HOSHIZAKI

Instruction Manual

Steelheart Series
Refrigerated Kitchen Equipment

Models
B Series Refrigerated Equipment Stand

hoshizakiamerica.com

Issued: 8-1-2025

⚠ 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.hoshizakiamerica.com. No installation, operation, or maintenance should be undertaken until the technician has thoroughly read this Instruction Manual. No service should be undertaken until the technician has thoroughly read the service manual available at www.hoshizakiamerica.com. Likewise, the owner/manager should not proceed to operate the appliance until the installer has instructed them on its proper operation. Failure to install, operate, 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 installation, operation, 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

E-mail: tech-support@hoshizaki.com

HOSHIZAKI AMERICA, INC.
618 Highway 74 South
Peachtree City, GA 30269
Attn: Hoshizaki Technical Support Department

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 installed and operated. Read the warnings and guidelines contained in this manual carefully as they provide essential information for the continued safe use and maintenance of the appliance. Retain this manual for any further reference that may be necessary.

CONTENTS

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.

	**R-290 Class A3 Flammable Refrigerant Used**
⚠ DANGER	**Indicates a hazardous situation that, if not avoided, will result in death or serious injury.**
⚠ WARNING	**Indicates a hazardous situation that, if not avoided, could result in death or serious injury.**
NOTICE	**Indicates a situation that, if not avoided, could result in damage to the appliance or property.**
IMPORTANT	**Indicates important information about the use and care of the appliance.**

⚠ DANGER

Risk of Fire or Explosion
Flammable Refrigerant Used

- Only qualified service technicians should install and service the appliance.
- No installation, operation, or maintenance should be undertaken until the technician has thoroughly read this Instruction Manual. All safety precautions must be followed.
- No service should be undertaken until the technician has thoroughly read the Service Manual available at www.hoshizakiamerica.com. All safety precautions must be followed.
- This appliance to be installed in accordance with the Safety Standard for Refrigeration Systems ANSI/ASHRAE 15.
- Follow handling instructions carefully in compliance with national regulations.
- Do not use mechanical devices or other means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
- Do not puncture refrigerant tubing. Risk of fire or explosion due to puncture of refrigerant tubing; follow handling instructions carefully.
- Servicing shall be done by trained service personnel with certified competence in handling flammable refrigerants to minimize the risk of possible ignition due to incorrect parts or improper service.
- Component parts shall be replaced with like components. so as to minimize the risk of possible ignition due to incorrect parts.
- Dispose of properly in accordance with federal or local regulations.
- Do not pierce or burn.
- Be aware that refrigerants may not contain an odor.
- Do not damage the refrigeration circuit.
- See nameplate for R-290 refrigerant charge:
  - If greater than 114 g (4 oz.), do not install in public corridor or lobby.
  - If greater than 152 g (5.3 oz.), do not install within 6 m (20 ft) of open flame.
- The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance, or an operating electric heater).

⚠ DANGER continued

- Do not place any potential ignition sources in or near the appliance.
- Keep clear of obstruction all ventilation openings in the appliance enclosure or in the structure for building-in.
- No potential sources of ignition are to be used in the searching for or detection of refrigerant leaks.
- Do not use electrical appliances inside the appliance unless they are of the type recommended by the manufacturer.
- Do not store explosive substances such as aerosol cans with a flammable propellant in this appliance.
- Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges, or any other adverse environmental effects. The check shall also take into account the effects of aging or continual vibration from sources such as compressors or fans.
- Ensure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any hot work. A degree of ventilation shall continue during the period that the work is carried out. The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.

Risque D'Incendie ou D'Explosion
Fluide Frigorigène Inflammable Utilisé

- Seuls des techniciens de service qualifiés doivent installer et entretenir l'appareil.
- Aucune installation, opération ou maintenance ne doit être entreprise avant que le technicien n'ait lu attentivement ce manuel d'instructions. Toutes les précautions de sécurité doivent être suivies.
- Aucune opération d'entretien ne doit être entreprise avant que le technicien n'ait lu attentivement le manuel d'entretien disponible sur le site www.hoshizakiamerica.com. Toutes les précautions de sécurité doivent être suivies.
- Cet appareil doit être installé conformément à la norme de sécurité pour les systèmes de réfrigération ANSI/ ASHRAE 15.
- Suivez attentivement les instructions de manutention conformément aux réglements nationaux.
- Ne pas utiliser de dispositifs mécaniques ou d'autres moyens pour accélérer le processus de dégivrage ou pour nettoyer, autres que ceux recommandés par le fabricant.
- Ne pas perforer la conduite de fluide frigorigène. Risque d'incendie ou d'explosion en cas de perforation d'une canalisation de fluide frigorigène; suivez attentivement les instructions de manutention.
- L'entretien doit être effectué par du personnel formé et certifié pour la manipulation de réfrigérants inflammables afin de réduire au minimum le risque d'inflammation dû à des pièces incorrectes ou à un entretien inadéquat.

⚠ DANGER continued

- Les pièces doivent être remplacées par des pièces similaires, de manière à réduire au minimum le risque d'inflammation dû à des pièces incorrectes.
- Mettre au rebut conformément aux réglements fédéraux ou locaux.
- Ne pas percer ou brûler.
- Attention, les fluides frigorigénes peuvent ne pas dégager d'odeur.
- Ne pas endommager les composants du circuit de réfrigération.
- Voir plaque signalétique pour la charge de réfrigérant R-290:
  - Si elle est supérieure à 114 g (4 oz.), ne pas l'installer dans un couloir public ou un hall d'entrée.
  - Si elle est supérieure à 152 g (5,3 oz.), ne pas l'installer à moins de 6 m (20 pi) d'une flamme nue.
- L'appareil doit être entreposé dans un local ne contenant pas de sources d'inflammation permanentes (flammes nues, appareil à gaz ou dispositif de chauffage électrique en fonctionnement, par exemple).
- Ne placer aucune source d'inflammation potentielle à l'intérieur ou à proximité de l'appareil.
- Ne pas obstruer les ouvertures de ventilation dans l'enceinte de l'appareil ou dans la structure d'encastrement.
- Aucune source potentielle d'inflammation ne doit être utilisée pour rechercher ou détecter des fuites de réfrigérant.
- Ne pas utiliser d'appareils électriques à l'intérieur de l'appareil, sauf s'ils sont du type recommandé par le fabricant.
- Ne pas entreposer dans cet appareil des substances explosives telles que des bombes aérosols contenant un gaz propulseur inflammable.
- Vérifier que le câblage ne sera pas soumis à l'usure, à la corrosion, à une pression excessive, à des vibrations, à des arêtes vives ou à tout autre effet environnemental négatif. Le contrôle doit également prendre en compte les effets du vieillissement ou des vibrations continues provenant de sources telles que les compresseurs ou les ventilateurs.
- S'assurer que la zone est à l'air libre ou qu'elle est correctement ventilée avant de pénétrer dans le système ou d'effectuer un travail à chaud. Une certaine ventilation doit être maintenue pendant la durée des travaux. La ventilation doit permettre de disperser en toute sécurité tout réfrigérant libéré et, de préférence, de l'expulser dans l'atmosphère.

⚠ 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:

- This appliance is not intended for use above 2,000 m (6,561 ft). Installation above 2,000 m (6,561 ft) may adversely affect safety, performance, and component life.
- 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.
- 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.
- To reduce the risk of electric shock, do not touch the control switch or plug with damp hands.
- Unplug the appliance before servicing.
- 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.
- Do not use an extension cord.
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent, or similarly qualified persons in order to avoid a hazard. Upon replacement, the GREEN ground wire in the power cord must be connected to the designated grounding screw.
- Do not make any alterations to the appliance. Alterations could result in electric shock, injury, fire, or damage to the appliance.
- 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 or the drawers.

⚠ WARNING continued

- 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.
- Do not splash, pour, or spray water directly onto or into the appliance. This might cause short circuit, electric shock, corrosion, or failure.
- Children should be supervised to ensure that they do not play with the appliance.
- Do not climb, stand, or hang on the appliance or drawers 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 drawers or when handling food pans. Be careful when opening and closing the drawers when children are in the area.
- Open and close the drawers with care. Opening the drawers 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.
- The appliance is designed only for temporary storage 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.
- A minimum of 4" (11 cm) clearance is required between the bottom of the cooking equipment heating element and the appliance top. When setting up cooking equipment, follow the cooking equipment manufacturer's setup procedure. Temperature at the appliance top must not exceed 180°F (82°C). For optimum performance, installation of a heat shield (supplied by others) is recommended.
- For cooking equipment on the cabinet, do not exceed the total maximum weight listed for your model.

Total Maximum Weight for Cooking Equipment on the Cabinet	
C_36B(-L), C_49B(-L), C_60B(-L)	1000 lb. (454 kg)
C_72B(-L), CR85B(-L)	1,500 lb. (680 kg)
CR98B(-L), CR110B(-L)	2,000 lb. (907 kg)

- Do not overload any single drawer with product. Depending on the weight of product in the drawers, secure the appliance as necessary to prevent it from overturning. Do not open more than one drawer at a time.
- Food storage and handling must comply with applicable codes and regulations.
- Do not put warm or hot foods in the cabinet. Let them cool first, or they will raise the cabinet temperature and could deteriorate other foods in the cabinet or overload the appliance.
- Do not store items near air outlets. Otherwise, items may freeze up and crack or break causing a risk of injury or contamination of other food.
- Do not block air inlets or outlets, otherwise cooling performance may be reduced.

⚠ WARNING, continued

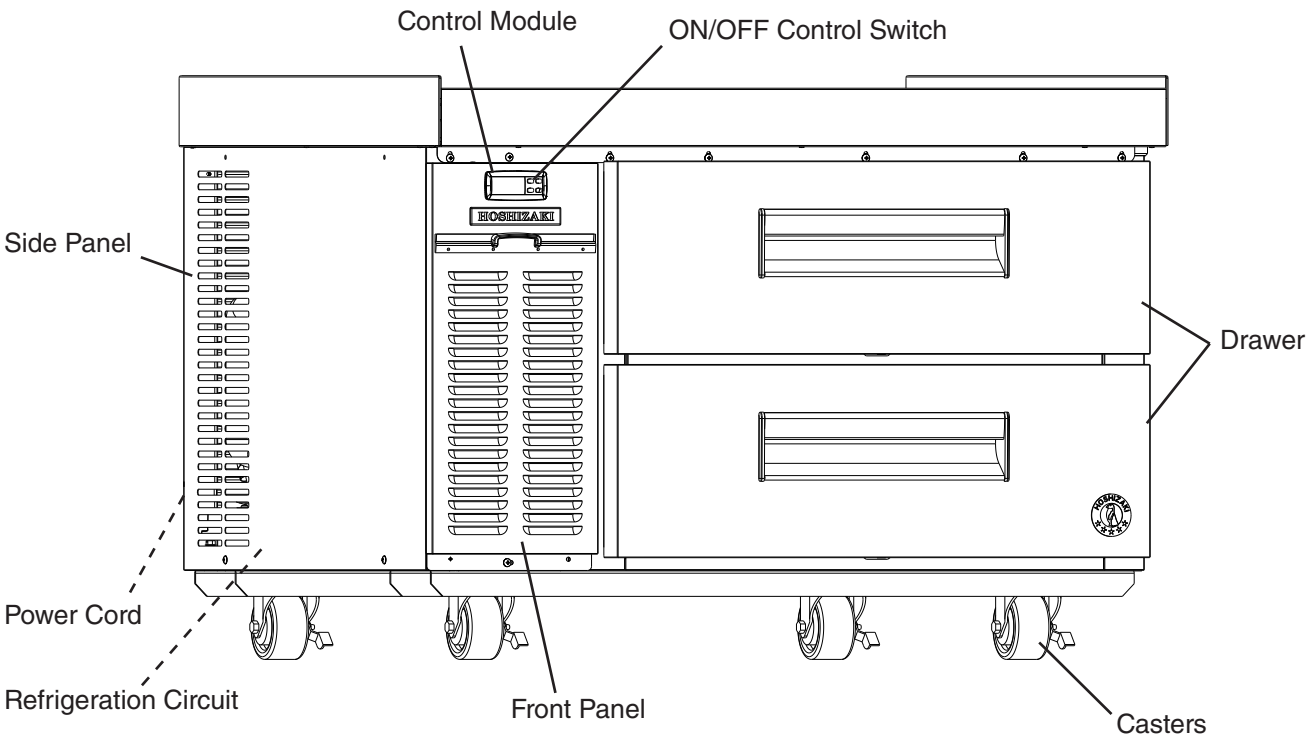
- All foods should be wrapped in plastic film or stored in sealed containers. Otherwise foods may dry up, pass their smells onto other foods, cause frost to develop, result in poor appliance performance, or increase the likelihood of cross-contamination. Certain dressings and food ingredients, if not stored in sealed containers, may accelerate corrosion of the evaporator, resulting in failure.
- All casters on the appliance are lockable. After positioning the appliance in its final location, lock all casters.

NOTICE

- Protect the floor when moving the appliance to prevent damage to the floor.
- Keep ventilation openings, in the appliance enclosure or in the built-in structure, clear of obstruction. The factory-installed rear bumpers must be in place to ensure proper rear clearance. Blockage of airflow could negatively affect performance and damage the appliance.
- To prevent deformation or cracks, do not spray insecticide onto the plastic parts or let them come into contact with oil.
- To avoid damage to the gasket, use only the drawer handle when opening and closing.
- To avoid damage to the top seal, do not lift the appliance by the top panel or remove the top panel.
- Do not leave the drawers open.

I. Specifications

A. Construction



Model Shown: CR36B-L

B. Electrical and Refrigerant Data

The nameplate provides electrical and refrigerant data and Year of Manufacture (YOM). The nameplate is located on the rear panel. For certification marks, see the nameplate.

We reserve the right to make changes in specifications and design without prior notice.

Model Number	**CR36B(-L), CR49B(-L), CR60B(-L)**	**CR72B(-L), CR85B(-L)**
AC SUPPLY VOLTAGE	~115/60/1	~115/60/1
AMPERES	3	3
DESIGN PRESSURE kPa (PSI)	HI-2482 (360) LO-1310 (190)	HI-2482 (360) LO-1310 (190)
REFRIGERANT g (oz.)	R-290 68 (2.4)	R-290 88 (3.1)
CLIMATIC CLASS	5	5
INSULATION BLOWING GAS	HFO 1233zd(E)	HFO 1233zd(E)
MINIMUM ROOM FLOOR AREA m^2 (ft^2)	3.3 (35)	4.2 (45.3)

Model Number	**CR98B(-L), CR110B(-L)**
AC SUPPLY VOLTAGE	~115/60/1
AMPERES	3
DESIGN PRESSURE kPa (PSI)	HI-2482 (360) LO-1310 (190)
REFRIGERANT g (oz.)	R-290 120 (4.2)
CLIMATIC CLASS	5
INSULATION BLOWING GAS	HFO 1233zd(E)
MINIMUM ROOM FLOOR AREA m^2 (ft^2)	5.7 (61.8)

Model Number	**CF36B(-L), CF49B(-L), CF60B(-L), CF72B(-L)**
AC SUPPLY VOLTAGE	~115/60/1
AMPERES	4
DESIGN PRESSURE kPa (PSI)	HI-2482 (360) LO-1310 (190)
REFRIGERANT g (oz.)	R-290 68 (2.4)
CLIMATIC CLASS	5
INSULATION BLOWING GAS	HFO 1233zd(E)
MINIMUM ROOM FLOOR AREA m^2 (ft^2)	3.3 (35)

Note: Climatic Class 5: This appliance electrical safety tested for operation in maximum ambient temperature of 104°F (40°C) with 40% relative humidity. However, normal operating ambient temperature must be within 45°F to 100°F (7°C to 38°C). Operation of the appliance, for extended periods, outside of these normal temperature ranges may affect appliance performance.

II. Installation Instructions

A. Location

This appliance is approved for indoor use.

This appliance uses an A3 flammable refrigerant. For refrigerant charge and minimum room floor area, see the table below.

⚠ DANGER

R-290 Class A3 Flammable Refrigerant Used

Model	R-290 Refrigerant Charge g (oz.)	Minimum Room Floor Area (operating or storage) Superficie Minimale du Local (service ou stockage) m^2 (ft^2); m^2 (pi^2)
C_36B(-L), C_49B(-L), C_60B(-L)	68 (2.4)	3.3 (35)
C_72B(-L), CR85B(-L),	88 (3.1)	4.2 (45.3)
CR98B(-L), CR110B(-L)	120 (4.2)	5.7 (61.8)

≥ Area m^2 (ft^2) (see "Minimum Room Floor Area" above)
≥ Superficie m^2 (pi^2) (voir « Superficie Minimale du Local » ci-dessus)

⚠ DANGER continued

R-290 Refrigerant Charge:

- If greater than 114 g (4 oz.), do not install in public corridor or lobby.
- If greater than 152 g (5.3 oz.), do not install within 6 m (20 ft) of open flame.

Charge de réfrigérant R-290:

- Si elle est supérieure à 114 g (4 oz.), ne pas l'installer dans un couloir public ou un hall d'entrée.
- Si elle est supérieure à 152 g (5,3 oz.), ne pas l'installer à moins de 6 m (20 pi) d'une flamme nue.

This appliance is not intended for use above 2,000 m (6,561 ft). Installation above 2,000 m (6,561 ft) may adversely affect safety, performance, and component life.

⚠ WARNING

- The appliance must be installed in accordance with applicable national, state, and local 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 or the drawers.
- Do not tilt the appliance more than 45°.
- The appliance is not intended for outdoor use.
- This appliance to be installed in accordance with the Safety Standard for Refrigeration Systems ANSI/ASHRAE 15
- Normal operating ambient temperature: 45°F to 100°F (7°C to 38°C) Operation of the appliance, for extended periods, outside of this normal temperature range may affect appliance performance.

- The appliance must not be located next to ovens, grills, or other high heat producing equipment.
- The location must provide a firm and level foundation for the appliance.
- The appliance must not be located in a corrosive environment.
- Minimum Clearance

Top	Side	Rear
WARNING! A minimum of 4" (11 cm) clearance is required between the bottom of the cooking equipment heating element and the appliance top. When setting up cooking equipment, follow the cooking equipment manufacturer's setup procedure.	0" (0 mm)	The factory-installed rear bumpers must be in place to ensure proper rear clearance.

- **WARNING! Temperature at the appliance top must not exceed 180°F (82°C). For optimum performance, installation of a heat shield (supplied by others) is recommended.**
- **WARNING! For cooking equipment on the cabinet, do not exceed the total maximum weight listed for your model.**

Total Maximum Weight for Cooking Equipment on the Cabinet		
C_36B(-L), C_49B(-L), C_60B(-L)	**C_72B(-L), CR85B(-L)**	**CR98B(-L), CR110B(-L)**
1000 lb. (454 kg)	1,500 lb. (680 kg)	2,000 lb. (907 kg)

B. Checks Before Installation

⚠ WARNING

The rating label and nameplate provide electrical and refrigerant data. The rating label can be seen by removing the front panel. The nameplate is located on the rear panel. For certification marks, see the nameplate. For electrical connection details, see "I.D. Electrical Connection." We reserve the right to make specification and design changes without prior notice.

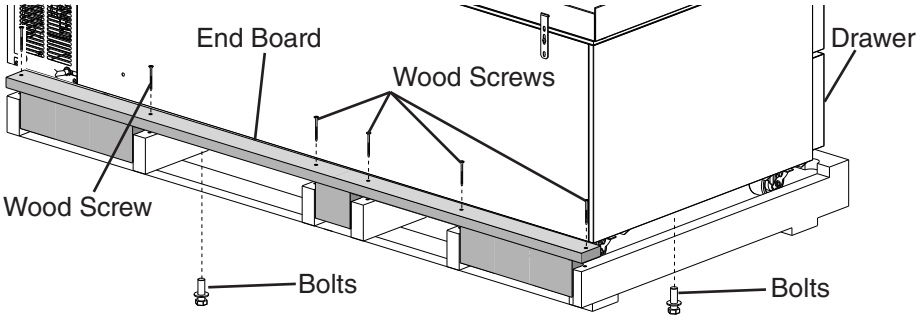
- Visually inspect the exterior of the shipping package and immediately report any damage to the carrier. Upon opening the package, any concealed damage should also be immediately reported to the carrier.
- Remove the shipping carton, tape, and packing material. Also remove the protective plastic film from both the exterior panels and the interior drawer panel. If the appliance is exposed to the sun or to heat, remove the film after the appliance cools.
- Remove all accessory containers before discarding the packing materials. Dispose of all packing materials in a proper and environmentally responsible manner.
- Check for missing or damaged accessories.

C. Setup

1. Remove the Appliance from the Pallet

1) Move as close to the final location as possible.
2) Remove the wood screws and end board. See Fig. 1.
3) Remove the bolts securing the appliance to the pallet.
4) Secure the drawers so that they will not open during removal from the pallet.
5) While supporting the appliance to keep it from tipping, slide the appliance off of the pallet and lower the casters to the floor. ***NOTICE!*** **Do not allow the drawers to bear the weight of the appliance.**

Fig. 1



2. Check the Refrigeration Circuit

- Visually check that the refrigerant lines do not rub or touch other lines or surfaces and that the condenser fan blade turns freely.
- Check that the compressor is snug on all mounting pads.

3. Position the Appliance and Lock All Casters

All casters on the appliance are lockable. After positioning the appliance in its final location, lock all casters.

D. Electrical Connection

⚠ WARNING

- Electrical connection must meet national, state, and local electrical code requirements. Failure to meet these code requirements could result in death, electric shock, serious injury, fire, or severe damage to equipment.
- 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.
- To reduce the risk of electric shock, do not touch the control module or plug with damp hands.
- 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.
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent, or similarly qualified persons in order to avoid a hazard. Upon replacement, the GREEN ground wire in the power cord must be connected to the designated grounding screw.

- Usually an electrical permit and services of a licensed electrician are required.
- The maximum allowable voltage variation is ±10 percent of the nameplate rating.

E. Final Checklist

1) Have the appliance and accessories been checked for shipping damage?
2) Is the appliance level? Have all casters been locked?
3) Is the appliance in a site where the ambient temperature is within 45°F to 100°F (7°C to 38°C) all year around?
4) Have the shipping carton, tape, and packing material been removed from the appliance? Has the protective plastic film been removed from both the exterior panels and the interior drawer panel?
5) Is there at least 4" (11 cm) clearance between the bottom of the cooking equipment heating element and the appliance top? Has the cooking equipment been set up per the cooking equipment manufacturer's setup procedure? Are the factory-installed rear bumpers in place to ensure proper rear clearance?
6) Is the temperature at the appliance top 180°F (82°C) or less? Has a heat shield (supplied by others) been installed?
7) For cooking equipment on the cabinet, is the total weight equal to or less than the total maximum weight listed for your model?

Total Maximum Weight for Cooking Equipment on the Cabinet		
C_36B(-L), C_49B(-L), C_60B(-L)	**C_72B(-L), CR85B(-L)**	**CR98B(-L), CR110B(-L)**
1000 lb. (454 kg)	1,500 lb. (680 kg)	2,000 lb. (907 kg)

8) Has the power supply voltage been checked or tested against the nameplate rating? Is the power supply a properly grounded, independent wall outlet? Does the electrical connection meet all national, state, and local code and regulation requirements?
9) Is the compressor snug on all mounting pads? Have the refrigerant lines been checked to make sure they do not rub or touch other lines or surfaces? Has the condenser fan blade been checked to make sure it turns freely?
10) Are all components and fasteners securely in place?
11) Has the end user been given the instruction manual, and instructed on how to operate the appliance and the importance of the recommended periodic maintenance?
12) Has the end user been given the name and telephone number of an authorized service agent?
13) Has the warranty card been filled out and forwarded to the factory for warranty registration?

III. Operating Instructions

R-290 Class A3 Flammable Refrigerant Used

⚠ DANGER

Risk of Fire or Explosion Flammable Refrigerant Used

- Be sure to follow all Important Safety Information located at the beginning of this manual.
- Failure to install, operate, and maintain the appliance in accordance with this manual will adversely affect safety, performance, component life, and warranty coverage.
- Keep clear of obstruction all ventilation openings in the appliance enclosure or in the structure for building-in.

Risque D'Incendie ou D'Explosion. Fluide Frigorigène Inflammable Utilisé.

- Veillez à respecter toutes les consignes de sécurité importantes figurant au début de ce manuel.
- Le fait de ne pas installer, utiliser et entretenir l'appareil conformément à ce manuel aura des conséquences négatives sur la sécurité, les performances, la durée de vie des composants et la couverture de la garantie.
- Ne pas obstruer les ouvertures de ventilation dans l'enceinte de l'appareil ou dans la structure d'encastrement.

A. Important Notes About Usage

⚠ WARNING

- A minimum of 4" (11 cm) clearance is required between the bottom of the cooking equipment heating element and the appliance top. When setting up cooking equipment, follow the cooking equipment manufacturer's setup procedure. Temperature at the appliance top must not exceed 180°F (82°C). For optimum performance, installation of a heat shield (supplied by others) is recommended.
- For cooking equipment on the cabinet, do not exceed the total maximum weight listed for your model.

Total Maximum Weight for Cooking Equipment on the Cabinet		
C_36B(-L), C_49B(-L), C_60B(-L)	**C_72B(-L), CR85B(-L)**	**CR98B(-L), CR110B(-L)**
1000 lb. (454 kg)	1,500 lb. (680 kg)	2,000 lb. (907 kg)

- Do not overload any single drawer with product. Depending on the weight of product in the drawers, secure the appliance as necessary to prevent it from overturning. Do not open more than one drawer at a time.
- The appliance is designed only for storage 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 put warm or hot foods in the cabinet. Let them cool first, or they will raise the cabinet temperature and could deteriorate other foods in the cabinet or overload the appliance.

NOTICE

- Keep ventilation openings, in the appliance enclosure or in the built-in structure, clear of obstruction. Blockage of airflow could negatively affect performance and damage the appliance.
- To prevent deformation or cracks, do not spray insecticide onto the plastic parts or let them come into contact with oil.
- To avoid damage to the gasket, use only the drawer handle when opening and closing.
- Do not leave the drawers open.

B. Startup

⚠ WARNING
• All parts are factory-adjusted. Improper adjustments may adversely affect safety, performance, component life, and warranty coverage. • Allow the appliance to cool down prior to loading it with food products.

1) Plug the appliance into the electrical outlet. **WARNING! To reduce the risk of electric shock, do not touch the plug with damp hands.** At startup, there is a slight delay before the compressor starts.

C. Controls and Adjustments

1. Temperature Display

The cabinet temperature is displayed on the control module. See Fig. 2. The display default is °F, but it can be changed to read °C. To change, see "II.C.3. Changing the Temperature Display Scale (°F or °C)."

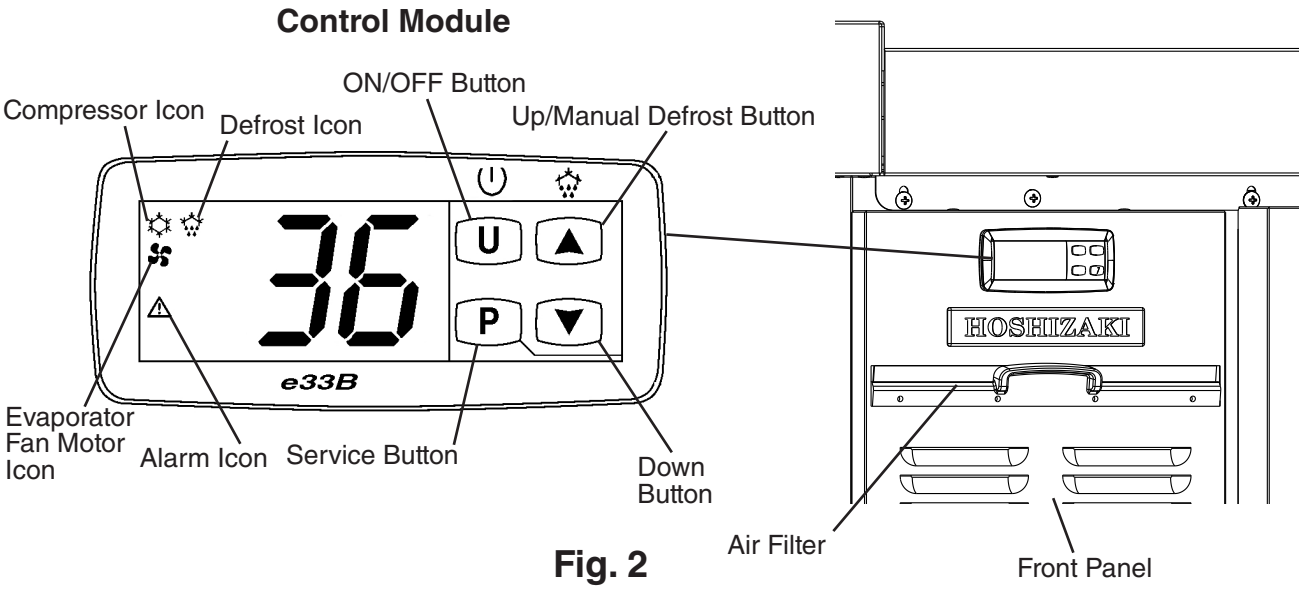


Fig. 2

2. Adjusting the Temperature Setpoint

The temperature setpoint is used to adjust the amount of cooling for the cabinet.

Note: The temperature differential for the compressor to turn on or off is:

Refrigerator: ±2.7°F (±1.5°C) of the temperature setpoint.

Freezer: ±2.2°F (±1.2°C) of the temperature setpoint.

For example, a refrigerator temperature setpoint of 34°F (1.1°C), the compressor turns on at 36.7°F (2.6°C) and the compressor turns off at 31.3°F (-0.4°C). If necessary, adjust the temperature setpoint temperature as follows:

a) To change the temperature setpoint, press the down button briefly and then release. SP1 flashes for a few seconds, then the current temperature setpoint appears. Press the up or down button until the desired value is displayed. After 10 seconds or the "P" button is pressed, the display returns to the current cabinet temperature and the temperature setpoint is saved. ***NOTICE!*** **Do not adjust the temperature setpoint more than 2°F (1°C) at a time. Allow the temperature to stabilize for a minimum of 8 hours before making further temperature setpoint adjustments.**

Model	Temperature Setpoint Range	Factory Default Temperature Setting
Refrigerator	28°F to 45°F (-2.2°C to 7.2°C)	36°F (2.2°C)
Freezer	-12°F to 10°F (-24.4°C to -12.2°C)	2.0°F (-16.7°C)

3. Cabinet Temperature Display Scale (°F or °C)

There are 4 temperature display settings from which to choose.

The factory temperature display default is F0 for °F whole number.

For a whole number temperature display scale value, select F0 or C0.

For a temperature display scale value to one decimal point, select F1 or C1.

Display Scale	Temperature Display Style
F0 - Factory Default	36°F
C0	2°C
F1	36.0°F
C1	2.2°C

To change the temperature display scale value, follow the steps below:

1) Press the "U" and "P" buttons together for 5 seconds. ıuP is displayed.
2) Press the "P" button. The current display setting (F0, F1, C0, or C1) and ıuP start flashing.
3) Press the up or down button until the desired temperature display style is displayed.
4) Press the "P" button to save the selection. ıuP is displayed. To return to normal display mode, press and hold the "U" button for 5 sec. Display returns to normal display mode. If no other button is pressed after pressing the "P" button, 25 sec. later, display returns to normal display mode.

   Note: If no selection is saved within 30 seconds, the display returns to normal mode and the temperature display scale remains unchanged.

D. Cabinet Control Display Icons

Control module icons inform you of energized components and if the appliance is in alarm.

Control Module Icons	
Icon	**Meaning**
	Compressor Flashing: Refrigerator: Compressor waiting for 2-min. compressor delay timer to terminate. Freezer: Compressor waiting for 3.5-min. compressor delay timer to terminate. Solid: Compressor energized.
	Defrost Flashing: Drip Time (compressor delay) Solid: Appliance is in defrost cycle. See "II.E. Defrost" for details.
	Evaporator Fan Motor Flashing: Refrigerator: Evaporator fan motor waiting for 2-min. evaporator fan motor delay timer to terminate. Freezer: Evaporator fan motor waiting for 3.5-min. evaporator fan motor delay timer to terminate. Solid: Evaporator fan motor energized.
	Alarm Appliance is in alarm. See "II.F. Alarm Safeties" for details.

E. Defrost

⚠ DANGER

Risk of Fire or Explosion Flammable Refrigerant Used

- 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.

Risque De Feu Ou D'Explosion Le Frigorigène Est Inflammable

- Ne pas utiliser d'appareils mécaniques pour dégivrer.
- 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.

1. Refrigerators

Off-Cycle Defrost: Refrigerators defrost naturally between run cycles and have a temperature or time initiated defrost cycle.

Note: There is a 1-hr. defrost lock-out after a defrost cycle terminates. This may be bypassed by initiating a manual defrost or unplugging and plugging back in to the electrical outlet.

- Temperature Initiated: When the defrost thermistor is at or below -4°F (-20°C), defrost starts.
- Time Initiated:

a) Cumulative Compressor Run Time: Once the 6-hr. Cumulative Compressor Run Timer terminates, defrost starts.

b) Continuous Compressor Run Time: Once the 4hr. Continuous Compressor Run Timer terminates, defrost starts.

The maximum defrost time is 1 hr.

- When defrost initiates, the maximum 1-hr. defrost timer starts. Compressor and condenser fan motor de-energize. Evaporator fan motor remains energized.
- When the defrost thermistor reaches 45°F (7.2°C), or the maximum 1-hr. defrost timer terminates, defrost terminates. Evaporator fan motor remains energized and compressor and condenser fan motor energize.

2.Freezers

Heated Defrost: Freezers utilize a temperature or time initiated heated defrost.
Note: There is a 1-hr. defrost lock-out after a defrost cycle terminates. This may be bypassed by initiating a manual defrost or unplugging and plugging back in to the electrical outlet.

- Temperature Initiated: When the defrost thermistor is at or below -32°F (-35.5°C), defrost starts.
- Time Initiated:

a) Cumulative Compressor Run Time: Once the 12-hr. Cumulative Compressor Run Timer terminates, defrost starts.

b) Continuous Compressor Run Time: Once the 4hr. Continuous Compressor Run Timer terminates, defrost starts.

The maximum defrost time is 1 hr.

- When defrost initiates, the maximum 1-hr. defrost timer starts. Defrost heater energizes, compressor, condenser fan motor, and evaporator fan motor de-energize.
- When the defrost thermistor reaches 55°F (12.7°C), or the maximum 1-hr. defrost timer terminates, defrost terminates. Defrost heater de-energizes. 3-min. drip time starts. Once the 3-min. drip timer terminates the compressor, condenser fan motor, and evaporator fan motor energize.

3. Defrost Display

a) **Refrigerator Display**: During defrost "dEF" is displayed. The compressor icon turns off and the evaporator fan motor icon continues. Once defrost termination temperature is achieved or the maximum timer times out, defrost terminates. The compressor icon turns on, the evaporator fan motor icon continues and PdF is displayed. PdF continues until the cabinet temperature achieves 2.7°F (1.5°C) above temperature setpoint or the 15-min. timer terminates. Once 2.7°F (1.5°C) above temperature setpoint is achieved or the 15-min. timer terminates, the cabinet temperature returns to display.

b) **Freezer Display**: During defrost "dEF" is displayed. The compressor and evaporator fan motor icons turn off. Once defrost termination temperature is achieved or the maximum timer times out, defrost terminates. The defrost icon starts flashing, PdF is displayed, and the 3-min. drip timer starts. Once the 3-min. drip timer terminates, the defrost icon turns off, the compressor and evaporator fan motor icons turn on, and PdF continues. PdF continues until the cabinet temperature achieves 2.2°F (1.2°C) above temperature setpoint or 15-min. timer terminates. Once 2.2°F (1.2°C) above temperature setpoint is achieved or 15-min. timer terminates, the cabinet temperature returns to display.

4. Defrost Termination

Defrost Termination Temperature:
Refrigerator: 45°F (7.2°C)
Freezer: 55°F (12.7°C)
Example: After the refrigerator defrost thermistor warms to 45°F (7.2°C), defrost terminates.

5. Manual Defrost

To initiate a manual defrost, press and hold the up button for 5 seconds.
To terminate a defrost, press and hold the up button for 5 seconds. Note: Manual defrost only initiates when evaporator temperature (defrost thermistor) is at or below 45°F (7.2°C) for refrigerators and 56°F (13.3°C) for freezers.

F. Cabinet Control Alarm Safeties

Alarm signals are designed to protect the appliance and food product. These alarms give information or warnings in the event the appliance is operating out of acceptable parameters. Should one of the alarms occur, follow the instructions in the table below to address the alarm. The alarm code and alarm icon flash with audible alarm.

Alarm Signals		
Alarm Code	**Problem**	**Corrective Action/Reset Details**
(-)E1	Cabinet Thermistor Malfunction Alarm Cabinet thermistor has failed.	Call a qualified service technician. Steady tone. To silence the alarm, press and release any button. **Refrigerator**: Appliance cycles 4 min. on, 6 min. off. **Freezer**: Appliance cycles 6 min. on, 3 min. off. -E1 - Cabinet thermistor out of place or open. E1 - Cabinet thermistor shorted.
(-)E2	Defrost Thermistor Malfunction Alarm Defrost thermistor has failed.	Call a qualified service technician. Steady tone. To silence the alarm, press and release any button. Appliance cycles on and off with cabinet thermistor. **Refrigerator**: Defrost cycles for 20 min. every 12 hrs. **Freezer**: Defrost cycles for 15 min. every 5 hrs. -E2 - Defrost thermistor out of place or open E2 - Defrost thermistor shorted.
Hi	High Temperature Alarm **Refrigerator**: Cabinet temperature has remained above 53°F (11.6°C) for more than 1 hour. **Freezer**: Cabinet temperature has remained above 32°F (0°C) for more than 1 hour.	If obvious corrections such as closing drawers and cleaning the air filter and/or condenser do not bring temperature back in range, call a qualified service technician. Steady tone. To silence the alarm and clear "Hi" from the display, press and release any button. The alarm icon stays on. Automatically resets when temperature returns to normal.
Lo	Low Temperature Alarm **Refrigerator**: Cabinet temperature has remained below 20°F (-6.7°C) for more than 1 hour. **Freezer**: Cabinet temperature has remained below -30°F (-34.4°C) for more than 1 hour.	If obvious corrections do not bring the temperature back in range, call a qualified service technician. Steady tone. To silence the alarm and clear "Lo" from the display, press and release any button. The alarm icon stays on. Automatically resets when temperature returns to normal.
UHi	High Voltage Alarm (140VAC ± 5% or more)	The compressor de-energizes if voltage protection operates. The voltage safeties automatically reset when voltage is corrected.
ULo	Low Voltage Alarm (100VAC ± 5% or less)	

G. Food Storage

⚠ WARNING

- The appliance is designed only for storage 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 cabinet. Allow some space between items to ensure good air flow. Also allow space between items and interior surfaces.
- Do not put warm or hot foods in the cabinet. Let them cool first, or they will raise the cabinet temperature and could deteriorate other foods in the cabinet or overload the appliance.
- 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 near air outlets. Otherwise, items may freeze up and crack or break causing a risk of injury or contamination of other food.

H. Safety Devices

1. Compressor External Protector

If combined temperature/amperage value is above the limit specified by the compressor manufacturer, the compressor protector operates independently to turn off the compressor. The compressor protector de-energizes the compressor until the temperature/amperage value returns to an acceptable level.

2. Short-Cycle Protection

There is a minimum off-time and on-time for the compressor.
Refrigerator: 2-min.
Freezer: 3.5-min.
Note: Time may vary with compressor overload.

I. Cooling Performance

Be sure the appliance is properly installed and located for optimum cooling performance. If cooling performance is not at its optimum level, check the following items:

- Drawers opened too often.
- Drawers left open. Close.
- Cabinet too tightly packed or air inlets/outlets blocked. Allow some space between items to ensure good air flow.
- Warm or hot foods inside. Take them out until they cool down more.
- Ambient temperature too high. Avoid installation near high heat producing equipment or exposure to direct sunlight.
- Not enough clearance. Ensure a minimum of 4" (11 cm) clearance between the bottom of the cooking equipment heating element and the appliance top. Ensure cooking equipment is set up per the cooking equipment manufacturer's setup procedure.
- Temperature at the appliance top too high. Ensure the temperature at the appliance top does not exceed 180°F (82°C). For optimum performance, installation of a heat shield (supplied by others) is recommended.
- Temperature setpoint not cold enough. Adjust to a colder setting. See "II.C.2. Adjusting the Temperature Setpoint" for details.
- Appliance in defrost cycle. The cabinet temperature may rise temporarily during the defrost cycle, but this will not affect the food inside.

J. Cabinet Condensation

In the event condensation develops on the cabinet exterior, check the following items:

- Drawers left open. Close.
- Ambient humidity too high. In high humidity areas it may be necessary to wipe off the cabinet frame occasionally.

IV. Maintenance

This appliance must be maintained in accordance with the instruction manual and labels provided with the appliance. Consult with your local Hoshizaki Certified Service Representative about maintenance service. To obtain the name and phone number of your local Hoshizaki Certified Service Representative, visit www.hoshizakiamerica.com.

⚠ WARNING

- Only qualified service technicians should service the appliance.
- Press and hold the "U" button for 1 sec. to turn the appliance off. Unplug the appliance before performing maintenance to prevent electric shock or injury by moving parts. To reduce the risk of electric shock, do not touch the plug with damp hands.
- Risk of electric shock. Appliance in the off position does not de-energize all loads. Use extreme caution and exercise safe electrical practices.
- Before performing maintenance, move all foods into another clean refrigerator.
- Before performing maintenance, disconnect any cooking equipment on the appliance top and allow to cool.

A. Maintenance Schedule

The maintenance schedule below is a guideline. More frequent maintenance may be required depending on the appliance's environment, and local sanitation regulations.

Maintenance Schedule		
Frequency	**Area**	**Task**
Bi-Weekly	Air Filters	Inspect. Wash with warm water and neutral cleaner if dirty.
Bi-Yearly	Condenser	Inspect. Clean if necessary by using a brush or vacuum cleaner. More frequent cleaning may be required depending on location.

Air Filter and Condenser Access:

To remove the air filter, grip the air filter handle and slide the air filter up. See Fig. 3. To access the condenser, remove the front panel screws, then remove the front panel.

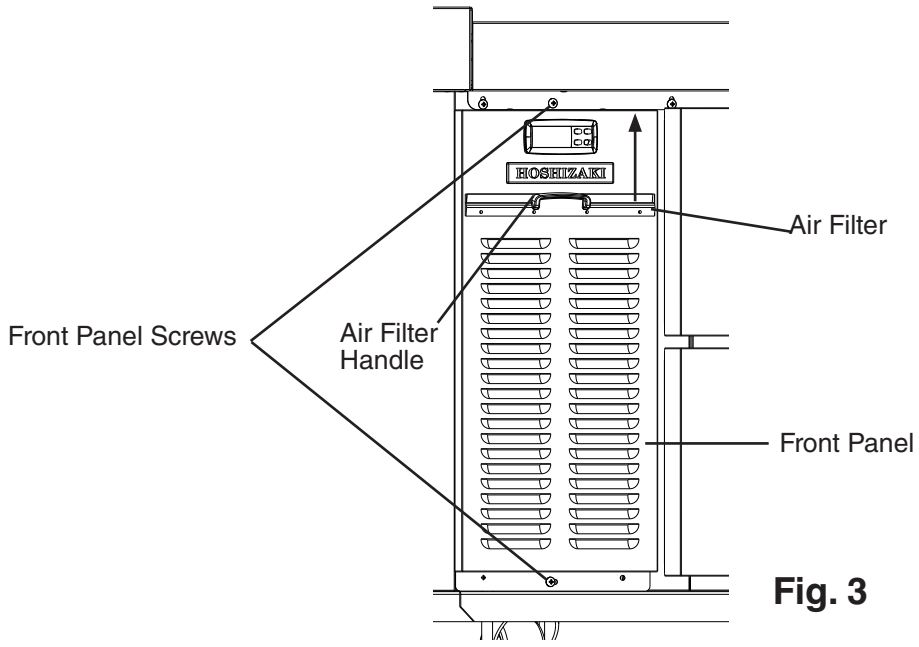


Fig. 3

B. Cleaning Instructions

⚠ WARNING

- Unplug the appliance before cleaning to prevent electric shock by unexpected entrance of water into the appliance or injury by moving parts. To reduce the risk of electric shock, do not touch the plug with damp hands.
- Before cleaning the appliance, move all foods into another clean refrigerator.
- Before cleaning the appliance, disconnect any cooking equipment on the appliance top and allow to cool.
- Do not splash, pour, or spray water directly onto or into the appliance. This might cause short circuit, electric shock, corrosion, or failure.
- Carefully follow instructions provided with cleaning and sanitizing products.

NOTICE

- To prevent damage to the plastic surfaces, do not use the following: hot water, thinner, benzine, alcohol, petroleum, soap powder, polishing powder, alkaline cleaner, acid, scouring pad and especially those strong cleaners for use on a ventilating fan or a cooking range.
- To prevent corrosion and damage to stainless steel surfaces, use only products formulated for use on stainless steel appliances. Do not use steel wool, abrasive products, or products containing sodium hypochlorite (chlorine bleach).
- Use a clean cloth for cleaning.

1. Exterior

Wipe the exterior occasionally with a clean, soft cloth. Use a damp cloth containing a neutral cleaner to wipe off oil or dirt buildup. Clean any rust colored spots using a non-abrasive cleanser.

2. Cabinet Interior

Spills should be wiped up promptly to avoid unpleasant odors. The cabinet interior should be cleaned periodically with a mild soap or detergent and warm water.

3. Drawer Gaskets

Drawer gaskets should be cleaned regularly with mild soap and warm water to remove dirt and grease.

4. Drawers

Drawers and drawer slides are removable.

- **To remove a drawer:** Remove all items from the drawer. Pull the drawer out to its fully extended position. Open the safety clips (one on each side) by sliding them forward. See Fig. 4. Lift up on the handle slightly, then pull to disengage the drawer. Be sure to support the rear and front of the drawer while removing it. **WARNING! Be sure to close the safety clips when reinstalling the drawer.**
- **To remove a drawer slide (center slide containing rollers):** Open the stop levers (one on each side) by sliding them to the rear. See Fig. 5. Lift up on the drawer slide slightly, then pull to disengage the drawer slide. **WARNING! Be sure to close the stop levers when reinstalling the drawer.** Drawer slides do not require lubrication, but drawer slides should be kept clean and free of food.

Note: Drawer slides are dishwasher safe.

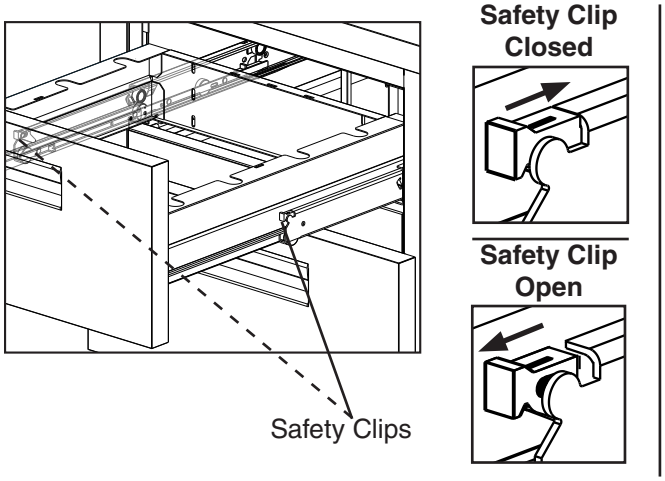


Fig. 4

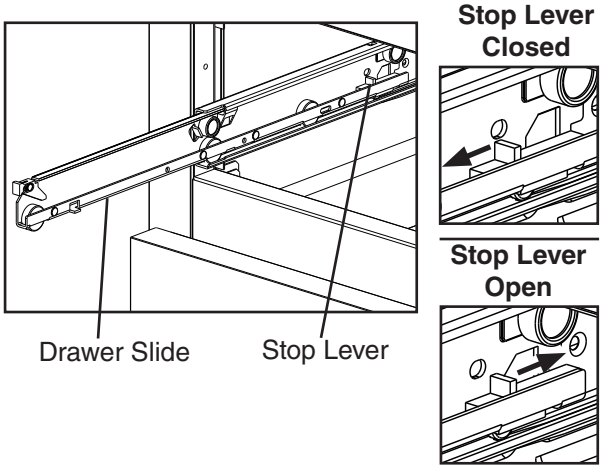


Fig. 5

V. Preparing the Appliance for Periods of Non-Use

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

⚠ WARNING

- Only qualified service technicians should service this appliance.
- When preparing the appliance for long storage, prevent the doors or drawers from closing to reduce the risk of children getting trapped.
- Risk of electric shock. Appliance in the off position does not de-energize all loads. Use extreme caution and exercise safe electrical practices.
- To reduce the risk of electric shock, do not touch the plug with damp hands

NOTICE

- During extended periods of non-use, extended absences, or in sub-freezing temperatures, follow the instructions below to reduce the risk of costly water damage.
- When the appliance is not used for two or three days under normal conditions, it is sufficient to move the power switch to the "OFF" position.
- When preparing the appliance for long storage, clean the appliance. See "IV.B. Cleaning Instructions" for details.

1) Before shutting down the appliance, move all foods into another clean refrigerator.

2) Unplug the appliance. **WARNING! To reduce the risk of electric shock, do not touch the plug with damp hands.**

3) **WARNING! Prevent the drawers from closing to reduce the risk of children getting trapped.**

VI. Decommissioning and Disposal

R-2290 Class A3 Flammable Refrigerant Used

⚠ DANGER

Risk of Fire or Explosion Flammable Refrigerant Used

- Only qualified service technicians should install and service the appliance.
- Follow handling instructions carefully in compliance with national regulations.
- Dispose of properly in accordance with federal or local regulations.
- Do not puncture refrigerant tubing. Risk of fire or explosion due to puncture of refrigerant tubing; follow handling instructions carefully.
- Be sure to follow the full Decommissioning and Disposal information located in the Service Manual for this model. The Service Manual is available at www.hoshizakiamerica.com.

Risque D'Incendie ou D'Explosion. Fluide Frigorigène Inflammable Utilisé

- Seuls des techniciens de service qualifiés doivent installer et entretenir l'appareil.
- Suivre attentivement les instructions de manutention conformément aux réglements nationaux.
- Mettre au rebut conformément aux conformément aux réglements fédéraux ou locaux.
- Ne pas perforer la conduite de fluide frigorigène. Risque d'incendie ou d'explosion en cas de perforation d'une canalisation de fluide frigorigène; suivez attentivement les instructions de manutention.
- Veiller à respecter l'ensemble des informations relatives à la mise hors service et à la mise au rebut figurant dans le manuel d'entretien de ce modèle. Le manuel d'entretien est disponible à l'adresse suivante: www.hoshizakiamerica.com.

HOSHIZAKI AMERICA, INC.

618 Hwy. 74 South, Peachtree City, GA 30269 USA (P) 770.487.2331 (F) 770.487.3360 hoshizakiamerica.com

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