



## INSTRUCTION MANUAL

# MPR-1411 MPR-1411R

## Pharmaceutical Refrigerator



MPR-1411R

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# INTRODUCTION

- Read this manual carefully before using the appliance and follow the instructions for safety operation.
- Sanyo 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 manual.
- Keep this manual in an adequate place to refer to it as necessary.
- The contents of the manual will be subjected to change without notice due to the improvement of performance or functions.
- Contact Sanyo sales representative or agent if any page of the manual is lost or page order is incorrect.
- Contact Sanyo sales representative or agent if any point in this manual is unclear or if there are any inaccuracies.
- No part of this manual may be reproduced in any form without the expressed written permission of Sanyo.

## **CAUTION**

SANYO guarantees the product under certain warranty conditions. SANYO 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 manual 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 manual 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.














# 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.

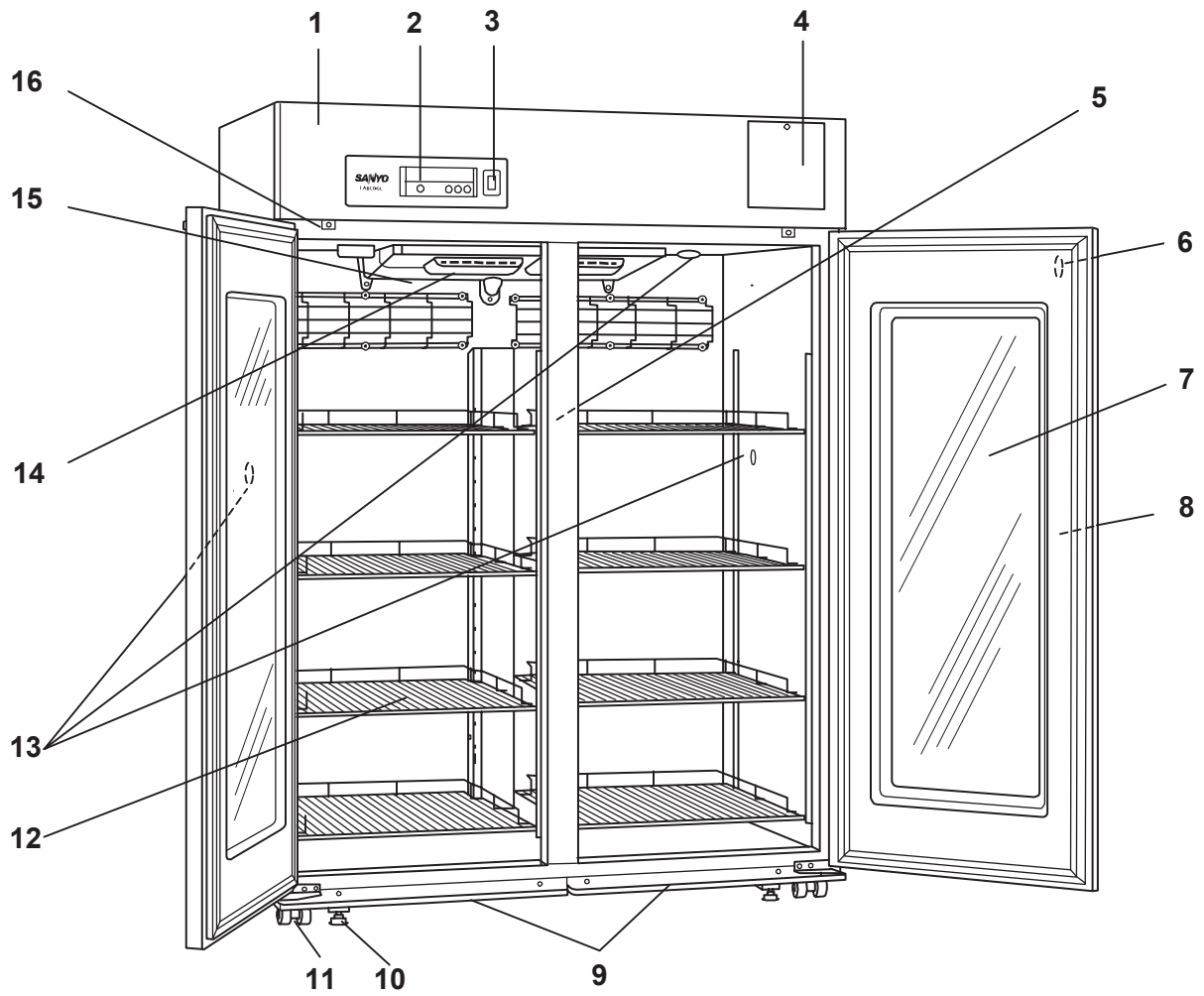
# ENVIRONMENTAL CONDITIONS

This equipment is designed to be safe at least under the following conditions (based on the IEC 61010-1):

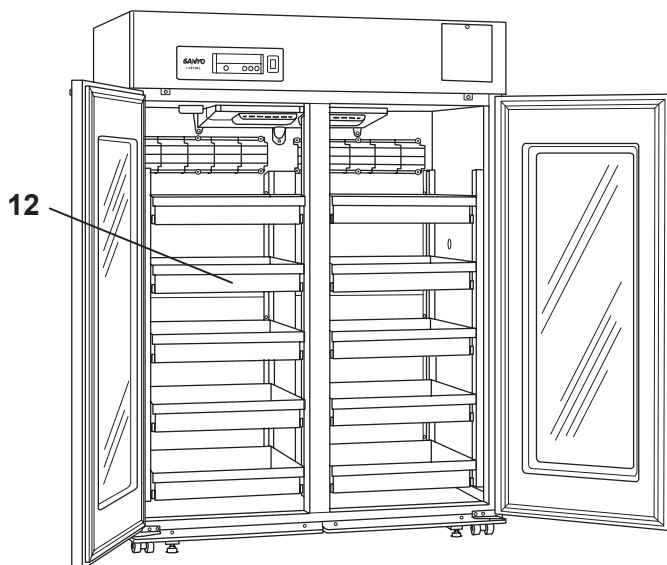
1. Indoor use;
2. Altitude up to 2000 m;
3. Ambient temperature 5°C to 40°C
4. Maximum relative humidity 80% for temperature up to 31°C decreasing linearly to 50% relative humidity at 40°C;
5. Mains supply voltage fluctuations not to exceed  $\pm 10\%$  of the nominal voltage;
6. Other supply voltage fluctuations as stated by the manufacture;
7. Transient overvoltages according to Installation Categories (Overvoltage Categories) II; For mains supply the minimum and normal category is II;
8. Pollution degree 2 in accordance with IEC 60664.



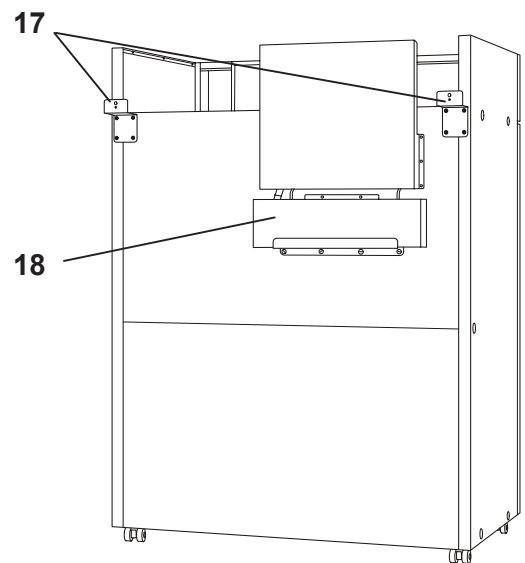
# REFRIGERATOR COMPONENTS



**MPR-1411**



**MPR-1411R**



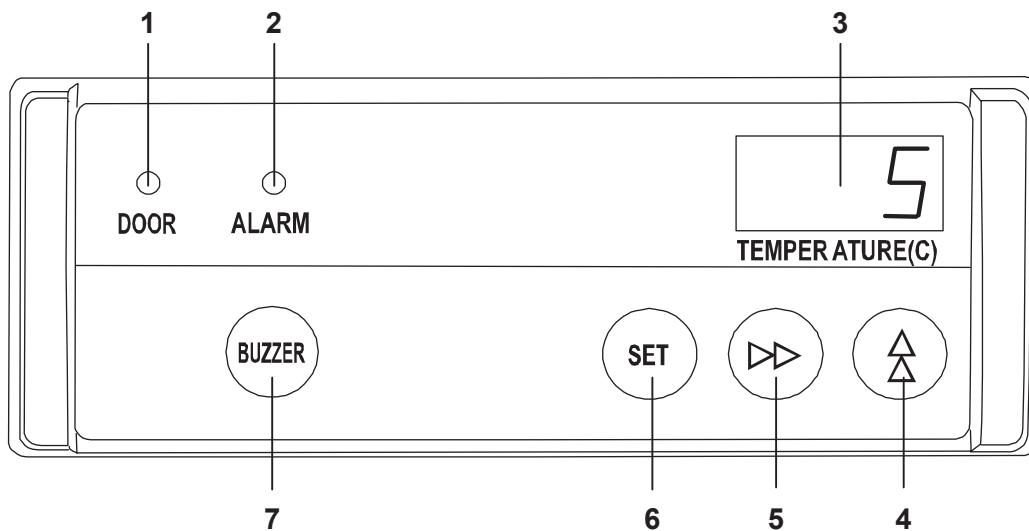
**Rear side**

# REFRIGERATOR COMPONENTS

- 1. Front cover:** A front cover opens when a bottom part is pulled to the front. Open this cover when you use cleaning of the condenser filter, a remote alarm terminal. Refer to page 11.
- 2. Control panel:** Panel opens when the right top of the lower part cover is pushed. Refer to page 10.
- 3. Light switch:** This switch is used for turning the fluorescent lamp off and on.
- 4. Space for temperature recorder:** An temperature recorder (optional accessory) can be mounted here. See page 32.
- 5. Fluorescent lamp:** 40 W white lamp. See page 24 for replacement.
- 6. Lock:** Turn the key clockwise through 180° to securely lock the door.
- 7. Glass window:** The window may have condensation in high humidity environment. Wipe off the condensation with a soft dry cloth.
- 8. Handle:** Always hold the handle when opening/closing the door.
- 9. Dew receiver:** The condensation on the outer door is accumulated on this dew receiver. Wipe off the water on the dew receiver with a cloth.
- 10. Leveling foot:** Adjust the height of the leveling feet by turning the screw bolts until the unit is level.
- 11. Caster:** When installing the unit, the castors can be raised from the floor by using the leveling feet above.
- 12. Drawer (MPR-1411R only):** Items to be stored in the chamber must be placed on the drawers. The maximum storage weight for each drawer is 40 kg.  
**Shelf (MPR-1411 only):** Items to be stored in the chamber must be placed on the shelves. The maximum storage weight for each shelf is 50 kg. Do not put stored items directly onto the interior floor of the chamber. See page 15.
- 13. Access port:** This port allows temperature measurement cables to enter the chamber from outside. A total of three (3) ports are provided; left side, right side and top.
- 14. Exhaust air vent:** Do not block this vent. If this vent is blocked, temperature regulation will become unstable. Do not place stored items in the path of the cold air.
- 15. Intake air vent:** Do not block this vent. If this vent is blocked, temperature regulation will become unstable. Do not insert a finger or any foreign object into this vent as there is danger from the internal fan.
- 16. Door switch:** When a door opens, a fan for the cold circulation is stopped, and the leakage of the cold is prevented. And, the check lamp of the door is turned on.
- 17. Fixture:** 2 fixtures are attached on the rear side of the unit. These keep adequate space between the unit and wall and also can be used for fixing the unit. See page 13.
- 18. Evaporating tray:** Defrost water from the evaporator accumulates on the tray and evaporates into the atmosphere. See page 23 for cleaning.

# REFRIGERATOR COMPONENTS

## Control panel



**1. Door check indicator (DOOR):** The red LED lamp is lit when the outer door is opened.

**2. Alarm lamp (ALARM):** This lamp is flashed when the audible alarm is activated.

**3. Digital temperature indicator:** This indicator shows the present chamber temperature or set temperature.

**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.

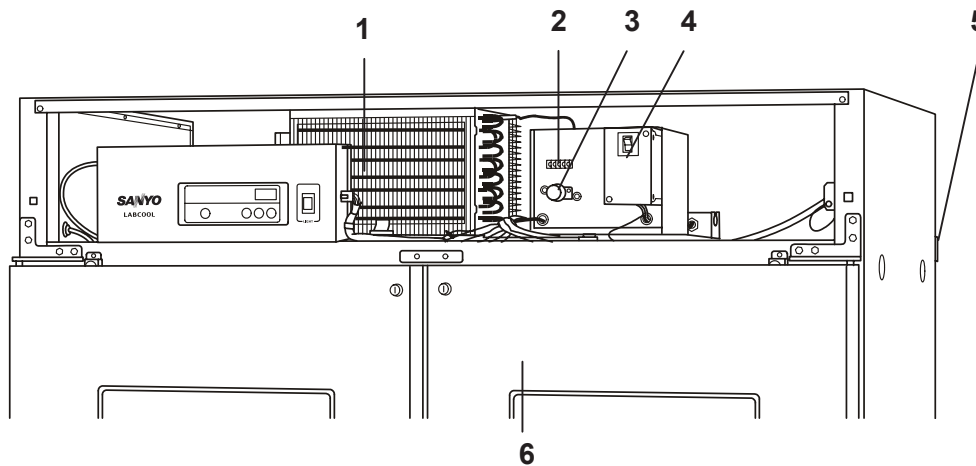
**5. Digit shift key (▶▶):** Pressing this key in the setting mode causes the changeable digit to shift. Key lock is available by pressing this key for more than 5 seconds in the temperature display mode. Refer to page 20 for the key lock.

**6. Set key (SET):** Temperature setting mode is led by pressing this key. Once the key is pressed, the changeable digit is flashed. Pressing this key again after setting desired temperature, the setting is stored into computer memory. If there is no key operation for 90 seconds during the temperature setting mode, the temperature setting mode is invalid automatically. See page 16 for the details.

**7. Buzzer stop key (BUZZER):** To silence the audible alarm, press this key. The remote alarm is also silenced by pressing this key. (The buzzer cannot be stopped during remote alarm testing.)

# REFRIGERATOR COMPONENTS

## Inside of front cover



**1. Condenser filter:** This filter is for prevention of condenser clogged up. Clean the filter every 3 month.

**2. Remote alarm terminal:** This is used to connect the unit to an exterior alarm to notify users of any malfunction. Refer to page 21.

**3. Glow starter:** This is for the fluorescent lamp. It is recommended that the glow starter is also replaced when the fluorescent lamp is replaced. Refer to page 25.

**4. Circuit breaker:** Make sure to switch ON this breaker before starting up of the unit. This disconnects the power when any abnormality is occurred and over current is rushed. Contact with dealer or service station after disconnect the power supply plug. Rated AC 250 V, 10 A.

**5. Fixture (rear side):** 2 fixtures are attached on the rear side of the unit. These keep adequate space between the unit and wall and also can be used for fixing the unit. See page 13.

# 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 compliance with the following conditions may cause poor performance, failure or accident.

- **A location not subjected to direct sunlight**

Do not install the unit under direct sunlight. Installation in a location subjected to direct sunlight may degrade the 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. Installing the unit under unstable ambient temperature may result in unstable performance.

- **A location with a sturdy and level floor**

Always install the unit on a sturdy and level floor withstanding the total weight of the unit. The uneven floor or tilted installation may cause failure or injury. Unstable condition may cause vibration or noise.

- **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.

## CAUTION

The unit may collect excessive frost on the evaporator if it is installed in high temperature and high humidity location. This will cause frequent defrosting.

- **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.

## CAUTION

**Never install the unit in a location where the corrosive material such as sulfur compound is likely to be generated (near a drainage facilities, etc).** Corrosion of the copper pipe may result in deterioration of cooling unit and consequently the failure.

- **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.

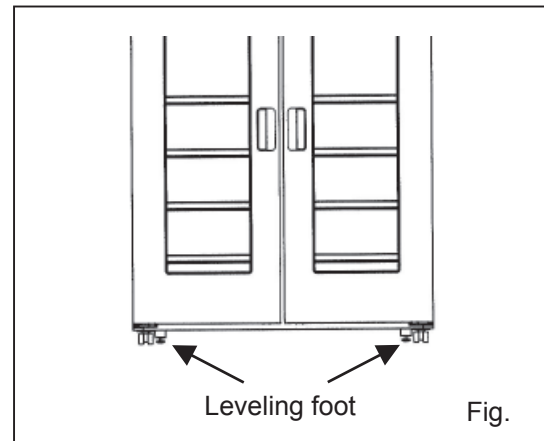
# INSTALLATION

## 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.

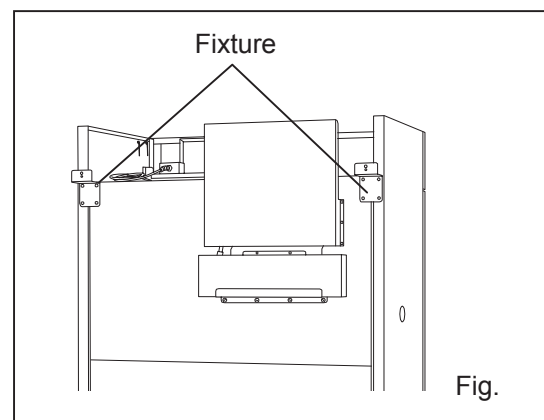
## 2. Adjusting the leveling foot

Extend the leveling feet by rotating them counterclockwise until they make contact with the floor. (Fig. 1) Ensure the unit is level.



## 3. Fixing the unit

Two fixtures are attached to the rear of the frame. Fix the frame to the wall by attaching a rope or chain between the wall and the fixtures. (Fig. 2)



## 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. Connect the power cord to the dedicated outlet with appropriate rating.

## CAUTION

If the unit is unplugged or the power to the unit is interrupted, do not restart the unit for at least 5 minutes. This protects the compressor.

2. On start-up, the alarm buzzer sometimes operates. In this case, stop the buzzer by pressing the alarm buzzer stop key (BUZZER).
3. Set the chamber temperature to 5°C.
4. Allow the chamber temperature to fall to 5°C. Check the chamber temperature on the temperature indicator.
5. Turn on the fluorescent light switch to check the light. After checking, turn off the switch if the light is not necessary.
6. Set the desired temperature. When the chamber temperature gets to the set temperature, begin slowly placing items into the chamber to minimize the temperature rise.

## CAUTION

The chamber is refrigerated by the forced circulation of cooled air inside the chamber. Ensure that the intake and exhaust air vents are not blocked. Adequate space should be provided between the items inside the unit to allow air circulation.

## <Attention>

The outer door has a condensation on the glass during refrigerator operation. Wipe off the condensation with a dry soft cloth. Also, wipe off the water on the dew receiver regularly.

# STOCK OF CONTAINERS

Always distribute items so as not to disturb the air circulation in the chamber. Disruption of the air flow can cause items to freeze or reduce the uniformity of the chamber temperature. Never put any articles on the top of the unit.

## Intake air vent

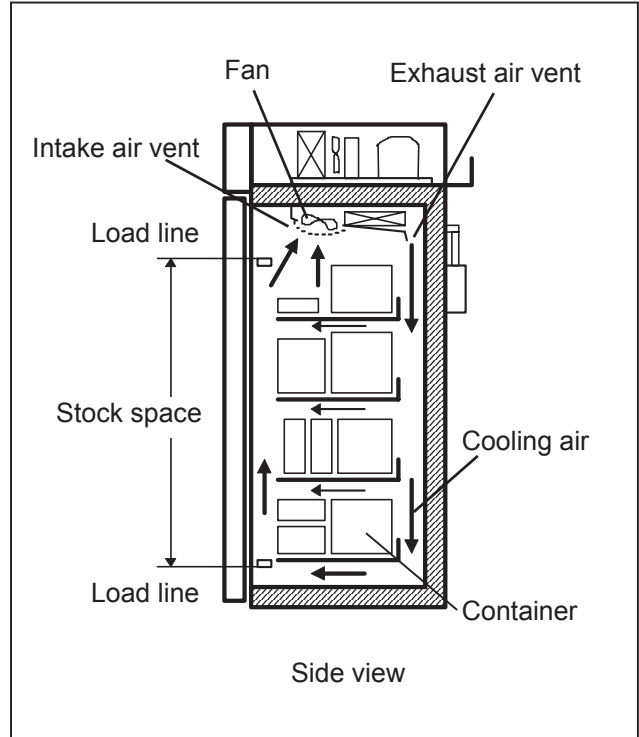
Do not block this vent with containers. If this vent becomes blocked, temperature regulation becomes unstable. Do not place paper or vinyl near the vent as they may be sucked into the fan.

## Exhaust air vent

Do not block this vent with containers as this can impede air circulation. Items stored near the exhaust air vent can freeze when the refrigerator is operating at temperature settings lower than 5°C.

## Load line

In this refrigerator, storage space is limited to allow the passage of cool air around the chamber. The label "load line" is fixed to both sides of the chamber. Always stock items within this line.



## **⚠ CAUTION**

**Never store corrosive substances** in this unit. This may lead to damage to the inner components or electric parts.

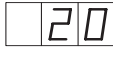








# CHAMBER TEMPERATURE SETTING

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 10°C.

**Note:** The unit is set at the factory with a chamber temperature of 5°C.

**Table 1 Basic operation sequence (Example: Chamber set temperature 10°C)**

	Description of operation	Key operated	Indication after operation
1	Connect the power supply plug.	----	The current chamber temperature is displayed. 
2	Press set key.	SET	The second digit is flashed. 
3	Set to 010 with the numerical value shift key and digit shift key.		By pressing key, the settable digits moves. 
			When pressed, the figure of settable digit increases. 
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. In this case, the chamber temperature setting is not accepted.
- The available set range of chamber temperature is between 2 and 23°C. The partial freezing may occurred if the set temperature is lower than 3°C.

# ALARM TEMPERATURE SETTING

This unit is provided with both high and low temperature alarms. The temperature at which the alarm is activated may be changed.

The available set range for high temperature alarm is between +2°C and +14°C and -2°C and -14°C for low temperature alarm against the chamber temperature.

**Note:** The temperature alarm is set at  $\pm 5^\circ\text{C}$  of the set temperature at the factory.

Display	Mode	Function
F01	High temperature alarm set	See Table 2 on page 17
F02	Low temperature alarm set	See Table 3 on page 17

As an example, Table 2 shows the procedure to set the high temperature alarm so that the alarm can activate when the chamber temperature is 3°C higher than the set temperature.

Table 3 shows the procedure to set the low temperature alarm so that the alarm can activate when the chamber temperature is 3°C lower than the set temperature.

**Table 2 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 6.		When pressed, the figure of settable digit increases.
4	Press set key.	SET	The first digit is flashed.
5	Set the temperature to 03 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.

**Table 3 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 first digit is flashed.
3	Press numerical value shift key and scroll the figure to 7.		When pressed, the figure of settable digit increases.
4	Press set key.	SET	The first digit is flashed.
5	Set the temperature to -03 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.

# SETTING OF DELAY OF DOOR ALARM

The door check indicator is light when the door is opened, and the alarm buzzer sounds with some delay to notice the door opening.

The delay time (between lighting of the door check indicator and activation of the alarm buzzer) can be changed. Set an appropriate delay time according to the condition of use to prevent the rise of chamber temperature resulting from inadequate door close.

(The available set range of delay time is between 1 and 15 minutes. Initial setting (factory setting) is 2 minutes.)

**Table 4 Procedure for setting of delay of door alarm (Change the delay time to 3 min. from 2 min.)**

	Description of operation	Key operated	Indication after operation
1		----- ▲	The current chamber temperature is displayed.
2	Press numerical value shift key for 5 seconds.	▲	F00 is displayed and the first digit blinks.
3	Press up arrow key 4 times.	▲	The display is changed to F04 from F00.
4	Press set key.	SET ▲	The current setting (002) is displayed and the first digit blinks.
5	Press numerical value shift key and scroll the figure to 003.	▲	The display is changed to 003 from 002.
6	Press set key.	SET	Delay time is memorized and the current chamber temperature is displayed.

**Note:**

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

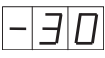





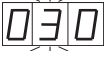

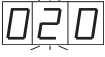
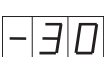
# SETTING OF ALARM RESUME TIME

The alarm buzzer and remote alarm are silenced by pressing the alarm buzzer stop key (BUZZER) on the control panel during alarm condition. The buzzer and remote alarm 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 Procedure for setting of alarm resume time (Example: change from 30 minutes to 20 minutes)**

	Operation	Key operated	Indication after operation
1		----	The current chamber temperature is displayed. 
2	Press and hold the numerical value shift key for about 5 seconds.		The first digit of the temperature display blinks. 
3	Set to F25 by using digit shift key and numerical value shift key.		Pressing the key leads the change of flashed digit.
			Pressing the key shifts up the figure of the current digit. 
4	Press the set key.	SET	The current set value is displayed and the second digit of the temperature display flashes. 
5	Set to 020 by using numerical value shift key.		Pressing the key shifts up the figure in the second digit. 
6	Press the set key.	SET	The value is stored in memory and the current chamber temperature is displayed. 

**Note:**

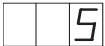

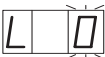

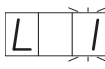
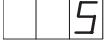
- The settable alarm resume times are 10, 20, 30, 40, 50, or 60 minutes (The set values are 010, 020, 030, 040, 050, and 060). The buzzer would not reset if the resume time is set in 000.
- The set mode returns to the temperature display mode automatically when 90 seconds has passed without any key operation. In this case, any setting before pressing set key (SET) is not memorized.

# KEY LOCK FUNCTION

This unit is provided with a 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 in OFF at the factory.

Display	Mode	Function
L0	Key lock is OFF	Enable to change of temperature setting
L1	Key lock is ON	Disable to change of temperature setting

**Table 6 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 increases. 
4	Press set key.	SET	The key lock is set to ON. The current chamber temperature is displayed. 

**Note:**

- F00 is displayed if the numerical value shift key is depressed for about 5 seconds accidentally. This display is for service personnel. Do not change this display. Present temperature is displayed automatically when the set key (SET) is pressed or about 90 seconds is passed without any key operation.

# DEFROST CYCLES

## ▪ Cycle defrost

When the ambient humidity is high, or a large amount of damp product is being stored inside the chamber, there is a possibility that cycle defrost may not be enough to remove all of the frost on the evaporator. In this case, a forced defrost cycle can be initiated.

## ▪ Forced defrost

When the unit is operating under a forced defrost cycle, the current chamber temperature and dF is displayed alternately on the digital temperature display. The chamber temperature rises about 10°C during the defrosting.

### CAUTION

**The unit may collect excessive frost on the evaporator** if it is installed in high temperature and high humidity location. For example, the unit starts to defrost once a week with 2°C setting in the ambient of 35°C and 80% R.H. **The chamber temperature goes up to approximately 10°C temporarily during defrosting.**

# 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.

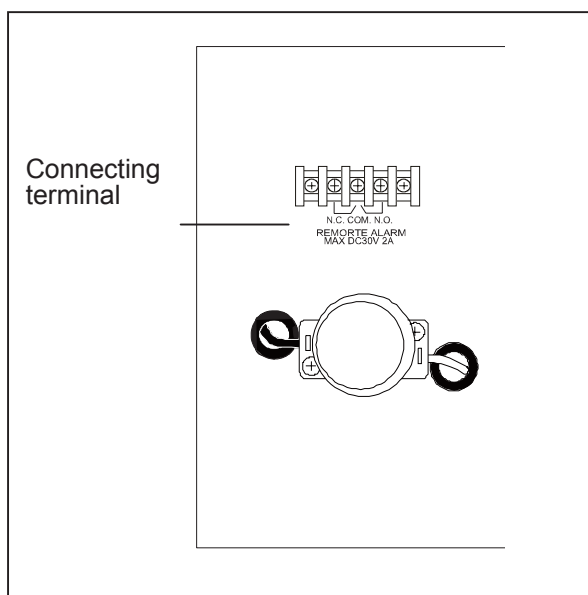
Contact output:

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

### Note:

The alarm status of remote alarm terminal is cancelled by pressing the alarm buzzer stop key (BUZZER) since the remote alarm is operated in conjunction with alarm buzzer.

The remote alarm terminal is in alarm status when the power supply cord is unplugged because it is regarded as a power failure. In this case, the alarm status of remote alarm terminal is not cancelled by pressing the alarm buzzer stop key (BUZZER).



# 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 deviates from the set temperature +2°C or up to +14°C.	Alarm lamp is flashed. Chamber temperature is flashed.	Intermittent tone with about 15 minutes delay.	Remote alarm with about 15 minutes delay.
Low temperature alarm	If the chamber temperature deviates from the set temperature -2°C or up to -14°C.	Alarm lamp is flashed. Chamber temperature is flashed.	Intermittent tone with about 15 minutes delay.	Remote alarm with about 15 minutes delay.
	If the chamber temperature is lower than 0°C.		Intermittent tone	Remote alarm
Over-heat protection	When the chamber temp. is higher than 40°C. (Reset when the chamber temp. is lower than 30°C)	----	----	Inside fan, drain pan heater, defrost heater, drain pipe heater OFF
Over-cooling protection	When the chamber temp. is lower than -1°C. (Reset when the chamber temp. is higher than 6°C)	----	----	Compressor OFF
Power failure alarm	When the power to the unit is disconnected.	----	----	Remote alarm.
Power failure alarm (with MPR-48B)	At power failure. If the power supply cord is unplugged.	Alarm lamp blinks.	Intermittent tone	Alarm status.
Door alarm	When the door is open.	Door check lamp is lit.	Intermittent tone with about 2 minutes delay.	----
Auto-return	When there is no key pressing in each setting mode for 90 seconds.	Chamber temperature is displayed.	----	Finishing of each setting mode.
Key lock	When the key lock is "ON".	----	----	Change of setting is disable.
Sensor abnormality	If the thermal sensor is disconnected.	Alarm lamp is flashed. E01 and 50°C (or -50°C) are displayed alternately.	Intermittent tone	Remote alarm. Unit keeps continuous running.
	If the thermal sensor is short-circuited.	Alarm lamp is flashed. E02 and 50°C (or -50°C) are displayed alternately.	Intermittent tone	Remote alarm. Unit keeps continuous running.
	If the defrost sensor is disconnected.	Alarm lamp is flashed. E03 and chamber temp. are displayed alternately.	Intermittent tone	Remote alarm.
	If the defrost sensor is short circuited.	Alarm lamp is flashed. E04 and chamber temp. are displayed alternately.	Intermittent tone	Remote alarm.
	If the compressor sensor is disconnected.	Alarm lamp is flashed. E05 and chamber temp. are displayed alternately.	Intermittent tone	Remote alarm.
	If the compressor sensor is short-circuited.	Alarm lamp is flashed. E06 and chamber temp. are displayed alternately.	Intermittent tone	Remote alarm.
Battery switch check (with MPR-48B)	When the battery switch is turned ON without setting after attachment.	E09 and chamber temp. is displayed alternately.	----	----
Condenser temp. abnormality	In the event of failure of fan motor for cooling the compressor	E10 and chamber temp. are displayed alternately.	Intermittent tone	Remote alarm. Compressor of high stage side stops.
Battery check (with MPR-48B)	When about 3 years have passed with the power switch on. (time to replace the battery)	F-1 and chamber temp. is displayed alternately.	----	----
Fan motor check	When about 6 years have passed with the power switch on. (time to replace the fan motor)	F-2 and chamber temp. is displayed alternately.	----	----

**Note:**

The alarm status of remote alarm terminal is cancelled by pressing the alarm buzzer stop key (BUZZER) since the remote alarm is operated in conjunction with alarm buzzer. (except for power failure alarm status).

When more than two alarm conditions occur simultaneously, the lowest number error code has priority on the error display.

After a power failure, the unit will resume operation with the set value that was in place before power failure occurred.

The over-cooling protection may activate when the set temperature is 2°C. In this case, the chamber temperature will rise to 6°C, but this is not malfunction

# 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.

## **⚠ CAUTION**

**Always wear dry gloves to protect hands** at the time of maintenance. Failure to wear gloves may result in injury from edges and corners.

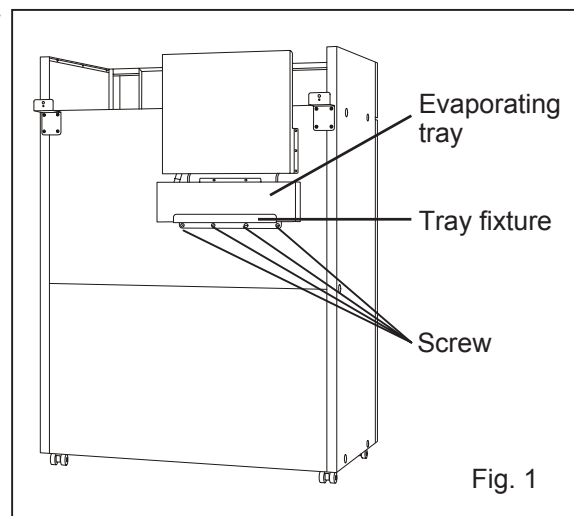
## Cleaning of cabinet

- 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.

## Cleaning of evaporating tray

The evaporating tray is installed on the back on of the unit. Clean the evaporating tray once a month.

1. Remove the tray fixture under the evaporating tray by unscrewing 4 screws and the evaporating tray is free. (Fig. 1)
2. Wash away any accumulated dirt in the evaporating tray.
3. Fix the evaporating tray with the tray fixture and 4 screws.



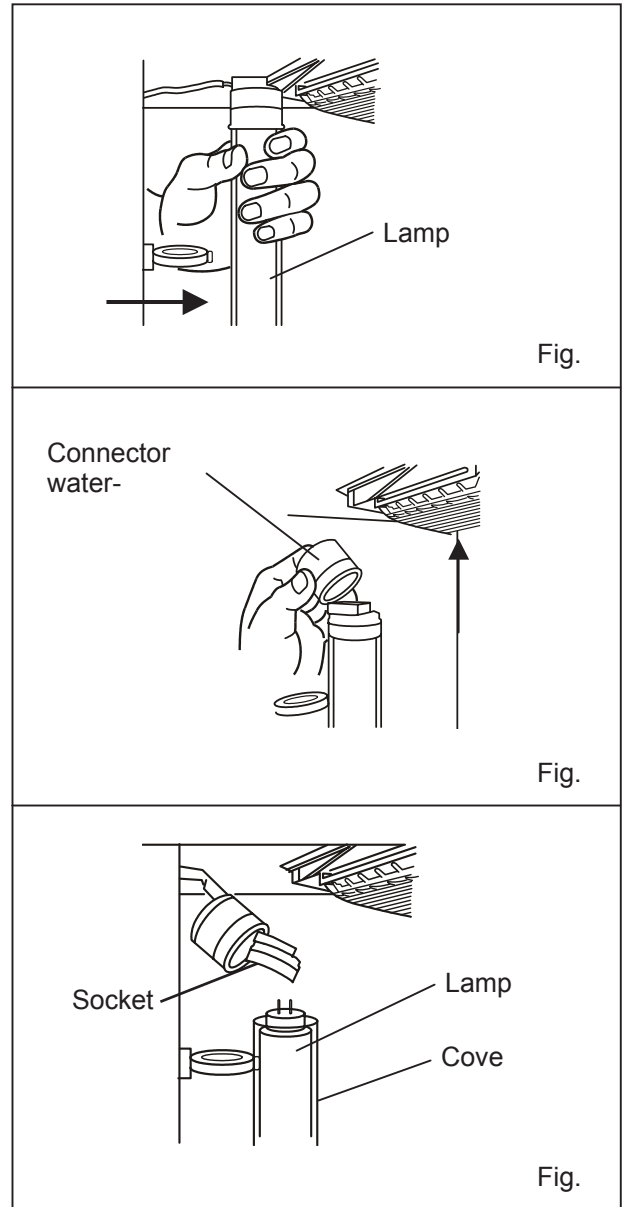


# ROUTINE MAINTENANCE

## Replacement of fluorescent lamp

The fluorescent lamp is placed vertically at the center of the chamber. Follow the procedure below to replace the lamp.

1. Turn off the fluorescent light switch and disconnect the power supply plug.
2. Remove all shelves or drawers.
3. In the case of MPR-1411R, remove the rail that is placed vertically at the center of the frame.
4. Pull the lamp toward the rear together with the cover as shown in Fig. 1, together with the wiring.
5. Take out the lamp and remove the connector water-proof rubber at both ends. As shown in Fig. 2, shift the rubber by rolling it.
6. Remove the connector as shown in Fig. 3.
7. Take out the lamp by pulling it gently from the cover.
8. After replacing a new lamp, return the lamp with cover to the original position.

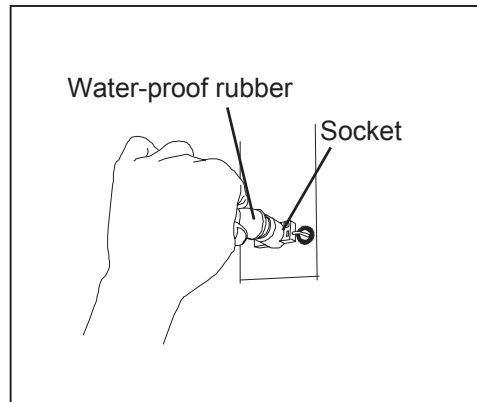


# ROUTINE MAINTENANCE

## Replacement of glow starter

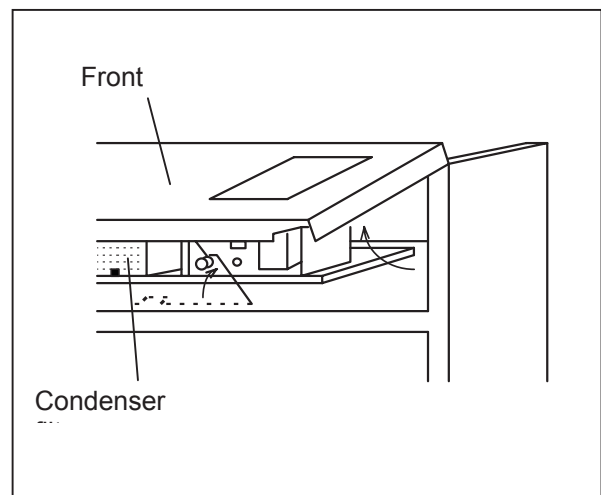
A glow starter is located inside the front cover.

1. Disconnect the power supply plug.
2. Remove the water-proof rubber.
3. Remove the glow starter and replace with a new one.
4. Replace the water-proof rubber.



## Cleaning of condenser filter

1. Lift the front cover as shown in the figure.
2. Take out the shaft and insert the end of the shaft in the black hole of the front cover.
3. After holding black handle of condenser filter, and having raised it aloft, remove the condenser filter.
4. Absorb a dirt of condenser filter with leaning machine, or wash it away with water.
5. Cut water of condenser filter well when used water.
6. After cleaning the condenser filter, return it to the original position.



# TROUBLE SHOOTING

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

Malfunction	Check/Remedy
If nothing operates even when switched on	<ul style="list-style-type: none"> <li>▪ There is a power failure.</li> <li>▪ The circuit breaker is activated.</li> <li>▪ The unit is not connected to the power supply.</li> </ul>
When no key operation is available	<ul style="list-style-type: none"> <li>▪ The key lock is set in ON (L 1).</li> </ul>
The alarm device is activated	<p>&lt; On start-up &gt;</p> <ul style="list-style-type: none"> <li>▪ The temperature in the unit does not match the set value.</li> </ul> <p>&lt; In use &gt;</p> <ul style="list-style-type: none"> <li>▪ The door was kept opened for a long time.</li> <li>▪ The temperature setting was changed.</li> <li>▪ The containers of high temperature (load) were put in the unit.</li> </ul> <p>In these cases, alarm is removed automatically by running the unit for several hours.</p>
When unit does not get cold enough	<ul style="list-style-type: none"> <li>▪ A large amount of items or warm product was put in the unit.</li> <li>▪ The air exhaust vent is blocked up with containers.</li> <li>▪ The unit is in direct sunlight.</li> <li>▪ The door is frequently opened.</li> <li>▪ There is a nearby heat source.</li> <li>▪ The ambient temperature is too high.</li> <li>▪ The door is not securely closed.</li> <li>▪ The heat source is put in the unit.</li> <li>▪ The door seal is damaged or foreign substance is inserted between door gaskets.</li> </ul>

**Note:**

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

# 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.**

# 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 SANYO 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 SANYO 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 Haushaltemüll 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 SANYO 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 descritos a continuación se aplican para países de la Unión Europea y no se aplica para países en otras áreas del mundo.

Su producto SANYO 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 SANYO 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 SANYO 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 SANYO 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 inzamelingsystemen voor gebruikte elektrische en elektronische apparatuur, batterijen en accu's.

Wilt u deze op de juiste manier weggoeien 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 SANYO-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 ackumulatörer, 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 ackumulatören 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 ackumulatörer.

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!





# OPTIONAL COMPONENTS

## Automatic temperature recorder

An automatic temperature recorder is available for this refrigerator as an optional accessory. If an automatic temperature recorder is required, contact your Sanyo dealer.

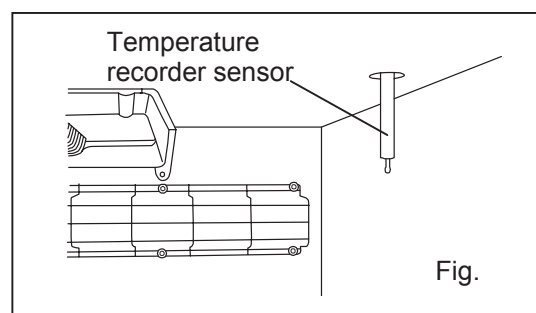
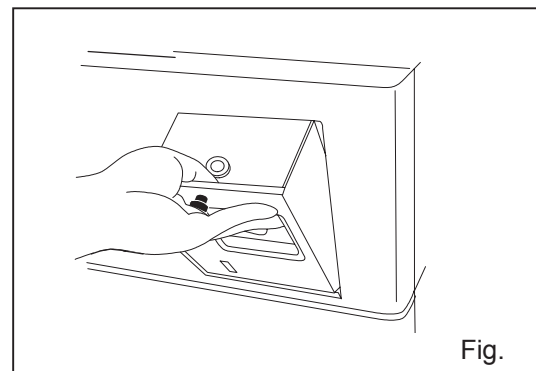
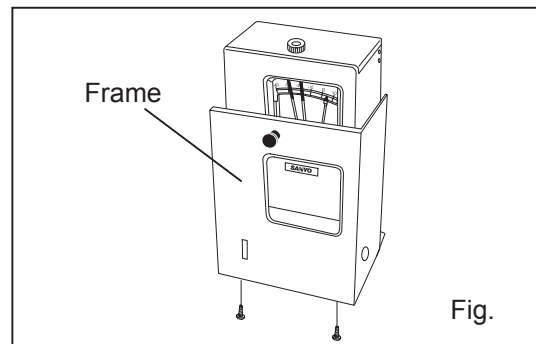
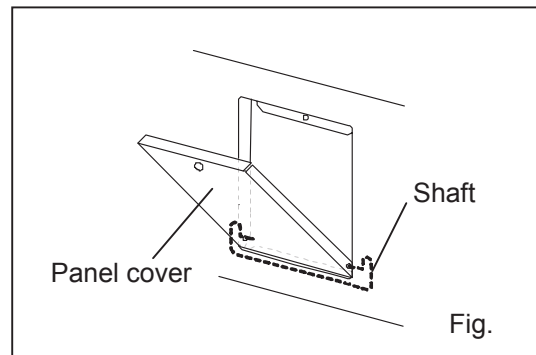
Two recorders are selectable for the refrigerator; MTR-0621LH and MTR-G04. Please note that each recorder needs a exclusive fixture for mounting. See the following for the details.

Temperature recorder	Recorder fixture
MTR-0621LH	MPR-S30
MTR-G04	MPR-S7

## Attachment of recorder MTR-0621LH

The temperature record range of the temperature recorder (MTR-0621LH) is +20°C from -6°C. Temperature of +20°C and more cannot be recorded.

1. Unscrew the screw fixing the panel cover at the space for temperature recorder and open the panel cover. (Fig. 1)
2. Fix the temperature recorder to the frame in the temperature recorder mounting kit (MPR-S30) referring to the instruction manual enclosed with the temperature recorder mounting kit.(Fig. 2)
3. Fix the temperature record installation temperature recorder mounting kit which fixed a temperature recorder in the front cover. (Fig. 3)
4. Remove the black rubber caps (inside and outside) on the access port located at the top corner of the unit and take the insulation out of the access port.
5. Pass the recorder sensor into the chamber through the access port. (Fig. 4)

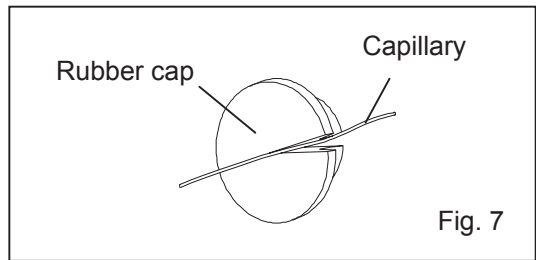
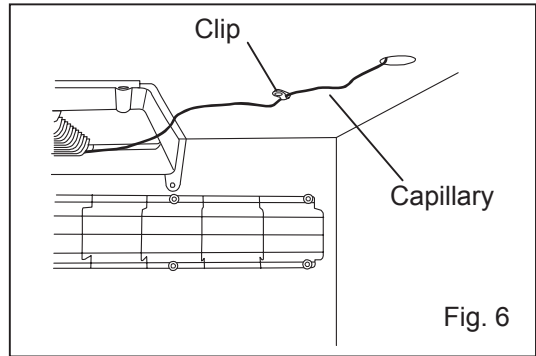
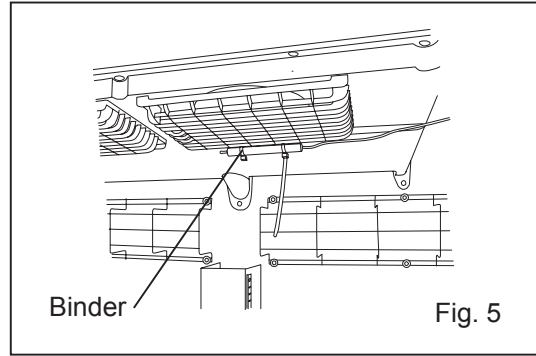


# OPTIONAL COMPONENTS

6. An attached binder (two pcs) is used for the fan cover of the top of the chamber as the Fig. 5, and a temperature sensor is fixed.

7. Route the capillary on the top of the chamber and fix it with the provided clip and screw. (Fig. 6)

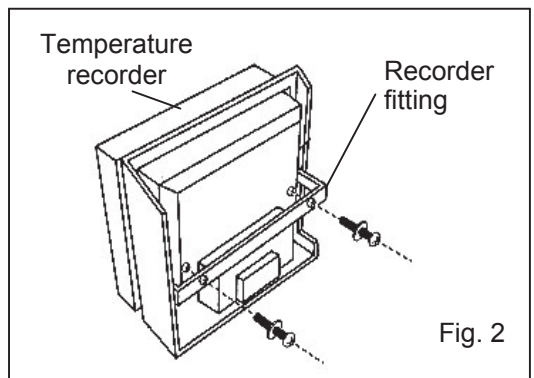
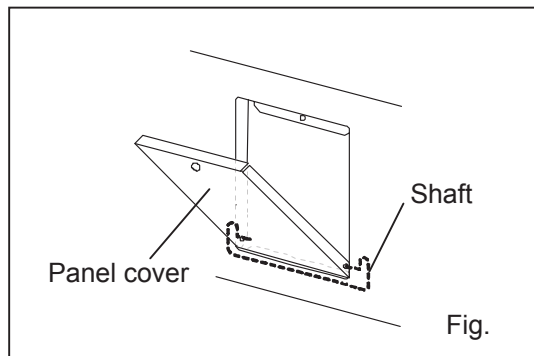
8. Make a cut on the rubber caps so that the capillary can pass the caps and place them back on the access port (inside and outside). (Fig. 7)



## Attachment of recorder MTR-G04

1. Unscrew the screw fixing the panel cover at the space for temperature recorder and open the panel cover. (Fig. 1)

2. Fix the temperature recorder to the frame in the temperature recorder mounting kit (MPR-S7) referring to the instruction manual enclosed with the temperature recorder mounting kit. (Fig. 2)



# OPTIONAL COMPONENTS

3. Remove the black rubber caps (inside and outside) on the access port located at the top corner of the unit and take the insulation out of the access port.

4. Pass the recorder sensor into the chamber through the access port. (Fig. 3)

5. An attached binder (two pcs) is used for the fan cover of the top of the chamber as the Fig. 4, and a temperature sensor is fixed.

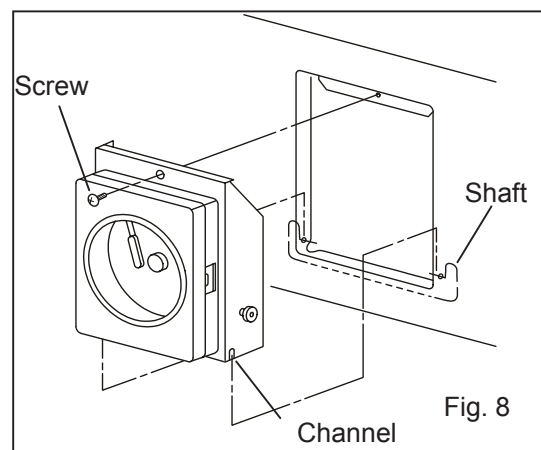
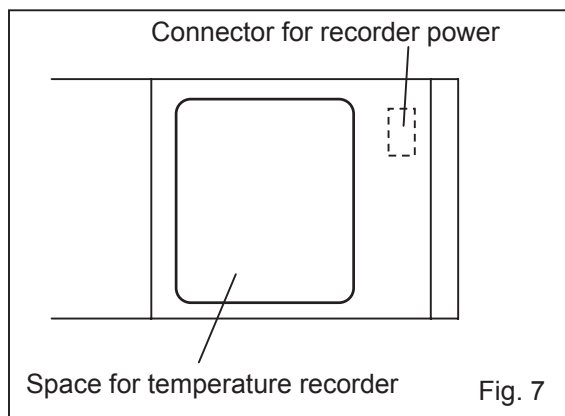
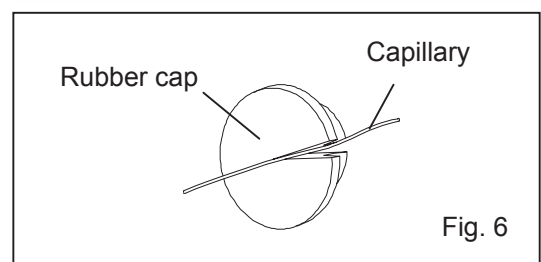
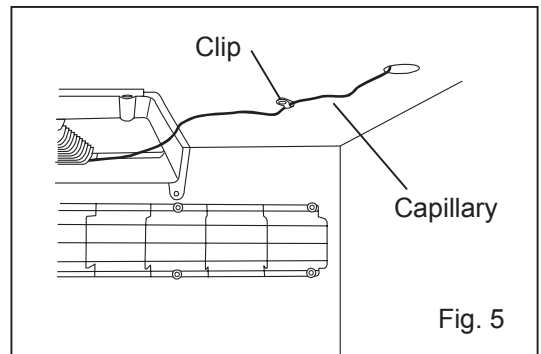
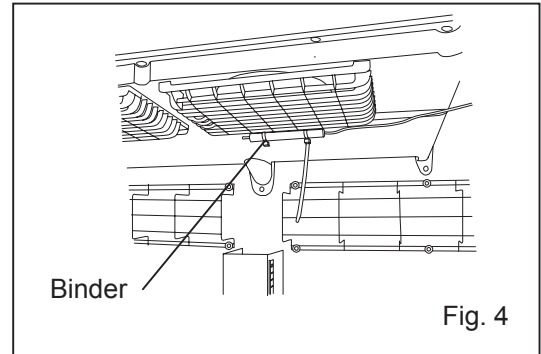
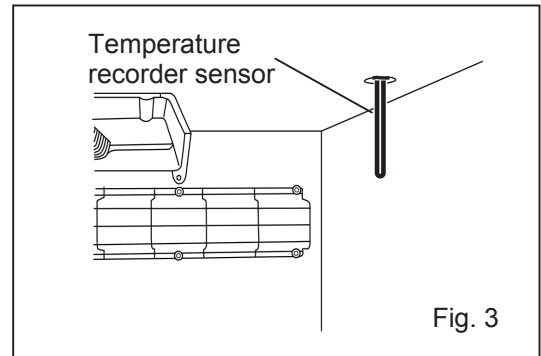
4. Route the capillary on the top of the chamber and fix it with the provided clip and screw. (Fig. 5)

5. Make a cut on the rubber caps so that the capillary can pass the caps and place them back on the access port (inside and outside). (Fig. 6)

9. Bind the lead wire on the right upper side of the unit with the provided band.

10. Remove the connector cap located on the right side and then connect the recorder power. (Fig. 7)

11. Attach the recorder on the front cover with a screw. (Fig. 8)



# OPTIONAL COMPONENTS

## Attachment of battery kit MPR-48B

The alarm lamp blinks and the alarm buzzer sounds to notice the power failure when a battery for power failure alarm is installed. For the installation of the battery for power failure alarm, a battery kit (MPR-48B), an optional component is necessary. A battery for power failure alarm is included in the battery kit.

- Contact Sanyo sales representative or agent for the installation of the battery kit (MPR-48B).

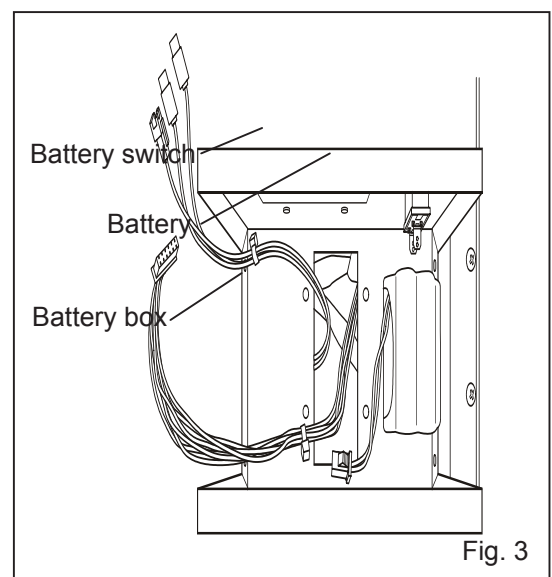
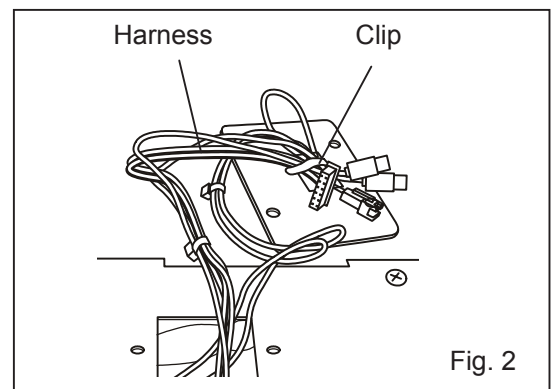
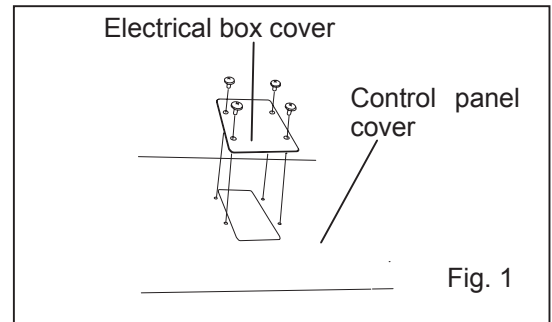
1. Remove the top cover on the right front of the refrigerator top by unscrewing 4 screws. (Fig. 1)

2. Remove a electrical box cover from the control panel cover, and remove harness from the clip which harness is fastened with behind the electrical box cover. (Fig.1,2)

3. Pass the harnesses through the bottom opening of the battery box and set the battery box on the control panel of the refrigerator top so that four screw holes can be aligned. (Fig. 3)

- The battery box should be located with the battery switch faced to the refrigerator front.

4. Put the battery on the left of the battery box. (Fig. 3)



# OPTIONAL COMPONENTS

5. Put the battery fixture over the battery and fix the battery box and battery fixture by four screws. (Fig. 4)

6. Each harness is connected to the battery connectors (Fig. 5) and switches to a fixed mounting plate on the battery clip.(Fig. 4)

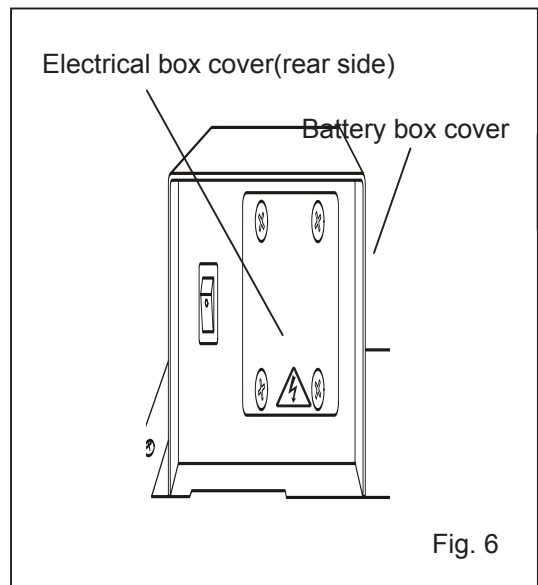
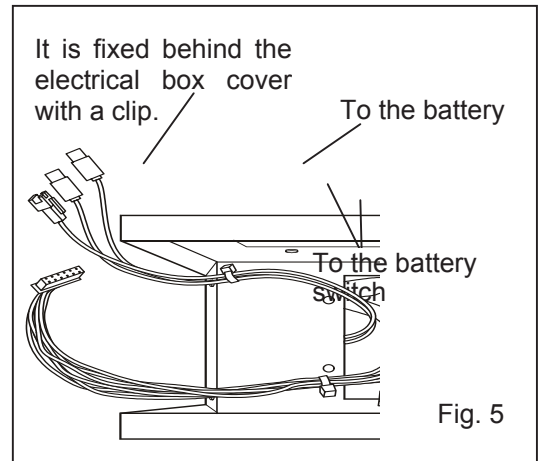
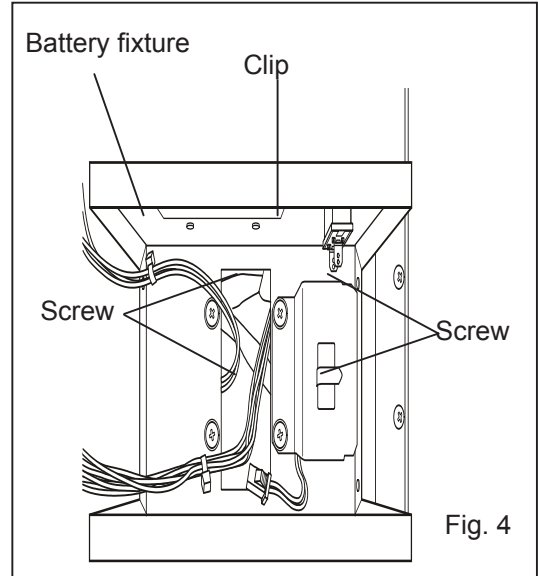
6. Connect the harness to the battery connector and battery switch (Fig. 6) and bind the harnesses by the clip on the battery fixture.

7. Cover the opening beside the battery switch with the top cover removed in procedure 2 (four screws). The harness in no use is bound by the clip on the back of the top cover.

8. Put the battery box cover over the battery box and fix the battery box cover with screws (three screws on the right and left). (Fig. 6)

9. Perform the setting for battery through the keys on the control panel of refrigerator. Refer to the procedure on the next page "Setting for battery before starting"

10. Switch on the battery switch on the battery box.



# OPTIONAL COMPONENTS

## Setting for battery before starting

Always perform the setting shown below after the installation of battery for power failure alarm, an optional component (MPR-48B).

The chamber temperature and "E09" is displayed on the temperature display alternately if the battery switch is turned on without following procedure.

- Turn off the battery switch, perform the following setting, and turn on the battery switch again if "E09" is displayed on the temperature display.

	Description of operation	Key operated	Indication after operation
1		----	The current chamber temperature is displayed.
2	Press numerical value shift key for 5 seconds.	▲	F00 is displayed and the first digit blinks.
3	Press numerical value shift key twice.	▲	The display is changed to F02 from F00.
4	Press digit shift key once.	▶▶	The second digit blinks.
5	Press numerical value shift key 4 times.	▲	The display is changed to F42 from F02.
6	Press set key.	SET	The current setting (000) is displayed and the first digit blinks.
7	Press numerical value shift key and scroll the figure to 1.	▲	The display is changed to 001 from 000.
8	Press set key.	SET	The setting is memorized and the current chamber temperature is displayed.

# SPECIFICATIONS

Name	Pharmaceutical Refrigerator				
Model	MPR-1411		MPR-1411R		
External dimensions	W1440 x D830 x H1950 (mm)				
Internal dimensions	W1320 x D710 x H1500 (mm)				
Effective capacity	1364 L		1359 L		
Exterior	Painted steel				
Interior	Painted steel				
Door	Double layer pair glass/steel plate, automatic closing mechanism, 2 doors				
Insulation	Rigid polyurethane foamed-in place				
Shelf	Hard steel wire on polyethylene coating 8 pcs.		-----		
Drawer	-----		Painted steel 10 pcs.		
Access port	Left side, right side, top side, Inner diameter 30 mm				
Cooling method	Forced cool air circulation				
Compressor	Hermetic type, Output; 250 W				
Condenser	Fin and tube type				
Evaporator	Fin and tube type				
Refrigerant	R-404A				
Defrosting	Forced type, Fully automatic				
Internal heater	257 W				
Temperature controller	Microprocessor control system				
Temperature display	Digital display				
Alarm	High temp., Low temp., Door, Power failure, Over-heat and cooling protection				
Remote alarm contact	Allowable contact capacity: DC 30 V, 2A				
Memory back-up	Nonvolatile static memory				
Fluorescent lamp	White light 40 W x 1 (Glow starter; FG-4P)				
Accessories	1 set of key, 1 nylon clip, 2 binders				
Weight	248 kg		287 kg		
Optional component	Automatic temperature recorder (MTR-0621LH), Recorder fixture (MPR-S30), Automatic temperature recorder (MTR-G04), Recorder fixture (MPR-S7), Battery kit for power failure alarm (MPR-48B), Interface board (MTR-480), LAN interface board (MTR-L03),				

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

# PERFORMANCE

Cooling performance	2 to 14°C (ambient temperature; -5 to 0°C, no load) 2 to 23°C (ambient temperature; 0 to 35°C, no load)				
Temperature control range	2 to 23°C				
Power source	110V, 60Hz	115V, 60Hz	220V, 60Hz	230V, 50Hz	240V, 50Hz
Rated power consumption	370 W	380 W	375 W	360 W	370 W
Noise level	48 dB [A] (background noise; 20 dB)				
Maximum pressure	2319 kPa				

**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. Refrigerator 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 : Pharmaceutical Refrigerator	Model : MPR-1411 MPR-1411R	Serial number :	Date of Installation :
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Please decontaminate the unit yourself before calling the service engineer.





SANYO Electric Co., Ltd  
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