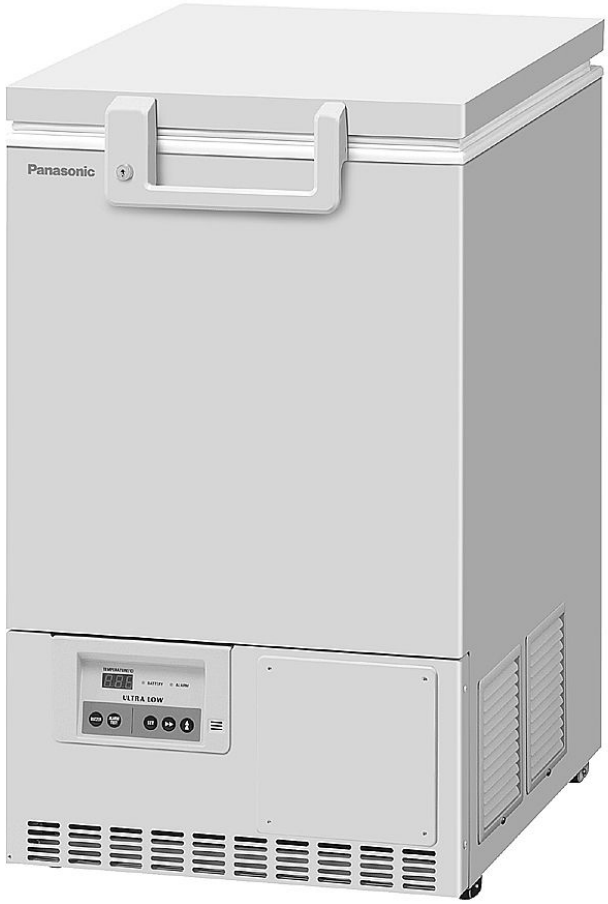
Panasonic

Operating Instructions

Ultra-Low Temperature Freezer

MDF-C8V1

MDF-C8V1 Series



Please read these instructions carefully before using this product, and save this operating instructions for future use.

See page 38 for all Model Numbers.

CONTENTS

INTRODUCTION

■ Read this operating instructions carefully before using the appliance and follow the instructions for safety operation.

■ Our company never guarantee any safety if the appliance is used for any objects other than intended use or used by any procedures other than those mentioned in this operating instructions.

■ Keep this operating instructions in an adequate place to refer to it as necessary.

■ The contents of the operating instructions will be subjected to change without notice due to the improvement of performance or functions.

■ Contact our sales representative or agent if any page of the operating instructions is lost or page order is incorrect.

■ Contact our sales representative or agent if any point in this operating instructions is unclear or if there are any inaccuracies.

⚠CAUTION

Our company guarantees the product under certain warranty conditions. Our company in no way shall be responsible for any loss of content or damage of content.

PRECAUTIONS FOR SAFE OPERATION

It is imperative that the user complies with this operating instructions as it contains important safety advice.

Items and procedures are described so that you can use this unit correctly and safely. If the precautions advised are followed, this will prevent possible injury to the user and any other person.

Precautions are illustrated in the following way:

⚠WARNING

Failure to observe WARNING signs could result in a hazard to personnel possibly resulting in serious injury or death.

⚠CAUTION

Failure to observe CAUTION signs could result in injury to personnel and damage to the unit and associated property.

Symbol shows;

△ this symbol means caution.

⃠ this symbol means an action is prohibited.

● this symbol means an instruction must be followed.

Be sure to keep this operating instructions in a place accessible to users of this unit.

< Label on the unit >

This mark is labeled on the cover in which the electrical components of high voltage are enclosed to prevent the electric shock.

The cover should be removed by a qualified engineer or a service personnel only.

⚠WARNING

As with any equipment that uses CO_2 gas, there is a likelihood of oxygen depletion in the vicinity of the equipment. It is important that you assess the work site to ensure there is suitable and sufficient ventilation. If restricted ventilation is suspected, then other methods of ensuring a safe environment must be considered. These may include atmosphere monitoring and warning devices.

PRECAUTIONS FOR SAFE OPERATION

⚠WARNING

Do not use the unit outdoors. Current leakage or electric shock may result if the unit is exposed to rain water.

Only qualified engineers or service personnel should install the unit. The installation by unqualified personnel may cause electric shock or fire.

Install the unit on a sturdy floor and take an adequate precaution to prevent the unit from turning over. If the floor is not strong enough or the installation site is not adequate, this may result in injury from the unit falling or tipping over.

Never install the unit in a humid place or a place where it is likely to be splashed by water. Deterioration of the insulation may result which could cause current leakage or electric shock.

Never install the unit in a flammable or volatile location. This may cause explosion or fire.

Never install the unit where acid or corrosive gases are present as current leakage or electric shock may result due to corrosion.

Always ground (earth) the unit to prevent electric shock. If the power supply outlet is not grounded, it will be necessary to install a ground by qualified engineers.

Never ground the unit through a gas pipe, water main, telephone line or lightning rod. Such grounding may cause electric shock in the case of an incomplete circuit.

Connect the unit to a power source as indicated on the rating label attached to the unit. Use of any other voltage or frequency other than that on the rating label may cause fire or electric shock.

Never store volatile or flammable substances in this unit if the container cannot be sealed. These may cause explosion or fire.

Do not insert metal objects such as a pin or a wire into any vent, gap or any outlet on the unit. This may cause electric shock or injury by accidental contact with moving parts.

Use this unit in safe area when treating the poison, harmful or radiate articles. Improper use may cause bad effect on your health or environment.

Turn off the power switch (if provided) and disconnect the power supply to the unit prior to any repair or maintenance of the unit in order to prevent electric shock or injury.

Do not touch any electrical parts (such as power supply plug) or operate switches with a wet hand. This may cause electric shock.

PRECAUTIONS FOR SAFE OPERATION

⚠WARNING

Ensure you do not inhale or consume medication or aerosols from around the unit at the time of maintenance. These may be harmful to your health.

Never splash water directly onto the unit as this may cause electric shock or short circuit.

Never put containers with liquid on the unit as this may cause electric shock or short circuit when the liquid is spilled.

Never bind, process, or step on the power supply cord, or never damage or break the power supply plug. A broken supply cord or plug may cause fire or electric shock.

Do not use the supply cord if its plug is loose. Such supply cord may cause fire or electric shock.

Never disassemble, repair, or modify the unit yourself. Any such work carried out by an unauthorized person may result in fire, or electric shock or injury due to a malfunction.

Disconnect the power supply plug if there is something wrong with the unit. Continued abnormal operation may cause electric shock or fire.

When removing the plug from the power supply outlet, grip the power supply plug, not the cord. Pulling the cord may result in electric shock or fire by short circuit.

Disconnect the power supply plug before moving the unit. Take care not to damage the power cord. A damaged cord may cause electric shock or fire.

Disconnect the power plug when the unit is not used for long periods. Keeping the connection may cause electric shock, current leakage, or fire due to the deterioration of insulation.

If the unit is to be stored unused in an unsupervised area for an extended period, **ensure that children do not have access and that doors cannot be closed completely.**

The disposal of the unit should be accomplished by appropriate personnel. Remove doors to prevent accidents such as suffocation.

Do not put the packing plastic bag within reach of children as suffocation may result.

PRECAUTIONS FOR SAFE OPERATION

⚠CAUTION

Use a dedicated power source (a dedicated circuit with a breaker) as indicated on the rating label attached to the unit. A branched circuit may cause fire resulting from abnormal heating.

Connect the power supply plug to the power source firmly after removing the dust on the plug. A dusty plug or improper insertion may cause a heat or ignition.

Never store corrosive substances such as acid or alkali in this unit if the container cannot be sealed. These may cause corrosion of inner components or electric parts.

Check the setting when starting up of operation after power failure or turning off of power switch. The stored items may be damaged due to the change of setting.

Be careful not to tip over the unit during movement to prevent damage or injury.

Prepare a safety check sheet when you request any repair or maintenance for the safety of service personnel.

ENVIRONMENTAL CONDITIONS

This equipment is designed to be safe at least under the following conditions (based on the IEC61010-1):

■ Indoor use;

■ Altitude up to 2000 m;

■ Ambient temperature 5^{o}C to 40^{o}C;

■ Maximum relative humidity 80% for temperature up to 31^{o}C decreasing linearly to 50% relative humidity at 40^{o}C;

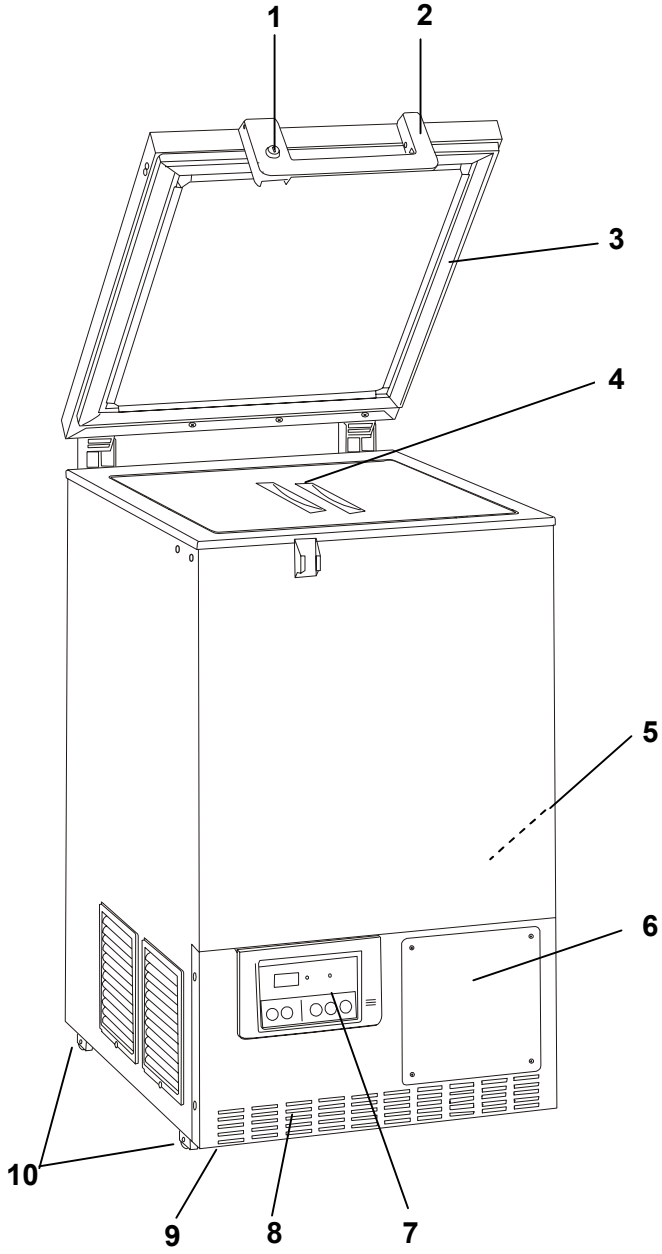
■ Mains supply voltage fluctuations up to ±10% of the nominal voltage;

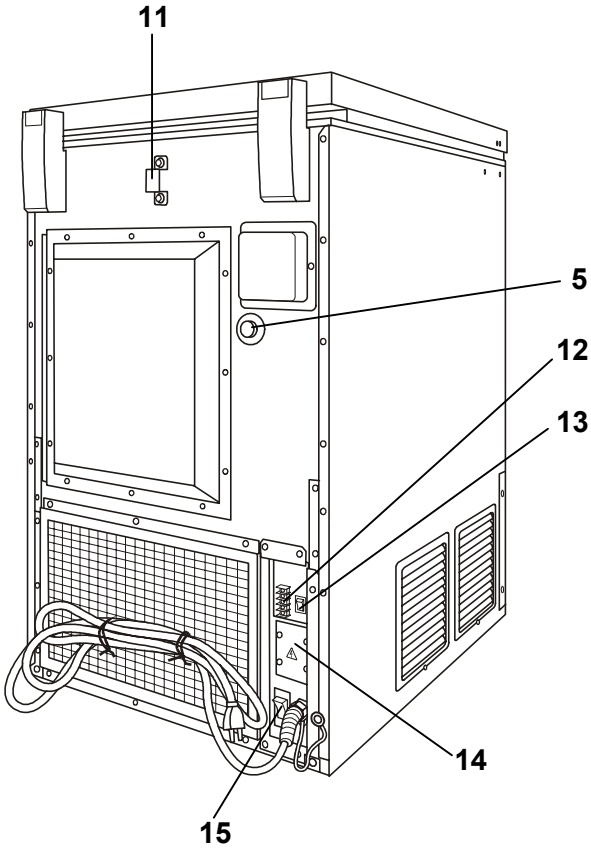
■ Transient overvoltages up to the levels of OVERVOLTAGE CATEGORY II;

■ Temporary OVERVOLTAGES occurring on the mains supply;

■ Applicable pollution degree of the intended environment (POLUTION DEGREE 2 in most cases)

FREEZER COMPONENTS





FREEZER COMPONENTS

1. Lock: By turning to 180 degree to clockwise with a key, the door can be locked.

2. Door: Top hinged type. To open the door, grip the handle.

3. Door gasket: Seals the door and prevents leakage of cold air.

4. Inner lid: Serves as a means of reducing cold air leakage when the door is open. Remove the frost regularly.

5. Access port: Located on the back side and bottom. These are used for leading the measuring cable from the freezing chamber to the outside. The bottom port is also used for passing the temperature sensor.

6. Space for temperature recorder: An automatic temperature recorder (optional part) can be attached here. See page 30 “Temperature recorder (option)”.

7. Control panel: The temperature setting keys etc. are located. See page 10 for details.

8. Intake air vent: Be careful not to block this.

9. Leveling foot: Serves to adjust the height and to settle the frame evenly.

10. Caster: 4 casters are provided for easy movement.

11. Fixture (back side): A fixture is attached to the rear of the frame. Fix the frame to the wall with this fixture and rope or chain.

12. Remote alarm terminal (back side): Used to notify an alarm condition of the unit to remote location. See page 19 for details.

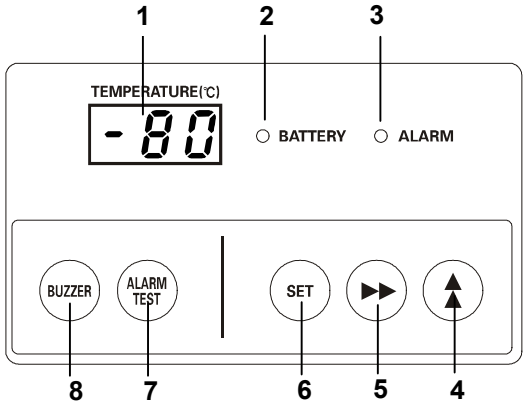
13. Battery switch (back side): Switch for battery used for power failure alarm. Always keep ON. Turn the switch OFF when the unit is in no use for a long period (more than 1 month).

14. Space for optional component: An interface board (optional component) can be attached here.

15. Power switch: A switch for supplying/disconnecting the power to the freezer.

FREEZER COMPONENTS

Control panel



1. Digital temperature indicator (TEMPERATURE): This indicator shows the present chamber temperature or set temperature.

2. Battery check lamp (BATTERY): This lamp lights to recommend the battery replacement. For the replacement, consult our sales representative or agent.

3. Alarm lamp (ALARM): This lamp is flashed during alarm condition.

4. Numerical value shift key (▲): Pressing this key in the setting mode causes the numerical value to shift. ON-OFF of key lock can be selected by pressing this key in the key lock mode. Pressing this key for more than 5 seconds in the temperature display mode causes the alarm temperature setting mode or alarm resume time setting mode. See page 15 “Alarm temperature setting” or page 17 “Setting of alarm resume time”.

5. Digit shift key (▶▶): Pressing this key in the setting mode causes the changeable digit to shift. Key lock mode is led by pressing this key for more than 5 seconds in the temperature display mode.

6. Set key (SET): Temperature setting mode is led by pressing this key and the changeable digit is flashed. By pressing this key again, the setting is memorized. The set mode returns to the temperature display mode automatically when 90 seconds has passed without any key operation. Refer to page 14 “Chamber temperature setting” for the details.

7. Alarm test key (ALARM TEST): To check the alarm system during freezer operation. Pressing this key with the battery switch ON gets the alarm lamp to flash, the remote alarm to operate, and the buzzer to sound.

8. Alarm buzzer stop key (BUZZER): To silence the audible alarm, press this key. The alarm during the alarm test cannot be silenced by pressing this key. See page 17 “Setting of alarm resume time” for the details.

INSTALLATION SITE

To operate this unit properly and to obtain maximum performance, install the unit in a location with the following conditions:

■ A location not subjected to direct sunlight

Do not install the unit under direct sunlight. Installation in a location subjected to direct sunlight cannot obtain the intended performance.

■ A location with adequate ventilation

Leave at least 10 cm around the unit for ventilation. Poor ventilation will result in a reduction of the performance and consequently the failure.

■ A location away from heat generating sources

Avoid installing the unit near heat-emitting appliances such as a heater or a boiler etc. Heat can decrease the intended performance of the unit.

■ A location with little temperature change

Install the unit under stable ambient temperature. The allowable ambient temperature is between 5 and 30°C.

■ A location with a sturdy and level floor

Always install the unit on a sturdy and level floor. The uneven floor or tilted installation may cause failure or injury. Install the unit in stable condition to avoid the vibration or noise. Unstable condition may cause vibration or noise.

⚠WARNING

Install the unit on a sturdy floor. If the floor is not strong enough or the installation site is not adequate, this may result in injury from the unit falling or tipping over.

Select a level and sturdy floor for installation. This precaution will prevent the unit from tipping. Improper installation may result in water spillage or injury from the unit tipping over.

■ A location not prone to high humidity

Install the unit in the ambient of 80% R.H. or less humidity. Installation under high humidity may cause current leakage or electric shock.

⚠WARNING

Do not use the unit outdoors. Current leakage or electric shock may result if the unit is exposed to rain water.

Never install the unit in a humid place or a place where it is likely to be splashed by water. Deterioration of the insulation may result which could cause current leakage or electric shock.

■ A location without flammable or corrosive gas

Never install the unit in a flammable or volatile location. This may cause explosion or fire or may result in the current leakage or electric shock by the corrosion of the electrical components.

■ A location without the possibility of anything fall

Avoid installing the unit in the location where anything can fall down onto the unit. This may cause the breakdown or failure of the unit.

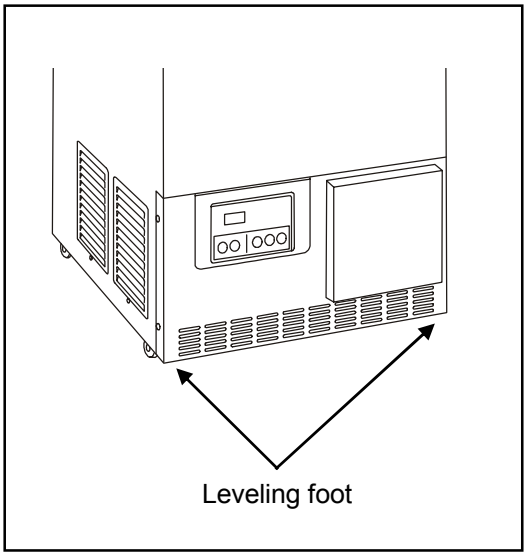
INSTALLATION

1. Removing the packaging materials and tapes

Remove all transportation packaging materials and tapes. Open the doors and ventilate the unit. If the outside panels are dirty, clean them with a diluted neutral dishwashing detergent. (Undiluted detergent can damage the plastic components. For the dilution, refer to the instruction of the detergent.) After the cleaning with the diluted detergent, always wipe it off with a wet cloth. Then wipe off the panels with a dry cloth.

Note:

Remove the cable tie banding the power supply cord. Prolonged banding may cause the corrosion of the cord coating.



2. Adjusting the leveling foot

Extend the leveling feet by rotating them counterclockwise to contact them to the floor. Ensure the unit is level and the casters are not in contact with the floor.

3. Fixing the unit

A fixture is attached to the rear of the frame. Fix the frame to the wall with this fixture and rope or chain.

4. Ground (earth)

The ground (earth) is for preventing the electric shock in the case of the electrical insulation is somehow degraded. Always ground the unit at the time of installation.

⚠WARNING

Use a power supply outlet with ground (earth) to prevent electric shock. If the power supply outlet is not grounded, it is necessary to install a ground by qualified engineers.

Never ground the unit through a gas pipe, water main, telephone line or lightning rod. Such grounding may cause electric shock in the case of an incomplete circuit.

START-UP OF UNIT

Follow the procedures for the initial and consequent operations of the unit.

1. Check that the power switch and battery switch are OFF.

2. Connect the power cord to the dedicated outlet having appropriate rating with the chamber empty.

3. Turn on the power switch.
Note:
The alarm buzzer operates until the chamber temperature reaches the set temperature if the power switch is turned on with the battery switch is ON.

4. Turn off the power switch of the Backup cooling kit (optional component) if it is installed.

5. Turn on the battery switch.

6. Set the chamber temperature to the desired temperature.

7. Allow the chamber temperature to fall to the desired temperature. Check the chamber temperature on the digital temperature indicator.

8. Turn on the power switch of the Backup cooling kit (optional component) if it is installed.

9. Press the alarm test key (ALARM TEST) and check that the alarm lamp blinks and alarm buzzer activates.

10. After confirming the above, you can put articles into the freezer chamber in a small batch to prevent the temperature rise.

Operation after power failure
The settings (chamber temperature, alarm temperature) are memorized by nonvolatile memory during the power failure. Accordingly, the freezer resumes the operation with setting before power failure.

⚠
In some cases, the condensing fan may not operate to improve the cooling performance. This does not mean the malfunction.

At the start-up: the fan starts to run with more than 30 minutes delay when the ambient temperature is lower than 20°C.

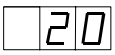
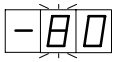
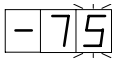
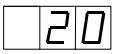
During the normal operation: the fan may not operate when the ambient temperature is lower than 20°C.

CHAMBER TEMPERATURE SETTING

Table 1 shows the basic procedure for setting the chamber temperature. Perform key operations in the sequence indicated in the table. The example in the table is based on the assumption that the desired temperature is -75°C.

Note: The chamber temperature is set to -80°C at the factory.

Table 1 Basic operation sequence (Example: Chamber temperature -75°C)

	Description of operation	Key operated	Indication after operation
1	Connect the power cord to the outlet. Turn the power switch ON.	----	The current chamber temperature is displayed. 
2	Press set key.	SET	The second digit is flashed. 
3	Set to -75 with the numerical value shift key and digit shift key.	▲▲	When pressed, the figure of settable digit changes.
		▶▶	When pressed, the settable digit is shifted. 
4	Press set key.	SET	Set temperature is memorized and the current chamber temperature is displayed. 

Note:

■ The temperature set mode returns to the temperature display mode automatically when 90 seconds has passed without any key operation.

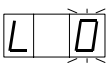
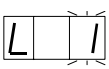
■ Although the value of the chamber temperature setting can range from -55°C to -90°C, the guaranteed temperature range with no load is between -60°C and -80°C when the ambient temperature is 30°C.

KEY LOCK FUNCTION

This unit is provided with the key lock function. When the key lock is ON, change of temperature setting through the key pad is not available. The key lock is set to OFF at the factory.

Display	Mode	Function
L 0	Key lock is OFF	Enable to change of temperature setting
L 1	Key lock is ON	Disable to change of temperature setting

Table 2. Procedure for key lock setting (change from key lock OFF to key lock ON)

	Description of operation	Key operated	Indication after operation
1		----	The current chamber temperature is displayed. 
2	Press digit shift key for 5 seconds.	▶▶	The first digit is flashed. 
3	Press numerical value shift key and scroll the figure to 1.	▲▲	When pressed, the figure of settable digit changes. 
4	Press set key.	SET	The key lock is set to ON. The current chamber temperature is displayed. 

FUNCTION MODE

This unit has the following function mode.

Indication	Mode	Settable range
F01	Setting of high temperature alarm	Between 5 and 20°C higher than the chamber set temperature (1°C gradient)
F02	Setting of low temperature alarm	Between -5 and -20°C lower than the chamber set temperature (1°C gradient)
F05	Setting of compressor delay time	Between 3 and 15 minutes (1 minute gradient)
F25	Setting of alarm resume time	0 or between 10 and 60 minutes (10-minute gradient)

ALARM TEMPERATURE SETTING

This unit is provided with the high and low temperature alarm and the temperature at which the alarm is activated is changeable.

The following procedure shows the setting of alarm temperature according to the condition below:

High temperature alarm: activates at the temperature 5°C higher than the chamber set temperature

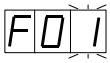
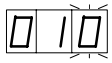
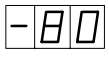
Low temperature alarm: activates at the temperature 5°C lower than the chamber set temperature

Note:

The alarm temperature is set at the factory 10°C higher and lower than the chamber set temperature.

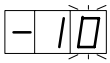
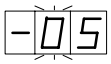
The available range of high/low temperature alarm is between 5°C and 20°C higher/lower than the chamber set temperature.

Table 3 Procedure for setting high temperature alarm

	Description of operation	Key operated	Indication after operation
1		----	The current chamber temperature is displayed. 
2	Press numerical value shift key for 5 seconds.	▲▲	The first digit is flashed. 
3	Press numerical value shift key and scroll the figure to 1.	▲▲	When pressed, the figure of settable digit increases. 
4	Press set key.	SET	The first digit is flashed. 
5	Set the temperature to 005 with the digit shift key and numerical value shift key.	▶▶	Pressing the key shifts the digit which can be set.
		▲▲	When pressed, the figure of settable digit increases. 
6	Press set key.	SET	Alarm temperature is memorized and the current chamber temperature is displayed. 

ALARM TEMPERATURE SETTING

Table 4 Procedure for setting low temperature alarm

	Description of operation	Key operated	Indication after operation
1		----	The current chamber temperature is displayed. 
2	Press numerical value shift key for 5 seconds.	▲▲	The right digit is flashed. 
3	Press numerical value shift key and scroll the figure to 2.	▲▲	When pressed, the figure of settable digit increases. 
4	Press set key.	SET	The right digit is flashed. 
5	Set the temperature to -05 with the digit key and numerical value shift key.	▶▶	Pressing the key shifts the digit which can be set.
		▲▲	When pressed, the figure of settable digit increases. 
6	Press set key.	SET	Alarm temperature is memorized and the current chamber temperature is displayed. 

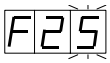
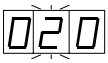
SETTING OF ALARM RESUME TIME

The alarm buzzer is silenced by pressing alarm buzzer stop key (BUZZER) key on the control panel during alarm condition (The remote alarm cannot stopped.). The buzzer will be activated again after certain suspension if the alarm condition is continued. The suspension time can be set by following the procedure shown in the Table 5 below.

The example in the table is based on the assumption that the desired duration is 20 minutes.

Note: The duration is set in 30 minutes at the factory.

Table 5 Setting procedure for alarm resuming time (change from 30 minutes to 20 minutes)

	Description of operation	Key operated	Indication after operation
1		----	The current chamber temperature is displayed. 
2	Press numerical value shift key for 5 seconds.	▲▲	The first digit is flashed. 
3	Set the figure to F25 with the digit shift key and numerical value shift key.	▶▶	Pressing the key shifts the digit which can be set.
		▲▲	When pressed, the figure of settable digit increases. 
4	Press set key.	SET	The current setting is displayed. The second digit is flashed. 
5	Set the figure to 020 with the numerical value shift key.	▲▲	When pressed, the figure of settable digit increases. 
6	Press set key.	SET	Alarm resume time is memorized and the current chamber temperature is displayed. 

■ The settable alarm resume time is 10, 20, 30, 40, 50, or 60 minutes (The setting is 010, 020, 030, 040, 050, or 060). The buzzer would not resume if the resume time is set in 000.

■ It is recommended to set the alarm resume time when the freezer is not under alarm condition. The new setting is effective on the next alarm condition.

■ The setting cannot be changed during power failure.

■ The remote alarm during power failure or buzzer and remote alarm during alarm test cannot be silenced.

■ The setting mode returns to the temperature display mode automatically when 90 seconds has passed without any key operation. In this case, any setting before pressing the set key (SET) is not memorized.

CHANGE OF COMPRESSOR DELAY TIME

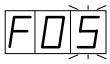
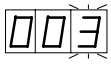
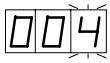
The delay time of the compressor can be changed to reduce the load on the power line and to facilitate the start-up (reset) of the freezer after power failure.

The example in the table is based on the assumption that the delay time is changed to 4 minutes.
The delay time is set in 3 minutes at the factory.

Note:

■ The setting range for delay time is between 3 and 15 minutes. The cool down of chamber temperature may be slow when the setting of delay time is over 5 minutes, depending on the installation environment. There is no need of changing the delay time when the capacity of power source is adequate.

Table 6. Changing procedure for delay time (change from 3 minutes to 4 minutes)

	Description of operation	Key operated	Indication after operation
1		----	The current chamber temperature is displayed. 
2	Press numerical value shift key for 5 seconds.	▲▲	The first digit is flashed. 
3	Set the figure to F05 with the numerical value shift key.	▲▲	When pressed, the figure of settable digit changes. 
4	Press set key.	SET	The current delay time is displayed. The first digit is flashed. 
5	Set the figure to 004 with the numerical value shift key.	▲▲	When pressed, the figure of the first digit changes. 
6	Press set key.	SET	The delay time is memorized and the current chamber temperature is displayed. 

■ The compressor starts to run with the delay time when the power cord is connected to the outlet or after power failure.

REMOTE ALARM TERMINAL

⚠WARNING

Always disconnect the power supply cord before connecting an alarm device to the remote alarm terminal.

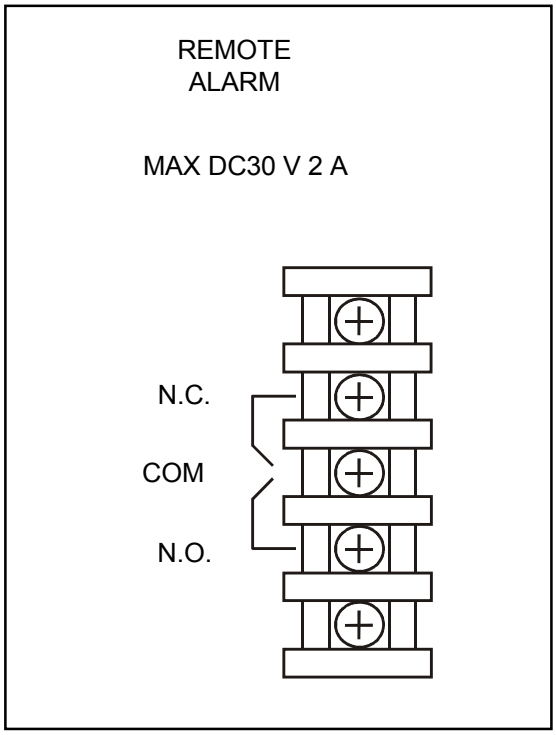
The terminal of the remote alarm is installed at the back of the unit. The alarm is generated from this terminal. The contact capacity is DC 30 V, 2 A.

Contact output:

	Between COM and N.O.	Between COM and N.C.
At normal condition	"Open"	"Close"
At abnormal condition	"Close"	"Open"

Note:

The alarm device is activated when the power cord is disconnected because such condition is determined as power failure.



ALARMS & SAFETY FUNCTIONS

This unit has the alarms and safety functions shown in Table 7, and also self diagnostic functions.

Table 7 Alarms and safety functions

Alarm & Safety	Situation	Indication	Buzzer	Safety operation
High temperature alarm	If the chamber temperature is higher than the temperature at which the high temperature alarm is activated.	Alarm lamp is flashed. Temperature indicator is flashed.	Intermittent tone with 15 minutes delay.	Remote alarm with 15 minutes delay.
Low temperature alarm	If the chamber temperature is lower than the temperature at which the low temperature alarm is activated.	Alarm lamp is flashed. Temperature indicator is flashed.	Intermittent tone with 15 minutes delay.	Remote alarm with 15 minutes delay.
Power failure alarm	In the case of power failure. If the power switch is OFF. When the power to the unit is disconnected.	Alarm lamp is flashed.	Intermittent tone	Remote alarm.
Sensor abnormality	If the thermal sensor is disconnected..	Alarm lamp is flashed. E01 and chamber temp. are displayed alternately.	Intermittent tone	Remote alarm.
	If the thermal sensor is short-circuited	Alarm lamp is flashed. E02 and chamber temp. are displayed alternately.		
	If the thermal sensor of the compressor is disconnected.	Alarm lamp is flashed. E05 and chamber temp. are displayed alternately.	Intermittent tone	Remote alarm.
	If the thermal sensor of the compressor is short-circuited	Alarm lamp is flashed. E06 and chamber temp. are displayed alternately.		
Compressor temp. abnormality	In the event of failure of fan motor for cooling the compressor.	Alarm lamp is flashed. E10 and chamber temp. are displayed alternately.	Intermittent tone	Remote alarm. Compressor stops.
Fan motor abnormality	In the event of failure of fan motor for cooling the compressor.	Alarm lamp is flashed. E15 and chamber temp. are displayed alternately.	Intermittent tone	Remote alarm.
Battery switch check	When battery switch is OFF at the time of alarm test.	Alarm lamp is flashed. E09 is flashed.	-----	-----
Battery check	When approx. about 3 years has passed with the power cord connected to the outlet.	Battery check lamp lights.	-----	-----
Fan motor check	When about 6 years has passed with power switch ON.	Battery check lamp is flashed.	Intermittent tone	Remote alarm.

Note:

■ After power failure, the operation is resumed with the condition before power failure.

■ The chamber temperature is displayed for 5 seconds if the alarm buzzer stop key (BUZZER) is depressed during the power failure alarm. After that, the alarm buzzer stops. The alarm lamp (ALARM) keeps blinking.

■ In the case of thermal sensor disconnected (E01) or short-circuited (E02), the freezer continues to run.

ROUTINE MAINTENANCE

⚠WARNING

Always disconnect the power supply to the unit prior to any repair or maintenance of the unit in order to prevent electric shock or injury.

Ensure you do not inhale or consume medication or aerosols from around the unit at the time of maintenance. These may be harmful to your health.

Cleaning of cabinet

■ Clean the unit once a month. Regular cleaning keeps the unit looking new.

■ Use a dry cloth to wipe off small amounts of dirt on the outside and inside of the unit and all accessories. If the outside panels are dirty, clean them with a diluted neutral dishwashing detergent. (Undiluted detergent can damage the plastic components. For the dilution, refer to the instruction of the detergent.) After the cleaning with the diluted detergent, always wipe it off with a wet cloth. Then wipe off the cabinet or accessories with a dry cloth.

■ Never pour water onto or into the unit. Doing so can damage the electric insulation and cause failure.

■ The compressor and other mechanical parts are completely sealed. This unit requires absolutely no lubrication.

■ Remove the frost on the inner lid once a month.

■ Press the back-up test switch once a month to check the Backup cooling kit operation when the Backup cooling kit is installed.

Defrosting

The frost is built on the inside wall of the chamber and inner lid. The excessive frost possibly makes some gap between the cabinet and door gasket, which may cause poor cooling. Remove the frost with a scraper enclosed with the unit. Following shows the procedure for removing the heavy frost.

Note: For removing the frost, do not use a tool with sharp edge such as a knife or a screw driver.

1. Move all the contents in the chamber to another low temperature freezer or a tank refrigerated with liquid N_2 or CO_2 gas (or dry ice).

2. Turn off the battery switch and backup switch (when installed).

3. Turn off the power switch and disconnect the power cord from the dedicated outlet.

4. Open the freezer door and remove the inner lid. Keep the freezer as it is until the frost is removed completely.

5. Wipe out the water that has left in the chamber.

6. Start-up the freezer by following the procedure on page 13 “Start-up the unit”.

7. Once the chamber temperature has dropped to the desired temperature, place the original contents back in the freezer chamber.

ROUTINE MAINTENANCE

Battery

The battery for power failure alarm is an article for consumption. The battery life is approximately 3 years. The buzzer and alarm lamp cannot be activated at the power failure and the stored items may be influenced if the battery is left as it is for more than 3 years. It is recommended that the battery is replaced ahead of time.

For the replacement of the battery, contact our sales representative or agent.

REPLACEMENT OF BATTERY

Location of a nickel-metal-hydride battery

This unit is provided a nickel-metal-hydride battery for the power failure warning device. The battery is located at the back of the control panel. (Fig. 1)

The high voltage components are enclosed in the side cover. The side cover should be removed by a qualified engineer or a service personnel only to prevent the electric shock.

Removal of nickel-metal-hydride battery

1. Turn off the power switch, battery switch and disconnect the power supply plug.

2. As shown in the Fig. 2, remove 1 screws fixing the side cover with a screw driver and remove the side cover.

3. Disconnect the battery connector. (Fig. 3)

4. Remove 4 screws fixing the battery cover. (Fig. 4)

5. Take out the battery.

Handling of battery

Cover the battery terminal with an insulating tape to avoid the short circuit. Then follow the procedure for recycling or proper disposal.

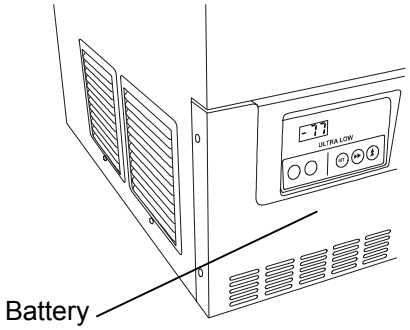


Fig. 1

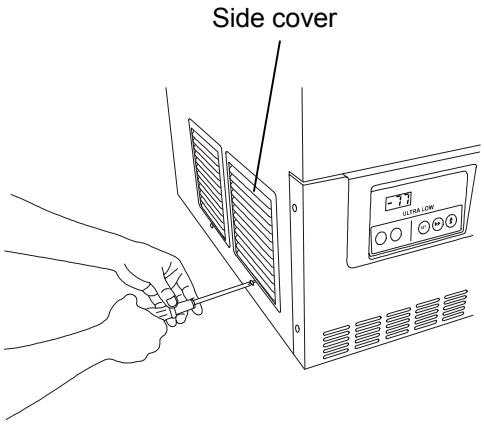


Fig. 2

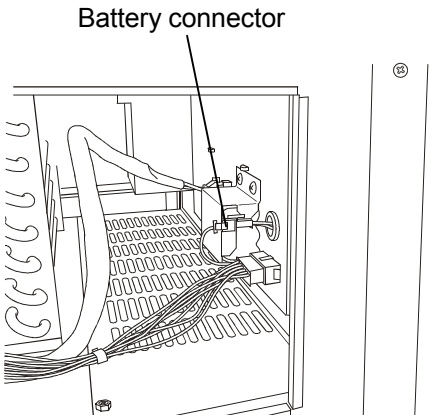


Fig. 3

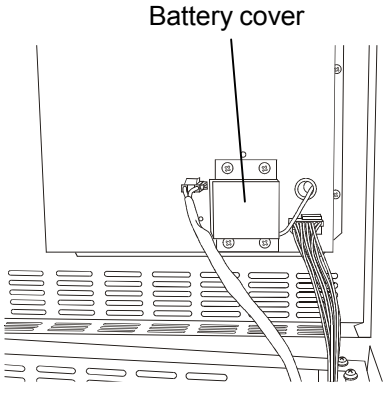


Fig. 4

TROUBLESHOOTING

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

Malfunction	Check/Remedy
The freezer does not run	■ The power cord is not connected to the proper outlet. ■ The power source does not have enough capacity. ■ The power failure is occurred. ■ The circuit breaker of power source is active. ■ The fuse is blown. **Note:** Move the freezer contents to another freezer if the chamber temperature raise due to the freezer failure.
The alarm device is active	<at the start-up> ■ The chamber temperature deviates from the set temperature. <during use> ■ The set temperature was changed. ■ The door was kept opened for long period. ■ The high temperature load was stored in the chamber. In above cases, the alarm is stopped automatically after certain time.
The cooling is poor	■ You put too many articles of high temperature in the chamber. ■ Too much frost is in the chamber. ■ The door is opened/closed frequently. ■ The set temperature is not appropriate. ■ The freezer is in the direct sunlight. ■ The freezer is not installed properly.
There is condensation outside the freezer	■ The condensation can be found outside the freezer depending on the installation site, or under muggy environment. The condensation is caused by the humidity not by freezer failure. Wipe off the condensation with a dry cloth.
Noise	■ The freezer is not installed on the sturdy floor. ■ The freezer is not leveled with the leveling feet. ■ There is anything touching the frame. ■ The freezer is in the status immediately after start up. The unit sometimes causes a noise when the chamber temperature is high due to the large load. The noise gets less and less accompanying with the cooling of the chamber.

Note:

If the malfunction is not eliminated after checking the above items, or the malfunction is not shown in the above table, contact our sales representative or agent.

CAUTION

The noise of refrigerant flow may be heard due to the characteristic of refrigerating circuit. Especially for several hours after start-up, the noise of motor compressor or refrigerant flow can be larger. But such noise does not mean malfunction nor failure.

DISPOSAL OF UNIT

⚠WARNING

If the unit is to be stored unused in an unsupervised area for an extended period **ensure that children do not have access and doors cannot be closed completely.**

The disposal of the unit should be accomplished by appropriate personnel. Always remove doors to prevent accidents such as suffocation.

Recycle of battery

The unit contains a rechargeable battery. The battery is recyclable. At the end of it's useful life, check with you local solid officials option or proper disposal.

∗ Label indication is obliged to comply with Taiwanese battery regulation.

DISPOSAL OF UNIT

(English)
FOR EU USERS
The symbol mark and recycling systems described below apply to EU countries and do not apply to countries in other areas of the world.

Your Panasonic product is designed and manufactured with high quality materials and components which can be recycled and/or reused.

The symbol mark means that electrical and electronic equipment, batteries and accumulators, at their end-of-life, should be disposed of separately from your household waste.

Note:
If a chemical symbol is printed beneath the symbol mark, this chemical symbol means that the battery or accumulator contains a heavy metal at a certain concentration. This will be indicated as follows: Hg: mercury, Cd: cadmium, Pb: lead

In the European Union there are separate collection systems for used electrical and electronic equipment, batteries and accumulators.
Please, dispose of them correctly at your local community waste collection/recycling centre.

Please, help us to conserve the environment we live in!

(German)
Für EU-Staaten
Das Symbol und das erwähnte Wiederverwertungssystem gelten nur für die Länder der EU und nicht für andere Länder oder Gebiete in der Welt.

Die Produkte von Panasonic werden aus hochwertigen Materialien und Komponenten gefertigt, die sich wieder verwenden lassen.

Das Symbol bedeutet, dass elektrische oder elektronische Geräte, Batterien und Akkus am Ende ihrer Lebensdauer nicht im Haushaltmüll entsorgt werden dürfen.

Hinweis:
Ein chemisches Zeichen unter dem Symbol bedeutet, dass die Batterie bzw. der Akku Schwermetalle in gewissen Konzentrationen enthält. Die Metalle werden wie folgt bezeichnet: Hg: Quecksilber, Cd: Kadmium, Pb: Blei

In der Europäischen Union gibt es separate Sammelstellen für elektrische und elektronische Geräte, Batterien und Akkus.
Entsorgen Sie solche Geräte bitte richtig in der kommunalen Sammelstelle bzw. im Recyclingzentrum.

Helfen Sie mit, die Umwelt in der wir leben, zu schützen.

DISPOSAL OF UNIT

(French)
POUR LES UTILISATEURS DE UE
Le symbole et les systèmes de recyclage évoqués ci-dessous s'appliquent uniquement aux pays de UE.

Votre produit Panasonic est conçu et fabriqué avec des composants et des matériaux de hautes qualités qui peuvent être recyclés et/ou réutilisés.

Le symbole signifie que les équipements électriques et électroniques, les batteries et les accumulateurs ne doivent pas être mis au rebut avec les déchets domestiques à l'issue de leur durée de vie.

Remarque:
Si un symbole chimique est imprimé sous le symbole, le symbole chimique indique que la batterie ou l'accumulateur contient une certaine concentration de métaux lourds. Les métaux sont indiqués de la manière suivante: Hg: mercure, Cd: cadmium, Pb: plomb.

Il existe différents systèmes de collecte pour les équipements électriques et électroniques, les batteries et les accumulateurs usagés au sein de l'Union européenne.
Veuillez mettre les équipements au rebut de manière correcte, auprès de votre centre de recyclage/de collecte des déchets local.

Aidez-nous à préserver l'environnement dans lequel nous vivons!

Les machines ou appareils électriques et électroniques contiennent fréquemment des matières qui, si elles sont traitées ou éliminées de manière inappropriée, peuvent s'avérer potentiellement dangereuses pour la santé humaine et pour l'environnement.
Cependant, ces matières sont nécessaires au bon fonctionnement de votre appareil ou de votre machine. Pour cette raison, il vous est demandé de ne pas vous débarrasser de votre appareil ou machine usagé avec vos ordures ménagères.

(Spanish)
PARA USUARIOS DE LA UNION EUROPEA
El símbolo y los sistemas de reciclado descriptos a continuación se aplican para países de la Unión Europea y no se aplica para países en otras áreas del mundo.

Su producto Panasonic fue diseñado y fabricado con materiales de alta calidad y componentes que pueden ser reciclados y/o vueltos a usar.

El símbolo significa que los equipos eléctricos y electrónicos, baterías y acumuladores, al final de su vida útil, debe ser desechados separadamente de sus residuos domiciliarios.

Nota:
Si hay un símbolo químico impreso debajo del símbolo, este símbolo químico significa que la batería o acumulador contiene una cierta concentración de un metal pesado. Esto es indicado de la siguiente manera: Hg: mercurio, Cd: cadmio, Pb: plomo

En la Unión Europea hay sistemas de recolección separados para equipos eléctricos y electrónicos, baterías y acumuladores usados.
Por favor, disponga de ellos correctamente en el centro de recolección de residuos/reciclado de la comunidad de su localidad.

Por favor, ayúdenos a proteger el medio ambiente en que vivimos!

DISPOSAL OF UNIT

(Portuguese)
PARA UTILIZADORES DA UE
O símbolo e os sistemas de reciclagem descritos abaixo aplicam-se aos países da UE e não se aplicam aos países noutras áreas do mundo.

O seu produto Panasonic foi concebido e fabricado com materiais e componentes de elevada qualidade que podem ser reciclados e/ou reutilizados.

O símbolo significa que o equipamento eléctrico e electrónico, baterias e acumuladores, em final de vida, não devem ser deitados fora juntamente com o lixo doméstico.

Atenção:
Se estiver impresso um símbolo químico debaixo do símbolo de , este símbolo químico significa que a bateria ou acumulador contém um metal pesado numa determinada concentração. Estará indicado da seguinte forma: Hg: mercúrio, Cd: cádmio, Pb: chumbo

Na União Europeia existem sistemas de recolha separados para equipamento eléctrico e electrónico, baterias e acumuladores.
Por favor, entregue-os no seu centro de reciclagem/recolha de lixo local.

Por favor, ajude-nos a conservar o ambiente!

(Italian)
PER UTENTI UE
Il simbolo e i sistemi di riciclaggio descritti di seguito si applicano esclusivamente ai paesi dell'UE.

Questo prodotto Panasonic è stato progettato e realizzato con materiali e componenti di elevata qualità che possono essere riciclati e/o riutilizzati.

Il simbolo di riciclaggio mostrato di seguito indica che i dispositivi elettrici ed elettronici, le batterie e gli accumulatori, una volta esauriti, devono essere smaltiti separatamente rispetto ai rifiuti domestici.

Nota:
Se sotto il simbolo di riciclaggio appare un simbolo chimico, esso sta ad indicare che la batteria o l'accumulatore contengono metalli pesanti a determinate concentrazioni. Questo viene specificato come segue: Hg: mercurio, Cd: cadmio, Pb: piombo.

Nell'Unione europea esistono diversi sistemi per la raccolta dei rifiuti speciali quali i dispositivi elettrici ed elettronici, le batterie e gli accumulatori.
Si raccomanda di provvedere allo smaltimento di tali rifiuti secondo quanto previsto dalle normative vigenti in materia.

Aiutaci a conservare l'ambiente!

DISPOSAL OF UNIT

(Dutch)
VOOR GEBRUIKERS IN DE EU
Het symbool en de recycleersystemen die hieronder beschreven worden, zijn van toepassing op de landen in de EU en zijn niet van toepassing op landen in andere delen van de wereld.

Uw Panasonic product is ontworpen en gemaakt met materialen en onderdelen van hoge kwaliteit, die gerecycleerd en opnieuw gebruikt kunnen worden.

Het symbool betekent dat elektrische en elektronische apparatuur, batterijen en accu's aan het eind van hun leven apart van uw huisafval weggegooid moeten worden.

Let op:
Indien een chemisch symbool afgedrukt staat onder het symbool, betekent dit chemisch symbool dat de batterij of accu een zwaar metaal met een bepaalde concentratie bevat. Dit wordt als volgt aangegeven: Hg: kwik, Cd: cadmium, Pb: lood

In de Europese Unie zijn afzonderlijke inzamelingssystemen voor gebruikte elektrische en elektronische apparatuur, batterijen en accu's.
Wilt u deze op de juiste manier weggooien bij uw plaatselijk afvalinzameling-/recyclingcentrum in uw buurt?

Help ons het milieu waarin wij leven in stand te houden!

(Swedish)
FÖR ANVÄNDARE INOM EU
Den symbolmärkning och de återvinningssystem som beskrivs här nedan gäller länder inom EU och gäller inte länder i någon annan del av världen.

Din Panasonic-produkt har konstruerats och tillverkats med delar och material av hög kvalitet, som kan återvinnas och/eller återanvändas.

Symbolmärkningen innebär att elektrisk och elektronisk utrustning, batterier och ackumulatorer, vid slutet av deras livslängd, inte får slängas som hushållsavfall utan skall slängas separat.

Observera:
Om en kemisk symbol finns tryckt under denna symbolmärkning, betyder denna kemiska symbol att batteriet eller ackumulatorn innehåller en tungmetall med en viss koncentration. Detta indikeras på följande sätt: Hg: kvicksilver, Cd: kadmium, Pb: bly

I den Europeiska Unionen finns det separata uppsamlingssystem för använd elektrisk och elektronisk utrustning, batterier och ackumulatorer.
Gör dig av med sådana saker på rätt sätt på den speciella lokala platsen för återsamling/återanvändning.

Hjälp oss att bevara den miljö vi lever i!

TEMPERATURE RECORDER (OPTION)

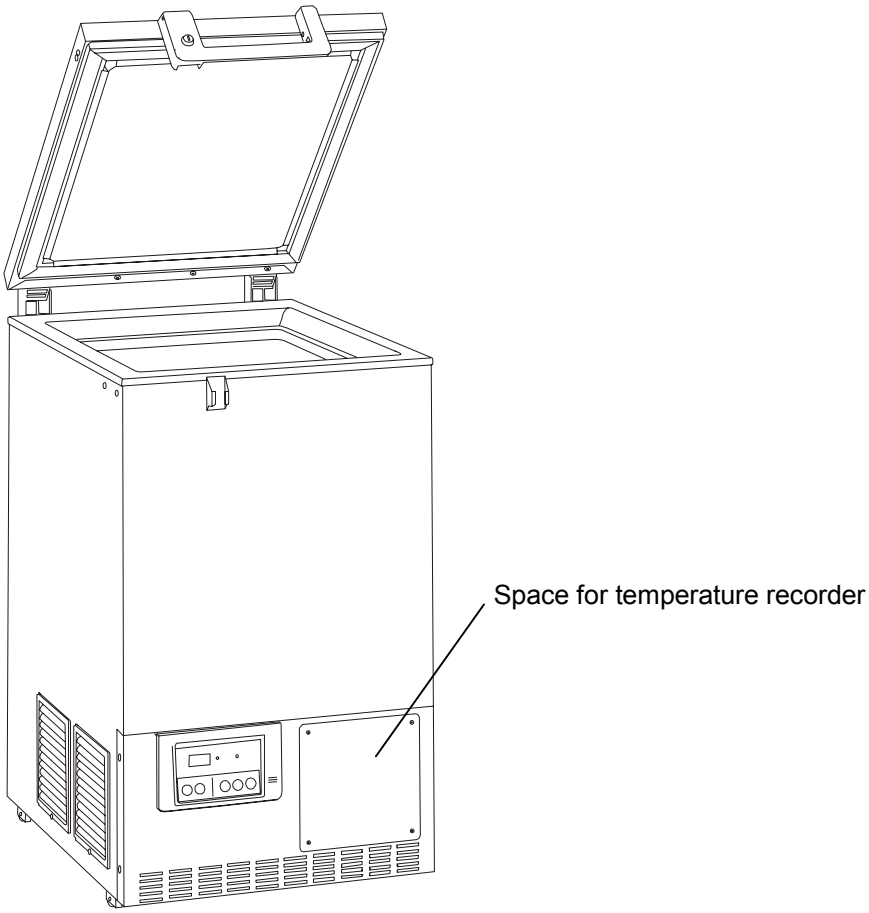
⚠WARNING

Always disconnect the power supply to the unit prior to attachment of a temperature recorder in order to prevent electric shock or injury.

A temperature recorder is available for the freezer as the optional component. The type of the temperature recorder is MTR-85H, MTR-G85A/MTR-G85C. For the attachment, optional component is necessary as follows.

Temperature recorder	Recorder fixing	Recorder sensor cover
MTR-85H	MDF-S3085	MTR-C8
MTR-G85A/MTR-G85C	-----	MTR-C8

For the installation of the temperature recorder, contact our sales representative or agent.



TEMPERATURE RECORDER (OPTION)

Installation of MTR-85H

1. Remove 4 screws (A, B, C, D) on the side of the front panel to take off the front panel. Then remove 4 screws on the cover for the recorder mounting space and take off the cover (Fig. 1). After removing the cover, replace 4 screws.

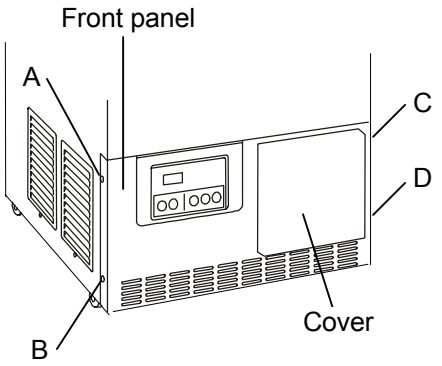


Fig. 1

2. As shown in Fig. 2, install the temperature recorder to the front panel by using the fixture enclosed with the temperature recorder and the recorder fixing (MDF-S3085).

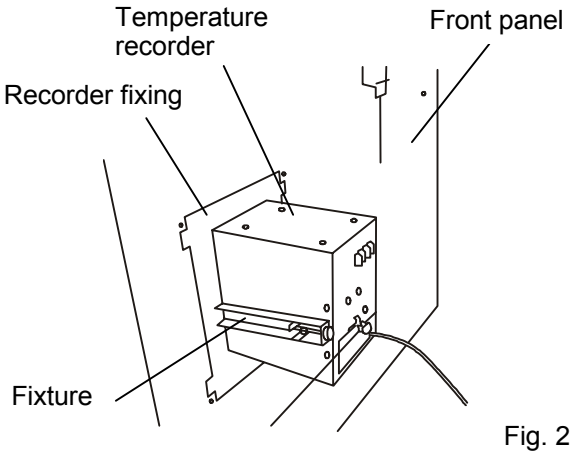


Fig. 2

3. Lead the recorder sensor to the chamber through the access port at the bottom of the chamber.

Note:

The port is covered with a thermal insulation and rubber cap. Remove those covers before passing the recorder sensor.

4. Attach the sensor cover to the right side of the chamber with 2 screws on the chamber wall.

5. Fix the recorder sensor to the inside of the sensor cover (MTR-C8) by using the enclosed clips and screws and seal the access port on the chamber side with a silicon. (Fig. 3)

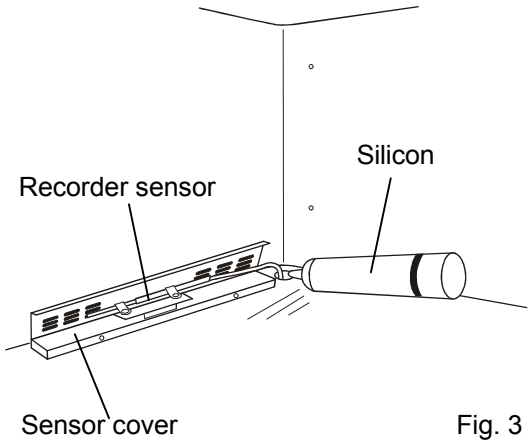


Fig. 3

TEMPERATURE RECORDER (OPTION)

5. Seal the access port on the outside with putty as shown in Fig. 4.

7. Replace the front panel and fix it with 4 screws.

8. Operate the freezer until the chamber temperature gets to the set temperature. Check the recorded temperature and chamber temperature displayed on the control panel.

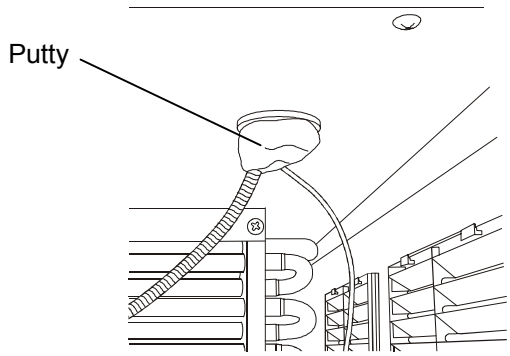


Fig. 4

TEMPERATURE RECORDER (OPTION)

Installation of MTR-G85A/MTR-G85C

1. Remove 4 screws (A, B, C, D) on the side of the front panel to take off the front panel. Then remove 4 screws on the cover for the recorder mounting space and take off the cover (Fig. 1).

2. Fix the temperature recorder to the front panel with fixture and screws enclosed with the recorder.

Note :

Before fixing the temperature recorder, connect the recorder connector with the connector on the right back side of the control panel (Fig. 2)

3. Lead the recorder sensor to the chamber through the access port at the bottom of the chamber.

Note:

The port is covered with a thermal insulation and rubber cap. Remove those covers before passing the recorder sensor.

4. Attach the sensor cover to the right side of the chamber with 2 screws on the chamber wall.

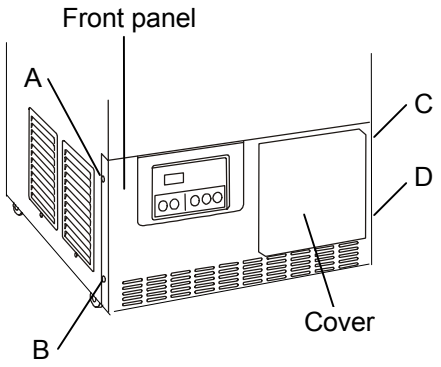
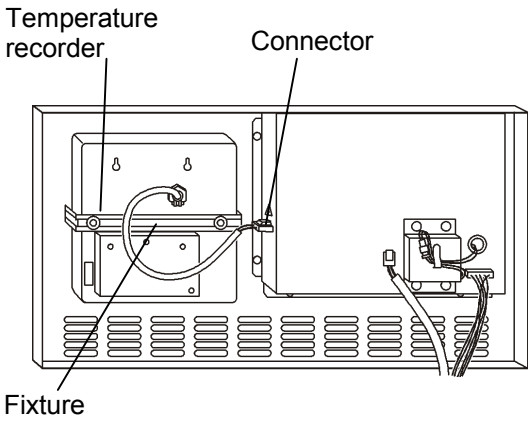


Fig. 1



< Back of the Front panel >

Fig. 2

TEMPERATURE RECORDER (OPTION)

5. Fix the recorder sensor to the inside of the sensor cover (MTR-C8) by using the enclosed clips and screws and seal the access port on the chamber side with a silicon. (Fig. 3)

6. Seal the access port on the outside with putty as shown in Fig. 4.

7. Replace the front panel and fix it with 4 screws.

8. Operate the freezer until the chamber temperature gets to the set temperature. Check the recorded temperature and chamber temperature displayed on the control panel. Adjust the zero adjustment volume on the temperature recorder so that the recorded temperature can corresponds with the displayed temperature if they are not compliance each other.
Refer to the instruction manual enclosed with the recorder.

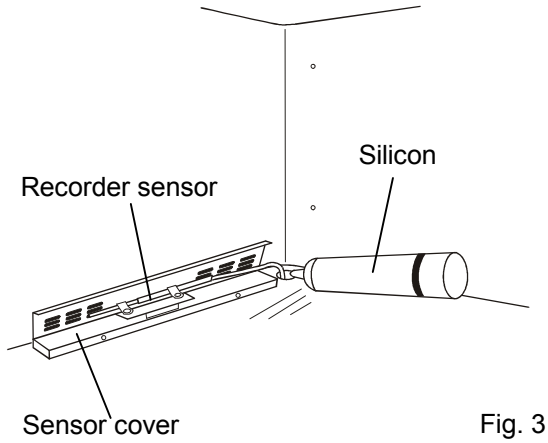


Fig. 3

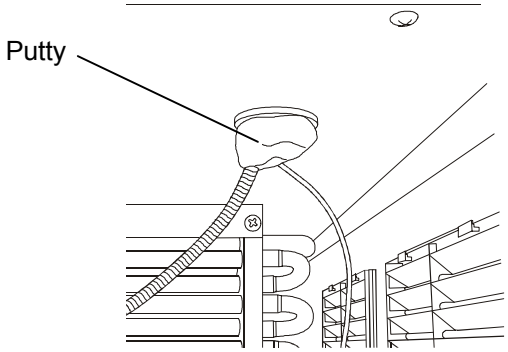
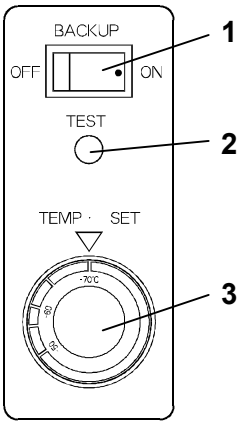


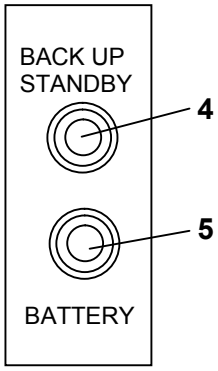
Fig. 4

BACKUP COOLING KIT (OPTION)

This freezer can be provided with a Backup cooling kit (CVK-UB4) which is available as an optional component. For the installation, refer to the instruction manual enclosed with the backup cooling kit.



CVK-UB4 control panel



CVK-UB4 switch box

1. Power switch (BACKUP)

When turning on the backup cooling kit, the backup standby lamp (green) is brightened. This means that the backup cooling kit is ready. To stop the operation of the backup cooling kit, turn off this switch.

2. Test switch (TEST)

This switch is for checking the operation of Backup cooling kit. Pressing this switch is resulted in the release of liquid carbon dioxide gas without backup cooling kit operation.

3. Temperature setting knob (TEMP. SET)

With this knob, set the temperature at which the backup cooling kit is operated. The effective set temperature range is between -50°C and -70°C.

4. Backup standby lamp (BACK UP STANDBY)

A lamp that is activated in conjunction with the ON/OFF of the power switch of the Backup cooling kit.

5. Battery lamp (BATTERY)

This lamp is brightened in orange when the battery capacity is less.

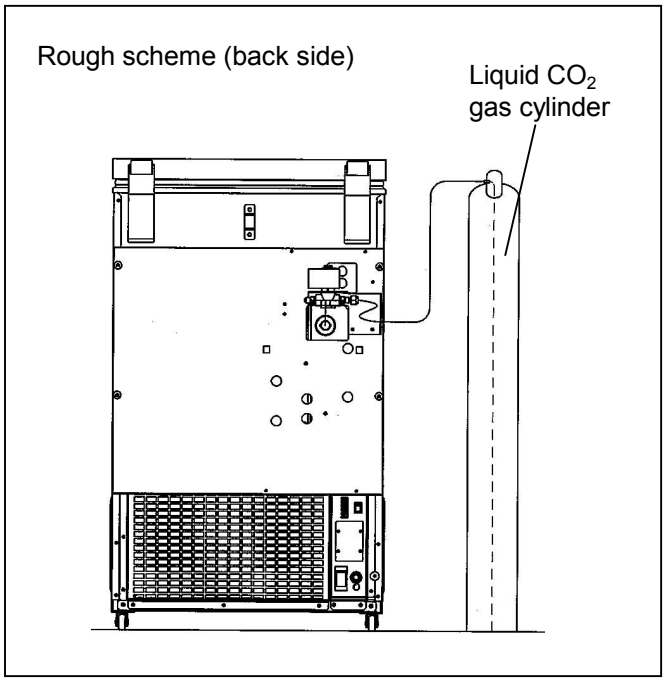
⚠WARNING

As with any equipment that uses CO_2 gas, there is a likelihood of oxygen depletion in the vicinity of the equipment. It is important that you assess the work site to endure there is suitable and sufficient ventilation. If restricted ventilation is suspected, then other methods of ensuring a safe environment must be considered. These may include atmosphere monitoring and warning devices.

BACKUP COOLING KIT (OPTION)

With the Backup cooling kit (CVK-UB4), the freezer prevents the chamber temperature from going up by injecting the liquid CO_2 gas when the power supply is disconnected (power failure, disconnection of power cord, breaker OFF) or in the case of failure of freezer itself. The liquid CO_2 gas is injected with the activation of solenoid valve energized by battery when the chamber temperature reaches the alarm temperature.
Following shows the procedure for setting the Backup cooling kit.

1. Setting of liquid CO_2 gas cylinder
By using the joint and pipe enclosed with the Backup cooling kit, connect the liquid CO_2 gas cylinder to the joint of the Backup cooling kit. For this setting, consult with a qualified gas supplier or our sales agency.



2. After setting the liquid CO_2 gas cylinder, operate the freezer until the chamber temperature reaches the required level.

3. Set the temperature of back-up operation at the temperature higher than -70°C. The Backup cooling kit is operated continuously if the temperature of back-up operation is set at the temperature lower than -70°C. This means the liquid CO_2 gas is consumed very quickly.

4. Switch on the Backup cooling kit.

5. Make sure that liquid CO_2 gas spouts into the freezer chamber by pressing the back-up test switch.

Note:

■ The liquid CO_2 gas cylinder loses its cooling capacity at speed when the ambient temperature is over 31°C. Install the liquid CO_2 gas cylinder in the cool environment. And the duration of back-up time per one liquid CO_2 gas cylinder varies depending on the ambient temperature. Refer to “Installation of Backup cooling kit” enclosed with the Backup cooling kit for the available back-up time.

■ The liquid CO_2 gas cylinder should be a siphon type.

■ Use the pipe encloses with the Backup cooling kit for the setting. (The extension of the pipe is not permitted because of cooling capacity.)

SPECIFICATIONS

Product name	Ultra-Low Temperature Freezer MDF-C8V1
External dimensions	W550 mm x D685 (+83)* mm x H945 mm
Internal dimensions	W405 mm x D490 mm x H425 mm
Effective capacity	84 L
Exterior	Painted steel
Interior	Painted steel
Door	Painted steel
Access port	Diameter 17 mm, back side, bottom
Insulation	Cabinet; Rigid polyurethane foamed-in place and VIP(vacuum insulation panel) Door; Rigid polyurethane foamed-in place
Compressor	Hermetic rotary type, 400 W
Evaporator	Tube on sheet type (also used as a inner cabinet)
Condenser	Finless tube type
Refrigerant	HFC mixed refrigerant
Temperature controller	Microcomputer control system
Temperature display	Digital display (setting range; between -55°C and -90°C)
Temperature sensor	Platinum resistance (Pt 1000Ω)
Temperature alarm	High temp. alarm, Low temp. alarm
Remote alarm contact	Allowable contact capacity: DC 30 V, 2 A
Battery	Nickel-metal-hydride battery, DC 6 V, 1100 mAh, Automatic charge
Weight	67 kg
Accessories	1 set of key, 1 scraper
Optional component	Temperature recorder (MTR-85H, MTR-G85A/MTR-G85C) Recorder fixing for temperature recorder MTR-85H (MDF-S3085) Recorder sensor cover (MTR-C8) Backup cooling kit (CVK-UB4), Backup fixing kit (MDF-UBK) Inventory rack (IR-207C, IR-305C)

Note:

* Design or specifications will be subject to change without notice.

• Refer to the updated catalog when ordering an optional component.

* The value in the parenthesis means the dimension of projected area.

• The battery for power failure alarm is an article for consumption. It is recommended that the battery will be replaced about every 3 years. Contact our sales representative or agent at the time of replacement of the battery for recycling.

• Fan motors are expendable supplies. Replace them for about every 6 years. Contact our sales representative or agent at the time of replacement of the fan motor.

PERFORMANCE

Product name	Ultra-Low Temperature Freezer MDF-C8V1			
Model No.	MDF-C8V1-PT	MDF-C8V1-PA	MDF-C8V1-PE	MDF-C8V1-PK
Cooling performance	-80°C (ambient temperature; 30°C, no load)			
Temperature control range	-60°C to -80°C (ambient temperature; 30°C, no load)			
Rated voltage	AC 110 V	AC 115 V	AC 220 V/ 230V/ 240V	AC 220V
Rated frequency	60 Hz	60 Hz	50 Hz	60 Hz
Rated power consumption	330 W	340 W	310 W/330 W/ 365 W	350 W
Noise level	47 dB [A] (background noise; 20 dB)			
Maximum pressure	3.5 MPa			

Note : The unit with CE mark complies with EC directives.

⚠ CAUTION

Please fill in this form before servicing.
Hand over this form to the service engineer to keep for his and your safety.

Safety check sheet

1. Freezer contents : ☐Yes ☐No
Risk of infection: ☐Yes ☐No
Risk of toxicity: ☐Yes ☐No
Risk from radioactive sources: ☐Yes ☐No

(List all potentially hazardous materials that have been stored in this unit.)
Notes :

2. Contamination of the unit:
Unit interior: ☐Yes ☐No
No contamination: ☐Yes ☐No
Decontaminated: ☐Yes ☐No
Contaminated: ☐Yes ☐No
Others:

3. Instructions for safe repair/maintenance of the unit
a) The unit is safe to work on ☐Yes ☐No
b) There is some danger (see below) ☐Yes ☐No
Procedure to be adhered to in order to reduce safety risk indicated in b) below.

Date :
Signature :
Address, Division :
Telephone :

Product name: Ultra-low temperature freezer	Model: MDF-	Serial number:	Date of installation:

Please decontaminate the unit yourself before calling the service engineer.

Panasonic Healthcare Co., Ltd.
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