

ROUTINE MAINTENANCE

Cleaning the exterior, interior, and accessories

Use a dry cloth to wipe down the outside and inside of the unit and all accessories. If the outside panels are dirty, clean them with a diluted neutral dish-washing detergent.

Wipe off condensation from the exterior of the cabinet with a dry, soft cloth.

◇Using an undiluted solution of detergent may cause the unit's plastic areas to crack. Follow the directions on the detergent for details of dilution.

◇After the wiping the cabinet or accessories with a diluted detergent, be absolutely sure to wipe the surfaces with a cloth dipped in clean water to remove traces of the detergent. After this, be absolutely sure to wipe the surfaces with a dry cloth.

<Important>

- Do not use a brush, an acid, a thinner, laundry soap, a powder detergent, or boiling water for cleaning. These may cause damage to painted surfaces or cause perishing of plastic and rubber components. Moreover, do not wipe plastic and rubber components with a volatile material.
- In order to maintain the unit's intended level of performance, always replace accessories that have been removed for cleaning.

Cleaning of air intake port (Manual)

Using the cap for air vent is likely to build a frost in/around the air intake port. Clean it in the case shown below.

Condition	Check / Remedy
When frost and ice can be seen in the air intake port.	The pipe of the air intake port is thrust with a stick for air intake port cleaning of the accessories, and frost is taken.
The outer door does not open even if the cap of the air intake port is opened.	The pipe of the air intake port is thrust with a stick for air intake port cleaning of the accessories, and frost is taken.
Frost and ice can be seen in the chamber.	Frost and ice inside the chamber are taken with scraper of the accessories.

WARNING

For removing the frost in the air intake port, do not use a tool with sharp edge such as a knife or a screw driver.

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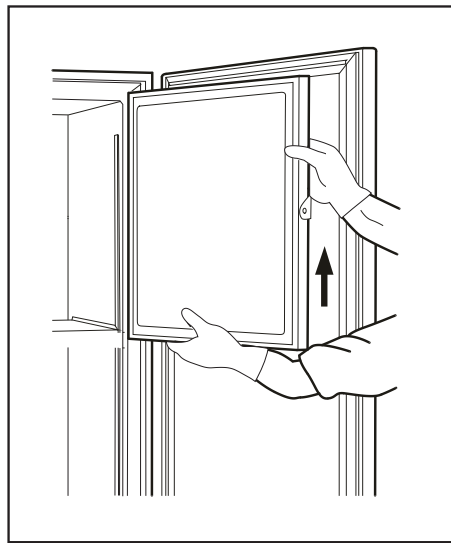
Defrosting of chamber

Frost may accumulate near the top of the chamber, near the door in the chamber, or near the air intake port (Auto). Excessive accumulation of frost is likely to create gaps between the door and the door gasket, which can reduce the cooling performance. Remove the frost from the chamber and the inner door with the scraper enclosed with the unit. Use the following procedure for defrosting when excessive frost builds up in the chamber.

Note:

Do not use tool with a sharp edge (such as a knife or screw-driver) to remove the frost.

1. Turn off the switch for the back-up cooling kit (if installed).
2. Take out all contents from the freezer and transfer them to another freezer or a container which is refrigerated by liquid carbon dioxide or dry ice.
3. Turn off the power switch and battery switch of the freezer.
4. Open the outer door and inner door. Remove the inner door by lifting up as shown in the figure.
5. Leave the freezer in this state until the frost in the chamber melts.
6. Wipe up the water that accumulates at the bottom of the chamber with a dry cloth.
7. After cleaning the chamber, replace the inner door and start up the unit according to the procedure on page 19.
8. Check that the chamber temperature reaches the set temperature and then replace the contents.
9. Turn on the switch for the back-up cooling kit (if installed).



⚠ WARNING

Always wear gloves when mounting and/or removing the inner door to prevent injury.

CALIBRATION

During continuous operation, the following service tasks must be performed:

- Perform a temperature calibration at least once a year.

For temperature calibration, contact our sales representative or agent.

REPLACEMENT OF WORN-OUT PARTS

Replacing the battery for power failure alarm

Replace the battery for power failure alarm about every 3 years. Contact our sales representative or agent for the replacement of battery when “S18: Exchange a Main Battery.” is displayed in the message display field.

- ↯ The replacement of the battery for power failure alarm is a paid service.
- ↯ The alarm function (message display, sound of buzzer and remote alarm) will not operate when the battery for power failure alarm is flat.
- ↯ “W01: Power Failure.” is displayed and the buzzer sounds by the battery for power failure alarm.



The replacement of the battery for power failure alarm should be executed by a qualified engineer or service personnel only. ➤ The replacement of the battery for power failure alarm involves the risk of electric shock.

«Important» The used battery is a recyclable resource. Do not dispose of the battery. Always follow the procedure for recycling.

Replacing the battery for backup cooling kit

Replace the battery for backup cooling kit about every 3 years. Contact our sales representative or agent for the replacement of battery when “S19: Exchange a Backup Battery.” is displayed in the message display field.

- ↯ The replacement of the battery for backup cooling kit is a paid service.
- ↯ The backup cooling kit will not operate when the battery for backup cooling kit is flat.
- ↯ When the chamber temperature rises, the backup cooling kit is activated by the battery for backup cooling kit even during a power failure. The regular replacement of the battery for backup cooling kit is important to prevent the rise of chamber temperature in the case of unexpected situation.



The replacement of the battery for backup cooling kit should be executed by a qualified engineer or service personnel only. ➤ The replacement of the battery for backup cooling kit involves the risk of electric shock.

«Important» The used battery is a recyclable resource. Do not dispose of the battery. Always follow the procedure for recycling.

TROUBLESHOOTING

If the unit malfunctions, check out the following before calling for service.

<Attention>

If the malfunction is not resolved after checking the following items or if the malfunction is not shown in the table below, contact our sales representative or agent.

Malfunction	Check/Remedy
Nothing operates even when the power supply plug is plugged in	<ul style="list-style-type: none"> <input type="checkbox"/> The unit is not connected to the power supply properly. <input type="checkbox"/> The capacity and voltage of the power supply is not sufficient. <input type="checkbox"/> There is a power failure. <input type="checkbox"/> The circuit breaker on the supply circuit is activated. <input type="checkbox"/> The fuse on the supply circuit is blown.
The compressor does not operate at all when turning ON the power switch. (LCD touch panel is turned ON)	<ul style="list-style-type: none"> <input type="checkbox"/> The capacity of power supply is not sufficient. When the capacity of power supply is not sufficient to start the compressor, compressor may not start.
The alarm is activated during operation	<ul style="list-style-type: none"> <input type="checkbox"/> The chamber temperature setting has been changed. <input type="checkbox"/> The door has been kept open for a long time. <input type="checkbox"/> Containers with a high temperature (load) have been put in the chamber.
Excessive noise	<ul style="list-style-type: none"> <input type="checkbox"/> The floor is not stable. <input type="checkbox"/> The installation site is not level. <input type="checkbox"/> The freezer is tilted. <input type="checkbox"/> The cabinet is touching the surrounding wall.
The chamber does not get cold enough	<ul style="list-style-type: none"> <input type="checkbox"/> Warm material has been put in the chamber. <input type="checkbox"/> The door is frequently opened. <input type="checkbox"/> The set value of the chamber temperature is lower than -86 °C. The temperature settable range is between -90 °C~-50 °C. However, the temperature control range is between -86 °C~-50 °C. <input type="checkbox"/> The unit is in direct sunlight. <input type="checkbox"/> The ventilation around the unit is blocked. <input type="checkbox"/> There is a nearby heat source. <input type="checkbox"/> The ambient temperature is too high. <input type="checkbox"/> There are too many items stored inside the chamber. <input type="checkbox"/> The access port is not covered. → The access port should be covered with insulation and rubber caps when not in use. <input type="checkbox"/> The door seal is damaged. → If it is damaged, contact our sales representative or agent for replacement. <input type="checkbox"/> A foreign substance is located between door gaskets.
The outside of the unit is wet with dew.	<p>In case of sultriness or bad location, the exterior of the unit may be wet with dew. Under a high humidity environment, the cold exterior of the unit condenses the moisture in the air, so that it is not malfunction. Wipe the dew with a dry cloth.</p>
Noisy in motor sound or flowing liquid.	<p>On the characteristics of the cooling circuit, the sound of motor or flowing refrigerant may be heard during operation. Especially a few hours after starting operation, the sound of compressor or flowing refrigerant may be loud, however it is a normal operation.</p>

Note:

- Keep an electric product which emits an electromagnetic wave away from this unit. A noise from an electromagnetic wave may cause malfunction to this unit.