Please read the operating instructions carefully before using this product, and keep the operating instructions for future use.
See page 43 for all model numbers.
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I N T R O D U C T I O N

- 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 >
- Exclamation mark: This mark is labeled on the cover in which the electrical components of high voltage are enclosed to prevent the electric shock.
- Electric plug symbol: The cover should be removed by a qualified engineer or service personnel only.
- HOT: This symbol indicates a hot surface.
- Exclamation mark: This symbol indicates that caution is required. Refer to product documentation for details.
P R E C A U T I O N S  F O R  S A F E  O P E R A T I O N

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 power supply cord or plug may cause fire or electric shock.

⚠️ Do not use the power supply cord if its plug is loose. Such power 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 power supply plug from the power supply outlet, grip the power supply plug, not the cord. Pulling the power supply 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 power supply 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 are locked completely with a key.

⚠️ 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.

⚠️ 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.
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 power supply 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 (copy the last page) when you request any repair or maintenance for the safety of service personnel.
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 unit

1. Lamp [page 27]
2. Door gasket
3. Back spacer [page 12]
4. Caster
5. Back side
6. Freezer
7. Refrigerator
8.
9.
10.
11 (inside)
1. **Control panel:** With the key on the control panel, temperature display can be changed and the alarm buzzer can be canceled. Also, the running status can be checked on the temperature display and the indicators. [page 10]

2. **Keyhole:** The door of refrigerator and freezer can be locked with the enclosed key.

3. **Drain port (bottom of freezer):** Remove the cap when the water resulting from defrosting is drained. The drained water is evaporated in the evaporating tray under the freezer.  
   ✷ Replace the cap after drainage.

4. **Leveling foot (front, 2 locations):** These are screw bolts used to install and fix the unit. Adjust the height of the leveling feet by turning the screw bolts until 2 front casters are away from the floor. [page 12]

5. **Space for a temperature recorder:** An optional temperature recorder is installed here [page 34]. For the installation of temperature recorder, contact our sales representative or agent.

6. **Shelf (for freezer):** Use to store the materials in the freezer. It is recommended to store the items on the shelf. The maximum load is 10 kg.  
   ✷ Never touch the storage items with wet hands. Touching with the wet hands may cause frostbite.

7. **Access port (left side):** This port allows a sensor or cable of measuring equipment to enter the chamber from outside. Also, the capillary tube of temperature recorder is passed through the port.  
   ✷ Replace the insulations 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.

8. **Air intake vent (lower back):** An intake vent for circulating the air in the refrigerator chamber. Do not block this vent. Blocking this vent may cause unstable chamber temperature. Do not insert fingers or similar articles into the vent.

9. **Shelf (for refrigerator):** Use to store the items in the refrigerator. It is recommended to store the items on the shelf. The maximum load is 20 kg per shelf.

10. **Air exhaust vent (center back):** An exhaust vent for circulating the air in the refrigerator chamber. Do not block this vent. Blocking this vent may cause unstable chamber temperature. Arrange the storage items not to subject to the cold air from this vent to avoid freezing.

11. **Power switch (also served as a circuit breaker):** Remove 2 screws fixing the cover and the power switch that is also served as a circuit breaker is accessible. The round button on the left of the power switch is a check button for circuit breaker. The operation of the circuit breaker is checked by pressing this button.  
   ✷ Please be advised that the power to the unit is disconnected when the check button is pressed.
1. **Door check indicator (DOOR):** The red LED lamp is lit when the refrigerator door or freezer door is opened.

   ✷ 2 minutes after the door check indicator is lit, the alarm buzzer is activated to notice the door opening. [page 24]

2. **Alarm indicator (ALARM):** The red LED lamp blinks during an alarm status. [page 24]

3. **Temperature display indicator for freezer (FREEZER):** The green LED lamp is lit when the freezer temperature is displayed on the temperature display.

4. **Temperature display indicator for refrigerator (REFRIGERATOR):** The green LED lamp is lit when the refrigerator temperature is displayed on the temperature display.

5. **Temperature display:** Normally this shows the refrigerator or freezer temperature and during an alarm status, this shows a blinking refrigerator or freezer temperature [page 24]. And an error code and a refrigerator or freezer temperature is displayed alternately when the self diagnostic function detects any abnormality. [page 25]

6. **Up arrow key ( ):** Pressing this key for 5 seconds at temperature display mode causes the setting mode. Pressing this key at setting mode makes the figure on the temperature display to change.

7. **Scroll key ( ):** Pressing this key at setting mode makes the digit to be inputted on the temperature display to change. Pressing this key for 5 seconds at temperature display mode causes the setting mode for key lock.

8. **Set key (SET):** Pressing this key at temperature display mode enables the temperature setting [page 14]. Pressing this is at the end of setting mode memorizes the setting.

9. **Temperature display changeover key (REF./FREEZ.):** By pressing this key, the displayed temperature is changed alternately; current refrigerator temperature and current freezer temperature.

10. **Alarm buzzer stop key (BUZZER):** Pressing this key silences the alarm buzzer when the alarm buzzer sounds. But the remote alarm is not canceled.

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✧ Temperature display mode: The status that the temperature display shows the refrigerator or freezer temperature.

✧ Setting mode: The status that the input on the temperature display is effective.
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 (refrigerator and freezer) 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 counterclockwise until 2 front casters separate from the floor by 5 mm to 10 mm. [Fig. 1]
And adjust the leveling foot to level the unit.
- The unit is installed firmly by separating the front casters from the floor. The unit may be moved at the time of opening/closing the door if the front casters contact with floor.

3. Fixing the unit
Fix the unit to the wall by using 2 back spacers and a rope or chain. [Fig. 2]

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.
- For a 3-prong plug with grounding pole, 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.

5. Connection of remote alarm equipment
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).
START-UP OF UNIT

Follow the procedures below when starting-up (initial and after stop due to the cleaning, maintenance or moving) of the unit.

◊ At the recovery from power failure, the operation is start-up automatically with the setting before power failure.

1. With the refrigerator and freezer empty, connect the power supply cord to the dedicated outlet having an appropriate rating, and turn on the power switch.
   ◁ The blinking refrigerator temperature is displayed on the temperature display and the alarm indicator blinks. (This is caused by high temperature alarm function and not a malfunction.)

   <Important>
   5 minutes is needed to re-start the compressor. Keep 5 minutes before turning on the power switch when the power switch is turned off.

2. The refrigerator temperature is set to 5 °C and the freezer temperature is set to -30 °C at the factory. Set the temperature of refrigerator or freezer when other temperature setting is desired. [page 14]
   ◁ The storage items may be frozen practically when the refrigerator temperature is set to 3 °C or lower.

3. On the temperature display check the refrigerator temperature reaches 5 °C and the freezer temperature reaches -30 °C, or reaches the desired temperature

4. Check the lamp in the refrigerator is on by opening the refrigerator door.

5. Begin slowly placing items into the refrigerator and freezer to minimize the temperature rise.

   <Important>
   Do not block the air intake vent or air exhaust vent in the refrigerator. Arrange the storage items with adequate space to keep the air circulation. Too much storage items in the refrigerator makes the temperature around the air exhaust vent at -2 °C when the refrigerator temperature is set to 2 °C. It is recommended to set the refrigerator temperature to 4 °C or 5 °C when the items that should not be frozen are stored.

<Attention>
The refrigerator door has a condensation on the glass during operation. Wipe off the condensation with a dry soft cloth.
SETTING OF CHAMBER TEMPERATURE

Set the temperature of refrigerator or freezer according to the usage condition. This unit keeps the storage items for long period with adequate chamber temperature.

<table>
<thead>
<tr>
<th></th>
<th>Refrigerator</th>
<th>Freezer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setting range</td>
<td>between 2 °C and 14 °C</td>
<td>between -35 °C and -15 °C</td>
</tr>
<tr>
<td>Initial setting (at factory)</td>
<td>5 °C</td>
<td>-30 °C</td>
</tr>
</tbody>
</table>

Example: Changing the refrigerator temperature to 4 °C from 5 °C and freezer temperature to -25 °C from -30 °C.

• Following shows an example. Change the setting as necessary.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Key operated</th>
<th>Display after operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Connect the power supply cord to the outlet and turn on the power switch. (only when start-up)</td>
<td>-----</td>
<td>The temperature display indicator for refrigerator is lit and the current refrigerator temperature is displayed with blink.</td>
</tr>
<tr>
<td>2 Press the set key.</td>
<td>SET</td>
<td>The current setting of refrigerator (005) is displayed and the second figure 0 blinks.</td>
</tr>
<tr>
<td>3 Press the scroll key.</td>
<td>➪</td>
<td>The first figure 5 blinks.</td>
</tr>
<tr>
<td>Change 5 to 4 by pressing the up arrow key.</td>
<td>▲</td>
<td>The display changes to 004 from 005.</td>
</tr>
<tr>
<td>4 Press the set key.</td>
<td>SET</td>
<td>The setting is memorized and the current refrigerator temperature is displayed with blink.</td>
</tr>
<tr>
<td>5 Press the temperature display changeover key to display the freezer temperature.</td>
<td>REF. FREEZ.</td>
<td>The temperature display indicator for freezer is lit and the current freezer temperature is displayed with blink.</td>
</tr>
<tr>
<td>6 Press the set key.</td>
<td>SET</td>
<td>The current setting of freeze (-30) is displayed and the second figure 3 blinks.</td>
</tr>
<tr>
<td>Change 3 to 2 by pressing the up arrow key.</td>
<td>▲</td>
<td>The display changes to-20 from -30.</td>
</tr>
<tr>
<td>7 Press the scroll key.</td>
<td>➪</td>
<td>The first figure 0 blinks.</td>
</tr>
<tr>
<td>Change 0 to 5 by pressing the up arrow key.</td>
<td>▲</td>
<td>The display changes to-25 from -20.</td>
</tr>
<tr>
<td>8 Press the set key.</td>
<td>SET</td>
<td>The setting is memorized and the current freezer temperature is displayed with blink.</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.

⚠️ CAUTION

It is recommended to install a temperature recorder (optional component) when items that need severe temperature control is stored. The maximum and minimum chamber temperature can be checked.
The temperature setting of chamber can be locked to avoid accidental change. When the lock is ON, the change of refrigerator temperature and freezer temperature is unable even if the key on the control panel is operated.

- Initial setting (at factory): Lock is OFF

<table>
<thead>
<tr>
<th>Display</th>
<th>Lock status</th>
<th>Setting of chamber temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>L 0</td>
<td>Lock is OFF</td>
<td>Enable to change the setting</td>
</tr>
<tr>
<td>L 1</td>
<td>Lock is ON</td>
<td>Unable to change the setting</td>
</tr>
</tbody>
</table>

Example: Changing the lock status to ON from OFF (initial setting).

<table>
<thead>
<tr>
<th>Operation</th>
<th>Key operated</th>
<th>Display after operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (when during operation)</td>
<td>-----</td>
<td>The current refrigerator or freezer temperature is displayed.</td>
</tr>
<tr>
<td>2 Press the scroll key for 5 seconds.</td>
<td>▲</td>
<td>The L0 is displayed and the first figure 0 blinks.</td>
</tr>
<tr>
<td>3 Press the up arrow key once.</td>
<td>^</td>
<td>The display changes to L1.</td>
</tr>
<tr>
<td>4 Press the set key</td>
<td>SET</td>
<td>The lock is ON and the current refrigerator or freezer 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.
STOP OF FREEZER OPERATION

The freezer operation can be stopped when removing the frost in the freezer chamber or no use of freezer.

The current freezer temperature and OFF is displayed alternately when the temperature display indicator for freezer is lit. (Only the current refrigerator temperature is displayed when the temperature display indicator for refrigerator is lit. OFF is not displayed.)

Following shows the procedure to stop the freezer operation.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Key operated</th>
<th>Display after operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Press the temperature display change over key to display the freezer temperature.</td>
<td>REF. FREEZ.</td>
<td>The temperature display indicator for freezer is lit and the current freezer temperature is displayed.</td>
</tr>
<tr>
<td>2 Press the set key.</td>
<td>SET</td>
<td>The current setting of freezer (-25) is displayed and the second figure 2 blinks.</td>
</tr>
<tr>
<td>Change 2 to 0 by pressing the up arrow key.</td>
<td>↑</td>
<td>The display changes to -05 from -25.</td>
</tr>
<tr>
<td>3 Press the scroll key.</td>
<td>▶▶</td>
<td>The first figure 5 blinks.</td>
</tr>
<tr>
<td>Change 5 to 0 by pressing the up arrow key.</td>
<td>↑</td>
<td>The display changes to -00 from -05.</td>
</tr>
<tr>
<td>4 Press the set key.</td>
<td>SET</td>
<td>The current freezer temperature and OFF is displayed alternately. (Stop of freezer operation.)</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.

<To resume the freezer operation>

Following shows the procedure to resume the freezer operation. The operation is resumed by setting the freezer temperature.

Example: Setting the freezer temperature to -25 °C.

◊ Following shows an example. Change the setting as necessary.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Key operated</th>
<th>Display after operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Press the temperature display change over key to display the freezer temperature.</td>
<td>REF. FREEZ.</td>
<td>The current freezer temperature and OFF is displayed alternately. (No freezer operation.)</td>
</tr>
<tr>
<td>2 Press the set key.</td>
<td>SET</td>
<td>The setting before stop of operation (-00) is displayed and the second figure 0 blinks.</td>
</tr>
<tr>
<td>Change 0 to 2 by pressing the up arrow key.</td>
<td>↑</td>
<td>The display changes to -20 from -00.</td>
</tr>
<tr>
<td>3 Press the scroll key.</td>
<td>▶▶</td>
<td>The first figure 0 blinks.</td>
</tr>
<tr>
<td>Change 0 to 5 by pressing the up arrow key.</td>
<td>↑</td>
<td>The display changes to -25 from -20.</td>
</tr>
<tr>
<td>4 Press the set key.</td>
<td>SET</td>
<td>The setting is memorized and the current freezer temperature is displayed with blink. (Start of freezer operation.)</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.
Defrosting of refrigerator

The following 2 types of defrosting methods is provided for the refrigerator. Both of them are controlled automatically.

- **Cycle defrosting**
  The refrigerator temperature is kept stable by ON/OFF operation of the compressor. When the compressor is OFF (stopped), the frost on the evaporator is melted by the heater. This defrosting never influences to the refrigerator temperature.

- **Defrosting by defrost sensor**
  The cycle defrosting may not be sufficient to remove the frost on the evaporator when the ambient temperature is high, the door is opened frequently, or heavy moist items are stored in the refrigerator. In this case, the defrosting operation is started automatically when the defrost sensor detects the frost. During the defrosting, the current refrigerator temperature and dF are displayed alternately when the temperature display indicator for refrigerator is lit.
  After completion of defrosting, dF display is disappeared and the refrigerator returns to the normal operation.
  <Important>
  During the defrosting, the refrigerator temperature reaches around 10 °C temporary.

**CAUTION**
Too much frost is accumulated on the evaporator when the refrigerator is running under high temperature and humidity condition. For example, the defrosting operation is started once a week when the refrigerator is running with 2 °C setting at 30 °C, 80 % R.H.

Defrosting of freezer

The freezer has no automatic defrosting system. Stop the freezer operation and remove the frost when the frost is accumulated in the freezer.

Following shows the procedure for defrosting.

1. Move all storage items in the freezer to other freezer.
2. Stop the freezer operation according to the procedure on page16.
   ✷ The current freezer temperature and OFF are displayed alternately when the temperature display indicator for freezer is lit. (Only the current refrigerator temperature is displayed when the temperature display indicator for refrigerator is lit. OFF is not displayed.)
3. When the frost is disappeared, drain the defrost water through the drain port at the bottom of the freezer. (The drained water is evaporated on the evaporating tray under the freezer.) Then, wipe off the freezer with a dry soft cloth.
   ✷ Replace the cap on the drain port after drainage.
4. Start the freezer operation according to the procedure on page 16.
5. Check that the freezer temperature reaches the set temperature and replace the storage items.
SETTING OF ALARM (REFRIGERATOR)

Setting of high temperature alarm

The abnormal temperature rise is notified by the blink of alarm indicator and display of refrigerator temperature, and the alarm buzzer (15 minutes after blink) when the high temperature alarm is set. Always set the high temperature alarm to avoid the damage of storage items due to the temperature rise.

- Settable range of high temperature alarm:
  - Between the set temperature of refrigerator plus 2 °C and
  - the set temperature of refrigerator plus 14 °C
- Initial setting (at factory): the set temperature of refrigerator plus 5 °C

Example: Changing the high temperature alarm to 3 °C from 5 °C plus the set temperature of refrigerator.

• Following shows an example. Change the setting as necessary.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Key operated</th>
<th>Display after operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Press the temperature display change over key to display the refrigerator temperature.</td>
<td>REF. FREEZ.</td>
<td>The temperature display indicator for refrigerator is lit and the current refrigerator temperature is displayed.</td>
</tr>
<tr>
<td>2 Press the up arrow key for 5 seconds.</td>
<td>▲</td>
<td>F00 is displayed and the first figure 0 blinks.</td>
</tr>
<tr>
<td>3 Change 0 to 1 by pressing the up arrow key.</td>
<td>▲</td>
<td>The display changes to F01 from F00.</td>
</tr>
<tr>
<td>4 Press the set key.</td>
<td>SET</td>
<td>The current setting of alarm (005) is displayed and the first figure 5 blinks.</td>
</tr>
<tr>
<td>5 Change 5 to 3 by pressing the up arrow key.</td>
<td>▲</td>
<td>The display changes to 003 from 005.</td>
</tr>
<tr>
<td>6 Press the set key.</td>
<td>SET</td>
<td>The setting is memorized and the current refrigerator 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 alarm may be activated after defrosting or when too much items are stored in the refrigerator, depending on the setting of high temperature alarm. This is not a malfunction. The alarm is cancelled automatically when the refrigerator temperature reaches the set temperature.
### Setting of low temperature alarm

The abnormal temperature descent is notified by the blink of alarm indicator and display of refrigerator temperature, and the alarm buzzer (15 minutes after blink) when the low temperature alarm is set. Always set the low temperature alarm to avoid the damage of storage items due to the temperature descent.

- **Settable range of low temperature alarm:**
  - Between the set temperature of refrigerator minus 2 °C and the set temperature of refrigerator minus 14 °C
- **Initial setting (at factory):** the set temperature of refrigerator minus 5 °C

Example: Changing the low temperature alarm to 3 °C from 5 °C minus the set temperature of refrigerator.

- Following shows an example. Change the setting as necessary.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Key operated</th>
<th>Display after operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Press the temperature display change over key to display the refrigerator temperature.</td>
<td>REF. FREEZ.</td>
</tr>
<tr>
<td>2</td>
<td>Press the up arrow key for 5 seconds.</td>
<td>▲</td>
</tr>
<tr>
<td>3</td>
<td>Change 0 to 2 by pressing the up arrow key.</td>
<td>▲</td>
</tr>
<tr>
<td>4</td>
<td>Press the set key.</td>
<td>SET</td>
</tr>
<tr>
<td>5</td>
<td>Change 5 to 3 by pressing the up arrow key.</td>
<td>▲</td>
</tr>
<tr>
<td>6</td>
<td>Press the set key.</td>
<td>SET</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 abnormal temperature descent is notified by the blink of alarm indicator and display of refrigerator temperature, and the alarm buzzer (15 minutes after blink) when the refrigerator temperature is 0 °C or lower with regardless the setting of low temperature alarm. In this case, the remote alarm terminal is changed to alarm status. This is a precaution against the freezing of storage items.
SETTING OF ALARM (FREEZER)

Setting of high temperature alarm

The abnormal temperature rise is notified by the blink of alarm indicator and display of freezer temperature, and the alarm buzzer (15 minutes after blink) when the high temperature alarm is set. Always set the high temperature alarm to avoid the damage of storage items due to the temperature rise.

- Settable range of high temperature alarm:
  - Between the set temperature of freezer plus 5 °C and
  - the set temperature of freezer plus 15 °C
- Initial setting (at factory): the set temperature of freezer plus 10 °C

Example: Changing the high temperature alarm to 5 °C from 10 °C plus the set temperature of freezer.

- Following shows an example. Change the setting as necessary.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Key operated</th>
<th>Display after operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Press the temperature display change over key to display the freezer temperature.</td>
<td>REF. FREEZ.</td>
<td>The temperature display indicator for freezer is lit and the current freezer temperature is displayed.</td>
</tr>
<tr>
<td>2 Press the up arrow key for 5 seconds.</td>
<td>↑</td>
<td>F00 is displayed and the first figure 0 blinks.</td>
</tr>
<tr>
<td>3 Change 0 to 3 by pressing the up arrow key.</td>
<td>↑</td>
<td>The display changes to F03 from F00.</td>
</tr>
<tr>
<td>4 Press the set key.</td>
<td>SET</td>
<td>The current setting of alarm (010) is displayed and the first figure 0 blinks.</td>
</tr>
<tr>
<td>Change 0 to 5 by pressing the up arrow key.</td>
<td>↑</td>
<td>The display changes to 015 from 010.</td>
</tr>
<tr>
<td>5 Press the scroll key.</td>
<td>☞</td>
<td>The second figure 1 blinks.</td>
</tr>
<tr>
<td>Change 1 to 0 by pressing the up arrow key.</td>
<td>↑</td>
<td>The display changes to 005 from 015.</td>
</tr>
<tr>
<td>6 Press the set key.</td>
<td>SET</td>
<td>The setting is memorized and the current freezer 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 low temperature alarm

The abnormal temperature descent is notified by the blink of alarm indicator and display of freezer temperature, and the alarm buzzer (15 minutes after blink) when the low temperature alarm is set. Always set the low temperature alarm to avoid the damage of storage items due to the temperature descent.

- Settable range of low temperature alarm:
  - Between the set temperature of freezer minus 5 °C and the set temperature of freezer minus 15 °C
- Initial setting (at factory): the set temperature of freezer minus 10 °C

Example: Changing the low temperature alarm to 5 °C from 10 °C minus the set temperature of freezer.

- Following shows an example. Change the setting as necessary.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Key operated</th>
<th>Display after operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Press the temperature display change over key to display the freezer temperature.</td>
<td>REF. FREEZ.</td>
<td>The temperature display indicator for freezer is lit and the current freezer temperature is displayed.</td>
</tr>
<tr>
<td>2 Press the up arrow key for 5 seconds.</td>
<td>▲</td>
<td>F00 is displayed and the first figure 0 blinks.</td>
</tr>
<tr>
<td>3 Change 0 to 4 by pressing the up arrow key.</td>
<td>▲</td>
<td>The display changes to F04 from F00.</td>
</tr>
<tr>
<td>4 Press the set key.</td>
<td>SET</td>
<td>The current setting of alarm (-10) is displayed and the first figure 0 blinks.</td>
</tr>
<tr>
<td>5 Change 0 to 5 by pressing the up arrow key.</td>
<td>▲</td>
<td>The display changes to -15 from -10.</td>
</tr>
<tr>
<td>6 Press the scroll key.</td>
<td></td>
<td>The second figure 1 blinks.</td>
</tr>
<tr>
<td>7 Change 1 to 0 by pressing the up arrow key.</td>
<td>▲</td>
<td>The display changes to -05 from -15.</td>
</tr>
<tr>
<td>8 Press the set key.</td>
<td>SET</td>
<td>The setting is memorized and the current freezer 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 alarm buzzer recovers and notifies the abnormality again after preset period (alarm buzzer recovery time) if the same alarm status is continued after the alarm buzzer is stopped by pressing the alarm buzzer stop key (BUZZER). Always set the alarm buzzer recovery time to avoid the false recognition of alarm status.

- Settable range of alarm buzzer recovery time:
  10 minutes interval between 10 and 60 minutes (setting; between 010 and 060) or
  No recovery (setting; 000)

- Initial setting (at factory): 30 minutes

The alarm buzzer never recovers once the alarm buzzer is silenced by pressing the alarm buzzer stop key (BUZZER) if the alarm buzzer recovery time is set to 000 (no recovery). Nevertheless, the alarm buzzer sounds when other alarm status is detected.

Example: Changing the alarm buzzer recovery time to 20 minutes from 30 minutes.

Following shows an example. Change the setting as necessary.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Key operated</th>
<th>Display after operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>The current refrigerator or freezer temperature is displayed.</td>
</tr>
<tr>
<td>2</td>
<td>▲</td>
<td>F00 is displayed and the first figure 0 blinks.</td>
</tr>
<tr>
<td>3</td>
<td>▲</td>
<td>The display changes to F05 from F00.</td>
</tr>
<tr>
<td>4</td>
<td>▶</td>
<td>The second figure 0 blinks.</td>
</tr>
<tr>
<td>5</td>
<td>▲</td>
<td>The display changes to F25 from F05.</td>
</tr>
<tr>
<td>6</td>
<td>SET</td>
<td>The current setting of recovery (030) is displayed and the second figure 3 blinks.</td>
</tr>
<tr>
<td>7</td>
<td>▲</td>
<td>The display changes to 020 from 030.</td>
</tr>
<tr>
<td>8</td>
<td>SET</td>
<td>The setting is memorized and the current refrigerator or freezer 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.
△ Do not set the alarm buzzer recovery time during the alarm status.
After recovery from a power failure, the unit will resume operation automatically with the setting (refrigerator temperature, freezer temperature, lock of temperature setting, alarm temperature, alarm buzzer recovery time) before power failure. Accordingly, there is no need for re-set however, always check the running status after recovery.

⚠ The setting is memorized by nonvolatile memory during power failure.

⚠ CAUTION

After recovery from a power failure, always check the unit starts the operation normally with the setting before power failure.
ALARM FUNCTIONS

This unit has the alarm functions shown below.
Contact our sales representative or agent after moving the storage items to other refrigerator or freezer if the alarm status continues because there is a possibility of any failure.

<table>
<thead>
<tr>
<th>Alarms</th>
<th>Situation</th>
<th>Indication</th>
<th>Alarm buzzer</th>
<th>Remote alarm terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>High temperature alarm</td>
<td>&lt;Refrigerator&gt; The refrigerator temperature reaches the setting of high temperature alarm.</td>
<td>Alarm indicator blinks. Displayed temp. blinks. (when the refrigerator temperature is displayed.)</td>
<td>Intermittent tone with 15 minutes delay</td>
<td>Alarm status with 15 minutes delay</td>
</tr>
<tr>
<td></td>
<td>&lt;Freezer&gt; The freezer temperature reaches the setting of high temperature alarm.</td>
<td>Alarm indicator blinks. Displayed temp. blinks. (when the freezer temperature is displayed.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low temperature alarm</td>
<td>&lt;Refrigerator&gt; The refrigerator temperature reaches the setting of low temperature alarm.</td>
<td>Alarm indicator blinks. Displayed temp. blinks. (when the refrigerator temperature is displayed.)</td>
<td>Intermittent tone with 15 minutes delay</td>
<td>Alarm status with 15 minutes delay</td>
</tr>
<tr>
<td></td>
<td>&lt;Freezer&gt; The freezer temperature reaches the setting of low temperature alarm.</td>
<td>Alarm indicator blinks. Displayed temp. blinks. (when the freezer temperature is displayed.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 °C alarm (refrigerator only)</td>
<td>The refrigerator temperature reaches 0 °C.</td>
<td>Alarm indicator blinks. Displayed temp. blinks. (when the refrigerator temperature is displayed.)</td>
<td>Intermittent tone</td>
<td>Alarm status.</td>
</tr>
<tr>
<td>Power failure alarm</td>
<td>Power failure. The power supply cord is disconnected. The power switch is off.</td>
<td>-----</td>
<td>-----</td>
<td>Alarm status.</td>
</tr>
<tr>
<td>Door alarm</td>
<td>The refrigerator or freezer door is open.</td>
<td>Door check indicator lights.</td>
<td>Intermittent tone with 2 minutes delay</td>
<td>-----</td>
</tr>
</tbody>
</table>

悄 The remote alarm terminal is in alarm status in conjunction with the alarm buzzer. However, the alarm status of the remote alarm terminal is not cancelled by pressing the alarm buzzer stop key (BUZZER).

SAFETY FUNCTIONS

This unit has the safety functions shown below.

<table>
<thead>
<tr>
<th>Safety</th>
<th>Situation</th>
<th>Indication and alarm buzzer</th>
<th>Safety operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over-heat Protection</td>
<td>The refrigerator temperature is higher than about 28 °C.</td>
<td>-----</td>
<td>The defrost heater is off to avoid the temperature rise.</td>
</tr>
<tr>
<td>(refrigerator only)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Over-cool protection</td>
<td>The refrigerator temperature is lower than about 0 °C.</td>
<td>-----</td>
<td>Compressor is off to avoid the temperature descent.</td>
</tr>
<tr>
<td>(refrigerator only)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auto-return</td>
<td>There is no key pressing for 90 seconds in the setting mode.</td>
<td>-----</td>
<td>The setting mode is returned to the temperature display mode.</td>
</tr>
<tr>
<td>Key lock</td>
<td>The key lock is ON (L1).</td>
<td>-----</td>
<td>Change of temperature setting is disable.</td>
</tr>
</tbody>
</table>
This unit has the self diagnostic functions shown below. Contact our sales representative or agent if an error code (ex. E01) is displayed resulting from the self diagnostic.

<table>
<thead>
<tr>
<th>Self diagnostic</th>
<th>Situation</th>
<th>Indication</th>
<th>Alarm buzzer</th>
<th>Remote alarm terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor abnormality</td>
<td>The thermal sensor for refrigerator is disconnected.</td>
<td>Alarm indicator blinks. E01 and -50 or freezer temp. are displayed alternately.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The thermal sensor for refrigerator is short-circuited.</td>
<td>Alarm indicator blinks. E02 and 50 or freezer temp. are displayed alternately.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The thermal sensor for freezer is disconnected.</td>
<td>Alarm indicator blinks. E03 and -50 or refrigerator temp. are displayed alternately.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The thermal sensor for freezer is short-circuited.</td>
<td>Alarm indicator blinks. E04 and 50 or refrigerator temp. are displayed alternately.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The defrost sensor is disconnected.</td>
<td>Alarm indicator blinks. E05 and refrigerator or freezer temp. are displayed alternately.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The defrost sensor is short-circuited.</td>
<td>Alarm indicator blinks. E06 and refrigerator or freezer temp. are displayed alternately.</td>
<td>Intermittent tone</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The alarm sensor is disconnected.</td>
<td>Alarm indicator blinks. E07 and refrigerator or freezer temp. are displayed alternately.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The alarm sensor is short-circuited.</td>
<td>Alarm indicator blinks. E08 and refrigerator or freezer temp. are displayed alternately.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The protective sensor for compressor is disconnected.</td>
<td>Alarm indicator blinks. E11 and refrigerator or freezer temp. are displayed alternately.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The protective sensor for compressor is short-circuited.</td>
<td>Alarm indicator blinks. E12 and refrigerator or freezer temp. are displayed alternately.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fan motor check</td>
<td>About 6 years have passed with the power switch on. (time to replace the fan motor)</td>
<td>F2 and refrigerator or freezer temp. are displayed alternately.</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>Temperature abnormality in the cooling circuit</td>
<td>In the event of failure of fan motor for cooling the compressor. When the ambient temperature exceeds the usable environmental condition, etc.</td>
<td>Alarm indicator blinks. E10 and refrigerator or freezer temp. are displayed alternately.</td>
<td>Intermittent tone</td>
<td>Alarm status</td>
</tr>
</tbody>
</table>

✧ The remote alarm terminal is in alarm status in conjunction with the alarm buzzer. However, the alarm status of the remote alarm terminal is not cancelled by pressing the alarm buzzer stop key (BUZZER).
✧ Contact our sales representative or agent for the replacement of the fan motor if the error code F2 is displayed.
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 lamp

Replace the lamp (bulb) by following the procedure below when the lamp is blown. The lamp is located at the upper right corner of the refrigerator. [Fig. 1]

1. Turn off the power switch and then disconnect the power supply cord.

2. Move the storage items on the top shelf.

3. Hold the both sides of the lamp cover by hand and lift and pull toward you with the both sides pushed inward a little to remove the lamp cover. [Fig. 2]

4. Remove the bulb from the socket by turning it counterclockwise. [Fig. 3]

5. Install a new bulb to the socket and then replace the lamp cover.
   ✷ Pay attention to the upside and downside direction of the lamp cover.

   <Bulb for replacement>
   Incandescent lamp (T22 E17) 110 V or 125 V, 10 W

6. Replace the storage items to the top shelf.

7. Connect the power supply cord to the outlet and turn on the power switch.

   <Important>
   5 minutes is needed to re-start the compressor. Keep 5 minutes before turning on the power switch when the power switch is turned off.

8. Open the refrigerator door to check the lamp is on.
**TROUBLESHOOTING**

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

<Attention>
If the malfunction is not eliminated after checking the following items or the malfunction is not shown in the table below, contact our sales representative or agent.

<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.  
   → A breaker of 15 A or more is recommended. |
| The alarm is activated at start-up | ✧ The alarm status is kept until the refrigerator temperature reaches the set temperature.  
   ➢ The alarm buzzer recovers after 30 minutes even if the alarm buzzer is silenced by pressing the alarm buzzer stop key (BUZZER). |
| The alarm is activated during operation | ✖ The door (refrigerator or freezer) was kept opened for a long time.  
   ✖ The door (refrigerator or freezer) is opened.  
   ✖ An error code is displayed on the temperature display. [page 25]  
   → Contact our sales representative or agent. |
| Noisy | ✖ The floor is not sturdy.  
   ✖ The installation site is not level.  
   ✖ The unit is tilted.  
   ✖ The cabinet contacts the surrounding wall. |
| When the refrigerator or freezer does not get cold enough | ✖ The door (refrigerator or freezer) is frequently opened.  
   ✖ The unit is in direct sunlight.  
   ✖ 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 30 °C.  
   ✖ The storage items are too much.  
   ✖ The air exhaust vent is blocked up with storage items.  
   ✖ The access port is not covered.  
   → The access port should be covered with the insulation and rubber caps when no use.  
   ✖ The door gasket is damaged.  
   → If it is damaged, contact our sales representative or agent for replacement.  
   ✖ Any foreign substance is located between door gaskets. |
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 that doors are locked completely with a key. The disposal of the unit should be accomplished by appropriate personnel. Always remove doors to prevent accidents such as suffocation.

Decontamination of unit

Before disposing the 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 products and/or accompanying documents means that used 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 on a free of charge basis. 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 human 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

If you wish to discard electrical and electronic equipment, please contact your local authorities for further details of your nearest designated collection point.

This symbol is only valid in the European Union.

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 local authorities or dealer and ask for the correct method of disposal.

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

Dieses Symbol auf Produkten und/oder begleitenden Dokumenten bedeutet, dass verbrauchte elektrische und elektronische Geräte nicht mit gewöhnlichem Haushaltsabfall vermischt werden sollen.

Bringen Sie zur ordnungsgemäßen Behandlung, Rückgewinnung und Recycling diese Produkte zu den entsprechenden Sammelstellen, wo sie ohne Gebühr entgegengenommen werden. In einigen Ländern kann es auch möglich sein, diese Produkte beim Kauf eines entsprechenden neuen Produkts bei Ihrem örtlichen Einzelhändler abzugeben.

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

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

Für Geschäftskunden in der Europäischen Union

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

Informations zur Entsorgung in anderen Ländern außerhalb der Europäischen Union

Bitte tragen 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 berendezések hulladékainak ártalmatlanításáról (háztartások)

Ha ez a szimbólum szerepel a terméken és/vagy a melléklet dokumentumokon, az elhasznált elektromos és elektronikus termékeket nem szabad keverni az általános háztartási személyzet.

A megfelelő kezelés, visszanyerés és újrahasznosítás érdekében kérjük, szállítsák az így kezelt termékeket a helyi gyűjtőhelyekre, ahol ténylegesen átvizsgáltatuk. Más lehetőségeknél bizonyos országokban a termékeket a helyi kiskereskedőjei visszavethetik, amennyiben hasznosított ukára adnak.

A termék megfelelő ártalmatlanításával segít megőrizni az értékes erőforrásokat és megelőzheti a környezetre és az egészségre esetleg ártalmas hatásokat, amelyeket a hulladékok helytelen kezelése egyébként okozhat. Kérjük, lépjen kapcsolatba a helyi hatóságokkal további információért a legközelebbi gyűjtőhelyekről.

A nemzeti törvények értelmében az így hulladékké letett ártalmatlanító esetben büntetést szabhatnak ki. Amennyiben a használt termék elemen vagy a mellékleteken van kialakuló tűz- vagy robbanási veszély, a helyi környezetvédelmi előírások betartásáról, külön ártalmatlanítási eszközök.

Üzleti felhasználók az Európai Unióban

Amerikánban elektronikus vagy elektronikus berendezést kíván án ártalmatlanítani, kérjük, lépjen kapcsolatba a kereskedőjével vagy szállítójával további információért.

Tájékoztatás az ártalmatlanítással kapcsolatban az Európai Unió kívüli országok esetében

Ez a szimbólum csak az Európai Unióban érvényes.

Amerikánban ezt a terméket kívánja ártalmatlaníttani, kérjük, lépjen kapcsolatba a helyi hatósággal, illetve a kereskedőjével, és érdeklődjön az ártalmatlanítás megfelelő módszereiről.

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

Cet symbole figure sur les produits et/ou les documents qui les accompagnent, cela signifie que les appareils électriques et électroniques ne doivent 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 renvoyer 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 vitales et à la prévention des éventuels effets négatifs sur l’environnement et la santé humaine qui pourraient survenir dans le cas contraire.

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.

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 savoir plus sur l’élimination des appareils électriques et électroniques, contactez votre revendeur ou fournisseur qui pourra vous renseigner sur leur évacuation ou fournir un guide à cet égard.
Oplysninger til brugerne om afhændelse af elektriske apparater og elektronisk udstyr (private husholdninger)

Vær opmærksom på, at symbolet på produktet og/eller i den medfølgende dokumentation betegner, at produktet, der ikke længere ses som værdifuldt, mådeslagnes, da det beskytter både det, at elektriske apparater og elektronisk udstyr ikke kan smides ud sammen med det almindelige husholdningsaffald.

For at sikre en korrekt behandling, insamling og genbrug, skal du aflevere disse produkter på dertil indrettede insamlingssteder, hvor de vil blive modtaget uden ekstra omkostninger. I nogle lande er der også mulighed for, at du kan indlevere dine produkter hos den lokale forhandler, hvis du hever det nyt og tilsvarende produkt.

Hvis du afhander dette produkt på korrekt vis, vil det være med til at spare på det værdifulde naturlige råstof og forhindre eventuelle negative påvirkninger på folkesundheden og miljøet, hvilketellers kan blive følges af en forennet hænting af affaldet. Kontakt de lokale myndigheder for at få yderligere oplysninger om, hvor du kan finde det nærmeste insamplingssted.

I visse lande er der også mulighed for, at du kan afhändige dette produktet som ungdomsaffald med en bedrestraf til en tilgængelig og gennemsigtig affaldscenter. Dette symbol er kun gyldigt i EU.

Informasjoner om avhending av elektroniske apparater og elektronisk apparat (hemmelige) (privat (= \text{hemmelige} = \text{hemmelig})\text{)\text{)}

La aparição deste símbolo em um produto e/ou na documentação adjunta indica que os produtos elétricos e eletrónicos usados não devem mezclarse com a basura doméstica geral.

Para que estes produtos se sometan a um processo adequado de tratamento, recuperação e reciclagem, é necessário que as pessoas eliminen correctamente a reciclagem dos produtos designados, onde os admitem sem custo algum. En algunos países existe também a possibilidade de devolver os produtos a um minorista local ao comprar um produto novo equivalente.

Si deseja eliminar correctamente, estará contribuindo a preservar valiosos recursos e a evitar quaisquer efeitos nocivos na saúde de as pessoas e no meio ambiente que pudera produzir-se devido a um tratamento incorrecto.

Para empresas de la Unión Europea

Si desea desechar equipos eléctricos y electrónicos, póngase en contacto con su minorista o proveedor para que le informe detalladamente.

Para eliminar correctamente este producto, deberá devolverlo a su minorista o distribuidor para que le informe sobre el método correcto de eliminación.

Información sobre la eliminación para los usuarios de equipos eléctricos y electrónicos usados (particulares)

La aparición de este símbolo en un producto y/o en la documentación adjunta indica que los productos eléctricos y electrónicos usados no deben mezclarse con la basura doméstica general.

Para que estos productos se sometan a un proceso adecuado de tratamiento, recuperación y reciclaje, deberán devolverse a los puntos de recogida designados, donde los admitirán sin costo alguno. En algunos países existe la posibilidad de devolver los productos a un minorista local al comprar un producto nuevo equivalente.

Si desechar correctamente, estará contribuyendo a preservar valiosos recursos y a evitar cualquier efecto nocivo en la salud de las personas y en el medio ambiente que pudiera producirse debido a un tratamiento incorrecto.

Para una eliminación en otros países no pertenecientes a la Unión Europea

Este símbolo sólo es válido en la Unión Europea. Si desea desechar un producto, póngase en contacto con las autoridades locales o con su distribuidor para que le informen sobre el método correcto de eliminación.

Información sobre la eliminación en otros países no pertenecientes a la Unión Europea

La aparición de este símbolo en un producto y/o en la documentación adjunta indica que los productos eléctricos y electrónicos usados no deben mezclarse con la basura doméstica general.

Para que estos productos se sometan a un proceso adecuado de tratamiento, recuperación y reciclaje, deberán devolverse a los puntos de recogida designados, donde los admitirán sin costo alguno. En algunos países existe la posibilidad de devolver los productos a un minorista local al comprar un producto nuevo equivalente.

Si desechar correctamente, estará contribuyendo a preservar valiosos recursos y a evitar cualquier efecto nocivo en la salud de las personas y en el medio ambiente que pudiera producirse debido a un tratamiento incorrecto.

Informacje o likwidacji zużytych i elektronicznych urządzeń domowych

Tento symbol na produktach a/alebo na priložených dokumentoch znamená, že použité elektrické a elektronické zariadenia sa nesmú miešať so všeobecným domácnosťom odpadom.

Pre správne zaochádzanie, obnovu a recykláciu, odvzde prosím tieto produkty na určené zberné miesta, kde budú prijaté bez poplatku. V niektorých krajínach je možné tieto produkty vrátiť priamo miestnemu maloobchodu v prípade, ak by sa počas ich používania nenachádzali žiadne nedoterie.

Informacjach o likwidacji elektronicznych urządzeń domowych (private husholdningar)

Správna likvidácia týchto produktov pomôžu ušetriť hodnotné zdroje a zabrániť možným negatívnym vplyvom na lúdské zdravie a prostredie.

Informacje o likwidacji urządzeń elektrycznych, elektronicznych (dotyczy gospodarstw domowych)

Tento symbol je platný iba v Európskej unii. Ak si prajete zlikvidovať tento produkt, pôžive informácie kontaktejte, prosím, vašiu miestnu úradu alebo predajcu a informujte sa o správnej metode likvidácie.
Informace pro uživatele k likvidaci elektrických a elektronických zařízení (domácnosti)

Tento symbol na produktch anebo v příručních dokumentech znamená, že použití elektrické a elektronické výrobky nesmí být přidány do běžného komunálního odpadu.

Ke správné likvidaci, obnově a recyklaci doteče tyto výroby na území evropského města, kde bude přijata zpráva. Alternativně v některých zemích může zvratně své výrobní prodejci při kopii ekvivalentního nového produktu.

Správnou likvidaci tohoto produktu pomůže zachovat cenné přírodní zdroje a napomáhá prevenci potenciálních negativních dopadů na životní prostředí a lidské zdraví, což by mohlo být důsledky nesprávné likvidace odpadu. Další podrobnosti si vyžádejte od místního úřadu nebo nejbližšího sběrného místa.

Informace k likvidaci v ostatních zemích mimo Evropskou unii

Chcete-li likvidovat elektrická a elektronická zařízení, vyžádejte si potřebné informace od svého prodejce nebo dodavatele.

Informace o odladění návazných odběrů (právní dominanta)

Informace o odladění u odpadu za korunské odpadní elektrické a elektronické opotřebení (domácnostní)

Informace o odladění u odpadu za korunské odpadní elektrické a elektronické opotřebení (domácnostní)

Informace na odladění u odpadu za korunské odpadní elektrické a elektronické opotřebení (domácnostní)

Informace o kassering av elektrisk & elektronisk utrustning (privata konsumenter)

Om denne symbolen finnes på produktene eller/heller medfølgende dokumentasjon, betyr det at forbudke elektriske og elektroniske produkter inte skal blandses med vanlige hushållssop.

For korrekt håndtering, innsamling og avhending, skal dessa produkter lămnas på återvinningssentraler, därefter tes anoten utan kostnad. I vissa länder kan du som eftersatt alternativ lämnas in denna återvinningssentral, där de tas emot utan kostnad. I dessa länder kan du som eftersatt alternativ lämnas in denna återvinningssentral, där de tas emot utan kostnad. I vissa länder kan du som eftersatt alternativ lämnas in denna återvinningssentral, där de tas emot utan kostnad.

Köpares som som eftersatt alternativ lämnas in denna återvinningssentral, där de tas emot utan kostnad.

Stort bättre låmnappe vid felaktigt avhending av dessa sopor, i enlighet med lagstiftningen i landet.

För företagsanvändare inom den Europeiska gemenskapen

Om ni vill kassera elektrisk eller elektronisk utrustning, vänligen kontakta er återförsäljare eller leverantör för mer information.

Informacje o odladaniu w elektronicznie urządzeń komputerowych (domowe)

Informacje o odladaniu w elektronicznie urządzeń komputerowych (domowe)

Informacje o odladaniu w elektronicznie urządzeń komputerowych (domowe)
To record the chamber temperature, an optional temperature recorder (3 types) is available. Contact our sales representative or agent for the installation of temperature recorder.

The available temperature recorder and its location for installation are as follows:

<table>
<thead>
<tr>
<th>Temp. recorder</th>
<th>Application</th>
<th>Location (see figure below)</th>
<th>Recorder fixing</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTR-0621LH</td>
<td>For refrigerator</td>
<td>Front left of top panel, or</td>
<td>Fixing enclosed with the temp. recorder</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lower left of front panel</td>
<td>MPR-S30</td>
</tr>
<tr>
<td>MTR-4015LH</td>
<td>For freezer</td>
<td>Lower left of front panel</td>
<td>MPR-S30</td>
</tr>
<tr>
<td>MTR-G3504A or MTR-G3504C</td>
<td>For both refrigerator and freezer</td>
<td>Lower left of front panel</td>
<td>MPR-S7</td>
</tr>
</tbody>
</table>

**WARNING**

Always disconnect the power supply to the unit before starting the installation of recorder to prevent electric shock or injury.
Installation of MTR-0621LH (1)

1. Attach the recorder fixing to the temperature recorder (MTR-0621LH) by referring to the instruction manual enclosed with the temperature recorder. [Fig. 1]

2. Remove 2 (outside) of 4 screws on the front left of the top panel. Fix the temperature recorder to the top panel by using the 2 removed screws. [Fig. 2]

3. Remove the caps (both outside and inside) covering the access port for refrigerator and take out the thermal insulation in the access port. Pass the recorder sensor to the refrigerator through the access port [Fig. 3]. Then replace the thermal insulation and caps (both outside and inside).
   △ Make a cut on the caps for access port to pass the capillary tube as shown in the Fig. 4.

4. Fix the recorder sensor to the attachment hole on the back side of the refrigerator by using the large clips provided as an accessory. [Fig. 5]

5. Arrange the capillary tube so that it cannot contact the shelf.
   △ Care should be taken for the following points to avoid the crush of the tube when bending the capillary tube.
   ・Do not bend the capillary tube for 30 mm from the edge of the recorder sensor.
   ・Do not bend and extend the capillary tube repeatedly at the same point.
   ・The bending should be R10〜R15.

6. Operate the unit until the refrigerator temperature gets to the set temperature. Check the recorded temperature and refrigerator temperature displayed on the control panel. Adjust the zero adjustment volume on the temperature recorder so that the recorded temperature can corresponds with the displayed temperature if they are not compliance each other.
Installation of MTR-0621LH (2)

1. Remove a cap for the fixing screw on the panel cover for the space for a temperature recorder. Remove the fixing screw and open the panel cover. Remove the panel cover by pushing the shaft on both sides outward. [Fig. 1]

2. Attach the temperature recorder (MTR-0621LH) to the recorder fixing (MPR-S30) by referring to the instruction manual enclosed with the recorder fixing. [Fig. 2]

3. Remove the cap on the port for taking out the recorder sensor and take out the recorder sensor. Then set the temperature recorder with recorder fixing to the space for a temperature recorder. [Fig. 3]
4. Remove the caps (both outside and inside) covering the access port for refrigerator and take out the thermal insulation in the access port. Pass the recorder sensor to the refrigerator through the access port [Fig. 4]. Then replace the thermal insulation and caps (both outside and inside). Also, replace the cap on the port for taking out the recorder sensor.

▶ Make a cut on the caps to pass the capillary tube as shown in the Fig. 5.

5. Fix the recorder sensor to the attachment hole on the back side of the refrigerator by using the large clips enclosed with the recorder fixture (MPR-S30). [Fig. 6]

6. Arrange the capillary tube so that it cannot contact the shelf.

▶ Care should be taken for the following points to avoid the crush of the tube when bending the capillary tube.

- Do not bend the capillary tube for 30 mm from the edge of the sensor.
- Do not bend and extend the capillary tube repeatedly at the same point.
- The bending should be R10～R15.

7. Operate the unit until the refrigerator temperature gets to the set temperature. Check the recorded temperature and refrigerator temperature displayed on the control panel. Adjust the zero adjustment volume on the temperature recorder so that the recorded temperature can corresponds with the displayed temperature if they are not compliance each other.
Installation of MTR-4015LH

1. Remove a cap for the fixing screw on the panel cover for the space for a temperature recorder. Remove the fixing screw and open the panel cover. Remove the panel cover by pushing the shaft on both sides outward. [Fig. 1]

2. Attach the temperature recorder (MTR-4015LH) to the recorder fixing (MPR-S30) by referring to the instruction manual enclosed with the recorder fixing. [Fig. 2]

3. Remove the cap on the port for taking out the recorder sensor and take out the recorder sensor. Then set the temperature recorder with recorder fixing to the space for a temperature recorder. [Fig. 3]
4. Remove the caps (both outside and inside) covering the access port for freezer and take out the thermal insulation in the port. Pass the recorder sensor to the freezer through the access port [Fig. 4]. Then replace the thermal insulation and caps (both outside and inside). Also, replace the cap on the port for taking out the recorder sensor.

Make a cut on the caps to pass the capillary tube as shown in the Fig. 5.

5. Fix the recorder sensor to the attachment hole on the left side of the freezer by using the middle size clips enclosed with the recorder fixture (MPR-S30) [Fig. 6].

6. Arrange the capillary tube so that it cannot contact the shelf.

Care should be taken for the following points to avoid the crush of the tube when bending the capillary tube.

- Do not bend the capillary tube for 30 mm from the edge of the sensor.
- Do not bend and extend the capillary tube repeatedly at the same point.
- The bending should be R10~R15.

7. Operate the unit until the freezer temperature gets to the set temperature. Check the recorded temperature and freezer temperature displayed on the control panel. Adjust the zero adjustment volume on the temperature recorder so that the recorded temperature can corresponds with the displayed temperature if they are not compliance each other.
1. Remove a cap for the fixing screw on the panel cover for the space for a temperature recorder. Remove the fixing screw and open the panel cover. Remove the panel cover by pushing the shaft on both sides outward. [Fig. 1]

2. Attach the temperature recorder (MTR-G3504A or MTR-G3504C) to the recorder fixing (MPR-S7) by referring to the instruction manual enclosed with the recorder fixture. [Fig. 2]

3. Remove the connector cover on the unit by pushing the lock under the cover. Connect the power supply connector of the temperature recorder with the connector on the unit. [Fig. 3]

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

4. Remove the cap on the port for taking out the recorder sensor and take out the recorder sensor. Then set the temperature recorder with the recorder fixing to the space for a temperature recorder. [Fig. 4]
5. Remove the caps (both outside and inside) covering the access port for refrigerator and freezer and take out the thermal insulation in the port. Pass the recorder sensor to the chamber through each port [Fig. 5]. Then replace the thermal insulation and caps (both outside and inside). Also, replace the cap on the port for taking out the recorder sensor.
   ✷ The identification label is adhered to the lead wire to distinguish between the sensor for refrigerator and for freezer.
   ✷ Make a cut on the caps for port to pass the lead wire as shown in the Fig. 6.

6. Fix the recorder sensor for refrigerator to the attachment hole on the back side of the refrigerator by using the clips enclosed with the recorder fixture (MPR-S7) [Fig. 7].

7. Fix the recorder sensor for freezer to the attachment hole on the left side of the freezer by using the clips enclosed with the recorder fixture (MPR-S7) [Fig. 8].

8. Operate the unit until the chamber (refrigerator and freezer) temperature gets to the set temperature. Check the recorded temperature and chamber (refrigerator and freezer) temperature displayed on the control panel. Adjust the zero adjustment volume on the temperature recorder so that the recorded temperature can corresponds with the displayed temperature if they are not compliance each other.
## SPECIFICATIONS

<table>
<thead>
<tr>
<th>Product name</th>
<th>Pharmaceutical Refrigerator MPR-215F</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>External dimensions</strong></td>
<td>W540 mm x D557 mm + (45)* mm x H1794 mm * projection</td>
</tr>
</tbody>
</table>
| **Internal dimensions** | W455 mm x D466 mm x H917 mm <Refrigerator>  
W420 mm x D342 mm x H267 mm <Freezer> |
| **Effective capacity** | 176 L (Refrigerator), 39 L (Freezer) |
| **Exterior**        | Painted steel                        |
| **Interior**        | Styrene resin (Refrigerator), Colored aluminum (Freezer) |
| **Door**            | Painted steel, Provided with glass window (Refrigerator) |
| **Insulation**      | Rigid polyurethane foamed-in place   |
| **Shelf**           |                                      |
| Refrigerator        | Hard steel wire on polyethylene coating x 5, Allowable load; 20 kg/shelf  
Inner dimensions; W388 mm x D325 mm |
| Freezer             | Hard steel wire on polyethylene coating x 1, Allowable load; 10 kg/shelf  
Inner dimensions; W327 mm x D250 mm |
| **Access port**     | Inner diameter; 30 mm, Left side (Refrigerator and Freezer) |
| **Cooling method**  | Forced air circulation (Refrigerator), Direct cooling (Freezer) |
| **Compressor**      | Hermetic reciprocating type, Output; 55 W x 2 |
| **Evaporator**      | Fin and tube type (Refrigerator), Tube on sheet type (Freezer) |
| **Condenser**       | Wire and tube (Refrigerator), Frame pipe (Freezer) |
| **Refrigerant**     | R-513A: MPR-215F-PA only, R-134a (HFC-134a): other model |
| **Defrosting**      | Cycle defrost and forced defrost (Refrigerator)  
Natural defrost by stopping operation (Freezer) |
| **Defrost heater**  | 46.3 W (Refrigerator) |
| **Temperature controller** | Electronic control system |
| **Temperature display** | Digital display (in 1 °C increments) |
| **Thermal sensor**  | Thermister sensor |
| **Alarms**          | High temp. alarm, Low temp. alarm, 0 °C alarm (Refrigerator only), Door alarm,  
Power failure alarm (remote alarm only) |
| **Safety functions**| Over-heat protection (Refrigerator only), Over-cool protection (Refrigerator only),  
Key lock, Auto-return |
| **Self diagnostic** | Thermal sensor abnormality, Fan motor check |
| **Memory backup**   | Nonvolatile memory |
| **Lamp**            | Incandescent lamp (T22 E17) 110 V or 125 V, 10 W x 1 (Refrigerator) |
| **Weight**          | 86 kg |
| **Accessories**     | 1 set of key, 2 large clips (for temperature recorder) |
| **Optional components** | Temperature recorder for refrigerator (MTR-0621LH)  
Temperature recorder for freezer (MTR-4015LH)  
Recorder fixing for MTR-4015LH (MPR-S30)  
Temperature recorder for refrigerator & freezer (MTR-G3504A or MTR-G3504C)  
Recorder fixing for MTR-G3504 or MTR-G3504C(MPR-S7)  
Interface board (MTR-480, MTR-L03)* |

- Design or specifications will be subject to change without notice.
- Refer to the updated catalog when ordering an optional component.
- For the data acquisition system MTR-5000 user only.
  It is recommended to use cables with a maximum length of 30 meters.
### PERFORMANCE

<table>
<thead>
<tr>
<th>Product name</th>
<th>Pharmaceutical Refrigerator MPR-215F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature control range</td>
<td>Refrigerator: between 2 °C and 14 °C (ambient temp.; -5 °C to 30 °C, no load)</td>
</tr>
<tr>
<td>Noise level</td>
<td>35 dB/36 dB (A scale) (50 Hz/60 Hz)</td>
</tr>
<tr>
<td>Maximum pressure</td>
<td>1900 kPa</td>
</tr>
<tr>
<td>Rated voltage</td>
<td>AC 110 V</td>
</tr>
<tr>
<td>Rated frequency</td>
<td>60 Hz</td>
</tr>
<tr>
<td>Power consumption</td>
<td>175 W</td>
</tr>
<tr>
<td>Usable condition</td>
<td>-5 °C to 30 °C, 80 % R.H. or less</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.
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.