



UNDERCOUNTER REFRIGERATOR/FREEZER

INSTRUCTION MANUAL

- This booklet is an integral and essential part of the product and should be kept and preserved by the user.
- Please read carefully the guidelines and warnings contained herein as they are intended to provide the installer/user with essential information for the proper installation and the continued safe use and maintenance of the product.
- Please preserve this booklet for any further consultation that may be necessary.

Manufacturer: **HOSHIZAKI CHINA CORPORATION**

RT-96MC-*.**
RT-126MC-*.**
RT-156MC-*.**
RT-186MC-*.**
RT-216MC-*.**
RT-98MC-*.**
RT-128MC-*.**
RT-138MC-*.**
RT-158MC-*.**
RT-178MC-*.**
RT-188MC-*.**
FT-96MC-*.**
FT-126MC-*.**
FT-156MC-*.**
FT-186MC-*.**
FT-98MC-*.**
FT-128MC-*.**
FT-138MC-*.**
FT-158MC-*.**
FT-178MC-*.**
FT-188MC-*.**

*: S, SG, SSG,
S-ML, P, PG,
PSG, P-ML

**: 1D, 2D, 3D, 4D,
5D, 6D, 7D, 8D, 9D
ST, GN, PR,
PRS, P, R, E

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ENGLISH

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WARNING

Do not wet this product or use it in potentially wet conditions. This may cause electric leakage, resulting in electric shock or fire.

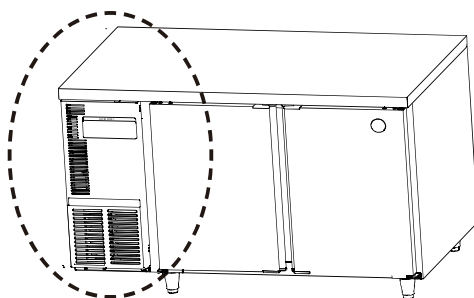
Keep Dry

IMPORTANT

1. This is a commercial refrigerator/freezer intended to be used in household and similar applications such as:
 - staff kitchen areas in shops, offices and other working environments;
 - farm houses and by clients in hotels, motels and other residential type environments;
 - bed and breakfast type environments;
 - catering and similar non-retail applications.
 Any other use should be considered improper and therefore dangerous. The manufacturer will not be held liable or responsible for any damage caused by improper, incorrect and unreasonable use.
2. This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Young children should be supervised to ensure that they do not play with the appliance.
3. This product should be installed by professionals before use.

I. INSTALLATION INSTRUCTIONS

1. CONSTRUCTION



Machine Compartment

Fig. 1

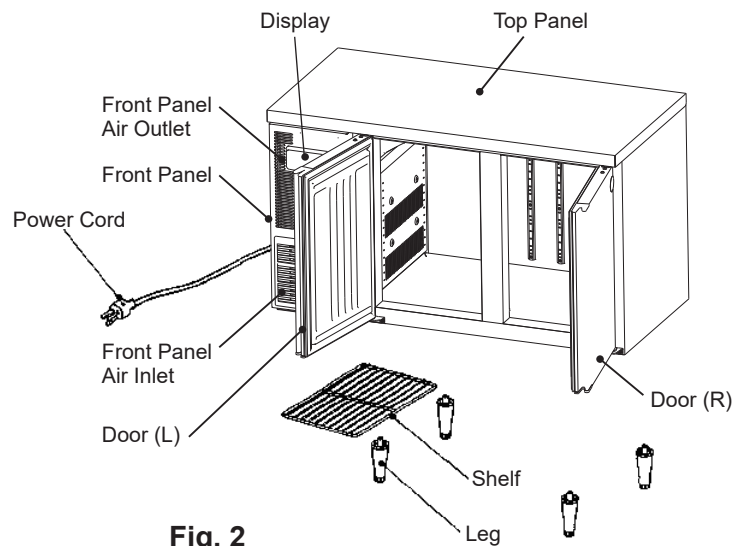


Fig. 2

- Note: 1. Attach the four legs provided to the mounting holes located at the bottom of the unit.
2. For RT/FT-96,98MC, attach the five legs provided to the mounting holes located at the bottom of the unit.

2. ACCESSORIES

Width	900mm	1200/1500mm	1800mm
a) Shelf:	2 [2]	4 [4]	6 [6]
b) Shelf clip:	8 [8]	16 [16]	24 [24]
c) Shelf holder:	5 [0]	10 [0]	15 [0]
d) Leg:	5 [5]	4 [4]	4 [4]

- Note: 1. Numbers in parentheses are for models without shelf holders.
2. Customized products may have different numbers and specifications of accessories.

3. LOCATION

IMPORTANT

This refrigerator/freezer is not intended for outdoor use. Normal operating ambient temperature should be within 5°C to 38°C.

For best operating results:

- * The refrigerator/freezer should not be located next to ovens, grills or other high heat producing equipment.
- * The location should provide a firm foundation for the equipment.

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* Avoid a site where dripping is not allowed. Especially, a side-by-side or back-to-back installation (possibly with other manufacturer's unit) may cause condensation between the two units, resulting in dripping onto the floor.

* Do not expose the unit to direct sunlight or higher temperatures.

* Allow at least 50 cm clearance between the front panel air inlet/outlet and the wall or other equipment for proper air circulation. The front of the unit should have enough space for smooth adjustment of the cabinet temperature. If the ambient temperature can exceed 38°C, allow at least 10 cm clearance from the wall at the side of the machine compartment to prevent overloading and damaging the refrigeration circuit.

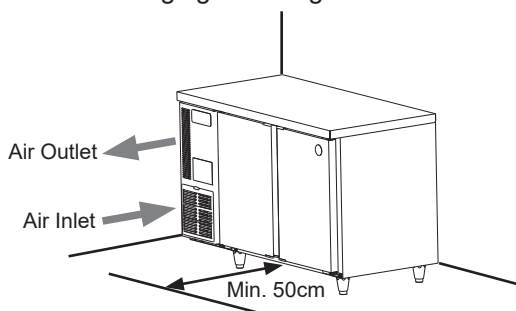


Fig. 3

4. SET UP

IMPORTANT

1. Do not tilt the unit more than 45° when mounting the legs.
2. Carry the unit by holding its bottom.

4) Mount the rear legs in the same way.

5) Before operating the unit, remove all shipping carton, packing, tape(s) and protective plastic film on the exterior, interior and top panel. Be careful not to damage the exterior panels.

6) Position the unit in a selected site.

7) Clean the interior with a soft cloth soaked in cold or warm water containing the proper amount of neutral cleaner and wrung dry.

8) Level the refrigerator/freezer in both the left-to-right and the front-to-rear directions. To adjust the height of the unit, turn the adjusters of the adjustable legs.

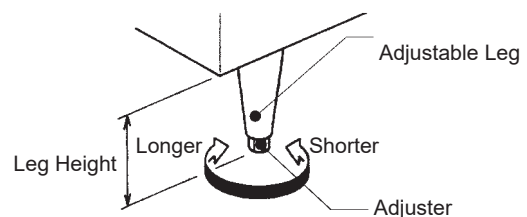


Fig. 6

CAUTION

The height of the adjustable legs must be within 9 - 12 cm (or 15 - 18 cm for some models). If extended too much, the legs may become weak or the adjusters can come off, causing unexpected injuries.

5. SHELF, SHELF CLIP AND SHELF HOLDER

1) Cut the shipping band and remove the carton.

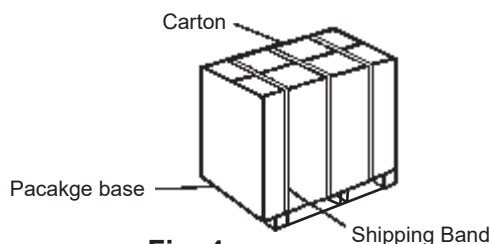


Fig. 4

2) Take out the accessory legs.

3) Tilt the unit backward to mount the front legs (work in pairs).

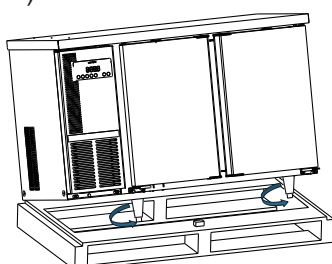


Fig. 5

* The shelf is adjustable in 2.5 cm increments. Adjust the shelf clips according to the height of stored items.

* To attach the shelf clip, insert the upper tab into an adjust hole in the shelf post to hook the shelf clip, and push the lower tab into another adjust hole until it locks in place. To detach the shelf clip, reverse the above procedure.

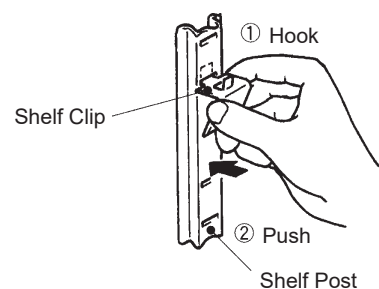


Fig. 7

CAUTION

Attach the shelf clips properly to make the shelf level.

- * To lay the shelf at the bottom of the cabinet, attach two shelf holders each to the left and right frames and one to the center frame as shown below.

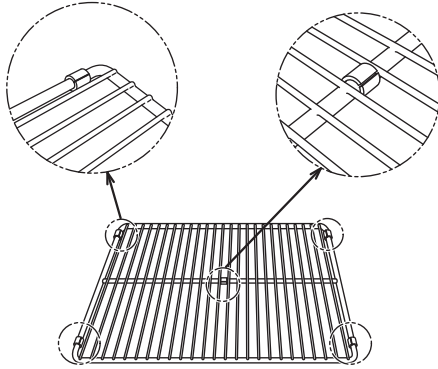


Fig. 8

IMPORTANT

When using the shelf at the bottom of the cabinet, be sure to use the shelf holders to prevent damage to the cabinet bottom, resulting in corrosion.

6. ELECTRICAL CONNECTIONS

IMPORTANT

This refrigerator/freezer is provided with no power switch or earth leakage circuit breaker, but with overcurrent protection (fuse) only. Install a switch rated at least 10A on the main power supply.

- * This refrigerator/freezer must be plugged into the separated power receptacle which is readily accessible and has enough capacity. The maximum allowable voltage variation should not exceed ± 10 percent of the nameplate rating. See the nameplate.
- * 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.

7. DRAIN CONNECTIONS (Direct drain sample)

- 1) Connect the accessory flexible hose with trap to the drain outlet located at the bottom of the unit.

- 2) Use the accessory cable strap to fix the trap tightly to the mounting hole on the bottom of the unit.

- * The flexible hose may not be provided for some models. If necessary, order the accessories (3S1332A02).

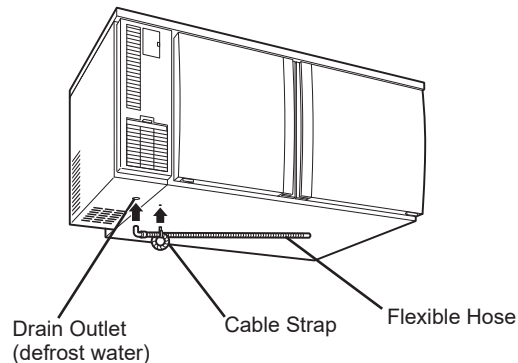
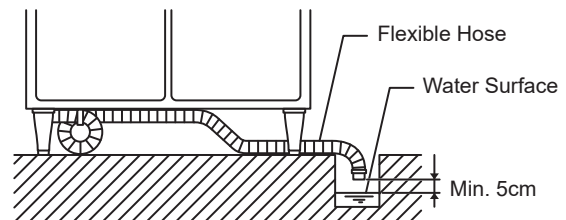


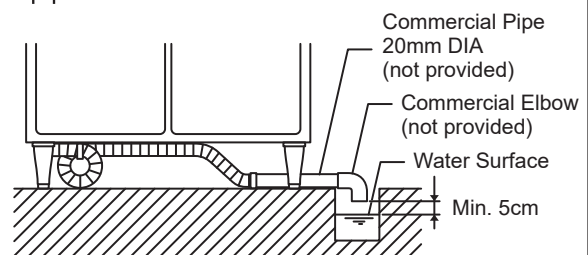
Fig. 9

IMPORTANT

1. To prevent disconnection, be sure to use the cable straps to secure the flexible hose in place.
2. The drain line should be as short and straight as possible, sloped downward, and located below the drain outlet.
3. To prevent backflow, do not connect the flexible hose directly to the sewer system. An air gap of at least 5 cm should be between the end of the flexible hose and the floor drain.



4. If the flexible hose is too short to reach the floor drain, connect a commercial pipe to the flexible hose. Be sure to allow an air gap of at least 5 cm between the end of the drain pipe and the floor drain.



ENGLISH

5. The drain connections are required to prevent ambient air from causing excessive frost build up on the evaporator, resulting in reduction of the refrigeration capacity.
6. Do not let water drain directly onto the floor before running into the drain. Foreign matter on the floor may mix into the water and clog the drain, or the water could run in a wrong direction.

8. POWER CORD INSTALLATION

IMPORTANT

If the power cord is not installed as described in the manual, it may be disconnected. Only qualified service technicians should install and service the appliance.

- ②. Loosen the clamp and put in the power cord to the proper position and tighten the clamp screw.

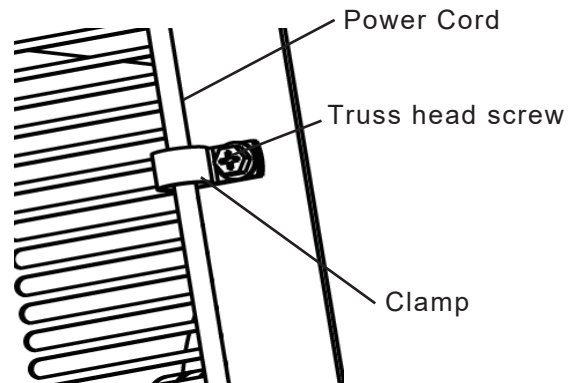


Fig. 12

- 1). Part indication diagram

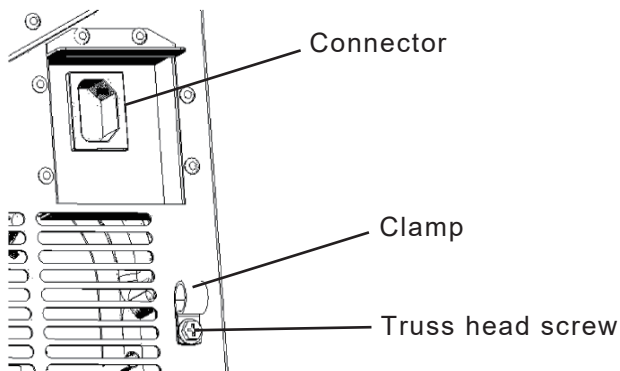


Fig. 10

- 2). Install power cord.

- ①. Insert the power cord into the connector.

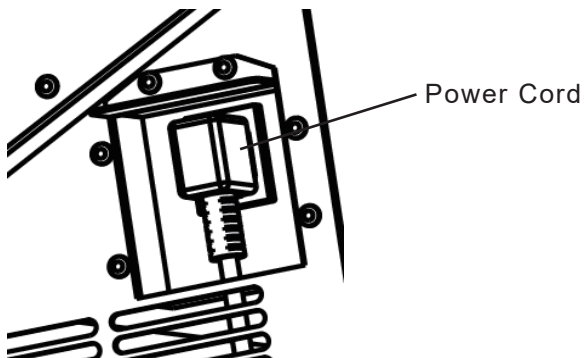


Fig. 11

II. OPERATING INSTRUCTIONS

IMPORTANT

1. Be careful not to wet the machine compartment. This might cause failure or electric shock hazard.
2. To prevent electric shock, do not touch the attachment plug with wet hands.
3. Do not store any volatile or flammable substances such as benzine, ether, adhesives and LPG, or any explosive substances such as aerosol cans with a flammable propellant in the unit.
4. This refrigerator/freezer is designed only for temporary storage of foods. Use for any other purposes (e.g. storage of chemicals or medical supplies such as vaccine and serum) could cause deterioration of stored items.
5. Do not throw anything onto the shelves or load more than 60 kg on each of them. They may fall off and cause injury.
6. Do not store bottles or cans near the air outlet. They may freeze up and break, causing a risk of injury.
7. Do not use combustible spray or place volatile and flammable substances near the unit. They could catch fire from a spark of a switch or the like.
8. Do not put anything into the machine compartment or the air inlet/outlet. The fan rotating rapidly inside may cause injury or heat.
9. Energise the refrigerator/freezer for 1 hour and check for proper temperature before putting foods in the cabinet.
10. Do not block the air inlet/outlet with foods.
11. Do not pack the cabinet with foods. Allow some space between them to ensure good air flow.
12. Do not put in warm or hot foods. Let them cool first, or they will raise the cabinet temperature and could deteriorate other foods in the cabinet or overload the refrigerator/freezer.

13. Make sure all items are snug on each shelf.
14. Moist or fresh foods and those with a strong smell like seafood should be wrapped up in a plastic film or packed in a container. Otherwise the foods may dry up or give their smells to other foods.
15. Foods containing acetic acid or yeast should be wrapped up in a plastic film. Otherwise they may accelerate corrosion of the evaporator and copper tubes, resulting in failure.
16. Foods intended for direct human consumption should be stored on the shelf in a proper container and protected from direct contact with the cabinet walls.
17. Do not use the freezer to freeze foods. It is designed only to store frozen foods. High quality ice cream may melt during defrost cycle and should not be stored in the freezer.
18. The doors may become difficult to open just after closed because of the negative pressure created inside the cabinet. Wait for about 30 seconds.
19. If the refrigerator door frame is prone to condensation due to harsh environment, Please contact the after-sales staff to adjust the anti-condensation mode.
20. WARNING: Keep clear of obstruction all ventilation openings in the appliance enclosure or in the structure for building-in.
21. Do not damage the refrigerating circuit.
22. Do not use electrical appliances inside the food/ice storage compartments unless they are of the type recommended by the manufacturer.

1. START UP

- 1) Plug in the unit.
- 2) The compressor and condenser fan motor will start in 3 minutes.

2. CABINET TEMPERATURE SETTING

IMPORTANT

1. Pressing the down key will not speed up refrigeration, but will only lower the temperature setting.
2. The temperature range given below is only the adjustable range. The actual cabinet temperature depends on the ambient temperature and other conditions.

The cabinet temperature is factory-adjusted to 1°C for the refrigerator and -20°C for the freezer. If necessary, readjust the temperature as follows.

- 1) Under normal operating conditions, press the set key to enter the user menu. The indicator light is on, entering the user menu and displaying the set temperature. At this time, the temperature setting can be modified by operating the up button or down button. Set the value, press the return button after modification, and exit the setting interface. Return to the menu selection state (see IMPORTANT 2).

In the setting state, no operation is performed for 30 seconds. The system will save the parameters and exit from the parameter setting mode.

Code	Function	Set Range	Default	Unit
🔧	Temperature setting (refrigerator)	-6 to +12	1	°C
🔧	Temperature setting (freezer)	-7 to -25	-20	°C

※ Glass door model (RT series) set temperature : -2°C to +12°C



Operation Panel

Fig. 13

- [1] Power Key
- [2] LED Key
- [3] Defrost Key
- [4] Set Key
- [5] Back key
- [6] Down Key
- [7] UP Key

IMPORTANT

1. The temperature setting must be between -6 and 12°C for the refrigerator and between -7 and -25°C for the freezer to prevent possible failure.
2. To avoid the risk of failure, do not make changes to other menus than "🔧".
3. The displayed cabinet temperature is adjusted to be almost equal to the temperature at the center of the cabinet without foods. But it can be different from the actual temperature depending on arrangement of stored foods, frequency of door opening or measuring points.

The compressor stops when the cabinet temperature reaches down to the set temperature, and starts when the cabinet temperature rises to the set temperature + 4°C. Accordingly, the average cabinet temperature will be around the set temperature + 2°C.

Set temperature (compressor off temperature)

Off-cycle defrost (RT series): -6 to +12°C

Heater defrost (FT series): -7 to -25°C

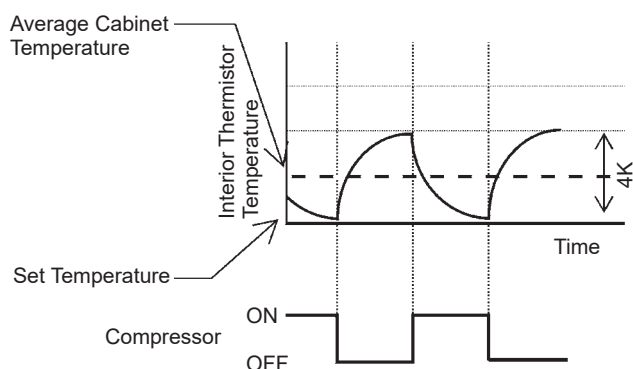


Fig. 14

3. DEFROST

Automatic defrost cycle

The refrigerator/freezer automatically defrosts the evaporator 6 hours after the refrigeration starts. The defrost indicator light on the operation panel comes on when the defrost cycle starts.

Manual defrost cycle

To start the manual defrost cycle, press the defrost/reset key for 3 seconds. The defrost indicator light on the operation panel comes on when the defrost cycle starts.

IMPORTANT

Do not use mechanical devices or other means to accelerate the defrosting process, other than those recommended by the manufacturer.

4. INDICATOR LIGHTS

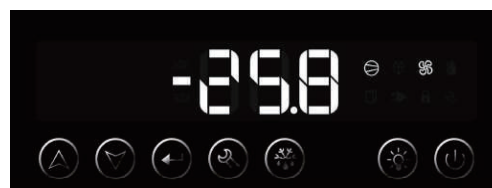
Indicator Light	Symbol	Status	Meaning
Setting		On	Parameter setting
		Off	Measuring and controlling status
Refrigeration		On	Refrigerating
		Off	Refrigeration stopped
		Flash	Refrigeration delayed
Defrost		On	Defrosting
		Off	Defrost stopped
Fan		On	Fan running
		Off	Fan stopped
Defrost dripping		On	Start defrost dripping
		Off	Stop defrost dripping
Anti - condensation		On	Start anti - condensation
		Off	Stop anti - condensation
Door switch		On	Door switch opened
		Off	Door switch closed

5. SHUT DOWN

- 1) Before shutting down the unit, move the stored foods into another refrigerator/freezer.
- 2) Unplug the unit or disconnect the main power supply.
- 3) When preparing the unit for long storage, clean the cabinet interior and door gaskets, dry them thoroughly and store the unit in a dry place.

★ Note: Press the display board button for 3 seconds, the controller will turn off. All outputs are turned off and the electrical parts of the whole machine will be in the "oFF" state, the device will be in standby state, and the thermostat display board will display "oFF".

6. LED OPERATING INSTRUCTIONS



[1]

Operation Panel

About led models, when the power is on, you can turn the led on or off by pressing the switch [1].

Fig.15

III. MAINTENANCE

IMPORTANT

1. Before carrying out any cleaning or maintenance operations, unplug the unit.
2. Do not touch or wet the machine compartment parts. This could result in failure or break down.
3. To prevent possible damage, do not clean the plastic parts with water above 40°C or in a dishwasher.

1. INTERIOR, EXTERIOR, SHELF

- * Clean the interior and exterior at least once a week for sanitary use.
- * Clean off the interior and exterior with a soft cloth soaked in cold or warm water containing the proper amount of neutral cleaner and wrung dry. Do not use a water jet to clean the machine compartment.
- * Chemical agents other than neutral cleaner might cause damage to the interior and exterior surfaces.
- * Any remaining detergent will damage metal or plastic surfaces. Use a soft cloth dampened with warm water to wipe it off.
- * Do not use the following items. They could damage painted or plastic surfaces:

Polishing powder, alcohol, thinner, benzene, acidic or alkaline detergent, hot water, petroleum, soap powder, metal scourer or brush, etc.
Especially detergent to clean grease on ventilator or microwave.



Fig. 16

Note: Some solutions other than the above may also damage painted or plastic surfaces. Immediately stop using such solutions if they cause any problems.

- * The door gasket and its contact surface get soiled easily. Clean every surface of these parts thoroughly. Remnants of food will accelerate aging.
- * Use a cloth to wipe off any water staying inside the cabinet.

2. WIRE CONDENSER

- * Use a vacuum cleaner or a soft brush to remove dust and stains from the condenser.

Note: If users clean the condenser with hard brushes, such as dishwasher brushes, the coating of the condenser may peel off, leading to rust.

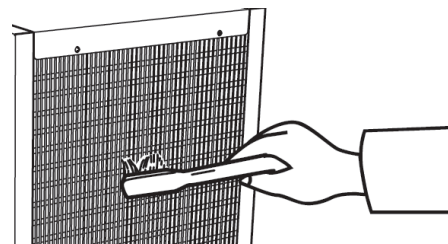


Fig. 17

3. AIR FILTER

Plastic mesh air filters remove dirt or dust from the air, and keep the condenser from getting clogged. If the filters get clogged, the refrigerator/freezer's performance will be reduced.

Check the filter at least twice a month. When clogged or when the temperature controller shows "CH", use warm water and a neutral cleaner to wash the filter. Do not operate the unit with the air filter removed, or the condenser will get clogged, resulting in failure.

- 1) Remove the screw under the front panel and open the front panel.
- 2) Remove the air filter from the condenser.
- 3) Wash the air filter carefully with cold or warm water containing the proper amount of neutral cleaner. Rinse and dry the air filter thoroughly.
- 4) To refit the air filter, put the two tabs into the heat exchanger line or fins in the condenser, and tightly attach the air filter over the condenser.

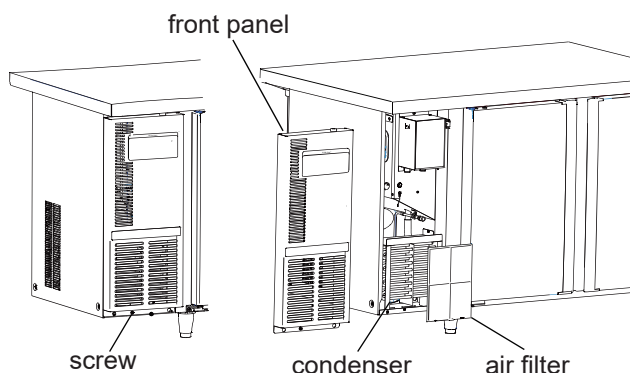


Fig. 18

4. BEFORE CALLING A SERVICE AGENT

IMPORTANT

1. If the screen on the operation panel indicates an error code or something seems wrong with the unit, check for possible causes according to the following instructions. If the problem still exists, immediately contact an authorized Hoshizaki service company.
2. When contacting a service company, let them know the model name, serial number, date of installation (see warranty card) and state of the trouble.
3. Do not attempt to repair the unit yourself.

[a] TROUBLES WITH ERROR CODE INDICATION

Code	Possible Cause	Remedy
E1	Cabinet sensor error	Immediately contact an authorized Hoshizaki service company.
E2	Evaporator sensor error	
E3	Condenser sensor error	
cH	Condenser high temperature alarm	Clean the air filter. If the problem cannot be resolved, immediately contact an authorized Hoshizaki service company.

* The code “dEF” is not an error code but indicates the unit is in defrost cycle.

[b] TROUBLES WITHOUT ERROR CODE INDICATION

- 1) Unit fails to operate:
 - (1) Unplugged.
 - (2) Power failure.
 - (3) Main power supply disconnected.
- 2) Poor cooling performance:
 - (1) Ambient temperature too high.
 - (2) Door(s) opened too often.
 - (3) Cabinet temperature setting too high.

- (4) Too packed with foods or air inlet/outlet blocked.
- (5) Air filter not clean.(freezer only)
- (6) Door(s) left open.
- (7) Warm or hot foods inside.
- (8) Unit in defrost process. The cabinet temperature may rise temporarily during defrost cycle but will not affect the foods inside.

3) Condensation around door(s):

- (1) Ambient humidity too high.
- (2) Door(s) not closed tightly.

4) Noise:

- (1) Normal operating sounds from compressor, condenser fan motor or Interior fan motor.
- (2) Installed on an unsteady floor. Contact an authorized Hoshizaki service company.
- (3) Not leveled in the left-to-right or front-to-rear directions. Contact an authorized Hoshizaki service company.

5) Frosting inside compartment:

- (1) Ambient humidity too high.
- (2) Door(s) opened too often.

5. DISPOSAL

When disposing of the refrigerator/freezer, contact an authorized Hoshizaki service company or a specialized waste disposal company.

IMPORTANT



The insulation foaming agent used for the unit body contains flammable gas cyclopentane. With this in mind, dispose of the refrigerator/freezer properly.
The meaning of this ISO 7010 W021 symbol is:Warning: Risk of fire.

6. WARRANTY

Hoshizaki warrants to the original owner/user that all Hoshizaki branded products shall be free of defects in material and/or workmanship for the duration of the “warranty period”. The warranty shall be effective for one year from the date of installation.

Hoshizaki’s liability under the terms of the warranty are limited and shall exclude routine servicing, cleaning, essential maintenance and/or repairs occasioned by misuse and installations not in accordance with Hoshizaki guidelines.

Warranty repairs should be completed by an approved Hoshizaki dealer or service agency using genuine Hoshizaki components.

To obtain full details of your warranty and approved service agency, please contact your dealer/supplier, or the nearest Hoshizaki Service office.

7. Description of climate type

Tropical type (code T or 5): the suitable ambient temperature is 18°C~43°C;

Subtropical type (code ST or 4): the suitable ambient temperature is 18°C~38°C;

Temperate type (code N or 3): the suitable ambient temperature is 16°C~32°C;

Subtemperate type (code SN or 2): the suitable ambient temperature is 10°C~32°C;

IMPORTANT

The climatic class 4 indicates the dry bulb temperature of 30°C and relative humidity of 55 percent.

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