Thank you for choosing our product.
For proper operation, please read and keep this manual carefully.
If you have lost the Owner's Manual, please visit: www.mirageappliances.us
# Table of Contents

## Owner’s/Installation manual

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precautions</td>
<td>4</td>
</tr>
<tr>
<td>Unit Specifications and Features</td>
<td>6</td>
</tr>
<tr>
<td>Manual Operation (Without Remote)</td>
<td>11</td>
</tr>
<tr>
<td>Care and Maintenance</td>
<td>12</td>
</tr>
<tr>
<td>Troubleshooting</td>
<td>14</td>
</tr>
<tr>
<td>Remote Controller Specifications</td>
<td>18</td>
</tr>
<tr>
<td>Operation of buttons</td>
<td>19</td>
</tr>
<tr>
<td>Indicators on LCD</td>
<td>22</td>
</tr>
<tr>
<td>How to use the buttons</td>
<td>23</td>
</tr>
<tr>
<td>Auto operation</td>
<td>23</td>
</tr>
<tr>
<td>Dehumidifying operation</td>
<td>24</td>
</tr>
<tr>
<td>Timer operation</td>
<td>25</td>
</tr>
<tr>
<td>Handling the remote controller</td>
<td>28</td>
</tr>
<tr>
<td>Installation</td>
<td>31</td>
</tr>
<tr>
<td>Safety Precautions</td>
<td>32</td>
</tr>
<tr>
<td>Accessories</td>
<td>34</td>
</tr>
<tr>
<td>Installation Summary - Indoor Unit</td>
<td>36</td>
</tr>
<tr>
<td>Unit Parts</td>
<td>38</td>
</tr>
<tr>
<td>Indoor Unit Installation</td>
<td>39</td>
</tr>
<tr>
<td>Installation Instructions</td>
<td></td>
</tr>
<tr>
<td>Step 1: Select installation location</td>
<td>39</td>
</tr>
<tr>
<td>Step 2: Attach mounting plate to wall</td>
<td>40</td>
</tr>
<tr>
<td>Step 3: Drill wall hole for connective piping</td>
<td>40</td>
</tr>
<tr>
<td>Step 4: Prepare refrigerant piping</td>
<td>42</td>
</tr>
<tr>
<td>Step 5: Connect drain hose</td>
<td>43</td>
</tr>
<tr>
<td>Step 6: Connect signal and power cables</td>
<td>45</td>
</tr>
<tr>
<td>Step 7: Wrap piping and cables</td>
<td>46</td>
</tr>
<tr>
<td>Step 8: Mount indoor unit</td>
<td>46</td>
</tr>
</tbody>
</table>
Outdoor Unit Installation

Installation Instructions - Outdoor Unit
- Step 1: Select installation location
- Step 2: Install drain joint
- Step 3: Anchor outdoor unit
- Step 4: Connect signal and power cables

Refrigerant Piping Connection
- Note on Pipe Length
- Connection Instructions - Refrigerant Piping
  - Step 1: Cut pipes
  - Step 2: Remove burrs
  - Step 3: Flare pipe ends
  - Step 4: Connect pipe ends

Air Evacuation
- Evacuation Instructions
- Note on Adding Refrigerant

Electrical and Gas Leak Checks

Test Run
Read Safety Precautions Before Installation

Incorrect installation due to ignoring instructions can cause serious damage or injury. The seriousness of potential damage or injuries is classified as either a WARNING or CAUTION.

![WARNING]
This symbol indicates that ignoring instructions may cause death or serious injury.

![CAUTION]
This symbol indicates that ignoring instructions may cause moderate injury to your person, or damage to your appliance or other property.

**WARNING**
This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

**INSTALLATION WARNINGS**
• Ask an authorized dealer to install this air conditioner. Inappropriate installation may cause water leakage, electric shock, or fire.
• All repairs, maintenance and relocation of this unit must be performed by an authorized service technician. Inappropriate repairs can lead to serious injury or product failure.

**WARNINGS FOR PRODUCT USE**
• If an abnormal situation arises (like a burning smell), immediately turn off the unit and pull the power plug. Call your dealer for instructions to avoid electric shock, fire or injury.
• **Do not** insert fingers, rods or other objects into the air inlet or outlet. This may cause injury, since the fan may be rotating at high speeds.
• **Do not** use flammable sprays such as hair spray, lacquer or paint near the unit. This may cause fire or combustion.
• **Do not** operate the air conditioner in places near or around combustible gases. Emitted gas may collect around the unit and cause explosion.
• **Do not** operate the air conditioner in a wet room (e.g., bathroom or laundry room). This can cause electrical shock and cause the product to deteriorate.
• **Do not** expose your body directly to cool air for a prolonged period of time.
ELECTRICAL WARNINGS

• Only use the specified power cord. If the power cord is damaged, it must be replaced by the manufacturer or certified service agent.
• Keep power plug clean. Remove any dust or grime that accumulates on or around the plug. Dirty plugs can cause fire or electric shock.
• **Do not** pull power cord to unplug unit. Hold the plug firmly and pull it from the outlet. Pulling directly on the cord can damage it, which can lead to fire or electric shock.
• **Do not** use an extension cord, manually extend the power cord, or connect other appliances to the same outlet as the air conditioner. Poor electrical connections, poor insulation, and insufficient voltage can cause fire.

CLEANING AND MAINTENANCE WARNINGS

• Turn off the device and pull the plug before cleaning. Failure to do so can cause electrical shock.
• **Do not** clean the air conditioner with excessive amounts of water.
• **Do not** clean the air conditioner with combustible cleaning agents. Combustible cleaning agents can cause fire or deformation.

⚠️ CAUTION

• If the air conditioner is used together with burners or other heating devices, thoroughly ventilate the room to avoid oxygen deficiency.
• Turn off the air conditioner and unplug the unit if you are not going to use it for a long time.
• Turn off and unplug the unit during storms.
• Make sure that water condensation can drain unhindered from the unit.
• **Do not** operate the air conditioner with wet hands. This may cause electric shock.
• **Do not** use device for any other purpose than its intended use.
• **Do not** climb onto or place objects on top of the outdoor unit.
• **Do not** allow the air conditioner to operate for long periods of time with doors or windows open, or if the humidity is very high.
Unit Specifications and Features

Unit Parts

Display Code Meanings

- **ON** • for 3 seconds when:
  • TIMER ON is set
  • FRESH, SWING, TURBO, SILENCE or SOLAR PV ECO features are turned on

- **OFF** • for 3 seconds when:
  • TIMER OFF is set
  • FRESH, SWING, TURBO, SILENCE or SOLAR PV ECO features are turned off

- **cF** • when anti-cold air feature is turned on

- **dF** • when defrosting

- **SC** • when unit is self-cleaning

- **FP** • when freeze protection is turned on

- "**88**" • When ECO function (optional) is activated, the '88' illuminates gradually one by one as --E
  - - - - set temperature --E...... in one second interval.

In Fan mode, the unit will display the room temperature.
In other modes, the unit will display your temperature setting.
Achieving Optimal Performance

Optimal performance for the COOL, HEAT, and DRY modes can be achieved in the following temperature ranges. When your air conditioner is used outside of these ranges, certain safety protection features will activate and cause the unit to perform less than optimally.

Inverter Split Type

<table>
<thead>
<tr>
<th>Room Temperature</th>
<th>COOL mode</th>
<th>HEAT mode</th>
<th>DRY mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>63°F - 90°F</td>
<td>32°F - 86°F</td>
<td>50°F - 90°F</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outdoor Temperature</th>
<th>32°F - 122°F</th>
<th>5°F - 86°F</th>
<th>32°F - 122°F</th>
</tr>
</thead>
<tbody>
<tr>
<td>5°F - 122°F (For models with low temp. cooling systems)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FOR OUTDOOR UNITS WITH AUXILIARY ELECTRIC HEATER

When outside temperature is below 32°F, we strongly recommend keeping the unit plugged in at all time to ensure smooth ongoing performance.

Fixed-speed Type

<table>
<thead>
<tr>
<th>Room Temperature</th>
<th>COOL mode</th>
<th>HEAT mode</th>
<th>DRY mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>63°F - 90°F</td>
<td>32°F - 86°F</td>
<td>50°F - 90°F</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outdoor Temperature</th>
<th>64°F -109°F</th>
<th>19°F- 109°F</th>
<th>64°F -129°F</th>
</tr>
</thead>
<tbody>
<tr>
<td>(For models with low-temp cooling systems)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>64°F -129°F (For special tropical models)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>19°F-75°F</th>
<th>64°F -109°F</th>
<th>64°F -129°F</th>
</tr>
</thead>
<tbody>
<tr>
<td>(For special tropical models)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

To further optimize the performance of your unit, do the following:

• Keep doors and windows closed.
• Limit energy usage by using TIMER ON and TIMER OFF functions.
• Do not block air inlets or outlets.
• Regularly inspect and clean air filters.
Other Features

• **Auto-Restart**
  If the unit loses power, it will automatically restart with the prior settings once power has been restored.

• **Anti-mildew (some units)**
  When turning off the unit from COOL, AUTO (COOL), or DRY modes, the air conditioner will continue operate at very low power to dry up condensed water and prevent mildew growth.

• **Louver Angle Memory (some units)**
  When turning on your unit, the louver will automatically resume its former angle.

• **Refrigerant Leakage Detection (some units)**
  The indoor unit will automatically display “EC” when it detects refrigerant leakage.

For a detailed explanation of your unit’s advanced functionality (such as TURBO mode and its self-cleaning functions), refer to the Remote Control Section.

NOTE ON ILLUSTRATIONS
Illustrations in this manual are for explanatory purposes. The actual shape of your indoor unit may be slightly different. The actual shape shall prevail.
Setting Angle of Air Flow

While the unit is on, use the SWING/DIRECT button to set the direction (vertical angle) of airflow.

1. Press the SWING/DIRECT button once to activate the louver. Each time you press the button, it will adjust the louver by 6°. Press the button until the direction you prefer is reached.

2. To make the louver swing up and down continuously, press and hold the SWING/DIRECT button for 3 seconds. Press it again to stop the automatic function.

Setting horizontal angle of air flow

The horizontal angle of the airflow must be set manually. Grip the deflector rod (See Fig.B) and manually adjust it to your preferred direction. For some units, the horizontal angle of the airflow can be set by remote control. Please refer to the Remote Control Section.

CAUTION

Do not put your fingers in or near the blower and suction side of the unit. The high-speed fan inside the unit may cause injury.

NOTE ON LOUVER ANGLES

When using COOL or DRY mode, do not set louver at too vertical an angle for long periods of time. This can cause water to condense on the louver blade, which will drop on your floor or furnishings. (See Fig.A)

When using COOL or HEAT mode, setting the louver at too vertical an angle can reduce the performance of the unit due to restricted air flow.

Do not move louver by hand. This will cause the louver to become out of sync. If this occurs, turn off the unit and unplug it for a few seconds, then restart the unit. This will reset the louver.
Sleep Operation

The SLEEP function is used to decrease energy use while you sleep (and don’t need the same temperature settings to stay comfortable). This function can only be activated via remote control.

Press the **SLEEP** button when you are ready to go to sleep. When in COOL mode, the unit will increase the temperature by 2°F after 1 hour, and will increase an additional 2°F after another hour. When in HEAT mode, the unit will decrease the temperature by 2°F after 1 hour, and will decrease an additional 2°F after another hour.

It will hold the new temperature for 5 hours, then the unit will turn off automatically.

---

**Note:** The SLEEP function is not available in FAN or DRY mode.
Manual Operation (Without Remote)

How to operate your unit without the remote control

In the event that your remote control fails to work, your unit can be operated manually with the MANUAL CONTROL button located on the indoor unit. Note that manual operation is not a long-term solution, and that operating the unit with your remote control is strongly recommended.

BEFORE MANUAL OPERATION
Unit must be turned off before manual operation.

To operate your unit manually:
1. Open the front panel of the indoor unit.
2. Locate the MANUAL CONTROL button on the right-hand side of the unit.
3. Press the MANUAL CONTROL button one time to activate FORCED AUTO mode.
4. Press the MANUAL CONTROL button again to activate FORCED COOLING mode.
5. Press the MANUAL CONTROL button a third time to turn the unit off.
6. Close the front panel.

CAUTION

The manual button is intended for testing purposes and emergency operation only. Please do not use this function unless the remote is lost and it is absolutely necessary. To restore regular operation, use the remote control to activate the unit.
Care and Maintenance

Cleaning Your Indoor Unit

BEFORE CLEANING OR MAINTENANCE

ALWAYS TURN OFF YOUR AIR CONDITIONER SYSTEM AND DISCONNECT ITS POWER SUPPLY BEFORE CLEANING OR MAINTENANCE.

CAUTION

Only use a soft, dry cloth to wipe the unit clean. If the unit is especially dirty, you can use a cloth soaked in warm water to wipe it clean.

- **Do not** use chemicals or chemically treated cloths to clean the unit.
- **Do not** use benzene, paint thinner, polishing powder or other solvents to clean the unit. They can cause the plastic surface to crack or deform.
- **Do not** use water hotter than 104°F to clean the front panel. This can cause the panel to deform or become discolored.

Cleaning Your Air Filter

A clogged air conditioner can reduce the cooling efficiency of your unit, and can also be bad for your health. Make sure to clean the filter once every two weeks.

1. Lift the front panel of the indoor unit.
2. Grip the tab on the end of the filter, lift it up, then pull it towards yourself.
3. Now pull the filter out.
4. If your filter has a small air freshening filter, unclip it from the larger filter. Clean this air freshening filter with a hand-held vacuum.
5. Clean the large air filter with warm, soapy water. Be sure to use a mild detergent.

6. Rinse the filter with fresh water, then shake off excess water.
7. Dry it in a cool, dry place, and refrain from exposing it to direct sunlight.
8. When dry, re-clip the air freshening filter to the larger filter, then slide it back into the indoor unit.
9. Close the front panel of the indoor unit.

CAUTION

Do not touch air freshening (Plasma) filter for at least 10 minutes after turning off the unit.
CAUTION

• Before changing the filter or cleaning, turn off the unit and disconnect its power supply.
• When removing filter, do not touch metal parts in the unit. The sharp metal edges can cut you.
• Do not use water to clean the inside of the indoor unit. This can destroy insulation and cause electrical shock.
• Do not expose filter to direct sunlight when drying. This can shrink the filter.

Air Filter Reminders (Optional)

• Air Filter Cleaning Reminder
After 240 hours of use, the display window on the indoor unit will flash “CL.” This is a reminder to clean your filter. After 15 seconds, the unit will revert to its previous display.

To reset the reminder, press the LED button on your remote control 4 times, or press the MANUAL CONTROL button 3 times. If you don’t reset the reminder, the “CL” indicator will flash again when you restart the unit.

• Air Filter Replacement Reminder
After 2,880 hours of use, the display window on the indoor unit will flash “nF.” This is a reminder to replace your filter. After 15 seconds, the unit will revert to its previous display.

To reset the reminder, press the LED button on your remote control 4 times, or press the MANUAL CONTROL button 3 times. If you don’t reset the reminder, the “nF” indicator will flash again when you restart the unit.

CAUTION

• Any maintenance and cleaning of outdoor unit should be performed by an authorized dealer or licensed service provider.
• Any unit repairs should be performed by authorized dealer or licensed service provider.
## SAFETY PRECAUTIONS

If ANY of the following conditions occurs, turn off your unit immediately!

- The power cord is damaged or abnormally warm
- You smell a burning odor
- The unit emits loud or abnormal sounds
- A power fuse blows or the circuit breaker frequently trips
- Water or other objects fall into or out of the unit

DO NOT ATTEMPT TO FIX THESE YOURSELF! CONTACT AUTHORIZED SERVICE PROVIDER IMMEDIATELY!

## Common Issues

The following problems are not a malfunction and in most situations will not require repairs.

<table>
<thead>
<tr>
<th>Issue</th>
<th>Possible Causes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit does not turn on when pressing ON/OFF button</td>
<td>The Unit has a 3-minute protection feature that prevents the unit from overloading. The unit cannot be restarted within three minutes of being turned off.</td>
</tr>
<tr>
<td>The unit changes from COOL/HEAT mode to FAN mode</td>
<td>The unit may change its setting to prevent frost from forming on the unit. Once the temperature increases, the unit will start operating in the previously selected mode again.</td>
</tr>
<tr>
<td>The indoor unit emits white mist</td>
<td>The set temperature has been reached, at which point the unit turns off the compressor. The unit will continue operating when the temperature fluctuates again.</td>
</tr>
<tr>
<td>Both the indoor and outdoor units emit white mist</td>
<td>In humid regions, a large temperature difference between the room’s air and the conditioned air can cause white mist.</td>
</tr>
<tr>
<td>Both the indoor and outdoor units emit white mist</td>
<td>When the unit restarts in HEAT mode after defrosting, white mist may be emitted due to moisture generated from the defrosting process.</td>
</tr>
<tr>
<td>Issue</td>
<td>Possible Causes</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>The indoor unit makes noises</td>
<td>A rushing air sound may occur when the louver resets its position.</td>
</tr>
<tr>
<td></td>
<td>A squeaking sound may occur after running the unit in HEAT mode due to expansion and contraction of the unit’s plastic parts.</td>
</tr>
<tr>
<td>Both the indoor unit and outdoor unit make noises</td>
<td>Low hissing sound during operation: This is normal and is caused by refrigerant gas flowing through both indoor and outdoor units.</td>
</tr>
<tr>
<td></td>
<td>Low hissing sound when the system starts, has just stopped running, or is defrosting: This noise is normal and is caused by the refrigerant gas stopping or changing direction.</td>
</tr>
<tr>
<td></td>
<td>Squeaking sound: Normal expansion and contraction of plastic and metal parts caused by temperature changes during operation can cause squeaking noises.</td>
</tr>
<tr>
<td>The outdoor unit makes noises</td>
<td>The unit will make different sounds based on its current operating mode.</td>
</tr>
<tr>
<td>Dust is emitted from either the indoor or outdoor unit</td>
<td>The unit may accumulate dust during extended periods of non-use, which will be emitted when the unit is turned on. This can be mitigated by covering the unit during long periods of inactivity.</td>
</tr>
<tr>
<td>The unit emits a bad odor</td>
<td>The unit may absorb odors from the environment (such as furniture, cooking, cigarettes, etc.) which will be emitted during operations.</td>
</tr>
<tr>
<td></td>
<td>The unit’s filters have become moldy and should be cleaned.</td>
</tr>
<tr>
<td>The fan of the outdoor unit does not operate</td>
<td>During operation, the fan speed is controlled to optimize product operation.</td>
</tr>
<tr>
<td>Operation is erratic, unpredictable, or unit is unresponsive</td>
<td>Interference from cell phone towers and remote boosters may cause the unit to malfunction.</td>
</tr>
<tr>
<td></td>
<td>In this case, try the following:</td>
</tr>
<tr>
<td></td>
<td>• Disconnect the power, then reconnect.</td>
</tr>
<tr>
<td></td>
<td>• Press ON/OFF button on remote control to restart operation.</td>
</tr>
</tbody>
</table>

**NOTE:** If problem persists, contact a local dealer or your nearest customer service center. Provide them with a detailed description of the unit malfunction as well as your model number.
## Troubleshooting

When troubles occur, please check the following points before contacting a repair company.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Causes</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor Cooling Performance</td>
<td>Temperature setting may be higher than ambient room temperature</td>
<td>Lower the temperature setting</td>
</tr>
<tr>
<td></td>
<td>The heat exchanger on the indoor or outdoor unit is dirty</td>
<td>Clean the affected heat exchanger</td>
</tr>
<tr>
<td></td>
<td>The air filter is dirty</td>
<td>Remove the filter and clean it according to instructions</td>
</tr>
<tr>
<td></td>
<td>The air inlet or outlet of either unit is blocked</td>
<td>Turn the unit off, remove the obstruction and turn it back on</td>
</tr>
<tr>
<td></td>
<td>Doors and windows are open</td>
<td>Make sure that all doors and windows are closed while operating the unit</td>
</tr>
<tr>
<td></td>
<td>Excessive heat is generated by sunlight</td>
<td>Close windows and curtains during periods of high heat or bright sunshine</td>
</tr>
<tr>
<td></td>
<td>Too many sources of heat in the room (people, computers, electronics, etc.)</td>
<td>Reduce amount of heat sources</td>
</tr>
<tr>
<td></td>
<td>Low refrigerant due to leak or long-term use</td>
<td>Check for leaks, re-seal if necessary and top off refrigerant</td>
</tr>
<tr>
<td></td>
<td>SILENCE function is activated(optional function)</td>
<td>SILENCE function can lower product performance by reducing operating frequency. Turn off SILENCE function.</td>
</tr>
<tr>
<td>Problem</td>
<td>Possible Causes</td>
<td>Solution</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>-----------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>The unit is not working</td>
<td>Power failure</td>
<td>Wait for the power to be restored</td>
</tr>
<tr>
<td></td>
<td>The power is turned off</td>
<td>Turn on the power</td>
</tr>
<tr>
<td></td>
<td>The fuse is burned out</td>
<td>Replace the fuse</td>
</tr>
<tr>
<td></td>
<td>Remote control batteries are dead</td>
<td>Replace batteries</td>
</tr>
<tr>
<td></td>
<td>The Unit's 3-minute protection has been activated</td>
<td>Wait three minutes after restarting the unit</td>
</tr>
<tr>
<td></td>
<td>Timer is activated</td>
<td>Turn timer off</td>
</tr>
<tr>
<td>The unit starts and stops frequently</td>
<td>There's too much or too little refrigerant in the system</td>
<td>Check for leaks and recharge the system with refrigerant.</td>
</tr>
<tr>
<td></td>
<td>Incompressible gas or moisture has entered the system.</td>
<td>Evacuate and recharge the system with refrigerant</td>
</tr>
<tr>
<td></td>
<td>The compressor is broken</td>
<td>Replace the compressor</td>
</tr>
<tr>
<td></td>
<td>The voltage is too high or too low</td>
<td>Install a manostat to regulate the voltage</td>
</tr>
<tr>
<td>Poor heating performance</td>
<td>The outdoor temperature is exetremely low</td>
<td>Use auxiliary heating device</td>
</tr>
<tr>
<td></td>
<td>Cold air is entering through doors and windows</td>
<td>Make sure that all doors and windows are closed during use</td>
</tr>
<tr>
<td></td>
<td>Low refrigerant due to leak or long-term use</td>
<td>Check for leaks, re-seal if necessary and top off refrigerant</td>
</tr>
<tr>
<td>Indicator lamps continue flashing</td>
<td>The unit may stop operation or continue to run safely. If the indicator lamps continue to flash or error codes appear, wait for about 10 minutes. The problem may resolve itself. If not, disconnect the power, then connect it again. Turn the unit on. If the problem persists, disconnect the power and contact your nearest customer service center.</td>
<td></td>
</tr>
</tbody>
</table>
Remote Controller Specifications

Rated Voltage: 3.0V (Dry batteries) R03/LR03x2
Signal Recieving Range: 8m
Environment: 23°F ~ 140°F

NOTE:
• Buttons design is based on typical model and might be slightly different from the actual one you purchased, the actual shape shall prevail.

• All the functions described are accomplished by the unit. If the unit has not this feature, there is no corresponding operation happened when press the relative button on the remote controller.

• When there are wide differences between “Remote controller Illustration” and “USER’S MANUAL”, on function description, the description of “USER’S MANUAL” shall prevail.
ON/OFF Button
This button turns the air conditioner ON and OFF.

MODE Button
Press this button to modify the air conditioner mode in a sequence of following:

NOTE: Please do not select HEAT mode if the machine you purchased is cooling only type. Heat mode is not supported by the cooling only appliance.

FAN Button
Used to select the fan speed in four steps:

NOTE: You can not switch the fan speed in AUTO or DRY mode.

ECO Button
Used to enter the energy efficient mode. Under cooling mode, press this button, the remote controller will adjust the temperature automatically to 75 F, fan speed of Auto to save energy (but only if the set temperature is less than 75 F). If the set temperature is between 75 F and 86 F, press the ECO button, the fan speed will change to Auto, the set temperature will remain unchanged.

NOTE:
• Pressing the TURBO and MODE button, modifying the mode or adjusting the set temperature to less than 75 F will stop ECO operation.

• Under ECO operation, the set temperature should be 75 F or more, it may result in insufficient cooling. If you feel uncomfortable, just press the ECO button again to stop it.
Operation of buttons

5 TURBO Button
Active/Disable Turbo function. Turbo function enables the unit to reach the preset temperature at cooling or heating operation in the shortest time (if the indoor unit does not support this function, there is no corresponding operation happening when pressing this button.)

6 UP Button (          )
Push this button to increase the indoor temperature setting in 1 F increments to 86 F.

DOWN Button (          )
temperature setting in 1 F increments to 62 F.

NOTE: Temperature control is not available in Fan mode.

NOTE: Press and hold UP and DOWN buttons together for 3 seconds will alternate the temperature display between the C & F scale.

7 SILENCE Button
Active/Disable Silence function. When the Silence function is activated, the compressor will operate at low frequency and the indoor unit will bring faint breeze, which will reduce the noise to the lowest level and create a quiet and comfortable room for you. Due to low frequency operation of compressor, it may result in insufficient cooling and heating capacity.

8 TIMER ON Button
Press this button to initiate the auto-on time sequence. Each press will increase the auto-timed setting in 30 minutes increments. When the setting time displays 10.0, each press will increase the auto-timed setting in 60 minutes increments. To cancel the auto-timed program, simply adjust the auto-on time to 0.0.
Operation of buttons

9 **TIMER OFF Button**
Press this button to initiate the auto-off time sequence. Each press will increase the auto-timed setting in 30 minutes increments. When the setting time displays 10.0, each press will increase the auto-timed setting in 60 minutes increments. To cancel the auto-timed program, simply adjust the auto-off time to 0.0

10 **SWING Button**
Used to stop or start horizontal louver auto swing feature.

11 **DIRECT Button**
Used to change the louver movement and set the desired up/down air flow direction. The louver changes 6° in angle for each press.

12 **LED Button**
Disable/Active indoor screen Display. When pushing the button, the indoor screen display is cleared, press it again to light the display.
Indicators on LCD

Information are displayed when the remote controller is powered up.

![Indicator Icons]

### Mode display

<table>
<thead>
<tr>
<th>AUTO</th>
<th>COOL</th>
<th>DRY</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEAT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FAN</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **_connected** Displayed when data transmitted.
- **on** Displayed when remote controller is ON.
- **battery** Battery display (low battery detection)
- **eco** Displayed in ECO operation
- **on** Displayed when TIMER ON time is set.
- **off** Displayed when TIMER OFF time is set.
- **temperature** Show set temperature or room temperature, or time under TIMER setting.

- **not available** Not available for this unit
- **not available** Not available for this unit
- **not available** Not available for this unit
- **silence** Displayed when Silence function is activated

### Fan Speed Indication

<table>
<thead>
<tr>
<th>FAN</th>
<th>Low speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAN</td>
<td>Medium speed</td>
</tr>
<tr>
<td>FAN</td>
<td>High speed</td>
</tr>
<tr>
<td>FAN</td>
<td>Auto fan speed</td>
</tr>
</tbody>
</table>

**Note:**

All indicators shown in the figure are for the purpose of clear presentation. But during the actual operation only the relative functional signs are shown on the display window.
Auto operation
Ensure the unit is plugged in and power is available. The OPERATION indicator on the display panel of the indoor unit starts flashing.
1. Press the MODE button to select Auto.
2. Press the UP/DOWN button to set the desired temperature. The temperature can be set within a range of 62°F~ 86°F in 1°F increments.
3. Press the ON/OFF button to start the air conditioner.

**NOTE**
1. In the Auto mode, the air conditioner can logically choose the mode of Cooling, Fan, and Heating by sensing the difference between the actual ambient room temperature and the setting temperature on the remote controller.
2. In the Automode, you cannot switch the fanspeed. It has already been automatically controlled.
3. If the Auto mode is not comfortable for you, the desired mode can be selected manually.

Cooling /Heating/Fan operation
Ensure the unit is plugged in and power is available.

1. Press the MODE button to select COOL, HEAT(cooling & heating models only) or FAN mode.
2. Press the UP/DOWN buttons to set the desired temperature. The temperature can be set within a range of 62°F~ 86°F in 1°F increments.
3. Press the FAN button to select the fan speed in four steps- Auto, Low, Med, or High.
4. Press the ON/OFF button to start the air conditioner.

**NOTE**
In the FAN mode, the setting temperature is not displayed in the remote controller and you are not able to control the room temperature either. In this case, only step 1, 3 and 4 may be performed.
How to use the buttons

Dehumidifying operation
Ensure the unit is plugged in and power is available. The OPERATION indicator on the display panel of the indoor unit starts flashing.

1. Press the MODE button to select DRY mode.
2. Press the UP/DOWN buttons to set the desired temperature. The temperature can be set within a range of 62°F~86°F in 1°F increments.
3. Press the ON/OFF button to start the air conditioner.

NOTE
In the Dehumidifying mode, you cannot switch the fan speed. It has already been automatically controlled.
Timer operation

Press the TIMER ON button can set the auto-on time of the unit. Press the TIMER OFF button can set the auto-off time of the unit.

To set the Auto-on time.
1. Press the TIMER ON button. The remote controller shows TIMER ON, the last Auto-on setting time and the signal “H” will be shown on the LCD display area. Now it is ready to reset the Auto-on time to START the operation.

2. Push the TIMER ON button again to set desired Auto-on time. Each time you press the button, the time increases by half an hour between 0 and 10 hours and by one hour between 10 and 24 hours.

3. After setting the TIMER ON, there will be a one second delay before the remote controller transmits the signal to the air conditioner. Then, after approximately another 2 seconds, the signal “H” will disappear and the set temperature will re-appear on the LCD display window.

To set the Auto-off time.
1. Press the TIMER OFF button. The remote controller shows TIMER OFF, the last Auto-off setting time and the signal “H” will be shown on the LCD display area. Now it is ready to reset the Auto-off time to stop the operation.

2. Push the TIMER OFF button again to set desired Auto-off time. Each time you press the button, the time increases by half an hour between 0 and 10 hours and by one hour between 10 and 24 hours.

3. After setting the TIMER OFF, there will be a one second delay before the remote controller transmits the signal to the air conditioner. Then, after approximately another 2 seconds, the signal “H” will disappear and the set temperature will re-appear on the LCD display window.
When you select the timer operation, the remote controller automatically transmits the timer signal to the indoor unit for the specified time. Therefore, keep the remote controller in a location where it can transmit the signal to the indoor unit properly. The effective operation time set by the remote controller for the timer function is limited to the following settings: 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0, 5.5, 6.0, 6.5, 7.0, 7.5, 8.0, 8.5, 9.0, 9.5, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23 and 24.

Example of timer setting

TIMER ON (Auto-on Operation)
The TIMER ON feature is useful when you want the unit to turn on automatically before you return home. The air conditioner will automatically start operating at the set time.

Example:
To start the air conditioner in 6 hours.
1. Press the TIMER ON button, the last setting of starting operation time and the signal “H” will show on the display area.

2. Press the TIMER ON button to display “6.0H” on the TIMER ON display of the remote controller.

3. Wait for 3 seconds and the digital display area will show the temperature again. The “TIMER ON” indicator remains on and this function is activated.
**TIMER OFF**  
**(Auto-off Operation)**  
The TIMER OFF feature is useful when you want the unit to turn off automatically after you go to bed. The air conditioner will stop automatically at the set time.

**Example:**  
To stop the air conditioner in 10 hours.  
1. Press the TIMER OFF button, the last setting of stopping operation time and the signal “H” will show on the display area.  
2. Press the TIMER OFF button to display “10H “ on the TIMER OFF display of the remote controller.  
3. Wait for 3 seconds and the digital display area will show the temperature again. The “TIMER OFF” indicator remains on and this function is activated.

**COMBINED TIMER**  
**(Setting both ON and OFF timers simultaneously)**  
TIMER OFF → TIMER ON  
(On → Stop → Start operation)  
This feature is useful when you want to stop the air conditioner after you go to bed, and start it again in the morning when you wake up or when you return home.

**Example:**  
To stop the air conditioner 2 hours after setting and start it again 10 hours after setting.  
1. Press the TIMER OFF button.  
2. Press the TIMER OFF button again to display 2.0H on the TIMER OFF display.  
3. Press the TIMER ON button.  
4. Press the TIMER ON button again to display 10H on the TIMER ON display .  
5. Wait for 3 seconds and the digital display area will show the temperature again. The “TIMER ON OFF” indicator remains on and this function is activated.
TIMER ON → TIMER OFF
(Off → Start → Stop operation)
This feature is useful when you want to start the air conditioner before you wake up and stop it after you leave the house.

Example:
To start the air conditioner 2 hours after setting, and stop it 5 hours after setting.
1. Press the TIMER ON button.
2. Press the TIMER ON button again to display 2.0H on the TIMER ON display.
3. Press the TIMER OFF button.
4. Press the TIMER OFF button again to display 5.0H on the TIMER OFF display.
5. Wait for 3 seconds and the digital display area will show the temperature again. The “TIMER ON & TIMER OFF” indicator remains on and this function is activated.

Handling the remote controller

Location of the remote controller.
Use the remote controller within a distance of 26 feet from the appliance, pointing it towards the receiver. Reception is confirmed by a beep.

⚠️ CAUTION
The air conditioner will not operate if curtains, doors or other materials block the signals from the remote controller to the indoor unit. Prevent any liquid from falling into the remote controller. Do not expose the remote controller to direct sunlight or heat.
If the infrared signal receiver on the indoor unit is exposed to direct sunlight, the air conditioner may not function properly. Use curtains to prevent the sunlight from falling on the receiver. If other electrical appliances react to the remote controller, either move these appliances or consult your local dealer.
Do not drop the remote controller. Handle with care.
Do not place heavy objects on the remote controller, or step on it.
Using the remote controller holder (optional)

The remote controller can be attached to a wall or pillar by using a remote controller holder (not supplied, purchased separately). Before installing the remote controller, check that the air conditioner receives the signals properly. Install the remote controller with two screws. For installing or removing the remote controller, move it up or down in the holder.

Replacing batteries
The following cases signify exhausted batteries. Replace old batteries with new ones. Receiving beep is not emitted when a signal is transmitted. Indicator fades away.

The remote controller is powered by two dry batteries (R03/LR03X2) housed in the back rear part and protected by a cover.
(1) Remove the cover in the rear part of the remote controller.
(2) Remove the old batteries and insert the new batteries, placing the (+) and (-) ends correctly. (3) Install the cover back on.

NOTE: When the batteries are removed, the remote controller erases all programming. After inserting new batteries, the remote controller must be reprogrammed.

⚠️ CAUTION

Do not mix old and new batteries or batteries of different types.
Do not leave the batteries in the remote controller if they are not going to be used for 2 or 3 months.
Do not dispose batteries as unsorted municipal waste. Collection of such waste separately for special treatment is necessary.
NOTE:
The device could comply with the local national regulations. In Canada, it should comply with CAN ICES-3(B)/NMB-3(B). In USA, this device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
• Reorient or relocate the receiving antenna.
• Increase the separation between the equipment and receiver.
• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
• Consult the dealer or an experienced radio/TV technician for help.
• Changes or modifications not approved by the party responsible for compliance could void user’s authority to operate the equipment.
INSTALLATION
INSTALLATION MANUAL

Safety Precautions
Read Safety Precautions Before Installation
Incorrect installation due to ignoring instructions can cause serious damage or injury. The seriousness of potential damage or injuries is classified as either a WARNING or CAUTION.

This symbol indicates that ignoring instructions may cause death or serious injury.

This symbol indicates that ignoring instructions may cause moderate injury to your person, or damage to your unit or other property.

This symbol indicates that you must never perform the action indicated.

WARNING

Do not modify the length of the power supply cord or use an extension cord to power the unit.
Do not share the electrical outlet with other appliances. Improper or insufficient power supply can cause fire or electrical shock.
When connecting refrigerant piping, do not let substances or gases other than the specified refrigerant enter the unit. The presence of other gases or substances will lower the units capacity, and can cause abnormally high pressure in the refrigeration cycle. This can cause explosion and injury.
Do not allow children to play with the air conditioner. Children must be supervised around the unit at all times.

1. Installation must be performed by an authorized dealer or specialist. Defective installation can cause water leakage, electrical shock, or fire.
2. Installation must be performed according to the installation instructions. Improper installation can cause water leakage, electrical shock, or fire.
3. Contact an authorized service technician for repair or maintenance of this unit.
4. Only use the included accessories, parts, and specified parts for installation. Using non-standard parts can cause water leakage, electrical shock, fire, and can cause the unit to fail.
5. Install the unit in a firm location that can support the unit’s weight. If the chosen location cannot support the units weight, or the installation is not done properly, the unit may drop and cause serious injury and damage.
**WARNING**

6. For all electrical work, follow all local and national wiring standards, regulations, and the Installation Manual. You must use an independent circuit and single outlet to supply power. Do not connect other appliances to the same outlet. Insufficient electrical capacity or defects in electrical work can cause electrical shock or fire.

7. For all electrical work, use the specified cables. Connect cables tightly, and clamp them securely to prevent external forces from damaging the terminal. Improper electrical connections can overheat and cause fire, and may also cause shock.

8. All wiring must be properly arranged to ensure that the control board cover can close properly. If the control board cover is not closed properly, it can lead to corrosion and cause the connection points on the terminal to heat up, catch fire, or cause electrical shock.

9. In certain functional environments, such as kitchens, server rooms, etc., the use of specially designed air-conditioning units is highly recommended.

10. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

11. This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

**CAUTION**

- For units that have an auxiliary electric heater, do not install the unit within 1 meter (3 feet) of any combustible materials.
- **Do not** install the unit in a location that may be exposed to combustible gas leaks. If combustible gas accumulates around the unit, it may cause fire.
- **Do not** operate your air conditioner in a wet room such as a bathroom or laundry room. Too much exposure to water can cause electrical components to short circuit.
  1. The product must be properly grounded at the time of installation, or electrical shock may occur.
  2. Install drainage piping according to the instructions in this manual. Improper drainage may cause water damage to your home and property.

**Note about Fluorinated Gasses**

1. This air-conditioning unit contains fluorinated gasses. For specific information on the type of gas and the amount, please refer to the relevant label on the unit itself.
2. Installation, service, maintenance and repair of this unit must be performed by a certified technician.
3. Product uninstallation and recycling must be performed by a certified technician.
4. If the system has a leak-detection system installed, it must be checked for leaks at least every 12 months.
5. When the unit is checked for leaks, proper record-keeping of all checks is strongly recommended.
### Accessories

The air conditioning system comes with the following accessories. Use all of the installation parts and accessories to install the air conditioner. Improper installation may result in water leakage, electrical shock and fire, or cause the equipment to fail.

<table>
<thead>
<tr>
<th>Name</th>
<th>Shape</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mounting plate</td>
<td><img src="image" alt="Mounting plate" /></td>
<td>1</td>
</tr>
<tr>
<td>Clip anchor</td>
<td><img src="image" alt="Clip anchor" /></td>
<td>5</td>
</tr>
<tr>
<td>Mounting plate fixing screw ST3.9 X 25</td>
<td><img src="image" alt="Mounting plate fixing screw" /></td>
<td>5</td>
</tr>
<tr>
<td>Remote controller</td>
<td><img src="image" alt="Remote controller" /></td>
<td>1</td>
</tr>
<tr>
<td>Fixing screw for remote controller holder ST2.9 x 10</td>
<td><img src="image" alt="Fixing screw" /></td>
<td>2</td>
</tr>
<tr>
<td>Remote controller holder</td>
<td><img src="image" alt="Remote controller holder" /></td>
<td>1</td>
</tr>
<tr>
<td>Dry battery AAA.LR03</td>
<td><img src="image" alt="Dry battery" /></td>
<td>2</td>
</tr>
<tr>
<td>Air freshening filter</td>
<td><img src="image" alt="Air freshening filter" /></td>
<td>1</td>
</tr>
<tr>
<td>Seal</td>
<td><img src="image" alt="Seal" /></td>
<td>1</td>
</tr>
<tr>
<td>Drain joint</td>
<td><img src="image" alt="Drain joint" /></td>
<td>1</td>
</tr>
<tr>
<td>Name</td>
<td>Shape</td>
<td>Quantity</td>
</tr>
<tr>
<td>---------------------------------------</td>
<td>---------</td>
<td>----------</td>
</tr>
<tr>
<td>Owner's/Installation manual</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Connecting pipe assembly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liquid side</td>
<td>Φ 6.35 (1/4in)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Φ 9.52 (3/8in)</td>
<td></td>
</tr>
<tr>
<td>Gas side</td>
<td>Φ 9.52 (3/8in)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Φ 12.7 (1/2in)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Φ 16 (5/8in)</td>
<td></td>
</tr>
</tbody>
</table>

Parts you must purchase. Consult the dealer about the pipe size.
Installation Summary - Indoor Unit

1. Select Installation Location
   - 15 cm (5.9 in)
   - 12 cm (4.75 in)
   - 2.3 m (90.55 in)

2. Determine Wall Hole Position

3. Attach Mounting Plate

4. Drill Wall Hole
5. Connect Piping

6. Connect Wiring

7. Prepare Drain Hose

8. Wrap Piping and Cable

9. Mount Indoor Unit
Unit Parts

NOTE ON ILLUSTRATIONS
Illustrations in this manual are for explanatory purposes. The actual shape of your indoor unit may be slightly different. The actual shape shall prevail.
Installation Instructions - Indoor Unit

PRIOR TO INSTALLATION
Before installing the indoor unit, refer to the label on the product box to make sure that the model number of the indoor unit matches the model number of the outdoor unit.

Step 1: Select installation location
Before installing the indoor unit, you must choose an appropriate location.
The following are standards that will help you choose an appropriate location for the unit.

Proper installation locations meet the following standards:
✓ Good air circulation
✓ Convenient drainage
✓ Noise from the unit will not disturb other people
✓ Firm and solid—the location will not vibrate
✓ Strong enough to support the weight of the unit
✓ A location at least 3.5 feet from all other electrical devices (e.g., TV, radio, computer)

DO NOT install unit in the following locations:
🚫 Near any source of heat, steam, or combustible gas
🚫 Near flammable items such as curtains or clothing
🚫 Near any obstacle that might block air circulation
🚫 Near the doorway
🚫 In a location subject to direct sunlight

NOTE ABOUT WALL HOLE:
If there is no fixed refrigerant piping:
While choosing a location, be aware that you should leave ample room for a wall hole (see Drill wall hole for connective piping step) for the signal cable and refrigerant piping that connect the indoor and outdoor units. The default position for all piping is the right side of the indoor unit (while facing the unit). However, the unit can accommodate piping to both the left and right.
Refer to the following diagram to ensure proper distance from walls and ceiling:

Step 2: Attach mounting plate to wall
The mounting plate is the device on which you will mount the indoor unit.
1. Take out the mounting plate which packed with the indoor unit.
2. Place the mounting plate against the wall in a location that meets the standards in the Select Installation Location step. (See Mounting Plate Dimensions for detailed information on mounting plate sizes.)
3. Drill holes for mounting screws in places that: Have studs and can support the weight of the unit Correspond to screw holes in the mounting plate
4. Secure the mounting plate to the wall with the screws provided.
5. Make sure that mounting plate is flat against the wall.

NOTE FOR CONCRETE OR BRICK WALLS:
If the wall is made of brick, concrete, or similar material, drill 0.2in-diameter holes in the wall and insert the sleeve anchors provided. Then secure the mounting plate to the wall by tightening the screws directly into the clip anchors.

Step 3: Drill wall hole for connective piping
You must drill a hole in the wall for refrigerant piping, the drainage pipe, and the signal cable that will connect the indoor and outdoor units.
1. Determine the location of the wall hole based on the position of the mounting plate. Refer to Mounting Plate Dimensions on the next page to help you determine the optimal position. The wall hole should be at least 2.5 in from the side of the unit, and at a slightly lower angle to facilitate drainage.
2. Using a 2.5 in core drill, drill a hole in the wall. Make sure that the hole is drilled at a slight downward angle, so that the outdoor end of the hole is lower than the indoor end by about 0.2-0.275 in. This will ensure proper water drainage. (See Fig. 3.2)
3. Place the protective wall cuff in the hole. This protects the edges of the hole and will help seal it when you finish the installation process.

⚠️ CAUTION
When drilling the wall hole, make sure to avoid wires, plumbing, and other sensitive components.
Different models have different mounting plates. In order to ensure that you have ample room to mount the indoor unit, the diagrams to the right show different types of mounting plates along with the following dimensions:

- Width of mounting plate
- Height of mounting plate
- Width of indoor unit relative to plate
- Height of indoor unit relative to plate
- Recommended position of wall hole (both to the left and right of mounting plate)
- Relative distances between screw holes

Correct orientation of Mounting Plate

- ✓
- ✗
- ✗
Step 4: Prepare refrigerant piping
The refrigerant piping is inside an insulating sleeve attached to the back of the unit. You must prepare the piping before passing it through the hole in the wall. Refer to the Refrigerant Piping Connection section of this manual for detailed instructions on pipe flaring and flare torque requirements, technique, etc.

1. Based on the position of the wall hole relative to the mounting plate, choose the side from which the piping will exit the unit.
2. If the wall hole is behind the unit, keep the knock-out panel in place. If the wall hole is to the side of the indoor unit, remove the plastic knock-out panel from that side of the unit. (See Fig. 3.3). This will create a slot through which your piping can exit the unit. Use needle nose pliers if the plastic panel is too difficult to remove by hand.

3. Use scissors to cut down the length of the insulating sleeve to reveal about 6 in of the refrigerant piping. This serves two purposes:
   • To facilitate the Refrigerant Piping Connection process
   • To facilitate Gas Leak Checks and enable you to check for dents

4. If existing connective piping is already embedded in the wall, proceed directly to the Connect Drain Hose step. If there is no embedded piping, connect the indoor unit’s refrigerant piping to the connective piping that will join the indoor and outdoor units. Refer to the Refrigerant Piping Connection section of this manual for detailed instructions.
5. Based on the position of the wall hole relative to the mounting plate, determine the necessary angle of your piping.
6. Grip the refrigerant piping at the base of the bend.
7. Slowly, with even pressure, bend the piping towards the hole. DO NOT dent or damage the piping during the process.

NOTE ON PIPING ANGLE
Refrigerant piping can exit the indoor unit from four different angles:
   • Left-hand side
   • Left rear
   • Right hand side
   • Right rear

Refer to Fig. 3.4 for details.

CAUTION
Be extremely careful not to dent or damage the piping while bending them away from the unit. Any dents in the piping will affect the unit’s performance.
Step 5: Connect drain hose
By default, the drain hose is attached to the left-hand side of the unit (when you’re facing the back of the unit). However, it can also be attached to the right hand side.
1. To ensure proper drainage, attach the drain hose on the same side that your refrigerant piping exits the unit. However, it can also be attached to the right hand side.
2. Attach drain hose extension (purchased separately) to the end of drain hose.
3. Wrap the connection point firmly with Teflon tape to ensure a good seal and to prevent leaks.
4. For the portion of the drain hose that will remain indoors, wrap it with foam pipe insulation to prevent condensation.
5. Remove the air filter and pour a small amount of water into the drain pan to make sure that water flows from the unit smoothly.

NOTE ON DRAIN HOSE PLACEMENT
Make sure to arrange the drain hose according to Fig. 3.5.

DO NOT kink the drain hose.
DO NOT create a water trap.
DO NOT put the end of drain hose in water or a container that will collect water.

PLUG THE UNUSED DRAIN HOLE
To prevent unwanted leaks you must plug the unused drain hole with the rubber plug provided.

CORRECT
Make sure there are no kinks or dent in drain hose to ensure proper drainage.

NOT CORRECT
Kinks in the drain hose will create water traps.
BEFORE PERFORMING ELECTRICAL WORK, READ THESE REGULATIONS

1. All wiring must comply with local and national electrical codes, and must be installed by a licensed electrician.

2. All electrical connections must be made according to the Electrical Connection Diagram located on the panels of the indoor and outdoor units.

3. If there is a serious safety issue with the power supply, stop work immediately. Explain your reasoning to the client, and refuse to install the unit until the safety issue is properly resolved.

4. Power voltage should be within 90-100% of rated voltage. Insufficient power supply can cause malfunction, electrical shock, or fire.

5. If connecting power to fixed wiring, a switch or circuit breaker that disconnects all poles and has a contact separation of at least 1/8in (3mm) must be incorporated in the fixed wiring. The qualified technician must use an approved circuit breaker or switch.

6. Only connect the unit to an individual branch circuit outlet. Do not connect another appliance to that outlet.

7. Make sure to properly ground the air conditioner.

8. Every wire must be firmly connected. Loose wiring can cause the terminal to overheat, resulting in product malfunction and possible fire.

9. Do not let wires touch or rest against refrigerant tubing, the compressor, or any moving parts within the unit.

10. If the unit has an auxiliary electric heater, it must be installed at least 1 meter (40in) away from any combustible materials.

⚠️ WARNING

BEFORE PERFORMING ANY ELECTRICAL OR WIRING WORK, TURN OFF THE MAIN POWER TO THE SYSTEM.
Step 6: Connect signal and power cables

The signal cable enables communication between the indoor and outdoor units. You must first choose the right cable size before preparing it for connection.

Cable Types

• Indoor Power Cable (if applicable): H05VV-F or H05V2V2-F
• Outdoor Power Cable: H07RN-F
• Signal Cable: H07RN-F

Minimum Cross-Sectional Area of Power and Signal Cables

<table>
<thead>
<tr>
<th>Appliance Amps (A)</th>
<th>AWG</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>18</td>
</tr>
<tr>
<td>13</td>
<td>16</td>
</tr>
<tr>
<td>18</td>
<td>14</td>
</tr>
<tr>
<td>25</td>
<td>12</td>
</tr>
<tr>
<td>30</td>
<td>10</td>
</tr>
</tbody>
</table>

TAKE NOTE OF FUSE SPECIFICATIONS

The air conditioner’s circuit board (PCB) is designed with a fuse to provide overcurrent protection. The specifications of the fuse are printed on the circuit board, such as: T3.15A/250VAC, T5A/250VAC, etc.

1. Prepare the cable for connection:
   a. Using wire strippers, strip the rubber jacket from both ends of signal cable to reveal about 1.57 in of the wires inside.
   b. Strip the insulation from the ends of the wires.
   c. Using wire crimper, crimp u-type lugs on the ends of the wires.

PAY ATTENTION TO LIVE WIRE

While crimping wires, make sure you clearly distinguish the Live (“L”) Wire from other wires.

2. Open front panel of the indoor unit.
3. Using a screwdriver, open the wire box cover on the right side of the unit. This will reveal the terminal block.

WARNING

ALL WIRING MUST PERFORMED STRICTLY IN ACCORDANCE WITH THE WIRING DIAGRAM LOCATED ON THE INSIDE OF THE INDOOR UNIT’S WIRE COVER.

4. Unscrew the cable clamp below the terminal block and place it to the side.
5. Facing the back of the unit, remove the plastic panel on the bottom left-hand side.
6. Feed the signal wire through this slot, from the back of the unit to the front.

7. Facing the front of the unit, match the wire colors with the labels on the terminal block, connect the u-lug and and firmly screw each wire to its corresponding terminal.

**CAUTION**

**DO NOT MIX UP LIVE AND NULL WIRES**
This is dangerous, and can cause the air conditioning unit to malfunction.

8. After checking to make sure every connection is secure, use the cable clamp to fasten the signal cable to the unit. Screw the cable clamp down tightly.

9. Replace the wire cover on the front of the unit, and the plastic panel on the back.

**NOTE ABOUT WIRING**

THE WIRING CONNECTION PROCESS MAY DIFFER SLIGHTLY BETWEEN UNITS

**Step 7: Wrap piping and cables**
Before passing the piping, drain hose, and the signal cable through the wall hole, you must bundle them together to save space, protect them, and insulate them.

1. Bundle the drain hose, refrigerant pipes, and signal cable according to Fig. 3.10

2. Using adhesive vinyl tape, attach the drain hose to the underside of the refrigerant pipes.

3. Using insulation tape, wrap the signal wire, refrigerant pipes, and drain hose tightly together. Double-check that all items are bundled in accordance with Fig. 3.10

4. Using even pressure, push down on the bottom half of the unit. Keep pushing down until the unit snaps onto the hooks along the bottom of the mounting plate.

**Step 8: Mount indoor unit**
If you installed new connective piping to the outdoor unit, do the following:

1. If you have already passed the refrigerant piping through the hole in the wall, proceed to Step 4.

2. Otherwise, double-check that the ends of the refrigerant pipes are sealed to prevent dirt or foreign materials from entering the pipes.

3. Slowly pass the wrapped bundle of refrigerant pipes, drain hose, and signal wire through the hole in the wall.

4. Hook the top of the indoor unit on the upper hook of the mounting plate.

5. Check that unit is hooked firmly on mounting by applying slight pressure to the left and right-hand sides of the unit. The unit should not jiggle or shift.

6. Using even pressure, push down on the bottom half of the unit. Keep pushing down until the unit snaps onto the hooks along the bottom of the mounting plate.

7. Again, check that the unit is firmly mounted by applying slight pressure to the left and the right-hand sides of the unit.

**DRAIN HOSE MUST BE ON BOTTOM**
Make sure that the drain hose is at the bottom of the bundle. Putting the drain hose at the top of the bundle can cause the drain pan to overflow, which can lead to fire or water damage.
If refrigerant piping is already embedded in the wall, do the following:

1. Hook the top of the indoor unit on the upper hook of the mounting plate.

2. Use a bracket or wedge to prop up the unit, giving you enough room to connect the refrigerant piping, signal cable, and drain hose. Refer to Fig. 3.11 for an example.

3. Connect drain hose and refrigerant piping (refer to Refrigerant Piping Connection section of this manual for instructions).

4. Keep pipe connection point exposed to perform the leak test (refer to Electrical Checks and Leak Checks section of this manual).

5. After the leak test, wrap the connection point with insulation tape.

6. Remove the bracket or wedge that is propping up the unit.

7. Using even pressure, push down on the bottom half of the unit. Keep pushing down until the unit snaps onto the hooks along the bottom of the mounting plate.

UNIT IS ADJUSTABLE

Keep in mind that the hooks on the mounting plate are smaller than the holes on the back of the unit. If you find that you don’t have ample room to connect embedded pipes to the indoor unit, the unit can be adjusted left or right by about 1.25-1.95in, depending on the model. (see Fig. 3.12).
Installation Instructions - Outdoor Unit

Step 1: Select installation location
Before installing the outdoor unit, you must choose an appropriate location. The following are standards that will help you choose an appropriate location for the unit.

Proper installation locations meet the following standards:

- Meets all spatial requirements shown in Installation Space Requirements (Fig. 4.1)
- Good air circulation and ventilation
- Firm and solid - the location can support the unit and will not vibrate
- Noise from the unit will not disturb others
- Protected from prolonged periods of direct sunlight or rain

DO NOT install unit in the following locations:
- Near an obstacle that will block air inlets and outlets
- Near a public street, crowded areas, or where noise from the unit will disturb others
- Near animals or plants that will be harmed by hot air discharge
- Near any source of combustible gas
- In a location that is exposed to large amounts of dust
- In a location exposed to a excessive amounts of salty air
SPECIAL CONSIDERATIONS FOR EXTREME WEATHER
If the unit is exposed to heavy wind:
Install unit so that air outlet fan is at a 90° angle to the direction of the wind. If needed, build a barrier in front of the unit to protect it from extremely heavy winds.
See Fig. 4.2 and Fig. 4.3 below.

If the drain joint comes with a rubber seal (see Fig. 4.4 - A), do the following:
1. Fit the rubber seal on the end of the drain joint that will connect to the outdoor unit.
2. Insert the drain joint into the hole in the base pan of the unit.
3. Rotate the drain joint 90° until it clicks in place facing the front of the unit.
4. Connect a drain hose extension (not included) to the drain joint to redirect water from the unit during heating mode.

If the drain joint doesn’t come with a rubber seal (see Fig. 4.4 - B), do the following:
1. Insert the drain joint into the hole in the base pan of the unit. The drain joint will click in place.
2. Connect a drain hose extension (not included) to the drain joint to redirect water from the unit during heating mode.

If the unit is frequently exposed to heavy rain or snow:
Build a shelter above the unit to protect it from the rain or snow. Be careful not to obstruct air flow around the unit.
If the unit is frequently exposed to salty air (seaside):
Use outdoor unit that is specially designed to resist corrosion.

Step 2: Install drain joint
Heat pump units require a drain joint. Before bolting the outdoor unit in place, you must install the drain joint at the bottom of the unit. Note that there are two different types of drain joints depending on the type of outdoor unit.

IN COLD CLIMATES
In cold climates, make sure that the drain hose is as vertical as possible to ensure swift water drainage. If water drains too slowly, it can freeze in the hose and flood the unit.
Step 3: Anchor outdoor unit
The outdoor unit can be anchored to the ground or to a wall-mounted bracket.

UNIT MOUNTING DIMENSIONS
The following is a list of different outdoor unit sizes and the distance between their mounting feet. Prepare the installation base of the unit according to the dimensions below.

<table>
<thead>
<tr>
<th>Outdoor Unit Dimensions (mm/in)</th>
<th>Mounting Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>W x H x D</td>
<td>Distance A (in)</td>
</tr>
<tr>
<td>26.8&quot;x17&quot;x11.2&quot;</td>
<td>18.10&quot;</td>
</tr>
<tr>
<td>27.5&quot;x21.6&quot;x10.62&quot;</td>
<td>17.7&quot;</td>
</tr>
<tr>
<td>30.7&quot;x21.25&quot;x9.85&quot;</td>
<td>21.6&quot;</td>
</tr>
<tr>
<td>33.25&quot;x27.5&quot;x12.6&quot;</td>
<td>22&quot;</td>
</tr>
<tr>
<td>31.9&quot;x22&quot;x12.2&quot;</td>
<td>21.6&quot;</td>
</tr>
<tr>
<td>27.5&quot;x21.6&quot;x10.82&quot;</td>
<td>17.7&quot;</td>
</tr>
<tr>
<td>30.3&quot;x21.85&quot;x11.81&quot;</td>
<td>19.2&quot;</td>
</tr>
<tr>
<td>31.5&quot;x21.8&quot;x13.1&quot;</td>
<td>20.24&quot;</td>
</tr>
<tr>
<td>33.25&quot;x27.63&quot;x14.29&quot;</td>
<td>21.26&quot;</td>
</tr>
<tr>
<td>35.4&quot;x33.85&quot;x12.4&quot;</td>
<td>23.2&quot;</td>
</tr>
<tr>
<td>37.2&quot;x31.9&quot;x15.55&quot;</td>
<td>25.2&quot;</td>
</tr>
<tr>
<td>37.21&quot;x31.9&quot;x16.53&quot;</td>
<td>26.5&quot;</td>
</tr>
</tbody>
</table>

If you will install the unit on the ground or on a concrete mounting platform, do the following:
1. Mark the positions for four expansion bolts based on dimensions in the Unit Mounting Dimensions chart.
2. Pre-drill holes for expansion bolts.
3. Clean concrete dust away from holes.
4. Place a nut on the end of each expansion bolt.
5. Hammer expansion bolts into the pre-drilled holes.

6. Remove the nuts from expansion bolts, and place outdoor unit on bolts.
7. Put washer on each expansion bolt, then replace the nuts.
8. Using a wrench, tighten each nut until snug.

**WARNING**
WHEN DRILLING INTO CONCRETE, EYEPROTECTION IS RECOMMENDED AT ALL TIMES.
If you will install the unit on a wall-mounted bracket, do the following:

**CAUTION**
Before installing a wall-mounted unit, make sure that the wall is made of solid brick, concrete, or of similarly strong material. The wall must be able to support at least four times the weight of the unit.

1. Mark the position of bracket holes based on dimensions in the Unit Mounting Dimensions chart.
2. Pre-drill the holes for the expansion bolts.
3. Clean dust and debris away from holes.
4. Place a washer and nut on the end of each expansion bolt.
5. Thread expansion bolts through holes in mounting brackets, put mounting brackets in position, and hammer expansion bolts into the wall.
6. Check that the mounting brackets are level.
7. Carefully lift unit and place its mounting feet on brackets.
8. Bolt the unit firmly to the brackets.

**TO REDUCE VIBRATIONS OF WALL-MOUNTED UNIT**
If allowed, you can install the wall-mounted unit with rubber gaskets to reduce vibrations and noise.

**BEFORE PERFORMING ELECTRICAL WORK, READ THESE REGULATIONS**

1. All wiring must comply with local and national electrical codes, and must be installed by a licensed electrician.
2. All electrical connections must be made according to the Electrical Connection Diagram located on the side panels of the indoor and outdoor units.
3. If there is a serious safety issue with the power supply, stop work immediately. Explain your reasoning to the client, and refuse to install the unit until the safety issue is properly resolved.
4. Power voltage should be within 90-100% of rated voltage. Insufficient power supply can cause electrical shock or fire.
5. If connecting power to fixed wiring, install a surge protector and main power switch with a capacity of 1.5 times the maximum current of the unit.
6. If connecting power to fixed wiring, a switch or circuit breaker that disconnects all poles and has a contact separation of at least 1/8in must be incorporated in the fixed wiring. The qualified technician must use an approved circuit breaker or switch.
7. Only connect the unit to an individual branch circuit outlet. Do not connect another appliance to that outlet.
8. Make sure to properly ground the air conditioner.
9. Every wire must be firmly connected. Loose wiring can cause the terminal to overheat, resulting in product malfunction and possible fire.
10. **Do not** let wires touch or rest against refrigerant tubing, the compressor, or any moving parts within the unit.
11. If the unit has an auxiliary electric heater, it must be installed at least 40in away from any combustible materials.
BEFORE PERFORMING ANY ELECTRICAL OR WIRING WORK, TURN OFF THE MAIN POWER TO THE SYSTEM.

1. Prepare the cable for connection:

USE THE RIGHT CABLE

- Indoor Power Cable (if applicable): H05VV-F or H05V2V2-F
- Outdoor Power Cable: H07RN-F
- Signal Cable: H07RN-F

Minimum Cross-Sectional Area of Power and Signal Cables

<table>
<thead>
<tr>
<th>Appliance Amps (A)</th>
<th>AWG</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>18</td>
</tr>
<tr>
<td>13</td>
<td>16</td>
</tr>
<tr>
<td>18</td>
<td>14</td>
</tr>
<tr>
<td>25</td>
<td>12</td>
</tr>
<tr>
<td>30</td>
<td>10</td>
</tr>
</tbody>
</table>

a. Using wire strippers, strip the rubber jacket from both ends of cable to reveal about 1.57in of the wires inside.
b. Strip the insulation from the ends of the wires.
c. Using a wire crimper, crimp u-lugs on the ends of the wires.

PAY ATTENTION TO LIVE WIRE
While crimping wires, make sure you clearly distinguish the Live (“L”) Wire from other wires.

WARNING
ALL WIRING MUST PERFORMED STRICTLY IN ACCORDANCE WITH THE WIRING DIAGRAM LOCATED INSIDE THE OUTDOOR UNIT’S WIRE COVER.

2. Unscrew the electrical wiring cover and remove it.
3. Unscrew the cable clamp below the terminal block and place it to the side.
4. Match the wire colors/labels with the labels on the terminal block, and firmly screw the u-lug of each wire to its corresponding terminal.
5. After checking to make sure every connection is secure, loop the wires around to prevent rain water from flowing into the terminal.
6. Using the cable clamp, fasten the cable to the unit. Screw the cable clamp down tightly.
7. Insulate unused wires with PVC electrical tape. Arrange them so that they do not touch any electrical or metal parts.
8. Replace the wire cover on the side of the unit, and screw it in place.
Refrigerant Piping Connection.

Note on Pipe Length
The length of refrigerant piping will affect the performance and energy efficiency of the unit. Nominal efficiency is tested on units with a pipe length of 16.5ft. Refer to the table below for specifications on the maximum length and drop height of piping.

<table>
<thead>
<tr>
<th>Model</th>
<th>Capacity (BTU/h)</th>
<th>Max. Length</th>
<th>Max. Drop Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>R410A Inverter Split Air Conditioner</td>
<td>&lt; 15,000</td>
<td>82ft</td>
<td>33ft</td>
</tr>
<tr>
<td></td>
<td>≥ 15,000 and &lt; 24,000</td>
<td>98.5ft</td>
<td>66ft</td>
</tr>
<tr>
<td></td>
<td>≥ 24,000 and &lt; 36,000</td>
<td>164ft</td>
<td>82ft</td>
</tr>
<tr>
<td></td>
<td>≥ 36,000 and ≤ 60,000</td>
<td>213ft</td>
<td>98.5ft</td>
</tr>
</tbody>
</table>

Connection Instructions - Refrigerant Piping.

Step 1: Cut pipes
When preparing refrigerant pipes, take extra care to cut and flare them properly. This will ensure efficient operation and minimize the need for future maintenance.

1. Measure the distance between the indoor and outdoor units.
2. Using a pipe cutter, cut the pipe a little longer than the measured distance.
3. Make sure that the pipe is cut at a perfect 90 angle.
Refer to Fig. 5.1 for bad cut examples.
DO NOT DEFORM PIPE WHILE CUTTING

Be extra careful not to damage, dent, or deform the pipe while cutting. This will drastically reduce the heating efficiency of the unit.

Step 2: Remove burrs

Burrs can affect the air-tight seal of refrigerant piping connection. They must be completely removed.

1. Hold the pipe at a downward angle to prevent burrs from falling into the pipe.
2. Using a reamer or deburring tool, remove all burrs from the cut section of the pipe.

Step 3: Flare pipe ends

Proper flaring is essential to achieve an airtight seal.

1. After removing burrs from cut pipe, seal the ends with PVC tape to prevent foreign materials from entering the pipe.
2. Sheath the pipe with insulating material.
3. Place flare nuts on both ends of pipe. Make sure they facing in the right direction, because you can’t put them on or change their direction after flaring. See Fig. 5.3.

4. Remove PVC tape from ends of pipe when ready to perform flaring work.

5. Clamp flare form on the end of the pipe. The end of the pipe must extend beyond the edge of the flare form in accordance with the dimensions shown in the table below.

<table>
<thead>
<tr>
<th>Outer Diameter of Pipe</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø 0.25”</td>
<td>0.0275”</td>
</tr>
<tr>
<td>Ø 0.375”</td>
<td>0.04”</td>
</tr>
<tr>
<td>Ø 0.5”</td>
<td>0.04”</td>
</tr>
<tr>
<td>Ø 0.63”</td>
<td>0.078”</td>
</tr>
</tbody>
</table>
6. Place flaring tool onto the form.
7. Turn the handle of the flaring tool clockwise until the pipe is fully flared.
8. Remove the flaring tool and flare form, then inspect the end of the pipe for cracks and even flaring.

**Step 4: Connect pipes**

When connecting refrigerant pipes, be careful not to use excessive torque or to deform the piping in any way. You should first connect the low-pressure pipe, then the high-pressure pipe.

**MINIMUM BEND RADIUS**
When bending connective refrigerant piping, the minimum bending radius is 4 in. See Fig 5.6.

![Fig. 5.6](image)

---

**Instructions for connecting Piping to indoor Unit**

1. Align the center of the two pipes that you will connect. See Fig. 5.7

![Fig. 5.7](image)

2. Tighten the flare nut as tightly as possible by hand.
3. Using a spanner, grip the nut on the unit tubing.
4. While firmly gripping the nut on the unit tubing, use a torque wrench to tighten the flare nut according to the torque values in the Torque Requirements table below. Loosen the flaring nut slightly, then tighten again.

![Fig. 5.8](image)

**TORQUE REQUIREMENTS**

<table>
<thead>
<tr>
<th>Outer Diameter of Pipe (in)</th>
<th>Tightening Torque (lb-ft)</th>
<th>Add. Tightening Torque (lb-ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø 0.25&quot;</td>
<td>11 lb-ft</td>
<td>11.8 lb-ft</td>
</tr>
<tr>
<td>Ø 0.375&quot;</td>
<td>18.4 lb-ft</td>
<td>19.18 lb-ft</td>
</tr>
<tr>
<td>Ø 0.5&quot;</td>
<td>25.8 lb-ft</td>
<td>26.55 lb-ft</td>
</tr>
<tr>
<td>Ø 0.63&quot;</td>
<td>33.19 lb-ft</td>
<td>34.67 lb-ft</td>
</tr>
</tbody>
</table>

---

**DO NOT USE EXCESSIVE TORQUE**

Excessive force can break the nut or damage the refrigerant piping. You must not exceed torque requirementes shown in the table above.
Instructions for connecting Piping to Outdoor Unit

1. Unscrew the cover from the packed valve on the side of the outdoor unit. (See Fig. 5.9)

2. Remove protective caps from ends of valves.
3. Align flared pipe end with each valve, and tighten the flare nut as tightly as possible by hand.
4. Using a spanner, grip the body of the valve. Do not grip the nut that seals the service valve. (See Fig. 5.10).

5. While firmly gripping the body of the valve, use a torque wrench to tighten the flare nut according to the correct torque values.
6. Loosen the flaring nut slightly, then tighten again.
7. Repeat Steps 3 to 6 for the remaining pipe.

**USE SPANNER TO GRIP MAIN BODY OF VALVE**

Torque from tightening the flare nut can snap off other parts of valve.
Preparations and Precautions
Air and foreign matter in the refrigerant circuit can cause abnormal rises in pressure, which can damage the air conditioner, reduce its efficiency, and cause injury. Use a vacuum pump and manifold gauge to evacuate the refrigerant circuit, removing any non-condensable gas and moisture from the system.

Evacuation should be performed upon initial installation and when unit is relocated.

BEFORE PERFORMING EVACUATION

✔ Check to make sure that both high-pressure and low-pressure pipes between the indoor and outdoor units are connected properly in accordance with the Refrigerant Piping Connection section of this manual.

✔ Check to make sure all wiring is connected properly.

Evacuation Instructions
Before using the manifold gauge and vacuum pump, read their operation manuals to familiarize yourself with how to use them properly.

1. Connect the charge hose of the manifold gauge to service port on the outdoor unit’s low pressure valve.

2. Connect another charge hose from the manifold gauge to the vacuum pump.
3. Open the low Pressure side of the manifold gauge. Keep the High Pressure side closed.
4. Turn on the vacuum pump to evacuate the system.
5. Run the vacuum for at least 15 minutes, or until the Compound Meter reads -76cmHG (-105Pa).
6. Close the Low Pressure side of the manifold gauge, and turn off the vacuum pump.
7. Wait for 5 minutes, then check that there has been no change in system pressure.
8. If there is a change in system pressure, refer to Gas Leak Check section for information on how to check for leaks. If there is no change in system pressure, unscrew the cap from the packed valve (high pressure valve).
9. Insert hexagonal wrench into the packed valve (high pressure valve) and open the valve by turning the the wrench in a 1/4 counterclockwise turn. Listen for gas to exit the system, then close the valve after 5 seconds.
10. Watch the Pressure Gauge for one minute to make sure that there is no change in pressure. The pressure Gauge should read slightly higher than atmospheric pressure.

11. Remove the charge hose from the service port.
12. Using hexagonal wrench, fully open both the high pressure and low pressure valves.
13. Tighten valve caps on all three valves (service port, high pressure, low pressure) by hand. You may tighten it further using a torque wrench if needed.

**OPEN VALVE STEM GENTLY**

When opening valve stems, turn the hexagonal wrench until it hits againsts the stopper. Do not try to force the valve to open further.

---

**Note on Adding Refrigerant**

Some systems require additional charging depending on pipe lengths. The additional refrigerant to be charged can be calculated using the following formula:

<table>
<thead>
<tr>
<th>Connective Pipe Length (m)</th>
<th>Air Purging Method</th>
<th>Additional Refrigerant</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 7.5m</td>
<td>Vacuum Pump</td>
<td><strong>N/A</strong></td>
</tr>
</tbody>
</table>
| > 7.5m                     | Vacuum Pump        | **Liquid Side: ø 0.25”**
|                            |                    | R22: (Pipe length - 7.5m) x 0.32oZ/ft |
|                            |                    | Inverter R410A: (Pipe length - 7.5m) x 0.16oZ/ft |
|                            |                    | Fixed-frequency R410A: (Pipe length - 7.5m) x 0.21oZ/ft |
|                            |                    | **Liquid Side: ø 0.375”**
|                            |                    | R22: (Pipe length - 7.5m) x 0.64oZ/ft |
|                            |                    | Inverter R410A: (Pipe length - 7.5m) x 0.32oZ/ft |
|                            |                    | Fixed-frequency R410A: (Pipe length - 7.5m) x 0.42oZ/ft |

**CAUTION**

DO NOT mix refrigerant types.
Electrical and Gas Leak Checks

Electrical Safety Checks
After installation, confirm that all electrical wiring is installed in accordance with local and national regulations, and according to the Installation Manual.

BEFORE TEST RUN
Check Grounding Work
Measure grounding resistance by visual detection and with grounding resistance tester. Grounding resistance must be less than 4.
Note: This may not be required for some locations in the US.

DURING TEST RUN
Check for Electrical Leakage
During the Test Run, use an electroprobe and multimeter to perform a comprehensive electrical leakage test.
If electrical leakage is detected, turn off the unit immediately and call a licensed electrician to find and resolve the cause of the leakage.
Note: This may not be required for some locations in the US.

Gas Leak Checks
There are two different methods to check for gas leaks.

Soap and Water Method
Using a soft brush, apply soapy water or liquid detergent to all pipe connection points on the indoor unit and outdoor unit. The presence of bubbles indicates a leak.

Leak Detector Method
If using leak detector, refer to the device’s operation manual for proper usage instructions.

WARNING
RISK OF ELECTRIC SHOCK
ALL WIRING MUST COMPLY WITH LOCAL AND NATIONAL ELECTRICAL CODES, AND MUST BE INSTALLED BY A LICENSED ELECTRICIAN.

AFTER PERFORMING GAS LEAK CHECKS
After confirming that all pipe connection points DO NOT leak, replace the valve cover on the outside unit.
BEFORE TEST RUN
Only perform test run after you have completed the following steps:

• Electrical Safety Checks - Confirm that the unit’s electrical system is safe and operating properly.

• Gas Leak Checks - Check all fare nut connections and confirm that the system is not leaking.

• Confirm that gas and liquid (high and low pressure) valves are fully open.

TEST RUN INSTRUCTIONS
You should perform the Test Run for at least 30 minutes.

1. Connect power to the unit.
2. Press the ON/OFF button on the remote controller to turn it on.
3. Press the MODE button to scroll through the following functions, one at a time:
   • COOL - Select lowest possible temperature
   • HEAT - Select highest possible temperature
4. Let each function run for 5 minutes, and perform the following checks:

<table>
<thead>
<tr>
<th>List of Checks to Perform</th>
<th>PASS/FAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>No electrical leakage</td>
<td></td>
</tr>
<tr>
<td>Unit is properly grounded</td>
<td></td>
</tr>
<tr>
<td>All electrical terminals properly covered</td>
<td></td>
</tr>
<tr>
<td>Indoor and outdoor units are solidly installed</td>
<td></td>
</tr>
<tr>
<td>All pipe connection points do not leak</td>
<td>Outdoor (2):</td>
</tr>
<tr>
<td>Water drains properly from drain hose</td>
<td>Indoor (2):</td>
</tr>
<tr>
<td>All piping is properly insulated</td>
<td></td>
</tr>
<tr>
<td>Unit performs COOL function properly</td>
<td></td>
</tr>
<tr>
<td>Unit performs HEAT function properly</td>
<td></td>
</tr>
<tr>
<td>Indoor unit louvers rotate properly</td>
<td></td>
</tr>
<tr>
<td>Indoor unit responds to remote controller</td>
<td></td>
</tr>
</tbody>
</table>
DOUBLE-CHECK PIPE CONNECTIONS
During operation, the pressure of the refrigerant circuit will increase. This may reveal leaks that were not present during your initial leak check. Take time during the Test Run to double-check that all refrigerant pipe connection points do not have leaks. Refer to Gas Leak Check section for instructions.

5. After the Test Run is successfully completed, and you confirm that all checks points in List of Checks to Perform have PASSED, do the following:
   a. Using remote control, return unit to normal operating temperature.
   b. Using insulation tape, wrap the indoor refrigerant pipe connections that you left uncovered during the indoor unit installation process.

IF AMBIENT TEMPERATURE IS BELOW 63°F
You can’t use the remote controller to turn on the COOL function when the ambient temperature is below 17°F. In this instance, you can use the MANUAL CONTROL button to test the COOL function.

1. Lift the front panel of the indoor unit, and raise it until it clicks in place.
2. The MANUAL CONTROL button is located on the right-hand side of the unit. Press it 2 times to select the COOL function. See Fig. 8.1.
3. Perform Test Run as normal.