NOTE:
This manual describes only points that differ from RAK-18NH5, 25NH5, 35NH5 (PM NO. 0269E) and RAM-40QH5 (PM NO. 0270E) for items not described in this manual.

SPECIFICATIONS

<table>
<thead>
<tr>
<th>TYPE</th>
<th>DC INVERTER (CEILING CASSETTE TYPE)</th>
<th>INDOOR UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>MODEL</td>
<td>RAI-25NH5</td>
<td>RAI-35NH5</td>
</tr>
<tr>
<td>POWER SOURCE</td>
<td>1 PHASE, 50 Hz, 220-240V</td>
<td>1 PHASE, 50 Hz, 220-240V</td>
</tr>
<tr>
<td>COOLING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL INPUT</td>
<td>(W)</td>
<td>(W)</td>
</tr>
<tr>
<td>TOTAL AMPERES</td>
<td>(A)</td>
<td>(A)</td>
</tr>
<tr>
<td>CAPACITY</td>
<td>(kW)</td>
<td>(B.T.U./h)</td>
</tr>
<tr>
<td>HEATING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL INPUT</td>
<td>(W)</td>
<td>(W)</td>
</tr>
<tr>
<td>TOTAL AMPERES</td>
<td>(A)</td>
<td>(A)</td>
</tr>
<tr>
<td>CAPACITY</td>
<td>(kW)</td>
<td>(B.T.U./h)</td>
</tr>
<tr>
<td>DIMENSIONS</td>
<td>W 580</td>
<td>580</td>
</tr>
<tr>
<td></td>
<td>H 285</td>
<td>285</td>
</tr>
<tr>
<td></td>
<td>D 580</td>
<td>580</td>
</tr>
<tr>
<td>NET WEIGHT</td>
<td>(kg) 20</td>
<td>20</td>
</tr>
</tbody>
</table>

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

ROOM AIR CONDITIONER
INDOOR UNIT

SEPTEMBER 2005 Refrigeration & Air-Conditioning Division
SAFETY DURING REPAIR WORK

1. In order to disassemble and repair the unit in question, be sure to disconnect the power cord plug from the power outlet before starting the work.

2. If it is necessary to replace any parts, they should be replaced with respective genuine parts for the unit, and the replacement must be effected in correct manner according to the instructions in the Service Manual of the unit.

If the contacts of electrical parts are defective, replace the electrical parts without trying to repair them.

3. After completion of repairs, the initial state should be restored.

4. Lead wires should be connected and laid as in the initial state.

5. Modification of the unit by user himself should absolutely be prohibited.

6. Tools and measuring instruments for use in repairs or inspection should be accurately calibrated in advance.

7. In installing the unit having been repaired, be careful to prevent the occurrence of any accident such as electrical shock, leak of current, or bodily injury due to the drop of any part.

8. To check the insulation of the unit, measure the insulation resistance between the power cord plug and grounding terminal of the unit. The insulation resistance should be $1\text{M} \Omega$ or more as measured by a $500\text{V DC}$ megger.

9. The initial location of installation such as window, floor or the other should be checked for being and safe enough to support the repaired unit again.
   If it is found not so strong and safe, the unit should be installed at the initial location reinforced or at a new location.

10. Any inflammable thing should never be placed about the location of installation.

11. Check the grounding to see whether it is proper or not, and if it is found improper, connect the grounding terminal to the earth.
WORKING STANDARDS FOR PREVENTING BREAKAGE OF SEMICONDUCTORS

1. Scope
The standards provide for items to be generally observed in carrying and handling semiconductors in relative manufacturers during maintenance and handling thereof. (They apply the same to handling of abnormal goods such as rejected goods being returned).

2. Object parts
(1) Micro computer
(2) Integrated circuits (IC)
(3) Field-effect transistors (FET)
(4) P.C. boards or the like on which the parts mentioned in (1) and (2) of this paragraph are equipped.

3. Items to be observed in handling
(1) Use a conductive container for carrying and storing of parts. (Even rejected goods should be handled in the same way).

(2) When any part is handled uncovered (in counting, packing and the like), the handling person must always use himself as a body earth. (Make yourself a body earth by passing one M ohm earth resistance through a ring or bracelet).

(3) Be careful not to touch the parts with your clothing when you hold a part even if a body earth is being taken.

(4) Be sure to place a part on a metal plate with grounding.

(5) Be careful not to fail to turn off power when you repair the printed circuit board. At the same time, try to repair the printed circuit board on a grounded metal plate.

---

*Fig. 1. Conductive Container*

*Fig. 2. Body Earth*
(6) Use a three wire type soldering iron including a grounding wire.

Metal plate (of aluminium, stainless steel, etc.)

Working table

Resistor of 1 MΩ (1/2W)

Staple

Bare copper wire (for body earth)

Earth wire

Fig. 3. Grounding of the working table

Soldering iron

Grounding wire

Screw stop at the screwed part using a rag plate

Fig. 4. Grounding a soldering iron

Use a high insulation mode (100V, 10MΩ or higher) when ordinary iron is to be used.

(7) In checking circuits for maintenance, inspection or some others, be careful not to have the test probes of the measuring instrument shortcircuit a load circuit or the like.
1. In quiet operation or stopping the running, slight flowing noise of refrigerant in the refrigerating cycle is heard occasionally, but this noise is not abnormal for the operation.

2. When it thunders near by, it is recommend to stop the operation and to disconnect the power cord plug from the power outlet for safety.

3. The room air conditioner does not start automatically after recovery of the electric power failure for preventing fuse blowing. Re-press START/STOP button after 3 minutes from when unit stopped.

4. If the room air conditioner is stopped by adjusting thermostat, or missoperation, and re-start in a moment, there is occasion that the cooling and heating operation does not start for 3 minutes, it is not abnormal and this is the result of the operation of IC delay circuit. This IC delay circuit ensures that there is no danger of blowing fuse or damaging parts even if operation is restarted accidentally.

5. This room air conditioner should not be used at the cooling operation when the outside temperature is below 10°C (50°F).

6. This room air conditioner (the reverse cycle) should not be used when the outside temperature is below −15°C (5°F).
   If the reverse cycle is used under this condition, the outside heat exchanger is frosted and efficiency falls.

7. When the outside heat exchanger is frosted, the frost is melted by operating the hot gas system, it is not trouble that at this time fan stops and the vapour may rise from the outside heat exchanger.
<table>
<thead>
<tr>
<th>SPECIFICATIONS</th>
<th>RAI-25NH5</th>
<th>RAI-35NH5</th>
</tr>
</thead>
<tbody>
<tr>
<td>MODEL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FAN MOTOR</td>
<td></td>
<td>25W</td>
</tr>
<tr>
<td>FAN MOTOR CAPACITOR</td>
<td></td>
<td>NO</td>
</tr>
<tr>
<td>FAN MOTOR PROTECTOR</td>
<td></td>
<td>NO</td>
</tr>
<tr>
<td>COMPRESSOR</td>
<td></td>
<td>_</td>
</tr>
<tr>
<td>COMPRESSOR MOTOR CAPACITOR</td>
<td></td>
<td>NO</td>
</tr>
<tr>
<td>OVERLOAD PROTECTOR</td>
<td></td>
<td>NO</td>
</tr>
<tr>
<td>OVERHEAT PROTECTOR</td>
<td></td>
<td>NO</td>
</tr>
<tr>
<td>FUSE (for MICROPROCESSOR)</td>
<td></td>
<td>NO</td>
</tr>
<tr>
<td>POWER RELAY</td>
<td></td>
<td>NO</td>
</tr>
<tr>
<td>POWER SWITCH</td>
<td></td>
<td>NO</td>
</tr>
<tr>
<td>TEMPORARY SWITCH</td>
<td></td>
<td>YES</td>
</tr>
<tr>
<td>SERVICE SWITCH</td>
<td></td>
<td>NO</td>
</tr>
<tr>
<td>TRANSFORMER</td>
<td></td>
<td>NO</td>
</tr>
<tr>
<td>VARISTOR</td>
<td></td>
<td>NO</td>
</tr>
<tr>
<td>NOISE SUPPRESSOR</td>
<td></td>
<td>NO</td>
</tr>
<tr>
<td>THERMOSTAT</td>
<td></td>
<td>YES(IC)</td>
</tr>
<tr>
<td>REMOTE CONTROL SWITCH (LIQUID CRYSTAL)</td>
<td></td>
<td>YES</td>
</tr>
<tr>
<td>REFRIGERANT CHARGING VOLUME (Refrigerant 410A)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNIT</td>
<td></td>
<td>--------</td>
</tr>
<tr>
<td>PIPES</td>
<td></td>
<td>WITHOUT REFRIGERANT BECAUSE COUPLING IS FLARE TYPE.</td>
</tr>
</tbody>
</table>
### SPECIFICATIONS FOR INDOOR UNITS COMBINATIONS

<table>
<thead>
<tr>
<th>MODEL</th>
<th>INDOOR UNIT</th>
<th>OUTDOOR UNIT</th>
<th>PHASE/VOLTAGE/FREQUENCY</th>
<th>CIRCUIT AMPERES TO CONNECT (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RAI-25NH5</td>
<td>RAM-40QH5</td>
<td>1ø, 220V-240V, 50Hz</td>
<td>16</td>
</tr>
</tbody>
</table>

#### COOLING

**ONE UNIT**

- **CAPACITY (kW)**: 2.50 (1.00 ~ 3.00)  
  (B.T.U./h): 8540 (3412~10236)  
- **TOTAL INPUT (W)**: 750 (200-880)  
- **EER (B.T.U./W)**: 11.39  
- **TOTAL AMPERES (A)**: 3.44 ~ 3.16  
- **POWER FACTOR (%)**: 99  
- **SOUND LEVEL (INDOOR)**: 35  
- **AIR FLOW VOLUME (Hi)**: 8.5m³/min  

**TWO UNITS**

- **CAPACITY (kW)**: 4.00 (1.50 ~ 4.50)  
  (B.T.U./h): 13660 (5126~15367)  
- **TOTAL INPUT (W)**: 1245 (200-1800)  
- **EER (B.T.U./W)**: 10.97  
- **TOTAL AMPERES (A)**: 5.72 ~ 5.24  
- **POWER FACTOR (%)**: 99  
- **SOUND LEVEL (OUTDOOR)**: 49  
- **AIR FLOW VOLUME (Hi)**: 8.5m³/min

#### HEATING

**ONE UNIT**

- **CAPACITY (kW)**: 3.40 (1.10 ~ 4.00)  
  (B.T.U./h): 11610 (3761~15026)  
- **TOTAL INPUT (W)**: 870 (200-1120)  
- **EER (B.T.U./W)**: 13.34  
- **TOTAL AMPERES (A)**: 3.99 ~ 3.66  
- **POWER FACTOR (%)**: 99  
- **SOUND LEVEL (OUTDOOR)**: 36  
- **AIR FLOW VOLUME (Hi)**: 8.5m³/min

**TWO UNITS**

- **CAPACITY (kW)**: 5.00 (1.50 ~ 5.00)  
  (B.T.U./h): 17070 (5126~19122)  
- **TOTAL INPUT (W)**: 1350 (200-1780)  
- **EER (B.T.U./W)**: 12.64  
- **TOTAL AMPERES (A)**: 6.20 ~ 5.68  
- **POWER FACTOR (%)**: 99  
- **SOUND LEVEL (OUTDOOR)**: 51  
- **AIR FLOW VOLUME (Hi)**: 8.5m³/min

#### PACKING

<table>
<thead>
<tr>
<th>MODEL</th>
<th>RAI-25NH5</th>
<th>RAI-35NH5</th>
<th>RAM-40QH5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>W</strong></td>
<td>760</td>
<td>760</td>
<td>905</td>
</tr>
<tr>
<td><strong>H</strong></td>
<td>395</td>
<td>395</td>
<td>633</td>
</tr>
<tr>
<td><strong>D</strong></td>
<td>706</td>
<td>706</td>
<td>394</td>
</tr>
<tr>
<td><strong>cu.ft.</strong></td>
<td>7.48</td>
<td>7.48</td>
<td>8.27</td>
</tr>
<tr>
<td><strong>GROSSWEIGHT (kg)</strong></td>
<td>25</td>
<td>25</td>
<td>43</td>
</tr>
<tr>
<td><strong>FLARENUTSIZE (SMALL/LARGE)</strong></td>
<td>6.35/9.52D</td>
<td>6.35/9.52D</td>
<td>6.35/9.52D, 6.35/9.52D</td>
</tr>
</tbody>
</table>

#### STANDARDS

- CE (EMC&LVD)
SAFETY PRECAUTION

● Please read the “Safety Precaution” carefully before operating the unit to ensure correct usage of the unit.
● Pay special attention to signs of “⚠️ Warning” and “⚠️ Caution”. The “Warning” section contains matters which, if not observed strictly, may cause death or serious injury. The “Caution” section contains matters which may result in serious consequences if not observed properly. Please observe all instructions strictly to ensure safety.
● The sign indicate the following meanings.

Make sure to connect earth line. – The sign in the figure indicates prohibition.
Indicates the instructions that must be followed.

● Please keep this manual after reading.

WARNING

● Do not reconstruct the unit. Water leakage, fault, short circuit or fire may occur if you reconstruct the unit by yourself.

● Please ask your sales agent or qualified technician for the installation of your unit. Water leakage, short circuit or fire may occur if you install the unit by yourself.

● Please use earth line. Do not place the earth line near water or gas pipes, lightning-conductor, or the earth line of telephone. Improper installation of earth line may cause electric shock.

● A circuit breaker should be installed depending on the mounting site of the unit. Without a circuit breaker, the danger of electric shock exists.

● Do not install near location where there is flammable gas. The outdoor unit may catch fire if flammable gas leaks around it.

● Please ensure smooth flow of water when installing the drain hose.

CAUTION

PRECAUTIONS DURING INSTALLATION

PRECAUTIONS DURING SHIFING OR MAINTENANCE

PRECAUTIONS DURING OPERATION

● Avoid an extended period of direct air flow for your health.

● Should abnormal situation arises (like burning smell), please stop operating the unit and turn off the circuit breaker. Contact your agent. Fault, short circuit or fire may occur if you continue to operate the unit under abnormal situation.

● Please contact your agent for maintenance. Improper self maintenance may cause electric shock and fire.

● Please contact your agent if you need to remove and reinstall the unit. Electric shock or fire may occur if you remove and reinstall the unit yourself improperly.

● Do not insert a finger, a rod or other objects into the air outlet or inlet. As the fan is rotating at a high speed, it will cause injury. Before cleaning, be sure to stop the operation and turn the breaker OFF.

● Do not use any conductor as fuse wire, this could cause fatal accident.

● During thunder storm, disconnect and turn off the circuit breaker.
● Do not attempt to operate the unit with wet hands, this could cause fatal accident.

● When operating the unit with burning equipments, regularly ventilate the room to avoid oxygen insufficiency.

● Do not direct the cool air coming out from the air-conditioner panel to face household heating apparatus as this may affect the working of apparatus such as the electric kettle, oven etc.

● Please ensure that outdoor mounting frame is always stable, firm and without defect. If not, the outdoor unit may collapse and cause danger.

● Do not splash or direct water to the body of the unit when cleaning it as this may cause short circuit.

● Do not use any aerosol or hair sprays near the indoor unit. This chemical can adhere on heat exchanger fin and blocked the evaporation water flow to drain pan. The water will drop on tangential fan and cause water splashing out from indoor unit.

● Please switch off the unit and turn off the circuit breaker during cleaning, the high-speed fan inside the unit may cause danger.

● Turn off the circuit breaker if the unit is not to be operated for a long period.

● Do not climb on the outdoor unit or put objects on it.

● When operating the unit with the door and windows opened, (the room humidity is always above 80%) and with the air deflector facing down or moving automatically for a long period of time, water will condense on the air deflector and drips down occasionally. This will wet your furniture. Therefore, do not operate under such condition for a long time.

● If the amount of heat in the room is above the cooling or heating capability of the unit (for example: more people entering the room, using heating equipments and etc.), the preset room temperature cannot be achieved.

● This appliance is not intended for use by young children or infirm persons unless they have been adequately supervised by a responsible person to ensure that they can use the appliance safely.

● Young children should be supervised to ensure that they do not play with the appliance.
NAMES AND FUNCTIONS OF EACH PART

AIR FILTER
To prevent dust from coming into the indoor unit.
(Refer page 23)

INDOOR UNIT INDICATORS
Light indicator showing the operating condition.
(Refer page 9)

SUCTION GRILL (AIR INLET)

HORIZONTAL DEFLECTOR (AIR OUTLET)
(Refer page 19)

REMOTE CONTROL
Send out operation signal to the indoor unit. So as to operate the whole unit.
(Refer page 10)

MODEL NAME AND DIMENSIONS

<table>
<thead>
<tr>
<th>MODEL</th>
<th>WIDTH (mm)</th>
<th>HEIGHT (mm)</th>
<th>DEPTH (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAI-25NH5 / RAI-35NH5</td>
<td>580</td>
<td>285</td>
<td>580</td>
</tr>
</tbody>
</table>

MULTI-AIR CONDITIONER

With this multi-air conditioner, several indoor units can be connected to one outdoor unit to be driven. You can operate the required number of indoor units.

Combination of Operations:

When operation mode is selected:
- You cannot operate the indoor units in the following combinations.

<table>
<thead>
<tr>
<th>One unit</th>
<th>Other unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heating</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cooling</td>
</tr>
<tr>
<td></td>
<td>Dehumidifying</td>
</tr>
<tr>
<td></td>
<td>Circulating (fan)</td>
</tr>
</tbody>
</table>

- The indoor unit which is switched on first continues to operate, but other indoor units which is switched on later does not operate while the lamp lights.
- To re-start an indoor unit which was operated later, stop the indoor unit which was operated first or later and reset the type of operation, then perform operation again.

During automatic operation:
- When heating operation is automatically selected for the first indoor unit, the next indoor unit will then start to heat. Also, if cooling or dehumidifying is automatically selected for the first indoor unit, the next indoor unit will also start to cool or dehumidify.

Adjusting the Number of Indoor Units:
Decrease the number of indoor units to be operated especially when it is very hot or cold or when you want to reach the present temperature quickly.

Stopped Indoor Units:
When an indoor unit is operated in the cooling, heating or dehumidifying mode in the room, the sound of refrigerant flow may be heard from a stopped indoor unit or a stopped indoor unit may become warm. This is because the indoor unit returns refrigerant to the outdoor unit to be ready for operation.
TEMPORARY SWITCH

Use this switch to start and stop when the remote controller does not work. [Use non-conductor stick (example toothpick)]

- By pressing the temporary switch, the operation is done in previously set operation mode.
- When the operation is done using the temporary switch after the power source is turned off and turn on again, the operation will be done in automatic mode.

OPERATION LAMP

This lamp lights during operation. The OPERATION LAMP flashes in the following cases during heating.

(1) During preheating
   For about 2–3 minutes after starting up.

(2) During defrosting
   Defrosting will be performed about once an hour when frost forms on the heat exchanger of the outdoor unit, for 5–10 minutes each time.

TIMER LAMP

This lamp lights when the timer is working.

FILTER LAMP

When the device is operated for a total of about 200 hours, the FILTER lamp lights to indicate that it is time to clean the filter. The lamp goes out when the “AUTO SWING” button is pressed while the device is on “STANDBY MODE”.

NAMES AND FUNCTIONS OF REMOTE CONTROL UNIT

REMOTE CONTROLLER
- Operate by pointing towards the signal receptor on the indoor unit. The range of control is about 7 meters. Signal receivable angle range is approximately 70°. However, if there is an electronic light sensor device (inverter) in the room, signal may not be received or receivable distance may become shorter.
- Indoor unit must be install 1 meter or more away from lighting.
- Handle the remote controller with care. Dropping it or getting it wet may compromise its signal transmission capability.
- After new batteries are inserted into the remote controller, the unit will initially require approximately 10 seconds to respond to commands and operate.

Signal emitting window/transmission sign
Point this window toward the indoor unit when controlling it. The transmission sign blinks when a signal is sent.

Display
This indicates the room temperature selected, current time, timer status, function and intensity of circulation selected.

START/STOP button
Press this button to start operation. Press it again to stop operation.

SLEEP button
Use this button to set the sleep timer.

TEMPERATURE buttons
Use these buttons to raise or lower the temperature setting. (Keep pressed, and the value will change more quickly.)

TIME button
Use this button to set and check the time and date.

RESET buttons

FUNCTION selector
Use this button to select the operating mode. Every time you press it, the mode will change from AUTO to HEAT to DEHUMIDIFY to COOL and to FAN cyclically.

FAN SPEED selector
This determines the fan speed. Every time you press this button, the intensity of circulation will change from AUTO to HI to MED to LOW (This button allows selecting the optimal or preferred fan speed for each operation mode).

AUTO SWING button
Controls the angle of the horizontal air deflector.

TIMER control
Use this button to set the timer.

OFF-TIMER button
Select the turn OFF time.

ON-TIMER button
Select the turn ON time.

RESERVE button
Time setting reservation.

CANCEL button
Cancel time reservation.

Precautions for Use
- Do not put the remote controller in the following places.
  - Under direct sunlight.
  - In the vicinity of a heater.
- Handle the remote controller carefully. Do not drop it on the floor, and protect it from water.
- Once the outdoor unit stops, it will not restart for about 3 minutes (unless you turn the power switch off and on or unplug the power cord and plug it in again). This is to protect the device and does not indicate a failure.
- If you press the FUNCTION selector button during operation, the device may stop for about 3 minutes for protection.
**AUTOMATIC OPERATION**

The device will automatically determine the mode of operation, HEAT, COOL or DEHUMIDIFY depending on the current room temperature. The selected mode of operation will change when the room temperature varies. However the mode of operation will not change when indoor unit connected to multi type outdoor unit.

Press the FUNCTION selector so that the display indicates the (AUTO) mode of operation.
- When AUTO has been selected, the device will automatically determine the mode of operation, HEAT, COOL or DEHUMIDIFY depending on the current room temperature. However the mode of operation will not change when indoor unit connected to multi type outdoor unit.
- If the mode automatically selected by the unit is not satisfactory, manually change the mode setting (heat, dehumidify, cool or fan).

Press the (START/STOP) button.
Operation starts with a beep.
Press the button again to stop operation.

As the settings are stored in memory in the remote controller, you only have to press the (START/STOP) button next time.

You can raise or lower the temperature setting as necessary by maximum of 3°C.

- The preset temperature and the actual room temperature may vary somewhat depending on conditions.
- The display does not indicate the preset temperature in the AUTO mode. If you change the setting, the indoor unit will produce a beep.

Press the (FAN SPEED) button, AUTO and LOW is available.

---

**VARIOUS FUNCTIONS**

- If there is a power failure, operation will be automatically restarted when the power is resumed with previous operation mode and airflow direction.
- If you intend not to continue the operation when the power is resumed, switch off the power supply.
  When you switch on the circuit breaker, the operation will be automatically restarted with previous operation mode and airflow direction.

Note: 1. If you do not require Auto Restart Control, please consult your sales agent or OFF by remote control.
2. Auto Restart Control is not available when Timer or Sleep Timer mode is set.
HEATING OPERATION

- Use the device for heating when the outdoor temperature is under 21°C. When it is too warm (over 21°C), the heating function may not work in order to protect the device.
- In order to keep reliability of the device, please use this device above -15°C of the outdoor temperature.

1. Press the FUNCTION selector so that the display indicates (HEAT).

2. Set the desired FAN SPEED with the (FAN SPEED) button (the display indicates the setting).
   - (AUTO): The fan speed is HI at first and varies to MED or LOW automatically when the preset temperature has been reached.
   - (HI): Economical as the room will become warm quickly. But you may feel a chill at the beginning.
   - (MED): Fan speed slow.
   - (LOW): Fan speed slower.

3. Set the desired room temperature with the TEMPERATURE buttons (the display indicates the setting).
   The temperature setting and the actual room temperature may vary somewhat depending on conditions.

START STOP

Press the (START/STOP) button. Heating operation starts with a beep. Press the button again to stop operation.

As the settings are stored in memory in the remote controller, you only have to press the (START/STOP) button next time.
DEHUMIDIFYING OPERATION

Use the device for dehumidifying when the room temperature is over 16°C. When it is under 15°C, the dehumidifying function will not work.

1. Press the FUNCTION selector so that the display indicates (DEHUMIDIFY). The FAN SPEED is set at LOW automatically. The FAN SPEED button does not work.

2. Set the desired room temperature with the TEMPERATURE button (the display indicates the setting).

   - The range of 20-26°C is recommended as the room temperature for dehumidifying.

   - Press the (START/STOP) button. Dehumidifying operation starts with a beep. Press the button again to stop operation.

   - As the settings are stored in memory in the remote controller, you only have to press the (START/STOP) button next time.

When the room temperature is higher than the temperature setting: The device will dehumidify the room, reducing the room temperature to the preset level.

When the room temperature is lower than the temperature setting: Dehumidifying will be performed at the temperature setting slightly lower than the current room temperature, regardless of the temperature setting. The function will stop (the indoor unit will stop emitting air) as soon as the room temperature becomes lower than the setting temperature.
COOLING OPERATION

Use the device for cooling when the outdoor temperature is 22-42°C. If in doors humidity is very high (80%), some dew may form on the air outlet grille of the indoor unit.

1. Press the FUNCTION selector so that the display indicates * (COOL).

2. Set the desired FAN SPEED with the + (FAN SPEED) button (the display indicates the setting).
   - (AUTO): The FAN SPEED is HI at first and varies to MED or LOW automatically when the preset temperature has been reached.
   - (HI) : Economical as the room will become cool quickly.
   - (MED) : Fan speed slow.
   - (LOW) : Fan speed slower.

3. Set the desired room temperature with the TEMPERATURE button (the display indicates the setting).
   The temperature setting and the actual room temperature may vary some how depending on conditions.

   Press the 0 (START/STOP) button. Cooling operation starts with a beep. Press the button again to stop operation. The cooling function does not start if the temperature setting is higher than the current room temperature (even though the 0 (OPERATION) lamp lights). The cooling function will start as soon as you set the temperature below the current room temperature.

   ■ As the settings are stored in memory in the remote controller, you only have to press the 0 (START/STOP) button next time.
FAN OPERATION

You can use the device simply as an air circulator. Use this function to dry the interior of the indoor unit at the end of summer.

Press the FUNCTION selector so that the display indicates + (FAN).

Press the + (FAN SPEED) button.

Press the (START/STOP) button. Fan operation starts with a beep. Press the button again to stop operation.

----- When the AUTO fan speed mode is set in the cooling/heating operation:

<table>
<thead>
<tr>
<th>For the heating operation</th>
<th>For the cooling operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>● The fan speed will automatically change according to the temperature of discharged air.</td>
<td>● When the difference of room temperature and setting temperature is large, fan starts to run at HI speed.</td>
</tr>
<tr>
<td>● When the difference of room temperature and setting temperature is large, fan starts to run at HI speed.</td>
<td>● After room temperature reaches the preset temperature, the cooling operation, which changes the fan speed and room temperature to obtain optimum conditions for natural healthful cooling will be performed.</td>
</tr>
<tr>
<td>● When the room temperature reaches setting temperature, fan speed changes to LOW automatically.</td>
<td></td>
</tr>
</tbody>
</table>
HOW TO SET THE TIMER

Time, Day, Month

After you change the batteries;

ON-Timer

● The device will turn on (off) and off (on) at the designated times.
● The switching occurs first at the preset time that comes earlier.
● The arrow mark appearing on the display indicates the sequence of switching operations.

1 Press the button so that the mark blinks.

OFF-Timer

You can set the device to turn off at the present time.

1 Press the (OFF-TIMER) button. The (OFF) mark blinks on the display.

ON-Timer

● The device will turn on at the designated times.

1 Press the (ON-TIMER) button and the (ON) mark blinks on the display.

ON/OFF-Timer

1 Press the (ON-OFF) button so that the (OFF) mark blinks.
2 Set the turn-off time with the TIMER control button. Press the (RESERVE) button.
3 Press the (ON-TIMER) button so that the (OFF) mark lights and the (ON) mark blinks.

How to Cancel Reservation

Point the signal window of the remote controller toward the indoor unit, and press the (CANCEL) button.
The (RESERVED) sign goes out with a beep and the (TIMER) lamp turns off on the indoor unit.

NOTE

You can set only one of the OFF-timer, ON-timer and ON/OFF-timer.
3 Point the signal window of the remote controller toward the indoor unit, and
press the (RESERVE) button.
The (OFF) mark starts lighting instead of flashing and the sign (RESERVED)
lights. A beep occurs and the (TIMER) lamp lights on the indoor unit.

Example: The device will turn off at 11:00 p.m.

Example: The setting of turn-off time is now complete.

3 Point the signal window of the remote controller toward the indoor unit, and
press the (RESERVE) button.
The (ON) mark starts lighting instead of flashing and the (RESERVED) sign lights. A beep occurs and the (TIMER) lamp lights on the indoor unit.

Example: The device will turn on at 7:00 a.m.

Example: The setting of the turn-on time is now complete.

4 Set the turn-on time with the TIMER control button.

Example: The device will turn off at 10:30 p.m. and it will be turned on at 7:00 a.m.

The settings of the turn-on/off times are now complete.

- The timer may be used in three ways: off-timer, on-timer, and ON/OFF (OFF/ON)-timer. Set the current time at first because it serves as a reference.

- As the time settings are stored in memory in the remote controller, you only have to press the (RESERVE) button in order to use the same settings next time.
HOW TO SET THE SLEEP TIMER

Set the current time at first if it is not set before (see the pages for setting the current time). Press the ☐ (SLEEP) button, and the display changes as shown below.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sleep timer</td>
<td>1 hour ➔ 2 hours ➔ 3 hours ➔ 7 hours ➔ Sleep timer off</td>
</tr>
</tbody>
</table>

Sleep Timer: The device will continue working for the designated number of hours and then turn off. Point the signal window of the remote controller toward the indoor unit, and press the SLEEP button. The timer information will be displayed on the remote controller. The TIMER lamp lights with a beep from the indoor unit. When the sleep timer has been set, the display indicates the turn-off time.

Example: If you set 3 hours sleep time at 11:38 p.m., the turn-off time is 2:38 a.m.

The device will be turned off by the sleep timer and turned on by on-timer.

1 Set the ON-timer.

2 Press the ☐ (SLEEP) button and set the sleep timer.

For heating:
In this case, the device will turn off in 2 hours (at 1:38 a.m.) and turn on early so that the preset temperature will be almost reached at 6:00 next morning.

How to Cancel Reservation

Point the signal window of the remote controller toward the indoor unit, and press the ☐ (CANCEL) button. The ☐ (RESERVED) sign goes out with a beep and the ☐ (TIMER) lamp turns off on the indoor unit.
Adjustment of the conditioned air in the upward and downward directions.

According to “Dehumidifying” or “Cooling” operation, the horizontal air deflector is automatically set to the proper angle suitable for each operation. The deflector can be swung up and down and also set to the desired angle using the “AUTO SWING” button. (If the angle of the deflector is changed, it will not return to the auto-set position after operations start unless the operation mode is switched.)

- If the “AUTO SWING” button is pressed once, the horizontal air deflector swings up and down. If the button is pressed again, the deflector stops in its current position. Several seconds (about 6 seconds) may be required before the deflector starts to move.

- Use the horizontal air deflector within the adjusting range shown on the right.

- When the “AUTO SWING” button is pressed while the operation is stopped, the horizontal air deflector moves and stops at the position where the air outlet closes.

- When the auto swing operation is performed, if the horizontal air deflector is moved manually, the swinging range may drift. However, it will return to the original operation range after a short time.

⚠️ CAUTION

When operating the unit in cooling operation with the air deflector facing down and moving automatically for a long period of time, water will condensed on the air deflector and drips down occasionally. This will wet your furniture.
**HOW TO EXCHANGE THE BATTERIES IN THE REMOTE CONTROLLER**

1. Remove the cover as shown in the figure and take out the old batteries.

2. Install the new batteries. The direction of the batteries should match the marks in the case.

---

**CAUTION**

1. Do not use new and old batteries, or different kinds of batteries together.
2. Take out the batteries when you do not use the remote controller for 2 or 3 months.
Suitable Room Temperature

⚠️ Warning
Freezing temperature is bad for health and a waste of electric power.

Install curtain or blinds

It is possible to reduce heat entering the room through windows.

Ventilation

⚠️ Caution
Do not close the room for a long period of time. Occasionally open the door and windows to allow the entrance of fresh air.

Effective Usage Of Timer

At night, please use the “OFF or ON timer operation mode”, together with your wake up time in the morning. This will enable you to enjoy a comfortable room temperature. Please use the timer effectively.

Do Not Forget To Clean The Air Filter

Dusty air filter will reduce the air volume and the cooling efficiency. To prevent from wasting electric energy, please clean the filter every 2 weeks.

Please Adjust Suitable Temperature For Baby And Children

Please pay attention to the room temperature and air flow direction when operating the unit for baby, children and old folks who have difficulty in movement.
The Air Conditioner And The Heat Source In The Room

Caution
If the amount of heat in the room is above the cooling capability of the air conditioner (for example: more people entering the room, using heating equipments and etc.), the preset room temperature cannot be achieved.

Not Operating For A Long Time

When the indoor unit is not to be used for a long period of time, please switch off the power from the mains. If the power from mains remains “ON”, the indoor unit still consumes about 8W in the operation control circuit even if it is in “OFF” mode.

When Lightning Occurs

Warning
To protect the whole unit during lightning, please stop operating the unit and remove the plug from the socket.

Interference From Electrical Products

Caution
To avoid noise interference, please place the indoor unit and its remote controller at least 1m away from electrical products.
Cleaning and maintenance must be carried out by qualified service personnel. Before the cleaning, stop operation and disconnect the power supply. Clean the filter at least once every one month. This helps save electricity cost.

1. CLEANING OF AIR FILTER

PROCEDURE

1. Remove the filter from indoor
   - Press the mark “PUSH” on the left and right sides of the suction grille.
   - Pull out the filter from the grille.

2. Remove dust from the filter using a vacuum cleaner.
   If there is too much dust, use neutral detergent. After using neutral detergent, wash with clean water and dry in the shade.

3. Install the filter. (Set it with “UP SIDE” mark facing front.)
   Slot the filter to suction grille and close as original state.
   (Press the mark “PUSH” at the left and right sides of the suction grille to fix it securely.)

Note:
- This model has an air cleaning filter. The cooling capacity is slightly weakened and the cooling speed becomes slower when the air cleaning filter is used. So, set the fan speed to “HIGH” when using it in this condition.
- Recommended to replace the air cleaning filter after every 3 months for normal usage. Type number for this air cleaning filter is <SPX-CFH5>. Please use this number for ordering when you want to renew it.

CAUTION
- Do not wash with hot water at more than 40°C. The filter may shrink.
- When washing it, shake off moisture completely and dry it in the shade; do not expose it directly to the sun. The filter may shrink.
- Do not operate the air conditioner with the filter removed. Dust may enter the air conditioner and cause trouble.
2. CLEANING OF FRONT PANEL

- Wipe it with a soft dry cloth.
- When it is excessively dirty, wipe with soft cloth soaked in lukewarm water or neutral detergent. Then wipe thoroughly with a soft dry cloth.

CAUTION

- Do not splash or direct water to the body of the unit when cleaning it as this may cause short circuit.
- Never use hot water (above 40°C), benzine, gasoline, acid, thinner or a brush, because they will damage the plastic surface and the coating.

3. MAINTENANCE AT BEGINNING OF LONG OFF PERIOD

- Running the unit setting the operation mode to FAN (FAN) and the fan speed to HI for about half a day on a fine day, and dry the whole of the unit.
- Turn off the circuit breaker.

REGULAR INSPECTION

PLEASE CHECK THE FOLLOWING POINTS EITHER EVERY HALF YEARLY OR YEARLY. CONTACT YOUR SALES AGENT SHOULD YOU NEED ANY HELP.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Is the earth line disconnected or broken?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td><strong>WARNING</strong> Coming off or breakage of grounding wire may cause malfunction or electrical shock.</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Is the mounting frame seriously affected by rust and is the outdoor unit tilted or unstable?</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>WARNING</strong> Outdoor unit may fall or drop if there is extreme rust on mounting frame or outdoor unit is unstably installed. This may cause injury.</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Is the plug of power line firmly plugged into the socket? (Please ensure no loose contact between them).</td>
</tr>
</tbody>
</table>
AFTER SALES SERVICE AND WARRANTY

WHEN ASKING FOR SERVICE, CHECK THE FOLLOWING POINTS.

- Is the fuse blown out or the circuit breaker tripped?
- Is the voltage normal?
- Is the circuit breaker “ON”?

- Is the air filter blocked with dust?
- Does sunlight fall directly on the outdoor unit?
- Is the air flow of the outdoor unit obstructed?
- Are the doors or windows opened, or is there any source of heat in the room?
- Is the set temperature suitable?

CONDITION

CHECK THE FOLLOWING POINTS

When it does not operate

When it does not cool well
When it does not hot well

Notes

- In quiet operation or stopping the running, the following phenomena may occasionally occur, but they are not abnormal for the operation.
  1. Slight flowing noise of refrigerant in the refrigerating cycle.
  2. Slight rubbing noise from the fan casing which is cooled and then gradually warmed as operation stops.
- The odor will possibly be emitted from the room air conditioner because the various odor, emitted by smoke, foodstuffs, cosmetics and so on, sticks to it. So please clean the air filter and the evaporator regularly to reduce the odor.

- Please contact your sales agent immediately if the air conditioner still fails to operate normally after the above inspections. Inform your agent of the model of your unit, production number, date of installation. Please also inform him regarding the fault.

- Power supply shall be connected at the rated voltage, otherwise the unit will be broken or could not reach the specified capacity.
Please note:
On switching on the equipment, particularly when the room light is dimmed, a slight brightness fluctuation may occur. This is of no consequence.
The conditions of the local Power Supply Companies are to be observed.

**Note**
- Avoid to use the room air conditioner for cooling operation when the outside temperature is below 21°C (70°F).

The recommended maximum and minimum operating temperatures of the hot and cold sides should be as below:

<table>
<thead>
<tr>
<th></th>
<th>Cooling</th>
<th>Heating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minimum</td>
<td>Maximum</td>
</tr>
<tr>
<td><strong>Indoor</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dry bulb °C</td>
<td>21</td>
<td>32</td>
</tr>
<tr>
<td>Wet bulb °C</td>
<td>15</td>
<td>23</td>
</tr>
<tr>
<td><strong>Outdoor</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dry bulb °C</td>
<td>21</td>
<td>43</td>
</tr>
<tr>
<td>Wet bulb °C</td>
<td>15</td>
<td>26</td>
</tr>
</tbody>
</table>

**MEMO**
CONSTRUCTION AND DIMENSIONAL DIAGRAM
MODEL RAI-25NH5, RAI-35NH5

Note:
1. Insulated pipes should be used for both the narrow and wide dia. pipes.
2. Piping length is within 20m.
3. Height difference of the piping between the indoor unit and the outdoor unit should be within 10m.
4. An F-cable 1.6mm or 2.0mm dia. X 3 (control side) is used for the connection cable.
MAIN PARTS COMPONENT

THERMOSTAT

Thermostat Specifications

<table>
<thead>
<tr>
<th>THERMOSTAT MODEL</th>
<th>IC</th>
</tr>
</thead>
<tbody>
<tr>
<td>MODEL</td>
<td>OPERATION MODE</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>TEMPERATURE °C (°F)</td>
<td>INDICATION</td>
</tr>
<tr>
<td></td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>32</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FAN MOTOR

Fan Motor Specifications

<table>
<thead>
<tr>
<th>MODEL</th>
<th>RAI-25NH5</th>
<th>RAI-35NH5</th>
</tr>
</thead>
<tbody>
<tr>
<td>POWER SOURCE</td>
<td>DC: 0 ~ 35V</td>
<td></td>
</tr>
<tr>
<td>OUTPUT</td>
<td>25W</td>
<td></td>
</tr>
</tbody>
</table>

CONNECTION

BLU : BLUE     YEL : YELLOW     BRN : BROWN    WHT : WHITE
GKY : GRAY     ORN : ORANGE     GRN : GREEN    RED : RED
BLK : BLACK    PNK : PINK       VIO : VIOLET  

(Control circuit built in)
PRINTED WIRING BOARD LOCATION DIAGRAM
MODEL RAI-25NH5, RAI-35NH5

MAIN P.W.B.
Marking on P.W.B.

COMPONENT SIDE

SOLDERING SIDE
### Basic Mode

**Model:** RAI-25NH5, RAI-35NH5

#### Operation Mode

<table>
<thead>
<tr>
<th>Basic Operation of</th>
<th>Fan</th>
<th>Cooling</th>
<th>Defrosting/Defrosting operation by the</th>
<th>Heating</th>
<th>Auto</th>
</tr>
</thead>
<tbody>
<tr>
<td>On timer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Off timer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Off ↔ On</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On ↔ Off timer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Operating Mode

Operating mode is judged by room temperature and outdoor temperature.

1. **Judging by outdoor temperature**
   - Operating mode is judged by outdoor temperatures.
   - Whether the mode is not specified by this judgment, the judgment by room temperature takes precedence in the next paragraph where performed.
   - (a) Outdoor temperature ≥ 25°C:Rated to cooling
   - (b) Outdoor temperature ≤ 9°C:Rated to heating

2. **Judging by room temperature**
   - Operating mode is judged by room temperature.
   - (a) Conditions for judgment (any of the following)
     - When auto operation is started after 1 hour has elapsed since the operation was stopped.
     - When auto operation is started after the previous manual mode operation.
     - When the operating mode is switched to auto while operating at manual mode.
   - (b) Judging method
     - Room temperature ≥ 25°C or ≥ 2°C: Heating
     - Room temperature < 25°C or ≥ 2°C: Cooling

#### Room Temperature Setting

![Room Temperature Setting Diagram]

- **Adjustable modes:** 2°C, 3°C, ±5°C
- **Midset Temperature:** ±5°C

#### Basic Operation of Temperature Controller

- Performs only fan operation at 2°C and 3°C.
- See page 47 for setting and See page 51 for initial setting.

#### Sleep Operation

- Same as at left
- See page 49

- Sleep operation after set as on the left
- Action during sleep operation Lo (sleep) operation
- Same as at left
- See page 51
<table>
<thead>
<tr>
<th>LABEL NAME</th>
<th>RAI-25NH5</th>
<th>RAI-35NH5</th>
</tr>
</thead>
<tbody>
<tr>
<td>WMAX</td>
<td>4400 min⁻¹</td>
<td>6000 min⁻¹</td>
</tr>
<tr>
<td>WMAX2</td>
<td>4500 min⁻¹</td>
<td>6000 min⁻¹</td>
</tr>
<tr>
<td>WSTD</td>
<td>3300 min⁻¹</td>
<td>4250 min⁻¹</td>
</tr>
<tr>
<td>WBEMAX</td>
<td>2800 min⁻¹</td>
<td>3500 min⁻¹</td>
</tr>
<tr>
<td>CMAX</td>
<td>2900 min⁻¹</td>
<td>4700 min⁻¹</td>
</tr>
<tr>
<td>CMAX2</td>
<td>3000 min⁻¹</td>
<td>4700 min⁻¹</td>
</tr>
<tr>
<td>CSTD</td>
<td>2350 min⁻¹</td>
<td>4100 min⁻¹</td>
</tr>
<tr>
<td>CKYMAX</td>
<td>2200 min⁻¹</td>
<td>3500 min⁻¹</td>
</tr>
<tr>
<td>CJKMAX</td>
<td>1800 min⁻¹</td>
<td>2700 min⁻¹</td>
</tr>
<tr>
<td>CBEMAX</td>
<td>1600 min⁻¹</td>
<td>2000 min⁻¹</td>
</tr>
<tr>
<td>WMIN</td>
<td>1500 min⁻¹</td>
<td>1800 min⁻¹</td>
</tr>
<tr>
<td>CMIN</td>
<td>1500 min⁻¹</td>
<td>1800 min⁻¹</td>
</tr>
<tr>
<td>STARTMC</td>
<td>60 Seconds</td>
<td>60 Seconds</td>
</tr>
<tr>
<td>DWRATEW</td>
<td>80%</td>
<td>80%</td>
</tr>
<tr>
<td>DWRATEC</td>
<td>80%</td>
<td>80%</td>
</tr>
<tr>
<td>SHIFTW</td>
<td>4.00°C</td>
<td>4.00°C</td>
</tr>
<tr>
<td>SHIFTC</td>
<td>−1.00°C</td>
<td>−2.99°C</td>
</tr>
<tr>
<td>CLMXTP</td>
<td>30.00°C</td>
<td>30.00°C</td>
</tr>
<tr>
<td>YNEOF</td>
<td>21.00°C</td>
<td>21.00°C</td>
</tr>
<tr>
<td>TEION</td>
<td>2.00°C</td>
<td>2.00°C</td>
</tr>
<tr>
<td>TEIOF</td>
<td>6.00°C</td>
<td>6.00°C</td>
</tr>
<tr>
<td>SFTDSW</td>
<td>2.66°C</td>
<td>2.66°C</td>
</tr>
<tr>
<td>DFTIM1</td>
<td>50 Minutes</td>
<td>50 Minutes</td>
</tr>
<tr>
<td>DFTIM2</td>
<td>90 Minutes</td>
<td>90 Minutes</td>
</tr>
<tr>
<td>DFTIM3</td>
<td>60 Minutes</td>
<td>60 Minutes</td>
</tr>
</tbody>
</table>
Basic Cooling Operation

Notes:
(1) Condition for entering into Cool Dashed mode. When fan set to “Hi” or “Auto mode” and temperature difference between indoor temperature and set temperature has a corresponding compressor rpm larger than WMAX.
(2) Cool Dashed will release when i) a maximum 25 minutes is lapsed and ii) room temperature is lower than set temperature –3°C (thermo off) and iii) when room temperature has achieved setting temperature –1°C then maximum Cool Dashed time will be revised to 20 minutes. And iv) indoor fan is set to Lo and Med fan mode and v) change operation mode.
(3) During Cool Dashed operation, thermo off temperature is set temperature (with shift value) –3°C. After thermo off, operation continue in Fuzzy control mode.
(4) Compressor minimum “ON” time and “OFF” time is 3 minutes.
(5) During normal cooling mode, compressor maximum rpm CMAX will maintain for 60 minutes if indoor temperature is lower than CLMXTPT. No time constrain if indoor temperature is higher than CLMXTPT.
(6) When fan is set to “Hi”, compressor rpm will be limited to CKYMAX.
(7) When fan is set to “Med”, compressor rpm will be limited to CJMKMAX.
(8) When fan is set to “Lo”, compressor rpm will be limited to CBEMAX.
(9) During Cool Dashed, when room temperature reaches set temperature –1°C compressor rpm is actual rpm x DWNRATEC.

Table 2

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Calculated difference</th>
<th>compressor rpm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>66</td>
<td>2265 min⁻¹</td>
</tr>
<tr>
<td>2</td>
<td>33</td>
<td>2600 min⁻¹</td>
</tr>
<tr>
<td>266</td>
<td>66</td>
<td>2765 min⁻¹</td>
</tr>
<tr>
<td>3</td>
<td>33</td>
<td>2935 min⁻¹</td>
</tr>
<tr>
<td>366</td>
<td>66</td>
<td>3100 min⁻¹</td>
</tr>
<tr>
<td>4</td>
<td>33</td>
<td>3265 min⁻¹</td>
</tr>
<tr>
<td>466</td>
<td>66</td>
<td>3435 min⁻¹</td>
</tr>
<tr>
<td>5</td>
<td>33</td>
<td>3600 min⁻¹</td>
</tr>
<tr>
<td>533</td>
<td>66</td>
<td>3765 min⁻¹</td>
</tr>
<tr>
<td>6</td>
<td>433</td>
<td>3935 min⁻¹</td>
</tr>
<tr>
<td>666</td>
<td>433</td>
<td>4100 min⁻¹</td>
</tr>
<tr>
<td>7</td>
<td>433</td>
<td>4265 min⁻¹</td>
</tr>
<tr>
<td>733</td>
<td>433</td>
<td>4435 min⁻¹</td>
</tr>
<tr>
<td>8</td>
<td>466</td>
<td>4600 min⁻¹</td>
</tr>
<tr>
<td>833</td>
<td>466</td>
<td>4765 min⁻¹</td>
</tr>
<tr>
<td>9</td>
<td>4935 min⁻¹</td>
<td></td>
</tr>
<tr>
<td>933</td>
<td>5100 min⁻¹</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>5265 min⁻¹</td>
<td></td>
</tr>
<tr>
<td>1033</td>
<td>5435 min⁻¹</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>5600 min⁻¹</td>
<td></td>
</tr>
<tr>
<td>1133</td>
<td>5765 min⁻¹</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>5935 min⁻¹</td>
<td></td>
</tr>
<tr>
<td>1233</td>
<td>6100 min⁻¹</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>6265 min⁻¹</td>
<td></td>
</tr>
<tr>
<td>1333</td>
<td>6435 min⁻¹</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>6600 min⁻¹</td>
<td></td>
</tr>
<tr>
<td>1433</td>
<td>6765 min⁻¹</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>6935 min⁻¹</td>
<td></td>
</tr>
</tbody>
</table>

Note:
1. See the data in Table 1 on page 45 for each constant in capital letters in the diagrams.
Notes:
(1) The sleep operation starts when the sleep key is pressed.
(2) When the sleep key is set, the maximum compressor speed is limited, and the indoor fan is set to “sleep Lo”.
(3) 30 minutes after the sleep key is set, the sleep shift of temperature starts, and upper shift is made at least 6 times. If 25˚C is not reached after 6 shifts, shifts repeat unit 25˚C is reached.
(4) The sleep shift upper value of set temperature is 28˚C.
(5) After 6 hours, a shift down to the initial set temperature is made at a rate of 0.33˚C/5 min.
(6) If the operation mode is changed during sleep operation, the set temperature is cleared, and shift starts from the point when switching is made.
(7) The indoor fan speed does not change even when the fan speed mode is changed.
(8) When operation is stopped during sleep operation, the set temperature when stopped, as well as the time, continue to be counted.
(9) If the set time is changed during sleep operation, all data including set temperature, time, etc. is cleared and restarted.
(10) If sleep operation is canceled by the cancel key or sleep key, all data is cleared.
Notes:
(1) If the room temperature is (cooling preset temperature) - (1.33°C) or less after 30 seconds from starting the operation, the operation is done assuming as the preset temperature = (room temperature at the time) - (2°C).
(2) The indoor fan is operated in the “Lo” mode. During thermo OFF indoor fan will be OFF for 5 minutes and ON for 1 minute.
(3) When the operation is started by the thermostat turning ON, the start of the indoor fan is delayed 32 seconds after the start of compressor operation.
(4) The compressor is operated forcedly for 3 minutes after operation is started.
(5) The minimum ON time and OFF time of the compressor are 3 minutes.
Basic Heating Operation

Table 3 \( \Delta T_{\text{WMAX}} \)

<table>
<thead>
<tr>
<th>Temperature difference</th>
<th>Compressor rpm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.66</td>
<td>1965 min(^{-1})</td>
</tr>
<tr>
<td>2</td>
<td>2135 min(^{-1})</td>
</tr>
<tr>
<td>2.33</td>
<td>2300 min(^{-1})</td>
</tr>
<tr>
<td>2.66</td>
<td>2465 min(^{-1})</td>
</tr>
<tr>
<td>3</td>
<td>2635 min(^{-1})</td>
</tr>
<tr>
<td>3.33</td>
<td>2800 min(^{-1})</td>
</tr>
<tr>
<td>3.66</td>
<td>2965 min(^{-1})</td>
</tr>
<tr>
<td>4</td>
<td>3135 min(^{-1})</td>
</tr>
<tr>
<td>4.33</td>
<td>3300 min(^{-1})</td>
</tr>
<tr>
<td>4.66</td>
<td>3465 min(^{-1})</td>
</tr>
<tr>
<td>5</td>
<td>3635 min(^{-1})</td>
</tr>
<tr>
<td>5.33</td>
<td>3800 min(^{-1})</td>
</tr>
<tr>
<td>5.66</td>
<td>3965 min(^{-1})</td>
</tr>
<tr>
<td>6</td>
<td>4135 min(^{-1})</td>
</tr>
<tr>
<td>6.33</td>
<td>4300 min(^{-1})</td>
</tr>
<tr>
<td>6.66</td>
<td>4465 min(^{-1})</td>
</tr>
<tr>
<td>7</td>
<td>4635 min(^{-1})</td>
</tr>
<tr>
<td>7.33</td>
<td>4800 min(^{-1})</td>
</tr>
<tr>
<td>7.66</td>
<td>4965 min(^{-1})</td>
</tr>
<tr>
<td>8</td>
<td>5135 min(^{-1})</td>
</tr>
<tr>
<td>8.33</td>
<td>5300 min(^{-1})</td>
</tr>
<tr>
<td>8.66</td>
<td>5465 min(^{-1})</td>
</tr>
<tr>
<td>9</td>
<td>5635 min(^{-1})</td>
</tr>
<tr>
<td>9.33</td>
<td>5800 min(^{-1})</td>
</tr>
<tr>
<td>9.66</td>
<td>5965 min(^{-1})</td>
</tr>
<tr>
<td>10</td>
<td>6135 min(^{-1})</td>
</tr>
<tr>
<td>10.33</td>
<td>6300 min(^{-1})</td>
</tr>
<tr>
<td>10.66</td>
<td>6465 min(^{-1})</td>
</tr>
<tr>
<td>11</td>
<td>6635 min(^{-1})</td>
</tr>
</tbody>
</table>

Notes:

1. See the data in Table 1 on page 45 for each constant in capital letters in the diagrams.

---

Notes:

1. Condition for entering into Hot Dashed mode. When fan set to “Hi” or “Auto mode” and i) Indoor temperature is lower than 18°C, and ii) Outdoor temperature is lower than 10°C, and iii) Temperature difference between indoor temperature and set temperature has a corresponding compressor rpm larger than WMAX.

2. Hot Dashed will release when i) Room temperature has achieved the set temperature + SFTDSW. ii) Thermo off.

3. During Hot Dashed operation, thermo off temperature is set temperature (with shift value) +3°C. After thermo off, operation continue in Fuzzy control mode.

4. Compressor minimum "ON" time and "OFF" time is 3 minutes.

5. During normal heating mode, compressor maximum rpm WMAX will maintain for 120 minutes if indoor temperature is higher than 18°C. No time limit constrain if indoor temperature is lower than 18°C and outdoor temperature is lower than 2°C.

6. During Hotkeep or Defrost mode, indoor operation lamp will blink at interval of 3 seconds "ON" and 0.5 second "OFF".

7. When heating mode starts, it will enter into Hotkeep mode if indoor heat exchanger temperature is lower than YNEOF + 0.33°C.

8. When fan is set to “Med” or “Lo”, compressor rpm will be limited to WBMAX.

9. In “Ultra-Lo” fan mode, if indoor temperature is lower than 18°C, indoor fan will stop. If indoor temperature is higher than 18°C + 0.33°C, fan will continue in “Ultra-Lo” mode. During Hotkeep or Defrost mode, fan will continue in “Ultra-Lo” mode.

10. During Hot Dashed or outdoor temperature is lower than –5°C, compressor rpm is WMAX2.

11. During Hot Dashed, when room temperature reaches set temperature + SFTDSW compressor rpm is actual rpm x DWRATEW.
Reversing Valve Defrosting

Notes:
1. The defrosting inhibit period is set as shown in the diagram below. When defrosting has finished once, the inhibit period is newly set, based on the outdoor temperature when the compressor was started. During this period, the defrost signals are not accepted.
2. If the difference between the room and outdoor temperature is large when defrosting is finished, the maximum compressor speed (WMAX) or (WMN) can be confirmed for 120 minutes maximum.
3. The defrosting period is 1.2 minutes minimum.
4. When operation is stopped during defrosting, it is switched to auto refresh defrosting.
5. Auto refresh defrosting cannot be engaged within 15 minutes after operation is started or defrosting is finished.

Setting Defrosting Inhibit Period

Notes:
1. The first inhibit time after operation start is set to DFTIM1.
2. From the second time onwards, the inhibit time is set according to the time required for defrosting. Reverse cycle operation time ≥ [DEFCOL] : DFTIM1 is set. Reverse cycle operation time < [DEFCOL] : The time corresponding to outdoor temperature is set.

Heating Sleep Operation

Notes:
1. The sleep operation starts when the sleep key is pressed.
2. When the sleep key is set, the maximum compressor speed is limited to WSTD+2000/2, and the indoor fan is set to "sleep Lo".
3. 30 minutes after the sleep key is set, the sleep shift of set temperature starts.
4. The maximum sleep shift of set temperature is 5°C, and the minimum is 12°C.
5. If the operation mode is changed during sleep operation, the changed operation mode is set and sleep control starts.
6. The indoor fan speed does not change even when the fan speed mode is changed. (Lo)
7. When defrosting is to be set during sleep operation, defrosting is engaged and sleep operation is restored after defrosting.
8. The indoor fan speed does not change even when the fan speed mode is changed. (Lo)
9. If the set time is changed during sleep operation, all data including set temperature, time, etc. is cleared and restarted.
10. If sleep operation is canceled by the cancel key or sleep key, all data is cleared.
REFRIGERATING CYCLE DIAGRAM
RAI-25NH5 / RAI-35NH5

Cooling, dehumidifying, defrosting
### AUTO SWING FUNCTION

**MODEL:** RAI-25NH5, RAI-35NH5

<table>
<thead>
<tr>
<th>INPUT SIGNAL</th>
<th>PRESENT CONDITION</th>
<th>OPERATING SPECIFICATION</th>
<th>REFERENCE</th>
</tr>
</thead>
</table>
| KEY INPUT    | STOP              | ONE SWING (CLOSING AIR DEFLECTOR)  
① DOWNWARD  
② UPWARD  
DURING ONE SWING  
STOP AT THE MOMENT. | initialize at next operation. |
|              | EACH MODE         | START SWINGING  
① DOWNWARD  
② UPWARD  
③ Downward | STOP AT THE MOMENT. |
|              | AUTO COOL COOL FAN AUTO DRY DRY | START SWINGING  
① DOWNWARD  
② UPWARD  
③ DOWNWARD | STOP AT THE MOMENT. |
|              | AUTO HEAT HEAT CIRCULATOR | START SWINGING  
① DOWNWARD  
② UPWARD  
③ DOWNWARD | STOP AT THE MOMENT. |
|              | AUTO SWING FUNCTION | STOP SWINGING TEMPORARILY.  
(SWING MODE IS CLEARED IF SWING COMMAND IS TRANSMITTED DURING TEMPORARY STOP.) | |
|              | AUTO DRY DRY AUTO HAET HEAT CIRCULATOR | START SWING AGAIN. | |
|              | MAIN SWITCH ON    | INITIALIZER  
① DOWNWARD  
② UPWARD | |
|              | COOL FAN DRY HEAT CIRCULATOR | STOP SWINGING  
DURING ONE SWING | |
|              | MAIN SWITCH OFF   | INITIALIZER  
① DOWNWARD | |
|              | EACH MODE         | INITIALIZING CONDITION OF EACH MODE. | |
|              | CHANGE OF OPERATION | STOP SWINGING AND MODE BECOMES INITIALIZING CONDITION. | |
The reset circuit initializes the microcomputer program when power is ON or OFF.

- Low voltage at pin 7 resets the microcomputer and Hi activates the microcomputer.
- When power “ON” 5V voltage rises and reaches 4.4V, pin 1 of IC521 is set to “Hi”. At this time the microcomputer starts operation.
- When power “OFF” voltage drops and reaches 4.2V, pin 1 of IC521 is set to “Low”. This will RESET the microcomputer.

Fig. 1-1

Fig. 1-2
2. Receiver Circuit

- The light receiver unit receives the infrared signal from the wireless remote control. The receiver amplifies and shapes the signal and outputs it.

3. Buzzer Circuit

- When the buzzer sounds, an approx. 3.9kHz square signal is output from buzzer output pin \( \text{BZ} \) of the microcomputer. After the amplitude of this signal has been set to 12Vp-p by a transistor, it is applied to the buzzer. The piezoelectric element in the buzzer oscillates to generate the buzzer's sound.
4. Auto Sweep Motor Circuit

- Fig. 4-1 shows the Auto sweep motor drive circuit; the signals shown in Fig.4-2 are output from pins 15 – 22 of microcomputer.

<table>
<thead>
<tr>
<th>Microcomputer pins</th>
<th>Step width</th>
<th>Horizontal air deflectors: 10ms.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horizontal air deflectors</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- As the microcomputer's outputs change as shown in Fig.4-2, the core of the auto sweep motor is excited to turn the rotor. Table 4-1 shows the rotation angle of horizontal air deflectors.

Table 4-1 Auto sweep Motor Rotation

<table>
<thead>
<tr>
<th>Horizontal air deflectors</th>
<th>Rotation angle per step (°)</th>
<th>Time per step (ms.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.0882</td>
<td>10</td>
</tr>
</tbody>
</table>

- The air deflectors are driven by the stepping motors, which are instructed by the microcomputer.
- The air deflectors on the left and right are each driven by two stepping motors.
- The stepping motors and main unit are connected via relay connectors. The air deflectors will not operate unless the relay connectors are connected: Securely connect the relay connectors identified by colors when attaching the panel.
- Before removing the panel for servicing, be sure to disconnect the relay connector to protect the lead wires.
5. Room Temperature Thermistor Circuit

- Fig. 5-1 shows the room temperature thermistor circuit.

- The voltage at ☺ depends on the room temperature as shown in Fig. 5-2.

![Fig. 5-1](image_url)

![Fig. 5-2](image_url)

6. Heat exchanger temperature thermistor circuit

- The circuit detects the indoor heat exchanger temperature and controls the following.

  (1) Preheating.

  (2) Low-temperature defrosting during cooling and dehumidifying operation.

  (3) Detection of the reversing valve non-operation or heat exchanger temperature thermistor open.

The voltage at ☺ depends on the heat exchanger temperature as shown in Fig. 6-2.

![Fig. 6-1](image_url)

![Fig. 6-2](image_url)
7. Initial Setting Circuit (IC401)

- When power is supplied, the microcomputer reads the data in IC401 (E²PROM) and sets the preheating activation value and the rating and maximum speed of the compressor, etc. to their initial values.
- Data of self-diagnosis mode is stored in IC401; data will not be erased even when power is turned off.

![Circuit Diagram](Fig. 7-1)
SERVICE CALL Q & A

Model  RAI-25NH5
     RAI-35NH5

COOLING MODE

Q1 The compressor has stopped suddenly during cooling operation.
A1 Check if the indoor heat exchanger is frosted. Wait for 3-4 minutes until it is defrosted.
A2 If the air conditioner operates in cooling mode when it is cold, the evaporator may get frosted.

DEHUMIDIFYING MODE

Q2 Sound of running water is heard from indoor unit during dehumidifying.
A2 Normal sound when refrigerant flows in pipe.

Q3 Compressor occasionally does not operate during dehumidifying.
A3 Compressor may not operate when room temperature is 10°C or less. It also stops when the humidity is preset humidity or less.

HEATING MODE

Q4 The circulation stops occasionally during Heating mode.
A4 It occurs during defrosting. Wait for 5-10 minutes until the condenser is defrosted.
A5 At the beginning of heating, the fan speed remains LOW for 30 seconds. If HIGH is selected, it switches to LOW and again to MED after additional 30 seconds.

Q5 When the fan speed is set at HIGH or MED, the flow is actually Weak.

Q6 Heating operation stops while the temperature is preset at "30".
A6 If temperature is high in the outdoor, heating operation may stop to protect internal devices.
**AUTO FRESH DEFROSTING**

Q7 After the ON/OFF button is pressed to stop heating, the outdoor unit is still working with the OPERATION lamp lighting.

A7 Auto Fresh Defrosting is carried out: the system checks the outdoor heat exchanger and defrosts it as necessary before stopping operation.

**AUTO OPERATION**

Q8 Fan speed does not change when fan speed selector is changed during auto operation.

A8 At this point fan speed is automatic.

**NICE TEMPERATURE RESERVATION**

Q9 When on-timer has been programmed, operation starts before the preset time has been reached.

A9 This is because “Nice temperature reservation” function is operating. This function starts operation earlier so the preset temperature is reached at the preset time. Operation may start maximum 60 minutes before the preset time.

Q10 Does “Nice temperature reservation” function operate during dehumidifying?

A10 It does not work. It works only during cooling and heating.

Q11 Even if the same time is preset, the operation start time varies.

A11 This is because “Nice temperature reservation” function is operating. The start time varies according to the load of room. Since load varies greatly during heating, the operation start time is corrected, so it will vary each day.

**INFRARED REMOTE CONTROL**

Q12 Timer cannot be set.

A12 Has the clock been set? Timer cannot be set unless the clock has been set.

Q13 The current time display disappears soon.

A13 The current time disappears in approx. 10 seconds. The time set display has priority. When the current time is set the display flashes for approx 3 minutes.

Q14 The timer has been programmed, but the preset time disappears.

A14 Is the current time past the preset time? When the preset time reaches the current time, it disappears.
Q15 The indoor fan varies among high air flow, low air flow and breeze in the auto fan speed mode. (Heating operation)

A15 This is because the cool wind prevention function is operating, and does not indicate a fault.

Q16 Loud noise from the outdoor unit is heard when operation is started.

A16 When operation is started, the compressor rotation speed goes to maximum to increase the heating or cooling capability, so noise becomes slightly louder. This does not indicate a fault.

Q17 Noise from the outdoor unit occasionally changes.

A17 The compressor rotation speed changes according to the difference between the thermostat set temperature and room temperature. This does not indicate a fault.

Q18 There is a difference between the set temperature and room temperature.

A18 There may be a difference between the set temperature and room temperature because of construction of room, air current, etc. Set the temperature at a comfortable for the space.

Q19 Air does not flow immediately after operation is started.

A19 Preliminary operation is performed for one minute when the power switch on and heating or dehumidifying is set. The operation lamp blinks during this time for heating. This does not indicate a fault.
TROUBLESHOOTING WHEN TIMER LAMP BLINKS.
Model RAI-25NH5, RAI-35NH5
Perform troubleshooting according to the number of times the indoor timer lamp and outdoor LD301 blink.

SELF-DIAGNOSIS LIGHTING MODE
Model: RAI-25NH5, RAI-35NH5

<table>
<thead>
<tr>
<th>No.</th>
<th>Timer indicator flashing mode</th>
<th>Reason for display</th>
<th>Section of estimated fault</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><img src="image" alt="Lights" /> 5 sec. – – – – – – Once</td>
<td><strong>Four-way valve faulty</strong>&lt;br&gt;The room heat exchange temperature is low during heating, or it is high during cooling.</td>
<td>(1) Four-way valve faulty.&lt;br&gt;(2) Disconnection in heat exchange thermistor (only during heating)</td>
</tr>
<tr>
<td>2</td>
<td><img src="image" alt="Lights" /> 5 sec. – – – – Twice</td>
<td><strong>Outdoor unit forced operation</strong>&lt;br&gt;The outdoor unit is in forced operation or undergoing balancing after forced operation.</td>
<td>Service SW in outdoor electrical parts turned ON.</td>
</tr>
<tr>
<td>3</td>
<td><img src="image" alt="Lights" /> 3 times</td>
<td><strong>Indoor/outdoor interface faulty</strong>&lt;br&gt;The interface signal from the outdoor unit has been interrupted.</td>
<td>(1) Indoor interface circuit&lt;br&gt;(2) Outdoor interface circuit</td>
</tr>
<tr>
<td>4</td>
<td><img src="image" alt="Lights" /> 4 times</td>
<td>Outdoor electrical assembly defective.</td>
<td>Please check at the outdoor electrical led lamp blinking (LD301) and refer to self diagnosis lighting mode for outdoor unit.</td>
</tr>
<tr>
<td>5</td>
<td><img src="image" alt="Lights" /> 6 times</td>
<td><strong>Abnormal water level detection</strong>&lt;br&gt;All stop when the float switch has been activated.</td>
<td>(1) Drain stopped up&lt;br&gt;(2) Drain pump&lt;br&gt;(3) Float switch</td>
</tr>
<tr>
<td>6</td>
<td><img src="image" alt="Lights" /> 7 times</td>
<td><strong>Drain pump forced operation</strong>&lt;br&gt;When the knob of drain pump test switch at Indoor P.W.B main slide to ‘test’ position.</td>
<td>(1) Indoor P.W.B. Main.</td>
</tr>
<tr>
<td>7</td>
<td><img src="image" alt="Lights" /> 9 times</td>
<td><strong>Room thermistor or heat exchanger thermistor is faulty</strong>&lt;br&gt;When room thermistor or heat exchanger thermistor is opened circuit or short circuit.</td>
<td>(1) Room thermistor&lt;br&gt;(2) Heat exchanger thermistor</td>
</tr>
<tr>
<td>8</td>
<td><img src="image" alt="Lights" /> 10 times</td>
<td><strong>DC fan motor overcurrent detection</strong>&lt;br&gt;Overcurrent in indoor DC fan motor has been detected.</td>
<td>(1) Indoor fan locked&lt;br&gt;(2) Indoor fan motor&lt;br&gt;(3) Indoor P.W.B. Main</td>
</tr>
<tr>
<td>9</td>
<td><img src="image" alt="Lights" /> 13 times</td>
<td><strong>IC401 data reading fault</strong>&lt;br&gt;There was error in the data read from IC401</td>
<td>IC401 faulty</td>
</tr>
</tbody>
</table>

( ![Lights](image) -- Lights for 0.5 sec. at interval of 0.5 sec.)

**<Cautions>**

(1) If the interface circuit is faulty when power is supplied, the self-diagnosis display will not be displayed.
(2) If the indoor unit does not operate at all, check to see if the F-cable is connected or disconnected.
(3) To check operation again when the timer lamp is blinking, you can use the remote control for operation (except for mode mark ※1).
1. Power does not come on (no operation)

Is AC 220-240V AC being generated between terminals L and N on the outdoor unit terminal board?
  - Yes → Is DC 35V being generated between terminals C and D on the outdoor unit terminal board?
    - Yes → Check the indoor/outdoor unit connection cable, and correct any defective section (wrong connection, incomplete insertion reversed).
    - No → Check the outdoor unit power circuit, and repair the defective section.
  - No → Check AC outlet and breaker, and repair any defective part.

Is DC 35V being generated between terminals C and D on the terminal board?
  - No → Are control voltages (12V, 5V) being generated normally?
    - Yes → Check the indication P.W.B. connection cord and light receiving unit.
    - No → Check according to the proper method for checking the power circuit.
  - Yes → Do the air deflectors perform initial operation when the power supply is turned on and off?
    - Yes → Check the reset circuit, and repair any defective section.
    - No → Replace the microcomputer and oscillator.

Is the microcomputer reset input (pin 7) Hi?
  - No → Is the microcomputer clock signal 10MHz at pin 10 being generated normally?
    - Yes → Replace the P.W.B Main
    - No → Perform final operation check.
  - Yes → Replace the P.W.B Main

Perform final operation check.
2. Only indoor fan does not operate (other is normal)

- Is approx 20 V DC generated between pins ② (blue) and ③ (red) of CN 10 when operated at high fan speed during cooling? (Yes/No)
- Are pulses of approx. 33 Vp-p generated at the collectors of Q901 in the fan operation mode? Are collectors of Q903 approx. 0 V? (Yes/No)
- Are microcomputer fan PWM outputs (micro computer pins ⑧) “Hi” or are pulses output in the fan operation mode? (Yes/No)

3. Indoor fan speed does not change (other is normal)

- Has the fan been stopped by remote control? (Yes/No)
- Are microcomputer fan PWM outputs micro computer pins ⑧ “Hi”? (Yes/No)
- Are the collectors of Q903 approx 0 V? (Yes/No)

4. Air deflector does not move (other is normal)

- Is pulse signal output to micro computer pins ⑦~⑩ with air deflector set to auto during cooling? (Yes/No)
- Is there a voltage higher than 15V across C114 (12 V line)? (Yes/No)
5. All systems stop from several seconds to several minutes after operation is started (all indicators are also off)

Set to the "Hi" fan mode.

The operation lamp lights once and goes out in 5-10 seconds.

Yes

Disconnect, CN10 and set to the fan mode again.

The operation lamp lights once and goes out in 5-10 seconds.

Yes

Check to see if shorting, etc. has occurred in the P.W.B. pattern.

No

Check to see if the indoor fan is touching the chassis, etc. If it does, repair.

Can the indoor fan be lightly turned by hand? (Set the power switch to "off" to check.)

Yes

Replace the indoor fan motor.

No
CHECKING THE REMOTE CONTROLLER

Is battery polarity correct?
  - Yes
  - No

Is the battery check sign \(\text{– –}\) flashing?
  - Yes
  - No

Turn on an AM radio, bring the remote control switch within 15 cm of the radio, and press the ON/OFF button.

Does the radio buzz noisily?
  - Yes
  - No

Check the indoor unit signal receiving P.W. B. If it is good, check the main P.W. B.

Check the LED (D1) with a multimeter.

“Buzz”

You can check the remote control switch by other methods as explained below.

Using the test card

Ultra redray test card

Sensible area

Within 2 cm

The sensible area should flash in orange when you operate the remote control unit if it is good.

Check functions again. If it does not work, replace the remote controller.
INDOOR UNIT
MODEL : RAI-25NH5
RAI-35NH5
## MODEL RAI-25NH5

<table>
<thead>
<tr>
<th>NO.</th>
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<td>1</td>
<td>PMRAI-25NH4R R01</td>
<td>1</td>
<td>25W MOTOR</td>
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<td>2</td>
<td>RAMD-350BW 011</td>
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<td>FLOAT SWITCH</td>
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