Please read the operating instructions carefully before using this product, and keep the operating instructions for future use.

See page 42 for all model numbers.
INTRODUCTION

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

- PHC Corporation never guarantees any safety if the appliance is used for any objects other than intended use or used by any procedures other than those mentioned in the operating instructions.

- Keep the 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 the operating instructions is unclear or if there are any inaccuracies.

- No part of the operating instructions may be reproduced in any form without the expressed written permission of PHC Corporation.

IMPORTANT NOTICE

PHC Corporation guarantees this product under certain warranty conditions. However, please note that PHC Corporation shall not be responsible for any loss or damage to the contents of the product.

<Intended Use>
This equipment is designed for storage of pharmaceuticals, samples and reagents.
PRECAUTIONS FOR SAFE OPERATION

It is imperative that the user complies with the 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 the operating instructions in a place accessible to users of this unit.

< Labels 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 service personnel only.

⚠️ This symbol indicates that caution is required. Refer to product documentation for details.

USA Only: This product has a fluorescent lamp that contains mercury. Disposal may be regulated in your community due to environmental considerations. For disposal or information, please visit PHC website: https://www.phchd.com.

Contains mercury / Contenu avec mercure
For more information on safe handling procedures, the measures to be taken in case of accidental breakage and safe disposal options visit: ec.gc.ca/mercure-mercury/
Dispose of or recycle in accordance with applicable laws.

Pour plus de renseignements sur les procédures de manutention sécuritaire, les mesures à prendre en cas de bris accidentel et les options d’élimination sécuritaire visitez: ec.gc.ca/mercure-mercury/
Mettez au rebut ou recyclez conformément aux lois applicables.
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.

  - Do not position this unit and the other unit so that it is difficult to operate the disconnection of the power supply plug. Failure to disconnect the power supply plug may cause fire if there is something wrong with the unit.

  - When removing the power supply 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 supply cord. A damaged cord may cause electric shock or fire.

  - Disconnect the power supply 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

⚠️ This unit must be plugged into a dedicated circuit protected by branch circuit breaker.

⚠️ Use a dedicated power source as indicated on the rating label attached to the unit. A multiple-tap 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 acids or alkalis in the unit except in a sealed container. These may be detrimental to health and may cause corrosion of internal components, cooling circuit or electrical components.

⚠️ 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):

- Indoor use;
- Altitude up to 2000 m;
- Temperature 5 °C to 40 °C;
- Maximum relative humidity 80 % for temperature up to 31 °C decreasing linearly to 50 % relative humidity at 40 °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 (POLLUTION DEGREE 2 in most cases);
REFRIGERATOR COMPONENTS

Refrigerator unit

1. MPR-514R
2. Refrigerator unit
3. Components
4. Specifications
5. Installation
6. Maintenance
1. **Control panel:** The chamber temperature and alarms can be set through the keys on the control panel. The temperature display and indicators are also provided on the control panel. Refer to page 10 for details.

2. **Light switch:** This switch is used for turning the fluorescent lamp off and on.

3. **Door switch:** This switch detects the door status (open/close). The door check lamp is ON when the door is open.

4. **Door:** Sliding type. The recessed portion on the rail enables the self-closing of the door. The glass is pair construction.
   - The condensation may be found on the door frame with ambient humidity of about 50% R.H. and on the glass surface with ambient humidity of about 60% R.H. This is not a malfunction.
   - The condensation on the door is dropped on the rail and exhausted to the evaporating tray.

5. **Air exhaust vent:** Do not block this vent. Arrange the stored items not to subject to the cold air from the vent.

6. **Drawer (Right side of MPR-514R):** To pull out the drawer, take out the drawer with pushing the button at the bottom of the drawer.
   **Note:** Never pull out the multiple drawers at a time. It may cause tipping over of the unit.

7. **Air intake vent (front bottom):** Do not block this vent. Blocking this vent may cause unstable chamber temperature. Do not insert fingers or similar articles into the vent.

8. **Space for a temperature recorder:** A temperature recorder (optional accessory) can be mounted here. See page 33.
   - For the installation, contact our sales representative or agent.

9. **Leveling feet (front):** These are used for install the unit. Adjust the height of the leveling feet by turning the screw bolts until 2 front casters are away from the floor.

10. **Evaporating tray:** Defrost water from the evaporator accumulates in the tray and evaporates into the atmosphere. See page 26 for cleaning.

11. **Shelf:** The set location is adjustable.
   - Items to be stored in the chamber must be placed on the shelves. Do not put stored items directly on the bottom of the chamber.

12. **Access port:** This port allows a sensor or cable of measuring equipment to enter the chamber from outside.
   - Replace insulation and the rubber caps when the access port is not used. Improper replacement may cause rise of chamber temperature or condensation around the access port.

13. **Exclusive alarm sensor:** A sensor for detecting the temperature rise at the upper area of the chamber. Refer to page 22 for alarm functions.

14. **Back spacer (also used as a fixture):** To keep the space between the unit and the back wall for adequate cooling performance. And this can be used as a fixture. Fix the unit by using the fixture and a rope or chain.

15. **Circuit breaker switch:** Switch ON this circuit breaker switch before the unit starts to run. When the operation of the unit is stopped by the circuit breaker, contact our sales representative or agent after disconnecting the power supply plug.
1. **Door check indicator (DOOR):** The red LED lamp is lit when the door is opened.
   - 2 minutes after the door check indicator ON, the buzzer is activated to notice the door opening.

2. **Alarm indicator (ALARM):** The red LED lamp blinks during an alarm condition. See page 22.

3. **Temperature display:** Normally shows the present chamber temperature and during an alarm condition, shows an error code. See page 23.

4. **Up arrow key ( ):**
   - At “temperature display mode”; pressing this key for more than 5 seconds leads setting mode.
   - At “setting mode”; increases number values between choices. See page 14 to 15 and page 17 to 20.
   - At “setting of lock function”; selects ON-OFF of key lock for chamber temperature setting. See page 15.

5. **Scroll key ( ):**
   - At “temperature display mode”; pressing this key for more than 5 seconds leads “setting of lock function”. See page 15.
   - At “setting mode”; moves the operator through digit on the display. See page 14 to 15 and page 17 to 20.

6. **Set key (SET):**
   - At “temperature display mode”; pressing this key leads “chamber temperature setting mode”.
   - At “setting mode”; stores the value into computer memory.

7. **Alarm buzzer stop key (BUZZER):** Mutes the audible alarm.
   - “temperature display mode”: the status which the temperature display shows the current chamber temperature
   - “setting mode”: the status which the temperature display is ready to be entered after pressing the up arrow key for 5 seconds.
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 corrosive 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.
1. After unpackaging
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. Installing the unit
Extend the leveling feet by rotating them to separate 2 front casters from the floor. [Fig. 1]
And adjust the leveling foot to level the unit.

3. Fixing the unit
Fix the unit to the wall by using 2 back spacers [Fig. 2] and a rope or chain.
✧ The back spacers (which are also used to prevent the unit from toppling over) have a dual purpose: To provide a clearance between the unit and the wall behind it, and to prevent the unit toppling over.

4. Ground (earth) the unit
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.
✧ A 3-prong plug with grounding pole is provided to the power supply cord. There is no need for electric work for grounding.
✧ If the power supply outlet is not grounded, it will be necessary to install a ground by qualified engineers.
START-UP OF UNIT

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

❖ At the recovery after power failure, the operation is start-up automatically with the setting before power failure. See page 20.

1. Connect the power supply cord to the dedicated outlet with appropriate rating.

<Important>
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 alarm buzzer by pressing the alarm buzzer stop key (BUZZER). (This is not a malfunction.)

<Important>
Close the door securely. The door check indicator is lit when the door is open. The alarm buzzer activates when the door is opened for more than 2 minutes. The alarm is canceled when the door is closed.

3. Allow the chamber temperature to fall to 5 °C (The chamber temperature is set to 5 °C at the factory). Check the chamber temperature on the temperature display.

4. Switch on the light switch to check the fluorescent lamp is on. After checking, turn off the fluorescent lamp if the light is not necessary.

5. Set the desired chamber temperature. See page 14.

6. When the chamber temperature gets to the set temperature, begin slowly placing items into the chamber to minimize the temperature rise.

<Important>
Always put the items on the shelf or in the drawer, not on the bottom of the chamber. Do not contact the items to the chamber walls.
Do not block the air intake vent nor air exhaust vent. Place the items with adequate space between them to keep the cool air circulation.

CAUTIONS FOR USAGE

This unit is equipped with a circuit breaker on the back. Make sure to switch ON this breaker before the unit starts to run. The figure shows the circuit breaker position.

When the operation of the unit is stopped by the circuit breaker, contact our sales representative or agent after disconnected the power supply plug.
Set the chamber temperature according to the condition of use. This refrigerator can keep the stored items for long period under appropriate temperature.

- Setting range of chamber temperature: between 2 °C and 14 °C
- Initial setting (factory setting): 5 °C

<Important>
The chamber temperature of 2 °C may cause partial freeze of stored items.

Example: Change the chamber temperature to 4 °C from 5 °C
- Following shows a sample setting. Set the desired chamber temperature according to the condition of use.

<table>
<thead>
<tr>
<th>Description of operation</th>
<th>Key operated</th>
<th>Indication after operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Connect the power supply plug to the dedicated outlet. (only when start-up of unit)</td>
<td>-----</td>
<td>The current chamber temperature is displayed.</td>
</tr>
<tr>
<td>2 Press set key.</td>
<td>SET</td>
<td>The current setting (005) is displayed and the first digit blinks.</td>
</tr>
<tr>
<td>3 Press up arrow key and scroll the figure to 4.</td>
<td>▲</td>
<td>The display is changed to 004 from 005.</td>
</tr>
<tr>
<td>4 Press set key.</td>
<td>SET</td>
<td>Set temperature is memorized and the current chamber temperature is displayed.</td>
</tr>
</tbody>
</table>

✧ The setting mode returns to the temperature display mode automatically when 90 seconds has passed without any key operation (auto-return function). In this case, the setting is not accepted.
The setting of chamber temperature can be protected to avoid an accidental change. When the lock is ON, change of chamber temperature setting through the key pad is not available.

- Initial setting (factory setting): lock OFF

<table>
<thead>
<tr>
<th>Display</th>
<th>Mode</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>L 0</td>
<td>Lock is OFF</td>
<td>Enable to change the chamber temperature setting</td>
</tr>
<tr>
<td>L 1</td>
<td>Lock is ON</td>
<td>Disable to change the chamber temperature setting</td>
</tr>
</tbody>
</table>

Example: Change the lock to ON from OFF (factory setting)

<table>
<thead>
<tr>
<th>Description of operation</th>
<th>Key operated</th>
<th>Indication after operation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-----</td>
<td>The current chamber temperature is displayed.</td>
</tr>
<tr>
<td>1</td>
<td>Press scroll key for 5 seconds.</td>
<td>The current setting (L 0) is displayed and the first digit blinks.</td>
</tr>
<tr>
<td>2</td>
<td>Press up arrow key once.</td>
<td>The display is changed to L 1 from L 0.</td>
</tr>
<tr>
<td>3</td>
<td>Press set key.</td>
<td>Lock status is memorized and the current chamber temperature is displayed.</td>
</tr>
</tbody>
</table>

◊ The setting mode returns to the temperature display mode automatically when 90 seconds has passed without any key operation (auto-return function). In this case, the setting is not accepted.
The following 2 kinds of defrost methods are provided with this refrigerator. Both defrost methods are controlled automatically.

- **Cycle defrost**
  To keep the chamber temperature stable, the refrigeration compressor is cycled on and off. During “off” period any frost which has accumulated on the evaporator is melted by energizing a defrost heater. This will not have any discernible effect on the chamber temperature.

- **Forced 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.
  When the unit is operating under a forced defrost cycle, the current chamber temperature and dF is displayed alternately on the temperature display.
  Once the forced defrost cycle is completed, normal operation resumes.

---

**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.
Setting of high temperature alarm

By setting the high temperature alarm, the alarm indicator and temperature display blinks and alarm buzzer operates (after 15 minutes) when the chamber temperature is over the setting of high temperature alarm. Set the high temperature alarm to protect the stored items against the damage resulting from temperature rise.

- Setting range of high temperature alarm:
  - Between chamber temperature plus 2 °C and chamber temperature plus 14 °C
- Initial setting (factory setting): chamber temperature plus 5 °C

Example: Change the high temperature alarm to chamber temperature plus 3 °C from chamber temperature plus 5 °C

- Following shows a sample setting. Set the desired high temperature alarm according to the condition of use.

<table>
<thead>
<tr>
<th>Description of operation</th>
<th>Key operated</th>
<th>Indication after operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>----</td>
<td>The current chamber temperature is displayed.</td>
</tr>
<tr>
<td>2 Press up arrow key for 5 seconds.</td>
<td>▲</td>
<td>F00 is displayed and the first digit blinks.</td>
</tr>
<tr>
<td>3 Press up arrow key once.</td>
<td>▲</td>
<td>The display is changed to F01 from F00.</td>
</tr>
<tr>
<td>4 Press set key.</td>
<td>SET</td>
<td>The current setting (005) is displayed and the first digit blinks.</td>
</tr>
<tr>
<td>5 Press up arrow key and scroll the figure to 3.</td>
<td>▲</td>
<td>The display is changed to 003 from 005.</td>
</tr>
<tr>
<td>6 Press set key.</td>
<td>SET</td>
<td>Set temperature is memorized and the current chamber temperature is displayed.</td>
</tr>
</tbody>
</table>

⚠️ The setting mode returns to the temperature display mode automatically when 90 seconds has passed without any key operation (auto-return function). In this case, the setting is not accepted.

**Important**

The high temperature alarm may be activated after defrosting or a large amount of load is stored in the chamber. This is not a malfunction. The high temperature alarm is cancelled automatically when the chamber temperature reaches the set temperature.
ALARM TEMPERATURE SETTING

Setting of low temperature alarm

By setting the low temperature alarm, the alarm indicator and temperature display blinks and alarm buzzer operates (after 15 minutes) when the chamber temperature is below the setting of low temperature alarm. Set the low temperature alarm to protect the stored items against the damage resulting from temperature lowering.

- Setting range of low temperature alarm:
  - Between chamber temperature minus 2 °C and chamber temperature minus 14 °C
- Initial setting (factory setting): chamber temperature minus 5 °C

Example: Change the low temperature alarm to chamber temperature minus 3 °C from chamber temperature minus 5 °C

Following shows a sample setting. Set the desired low temperature alarm according to the condition of use.

<table>
<thead>
<tr>
<th>Description of operation</th>
<th>Key operated</th>
<th>Indication after operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-----</td>
<td>The current chamber temperature is displayed.</td>
</tr>
<tr>
<td>2 Press up arrow key for 5 seconds.</td>
<td>▲</td>
<td>F00 is displayed and the first digit blinks.</td>
</tr>
<tr>
<td>3 Press up arrow key twice.</td>
<td>▲</td>
<td>The display is changed to F02 from F00.</td>
</tr>
<tr>
<td>4 Press set key.</td>
<td>SET</td>
<td>The current setting (-05) is displayed and the first digit blinks.</td>
</tr>
<tr>
<td>5 Press up arrow key and scroll the figure to 3.</td>
<td>▲</td>
<td>The display is changed to -03 from -05.</td>
</tr>
<tr>
<td>6 Press set key.</td>
<td>SET</td>
<td>Set temperature is memorized and the current chamber temperature is displayed.</td>
</tr>
</tbody>
</table>

The setting mode returns to the temperature display mode automatically when 90 seconds has passed without any key operation (auto-return function). In this case, the setting is not accepted.

<Important>
Regardless of the setting of low temperature alarm, the alarm indicator and temperature display blinks and alarm buzzer operates if the chamber temperature is lower than 0 °C to prevent the stored items from freezing.
The door check indicator lights 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.

- Setting range of delay time: between 1 minute and 15 minutes
- Initial setting (factory setting): 2 minutes

Example: Change the delay time to 3 minutes from 2 minutes

> Following shows a sample setting. Set the desired delay time according to the condition of use.

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

✧ The setting mode returns to the temperature display mode automatically when 90 seconds has passed without any key operation (auto-return function). In this case, the setting is not accepted.
SETTING OF RINGBACK OF ALARM BUZZER

The alarm buzzer operates again after a certain period (ringback time) even if the alarm buzzer is silenced by pressing the alarm buzzer stop key (BUZZER) when the same alarm status is continued. Set the ringback time to prevent misidentification of the alarm status.

- Setting range of ringback time: between 10 minutes and 60 minutes (10 minutes interval)
- Display of setting: between 010 and 060 (000 display shows no ringback)
- Initial setting (factory setting): 30 minutes

The alarm buzzer will not recover once the alarm buzzer is silenced by pressing the alarm buzzer stop key (BUZZER) when the ringback time is set to 000. However, the alarm buzzer will operate if other alarm status is detected.

Example: Change the ringback time to 20 minutes from 30 minutes
- Following shows a sample setting. Set the desired ringback time according to the condition of use.

<table>
<thead>
<tr>
<th>Description of operation</th>
<th>Key operated</th>
<th>Indication after operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-----</td>
<td>The current chamber temperature is displayed.</td>
</tr>
<tr>
<td>2 Press up arrow key for 5 seconds.</td>
<td>▲</td>
<td>F00 is displayed and the first digit blinks.</td>
</tr>
<tr>
<td>3 Press up arrow key 5 times.</td>
<td>▲</td>
<td>The display is changed to F05 from F00.</td>
</tr>
<tr>
<td>4 Press scroll key once.</td>
<td>▶▶</td>
<td>The second digit blinks.</td>
</tr>
<tr>
<td>5 Press up arrow key twice.</td>
<td>▲</td>
<td>The display is changed to F25 from F05.</td>
</tr>
<tr>
<td>6 Press set key.</td>
<td>SET</td>
<td>The current setting (030) is displayed and the second digit blinks.</td>
</tr>
<tr>
<td>7 Press up arrow key and scroll the figure to 2.</td>
<td>▲</td>
<td>The display is changed to 020 from 030.</td>
</tr>
<tr>
<td>8 Press set key.</td>
<td>SET</td>
<td>Ringback time is memorized and the current chamber temperature is displayed.</td>
</tr>
</tbody>
</table>

-The setting mode returns to the temperature display mode automatically when 90 seconds has passed without any key operation (auto-return function). In this case, the setting is not accepted.
- The setting should be performed during normal operation, not during alarm status.

OPERATION CHECK AFTER RECOVERY

After recovery from a power failure, the unit will resume operation automatically with the setting before power failure. Accordingly, there is no need for re-set however, always check the running status after recovery.
- The set value is memorized by nonvolatile memory during power failure.
The alarm status is noticed to a remote location when a remote alarm equipment (commercial item) is connected to the remote alarm terminal. It is recommended to install a remote alarm equipment (commercial item) when the refrigerator is installed in a desolate location so that an alarm status is noticed to an operator.

❖ Contact our sales representative or agent for the installation of a remote alarm equipment (commercial item).

- Location of remote alarm terminal: rear lower left
- Allowable contact capacity: DC 30 V, 2 A

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).

**Connection of remote alarm terminal**

1. Remove the terminal cover at rear lower left of the cabinet by unscrewing 2 screws. [Fig. 1]

2. Connect the lead wire of a remote alarm equipment (commercial item) to the terminal.
   ❖ It is recommended to use cables with a maximum length of 30 meters.

3. Replace the terminal cover and fix it by 2 screws.
This unit has the alarm functions shown below.

<table>
<thead>
<tr>
<th>Alarms</th>
<th>Situation</th>
<th>Indication</th>
<th>Alarm buzzer</th>
<th>Remote alarm</th>
</tr>
</thead>
<tbody>
<tr>
<td>High temp. alarm</td>
<td>If the chamber temp. is higher than the high temp. alarm setting.</td>
<td>Alarm indicator blinks.</td>
<td>Intermittent tone with 15 minutes delay.</td>
<td>Alarm status with 15 minutes delay.</td>
</tr>
<tr>
<td>Air circulation alarm</td>
<td>If the chamber temp. distribution gets worse. (chamber temperature at upper area is high)</td>
<td>Alarm indicator blinks.</td>
<td>Intermittent tone with 15 minutes delay.</td>
<td>Alarm status with 15 minutes delay.</td>
</tr>
<tr>
<td>Low temp. alarm</td>
<td>If the chamber temp. is lower than the low temp. alarm setting.</td>
<td>Alarm indicator blinks.</td>
<td>Intermittent tone with 15 minutes delay.</td>
<td>Alarm status with 15 minutes delay.</td>
</tr>
<tr>
<td>0 oC alarm</td>
<td>If the chamber temp. is lower than 0 oC.</td>
<td>Alarm indicator blinks.</td>
<td>Intermittent tone</td>
<td>Alarm status.</td>
</tr>
<tr>
<td>Power failure alarm</td>
<td>At power failure. If the power supply cord is unplugged.</td>
<td>-----</td>
<td>-----</td>
<td>Alarm status.</td>
</tr>
<tr>
<td>Power failure alarm (with MPR-48B1)</td>
<td>At power failure. If the power supply cord is unplugged.</td>
<td>Alarm indicator blinks.</td>
<td>Intermittent tone</td>
<td>Alarm status.</td>
</tr>
<tr>
<td>Door alarm</td>
<td>When the door is open.</td>
<td>Door check indicator blinks.</td>
<td>Intermittent tone with 2 minutes delay.</td>
<td>-----</td>
</tr>
</tbody>
</table>

⚠️ 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)

### Air circulation alarm

The alarm indicator blinks and the alarm buzzer sounds (after 15 minutes) when the sensor detects that the chamber temperature distribution is getting worse extremely. This may be caused by the block of cold air in the chamber due to the frost on the evaporator or stop of cooling fan motor.

⚠️ The air circulation is detected by the exclusive alarm sensor attached to the upper area of the chamber.
SELF DIAGNOSTIC FUNCTIONS

This unit has the self diagnostic functions shown below.

<table>
<thead>
<tr>
<th>Self diagnostic</th>
<th>Situation</th>
<th>Indication</th>
<th>Alarm buzzer</th>
<th>Remote alarm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor</td>
<td>If the thermal sensor is disconnected.</td>
<td>Alarm indicator blinks. E01 and -50 are displayed alternately.</td>
<td>Intermittent tone</td>
<td>Alarm status</td>
</tr>
<tr>
<td>Sensor</td>
<td>If the thermal sensor is short-circuited.</td>
<td>Alarm indicator blinks. E02 and 50 are displayed alternately.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensor</td>
<td>If the defrost sensor is disconnected.</td>
<td>Alarm indicator blinks. E03 and chamber temp. are displayed alternately.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensor</td>
<td>If the defrost sensor is short-circuited.</td>
<td>Alarm indicator blinks. E04 and chamber temp. are displayed alternately.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensor</td>
<td>If the exclusive alarm sensor is disconnected.</td>
<td>Alarm indicator blinks. E13 and chamber temp. are displayed alternately.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensor</td>
<td>If the exclusive alarm sensor is short-circuited.</td>
<td>Alarm indicator blinks. E14 and chamber temp. are displayed alternately.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery check</td>
<td>When about 3 years has passed after plug in.</td>
<td>F-1 and chamber temp. are displayed alternately.</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>Setting check</td>
<td>When the battery switch is turned ON without setting after attachment.</td>
<td>E09 and chamber temp. are displayed alternately.</td>
<td>-----</td>
<td>-----</td>
</tr>
</tbody>
</table>

- 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)
- The error code with smaller figure is displayed if some errors are occurred simultaneously.
- The chamber temperature is controlled at about 5°C by the defrost sensor if the thermal sensor is disconnected or short circuited.

SAFETY FUNCTIONS

This unit has the safety functions shown below.

<table>
<thead>
<tr>
<th>Safety</th>
<th>Situation</th>
<th>Indication, Buzzer</th>
<th>Safety operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over-heat</td>
<td>When the chamber temp. is higher than about 28 °C.</td>
<td>-----</td>
<td>The defrost heater OFF. Fan motor for cold air circulation is OFF. Reset when the chamber temp. is lower than about 18 °C.</td>
</tr>
<tr>
<td>Over-cool</td>
<td>When the chamber temp. is lower than about 0 °C.</td>
<td>-----</td>
<td>Compressor OFF. Reset when the chamber temp. is higher than 6 °C.</td>
</tr>
<tr>
<td>Auto-return</td>
<td>When there is no key pressing in setting mode for 90 seconds.</td>
<td>-----</td>
<td>Finishing of setting mode and returning to temp. display mode.</td>
</tr>
<tr>
<td>Key lock</td>
<td>When the key lock is ON (L1).</td>
<td>-----</td>
<td>Change of chamber temp. setting is disable.</td>
</tr>
</tbody>
</table>
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 exterior, interior, and accessories

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.

Wipe off the condensation on the glass or exterior of the cabinet with a dry soft cloth.

❖ 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.

<Important> Never pour water onto or into the unit. This may cause electric shock or failure.

⚠️ CAUTION
Do not use a brush, an acid, a thinner, laundry soap, a powder detergent, boiling water for cleaning. These cause damage of painted surface or failure of plastic and rubber components. Also, do not wipe the plastic and rubber components by a volatile material.
Replacement of fluorescent lamp

Follow the procedure below when replacing a fluorescent lamp. The fluorescent lamp is located horizontally at upper front of the cabinet.

1. Turn off the light switch and disconnect the power supply plug of the refrigerator.

2. Move the stored items on the top shelf and in the top drawer (MPR-514R).

3. Pull the fluorescent lamp downwards from the stopper together with the lamp cover and wiring. [Fig. 1]

4. Remove the water-proof cover with the wiring on the both sides of the lamp cover.

5. Take out the fluorescent lamp and insert a new fluorescent lamp into the lamp cover.

6. Replace the water-proof cover on the both sides of the lamp cover and then replace the lamp cover to the stopper.

7. Replace the stored items on the top shelf and in the top drawer (MPR-514R) and connect the power supply cord to the outlet.

Replacement of glow starter

The glow starter is located on the right side of top front in the chamber.

1. Turn off the light switch and disconnect the power supply plug of the refrigerator.

2. Remove the water-proof cover and take out the glow starter. (glow starter; FG-1P) [Fig. 1]

3. Attach a new glow starter and replace the water-proof cover.

4. Connect the power supply cord to the outlet.
Cleaning of evaporating tray

1. As shown in Fig. 1, remove 2 screws on the bottom of the unit cover and remove the unit cover.

2. The evaporating tray is installed in the back. Pull the clips on the both sides of the mounting plate to loosen the mounting plate. Take out the evaporating tray with the mounting plate as shown in Fig. 2.

3. Dispose any accumulated water in the evaporating tray.

4. Wash the evaporating tray with a diluted neutral dishwashing detergent and clean water. ◇ Never use the hot or boiling water to clean the tray.

5. Replace the evaporating tray in it original position and push the clips on the both sides of the mounting plate to fix the evaporating tray.

6. Replace the unit cover and fix it with 2 screws.

<Important>
Improper installation of mounting plate or unit cover can cause abnormal noise. Install the mounting plate and unit cover surely and check there is no abnormal noise during operation.
If the unit malfunctions, check out the following before calling for service.

<table>
<thead>
<tr>
<th>Malfunction</th>
<th>Check/Remedy</th>
</tr>
</thead>
</table>
| If nothing operates even when plugged in | ☐ The unit is not connected to the power supply properly.  
☐ The capacity and voltage of power supply is not sufficient.  
☐ There is a power failure.  
☐ The circuit breaker on the supply circuit is activated.  
☐ The fuse on the supply circuit is blown. |
| The alarm device is activated at start-up | ☐ The unit is not connected to the power supply properly.  
☐ The capacity and voltage of power supply is not sufficient.  
☐ There is a power failure.  
☐ The circuit breaker on the supply circuit is activated.  
☐ The fuse on the supply circuit is blown.  
☐ The chamber temperature setting was changed.  
☐ The containers of high temperature (load) were put in the chamber.  
☐ The door was kept opened for a long time. |
| The alarm device is activated during operation | ☐ The unit is not connected to the power supply properly.  
☐ The capacity and voltage of power supply is not sufficient.  
☐ There is a power failure.  
☐ The circuit breaker on the supply circuit is activated.  
☐ The fuse on the supply circuit is blown.  
☐ The chamber temperature setting was changed.  
☐ The door was kept opened for a long time.  
☐ The containers of high temperature (load) were put in the chamber.  
☐ The door is opened. |
| No key operation is available | ☐ The key lock is set in ON (L 1).  
→ Set the key lock in OFF (L 0). |
| During the setting mode, return to the temp. display mode | ☐ The floor is not sturdy.  
☐ The installation site is not level.  
☐ The refrigerator is tilted.  
☐ The cabinet contact the surrounding wall.  
☐ The mounting plate or unit cover in not installed surely after cleaning the evaporating tray. |
| Noisy | ☐ The floor is not sturdy.  
☐ The installation site is not level.  
☐ The refrigerator is tilted.  
☐ The cabinet contact the surrounding wall.  
☐ The mounting plate or unit cover in not installed surely after cleaning the evaporating tray. |
| When chamber does not get cold enough | ☐ A large amount of items or warm product was put in the chamber.  
☐ The door is frequently opened.  
☐ The chamber temperature setting is high.  
☐ The unit is in direct sunlight.  
☐ The unit is not installed in the installation site specified in the operating instructions.  
☐ The ventilation around the unit is blocked.  
☐ There is a nearby heat source.  
☐ The ambient temperature is too high.  
→ The allowable ambient temperature is between -5 °C and +35 °C.  
☐ The stored items is too much.  
☐ The air exhaust vent is blocked up with containers.  
☐ The access port is not covered.  
→ The access port should be covered with the insulation and rubber caps when no use.  
☐ The door seal is damaged.  
→ If it is damaged, contact our sales representative or agent for replacement.  
☐ Any foreign substance is located between door gaskets. |

**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.
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.

Decontamination of unit

Before disposal of unit with biohazardous danger, decontaminate the unit to the extent possible by the user.
Information on Disposal for Users of Waste Electrical & Electronic Equipment (private households)

This symbol on the product and/or accompanying documents means that electrical and electronic products should not be mixed with general household waste. For proper treatment, recovery and recycling, please take these products to designated collection points, where they will be accepted free of charge. Alternatively, in some countries you may be able to return your products to your local retailer upon the purchase of an equivalent new product.

Disposing of this product correctly will help to save valuable resources and prevent any potential negative effects on health and the environment which could otherwise arise from inappropriate waste handling. Please contact your local authority for further details of your nearest designated collection point.

Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.

For business users in the European Union

If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

Information on Disposal in other countries outside the European Union

This symbol is only valid in the European Union. If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.

Benutzerinformationen zur Entsorgung von elektrischen und elektronischen Geräten (private Haushalte)


Die ordnungsgemäße Entsorgung dieses Produkts dient dem Umweltschutz und verhindert mögliche negative Auswirkungen auf Mensch und Umgebung, die aus einer unsachgemäßen Handhabung von Abfall entstehen können. Genauere Informationen zur nächstgelegenen Sammelstelle erhalten Sie bei Ihrer Gemeindeverwaltung.

In Übereinstimmung mit der Landesgesetzgebung könnten für die unsachgemäße Entsorgung dieser Art von Abfall Strafgebühren erhoben werden.

Für Geschäftskunden in der Europäischen Union

Bitte treten Sie mit Ihrem Händler oder Lieferanten in Kontakt, wenn Sie elektrische und elektronische Geräte entsorgen möchten. Es hält weitere Informationen für sie bereit.

Informationen zur Entsorgung in anderen Ländern außerhalb der Europäischen Union

Dieses Symbol ist nur in der Europäischen Union gültig. Bitte treten Sie mit Ihrer Gemeindeverwaltung oder Ihrem Händler in Kontakt, wenn Sie elektrische und elektronische Geräte entsorgen möchten, und fragen Sie nach einer Entsorgungsmöglichkeit.

Täjekoztató az elektromos és elektronikus berendezéseket hulladékaik ártalmatlanításáról (házatartások)

Ha a terméken szerepel a termékek és/vagy a mellékelt dokumentumokban, az elhasznált elektromos és elektronikus termékeket nem szabad keverni az általános háztartási személyek részével.

A megfelelő kezelés, visszanyerés és újrahasznosítás érdekében kérjük, szállítsák az ilyen termékeket a kijelölt gyűjtőhelyekre, ahol ténylegesen átvesszék azokat. Úgy, hogy lehetőségént bizonyos országokban a termékek a helyi kiskereskedésbe is visszavethetőek, amennyiben hasznos, új termékeket vásárol.

A termék megfelelő ártalmatlanításával segít megőrizni az értékes erőforrásokat és megelőzhető a környezetre és az égésésigetéssé érlelő ártalmazatokat, amelyeket a hulladékok helytelen kezelése egybeépít okozhat. Kérjük, lépjen kapcsolatba a helyi hatósággal és vagyos országokban a termékek a helyi kiskereskedésbe is visszavethetőek, amennyiben hasznos, új termékeket vásárol.

Informations relatives à l’évacuation des déchets, destinées aux utilisateurs d’appareils électriques et électroniques (appareils ménagers domestiques)

Lorsque ce symbole figure sur les produits et/ou les documents qui les accompagnent, cela signifie que les appareils électriques et électroniques doivent ne pas être jetés avec les ordures ménagères.

Pour que ces produits subissent un traitement, une récupération et un recyclage appropriés, envoyez-les dans les points de collecte désignés, où ils peuvent être déposés gratuitement. Dans certains pays, il est possible de reprendre les produits au revendeur local en cas d’achat d’un produit équivalent.

En éliminant correctement ce produit, vous contribuerez à la conservation des ressources naturelles et à la prévention des éventuels effets négatifs sur l’environnement et la santé humaine qui pourraient survenir dans le cas contraire.

Afin de connaître le point de collecte le plus proche, veuillez contacter vos autorités locales.

Les sanctions peuvent être appliquées en cas d’élimination incorrecte de ces déchets, conformément à la législation nationale.

Utilisateurs professionnels de l’Union européenne

Pour en savoir plus sur l’élimination des appareils électriques et électroniques, contactez votre revendeur ou l’instance nationale.

Informations sur l’évacuation des déchets dans les pays ne faisant pas partie de l’Union européenne

Ce symbole n’est reconnu que dans l’Union européenne. Pour en savoir plus sur l’élimination des appareils électriques et électroniques à l’étranger, veuillez contacter vos autorités locales ou votre revendeur afin de connaître la procédure d’élimination à suivre.
DISPOSAL OF UNIT

Oplysninger til brugerne om afhændelse af elektriske apparater og elektronisk udstyr (private husholdninger)

For at sikre en korrekt behandling, indsamling og genbrug, skal du aflævere disse produkter på deres indstelte indsamlingstedater, hvor du vil blive modtaget uden ekstra omkostninger. I nogle lande er der også mulighed for, at du kan indlievere dine produkter hos den lokale forhandler, hvis du køber et nyt og tilsvarende produkt.

Hvis du afhænder dette produkt på korrekt vis, vil det være med at spare på de yderlige afhåndelsesavancer og forhindre eventuelle negativ påvirkninger på miljøet og humanheden.

Professionalne brugere i EU

Hvis du ønsker at afhænde elektriske apparater eller elektronisk udstyr ud, skal du kontakte din forhandler eller leverandør for at få yderligere oplysninger om, hvordan du kan afhænde produktet på det mest miljøvenlige og effektive måde.

Ved ordinarie forbrugere i EU

Hvis du ønsker at afhænde elektriske apparater eller elektronisk udstyr ud, skal du kontakte din forhandler eller leverandør for at få yderligere oplysninger om, hvordan du kan afhænde produktet på det mest miljøvenlige og effektive måde.

Informaciunea despre eliminarea echipamentelor electrice si electronice (unități de dominiu)

Acest simbol se aplică doar la produse și/sau documentele însoțitoare, care se referă la echipamente electrice și electronice utilizate, cu privire la eliminarea acestora, prin metode mecanice sau chimice, care sunt appropriate pentru eliminarea acestor produse.

Informacenti pentru utilizatori, privind eliminarea echipamentelor electrice și electronice uzate (proprietate particulări)

Acest simbol se aplică doar la produse și/sau documentele însoțitoare, care se referă la echipamente electrice și electronice utilizate, cu privire la eliminarea acestora, prin metode mecanice sau chimice, care sunt appropriate pentru eliminarea acestor produse.
DISPOSAL OF UNIT

Informazione per gli utenti sullo smaltimento di apparecchiature elettriche e elettroniche che non sono più utilizzabili

Questo simbolo sul prodotto o sulla documentazione indica che è necessario separare questo prodotto da altri rifiuti domestici all'anno finale del suo ciclo di vita. Il simbolo è valido solo nell'Unione Europea.

Informazioni sui dispositivi elettronici (strumenti domestici)

Se il prodotto presenta questo simbolo, significa che è destinato al riciclaggio/riutilizzo o al trattamento all'esterno della rete elettrica. Si prega di utilizzare i sistemi di raccolta previsti per questo tipo di rifiuti.

Informazioni per le aziende dell'Unione Europea

Gli utenti aziendali dell'Unione Europea che desiderano smaltire questo prodotto possono farlo presso i punti di raccogliibile pubblico adatto o in analogo modo all'ambiente e, in particolare, in base alle leggi nazionali.

Informazioni sullo smaltimento in nazioni ai di fuori dell'Unione Europea

Questo simbolo è valido solo nell'Unione Europea.

Informazioni aggiuntive per le aziende dell'Unione Europea

Gli utenti aziendali dell'Unione Europea che desiderano smaltire questo prodotto possono farlo presso i punti di raccogliibile pubblico adatto o in analogo modo all'ambiente e, in particolare, in base alle leggi nazionali.

Informazioni sullo smaltimento di apparecchiature elettriche e elettroniche che non sono più utilizzabili

Questo simbolo sul prodotto o sulla documentazione indica che è necessario separare questo prodotto da altri rifiuti domestici all'anno finale del suo ciclo di vita. Il simbolo è valido solo nell'Unione Europea.

Informazioni per l'utente sullo smaltimento di apparecchiature elettriche e elettroniche che non sono più utilizzabili

Questo simbolo sul prodotto indica che è necessario separare questo prodotto da altri rifiuti domestici all'anno finale del suo ciclo di vita. Il simbolo è valido solo nell'Unione Europea.

Informazioni per l'utente sullo smaltimento di apparecchiature elettriche e elettroniche che non sono più utilizzabili

Questo simbolo sul prodotto indica che è necessario separare questo prodotto da altri rifiuti domestici all'anno finale del suo ciclo di vita. Il simbolo è valido solo nell'Unione Europea.
The chamber temperature is recorded and maintained by attaching a temperature recorder available as an optional component. For the attachment of a temperature recorder, an optional recorder fixing is necessary.

<table>
<thead>
<tr>
<th>Temperature recorder</th>
<th>Recorder fixing</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTR-0621LH</td>
<td>MPR-S30</td>
</tr>
<tr>
<td>MTR-G04A (AC 100 V to 150 V)</td>
<td>MPR-S7</td>
</tr>
<tr>
<td>MTR-G04C (AC 220 V to 240 V)</td>
<td>MPR-S7</td>
</tr>
</tbody>
</table>

Contact our sales representative or agent for the attachment of a temperature recorder. For the usage of the temperature recorder, refer to an instruction manual enclosed with the temperature recorder.

For MPR-514, the installation is same as for MPR-514R.

**WARNING**

Always disconnect the power supply plug before installing a temperature recorder in order to prevent electric shock or injury.
1. Remove the bottom shelf (bottom right drawer for MPR-514R) in the chamber.  
   ♦ For MPR-514, remove the doors before taking out the bottom shelf.

2. Unscrew the screw fixing the panel cover at the space for automatic temperature recorder and open the panel cover. [Fig. 1]

3. Remove the panel cover from the shaft by pushing the shaft edge to the right and left side respectively.

4. Fix the temperature recorder to the frame in the recorder fixing (MPR-S30) referring to the instruction manual enclosed with the recorder fixing. [Fig. 2]

5. Unscrew 2 screws on the air intake vent cover (right side) on the front bottom and then remove the air intake vent cover. [Fig. 3]
   <Important>
   A sensor is fixed to the back side of the air intake vent cover. Do not pull the air intake vent cover excessively.

6. Take out the insulation in the sensor port and pass the recorder sensor into the chamber through the sensor port from the space for temperature recorder. [Fig. 4]
7. Fix the recorder sensor to the sensor fixture. [Fig. 5]

8. Replace the insulation to the sensor port and then replace and fix the air intake vent cover by 2 screws.

9. Set the temperature recorder with the frame to the space for temperature recorder. [Fig. 6]

10. Replace the bottom shelf (bottom right drawer for MPR-514R) in the chamber.
    ♦ For MPR-514, replace the doors after setting the bottom shelf.
Attachment of MTR-G04A or MTR-G04C

1. Remove the bottom shelf (bottom right drawer for MPR-514R) in the chamber.
   ❖ For MPR-514, remove the doors before taking out the bottom shelf.

2. Unscrew the screw fixing the panel cover at the space for temperature recorder and open the panel cover. [Fig. 1]

3. Remove the panel cover from the shaft by pushing the shaft edge to the right and left side respectively.

4. Fix the recorder to the recorder fitting in the recorder fixing (MPR-S7) referring to the instruction manual enclosed with the recorder fixing. [Fig. 2]

5. Unscrew 2 screws on the air intake vent cover (right side) on the front bottom and then remove the air intake vent cover. [Fig. 3]

   <Important>
   A sensor is fixed to the back side of the air intake vent cover. Do not pull the air intake vent cover excessively.

6. Take out the insulation in the sensor port and pass the recorder sensor into the chamber through the sensor port from the space for automatic temperature recorder. [Fig. 4]
7. Fix the recorder sensor to the sensor fixture. [Fig. 5]

8. Replace the insulation to the sensor port and then replace and fix the air intake vent cover by 2 screws.

9. Connect the recorder connector to the connector for recorder power located at upper right inside the space for temperature recorder. [Fig. 6]
   ✷ The connector for recorder power has a connector cover. Remove the connector cover before connection.

**WARNING**

*Always disconnect the power supply to the unit to prevent electric shock or injury since the connector on the unit is energized.*

10. Set the temperature recorder with the channel on the recorder fitting aligned with the shaft and fix the temperature recorder by a screw at the space for temperature recorder. [Fig. 7]

11. Replace the bottom shelf (bottom right drawer for MPR-514R) in the chamber.
   ✷ For MPR-514, replace the doors after setting the bottom shelf.
The alarm indicator 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 mounting box (MPR-48B1), an optional component is necessary. A battery for power failure alarm is included in the battery mounting box.

- Contact our sales representative or agent for the installation of the battery mounting box (MPR-48B1).

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

2. Release the harnesses from the clip fixed to the back side of the top cover. [Fig. 2]

3. Pass the harnesses through the bottom opening of the battery box and set the battery box on the right front of the refrigerator top so that 4 screw holes can be aligned. [Fig. 3]

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

4. Put the battery on the right of the battery box. [Fig. 3]
5. Put the battery fixture over the battery and fix the battery box and battery fixture by 4 screws. [Fig. 4]

6. Connect the harness to the battery connector and battery switch [Fig. 5] and bind the harnesses by the clip on the battery fixture. [Fig. 4]

7. Cover the opening beside the battery switch with the top cover removed in procedure 1 (4 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 (3 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.
After installing the optional battery mounting box (MPR-48B1), setting on the main unit is required.

✧ Contact our sales representative or agent for setting.
## SPECIFICATIONS

<table>
<thead>
<tr>
<th>Product name</th>
<th>Pharmaceutical refrigerator</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MPR-514</td>
</tr>
<tr>
<td>External dimensions</td>
<td>W900 mm x D600 mm + (58) mm x H1790 mm</td>
</tr>
<tr>
<td>Internal dimensions</td>
<td>W800 mm x D465 mm x H1300 mm</td>
</tr>
<tr>
<td>Effective capacity</td>
<td>489 L</td>
</tr>
<tr>
<td>Exterior</td>
<td>Painted steel</td>
</tr>
<tr>
<td>Interior</td>
<td>Stainless steel</td>
</tr>
<tr>
<td>Door</td>
<td>Sliding type, 2-layer pair glass with heat ray reflection film x 2</td>
</tr>
<tr>
<td>Insulation</td>
<td>Rigid polyurethane foamed-in place</td>
</tr>
<tr>
<td>Shelves</td>
<td>Hard steel wire on polyester coating x 5</td>
</tr>
<tr>
<td></td>
<td>Allowable load; 50 kg/shelf</td>
</tr>
<tr>
<td></td>
<td>Hard steel wire on polyester coating x 5</td>
</tr>
<tr>
<td></td>
<td>Allowable load; 20 kg/shelf</td>
</tr>
<tr>
<td>Drawers (MPR-514R only)</td>
<td>-----</td>
</tr>
<tr>
<td></td>
<td>Allowable load; 20 kg/drawer</td>
</tr>
<tr>
<td>Access port</td>
<td>Inner diameter; 30 mm, Left side</td>
</tr>
<tr>
<td>Cooling method</td>
<td>Forced cool air circulation</td>
</tr>
<tr>
<td>Compressor</td>
<td>Hermetic type, Output; 200 W x 1</td>
</tr>
<tr>
<td>Fan motor</td>
<td>For chamber cooling; output 3 W x 1</td>
</tr>
<tr>
<td>Evaporator</td>
<td>Fin and tube type</td>
</tr>
<tr>
<td>Condenser</td>
<td>Wire and tube condenser + skin condenser</td>
</tr>
<tr>
<td>Refrigerant</td>
<td>R-513A</td>
</tr>
<tr>
<td>Defrosting</td>
<td>Cycle defrost + forced defrost, Fully automatic</td>
</tr>
<tr>
<td>Defrost heater</td>
<td>148 W</td>
</tr>
<tr>
<td>Temperature controller</td>
<td>Electronic control system (control range; between 2 °C and 14 °C)</td>
</tr>
<tr>
<td>Thermometer</td>
<td>Digital thermometer</td>
</tr>
<tr>
<td>Fluorescent lamp</td>
<td>FL20SD (FL20SSEXD for MPR-514-PE and MPR-514R-PE)</td>
</tr>
<tr>
<td>Alarms</td>
<td>High temp. alarm, Low temp. alarm, 0°C alarm, Air circulation alarm, Door alarm</td>
</tr>
<tr>
<td>Remote alarm contact</td>
<td>During alarm buzzer and power failure, Output; N.O.; “close”, N.C.; “open” *</td>
</tr>
<tr>
<td>Weight</td>
<td>141 kg</td>
</tr>
<tr>
<td>Accessories</td>
<td>2 keys</td>
</tr>
<tr>
<td></td>
<td>20 shelf supports, 5 shelves</td>
</tr>
<tr>
<td>Optional components</td>
<td>Temperature recorder (MTR0621LH), Recorder fixing (MPR-S30)</td>
</tr>
<tr>
<td></td>
<td>Temperature recorder (MTR-G04A, -G04C), Recorder fixing (MPR-S7)</td>
</tr>
<tr>
<td></td>
<td>Shield door (MPR-51G), Battery mounting box (MPR-48B1)</td>
</tr>
</tbody>
</table>

✧ Design or specifications will be subject to change without notice.
✧ The dimension in ( ) shows the projected dimension.
✧ Refer to the updated catalog when ordering an optional component.
* It is recommended to use cables with a maximum length of 30 meters.
<table>
<thead>
<tr>
<th>Product name</th>
<th>Pharmaceutical Refrigerator MPR-514</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model number</td>
<td>MPR-514-PT MPR-514-PA MPR-514-PK MPR-514-PR MPR-514-PE</td>
</tr>
<tr>
<td>Temperature control range</td>
<td>+2 °C to +14 °C</td>
</tr>
<tr>
<td>Usable ambient temperature</td>
<td>-5 °C to +35 °C</td>
</tr>
<tr>
<td>Noise level</td>
<td>42 dB (A scale)</td>
</tr>
<tr>
<td>Maximum pressure</td>
<td>1500 kPa</td>
</tr>
<tr>
<td>Rated voltage</td>
<td>AC 110 V AC 115 V AC 220 V AC 220 V AC 220 V/230 V /240 V</td>
</tr>
<tr>
<td>Rated frequency</td>
<td>60 Hz 60 Hz 60 Hz 60 Hz 50 Hz</td>
</tr>
<tr>
<td>Amperage</td>
<td>2.4 A 3.2 A* 2.0 A* 1.4 A 1.3 A</td>
</tr>
<tr>
<td>Power consumption</td>
<td>240 W 320 W 330 W* 240 W 220 W</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Product name</th>
<th>Pharmaceutical Refrigerator MPR-514R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model number</td>
<td>MPR-514R-PT MPR-514R-PA MPR-514R-PK MPR-514R-PE</td>
</tr>
<tr>
<td>Temperature control range</td>
<td>+2 °C to +14 °C</td>
</tr>
<tr>
<td>Usable ambient temperature</td>
<td>-5 °C to +35 °C</td>
</tr>
<tr>
<td>Noise level</td>
<td>42 dB (A scale)</td>
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<tr>
<td>Maximum pressure</td>
<td>1500 kPa</td>
</tr>
<tr>
<td>Rated voltage</td>
<td>AC 110 V AC 115 V AC 220 V AC 220 V AC 220 V/230 V /240 V</td>
</tr>
<tr>
<td>Rated frequency</td>
<td>60 Hz 60 Hz 60 Hz 50 Hz</td>
</tr>
<tr>
<td>Amperage</td>
<td>2.4 A 3.2 A* 2.0 A* 1.3 A</td>
</tr>
<tr>
<td>Power consumption</td>
<td>240 W 320 W 330 W* 220 W</td>
</tr>
</tbody>
</table>

◦ The above data is measured based on our internal basis.
◦ Design or specifications will be subject to change without notice.
◦ The unit with CE mark complies with EU directives.
* These values are maximum amperage and power consumption.
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. Unit contents:
   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:
   No contamination: □ Yes □ No
   Decontaminated: □ Yes □ No
   Contaminated: □ Yes □ No
   Others:

3. Instructions for safe repair/maintenance/disposal 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- | Serial number: | Date of Installation: |

Please decontaminate the unit yourself before calling the service engineer.