**Installation Manual**

**IMPORTANT!**

Please Read Before Starting
This air conditioning system meets strict safety and operating standards. As the installer or service person, it is an important part of your job to install or service the system so it operates safely and efficiently. For safe installation and trouble-free operation, you must:

- Carefully read this instruction booklet before beginning.
- Follow each installation or repair step exactly as shown.
- Observe all local, state, and national electrical codes.
- Pay close attention to all danger, warning, and caution notices given in this manual.

**WARNING:** This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.

**CAUTION:** This symbol refers to a hazard or unsafe practice which can result in personal injury and the potential for product or property damage.

*Hazard alerting symbols

![Electrical](image)

![Safety/alert](image)

If Necessary, Get Help
These instructions are all you need for most installation sites and maintenance conditions. If you require help for a special problem, contact our sales/service outlet or your certified dealer for additional instructions.

In Case of Improper Installation
The manufacturer shall in no way be responsible for improper installation or maintenance service, including failure to follow the instructions in this document.

**SPECIAL PRECAUTIONS**

When Wiring

**ELECTRICAL SHOCK CAN CAUSE SEVERE PERSONAL INJURY OR DEATH. ONLY A QUALIFIED, EXPERIENCED ELECTRICIAN SHOULD ATTEMPT TO WIRE THIS SYSTEM.**

- Do not supply power to the unit until all wiring and tubing are completed or reconnected and checked.
- Highly dangerous electrical voltages are used in this system. Carefully refer to the wiring diagram and these instructions when wiring. Improper connections and inadequate grounding can cause accidental injury or death.
- Ground the unit following local electrical codes.

*Connect all wiring tightly. Loose wiring may cause overheating at connection points and a possible fire hazard.*

When Transporting

Be careful when picking up and moving the indoor and outdoor units.
Get a partner to help, and bend your knees when lifting to reduce strain on your back. Sharp edges or thin aluminum fins on the air conditioner can cut your fingers.

When Installing...

- **...In a Ceiling or Wall**
  Make sure the ceiling/wall is strong enough to hold the unit’s weight. It may be necessary to construct a strong wood or metal frame to provide added support.
- **...In a Room**
  Properly insulate any tubing run inside a room to prevent “sweating” that can cause dripping and water damage to walls and floors.
- **...In Moist or Uneven Locations**
  Use a raised concrete pad or concrete blocks to provide a solid, level foundation for the outdoor unit. This prevents water damage and abnormal vibration.
- **...In an Area with High Winds**
  Securely anchor the outdoor unit down with bolts and a metal frame.
- **Provide a suitable air baffle**
  ...In a Snowy Area (for Heat Pump-type Systems)
  Install the outdoor unit on a raised platform that is higher than drifting snow. Provide snow vents.

When Connecting Refrigerant tubing

Keep all tubing runs as short as possible. Use the flare method for connecting tubing.

Apply refrigerant lubricant to the matching surfaces of the flare and union tubes before connecting them, then tighten the nut with a torque wrench for a leak-free connection.

Check carefully for leaks before starting the test run.

**NOTE:**

Depending on the system type, liquid and gas lines may be either narrow or wide. Therefore, to avoid confusion the refrigerant tubing for your particular model is specified as either “small” or “large” rather than as “liquid” or “gas.”

When Servicing

Turn the power OFF at the main circuit breaker panel before opening the unit to check or repair electrical parts and wiring. Keep your fingers and clothing away from any moving parts.

Clean up the site after you finish, remembering to check that no metal scraps or bits of wiring have been left inside the unit being serviced.

After installation, explain correct operation to the customer, using the operating manual.
Installation Manual

This air conditioner uses new refrigerant HFC (R410A)
The basic installation work procedures are the same as conventional refrigerant (R22) models.
However, pay careful attention to the following points:

(1) Since the working pressure is 1.6 times higher than that of conventional refrigerant (R22) models, some of the piping and installation and service tools are special. (See the table below.)
Especially, when replacing a conventional refrigerant (R22) model with a new refrigerant R410A model, always replace the conventional piping and flare nuts with the R410A piping and flare nuts.

(2) Models that use refrigerant R410A have a different charging port thread diameter to prevent erroneous charging with conventional refrigerant (R22) and for safety. Therefore, check beforehand. [The charging port thread diameter for R410A is 1/2 threads per inch.]

(3) Be more careful that foreign matter (oil, water, etc.) does not enter the piping than with refrigerant (R22) models. Also, when storing the piping, securely seal the opening by pinching, taping, etc.

(4) When charging the refrigerant, take into account the slight change in the composition of the gas and liquid phases, and always charge from the liquid phase side whose composition is stable.

Special tools for R410A

<table>
<thead>
<tr>
<th>Tool name</th>
<th>Contents of change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gauge manifold</td>
<td>Pressure is high and cannot be measured with a conventional gauge. To prevent erroneous mixing of other refrigerants, the diameter of each port has been changed. It is recommended the gauge with seals: 0.1 to 5.3 MPa (-1 to 53 bar) for high pressure; 0.1 to 3.8 MPa (-1 to 38 bar) for low pressure.</td>
</tr>
<tr>
<td>Charge hose</td>
<td>To increase pressure resistance, the hose material and base size were changed.</td>
</tr>
<tr>
<td>Vacuum pump</td>
<td>A conventional vacuum pump can be used by installing a vacuum pump adapter.</td>
</tr>
<tr>
<td>Gas leakage detector</td>
<td>Special gas leakage detector for HFC refrigerant R410A.</td>
</tr>
</tbody>
</table>

Copper pipes
It is necessary to use seamless copper pipes and it is desirable that the amount of residual oil is less than 40 mg/10m. Do not use copper pipes having a collapsed, deformed or discolored portion (especially on the interior surface). Otherwise, the expansion value or capillary tube may become blocked with contaminants.
As an air conditioner using R410A incurs pressure higher than when using R22, it is necessary to choose adequate materials. Thicknesses of copper pipes used with R410A are as shown in the table. Never use copper pipes thinner than that in the table even when it is available on the market.

⚠️ WARNING

(1) Do not use the existing (for R22) piping and flare nuts.
   • If the existing materials are used, the pressure inside the refrigerant cycle will rise and cause breakage, injury, etc. (Use the special R410A materials.)

(2) When installing and relocating the air conditioner, do not mix gases other than the specified refrigerant (R410A) to enter the refrigerant cycle.
   • If air or other gas enters the refrigerant cycle, the pressure inside the cycle will rise to an abnormally high value and cause breakage, injury, etc.

⚠️ WARNING

When installing pipes shorter than 10 ft (3m), sound of the outdoor unit will be transferred to the indoor unit, which will cause large operating sound or some abnormal sound.
Installation Manual

GENERAL
This INSTALLATION MANUAL briefly outlines where and how to install the air conditioning system. Please read over the entire set of instructions for the indoor and outdoor units and make sure all accessory parts listed are with the system before beginning.

1. TYPE OF COPPER PIPE AND INSULATION MATERIAL
Copper tubing for connecting the outdoor unit to the indoor unit and insulation material is available for purchase locally. When you purchase them, please specify the following:
A. Desoldered annealed copper pipe for refrigerant piping as:

<table>
<thead>
<tr>
<th>Outer Diameter - Thickness</th>
<th>Outer Diameter - Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;(6.35 mm)-1/32&quot;(0.8 mm)</td>
<td>1/2&quot;(12.7 mm)-1/32&quot;(0.8 mm)</td>
</tr>
<tr>
<td>3/8&quot;(9.52 mm)-1/32&quot;(0.8 mm)</td>
<td>5/8&quot;(15.88 mm)-0.0393&quot;(1.0 mm)</td>
</tr>
</tbody>
</table>

Cut each pipe to the appropriate length +12" (30 cm) to 16" (40 cm) to dampen vibration between units.
B. Foamed polyethylene insulation for copper pipes as required to precise length of piping. Wall thickness of the insulation should not be less than 5/16" (8 mm).
C. Use insulated copper wire for field wiring.

WARNING
Check local electrical codes and regulations before obtaining wire. Also, check any specified instructions or limitations.

2. ADDITIONAL MATERIALS REQUIRED FOR INSTALLATION
A. Refrigeration (armored) tape
B. Insulated staples or clamps for connecting wire
C. Putty
D. Refrigeration lubricant
E. Clamps or saddles to secure refrigerant piping

3. OPERATING RANGE

<table>
<thead>
<tr>
<th>Outdoor temperature</th>
<th>Cooling/Dry Mode</th>
<th>Heating Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>0°F(-18°C) to 120°F(49°C)</td>
<td>0°F(-18°C) to 120°F(49°C)</td>
<td></td>
</tr>
<tr>
<td>Indoor temperature</td>
<td>10°F(-12°C) to 120°F(49°C)</td>
<td></td>
</tr>
<tr>
<td>Indoor humidity</td>
<td>80%</td>
<td></td>
</tr>
</tbody>
</table>

ADDITIONAL CHARGE
Refrigerant suitable for a piping length of 25 ft (7.5 m) is charged in the outdoor unit at the factory. When the piping is longer than 25 ft (7.5 m), additional charging is necessary. For the additional amount, see the table below.

<table>
<thead>
<tr>
<th>Pipe length</th>
<th>25 ft (7.5 m)</th>
<th>35 ft (10.6 m)</th>
<th>49 ft (15 m)</th>
<th>60 ft (18 m)</th>
<th>83 ft (25 m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional refrigerant</td>
<td>None</td>
<td>1 oz (25 g)</td>
<td>3 oz (85 g)</td>
<td>3 oz (85 g)</td>
<td>5 oz (150 g)</td>
</tr>
</tbody>
</table>

Between 25 ft (7.5 m) and 49 ft (15 m), when using a connection refrigerant other than that in the table, charge additional refrigerant with 0.7 oz/3.3 ft (20g/1 m) as the criteria.

CAUTION
(1) When adding refrigerant, add the refrigerant from the charging port at the completion of work.
(2) The maximum length of the piping is 15 ft if the units are further apart than this, correct operation cannot be guaranteed.

STANDARD ACCESSORIES
The following installation accessories are supplied. Use them as required.

<table>
<thead>
<tr>
<th>Name and Shape</th>
<th>Q'ty</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wall hook bracket</td>
<td>1</td>
<td>For indoor unit installation</td>
</tr>
<tr>
<td>Remote controller</td>
<td>1</td>
<td>Use for air conditioner operation</td>
</tr>
<tr>
<td>Battery</td>
<td>2</td>
<td>For remote control unit</td>
</tr>
<tr>
<td>Cloth tape</td>
<td>1</td>
<td>For indoor unit installation</td>
</tr>
<tr>
<td>Remote controller holder</td>
<td>1</td>
<td>Use as remote controller holder, not for option</td>
</tr>
<tr>
<td>Tapping screw (large)</td>
<td>8</td>
<td>For wall hook bracket installation</td>
</tr>
<tr>
<td>Tapping screw (small)</td>
<td>2</td>
<td>For remote controller holder installation</td>
</tr>
</tbody>
</table>

The following items are necessary to install this air conditioner. (The items are not included with the air conditioner and must be purchased separately.)

<table>
<thead>
<tr>
<th>Name</th>
<th>Q'ty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection pipe assembly</td>
<td>1</td>
</tr>
<tr>
<td>Connection cord (4-conductor)</td>
<td>1</td>
</tr>
<tr>
<td>Wall pipe</td>
<td>1</td>
</tr>
<tr>
<td>Decorative tape</td>
<td>1</td>
</tr>
<tr>
<td>Vinyl tape</td>
<td>1</td>
</tr>
<tr>
<td>Wall cap</td>
<td>1</td>
</tr>
<tr>
<td>Saddle</td>
<td>1 set</td>
</tr>
<tr>
<td>Drain hose</td>
<td>1</td>
</tr>
<tr>
<td>Tapping screws</td>
<td>1 set</td>
</tr>
<tr>
<td>Sealant</td>
<td>1</td>
</tr>
</tbody>
</table>

ELECTRICAL REQUIREMENTS
Always make the air conditioner power supply a special branch circuit and provide a special switch and receptacle. Do not extend the power cord.

WARNING

<table>
<thead>
<tr>
<th>Minimum Circuit Capacity</th>
<th>2KBTU</th>
<th>1K BTU</th>
<th>1.5K BTU</th>
<th>2KBTU</th>
<th>3K BTU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Overcurrent Protection (Time Delay Fuse or Manual Type Circuit Breaker)</td>
<td>15A</td>
<td>20A</td>
<td>20A</td>
<td>25A</td>
<td>30A</td>
</tr>
</tbody>
</table>
SELECTING THE MOUNTING POSITION

Decide the mounting position with the customer as follows:

1. INDOOR UNIT
   (1) Install the indoor unit level on a strong wall which is not subject to vibration.
   (2) The inlet and outlet ports should not be obstructed: the air should be able to blow all over the room.
   (3) Install the unit near an electric outlet or special branch circuit.
   (4) Do not install the unit where it will be exposed to direct sunlight.
   (5) Install the unit where the drain pipe can be easily installed.
   (7) Take servicing, etc., into consideration and leave the spaces shown in (Fig. 2). Also install the unit where the filter can be removed.

2. OUTDOOR UNIT
   (1) If possible, do not install the unit where it will be exposed to direct sunlight. (If necessary, install a blind that does not interfere with the air flow.)
   (2) Do not install the unit where a strong wind blows or where it is very dusty.
   (3) Do not install the unit where people pass.
   (4) Take your neighbors into consideration so that they are not disturbed by air blowing into their windows or by noise.
   (5) Provide the space shown in Fig. 2 so that the air flow is not blocked. Also for efficient operation, leave open three of the four directions front, rear, and both sides.

⚠️ WARNING
Install at a place that can withstand the weight of the indoor and outdoor units and install positively so that the units will not topple or fall.

⚠️ CAUTION
(1) Do not install where there is the danger of combustible gas leakage.
(2) Do not install near heat sources.
(3) If children under 10 years old may approach the unit, take preventive measures so that they cannot reach the unit.

[Indoor unit piping direction]
The piping can be connected in the 6 directions indicated in (Fig. 6). When the piping is connected in direction 2, 3, 4 or 5, cut along the piping groove in the side of the front cover with a hacksaw.

Fig. 6
220V, 50HZ  230V, 60HZ

Put the wood block with the thickness above 20mm between the wall and connecting pipe, or cover connecting pipe with bonding tape of 7 or 8 layers, when install connecting pipe on the wall that is metallic net or thin armor plate.

The left-side must spacious if only 45-50cm distance at back.

Connect 240cm

Above 9cm

Above 10cm

Above 15cm

Above 50cm

Above 60cm

Cable Tie

Connecting Pipe

Pressure High Valve

Low Pressure Valve

Charge Device

Timer Operation (Timer-on/Timer-off)

Liquid valve

Gas valve

Spanner

Valve Key

Drain tube

WATERPROOFING COVER

SIGNAL CORE

SIGNAL CORE

L1 L2 G L1 L2 1 0
Installation Manual

INDOOR UNIT

1. CUTTING THE HOLE IN THE WALL FOR THE CONNECTING PIPING
   (1) Cut a 3-2/16"(80 mm) diameter hole in the wall at the position shown in (Fig.1).
   (2) When cutting the wall hole at the inside of the installation frame, cut the hole within the range of the left and right center marks 3/8"(10 mm) below the installation frame.
   When cutting the wall hole at the outside of the installatin frame, cut the hole at least 3/8"(10 mm) below less.
   (3) Cut the hole so that the outside end is lower 3/16" to 3/8" (5 to 10 mm) than the inside end.
   (4) Always align the center of the wall hole. If misaligned, water leakage will occur.
   (5) Cut the wall pipe to match the wall thickness, stick it into the wall cap, fasten the cap with vinyl tape, and stick the pipe through the hole (The connection pipe is supplied in the installation set.) (Fig. 1)
   (6) For left piping and right piping, cut the hole a little lower so that drain water will flow freely. (Fig. 1)

2. INSTALLING THE WALL HOOK BRACKET
   (1) Install the wall hook bracket so that it is correctly positioned horizontally and vertically. If the wall hook bracket is tilted, water will drip to the floor.
   (2) Install the wall hook bracket so that it is strong enough to withstand the weight of an adult.
   ● Fasten the wall hook bracket to the wall with 6 or more screws through the holes near the outer edge of the bracket.
   ● Check that there is no rattle at the wall hook bracket.

   **WARNING**
   If the wall pipe is not used, the cord interconnecting the indoor and outdoor units may touch metal and cause electric leakage.

   **CAUTION**

   Install the wall hook bracket horizontally and perpendicularly.

3. FORMING THE DRAIN HOSE AND PIPE
   [Rear piping, Right piping, Bottom piping]
   * Install the indoor unit piping in the direction of the wall hole and bind the drain hose and pipe together with vinyl tape. (Fig. 3)
   * Install the piping so that the drain hose is at the bottom.
   * Wrap the pipes of the indoor unit that are visible from the outside with decorative tape.
   [For Left rear piping, Left piping]
   Interchange the drain cap and the drain hose.

   **WARNING**
   (1) In order to align the drain hose and drain cap, be sure to insert securely and vertically. Inclined insertion will cause water leakage.
   (2) When inserting, be sure not to attach any material besides water. If any other material is attached, it will cause deterioration and water leakage.
   (3) After removing drain hose, be sure not to forget mounting drain cap.
   (4) Be sure to fix the drain hose with tape to the bottom of piping.
   (5) Prevent drain water frozen under low temperature environment. When installing indoor unit's drain hose outdoors, necessary measure for frost protection should be taken to prevent drain water frozen.
4. CONNECTING THE PIPING

CONNECTION
(1) Install the outdoor unit wall cap (supplied with the optional installation set or procured at the site) to the wall pipe.
(2) Connect the outdoor unit and indoor unit piping.
(3) After matching the center of the flare surface and tightening the nut hand tight, tighten the nut to the specified tightening torque with a torque wrench. (Tighten the flare nut of the outdoor unit 3-way valve after air purging.)

FLARING
(1) Cut the connection pipe to the necessary length with a pipe cutter.
(2) Hold the pipe downward so that cuttings will not enter the pipe and remove the burrs.
(3) Insert the flare nut onto the pipe and flare the pipe with a flaring tool.

BENDING PIPES

The pipes are shaped by your hands. Be careful not to collapse them.
Do not bend the pipes in an angle more than 90°.
When pipes are repeatedly bent or stretched, the material will harden, making it difficult to bend or stretch them any more.
Do not bend or stretch the pipes more than three times.

<table>
<thead>
<tr>
<th>Flare nut tightening torque</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Flare size</th>
<th>Tightening torque</th>
<th>Tightening torque standard using a 20 cm wrench</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot; (6.35 mm)dia.</td>
<td>11.57 to 13.62 ft-lbs (160 to 196 kgf·cm)</td>
<td>Width strength</td>
</tr>
<tr>
<td>3/8&quot; (9.52 mm)dia.</td>
<td>21.70 to 30.35 ft-lbs (290 to 415 kgf·cm)</td>
<td>Arm strength</td>
</tr>
<tr>
<td>1/2&quot; (12.7 mm)dia.</td>
<td>36.57 to 59.71 ft-lbs (500 to 815 kgf·cm)</td>
<td></td>
</tr>
<tr>
<td>5/8&quot; (15.88 mm)dia.</td>
<td>46.6 to 65.3 ft-lbs (620 to 750 kgf·cm)</td>
<td></td>
</tr>
</tbody>
</table>

CAUTION

(1) Fasten a flare nut with a torque wrench as instructed in this manual. If fastened too tight, the flare nut may be broken after a long period of time and cause a leakage of refrigerant.
(2) During installation, make sure that the refrigerant pipe is attached firmly before you run the compressor. Do not operate the compressor under the condition of refrigerant piping not attached properly with 2-way or 3-way valve open. This may cause abnormal pressure in the refrigeration cycle that leads to breakage and even injury.
OUTDOOR UNIT
OUTDOOR UNIT INSTALLATION

- Set the unit on a strong stand, such as one made of concrete blocks to minimize shock and vibration.
- Do not set the unit directly on the ground because it will cause trouble.

Connect cover removal
- Remove the two mounting screws.

Installing the connector cover
1. After inserting the three front hooks, then insert the rear hook.
2. Tighten the two mounting screws.

WARNING
Always use the screws as shown above. Do not select the top and bottom screws incorrectly.

AIR PURGE
Always use a vacuum pump to purge the air.
Refrigerant for purging the air is not charged in the outdoor unit at the factory.
Close the high pressure side valve of the gauge manifold fully and do not operate it during the following work.

1. Check if the piping connections are secure.
2. Check that the stems of 2-way valve and 3-way valve are closed fully.
3. Connect the gauge manifold charge hose to the charging port of the 3-way valve (side with the projection for pushing in the valve core).
4. Open the low pressure side valve of the gauge manifold fully.
5. Operate the vacuum pump and start pump down.
6. Slowly loosen the flare nut of the 3-way valve and check if air enters, then retighten the flare nut. (When the flare nut is loosened the operating sound of the vacuum pump changes and the reading of the compound pressure gauge goes from minus to zero.)
7. Pump down the system for at least 15 minutes, then check if the compound pressure gauge reads -0.1 MPa (-76 cmHg, -1 bar).
8. At the end of pump down, close the low pressure side gauge of the gauge manifold fully and stop the vacuum pump.
9. Slowly loosen the valve stem of the 3-way valve. When the compound pressure gauge reading reaches 0.1-0.2 MPa, retighten the valve stem and disconnect the charge hose from the 3-way valve charging port.
   (If the stem of the 3-way valve is opened fully before the charge hose is disconnected, it may be difficult to disconnect the charge hose.)

Table 6

<table>
<thead>
<tr>
<th>Part</th>
<th>Tightening torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blank cap (2-way valve)</td>
<td>14.47 to 18.08 ft-lbs (200 to 250 kgf-cm)</td>
</tr>
<tr>
<td>Blank cap (3-way valve)</td>
<td>20.25 to 23.15 ft-lbs (280 to 320 kgf-cm)</td>
</tr>
<tr>
<td>Charging port cap</td>
<td>9.04 to 11.57 ft-lbs (125 to 160 kgf-cm)</td>
</tr>
</tbody>
</table>
Installation Manual

Installation of Quick Connector Between Indoor and Outdoor Unit

Take off the plastic covers on quick connectors. Insert the movable part in the fixed part.

Push down the handle.

A simultaneous and leak-free connection of the two lines is achieved.

Piping Connection

- Take off the waterproofing cover of the outdoor unit valve.
- Connect the speedy tie-in to the outdoor unit valve. Tighten them with 2 spanners.
- Remove the cap of two valves with the spanner.
- Open the liquid valve and gas valve with valve key.
- Tighten the cap of two valves.
- Gas leakage inspection: After connecting the piping, checking the joints for gas leakage with gas leakage carefully. Soap water or electrical detector can be used for gas leakages.
Installation Manual

- If the air conditioner needs to be disconnected and moved to another place, please recycle the gas back into the compressor according to the following steps before doing the disconnecting:

1. Start the a/c, operate cooling state.
2. Remove the cap of two valves with the spanner.

![Diagram showing liquid and gas valves with valve keys]

3. Tighten the core of the liquid valve (the smaller one) with valve key at first. After about 20 seconds, tighten the core of the gas (the bigger one) with valve key. Turn off the a/c at once and cut off the power supply.

![Diagram with 20 seconds timer between liquid and gas valve tightening]

4. Tighten the cap of two valves.

![Diagram showing liquid valve adjusted]

5. Disconnect the power cable from outdoor unit.
6. Loose the nut of the connect pipe to the outdoor unit valve with 2 spanner, disconnect the connect pipe and the two valves.

![Diagram showing pneumatic connections and valves]
Installation Manual

Indoor Unit Electrical Wiring

1. Remove the screws, then remove the cord clamp.
2. Connect connection cord to the terminal. Refer to the wiring diagram.
3. Use the screws to install the cord clamp.

220v/50hz power

HOW TO CONNECT WIRING TO THE TERMINALS

A. For solid core wiring (or F-cable)
   (1) Cut the wire end with a wire cutter or wire-cutting pliers,
       then strip the insulation to about 15/16" (25 mm) to expose
       the solid wire.
   (2) Using a screwdriver, remove the terminal screw(s) on the
       terminal board.
   (3) Using pliers, bend the solid wire to form a loop suitable
       for the terminal screw.
   (4) Shape the loop wire properly, place it on the terminal
       board and tighten securely with the terminal screw using
       a screwdriver.

B. For strand wiring
   (1) Cut the wire end with a wire cutter or wire-cutting pliers,
       then strip the insulation to about 3/8" (10 mm) to expose
       the strand wiring.
   (2) Using a screwdriver, remove the terminal screw(s) on the
       terminal board.
   (3) Using a round terminal fastener or pliers, securely clamp
       a round terminal to each stripped wire end.
   (4) Position the round terminal wire, and replace and tighten
       the terminal screw using a screwdriver.

(1) Match the terminal block numbers and connection cord colors with those of the outdoor unit. Erroneous wiring may cause burning of the electric parts.

(2) Connect the connection cords firmly to the terminal block. Imperfect installation may cause a fire.

(3) Always fasten the outside covering of the connection cord with the cord clamp. (If the insulator is chafed, electric leakage may occur.)

(4) Securely earth the power cord plug.

(5) Do not use the earth screw for an external connector. Only use for interconnection between two units.
Installation Manual

Outdoor Unit Electrical Wiring

- Remove the electric box access cover.
- Connect the electric cable to the terminal by the number.
- Secure the cables with cable clamp.
- Fix back the access cover.

![Wiring Diagram](image)

**WARNING**

- Be sure to comply with local codes while running the wire from the indoor unit to the outdoor unit (size of wire and wiring method, etc.).
- Every wire must be connected firmly.
- No wire should be allowed to touch refrigerant tubing, the compressor or any moving part.
- Loose wiring may cause the terminal to overheat or result in unit malfunction. A fire hazard may also exist. Therefore, be sure all wiring is tightly connected.
- Connect wires to the matching numbers & colors of terminals.

**CAUTION**

- The power source capacity must be the sum of the air conditioner current and the current of other electrical appliances. When the current contracted capacity is insufficient, change the contracted capacity.
- When the voltage is low and the air conditioner is difficult to start, contact the power company the voltage raised.

**POWER**

1. The rated voltage of this product is 220V AC50Hz for European country, 220V AC60Hz for USA/CANADA.
2. Before turning on the power, check if the voltage is within the rated voltage ±10%.
3. Always use a special branch circuit and install a special receptacle to supply power to the room air conditioner.
4. Use a circuit breaker and receptacle matched to the capacity of the air conditioner.
5. Do not extend the power cord.
6. Perform wiring work in accordance with standards so that the air conditioner can be operated safely and positively.
7. Install a leakage circuit breaker in accordance with the related laws and regulations and electric company standards.

**CUSTOMER GUIDANCE**

- Explain the following to the customer in accordance with the operating manual:
  1. Starting and stopping method, operation switching, temperature adjustment, timer, air flow switching, and other remote control unit operations.
  2. Air filter removal and cleaning, and how to use the air louvers.
  3. Give the operating and installation manuals to the customer.

**PUMP DOWN OPERATION**

To avoid discharging refrigerant into the atmosphere at the time of relocation or disposal, remove refrigerant by doing the following procedure:
1. Do the air purging of the charge hose by connecting the charging hose of gauge manifold to the charging port of 3-way valve and opening the low-pressure valve slightly.
2. Close the valve stem of 2-way valve completely.
3. Start the cooling operation. When using the remote control unit Press the MODE button after starting the cooling operation by the remote control unit.
4. Close the valve stem of 3-way valve when the reading on the compound pressure gage becomes 0.05-0 Mpa (0.5-0 kg/cm²).
5. Stop the operation.
   - Press the START/STOP button of the remote control unit to stop the operation.

During the pump-down operation, make sure that the compressor is turned off before you remove the refrigerant piping. Do not remove the connection pipe while the compressor is in operation with 2 way or 3 way valve open. This may cause abnormal pressure in the refrigeration cycle that leads to breakage and even injury.
Drain Piping

- The drain pipe should point downward for easy drain flow. (Fig. 1)
  Do not make drain piping as shown in Fig. 2 to 5.

- If the piping runs to the left as shown in the right figure, seal the drain port on the right with the plug and connect the drain pipe on the left.
  Check that:
  1) The top and bottom hooks are hooked firmly.
  2) The main unit is accurately positioned horizontally and vertically. If the unit is not installed properly, water will drip onto the floor.
  3) The drain pipe is not bent upwards as shown in the figure.

- Connect the drain pipe with extension drain hose.
  If the extension drain pipe has to pass through a room, be sure to wrap with commercially soil insulation.

TEST RUNNING

- Perform test operation and check items 1 and 2 below.
- For the test operation method, refer to the operating manual.
- The outdoor unit may not operate, depending on the room temperature. In this case, press the test run button on the remote control unit while the air conditioner is running. (Use a metallic object to short the two metal contacts under the battery compartment lid and send the "TEST RUN" signal from the remote control unit.)
- To end test operation, press the remote control unit START/STOP button. (When the air conditioner is run by pressing the test run button, the OPERATION indicator lamp and TIMER indicator lamp will simultaneously flash slowly.)

1. INDOOR UNIT
   (1) Is operation of each button on the remote control unit normal?
   (2) Does each lamp light normally?
   (3) Do the air flow-direction louvers operate normally?
   (4) Is the drain normal?

2. OUTDOOR UNIT
   (1) Is there any abnormal noise and vibration during operation?
   (2) Will noise, wind, or drain water from the unit disturb the neighbors?
   (3) Is there any gas leakage?
SAFETY PRECAUTIONS

⚠️ WARNING

Do not attempt to install this air conditioner by yourself.

This unit contains no user-serviceable parts. Always consult authorized service personnel for repairs.

When moving, consult authorized service personnel for disconnection and installation of the unit.

Do not become excessively chilled by staying for lengthy periods in the direct cooling airflow.

Do not insert fingers or objects into the outlet port or intake grilles.

Do not start and stop air conditioner operation by disconnecting the power supply cord and so on.

Take care not to damage the power supply cord.

In the event of a malfunction (burning smell, etc.), immediately stop operation, disconnect the power supply plug, and consult authorized service personnel.

If the power supply cord of this appliance is damaged, it should only be replaced by the manufacturer, their service personnel, or persons similarly qualified to prevent accidental hazard.

⚠️ CAUTION

Provide occasional ventilation during use.

Do not direct air flow at fireplaces or heating apparatus.

Do not climb on, or place objects on, the air conditioner.

Do not hang objects from the indoor unit.

Do not set flower vases or water containers on top of air conditioners.

Do not expose the air conditioner directly to water.

Do not operate the air conditioner with wet hands.

Do not pull power supply cord.

Turn off power source when not using the unit for extended periods.

Check the condition of the installation stand for damage.

Do not place animals or plants in the direct path of the air flow.

Do not drink the water drained from the air conditioner.

Do not use in applications involving the storage of foods, plants or animals, precision equipment, or art works.

Do not apply any heavy pressure to radiator fins.

Operate only with air filters installed.

Do not block or cover the intake grille and outlet port.

Ensure that any electronic equipment is at least one metre away from either the indoor or outdoor units.

Avoid installing the air conditioner near a fireplace or other heating apparatus.

When installing the indoor and outdoor unit, take precautions to prevent access to infants.

Do not use inflammable gases near the air conditioner.
Operation Manual

INDOOR UNIT

Air inlet grille
Takes in the indoor air.

Up/down air flow direction adjusting flap

Obstruct air flow direction adjusting fin

Air outlet
Air blows out from here.

Air filter
Removes dust or dirt out of the inlet air.

Room temperature detector

Manual operation button
9000,12000Btu

Manual operation button
Signal receiver
18000Btu

LED display

Digital display
Celsius degree lamp
(Yellow/green)

Cooling lamp(red)
Cooling only circulation lamp (green)

Signal receiver
(only for 09,12)

Fahrenheit degree lamp
(yellow)

Cooling lamp(blue)

Dehumidify lamp

Timer lamp(Orange)

Drain hose
Drains the water dehumidified out of the air.

Wireless remote controller

Air inlet
(at side & rear surface)

Refrigerant piping connection,
Electric wiring cord

Air outlet

How to open

Push down the air inlet grille and then push both sides of air inlet grille at the bottom.

NOTE
Do not open the air inlet grille more than 90°. Also refrain from exerting undue stress on it.

Lightly push both sides of the air inlet grille at the bottom and pull it up side till a resistance is felt.
Descriptions of Parts

Indoor Unit

Outdoor Unit

The figures of indoor unit and outdoor are only simple presentation of the appearance of the application; it may not conform with actual one you purchased.
<table>
<thead>
<tr>
<th>NO.</th>
<th>NAME</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Top panel</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Back grill</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Outdoor fan</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Condenser</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Handle</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Front grill</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>Front panel</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>Bottom plate</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>Filter capacitor</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>Partition board</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>Reactor</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>Compressor jacket</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>Compressor</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>Outdoor motor</td>
<td>1</td>
</tr>
<tr>
<td>15</td>
<td>Reversing valve</td>
<td>1</td>
</tr>
<tr>
<td>16</td>
<td>Valve plate</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NO.</th>
<th>NAME</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>Gas valve</td>
<td>1</td>
</tr>
<tr>
<td>18</td>
<td>Liquid valve</td>
<td>1</td>
</tr>
<tr>
<td>19</td>
<td>Capillary</td>
<td>1</td>
</tr>
<tr>
<td>20</td>
<td>Rev valve coil</td>
<td>1</td>
</tr>
<tr>
<td>21</td>
<td>Side panel</td>
<td>1</td>
</tr>
<tr>
<td>22</td>
<td>Access plate</td>
<td>1</td>
</tr>
<tr>
<td>23</td>
<td>Capacitor clips</td>
<td>1</td>
</tr>
<tr>
<td>24</td>
<td>Compressor capacitor</td>
<td>1</td>
</tr>
<tr>
<td>25</td>
<td>Wire clip</td>
<td>1</td>
</tr>
<tr>
<td>26</td>
<td>Electric box</td>
<td>1</td>
</tr>
<tr>
<td>27</td>
<td>Fan motor capacitor</td>
<td>1</td>
</tr>
<tr>
<td>28</td>
<td>Outdoor PCB</td>
<td>1</td>
</tr>
<tr>
<td>29</td>
<td>Module</td>
<td>1</td>
</tr>
<tr>
<td>30</td>
<td>Radiator</td>
<td>1</td>
</tr>
<tr>
<td>31</td>
<td>Motor bracket</td>
<td>1</td>
</tr>
</tbody>
</table>
PREPARING FOR OPERATION

Remote controller (setting clock)

1. Open the rear cover, put the batteries in.

2. Press the RESET button. Use a thin stick.

3. Press the CLOCK button.

4. Press the UP ▲ button for HR. and the DOWN ▼ button for MIN. to set the time.
   Press UP.▲ Once, the time change one hour.
   Press DOWN. ▼ once, the time change one minute.

5. Press the SET again, the setting time confirm, then closing the rear cover.

Never mix new and used batteries, or batteries of different types.
Batteries should last about one year under normal use.

* CAUTION *

Take care to prevent infants from accidentally swallowing batteries.
When not using the remote control unit for an extended period, remove the batteries to avoid possible leakage and damage to the unit.

If leaking battery fluid comes in contact with your skin, eyes, or mouth, immediately wash with copious amounts of water, and consult your physician.

Dead batteries should be removed immediately and disposed of properly, either in a battery collection receptacle or to the appropriate authority.

Do not attempt to recharge dry batteries.
Select the mode, and you can adjust the temp. or air direction.

- Press ON/OFF button.

- Please MODE to select the running mode.

  Press once, the mode change as the sequence:
  Auto - Cooling - Dehumidifying - Heating (only for heating pump type) - Ventilation.

Need to stop

- Press the ON/OFF button again.

  If you have set the mode, the next time you press ON/OFF button, the machine will run as before.

Need to change the temperature.

- Want to lower the temperature, please press the DOWN button once, it will lower 1°C/1°F.

- Want to upper the temperature, please press the UP button once, it will upper 1°C/1°F.

Heating operation (only for heating pump type)

- When the machine works hard with low outdoor ambient temperature, the outdoor fan motor will stop, and the condenser will defrost for a while, it is not a problem.

Dehumidifying operation

- The temperature can be set automatically, not be changed. The machine works at the temperature lower the room temperature a little.

If the doors/windows of the room not well closed, the ambient temperature too hot or too cold, then the room temperature will not reach the setting temperature.
Please set this function when you want a quiet environment to rest.

**To start sleep operation:**

- Press SLEEP button, there will have on the remote controller.

**To cancel sleep operation:**

- Press SLEEP button again.

- The air flowing sound from the indoor unit becomes lowest immediately.

- In sleep operation, if SLEEP button is pressed by any time, the sleep operation will be cancelled.

**During Heating operation:**

When the SLEEP timer is set, the thermostat setting is automatically lowered \(1{\degree}C\) (\(2{\degree}F\)) every thirty minutes. When the thermostat has been lowered a total of \(4{\degree}C\) (\(8{\degree}F\)), the thermostat setting at that time is maintained until the set time has elapsed, at which time the air conditioner automatically turns off.

**During Cooling/Dry operation:**

When the SLEEP timer is set, the thermostat setting is automatically raised \(1{\degree}C\) (\(2{\degree}F\)) every sixty minutes. When the thermostat has been raised a total of \(2{\degree}C\) (\(4{\degree}F\)), the thermostat setting at that time is maintained until the set time has elapsed, at which time the air conditioner automatically turns off.
To start the auto swing operation.

- Press SWING button.

To cancel the auto swing operation.

- Please press SWING button again.

- The auto-swing operation will be cancelled if the SWING button is pressed. Please set this auto-swing operation if you want the cool air blow to all over the room.

---

CAUTION

When adjusting the Right-Left Louvers, it is necessary to stop the Air-Conditioner first and make sure that it stops completely before adjusting the direction.

Move the Right-Left louvers to adjust air flow in the direction you prefer.

knobs (three places)
You can set the timer-on or timer-off before you sleep or go home.

- Press TIMER button when the unit is running to set the timer-on.

- Press ▲ • ▼ button to set the Hr./Min. Press once, the hour will change with 1 hour, the minute will change with 10 minutes.

**Cancelling the Timer-on**

- Press TIMER button to cancel the timer-on setting.

- Press TIMER button when the unit is running to set the timer-off.

- Press ▲ • ▼ button to set the Hr./Min. Press once, the hour will change with 1 hour, the minute will change with 10 minutes.

**Cancelling the Timer-off**

- Press TIMER button to cancel the timer-off setting.

- Time-on and timer-off can be set together, the near setting will take effect first.

- The timer will not be accuracy if you do not adjust the clock on the remote controller.
When the remote controller is lost or cannot be used due to battery run-out, please use the "Emergency" button on the unit to run on the air-conditioner.

1 Press the "Emergency" button.
Press the "Emergency" button, the air-conditioner operate with the mode which is changed at a sequence "Cooling → Heating → Stop" or "cooling → stop" (for cooling-only type).

But the temperature adjustment is not affected and the air-conditioner run continuously in the first 30 minutes.

<table>
<thead>
<tr>
<th>Running content</th>
<th>Cooling</th>
<th>Heating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set temperature</td>
<td>24°C/76°F</td>
<td>24°C/76°F</td>
</tr>
<tr>
<td>Fan speed</td>
<td>(Mid)</td>
<td>(Mid)</td>
</tr>
<tr>
<td>Louver</td>
<td>Auto</td>
<td>Auto</td>
</tr>
</tbody>
</table>

2 Please press the "Emergency" button if you want to stop the air-conditioner.

Press the "Emergency" button, the air-conditioner operate with the mode which is changed at a sequence "Cooling → Heating → Stop" or "cooling → stop" (for cooling-only type).
CLEANING AND CARE

Before cleaning the air conditioner, be sure to turn it off and disconnect the power.
Be sure the Intake Grille (Fig. 19) is installed securely.
When removing and replacing the air filters, be sure not to touch the heat exchanger, as personal injury may result.

Cleaning the Intake Grille

1. Remove the Intake Grille.
   a. Place your fingers at both lower ends of the grille panel, and lift forward; if the grille seems to catch part way through its movement, continue lifting upward to remove.
   b. Pull past the intermediate catch and open the Intake Grille wide so that it becomes horizontal.

2. Clean with water.
   Remove dust with a vacuum cleaner; wipe the unit with warm water, then dry with a clean, soft cloth.

3. Replace the Intake Grille.
   a. Pull the knobs all the way.
   b. Hold the grille horizontal and set the left and right mounting shafts into the bearings at the top of the panel.
   c. Press the place where the arrow on the diagram indicates and close the Intake Grille.

Cleaning the Air Filter

1. Open the Intake Grille, and remove the air filter.
   Lift up the air filter’s handle, disconnect the two lower tabs, and pull out.

2. Remove dust with a vacuum cleaner or by washing.
   After washing, allow to dry thoroughly in a shaded place.

3. Replace the Air Filter and close the Intake Grille.
   a. Align the slots of the air filter with the panel, and push in fully, making sure the two lower tabs are returned properly to their holes in the panel.

   b. Close the Intake Grille.
   (For purposes of example, the illustration shows the unit without Intake Grille installed.)
   * Dust can be cleaned from the air filter either with a vacuum cleaner, or by washing the filter in a solution of mild detergent and warm water. If you wash the filter, be sure to allow it to dry thoroughly in a shady place before reinstalling.
   * If dirt is allowed to accumulate on the air filter, airflow will be reduced, lowering operating efficiency and increasing noise.
   * During periods of normal use, the Air Filters should be cleaned every two weeks.

* When used for extended periods, the unit may accumulate dirt inside, reducing its performance. We recommend that the unit be inspected regularly, in addition to your own cleaning and care. For more information, consult authorized service personnel.
* When cleaning the unit’s body, do not use water hotter than 104 °F, harsh abrasive cleansers, or volatile agents like benzene or thinner.
* Do not expose the unit body to liquid insecticides or hairsprays.
* When shutting down the unit for one month or more, first allow the fan mode to operate continuously for about one-half day to allow internal parts to dry thoroughly.
CLEANING AND CARE

Air Cleaning Filter Installation

1. Open the Intake Grille and remove the Air filters.

2. Install the Air cleaning filter set (set of 2).
   a. Set the Air cleaning filter into the Air cleaning filter frame.

   b. Engage the latch at both ends of the filter with the two hooks at the rear of the Air cleaning filter frame.
   Hook (2 places at the rear)

   Latch (2 places)

   Take care that the Air cleaning filter does not project beyond the frame.
   c. Engage the four fixing locations at the top and bottom of the Air cleaning filter frame with the hooks of the Air filter.

   Rear of the filter

   Fixing location, hook (4 places)

3. Install the two Air filters and close the Intake Grille.

Replacing dirty Air cleaning filters

Replace filters with the following components (purchased separately).

POLYPHENOL CATECHIN AIR CLEANING FILTER (optional)
Activate carbon filter (optional)

1. Open the Intake Grille and remove the Air filters.

2. Replace them by two new Air cleaning filters.
   a. Remove the old Air cleaning filters in reverse order of their installation.
   b. Install in the same way as for installation of the Air cleaning filter set.

3. Install the two Air filters and close the Intake Grille.

In regard to the Air Cleaning Filters

POLYPHENOL CATECHIN AIR CLEANING FILTER (one sheet)
* The Air Cleaning Filters are disposable filters. (They can not be washed and reused.)
* For storage of the Air Cleaning Filters, use the filters as soon as possible after the package has been opened.
   (The air cleaning effect decreases when the filters are left in the opened package)
* Generally, the filters should be exchanged about every three months.

Please buy dedicated Air cleaning filters (Sold separately) to exchange the used dirty Air cleaning filters.

Active carbon filter (two sheets)
* The filters should be exchanged about every three months so as to maintain the air cleaning effect.
* Filter frame is not a one-off product.

Please buy dedicated Active carbon filter (Sold separately) when exchanging the filters.

When air cleaning filters are used, the effect will increased by setting the fan speed to "High".
# TROUBLE SHOOTING

**WARNING**

In the event of a malfunction (burning smell, etc.), immediately stop operation, disconnect the Power Supply Plug, and consult authorized service personnel. Merely turning off the unit’s power switch will not completely disconnect the unit from the power source. Always be sure to disconnect the Power Supply Plug or turn off your circuit breaker to ensure that power is completely off.

Before requesting service, perform the following checks:

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Problem Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doesn’t operate immediately</td>
<td>If the unit is stopped and then immediately started again, the compressor will not operate for about 3 minutes, in order to prevent fuse blowouts. Whenever the Power Supply Plug is disconnected and then reconnected to a power outlet, the protection circuit will operate for about 3 minutes, preventing unit operation during that period.</td>
</tr>
<tr>
<td>Noise is heard:</td>
<td>During operation and immediately after stopping the unit, the sound of water flowing in the air conditioner’s piping may be heard. Also, noise may be particularly noticeable for about 2 to 3 minutes after starting operation (sound of coolant flowing). During operation, a slight squeaking sound may be heard. This is the result of minute expansion and contraction of the front cover due to temperature changes. During Heating operation, a sizzling sound may be heard occasional. This sound is produced by the Automatic Defrosting operation.</td>
</tr>
<tr>
<td>Smells:</td>
<td>Some smell may be emitted from the indoor unit. This smell is the result of room smells (furniture, tobacco, etc.) which have been taken into the air conditioner.</td>
</tr>
<tr>
<td>Mist or steam are emitted:</td>
<td>During Cooling or Dry operation, a thin mist may be seen emitted from the indoor unit. This results from the sudden Cooling of room air by the air emitted from the air conditioner, resulting in condensation and misting. During Heating operation, the outdoor unit’s fan may stop, and steam may be seen rising from the unit. This is due to Automatic Defrosting operation.</td>
</tr>
<tr>
<td>Airflow is weak or stops:</td>
<td>When Heating operation is started, fan speed is temporarily very low, to allow internal parts to warm up. During Heating operation, if the room temperature rises above the thermostat setting, the outdoor unit will stop, and the indoor unit will operate at very low fan speed. If you wish to warm the room further, set the thermostat for a higher setting. During Heating operation, the unit will temporarily stop operation (between 7 and 15 minutes) as the Automatic Defrosting mode operates. During Automatic Defrosting operation, the OPERATION Indicator Lamp will flash. The fan may operate at very low speed during Dry operation or when the unit is monitoring the room’s temperature. During SLEEP mode operation, the fan will operate at very low speed.</td>
</tr>
<tr>
<td>Water is produced from the outdoor unit:</td>
<td>During Heating operation, water may be produced from the outdoor unit due to Automatic Defrosting operation.</td>
</tr>
</tbody>
</table>

www.Ideal-Air.com
# Operation Manual

## TROUBLESHOOTING

<table>
<thead>
<tr>
<th>Symptom</th>
<th>ITEMS TO CHECK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doesn't operate at all</td>
<td>Is the Power Supply Plug disconnected its outlet?  Has there been a power failure?  Has a fuse blown out, or a circuit breaker been tripped? Is the timer operating?</td>
</tr>
<tr>
<td><strong>CHECK ONCE MORE</strong></td>
<td></td>
</tr>
<tr>
<td>Poor Cooling performance:</td>
<td>Is the Air Filter dirty?  Air the air conditioner’s intake grille or outlet port blocked?  Did you adjust the room temperature settings (thermostat) correctly?  Is there a window or door open?</td>
</tr>
<tr>
<td></td>
<td>In the case of Cooling operation, is a window allowing bright sunlight to enter? (Close the curtains.)  In the case of Cooling operation, are there heating apparatus and computers inside the room, or are there too many people in the room?  Is the unit set for SLEEP mode operation?</td>
</tr>
<tr>
<td>The unit operates differently from the Remote Control Unit's setting:</td>
<td>Are the Remote Control Unit’s batteries dead?  Are the Remote Control Unit’s batteries loaded properly?</td>
</tr>
</tbody>
</table>

## OPERATING TIPS

### Operation and Performance

**Heating Performance**

*This air conditioner operates on the heat-pump principle, absorbing heat from outdoor air and transferring that heat indoors. As a result, the operating performance is reduced as outdoor air temperature drops. If you feel that insufficient heating performance is being produced, we recommend you use this air conditioner in conjunction with another kind of heating appliance.*

*Heat-pump air conditioners heat your entire room by recirculating air throughout the room, with the result that some time may be required after first starting the air conditioner until the room is heated.*

**Microcomputer-controlled Automatic Defrosting**

* When using the Heating mode under conditions of low outdoor temperature and high humidity, frost may form on the outdoor unit, resulting in reduced operating performance.

* In order to prevent this kind of reduced performance, this unit is equipped with a Microcomputer-controlled Automatic Defrosting function. If frost forms, the air conditioner will temporarily stop, and the defrosting circuit will operate briefly (for about 7-15 minutes).

* During Automatic Defrosting operation, the OPERATION Indicator Lamp (red) will flash.

### AUTO Restart Function

#### In Event of Power Interruption

* The air conditioner power has been interrupted by a power failure. The air conditioner will then restart automatically in its previous mode when the power is restored.

* Operated by setting before the power failure.

* If a power failure occurs during TIMER operation, the timer will be reset and the unit will begin (or stop) operation at the new time setting. In the event that this kind of timer fault occurs the TIMER Indicator Lamp will flash (see Page. 3).

* Use of other electrical appliances (electric shaver, etc.) or nearby use of a wireless radio transmitter may cause the air conditioner to malfunction. In this event, temporarily disconnect the Power Supply Plug, reconnect it, and then use the Remote Control Unit to resume operation.