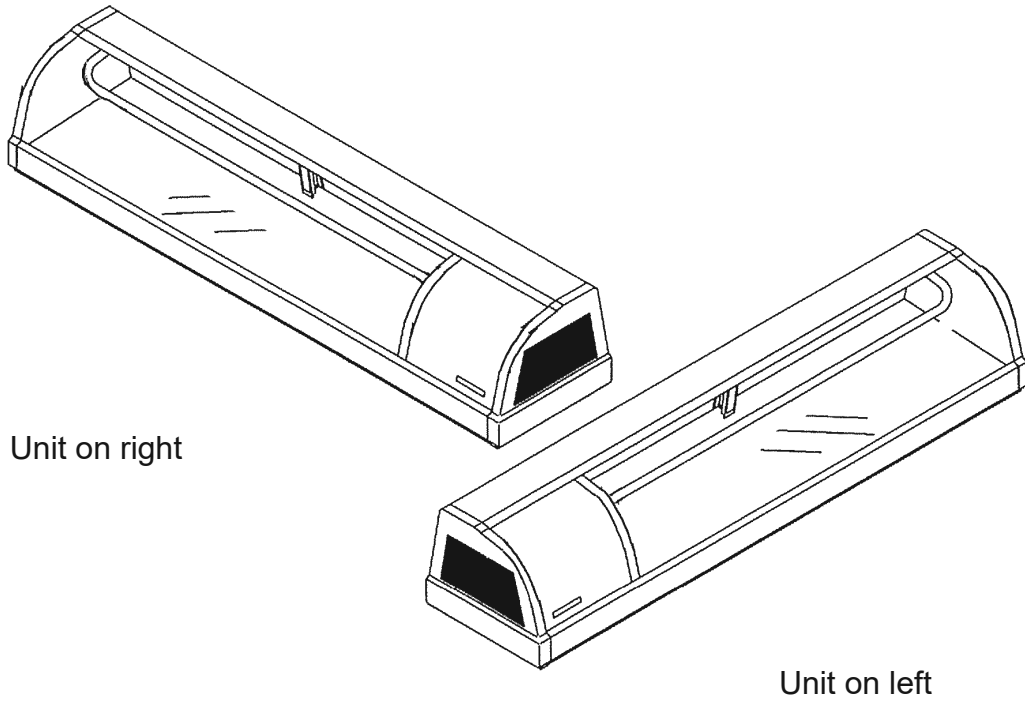
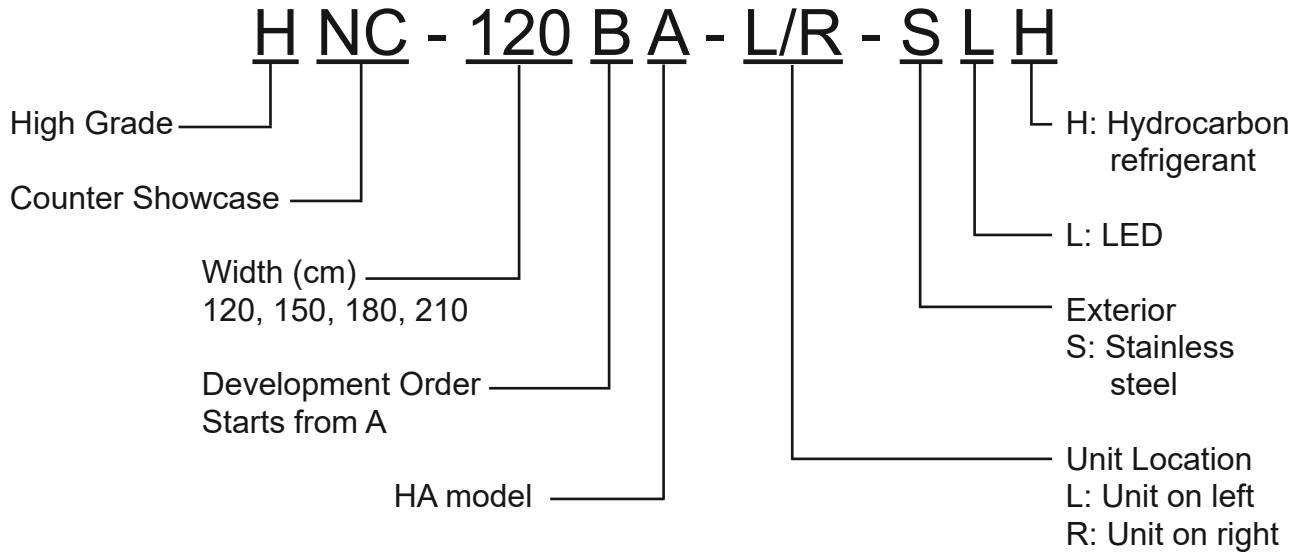
**NOTICE**

After servicing, follow the instructions below:

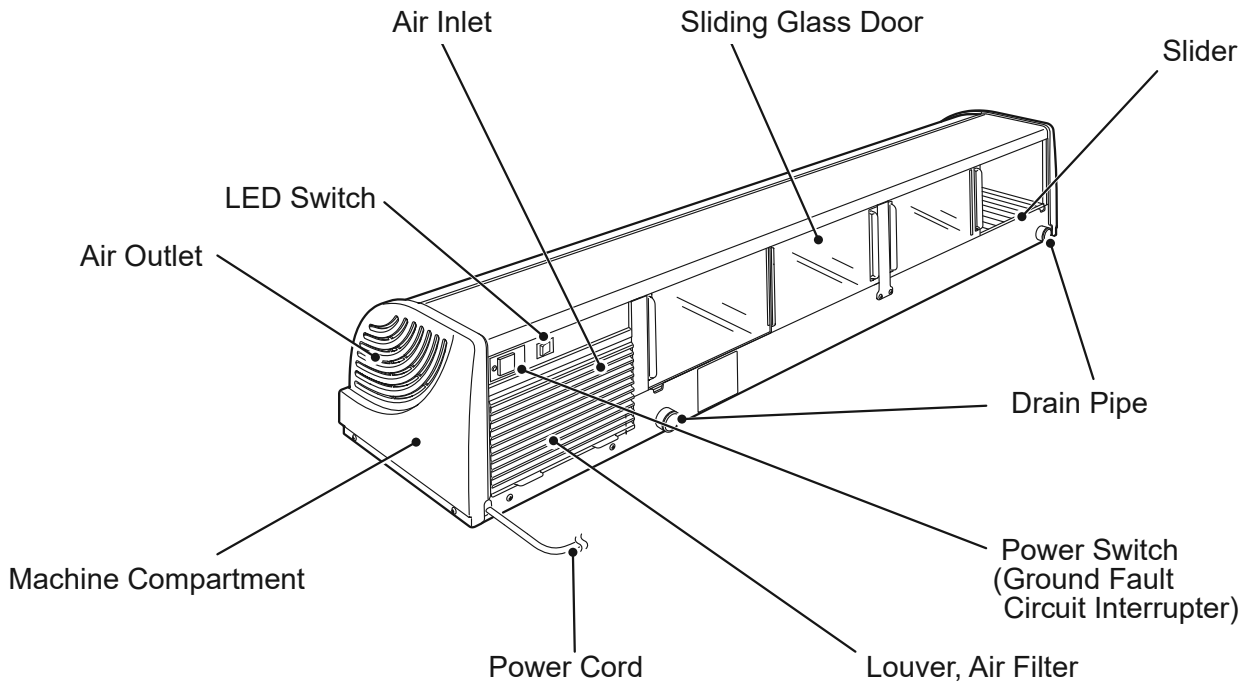
- Keep ventilation openings, in the appliance enclosure, clear of obstruction. Do not place anything on top of the appliance. Blockage of airflow could negatively affect performance and damage the appliance.
- Do not allow the appliance to bear any outside weight.
- To prevent deformation or cracks, do not spray insecticide onto the plastic parts or let them come into contact with oil.
- Use only the door handle when opening and closing the sliding doors.

# I. Construction and Refrigeration Circuit Diagram

## A. Model Name



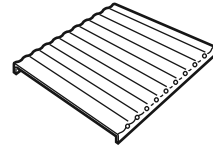
## B. Construction



Hose



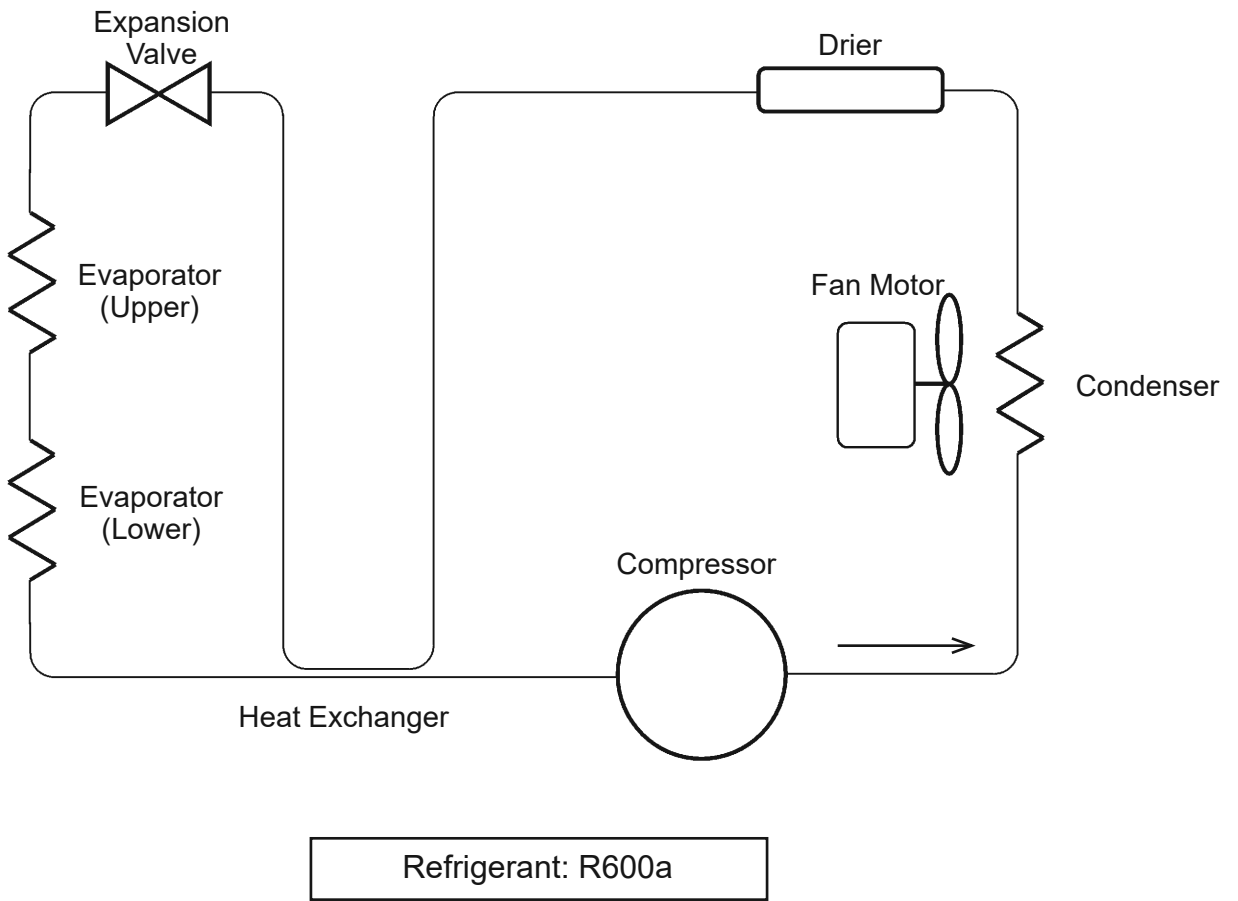
Joint



Food Mount



### C. Refrigeration Circuit Diagram



## II. Operating Instructions and Service Diagnosis

### A. Operating Instructions

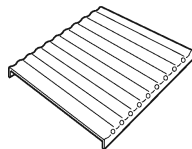
#### ***IMPORTANT***

Hoshizaki Counter Showcase is intended for temporary food display. Constructed with glass, this showcase gives relatively insufficient heat insulation and poor cooling performance compared with refrigerators in general. For safe and efficient operation, be sure to follow the instructions below.

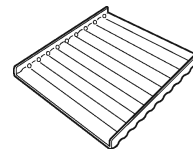
- 1) Do not leave foods in the showcase after service hours, or they may dry or spoil. Foods that should not dry must be covered or wrapped up in a plastic film.
- 2) Store only pre-refrigerated items in the showcase. It takes longer for foods to cool in the showcase than in a refrigerator.
- 3) Do not leave the doors open or open them too frequently. The interior temperature may rise, resulting in food deterioration.
- 4) Do not pack the showcase with foods. The cooling performance may reduce, resulting in food deterioration.
- 5) The showcase should not be exposed to direct sunlight or located next to ovens, grills or other high heat producing equipment. The interior temperature may rise, resulting in food deterioration.
- 6) The ambient temperature should not exceed 80°F (27°C). The cooling performance may reduce, resulting in food deterioration.
- 7) The food mount can be used on either side. The food temperature is controllable by turning over the food mount to change the distance from the interior bottom.

Normal condition

When food temperature is too low



For more intensive cooling



- 8) The maximum safe height for displaying food products is 3.5" (9 cm) above the interior bottom. Food products should not be placed above this height as they may not remain cold enough to avoid spoilage.

## B. Service Diagnosis

PROBLEM	POSSIBLE CAUSE	REMEDEY
[1] Showcase will not start.	1. Power switch (ground fault circuit interrupter) in OFF position.	1. Turn ON.
	2. Unplugged.	2. Plug in.
	3. Supply voltage too low.	3. Plug into a properly grounded, independent 3-prong wall outlet of 115V ± 10%.
	4. No power supply to the wall outlet. (Breaker or fuse blown.)	4. Correct.
	5. Electrical circuit open or bad contacts.	5. Correct.
	6. Motor protector tripped.	6. Allow to cool. If fan motor does not energize, replace fan motor.
[2] Poor cooling performance	1. Gas leaks.	1. Repair the leaks and recharge.
	2. Fan motor defective.	2. Replace.
	3. Condenser and/or air filter clogged.	3. Clean.
	4. Condenser air inlet blocked.	4 - 9. Instruct the user on characteristics and proper use of the showcase. See "II.A. Operating Instructions."
	5. Exposed to direct sunlight or high wattage lamps shining on the case.	
	6. Located next to a high heat producing equipment.	
	7. Doors opened too frequently or left open.	
	8. Packed with foods, or warm or hot foods inside.	
	9. Ambient temperature exceeding 80°F (27°C).	10. See (*) below for characteristics and proper use of the showcase.
	10. Frost formed.	
[3] Dry foods	1. Foods have been stored from the previous day.	1 - 2. Instruct the user on characteristics and proper use of the showcase.
	2. Foods have been stored for a long time.	
[4] Condensation formed.	1. [Exterior] Relative humidity exceeding 60%.	1. Wipe off excessive frost with a soft cloth.

\* During operation, moisture inside the showcase causes frost to build up on the evaporator pipe inside. Frost has an insulating effect on the evaporator pipe and reduces refrigeration performance. Every time the door is opened, warm and humid air comes in and raises the interior temperature to accelerate frost formation. Opening of the doors should be kept to a minimum to maintain proper operating temperatures. Do not leave the doors open continuously. Since frost on the evaporator pipe reduces refrigeration performance, the showcase cannot be used continuously. After business hours, return sushi materials to a refrigerator and turn off the showcase. Leave the showcase off for at least 1 to 2 hours to defrost. Failure to defrost the showcase will result in improper operating temperatures. In some conditions, frost may build up in a short time and reduce cooling performance. In these conditions, defrost the showcase as needed during the day. While defrosting the showcase, move sushi materials to a refrigerator to prevent deterioration.

### III. Refrigeration Circuit and Component Service Information

#### **DANGER**

##### **Risk of Fire or Explosion Flammable Refrigerant Used**

- Follow handling instructions carefully in compliance with U.S. government regulations.
- Do not use mechanical devices to defrost.
- Do not puncture refrigerant tubing. Risk of fire or explosion due to puncture of refrigerant tubing; follow handling instructions carefully.
- Component parts shall be replaced with like components.
- Servicing shall be done by factory authorized service personnel to minimize the risk of possible ignition due to incorrect parts or improper service.
- Consult instruction manual/service manual before attempting to install or service this product. All safety precautions must be followed.
- Dispose of properly in accordance with federal or local regulations.
- Do not place any potential ignition sources in or near the appliance.

##### **Risque De Feu Ou D'Explosion Le Frigorigène Est Inflammable**

- Suivre attentivement les instructions de manipulation conformément à la réglementation gouvernementale.
- Ne pas utiliser d'appareils mécaniques pour dégivrer le réfrigérateur.
- Ne pas perforer la tubulure contenant le frigorigène. Risque de feu ou d'explosion si la tubulure contenant le frigorigène est perforée; suivre les instructions de manutention avec soin.
- Les pièces des composants doivent être remplacées par des pièces et accessoires équivalents.
- L'entretien doit être effectué par le personnel de service autorisé par le fabricant afin de minimiser les risques d'inflammation attribuables à l'installation d'une pièce inadéquate ou à la mauvaise exécution du service.
- Consulter le manuel du propriétaire/guide de réparation avant de tenter une réparation. Toutes les mesures de sécurité doivent être respectées.
- Éliminer conformément aux règlements fédéraux ou locaux.
- Ne placez aucune source d'inflammation potentielle dans ou près de l'appareil.

**⚠ WARNING**

- Wear appropriate personal protective equipment (PPE) when servicing the appliance.
- Technician must utilize a combustible gas leak detector at all times.
- Notify everyone in the immediate area that you are working with flammable refrigerant.
- Do not work on appliance in a confined space. Confirm area is well ventilated.
- Identify and eliminate all possible ignition points in a 10 ft. (3 m) area around service area.
- Do not use mechanical devices to defrost.
- Use non-sparking tools.
- Class B dry chemical fire extinguisher or equivalent must be available.
- Do not pressurize system above 200 PSIG during leak check procedure or prior to evacuating refrigeration system.
- This appliance should be diagnosed and repaired only by qualified service personnel to reduce the risk of death, electric shock, serious injury, or fire.
- To reduce the risk of electric shock, do not touch the plug with damp hands.
- Move the power switch (ground fault circuit interrupter) to the “OFF” position, then unplug the appliance from the electrical outlet before servicing.
- Make sure all food zones in the appliance are clean after the appliance is serviced.

## A. Refrigeration Circuit Service Information (R600a)

### **⚠ WARNING**

- Repairs requiring the refrigeration circuit to be opened must be performed by properly trained and EPA-certified service personnel.
- Use an electronic leak detector or soap bubbles to check for leaks. Add a trace of refrigerant to the system (if using an electronic leak detector), and then raise the pressure using nitrogen gas (140 PSIG). Do not use R600a as a mixture with pressurized air for leak testing.

### **NOTICE**

- Do not leave the system open for longer than 15 minutes when replacing or servicing parts. The Polyol Ester (POE) oils used in R600a appliances can absorb moisture quickly. Therefore it is important to prevent moisture from entering the system when replacing or servicing parts.
- Always install a new drier every time the sealed refrigeration system is opened.
- Do not replace the drier until after all other repair or replacement has been made. Install the new drier with the arrow on the drier in the direction of the refrigerant flow.
- When brazing, protect the drier by using a wet cloth to prevent the drier from overheating. Do not allow the drier to exceed 250°F (121°C).

Refrigerant leaks must be repaired as soon as they are discovered. If not, refrigerant charge should be recovered from the system until the leak can be repaired. When repairing a leak:

- Repair the leak properly – Remove the refrigerant, examine the leak source, determine the reason for the leak, and carry out the proper course of action.
- Before repairing the leak, ensure that the refrigerant has been recovered and the system purged with nitrogen when brazing.
- Be sure to remove piercing valves attached to the system after repairs are made.

### **1. Refrigerant Recovery**

Using proper refrigerant practices, place piercing valves toward the end (crimped area) of the high and low-side process tubes, then recover the refrigerant into an approved container or device.

## 2. Brazing

### **⚠ DANGER**

#### **Risk of Fire or Explosion Flammable Refrigerant Used**

- Servicing shall be done by factory authorized service personnel to minimize the risk of possible ignition due to incorrect parts or improper service.

#### **Risque De Feu Ou D'Explosion Le Frigorigène Est Inflammable**

- L'entretien doit être effectué par le personnel de service autorisé par le fabricant afin de minimiser les risques d'inflammation attribuables à l'installation d'une pièce inadéquate ou à la mauvaise exécution du service.

### **⚠ WARNING**

- Wear appropriate personal protective equipment (PPE) when servicing the appliance.
- You must have a combustible gas leak detector in the immediate work area at all times.
- You must have a Class B chemical fire extinguisher available at all times.
- Notify all persons in the immediate area that you are working with a flammable refrigerant.
- Do not use silver alloy or copper alloy containing arsenic.
- Be sure the area is clear of refrigerant vapor before brazing.

1) Braze/repair/replace damaged component or fitting.

2) Purge with nitrogen gas for 2 min. Then braze all fittings while purging with nitrogen gas flowing at a pressure of 3 to 5 PSIG.

### ***NOTICE***

- Always install a new drier every time the sealed refrigeration system is opened.
- Do not replace the drier until after all other repair or replacement has been made. Install the new drier with the arrow on the drier in the direction of the refrigerant flow.
- When brazing, protect the drier by using a wet cloth to prevent the drier from overheating. Do not allow the drier to exceed 250°F (121°C).

3) Use soap bubbles to check for leaks. Raise the pressure using nitrogen gas (140 PSIG). Do not use any refrigerant as a mixture with pressurized air for leak testing.

4) Once leak checking is complete, release the nitrogen gas from the system.

### 3. Evacuation

- 1) Attach a vacuum pump to the system. Be sure to connect the charging hoses to both high and low-side refrigerant piercing valves.

#### ***IMPORTANT***

The vacuum level and vacuum pump may be the same as those for current refrigerants. However, the rubber hose and gauge manifold to be used for evacuation and refrigerant charge should be exclusively for POE oils.

- 2) Turn on the vacuum pump, then open the gauge manifold valves. Never allow the oil in the vacuum pump to flow backwards.
- 3) Allow the vacuum pump to pull down to a 29.9" Hg vacuum (500 microns). Evacuating period depends on pump capacity.
- 4) Close the low-side valve and high-side valve on the gauge manifold.
- 5) Disconnect the gauge manifold hose from the vacuum pump and attach it to refrigerant service cylinder. Remember to loosen the connection and purge the air from the hose. For the required refrigerant charge, see the nameplate. Hoshizaki recommends only virgin refrigerant or reclaimed refrigerant which meets AHRI Standard 700 (latest edition) be used.

### 4. Recharge

- 6) R600a can be charged in either the liquid or vapor state. Liquid charge is preferred. If refrigerant charging is done in the liquid state, place the service cylinder on the scales; **if the service cylinder is not equipped with a dip tube, invert the service cylinder, then place it on the scales.** Open the high-side valve on the gauge manifold.
- 7) Allow the system to charge with liquid until the proper charge weight is met.
- 8) Close the high-side valve on the gauge manifold. If charging is complete, skip to step 10.
- 9) If necessary, add any remaining charge to the system through the low-side. ***NOTICE!*** **To prevent compressor damage, use a throttling valve or liquid dispensing device to add the remaining liquid charge through the low-side refrigerant access valve with the compressor running.** Close the refrigerant cylinder valve and let the low-side refrigerant equalize to the system, then close the low-side manifold gauge. Move the power switch (ground fault circuit interrupter) to the "OFF" position, then unplug the appliance from the electrical outlet.
- 10) Pinch off (crimp down) the process tubes just below the piercing valves.



- 11) Remove the piercing valves. Cut the process tubes to remove the piercing valve holes then braze the process tubes closed. Note: Be sure there is no refrigerant leak before brazing.
- 12) Use a combustible gas leak detector or soap bubbles to check for leaks again.
- 13) Place red sleeves over the process tubes.
- 14) Plug the appliance back into the electrical outlet.

## B. Component Service Information

### ⚠ WARNING

- Be sure to move the power switch (ground fault circuit interrupter) to the “OFF” position, then unplug the showcase before removing or replacing the parts.
- Handle the glass parts with care.

#### 1. Side Cover

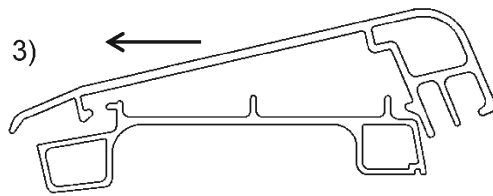
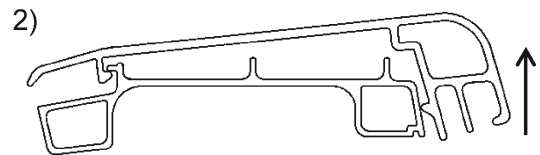
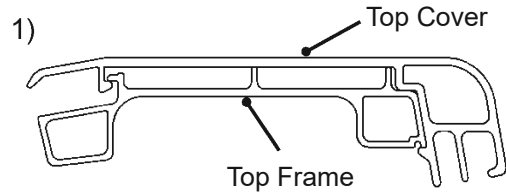
Remove the two machine screws at the bottom, lift up the side cover, and unhook the top.

#### 2. Top Cover

Remove the sliding door and side cover.

- 1) The top cover is hooked and fixed on the top frame (aluminum).
- 2) Lift up and unhook the rear end of the top cover.
- 3) When the rear part is lifted off, move it forward to unhook and remove the front part.

The top cover is tightly hooked on the top frame and will not come off easily. Remove it with care to avoid injury. To replace, reverse the removal procedure.

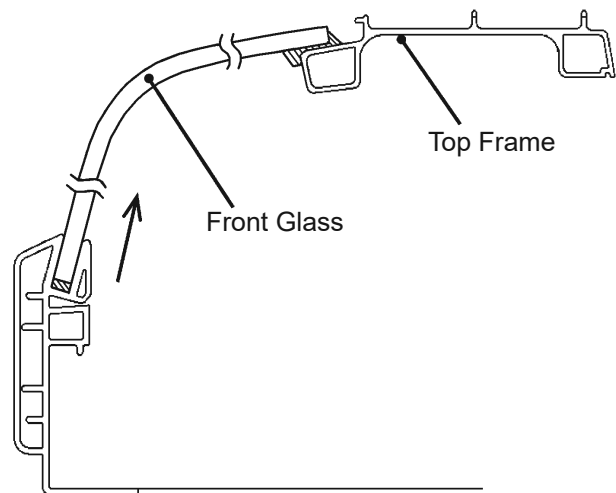


**Fig. 1**

#### 3. Front Glass

Remove the sliding door, side cover and top cover. Lift the front glass off the bottom joint.

The bottom and side interior of the front glass is sealed with silicone sealant (black). Be sure to re-seal it with food grade silicone sealant at replacement.



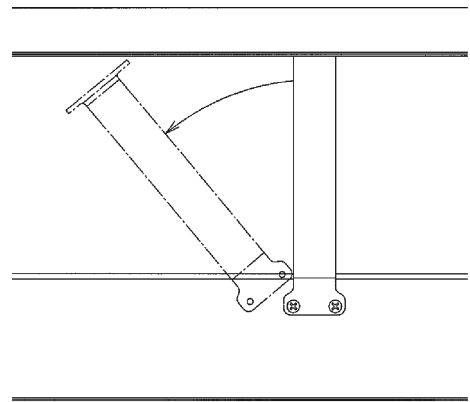
**Fig. 2**

#### 4. Side Frame

Remove the sliding door, side cover and top cover. Unbind the wiring on the side frame. Remove the two screws securing the top frame and the top of the side frame. Lift the side frame off the bottom joint.

## 5. Center Frame (Except HNC-120 Type)

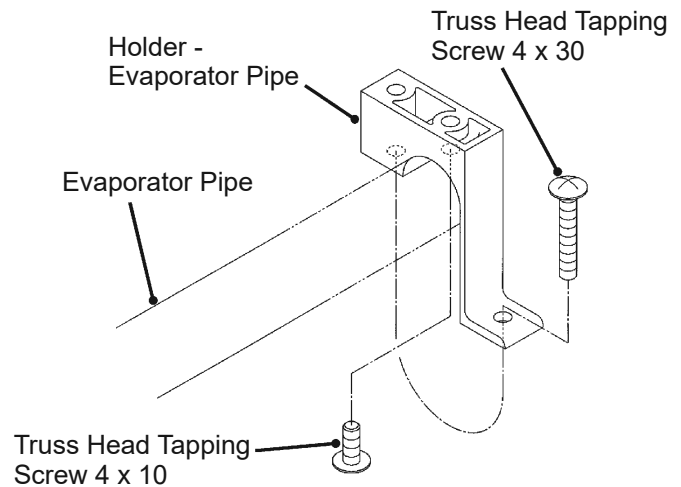
Remove the two flat head machine screws (black) securing the center frame to the rear and the two machine screws securing the center frame to the top frame. Tilt the center frame and release it from the joint.



**Fig. 3**

## 6. Holder - Evaporator Pipe

Remove the truss head tapping screw (4 x 30) from the bottom of the top frame. Take off the center frame. Be careful with the evaporator pipe. It will be released and hang down. Remove the truss head tapping screw (4 x 10) from the bottom of the top frame.



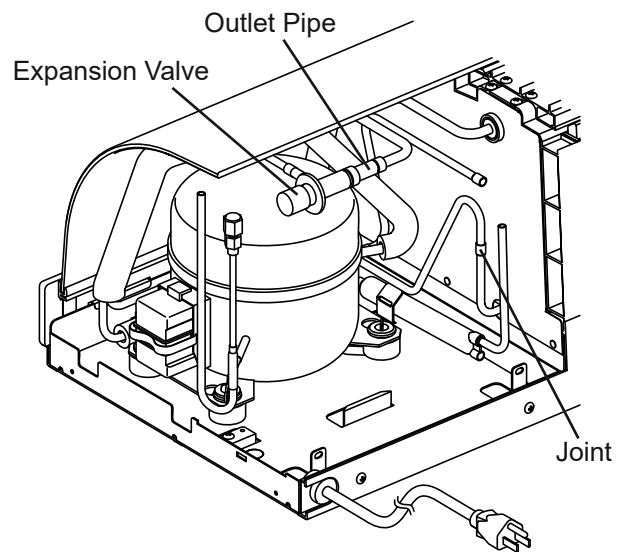
**Fig. 4**

## 7. Refrigeration Assembly

### **IMPORTANT**

Follow the instructions in "DANGER" and "WARNING" for flammable refrigerant use and "III. A. Refrigeration Circuit Service Information".

Remove the sliding door, side cover, top cover, top frame and side frame. Take off the compressor terminal cover and remove the starter and motor protector. Uninsulate the expansion valve and unbraid the outlet pipe (see "C. Constant Pressure Expansion Valve"). Unbraid the joint indicated. Remove the four machine screws securing the refrigeration assembly. The whole refrigeration assembly can be pulled out.



**Fig. 5**

## C. Constant Pressure Expansion Valve

### **IMPORTANT**

Follow the instructions in “DANGER” and “WARNING” for flammable refrigerant use and “III. A. Refrigeration Circuit Service Information”.

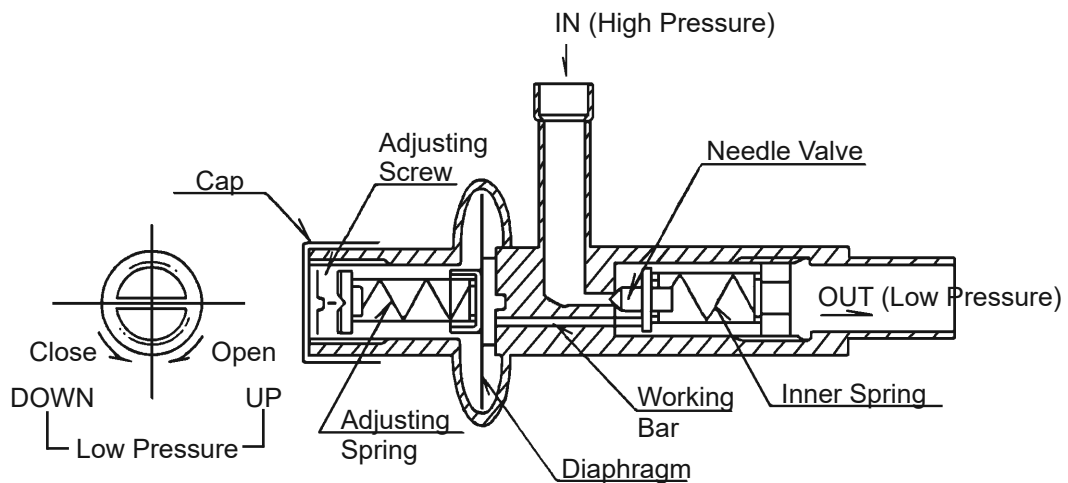
### 1. Specifications

Model:	HYP2-5VHD-1
Manufacturer:	Fuji Koki
Part Number:	P04945-01
Refrigerant:	R600a
Adjustment Range:	0.01 - 0.29MPaG
Pressure Rise by Adjusting Screw:	0.039 - 0.049MPa/tum

### 2. Function

When the low side pressure drops, the constant pressure expansion valve opens and lets the refrigerant flow to keep a constant pressure.

### 3. Construction



**Fig. 6**

## 4. Replacement

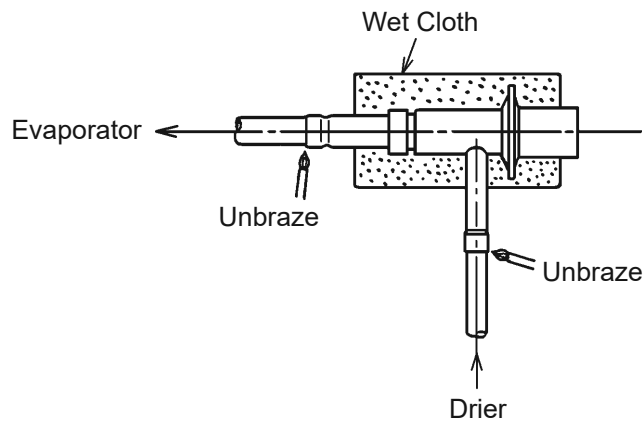
### **NOTICE**

Always protect the valve body by using a damp cloth to prevent the valve from overheating. Do not braze with the valve body exceeding 230°F (110°C).

### **IMPORTANT**

Always install a new drier every time the sealed refrigeration system is opened. Do not replace the drier until after all other repairs or replacement have been made.

- 1) Follow the instructions in “III. A. Refrigeration Circuit Service Information (R600a)”.
- 2) Remove the insulation cover and cap from the expansion valve.
- 3) Remove the expansion valve by unbrazing the inlet and outlet pipes.



**Fig. 7**

## IV. Preparing the Appliance for Periods of Non-Use

When shutting down the appliance for more than one week, follow the instructions below.

<b> WARNING</b>
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When preparing the appliance for long storage, prevent the doors from closing to reduce the risk of children getting injured.
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<b><i>NOTICE</i></b>
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When preparing the appliance for long storage, clean the appliance. See “III. Maintenance and Cleaning Instructions” in the instruction manual for details.
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- 1) Before shutting down the appliance, move all foods into another clean refrigerator or freezer.
- 2) Move the power switch (ground fault circuit interrupter) to the “OFF” position, then unplug the appliance. **WARNING! To reduce the risk of electric shock, do not touch the plug with damp hands.**

## V. Disposal

### **DANGER**

#### **Risk of Fire or Explosion Flammable Refrigerant Used**

- Follow handling instructions carefully in compliance with U.S. government regulations.
- Do not puncture refrigerant tubing. Risk of fire or explosion due to puncture of refrigerant tubing; follow handling instructions carefully.
- Dispose of properly in accordance with federal or local regulations.

#### **Risque De Feu Ou D'Explosion Le Frigorigène Est Inflammable**

- Suivre attentivement les instructions de manipulation conformément à la réglementation gouvernementale.
- Ne pas perforer la tubulure contenant le frigorigène. Risque de feu ou d'explosion si la tubulure contenant le frigorigène est perforée; suivre les instructions de manutention avec soin.
- Éliminer conformément aux règlements fédéraux ou locaux.

### **WARNING**

When preparing the appliance for disposal, remove the doors to reduce the risk of children getting injured.

The appliance contains refrigerant and must be disposed of in accordance with applicable national, state, and local codes and regulations. Refrigerant must be recovered by properly certified service personnel.

## VI. Technical Information

### A. Specifications

#### HNC-\*\*\*BA-L-SLH, HNC-\*\*\*BA-R-SLH with LED

MODEL	HNC-120BA-L-SLH -R-SLH	HNC-150BA-L-SLH -R-SLH	HNC-180BA-L-SLH -R-SLH	HNC-210BA-L-SLH -R-SLH
PRODUCT CODE	L: S109 R: S110	L: S111 R: S112	L: S113 R: S114	L: S115 R: S116
AC SUPPLY VOLTAGE POWER SUPPLY CAPACITY RATED AMPERAGE STARTING AMPERAGE ELECTRIC CONSUMPTION POWER FACTOR	1 Phase 115V 60Hz 0.47kVA (4.1A) 1.0A 15A 100W 86%		1 Phase 115V 60Hz 0.47kVA (4.1A) 1.2A 15A 130W 94%	
PULL DOWN TIME (10°C) SATURATION TEMPERATURE	Approx. 40 min. (Ambient Temp. 27°C, No Load) Approx. 5°C (Ambient Temp. 27°C, No Load)			Measured 20mm above the food mount (normal position) located at the interior bottom center
NET CAPACITY	42 L	57 L	72 L	87 L
EXTERIOR DIMENSIONS (W)	1200 mm	1500 mm	1800 mm	2100 mm
(D)	345 mm			
(H)	270 mm			
INTERIOR DIMENSIONS (W)	845 mm	1145 mm	1445 mm	1745 mm
(D)	288 mm (bottom)			
(H)	157 mm			
EXTERIOR INTERIOR INSULATION	Glass, ABS Plastic, PVC Plastic, Stainless Steel Glass, ABS Plastic, Stainless Steel Polyurethane Foam			
DRAWING NO. (DIMENSIONS)	L: D22783 R: D22784	L: D22785 R: D22786	L: D22787 R: D22788	L: D22789 R: D22790
REFRIGERATION SYSTEM DEFROST SYSTEM	Convection Cooling None			
COMPRESSOR CONDENSER EVAPORATOR REFRIGERANT CONTROL REFRIGERANT TYPE / CHARGE	Hermetic 55W Model CL0547-PA		Hermetic 75W Model CL0768-PA	
	Fin and Tube Type, Cooling Fan Motor x 1 (UPPER) Bare Tube Type, (LOWER) Pipe on Sheet Type Constant Pressure Expansion Valve			
	R600a / 40 g	R600a / 42 g	R600a / 45 g	R600a / 50 g
ELECTRIC CIRCUIT PROTECTION COMPRESSOR PROTECTION	Ground Fault Circuit Interrupter, Ground Wire Motor Protector			
SLIDING DOOR	2 pcs.	4 pcs.		
NET WEIGHT / GROSS WEIGHT	32 kg / 43 kg	37 kg / 51 kg	42 kg / 59 kg	47 kg / 65 kg
PACKAGE SHIPPING DIMENSIONS (W)	Carton (Wooden Pallet)			
(D)	1300 mm	1600 mm	1900 mm	2200 mm
(H)	430 mm			
	517 mm			
CERTIFICATION	NSF and cETLus certified			
ACCESSORIES FOOD MOUNT	3 pcs.	4 pcs.	5 pcs.	6 pcs.
VINYL HOSE	1 pc.			
JOINT	2 pcs.			
AMBIENT TEMP. VOLTAGE VARIATION	10 - 27°C Rated voltage $\pm 10\%$			

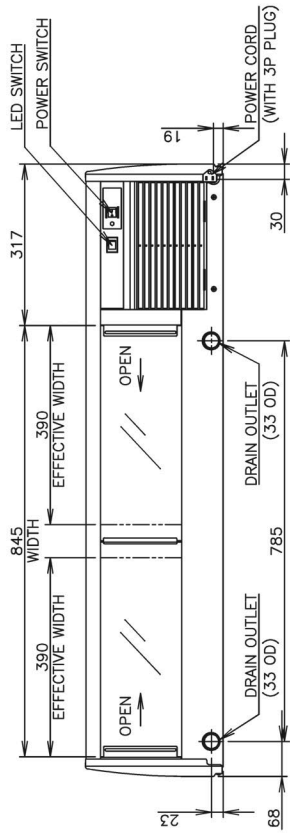
\* The electrical specifications were determined at an ambient temperature of 27°C according to the electrical appliance technical standards.

\* The food temperature is controllable by turning over the food mounts.

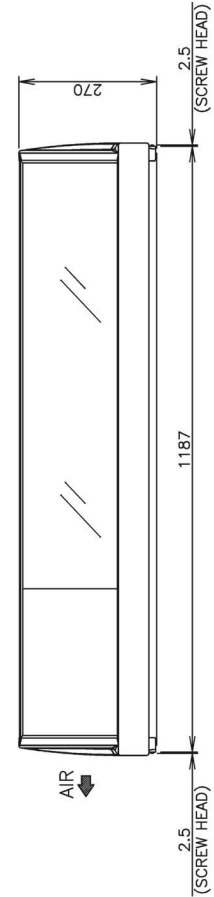
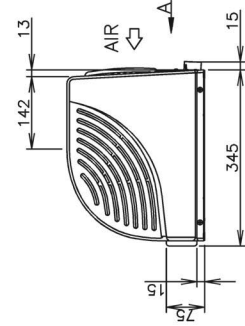
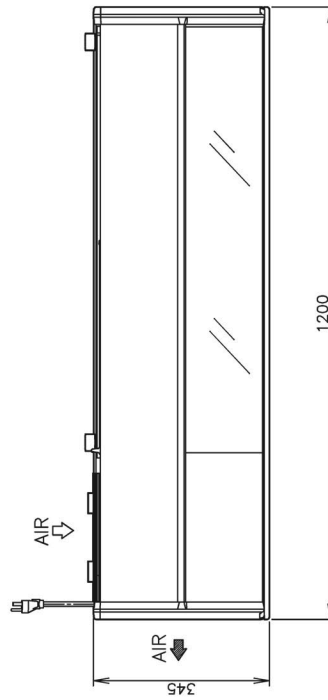


# B. Dimensions

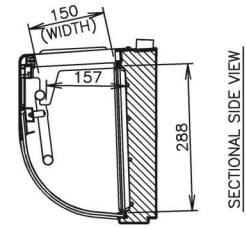
## 1. HNC-120BA-L-SLH



VIEW A(REAR)



(DISPLAY SIDE)

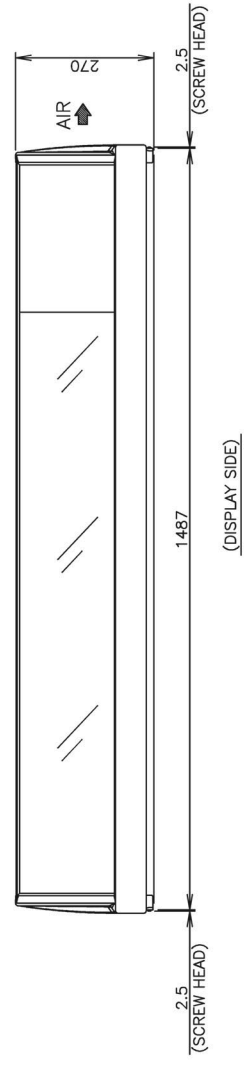
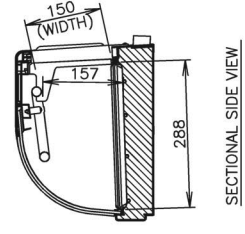
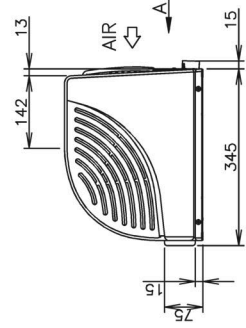
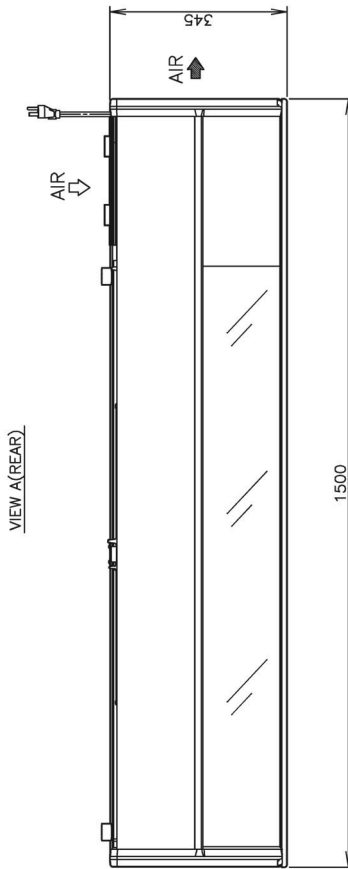
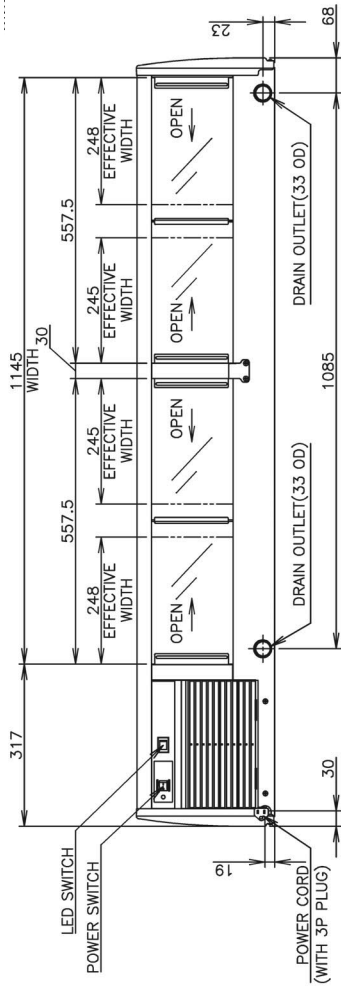


SECTIONAL SIDE VIEW

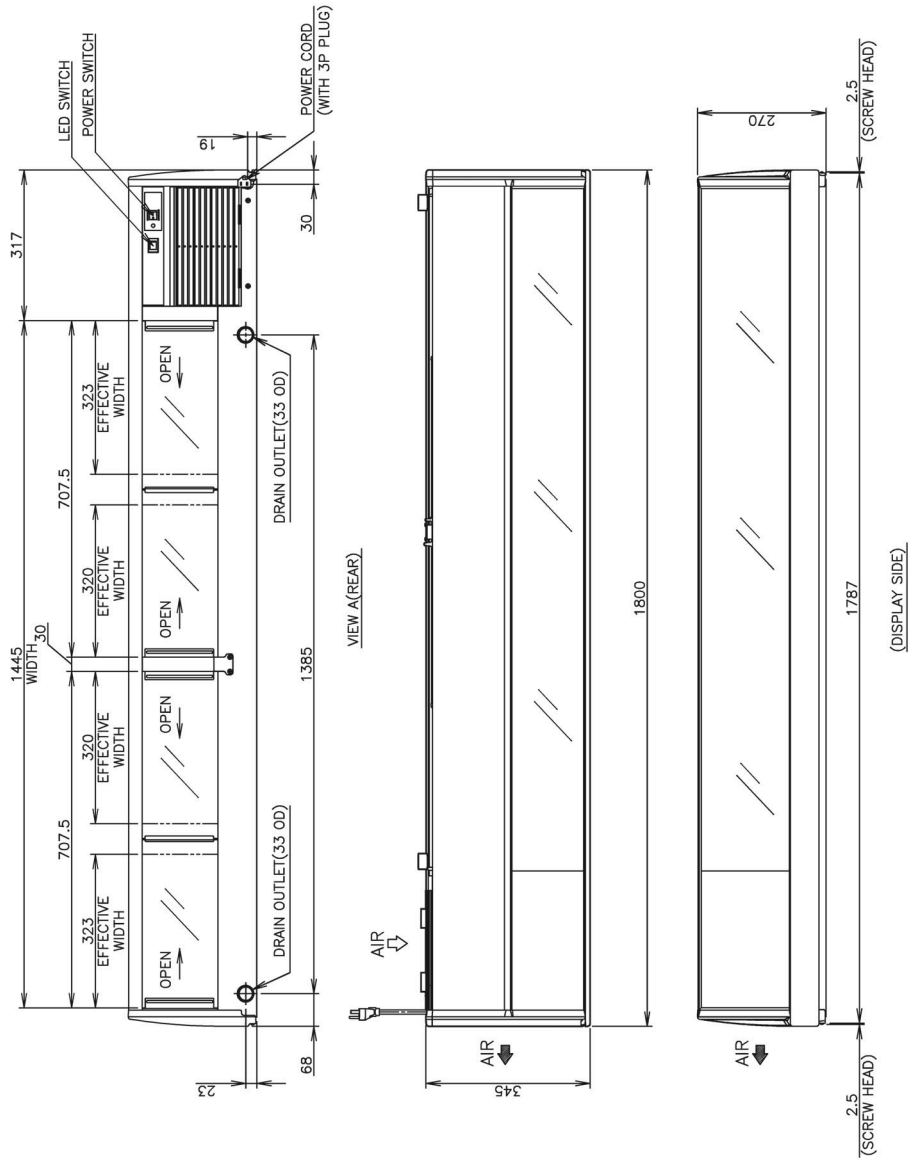




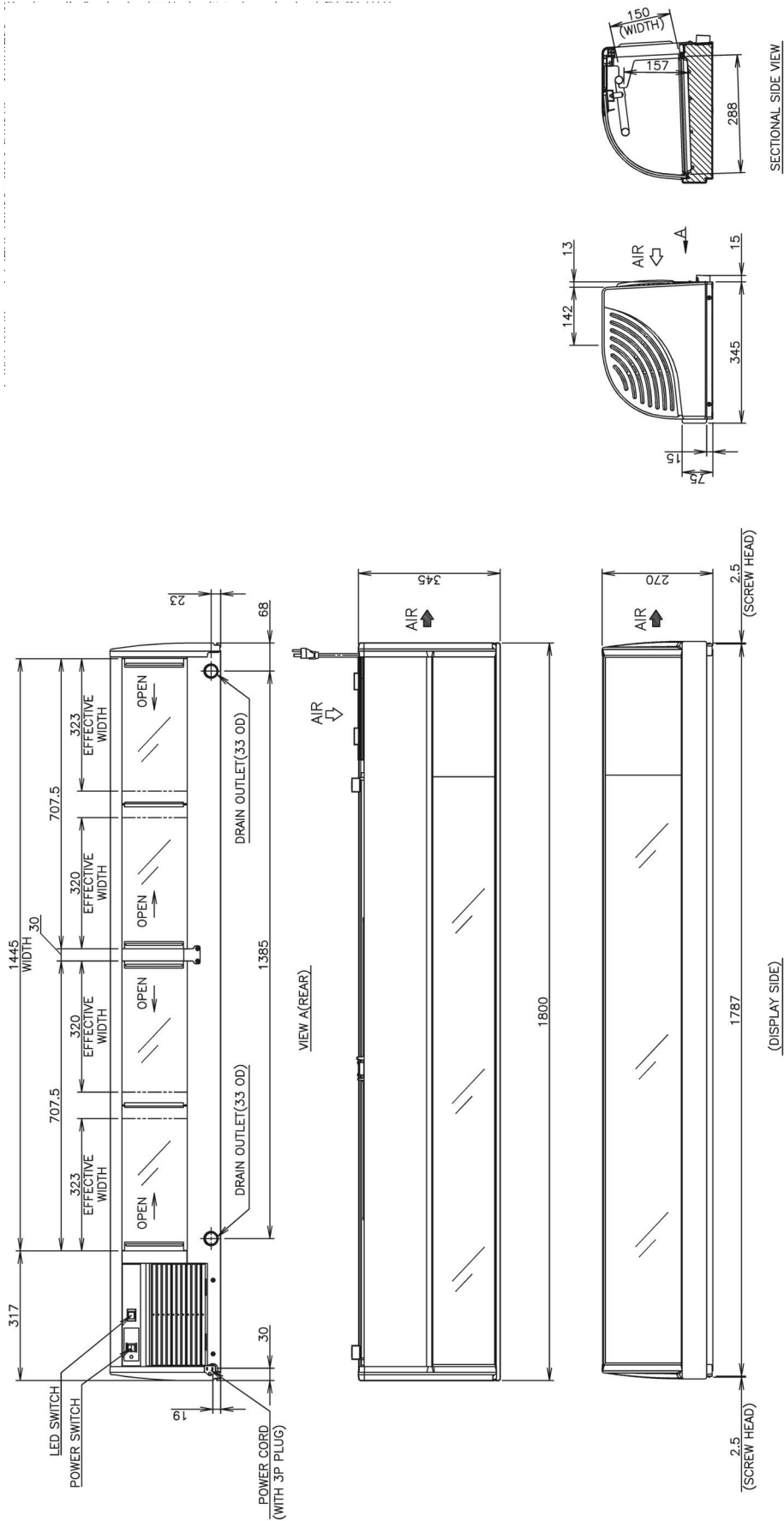
# 4. HNC-150BA-R-SLH



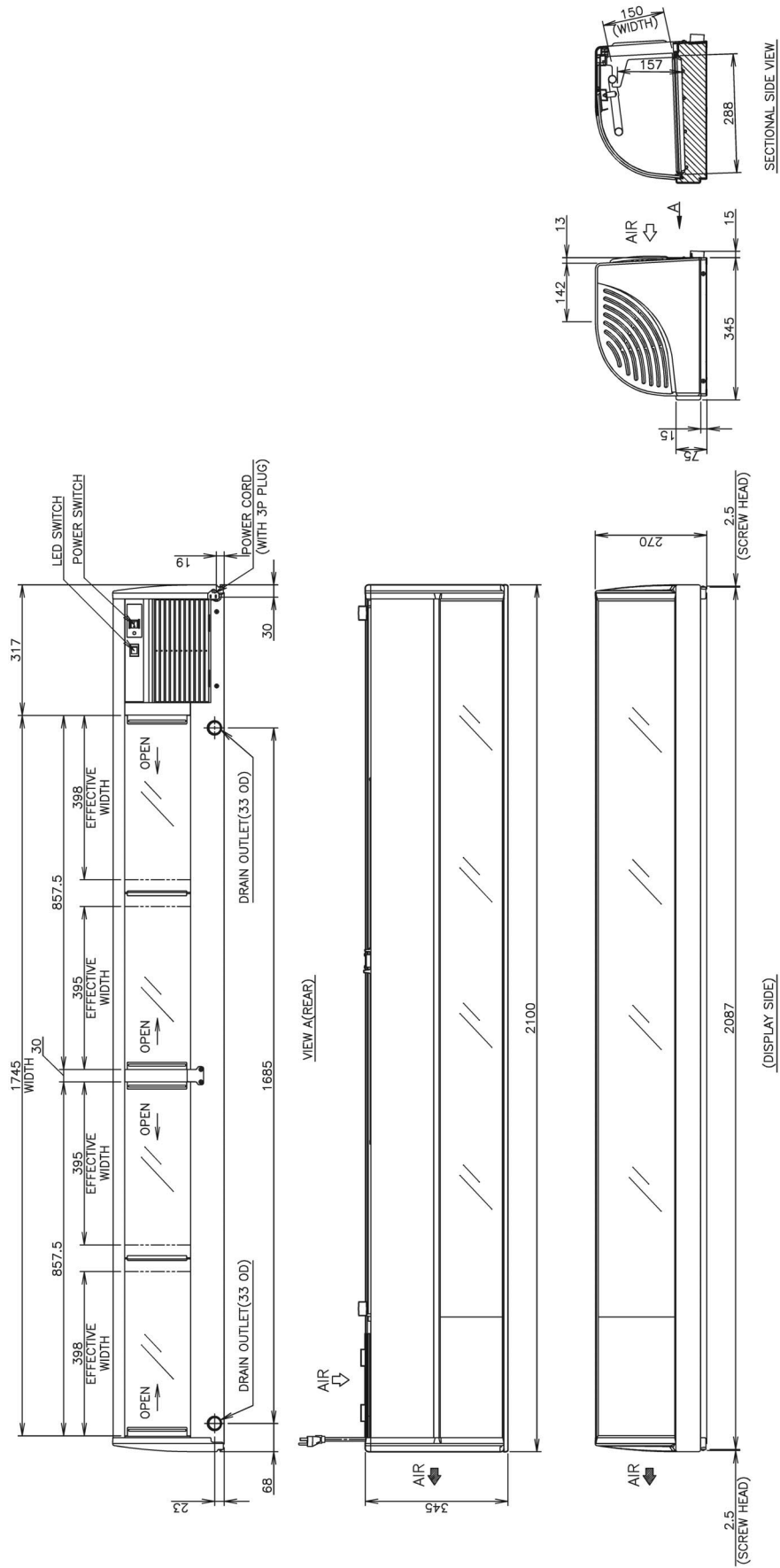
# 5. HNC-180BA-L-SLH



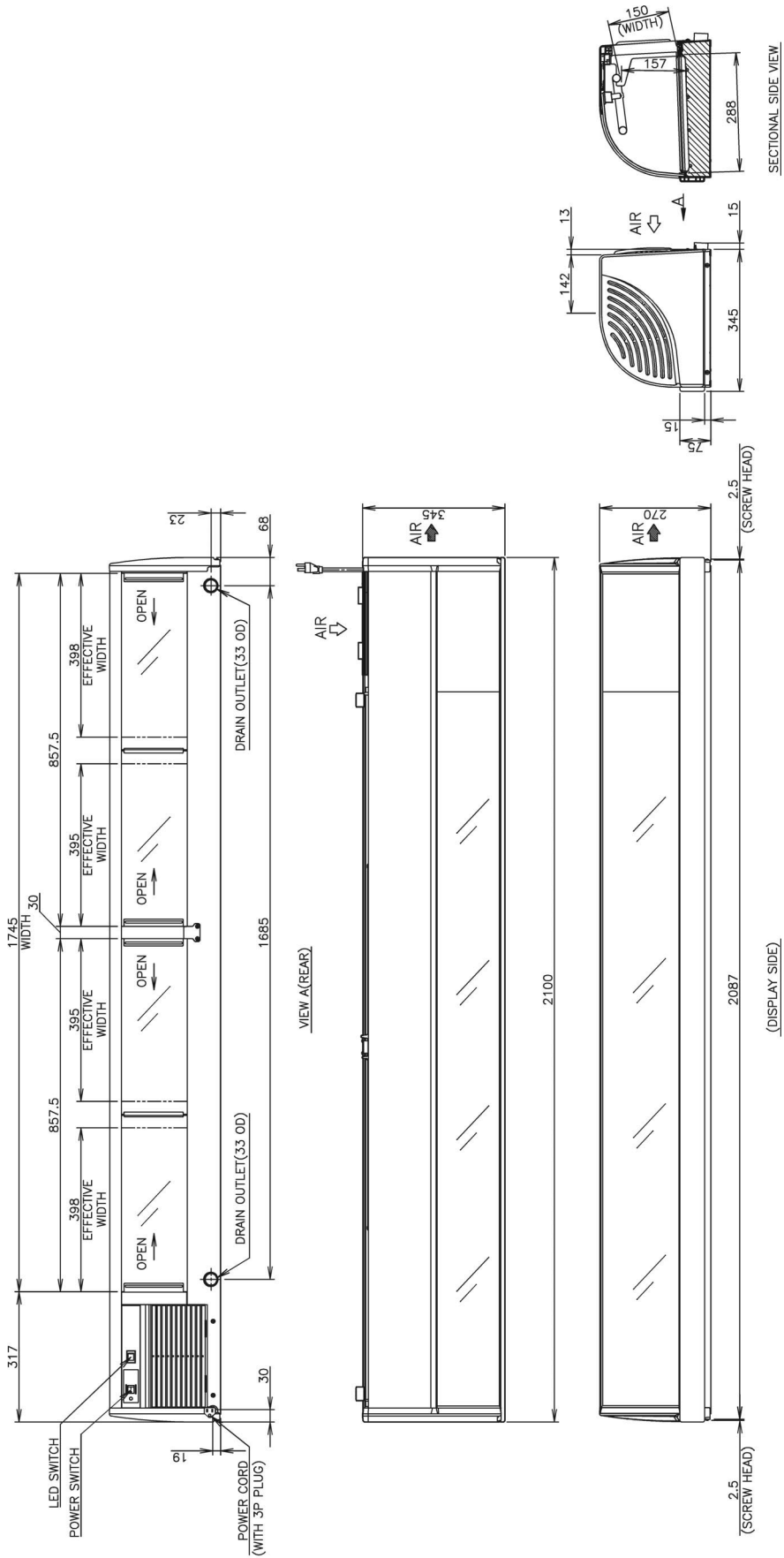
# 6. HNC-180BA-R-SLH



# 7. HNC-210BA-L-SLH



# 8. HNC-210BA-R-SLH





# C. Wiring Diagrams

HNC-\*\*\*BA-L-SLH, HNC-\*\*\*BA-R-SLH

