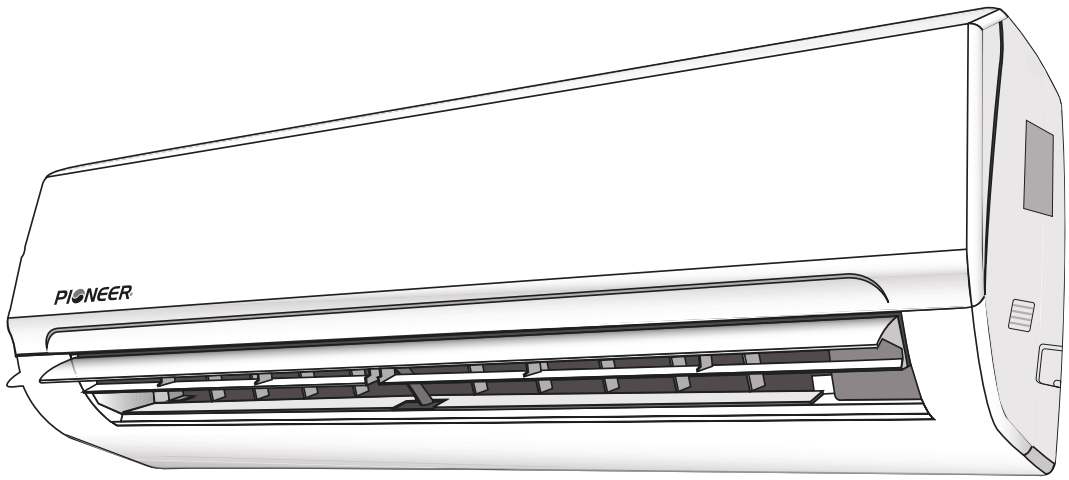
DUCTLESS MINI SPLIT SYSTEM AIR CONDITIONER / HEAT PUMP

PIONEER®

WYT-20S Inverter Series

For 9,000-36,000 BTU/hr Systems

Diamante Pro (R-454B) - WT Indoor and YN Outdoor



Installation & User Manual

IMPORTANT NOTICE:
Read this manual carefully before installing or operating the new air conditioning system. Be sure to save this manual for future reference.

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Read this Manual

The manual provides helpful hints on using and maintaining the air conditioner properly. Performing preventive care can save time and money over the lifespan of the air conditioner. These instructions may not cover every possible condition of use, so common sense and attention to safety is required when installing, operating, and maintaining this product.

Safety Precautions

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It is important to read this section before operating and installing the system. Incorrect installation due to ignoring instructions can cause serious damage or injury. The seriousness of potential damage and injuries is classified as either a warning or caution.

Explanation of Symbols



WARNING

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



CAUTION

This symbol indicates that ignoring the related instructions may cause moderate injury to nearby individuals and/or damage to the appliance or other property.



DANGER

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

WARNING

- Do not power the system with an extension cable or with wiring smaller than the specified gauge. Do not share the electrical outlet with other appliances. Improper or insufficient power supply can cause undesirable operation, fire, or electrical shock.

- When connecting the refrigerant piping, do not allow foreign substances or gases other than the specified refrigerant to enter the unit. The presence of other gases or substances will reduce the unit's capacity and cause abnormally high pressure in the refrigeration cycle. This may lead to permanent equipment failure, explosions, or severe injury. Ensure the system remains completely free of dust, moisture, and air.

- Do not allow children to play with or around the air conditioner. Supervise them near the unit at all times.

Safety Precautions

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WARNING

- Installation must be completed by trained personnel following applicable codes. Defective installation risks water leakage, electrical shock, or fire. Proper tools are required.

- Perform the installation according to the instructions. Improper installation can cause water leakage, undesirable performance, electrical shock, or fire. In North America, authorized personnel must perform the installation in accordance with the requirements of the NEC and CEC.

- If the unit requires repairs or maintenance, contact a qualified, licensed HVAC technician.

- Use only the included accessories, parts, and specified items for installation. Using non-standard components may cause water leaks, electrical shock, fire, or complete unit failure.

- Install the unit on a firm structure that can fully support its weight. If the location cannot support the unit, or if the installation is performed improperly, the unit may fall and cause serious injury or damage.

- Follow all local and national wiring regulations. Power must be supplied through an independent circuit and a dedicated breaker. Do not connect other appliances to the same circuit. Inadequate electrical capacity or poor workmanship may result in electrical shock or fire.

- Use the specified cables for all electrical work. Connect them tightly and clamp them securely to prevent external forces from damaging the terminals. Improper electrical connections can overheat, causing fires or electrical shocks.

- Properly arrange the wiring to ensure that the control board cover can close correctly. If the control board is not closed properly, it can lead to corrosion and cause the connection points at the terminals to heat up, catch fire, or cause electrical shock.

- Use specially designed air conditioners for functional environments, such as kitchens, server rooms, etc.

- If a part of the electrical wiring is damaged, a certified service agent or similarly qualified technicians must replace the wiring in order to avoid a hazard.

- Children aged 8 and above, as well as individuals with lack of experience or reduced physical, sensory, or mental capabilities can use the appliance if supervision or instruction is given. Do not allow children to play with or near the appliance. Children or untrained personnel should be restricted from cleaning and performing maintenance on the appliance, unless they're given supervision.

Safety Precautions

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CAUTION

- If the unit has an auxiliary electric heater, keep it at least 3 feet (1 m) away from combustible materials.
- Do not install the unit in a location that may be exposed to combustible gas leaks. Gas accumulation around the unit can cause a fire.
- Do not operate the air conditioner in highly humid spaces, such as bathrooms or laundry rooms. Exposure to high humidity or water can cause electrical components to short-circuit.
- The product must be properly grounded during installation to prevent electrical shock.
- Install the drainage piping according to the manual's instructions. Improper installation may cause water damage to your home and property.

Notes about Fluorinated Gases

- This air conditioner contains fluorinated gases. Refer to the label on the unit for the specific gas type and amount.
- Qualified and well-trained personnel must complete the installation, repair, servicing, and maintenance of the unit.
- A certified HVAC technician must remove and recycle the product.
- If the system includes a leak-detection feature, test its functionality at least once every 12 months.
- When checking the unit for leaks, log and record all findings.

Safety Precautions

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Safety Information for A2L Refrigerants

This air conditioner uses R-454B, an environmentally friendly refrigerant. Compared to conventional refrigerants, R-454B does not deplete the ozone layer and has a lower global warming potential (GWP). Note that R-454B is odorless and mildly flammable, and may pose a risk of fire or explosion under certain conditions.

Because this system contains R-454B refrigerant, read and follow the notices below. Intentionally venting refrigerant into the atmosphere is prohibited by federal law and may also violate state and local regulations. Always comply with all applicable EPA regulations and local laws.

- Refer to this manual for the required installation space dimensions, including the minimum clearance distances from adjacent structures.
- Install, operate, and store the appliance in a room that meets the minimum room area requirements.
- Keep the refrigerant piping length to a minimum.
- Protect the refrigerant piping from physical damage. Additionally, if the space is smaller than the minimum required area, ensure it is ventilated.
- Ensure the installation complies with all applicable national refrigerant regulations.
- Ensure all mechanical connections remain accessible for maintenance.
- Follow this manual's instructions to properly handle, install, clean, maintain, and dispose of the refrigerant.
- Confirm that all ventilation openings remain unobstructed.



Only service the equipment in accordance with the manufacturer's recommendations.



Store the appliance in a well-ventilated room that meets the minimum size requirements for operation.



Store the appliance in a room free of continuously operating open flames (e.g., an operating gas appliance) and ignition sources (e.g., an operating electric heater).

- Individuals working on refrigerant circuits must hold a valid certification from an industry-accredited assessment authority. They must prove their competence in handling refrigerants according to the recognized specifications of their industrial sector.
- Perform service operations strictly in accordance with the manufacturer's recommendations.
- If maintenance and repairs require assistance from additional qualified personnel, conduct the tasks under the supervision of a certified professional competent in handling flammable refrigerants.

Safety Precautions

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Service Information for A2L Refrigerants

- Store the appliance in a manner that prevents mechanical damage.
- Competent personnel must carry out any work procedures affecting safety measures.

WARNING

- Do not attempt to accelerate the defrosting process or remove frost manually.
- Follow the manufacturer's recommended procedures.
- Store the appliance in a room free of continuously operating ignition sources (e.g., open flames, active gas appliances, operating electric heaters).
- Do not pierce or incinerate the appliance or its components.
- Be aware that refrigerants may be odorless.
- **Area Inspection:**
  - Before servicing systems containing flammable refrigerants, perform safety checks to minimize the risk of ignition. When repairing the refrigeration system, observe all the following precautions before beginning any work.
- **Work Procedure:**
  - Conduct all work under a controlled process to minimize the risk of flammable gases or vapors from being present during service.
- **General Work Area:**
  - Notify all maintenance staff and individuals in the area about the work being performed.
  - Avoid working in confined spaces whenever possible.
  - Section off the work area to prevent unauthorized access.
- **Area Ventilation:**
  - Keep the area free of flammable materials and maintain controlled conditions for a safe working environment.
- **Checking for Refrigerant Presence:**
  - Monitor the work area for refrigerant leaks using an appropriate refrigerant detector before and during service.
  - Ensure that the leak detection equipment used is suitable for flammable refrigerants (i.e., non-sparking, adequately sealed, or intrinsically safe).
- **Presence of Fire Extinguisher:**
  - When performing hot work on refrigeration equipment or its components, ensure appropriate fire extinguishing equipment is readily available. Position a dry powder or CO_2 fire extinguisher adjacent to the charging area.
- **Elimination of Ignition Sources:**
  - Do not use ignition sources that could pose a fire or explosion risk when conducting any work involving the exposure of refrigeration system piping.
  - Keep all potential ignition sources, including smoking materials, away from installation, repair, removal, and disposal areas where refrigerant could accidentally escape.
  - Before starting work, inspect the area for flammable materials and ignition sources.
  - Clearly display "No Smoking" signs in the work area.

Safety Precautions

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- **Ventilated Area:**

  - Ensure the work is conducted either in an open area or in a space with adequate ventilation before breaking into the system or performing any heat-producing tasks.
  - Maintain ventilation throughout the duration of the work.
  - Ensure the ventilation system effectively disperses any released refrigerant and directs it safely to the outside atmosphere, if possible.

- **Inspection of Refrigeration Equipment:**

  - When replacing electrical components, ensure that they meet the correct specifications and are suitable for their intended purpose.
  - Follow the manufacturer's maintenance and service guidelines.
  - If unsure, consult the manufacturer's technical support department for guidance.

- **Inspections for Installations Using Flammable Refrigerants:**

  - Ensure that the refrigerant charge size complies with the minimum room size requirements when installing components that contain refrigerant.
  - Verify that the ventilation equipment and exhaust outlets are functioning properly and are free from obstructions.
  - If using an indirect refrigerant circuit, inspect the secondary circuit for any presence of refrigerant.
  - Confirm that all equipment markings remain visible and legible. Replace or correct any illegible markings or signs.
  - Install refrigeration piping and components away from corrosive substances. If exposure is unavoidable, verify that all components are either made from corrosion-resistant materials or adequately protected.

- **Inspection of Electrical Devices:**

  - Ensure that the repair and maintenance of electrical components include initial safety checks and a thorough inspection.
  - If the fault cannot be corrected immediately but work must continue, implement a temporary solution that is safe and effective.
  - Report any temporary measures to the equipment owner, ensuring that all relevant parties are informed.

- **Initial Safety Checks:**

  - Fully discharge the capacitors in a controlled manner to prevent sparking.
  - Verify that no live electrical components or exposed wiring are present during system charging, refrigerant recovery, or purging.
  - Confirm that earth bonding continuity is maintained.

- **Repairs to Sealed Components:**

  - Replace sealed electrical components, rather than repair them.

- **Repairs to Intrinsically Safe Components:**

  - Replace intrinsically safe components, rather than repair them.

Safety Precautions

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- **Cabling:** Do not expose the cabling to wear, corrosion, excessive pressure, vibration, sharp edges, or other adverse environmental factors. Consider the long-term effects of aging and continuous vibration from components such as compressors or fans.

- **Detection of Flammable Refrigerants:** Never use potential sources of ignition for refrigerant leak detection.

- **Leak Detection Methods:** The following methods are approved for detecting leaks in systems containing flammable refrigerants:

  - **Electronic Leak Detectors:** Use this method for detecting flammable refrigerants. They may require recalibration to maintain adequate sensitivity.

    -- Calibrate the detection equipment in a refrigerant-free area.

    -- Ensure the detector does not pose an ignition risk and is compatible with the refrigerant.

    -- Set the detector to a percentage of the refrigerant's Lower Flammability Limit (LFL), and calibrate it to confirm that the gas concentration does not exceed 25% of the LFL.

  - **Leak Detection Fluids:** This method is suitable for most refrigerants, but the system must not contain chlorine. Chlorine can react with the refrigerant and corrode copper piping.

  - **Safety Precautions:** If a leak is suspected, remove or extinguish all open flames. If a refrigerant leak requiring brazing is detected, fully recover the refrigerant or isolate it using the shut-off valves to prevent accidental release.

  - **Oxygen-Free Nitrogen (OFN):** Purge OFN through the system before and during brazing.

- **Removal & Evacuation:** Follow industry-standard practices when accessing the refrigerant circuit, adding extra precautions for flammability:

1. Recover the refrigerant into approved recovery cylinders.

2. Purge the circuit using an inert gas, such as OFN.

3. Evacuate the system.

4. Purge the circuit again using inert gas.

5. Open the circuit by cutting or brazing.

-- Flush the system with OFN to ensure safety. Repeat this process multiple times if needed.

-- Do not use compressed air or oxygen for flushing.

- **Flushing:** Follow this flushing procedure:

1. Break the system vacuum with OFN.

2. Fill the system until the working pressure is reached.

3. Vent the system to atmospheric pressure.

4. Pull the system down to vacuum.

5. Repeat this process until no refrigerant remains in the system.

6. Once the final OFN charge is introduced, vent the system to atmospheric pressure to ensure a safe workspace. This step is critical before brazing any pipework.

Position the vacuum pump outlet away from ignition sources and ensure adequate ventilation.

Safety Precautions

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Decommissioning Information for A2L Refrigerants

Before starting the decommission process, the technician must be fully familiar with the equipment and its components. Safely recover all refrigerant as a standard best practice. Prior to decommissioning, collect an oil and refrigerant sample for analysis if reclaimed refrigerant is intended for reuse. Ensure electrical power is available before beginning the decommissioning process.

1. Familiarization: Understand the equipment, its operation, and the decommissioning process before beginning work.

2. Electrical Isolation: Disconnect the system from the electrical supply to prevent accidental activation during the procedure.

3. Pre-Procedure Safety Checks: Before proceeding, ensure the following:

- Mechanical handling equipment is available to transport refrigerant cylinders if needed.
- All required personal protective equipment (PPE) is present and correctly used.
- A competent person supervises the entire refrigerant recovery process.
- Recovery equipment and cylinders comply with all relevant safety and regulatory standards.

4. Pump Down the Refrigerant System: If possible, perform a pump-down procedure to remove refrigerant from the system.

5. Alternative Method if Vacuum is Not Possible: If a complete vacuum cannot be achieved, create a manifold to facilitate refrigerant removal from multiple points in the system.

6. Cylinder Positioning: Ensure the recovery cylinder is placed on a scale before starting the refrigerant recovery process.

7. Recovery Machine Operation: Start the recovery machine and follow the manufacturer's instructions for proper operation.

8. Cylinder Fill Limits: Do not exceed 80% of the cylinder's total volume when filling with liquid refrigerant, to allow for expansion.

9. Maximum Pressure Precautions: Do not exceed the maximum working pressure of the recovery cylinder at any time, even temporarily.

10. Finalizing the Recovery Process:
Once the cylinders are correctly filled and the process is complete:

- Promptly remove the cylinders and recovery equipment from the site.
- Close all isolation valves on the equipment to prevent leaks.

11. Handling Recovered Refrigerant: Recovered refrigerant must not be recharged into another refrigeration system unless it has been properly cleaned and tested to ensure compliance with safety and performance standards.

12. Labeling: Label the equipment to indicate it has been decommissioned and emptied of refrigerant. The label must include the decommissioning date and the signature of the responsible technician. Ensure that the equipment preserves all labels indicating the presence of flammable refrigerant, even after decommissioning.

Safety Precautions

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Recovery Information for A2L Refrigerants

When removing refrigerant from a system for servicing or decommissioning, observe the following best practices to ensure safety and compliance:

1. Safe Refrigerant Removal: Safely remove all refrigerants from the system following proper handling procedures.

2. Use of Appropriate Recovery Cylinders: Only use approved refrigerant recovery cylinders.

- Ensure enough cylinders are available to hold the system's total refrigerant charge.
- Designate and label each cylinder for the specific refrigerant being recovered. (e.g., cylinders specifically designed for refrigerant recovery).
- Equip recovery cylinders with a pressure-relief valve and functioning shut-off valves.
- Evacuate empty recovery cylinders. If possible, pre-cool the recovery cylinders before the process begins.

3. Recovery Equipment Requirements: The recovery equipment must be:

- In good working condition.
- Accompanied by manufacturer-provided operating instructions.
- Suitable for recovering all appropriate refrigerants, including flammable refrigerants when applicable.
- Ensure a calibrated weighing scale is available to monitor refrigerant recovery accurately.
- Equip hoses with leak-free disconnect couplings and ensure they're in good conditions.
    - Before using the recovery machine, verify that it is in proper working order and has been properly maintained.
    - Ensure that any associated electrical components are sealed to prevent ignition in case of a refrigerant leak.
    - If in doubt, consult the manufacturer.

4. Handling Recovered Refrigerant:

- Return the recovered refrigerant to the supplier in the correct recovery cylinder.
- Arrange a waste transfer note for proper documentation and disposal.
- Do not mix refrigerants in recovery units or cylinders under any circumstances.

5. Compressor & Oil Removal:

If compressors or compressor oils need to be removed:

- Evacuate the compressor to an acceptable level to eliminate any remaining flammable refrigerant within the lubricant.
- Complete the evacuation process before returning the compressor to the supplier.
- Only use electric heating to accelerate the evacuation of refrigerant from the compressor body. Do not use open flames or ignition sources.
- When draining oil from a system, conduct the process safely and in accordance with best practices.

Safety Precautions

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Preparation for Working on Systems with A2L Refrigerants


No flammable sources


Ventilation necessary


Wear protective gear


Do not use electronics near system



Refrigerant Leakage Detector

A handheld leak detector can aid with tracing and isolating refrigerant leaks. It is recommended to have one handy whenever working on the system.

Determining Installation Location

Install the systems in suitable locations according to the guidelines below. For the best results, follow all the requirements for equipment placement in this manual.

Installation Site Requirements

1. Ensure Proper Ventilation

- Ventilate the installation site well to ensure safe operation and prevent refrigerant accumulation.

2. Keep Away from Heat & Fire Hazards

- When installing or maintaining R-454B air conditioners, keep the work site away from open flames and heat sources.
- To prevent ignition risks, technicians must avoid locations near welding activities, smoking areas, drying ovens, or any heat source exceeding 1,000°F (538°C).

3. Implement Anti-Static Precautions

- To prevent static discharge, wear anti-static clothing and gloves when handling and installing the unit.

4. Select an Accessible Installation Site

- The installation location must allow easy access for maintenance.
- Do not surround indoor and outdoor units with obstacles that restrict airflow.
- Keep away from heat sources and flammable or explosive materials.

5. Refrigerant Leak Emergency Actions

- If the indoor unit leaks refrigerant during installation, immediately shut off the outdoor unit valve.
- All personnel must evacuate the area for at least 15 minutes until the refrigerant fully dissipates.
- If the product is damaged, transport it to a maintenance station. On-site welding or refrigerant pipe repairs are strictly prohibited.

6. Ensure Even Airflow

- Choose a location where the indoor unit's air inlet and outlet remain unobstructed for even airflow.

7. Avoid Installing Near Sensitive Areas

- Do not install the indoor unit near:
    - Electric devices or power outlets.
    - Kitchen cabinets, beds, sofas, or valuable items.
    - Areas where airflow from both sides of the unit could directly impact important objects.

Safety Precautions

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Installation Area Requirements for R-454B Air Conditioners

m1=(6m^3) × LFL, m2=(52m^3) × LFL, m3=(260m^3) × LFL
When LFL is the lower-flammable limit is kg/m^3, R-454B LFL is 0.296kg/m^3.

For appliances with a charge amount of m1 < M < m2:
The maximum charge in a room must be in accordance with the following: $M_{max} = 2.5 \times (LFL)^{(5/4)} \times h_0 \times A^{1/2}$.
Do not exceed M_{max} = SF x LFL x h^0 x A (GG.3DV)

The required minimum floor area A_{min} to install an appliance with refrigerant charge M(kg) must be in accordance with the following: $A_{min} = (M / (2.5 \times (LFL)^{(5/4)} \times h^0))$ 2
Not less than: A_{min} = M / (SF x LFL x h) (GG.4DV)

Where:
M_{max} is the allowable maximum charge in a room (kg);
M is the refrigerant charge amount in appliance (kg);
A_{min} is the required minimum room area (m2);
A is the room area (m2);
LFL is the lower-flammable limit (kg/m3);
h^0 is the installation height of the appliance, in feet/meters for calculating M_{max} or A_{min} (5.9 feet / 1.8 m for wall mounted units)

Table 1 - Maximum Charge (kg)

Category	LFL kg/m^3 (kg/ft^3)	h0 (m/ft)	Floor Area (m^2/ft^2) Maximum Charge (kg)						
			4/43.06	7/75.35	10/107.64	15/161.46	20/215.28	30/322.92	50/538.2
R-454B	0.296/0.083	0.6/1.97	0.36	0.62	0.89	1.27	1.46	1.79	2.32
		1/3.28	0.59	1.04	1.48	2.11	2.44	2.99	3.86
		1.8/5.9	1.07	1.86	2.66	3.81	4.39	5.38	6.95
		2.2/7.22	1.3	2.28	3.26	4.65	5.37	6.58	8.49
		2.6/8.53	1.54	2.69	3.85	5.50	6.35	7.77	10.03
		3.0/9.84	1.78	3.11	4.44	6.34	7.32	8.97	11.58

Table 2 - Minimum Room Area (m^2)

Category	LFL kg/m^3 (kg/ft^3)	h0 (m/ft)	Charge Amount (M) (kg) Minimum Room Area (m^2/ ft^2)						
			1.776kg	2.664kg	3.552kg	5.328kg	7.104kg	8.88kg	11.544kg
R454B	0.296/ 0.083	0.6/1.97	/	66.17	117.63	264.68	470.54	735.21	1242.51
		1/3.28	/	23.82	42.35	95.28	169.39	264.68	447.3
		1.8/5.9	/	10	13.33	29.41	52.28	81.69	138.06
		2.2/7.22	/	8.18	10.91	19.69	35	54.69	92.42
		2.6/8.53	/	6.92	9.23	14.10	25.06	39.15	66.17
		3.0/9.84	/	6.00	8.00	12.00	18.82	29.41	49.70

Safety Precautions

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Charging Protocol for A2L Refrigerants - If Applicable

Important Considerations

1. Qualified personnel must install and service the air conditioner. Installers must comply with all manual instructions and local regulations.

2. Use caution when handling combustible refrigerants. Careless handling can cause serious injury or property damage.

3. Leak test the system after installation to ensure integrity.

4. Before maintaining or repairing air conditioners with combustible refrigerants, conduct safety inspections to minimize fire risks.

5. Operate the system under controlled conditions to reduce the risk of combustible gas or vapor hazards.

6. The specifications in Tables 1 and 2 outline the total weight of the refrigerant charge and minimum room area requirements for air conditioners.

Maximum Refrigerant Charge and Required Floor Area: The maximum charge is determined by the following equations:

$m_1 = (6m^3) \times LFL$, $m_2 = (52m^3) \times LFL$, $m_3 = (260m^3) \times LFL$

Where LFL is the lower refrigerant limit in kg/m^3.

For R-454B refrigerant, LFL = 0.303 kg/m^3.

For appliances with a charge amount $m_1 < M = m_2$:

The maximum refrigerant charge in a room must comply with: $M_{max} = 2.5 \times (LFL)^{5/4} \times h_0 \times A^{1/2}$

This value must not exceed: $M_{max} = SF \times LFL \times h_0 \times A$

Refer to Table 3 for specific factors and applications.

Minimum Floor Area Requirement: The required minimum floor area A_{min} for an appliance with a refrigerant charge M_c (kg) must be calculated as follows:

$A_{min} = [M_c / (2.5 \times LFL^{5/4} \times h_0]^2$

However, $A_{min} = M_c / (SF \times LFL \times h_0)$; SF = 0.5

Refer to Table 4 for specific values/factors.

Refrigerant = R-454B, LFL = 0.303 kg/m^3

Table 1 - Maximum Charge

h_0(m)	Floor Area	Charge Limit
(Installed Height)	43.1 ft² (4.0 m²)	38.4 oz (1.09 kg)
	75.3 ft² (7.0 m²)	67.4 oz (1.91 kg)
1.8 (6'0")	107.6 ft² (10.0 m²)	96.3 oz (2.73 kg)
	161.5 ft² (15.0 m²)	138.3 oz (3.92 kg)
	215.3 ft² (20.0 m²)	159.4 oz (4.52 kg)
	322.9 ft² (30.0 m²)	195.4 oz (5.54 kg)
	538.2 ft² (50.0 m²)	252.2 oz (7.15 kg)
2.5 (8'2")	43.1 ft² (4.0 m²)	53.6 oz (1.52 kg)
	75.3 ft² (7.0 m²)	93.5 oz (2.65 kg)
	107.6 ft² (10.0 m²)	133.7 oz (3.79 kg)
	161.5 ft² (15.0 m²)	191.9 oz (5.44 kg)
	215.3 ft² (20.0 m²)	221.5 oz (6.28 kg)
	322.9 ft² (30.0 m²)	271.6 oz (7.7 kg)
	538.2 ft² (50.0 m²)	350.6 oz (9.94 kg)
2.8 (9'2")	43.1 ft² (4.0 m²)	60.0 oz (1.7 kg)
	75.3 ft² (7.0 m²)	104.8 oz (2.97 kg)
	107.6 ft² (10.0 m²)	149.6 oz (4.24 kg)
	161.5 ft² (15.0 m²)	214.8 oz (6.09 kg)
	215.3 ft² (20.0 m²)	248.3 oz (7.04 kg)
	322.9 ft² (30.0 m²)	304.1 oz (8.62 kg)
	538.2 ft² (50.0 m²)	392.2 oz (11.12 kg)

Safety Precautions

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Table 2 - Minimum Room Area

Refrigerant = R-454B, LFL = 0.303 kg/m^3

h_0(m)	Charge Limit	Min. Room Area
(Installed Height)	23.3 oz (0.66 kg)	26.0 ft^2 (2.42 m²)
	30.3 oz (0.86 kg)	33.9 ft^2 (3.15 m²)
1.8 (6'0")	35.3 oz (1.0 kg)	39.5 ft^2 (3.67 m²)
	45.2 oz (1.28 kg)	50.5 ft^2 (4.69 m²)
	55.7 oz (1.58 kg)	62.3 ft^2 (5.79 m²)
	63.5 oz (1.8 kg)	71.0 ft^2 (6.6 m²)
	70.5 oz (2.0 kg)	78.9 ft^2 (7.33 m²)
2.5 (8'2")	23.3 oz (0.66 kg)	18.7 ft^2 (1.74 m²)
	30.3 oz (0.86 kg)	24.4 ft^2 (2.27 m²)
	35.3 oz (1.0 kg)	28.4 ft^2 (2.64 m²)
	45.2 oz (1.28 kg)	36.4 ft^2 (3.38 m²)
	55.7 oz (1.58 kg)	44.9 ft^2 (4.17 m²)
	63.5 oz (1.8 kg)	51.1 ft^2 (4.75 m²)
	70.5 oz (2.0 kg)	56.8 ft^2 (5.28 m²)
2.8 (9'2")	23.3 oz (0.66 kg)	16.8 ft^2 (1.56 m²)
	30.3 oz (0.86 kg)	21.9 ft^2 (2.03 m²)
	35.3 oz (1.0 kg)	25.4 ft^2 (2.36 m²)
	45.2 oz (1.28 kg)	32.5 ft^2 (3.02 m²)
	55.7 oz (1.58 kg)	40.0 ft^2 (3.72 m²)
	63.5 oz (1.8 kg)	45.6 ft^2 (4.24 m²)
	70.5 oz (2.0 kg)	50.7 ft^2 (4.71 m²)

Table 3 - Minimum Room Area

The calculated minimum allowable room area for all capacities is as follows:

Model (BTU)	Minimum Allowable Room Area (Assumes 25 ft. lineset and 6 ft. install height)
9K	26.0 ft^2 (2.42 m²)
12K	33.9 ft^2 (3.15 m²)
18K	39.5 ft^2 (3.67 m²)
24K	50.5 ft^2 (4.69 m²)
31.5K/36K	62.3 ft^2 (5.79 m²)

Table 4 - Maximum Charge

The standard factory refrigerant charge amount as well as the maximum allowable charge are as follows:

Model (BTU)	R-454B Refrigerant (Standard Charge)	R-454B Refrigerant (Maximum Charge)
9K	1.5 lbs/23.3 oz (660 g)	1.6 lbs/25.9 oz (735 g)
12K	1.9 lbs/30.3 oz (860 g)	2.1 lbs/33.0 oz (935 g)
18K	2.2 lbs/35.3 oz (1,000 g)	2.4 lbs/37.9 oz (1,075 g)
24K	2.8 lbs/45.2 oz (1,280 g)	2.8 lbs/45.2 oz (1,280 g)
31.5K/36K	3.5 lbs/55.7 oz (1,580 g)	3.7 lbs/58.4 oz (1,655 g)

(!) Determining Refrigerant Amount

Use the above figures when charging an empty system. The proceeding pages will also inform the reader in determining the additional refrigerant charging amounts for adjusting the factory charge when using non-standard piping length.

Suggested Tools:

Tool	Illustration	Tool	Illustration	Tool	Illustration
Standard wrench		Pipe cutter		Vacuum pump	
Adjustable / Crescent wrench		Screw drivers (Phillips & Flathead)		Safety glasses	
Torque wrench		Manifold gauge		Work gloves	
Hex keys or Allen wrenches		Level		Refrigerant scale	
Drill & Drill bits		Flaring tool		Micron gauge	
Hole saw		Clamp-on amp meter		Leak detector	

Safety Precautions

1

Compliance

- **Minimum Installation Requirements:** Install the equipment within the minimum height and room area (for both operation and storage) specified in the installation manual.
- **Mounting Clearance:** Mount the system so that its lowest moving part is at least 8 feet (2.5 m) above the floor or grade level.
- **Risk of Electric Shock:** Serious injury or death may occur. Disconnect all remote electric power supplies before servicing.
- **Flammable Refrigerant:** Flammable refrigerant is used. Ensure proper handling and disposal. Trained service personnel must perform maintenance and repairs. Do not puncture the refrigerant tubing.
- **Proper Disposal Requirements:** Dispose of the system according to all applicable federal and local regulations.
- **Service Precautions:** Flammable refrigerant is used. Refer to the service manual before attempting to service this product.
- **Compliance with Regulations:** Follow all handling instructions and comply with national regulations when working with flammable refrigerants.

Safety Precautions

1

Usage Statement

- Use a flammable gas detector to check for potential leaks before unloading and opening the container.
- Do not allow fire sources or smoking in the vicinity.
- Protect the pipework from physical damage. For flammable refrigerants, do not install pipes in an unventilated space if it is smaller than the minimum requirements in Annex GG. For A2L refrigerants, you must install pipes that comply with 22.116. If field charging is necessary, technicians must quantify the impact of different pipe lengths on the refrigerant charge.
- Ensure the compliance of all national gas regulations.
- Ensure that mechanical connections made in accordance with 22.118 remain accessible for maintenance.
- Protect all pipework — including piping materials, routing, and installation — from physical damage during operation and servicing. It must comply with all national and local codes and standards, including:
    - ASHRAE 15
    - ASHRAE 15.2
    - IAPMO Uniform Mechanical Code
    - ICC International Mechanical Code
    - CSA B52
    - All field joints must be accessible for inspection before being covered or enclosed.
- After completing the field piping installation for split systems, the field pipework must undergo:
    - Pressure testing with an inert gas.
    - Vacuum testing before refrigerant charging, following the required standards.
- Store the appliance in a way that prevents mechanical damage.
- Qualified personnel must carry out maintenance, service, and repair operations according to Annex HH.
- Only competent individuals should perform safety-critical procedures, including:
    - Breaking into the refrigerant circuit
    - Opening sealed components
    - Opening ventilated enclosures

Product Overview

2

Model Numbers

Note

The serial number is located behind the electric control box cover on each unit.

Model	Full System	Indoor Unit	Outdoor Unit
9K 110~120V	WYT009ALSI20RL	WT009ALSI20HLF	YN009ALSI20RPF
9K 208~230V	WYT009GLSI20RL	WT009GLSI20HLF	YN009GLSI20RPF
12K 110~120V	WYT012ALSI20RL	WT012ALSI20HLF	YN012ALSI20RPF
12K 208~230V	WYT012GLSI20RL	WT012GLSI20HLF	YN012GLSI20RPF
18K	WYT018GLSI20RL	WT018GLSI20HLF	YN018GLSI20RPF
24K	WYT024GLSI20RL	WT024GLSI20HLF	YN024GLSI20RPF
31.5K	WYT030GLSI20RL	WT030GLSI20HLF	YN030GLSI20RPF
36K	WYT036GLSI20RL	WT036GLSI20HLF	YN036GLSI20RPF

Product Overview

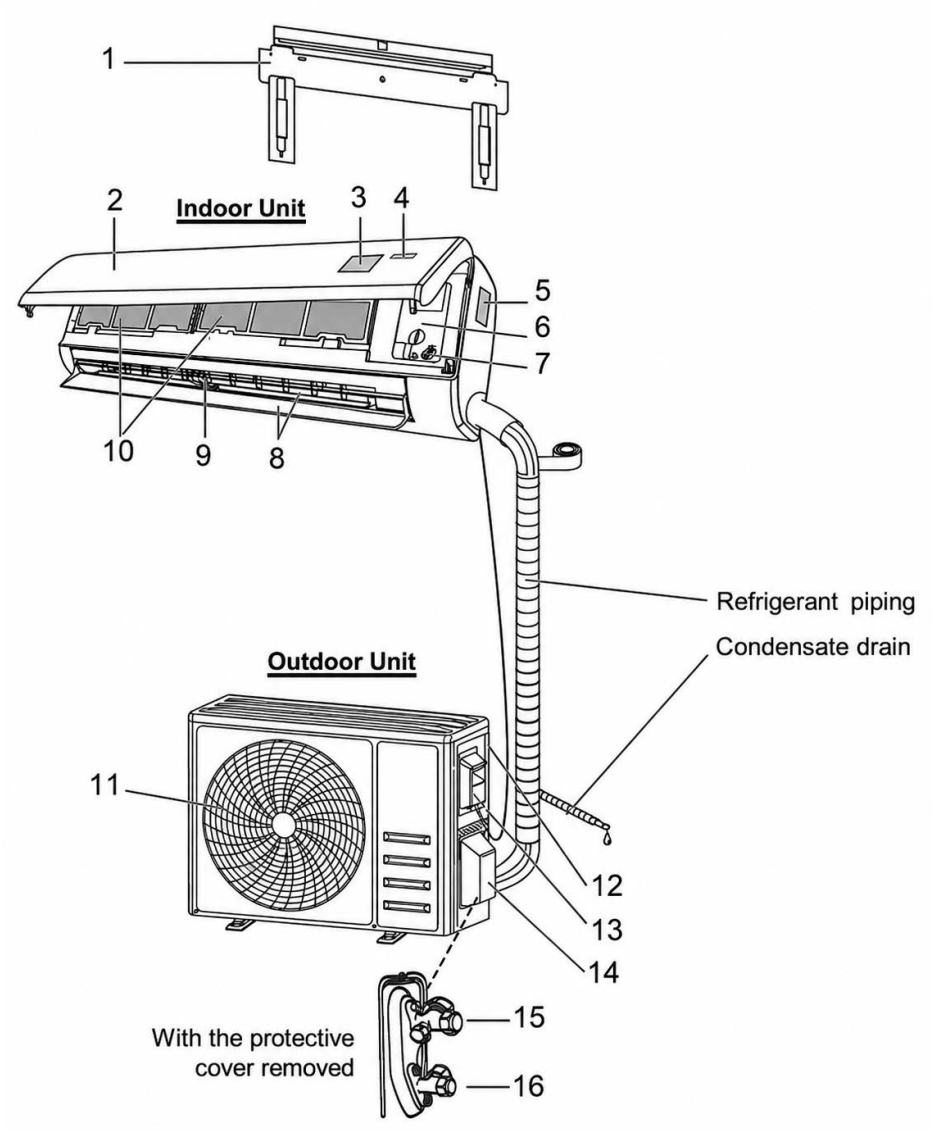
2

Part Names

Note

Illustrations in this manual are for explanatory purposes. The actual shape of the indoor unit may be slightly different. The actual shape shall prevail.

The system consists of two units connected by insulated copper pipes and an electrical communication cable. Mount the indoor unit on a wall inside the room selected for air conditioning. Install the outdoor unit on the ground or on the wall using suitable mounting brackets.



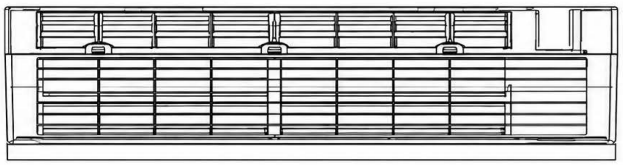
No.	Description
1	Wall mounting plate
2	Front panel
3	LED display
4	Controller signal receiver
5	Indoor unit rating label
6	Terminal block cover
7	Emergency (Manual) button
8	Air deflector & flap
9	Air outlet
10	Air filter
11	Air outlet grille
12	Outdoor unit nameplate
13	Terminal block cover
14	Valve protection cover
15	Gas (Suction) line valve
16	Liquid line valve

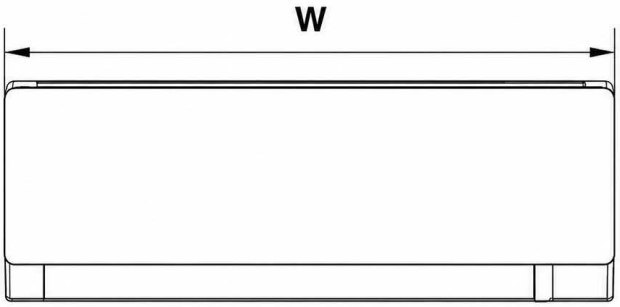
Product Overview

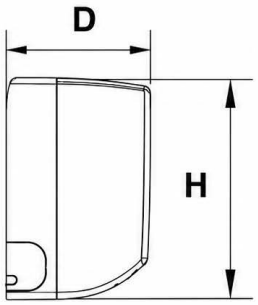
2

Dimensional Drawings

Indoor Unit:







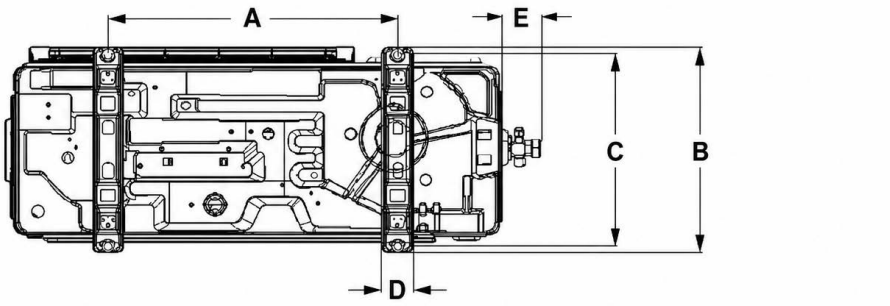
Indoor Unit	Dimensions		
	W	D	H
WT009ALSI20HLF	31-7/8 in	8 in	11-1/2 in
	810 mm	203 mm	292 mm
WT009GLSI20HLF	31-7/8 in	8 in	11-1/2 in
	810 mm	203 mm	292 mm
WT012ALSI20HLF	31-7/8 in	8 in	11-1/2 in
	810 mm	203 mm	292 mm
WT012GLSI20HLF	31-7/8 in	8 in	11-1/2 in
	810 mm	203 mm	292 mm
WT018GLSI20HLF	39-3/4 in	9 in	12-3/8 in
	1,010 mm	229 mm	314 mm
WT024GLSI20HLF	46-7/8 in	10-1/4 in	14-1/4 in
	1,191 mm	260 mm	362 mm
WT030GLSI20HLF	46-7/8 in	10-1/4 in	14-1/4 in
	1,191 mm	260 mm	362 mm
WT036GLSI20HLF	46-7/8 in	10-1/4 in	14-1/4 in
	1,191 mm	260 mm	362 mm

Indoor Unit	Net Unit Weight
WT009ALSI20HLF	19.8 lbs
	9.0 kgs
WT009GLSI20HLF	19.8 lbs
	9.0 kgs
WT012ALSI20HLF	19.8 lbs
	9.0 kgs
WT012GLSI20HLF	19.8 lbs
	9.0 kgs
WT018GLSI20HLF	27.6 lbs
	12.5 kgs
WT024GLSI20HLF	36.4 lbs
	16.5 kgs
WT030GLSI20HLF	39.7 lbs
	18.0 kgs
WT036GLSI20HLF	39.7 lbs
	18.0 kgs

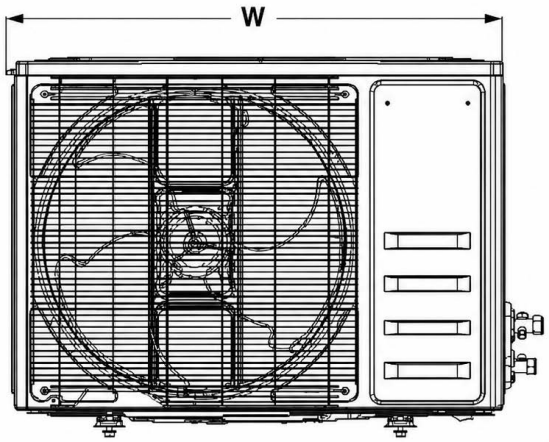
Product Overview

2

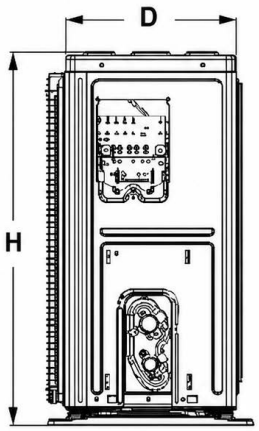
Outdoor Unit:



Underside view



Front view



Side view

Outdoor Unit	Dimensions							
	W	D	H	A	B	C	D	E
YN009ALSI20RPF	31 in	11-1/2 in	19-3/8 in	16-3/8 in	11-1/2 in	10-3/8 in	1-7/8 in	2-1/4 in
	787 mm	292 mm	492 mm	416 mm	292 mm	264 mm	48 mm	57 mm
YN009GLSI20RPF	31 in	11-1/2 in	19-3/8 in	16-3/8 in	11-1/2 in	10-3/8 in	1-7/8 in	2-1/4 in
	787 mm	292 mm	492 mm	416 mm	292 mm	264 mm	48 mm	57 mm
YN012ALSI20RPF	31 in	11-1/2 in	19-3/8 in	16-3/8 in	11-1/2 in	10-3/8 in	1-7/8 in	2-1/4 in
	787 mm	292 mm	492 mm	416 mm	292 mm	264 mm	48 mm	57 mm
YN012GLSI20RPF	31 in	11-1/2 in	19-3/8 in	16-3/8 in	11-1/2 in	10-3/8 in	1-7/8 in	2-1/4 in
	787 mm	292 mm	492 mm	416 mm	292 mm	264 mm	48 mm	57 mm
YN018GLSI20RPF	34 in	13-3/4 in	23-3/4 in	20-3/8 in	13-3/4 in	12-3/8 in	2-1/8 in	2-1/4 in
	864 mm	349 mm	603 mm	518 mm	349 mm	315 mm	54 mm	57 mm
YN024GLSI20RPF	36-1/2 in	14-7/8 in	27-1/2 in	23-1/8 in	14-3/4 in	13-3/4 in	2-1/8 in	2-1/4 in
	927 mm	378 mm	698.5 mm	587 mm	375 mm	349 mm	54 mm	57 mm
YN030GLSI20RPF	38-1/2 in	16-1/2 in	31-5/8 in	23-7/8 in	16-5/8 in	15-3/8 in	2-3/8 in	2-1/2 in
	978 mm	419 mm	803 mm	606 mm	422 mm	391 mm	60 mm	63.5 mm
YN036GLSI20RPF	38-1/2 in	16-1/2 in	31-5/8 in	23-7/8 in	16-5/8 in	15-3/8 in	2-3/8 in	2-1/2 in
	978 mm	419 mm	803 mm	606 mm	422 mm	391 mm	60 mm	63.5 mm

Product Overview

2

Outdoor Unit	Net Unit Weight
YN009ALSI20RPF	51.8 lbs
	23.5 kgs
YN009GLSI20RPF	51.8 lbs
	23.5 kgs
YN012ALSI20RPF	55.1 lbs
	25.0 kgs
YN012GLSI20RPF	55.1 lbs
	25.0 kgs
YN018GLSI20RPF	70.5 lbs
	32.0 kgs
YN024GLSI20RPF	88.2 lbs
	40.0 kgs
YN030GLSI20RPF	105.8 lbs
	48.0 kgs
YN036GLSI20RPF	105.8 lbs
	48.0 kgs

Product Overview

2

Operating Temperatures

The system is designed to run within a certain range of temperatures, which are listed below. The system has built-in protections that may stop the appliance when the ambient temperatures goes outside of these ranges.

Operating Temperatures	°F / °C
Temperature Setting Range	62~86°F
	17~30°C
Ambient Temperature Range for Cooling	5~122°F
	-15~50°C
Ambient Temperature Range for Heating	-4~86°F
	-20~30°C

Testing and rating agencies develop standard rating conditions to obtain full system-rated capacity and efficiency. Within certain limitations, variable speed compressors compensate the deviations from the rating conditions, especially the atmospheric conditions.

Heat pump systems function by exchanging energy between the indoor air and outdoor ambient air (atmospheric) in the form of heat. The system's net cooling or heating capacities and efficiencies change by atmospheric conditions, as well as the indoor air conditions, such as temperatures and humidity levels.

Professional individuals use detailed calculations to determine the capacity of the system required for a specific area or application, which are based on several internal and external factors.

To further optimize the performance of the unit, complete the following:

- Keep doors and windows closed.
- Use Timer On and Timer Off functions to limit energy usage.
- Do not block air inlets or outlets.
- Regularly inspect and clean air filters.

Unpacking & Packing

3

Instructions for unpacking and packing the unit:

Unpacking:

Indoor Unit:

1. Cut the packing belt.
2. Unpack the package.
3. Take out the packing cushion and support.
4. Remove the packing film.
5. Take out the accessories.
6. Lift the machine out and lay it flat.

Outdoor Unit:

1. Cut the packing belt.
2. Take the unit out of the package.
3. Remove the foam from the unit.
4. Remove the packing film from the unit.

Packing:

Indoor Unit:

1. Put the indoor unit into the packing film.
2. Put the accessories in.
3. Place the packing cushion and support into the package.
4. Put the indoor unit into the package.
5. Close the package and seal it.
6. Use the packing belt if necessary.

Outdoor Unit:

1. Put the outdoor unit into the packing film.
2. Put the bottom foam into the box.
3. Put the outdoor unit into the package, then put the upper packaging foam on the unit.
4. Close the package and seal it.
5. Use the packing belt if necessary,

Note

Keep all the packaging items in case they're needed in the future.

Installation Overview

4

Installation Summary

1



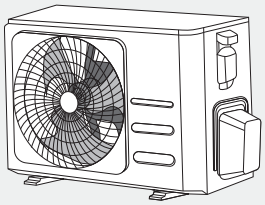
Select the installation locations

2



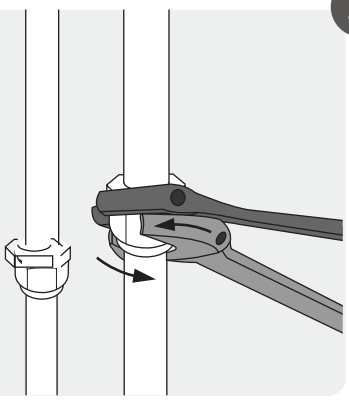
Install the indoor unit

3



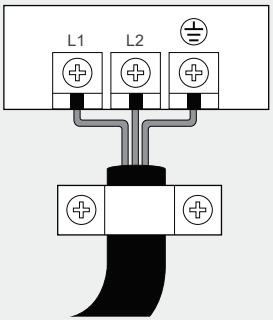
Install the outdoor unit

4



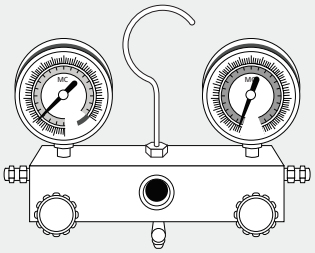
Connect the refrigerant pipes

5



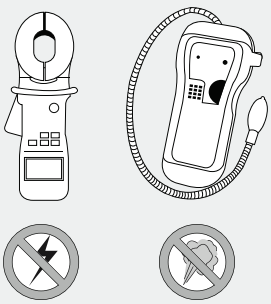
Connect the wires

6



Evacuate the refrigeration system

7



Perform a test run

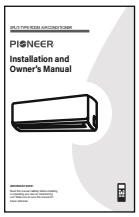
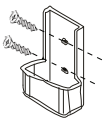
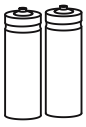
Installation Overview

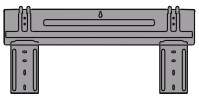
4

Accessories

The system comes with the following general accessories. Use all of the installation parts and accessories to properly install the air conditioner. The included items may vary slightly depending on the model. Pioneer reserves the right to modify the included components for product improvement without notice.

Improper installation may result in water leakage, electrical shock and fire, or equipment failure. The items that are not included with the air conditioner must be purchased separately.

Name		Appearance
1x	Installation & User manual	
1x	Warranty card	
1x	Communication cable*	
1x	Insulated copper pipe*	
1x	Remote controller	
1x	Remote controller holder	
2x	Remote controller batteries	

Name		Appearance
1x	Indoor unit mounting plate Pre-attached to the air handler's rear	
1x	Set of mounting plate screws	
1x	Plastic drain joint plug for the outdoor unit (Use only for wall-mounted condensers)	
1x	Condensate drain hose*	
1x	Wrapping tape*	
1x	Wall-hole packing sealant*	
1x	Wall sleeve*	
1x	Allen wrench for opening service valves	

Note

Items with an asterisk * may be sold separately and are sometimes supplied by the installer. Therefore, some items may differ in appearance, shape, or length, depending on the particular installation.

Installation

5

5.1. Select the Installation Locations

Before installing the indoor and outdoor units, choose the appropriate locations.

Notes

- Before starting, 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.
- We recommend understanding the guidelines for selecting ideal locations for the indoor and outdoor units.
- Refrain from exerting force on other parts of the unit, especially the refrigerant piping, water discharge piping, and plastic parts.

Indoor Unit

Select an indoor unit installation location that meets these standards:



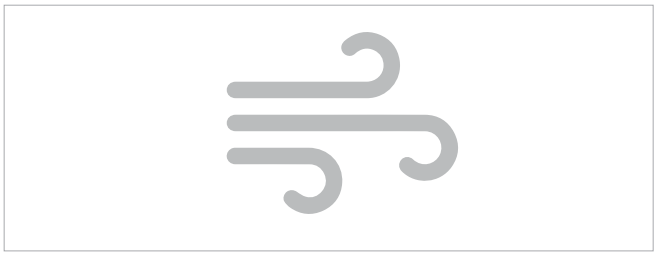
☑ Sufficient space for installation and maintenance.

☑ Sufficient space to connect the refrigerant pipes and condensate drain hose.

☑ Minimize the distance between the indoor and outdoor units.

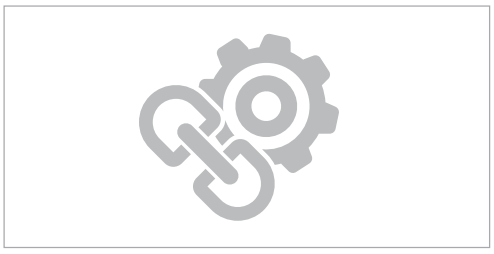


☑ No direct radiation from heaters.



☑ The air inlet and outlet are not blocked.

☑ The airflow can fill the entire room.



☑ Firm and solid — the location can support the unit and will not vibrate.

Installation

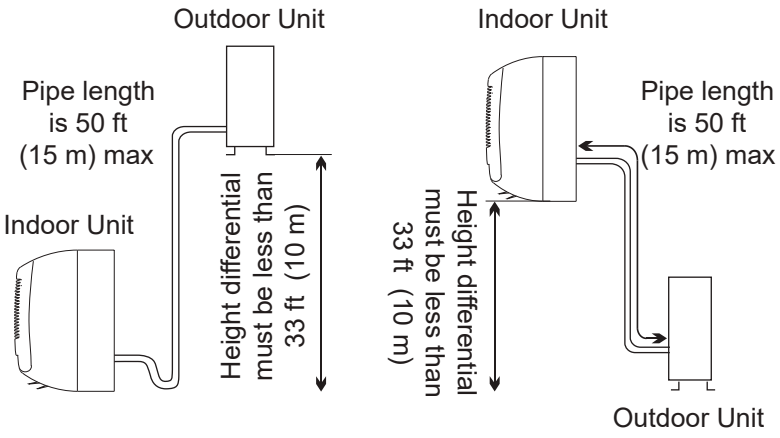
5

Do not install the unit in the following locations:

- ⊘ Areas with oil drilling or fracking.
- ⊘ Coastal areas with high salt content in the air.
- ⊘ Areas with caustic gases in the air, such as hot springs.
- ⊘ Areas that experience power fluctuations, such as factories.
- ⊘ Areas that are exposed to direct sunlight.
- ⊘ Enclosed spaces, such as cabinets.
- ⊘ Kitchens that use natural gas.
- ⊘ Areas with strong electromagnetic waves
- ⊘ Areas that store flammable materials or gas.
- ⊘ Rooms with high humidity, such as bathrooms or laundry rooms.

Installation Diagram

Consider the following height and length restrictions:



For 9K & 12K BTU Systems

Follow the given constraints in the figures to the left.

For 18K, 24K, 31.5K, & 36K BTU Systems:

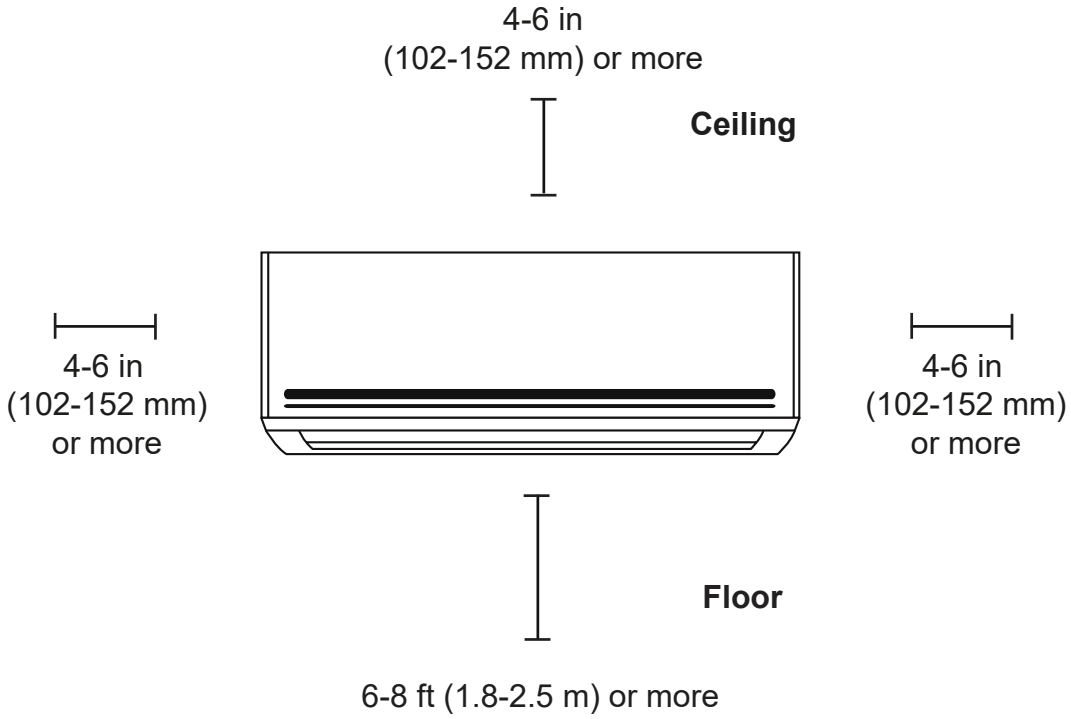
- The allowable height differential increases to 50 feet / 15 m (18K/24K) and 65 feet / 20 m (31.5K/36K)
- The allowable pipe length is 65 feet / 20 m (18K/24K) and 100 feet / 30.5 m (31.5K/36K)

Select the positions of both units before starting the installation. Follow the minimum clearance requirements found in the respective sections of this manual.

Install the indoor unit inside the room intended for air conditioning. Avoid corridors and communal areas. Install the indoor unit so that its bottom is at least 6 feet (1.8 m) above the floor. Ensure adequate space above the air handler for return airflow — ideally 8 inches (203 mm), but at least 4 to 6 inches (102–152 mm).

Installation

5

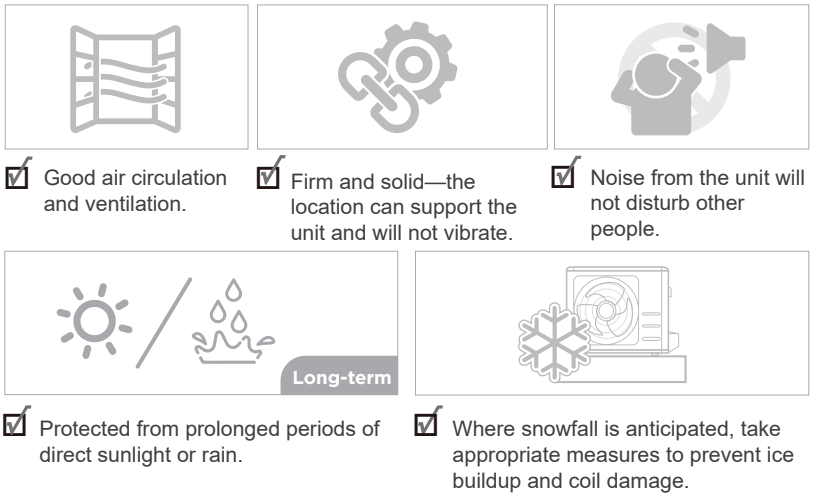


Installation

5

Outdoor Unit

Select an outdoor unit installation location that meets these standards:



☑ 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 other people.

☑ Protected from prolonged periods of direct sunlight or rain.

☑ Where snowfall is anticipated, take appropriate measures to prevent ice buildup and coil damage.

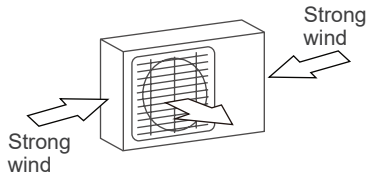
⚠ CAUTION:

Special Considerations for Extreme Weather

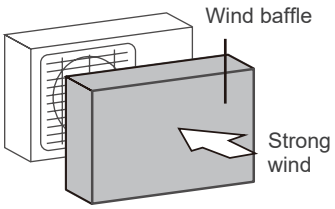
If the unit is exposed to heavy wind:
Install the unit so that the air outlet fan is at a 90-degree angle to the wind direction. If necessary, build a barrier in front of the unit to protect it from extremely strong winds.

If the unit is frequently exposed to heavy rain or snow:
Build a shelter above the unit to protect it from rain or snow, ensuring the airflow is not obstructed.

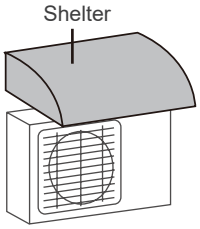
If the unit is frequently exposed to salty air (seaside):
Use an outdoor unit specifically designed for corrosion resistance.



90-degree angle to the direction of the wind



Build a wind baffle to protect the unit



Build a shelter to protect the unit

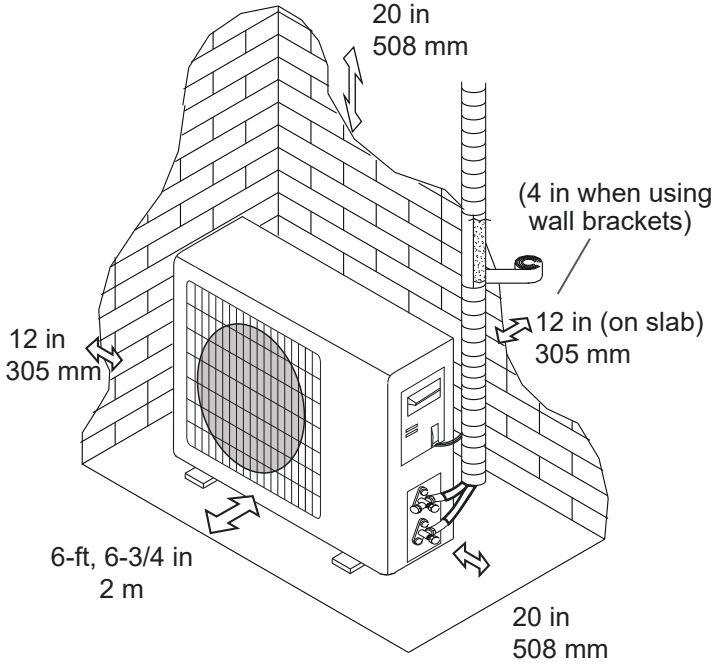
Installation

5

Do not the install the outdoor unit in the following locations:

- Near an obstacle that will block air inlets and outlets.
- Near public streets, crowded areas, or places 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.
- A location that is exposed to large amounts of dust.
- A location exposed to an excessive amount of salty air.

Installation Diagram



Installation

5

5.2. Indoor Unit Installation

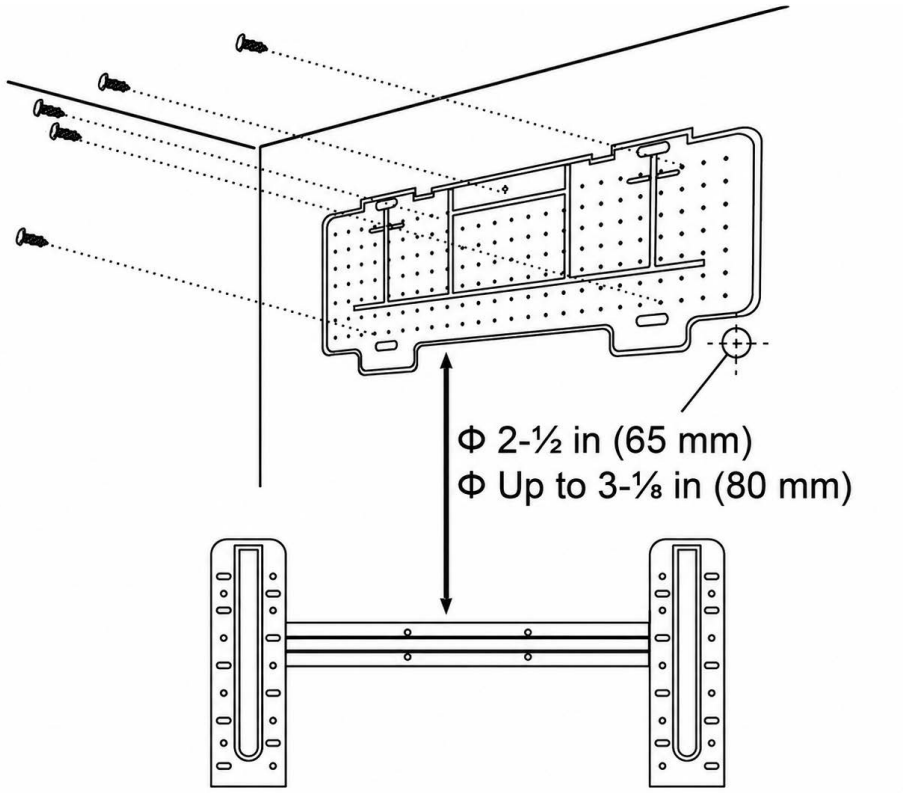
A. Install the Mounting Plate

1. Remove the mounting plate from the rear of the indoor unit and position it against the wall where the system will hang. Use a level to ensure the plate is perfectly aligned.

2. Drill holes 1-¼ inch (32 mm) deep for each screw. The locations are flexible but should be well-spaced.

3. Insert the plastic anchors into each of the holes.

4. Attach the mounting plate to the wall using the included tapping screws. Confirm that it is secured.



Ensure the mounting plate is firm and flat against the wall

Note

The actual appearance of the mounting plate may differ slightly, but the process is similar.

Installation

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B. Drill the Wall Hole for Piping

1. After firmly attaching the mounting plate to the wall, temporarily mount the indoor unit onto the plate to confirm the wall hole location.

2. Use a pencil to lightly trace the bottom corner of the indoor unit, depending on which side the piping will exit.

The pre-attached piping pigtails on the indoor unit can be routed in three ways. For a side exit, use a suitable cutter to remove the knock-out panels along the groove to create a pipe exit notch.

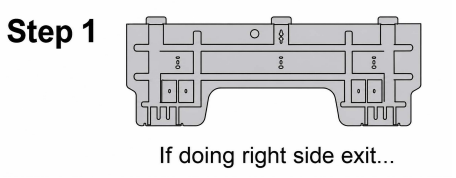
By default, the piping is routed for a left-side exit (Option 1). This method can use either the left-side knockout for a side exit or a wall hole drilled to the left of the unit's rear.

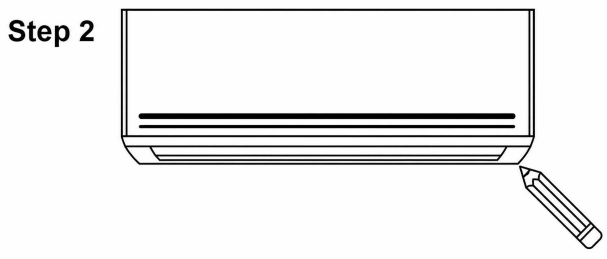
We recommend routing the piping through the back of the system (Option 2) to easily connect the copper pipe extensions.

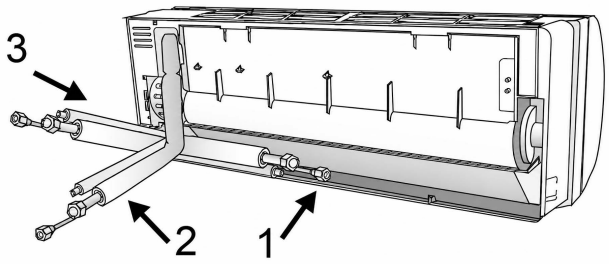
Routing the piping for a right-side exit (Option 3) is possible but not recommended. This configuration requires a 180-degree bend, which severely increases the risk of the lines kinking or collapsing. If this layout is required, bend the piping slowly and cautiously.

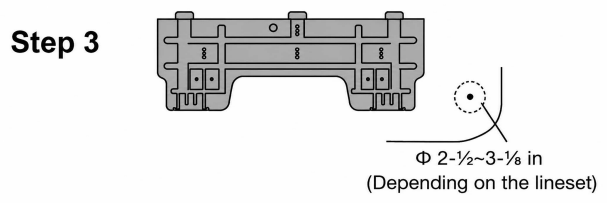
3. Remove the indoor unit from the plate and mark the hole location, ensuring ample clearance between the mark and bracket.

Below are the recommended wall hole locations for systems ranging from 9,000 to 36,000 BTU. These measurements accommodate both left- and right-side exits with a 2-½ inch (63.5 mm) hole. Verify the hole locations by performing corner tracing.



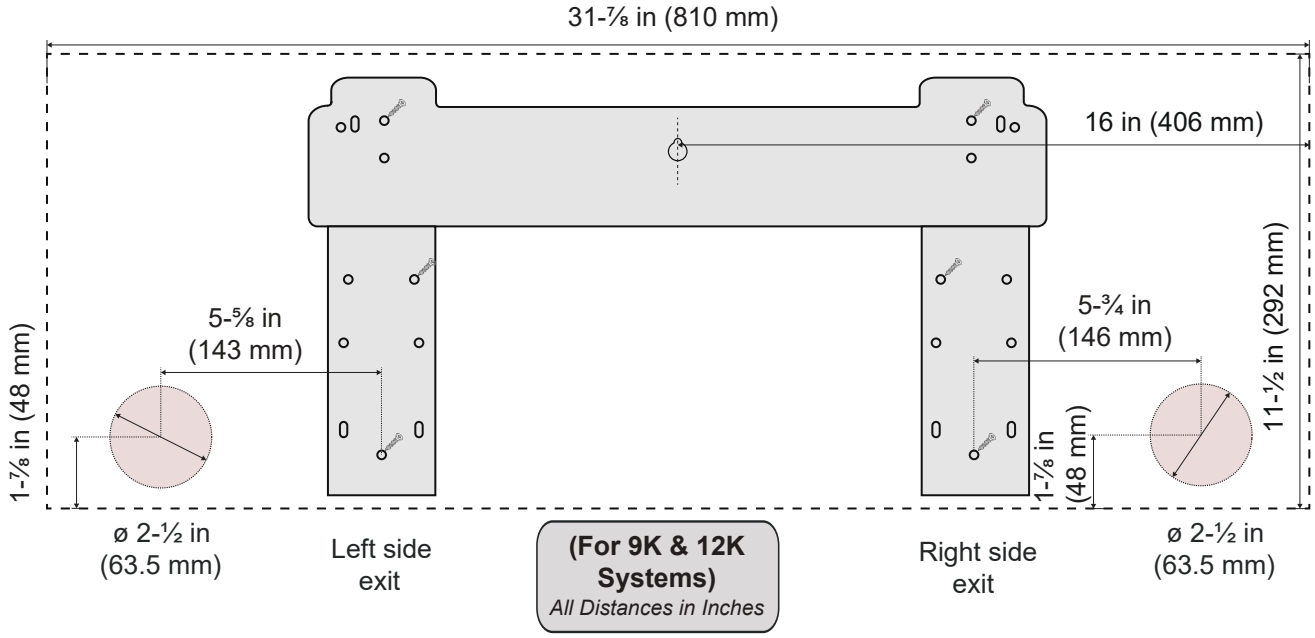


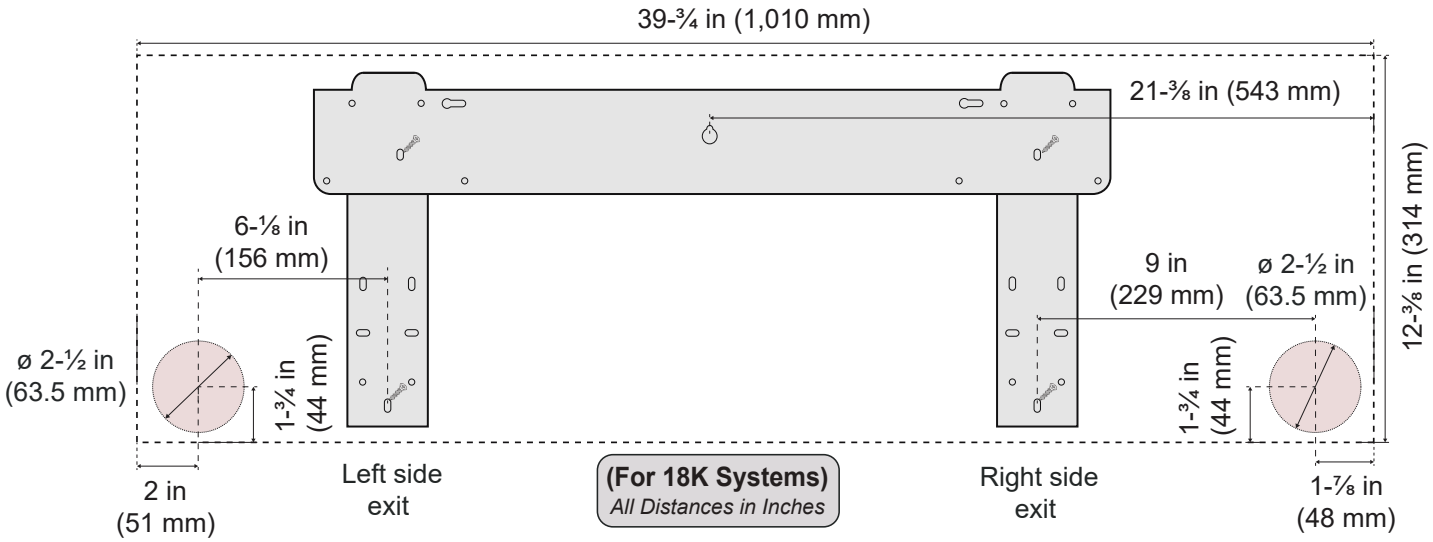




Installation

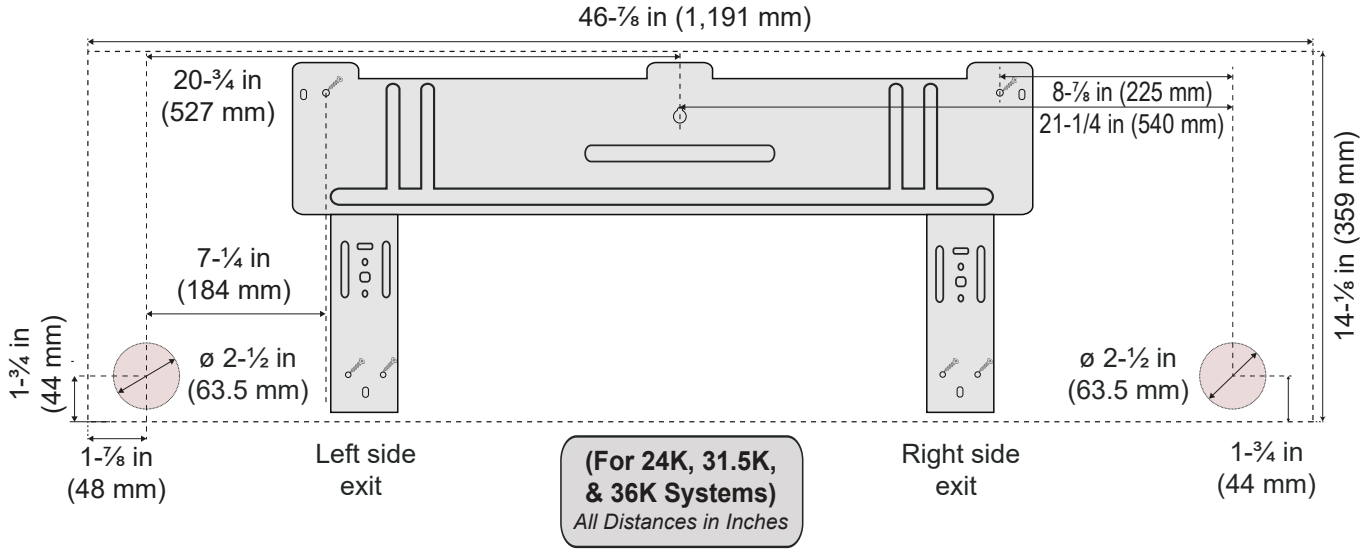
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Installation

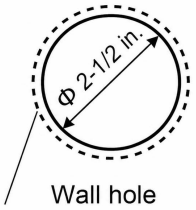
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4. Using a core drill, drill a 2-½ to 3-⅛ inch (63.5 to 79 mm) hole through the wall at a slight downward angle.

Be careful to avoid wires, plumbing, and other sensitive materials. The bottom of the inside hole should be ¼ inch (6.35 mm) above the bottom of the outside hole.

Step 4



For bigger linesets or according to the wall liner used, a larger wall hole size up to 3-⅛ inch (79 mm) can be made.

Installation

5

C. Install the Condensate Drain Hose

The condensate drain hose, also called a drain line, directs water away from the unit. Improper installation may cause property damage.

⚠CAUTION

- Ensure the drain line installation complies with all local and national codes and regulations.
- Verify that the drain line is insulated to prevent condensation and potential water damage. If it is not, insulate it properly.
- If the drain line is bent or installed incorrectly, water may leak and cause a water-level switch malfunction.
- Do not pull the drain line forcefully. This could disconnect it.

Notes

- When using an extended drain line, tighten the indoor connection with an additional protection tube to prevent accidental disconnection.
- The drain line should slope downward at a gradient of at least 1/100 to prevent water from flowing back into the air conditioner.
- To prevent air bubbles, keep the drain line level or slightly tilted up by 3 inches (less than 75 mm).
- Installation requires a polyethylene tube (exterior diameter = 1 in / 25 mm), which can be obtained at a local hardware store or dealer.

Installation

5

1. Plan the Drain Line Layout

Before beginning the installation, plan the drain line layout and connection.

2. Cut the Drain Line (If Needed)

If necessary, cut the drain line to fit your layout and connection.

3. Insulate the Drain Line (If Needed)

Verify that the drain line is insulated to prevent condensation and potential water damage. If it is not, insulate it properly. Insufficient insulation may allow dew to form due to low condensate temperatures, resulting in potential water damage.

Insulate the drain line before beginning the connection, excluding the joint sections. These will be insulated at the end of the procedure.

Ensure the insulation material is fitted tightly with no gaps. Do not over-tighten the insulation material. This may compress the air out of the material, causing poor insulation and early aging.

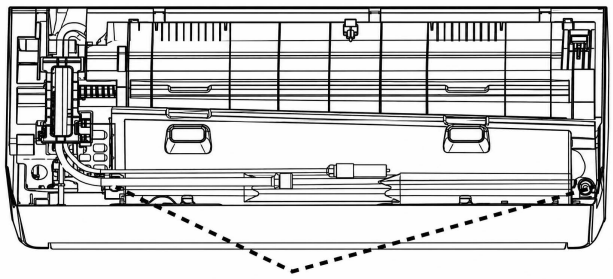
The insulation material must be made of flame-retardant material. Select a material that complies with local regulations.

The thickness of the insulation material must be more than ⅜ of an inch (10 mm).

Apply specialized adhesive to the insulation seams, then secure them with tape. Ensure the tape is at least 2 inches (51 mm) wide and applied firmly to prevent condensation.

4. Connect the Drain Hose

The indoor unit features two drain connections, located on the left and right sides. By default, the drain line attaches to the left side of the unit (when facing the back). One side connects to the hose, while the other remains plugged.



Drainage ports

1. Attach the drain line on the same side where the refrigerant piping exits the unit.

2. Attach any optional extensions (sold separately) to the end of the drain hose.

3. Wrap the drain line connection firmly with Teflon tape to ensure a tight seal and prevent leaks.

4. For the portion of the drain line that will remain indoors, wrap it with foam pipe insulation to prevent condensation.

Installation

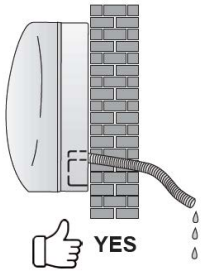
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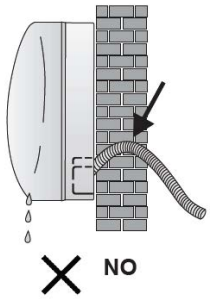
5. Pass the Drain Line Through the Wall Hole

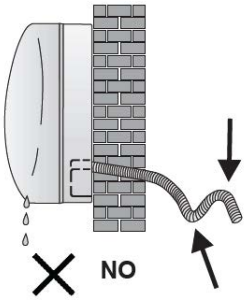
When passing the drain line through the wall hole, make sure the water drains to a safe location where it will not cause water damage or a slipping hazard.

The drain line outlet should be at least 1-⅞ inches (50 mm) above the ground. If it touches the ground, the unit may become blocked, potentially leading to a malfunction.

If the water is discharged directly into the sewer, ensure the drain has a U or S pipe to prevent odors from coming back into the house.







6. Complete a Drainage Test

Ensure the condensate drains to a suitable location by completing the drainage test.



1. Open the front panel.

2. Remove any filters.

3. Pour water over the coils.

4. Check whether the water is exiting the drain point correctly.

7. Insulate the Drain Line Joint Sections

The drain line joint insulation should be 2~4 inches (51~102 mm) longer than the gap to ensure a proper seal.

Insert the joint insulation into the gap of the existing insulation.

Ensure the joint insulation is securely fastened to the suction and liquid pipes to prevent gaps. Use adhesive to bond the joints together. Do not over-tighten the insulation material; this can compress the material and release the trapped air, causing poor insulation and premature aging.

Installation

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D. Wrap the Lines & Mount the Indoor Unit

Note

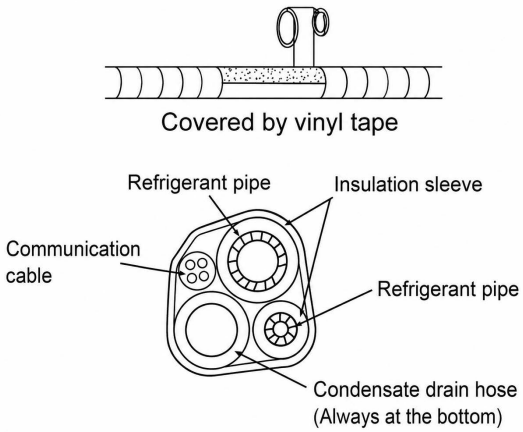
Before wrapping the lines and mounting the indoor unit, install the indoor and outdoor drain line, refrigerant piping, and communication cable.

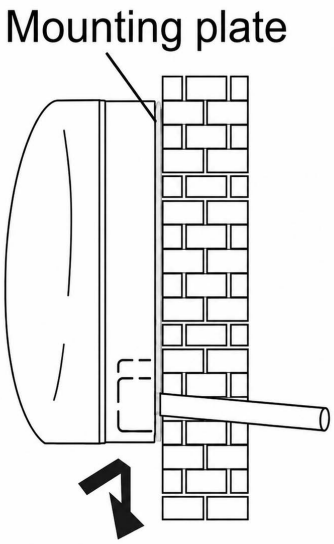
1. Arrange the pipes, cable, and drain line correctly. Keep the drain line at the bottom so that the water can flow freely.

2. Lag the pipe joints with insulation material and secure them with vinyl tape as depicted in the figure.

3. Route the bundle through the wall hole and securely mount the indoor unit onto the installation plate.

4. Press or push the lower part of the indoor unit so it clicks onto the mounting plate.





Installation

5

5.3. Outdoor Unit Installation

A. Install the Drain Joint (Optional)

The outdoor condensate drain hose is optional. It is only needed if the user does not want to use the default bottom drainage port.

If a drain hose is required, install the drain joint into the outdoor unit's base pan hole before mounting. This installation is unnecessary when mounting the unit on a slab.

There are two types of drain joints for the outdoor unit: one with a rubber seal and one without.

If the drain joint comes with a rubber seal (Figure A), follow these steps:

1. Fit the rubber seal on the end of the drain joint connecting to the outdoor unit.

2. Insert the drain joint into the hole of the unit's base pan.

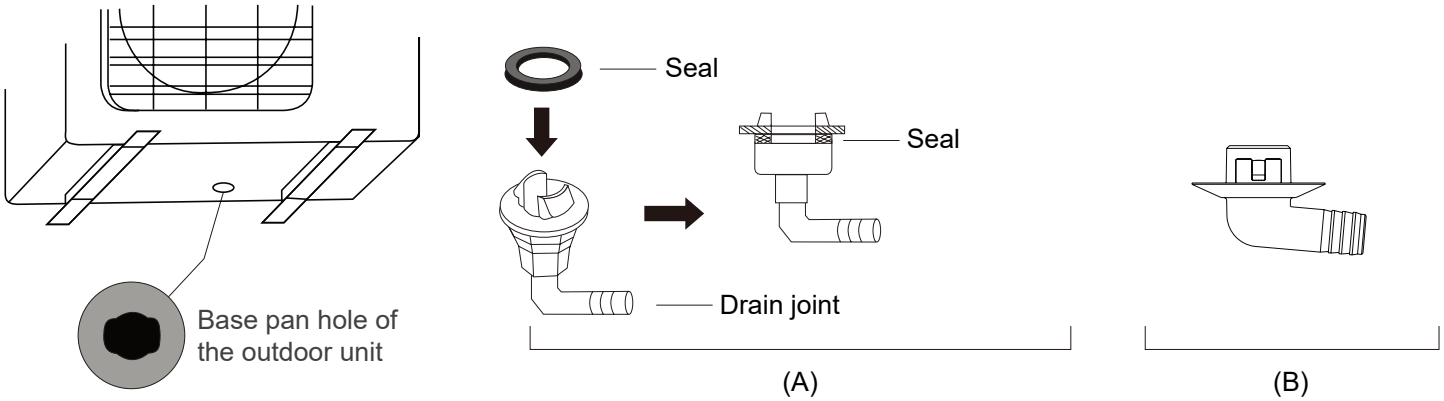
3. Rotate the drain joint 90-degrees until it clicks into place facing the front of the unit.

4. Connect a drain hose extension (not included) to the drain joint in order to redirect water from the unit during Heating mode.

If the drain joint does not come with a rubber seal (Figure B), follow these steps:

1. Insert the drain joint into the base pan hole, then press firmly to ensure it is properly installed and does not become loose.

2. Connect a drain hose extension (not included) to the drain joint in order to redirect water from the unit during Heating mode.



In Cold Climates

In cold climates, make sure the drain line is as vertical as possible to ensure swift water drainage. If water drains too slowly, it can freeze in the hose and flood into the unit.

Installation

5

B. Mount the Outdoor Unit

⚠ WARNING

When drilling into concrete, eye protection is recommended at all time.

Notes

Before mounting the outdoor unit, read these notes:

General Notes

- Before connecting any pipes or cables, install the outdoor unit on a pad or solid wall using suitable mounting brackets.
- Decide the best position on the wall or ground and leave enough space in order to carry out maintenance easily.
- Follow all national regulations when installing the unit.

Mounting on Slabs

- The installation of the drain joint and tubing is not necessary when mounting the unit on slabs.

Wall Mounting

- Before mounting the unit on the wall, make sure the wall is made of solid brick, concrete, or a similarly strong material. The wall must be able to support at least four times the weight of the unit.
- Fasten the supporting brackets to the wall using hardware that is particularly suited for the type of wall. Use the appropriate amount of hardware for the application. Installing four rubber pads is optional.
- If allowed, install the wall-mounted unit with rubber gaskets to reduce vibration and noise.

Choose the best location on the wall or ground, leaving enough space for easy maintenance. The outdoor unit can be mounted to the ground or on wall brackets. The following list shows different outdoor unit sizes and the distance between their mounting feet. Prepare the installation base for each unit according to the dimensions found on **Page 18** in the *Product Overview* section.

Installation

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Ground/Concrete Mounting Platform

1. Mark the positions for the four bolts based on the dimensions.

2. Pre-drill holes for the bolts.

3. Clean the concrete dust away from the holes.

4. Place a nut on the end of each bolt.

5. Hammer the bolts into each hole.

6. Remove the nuts from the bolts and place the outdoor unit onto the bolts.

7. Put washers onto each expansion bolt, then replace each of the nuts.

8. Use a wrench to tighten each nut until snug.

Wall-Mounted Bracket

1. Mark the positions for the bracket holes based on the dimensions.

2. Pre-drill holes for the bolts.

3. Clean the concrete dust away from the holes.

4. Place a washer and nut on the end of each bolt.

5. Thread expansion bolts through the holes in the mounting bracket. Then, put the mounting bracket in position and hammer the expansion bolts into the wall.

6. Confirm the mounting bracket is level.

7. If the feet of the outdoor unit have rubber pads already installed and are using a local dealer's wall-mounting bracket, remove them before attempting to mount the condenser to the bracket. The mounting bracket has rubber isolating pads on it that will take the place of these.

8. Carefully lift the unit and place its mounting feet on the brackets.

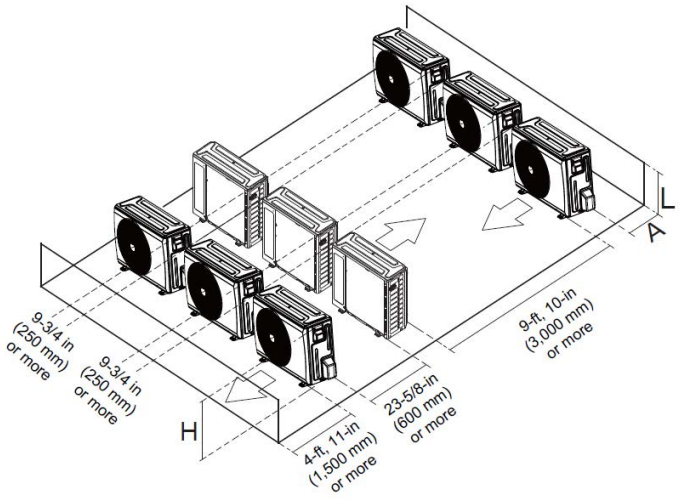
9. Bolt the unit firmly to the brackets.

Installation

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Multiple Outdoor Units

If multiple outdoor units are being installed in a row, follow these guidelines:



	L	A
L ≤ H	L ≤ 1/2H	9-¾ in (250 mm) or more
	1/2H < L ≤ H	11-¾ in (300 mm) or more
L > H	Cannot be installed	

H: Unit height
L: Height of the wall behind the unit
A: Distance between the unit and wall

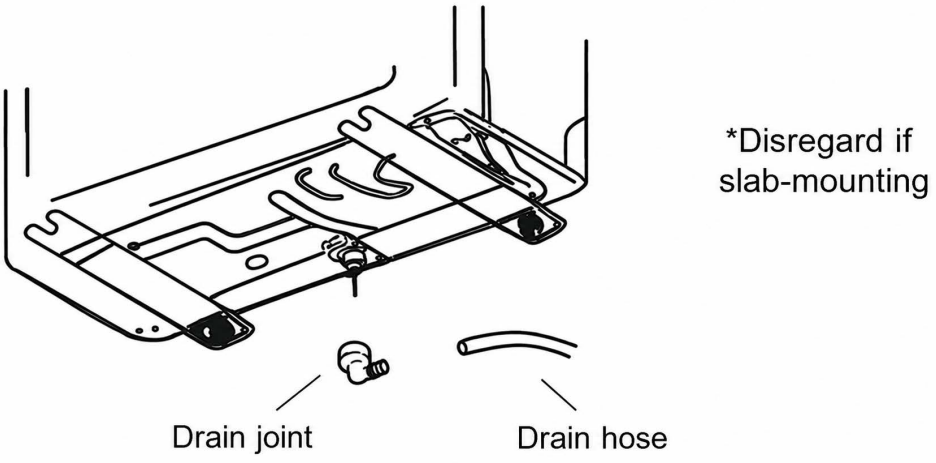
C. Install the Condensate Drain Hose (Optional)

The outdoor condensate drain hose is optional. It is only needed if the user does not want to use the default bottom drainage port. Installing a drain hose is unnecessary if the unit is slab-mounted.

Instructions for planning the drain line layout, cutting the hose, and adding insulation are on **Page 36** in the *Installation* section. Revisit this page if necessary.

1. Connect the condensate drain hose to the drain joint at the bottom of the unit.

2. Ensure the water drains to a suitable location.



Installation

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5.4. Refrigerant Piping Connection

Prerequisite:

- Do not install the connecting pipe until both the indoor and outdoor units have been installed.

Notes

- Confirm the refrigerant piping is insulated. All refrigerant piping from Pioneer arrives pre-insulated. If you purchase refrigerant piping from another dealer that is not insulated, ensure that you insulate them correctly.
- Confirm the refrigerant piping is flared. All refrigerant piping from Pioneer arrives pre-flared. If you purchase refrigerant piping from another dealer that is not pre-flared, ensure that you flare them correctly.
- The length of the refrigerant piping will affect the performance and energy efficiency of the unit.
- Nominal efficiency is tested on units with a pipe length of 16 feet (4.9 m).
- The factory precharge supports up to 25 feet (7.6 m) of connected lineset.
- The total piping length should not be less than 10 feet (3 m).
- If the factory precharge is modified, make a note of the charge modification amount.

Installation

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Refrigerant Piping Specifications

Refer to this table for refrigerant piping specifications, such as maximum length and drop height.

WYT-20S	9K BTU 110~120V	9K BTU 208~230V	12K BTU 110~120V	12K BTU 208~230V	18K BTU
Liquid Pipe Diameter	Φ 1/4 in (6.4 mm)	Φ 1/4 in (6.4 mm)	Φ 1/4 in (6.4 mm)	Φ 1/4 in (6.4 mm)	Φ 1/4 in (6.4 mm)
Gas Pipe Diameter	Φ 3/8 in (9.5 mm)	Φ 3/8 in (9.5 mm)	Φ 3/8 in (9.5 mm)	Φ 3/8 in (9.5 mm)	Φ 3/8 in (9.5 mm)
Max. Length of Pipe with Standard Charge	25 ft / 7.6 m				
Max. Length Between Indoor and Outdoor Unit	50 ft / 15.2 m	50 ft / 15.2 m	50 ft / 15.2 m	50 ft / 15.2 m	65 ft / 19.8 m
Adjustment Refrigerant Charge (For each additional foot after 25 ft.)	0.11oz/ft				
Max. Drop Height Between Indoor and Outdoor Unit	33 ft / 10 m	33 ft / 10 m	33 ft / 10 m	33 ft / 10 m	50 ft / 15.2 m
Type of Refrigerant	R-454B				

WYT-20S	24K BTU	31.5K BTU	36K BTU
Liquid Pipe Diameter	Φ 1/4 in (6.4 mm)	Φ 1/4 in (6.4 mm)	Φ 1/4 in (6.4 mm)
Gas Pipe Diameter	Φ 1/2 in (12.7 mm)	Φ 5/8 in (15.9 mm)	Φ 5/8 in (15.9 mm)
Max. Length of Pipe with Standard Charge	25 ft / 7.6 m		
Max. Length Between Indoor and Outdoor Unit	65 ft / 19.8 m	100 ft / 30.5 m	100 ft / 30.5 m
Adjustment Refrigerant Charge (For each additional foot after 25 ft.)	0.11oz/ft		
Max. Drop Height Between Indoor and Outdoor Unit	50 ft / 15.2 m	65 ft / 19.8 m	65 ft / 19.8 m
Type of Refrigerant	R-454B		

Installation 5

A. Plan the Piping Layout

Before beginning the installation, plan the refrigerant piping layout and connection. Run the piping in the direction of the wall hole.

Oil Traps

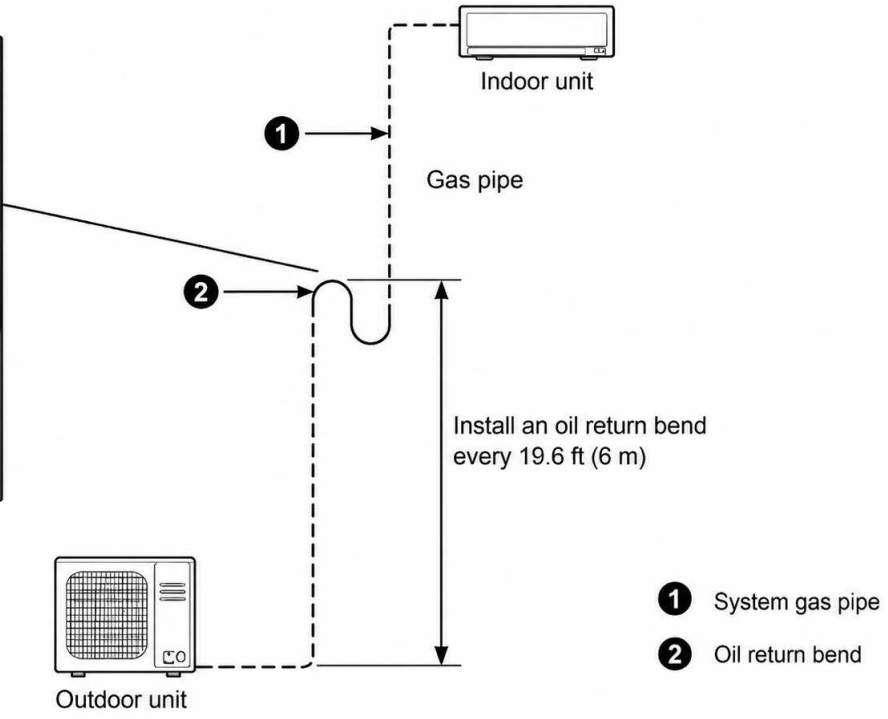
CAUTION

If oil flows back into the outdoor unit's compressor, this might cause liquid compression or deterioration of the oil return. Oil traps in the rising gas piping can prevent this.

Outdoor Unit is Beneath the Indoor Unit

Install an oil return bend every 19-feet, 8-¼-inches (6 m). There is no need to add a non-return bend at the lowest and highest positions of the vertical pipe.



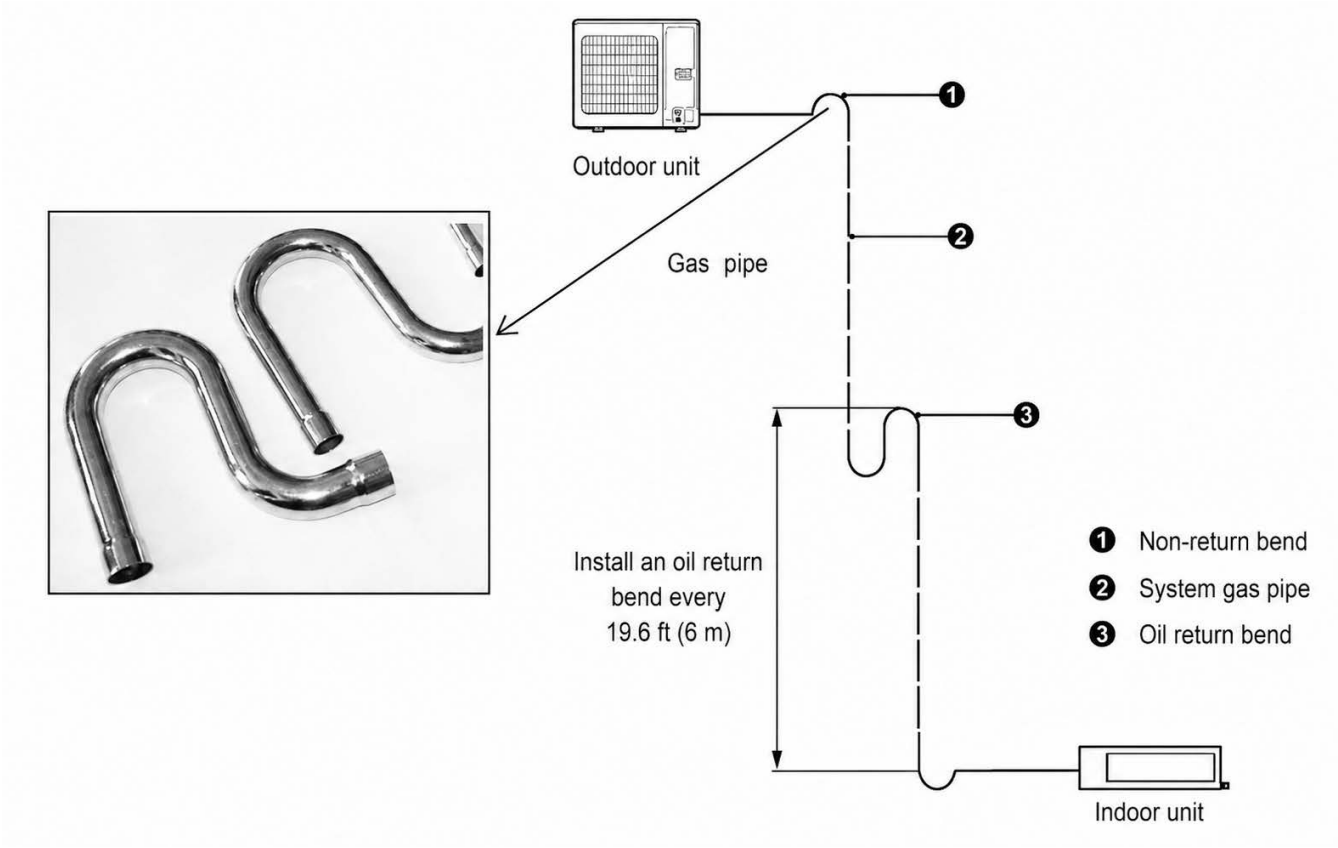


Installation

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Outdoor Unit is Above the Indoor Unit

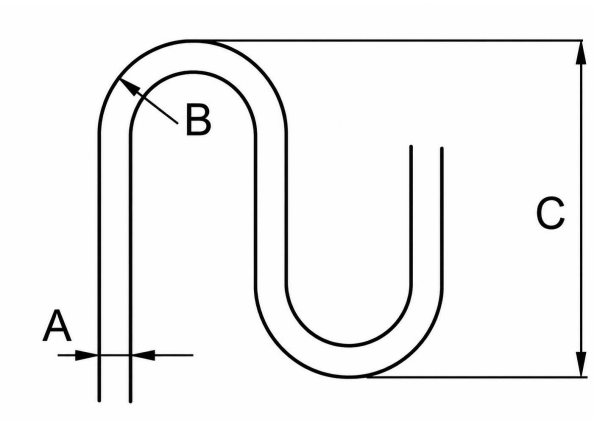
Install an oil return bend every 19-feet, 8-¼-inches (6 m). Add the oil return bend and non-return bend at the lowest and highest positions of the vertical pipe.



Oil Trap Dimensions

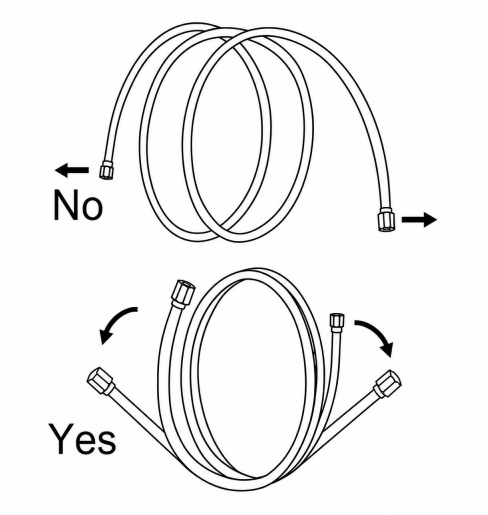
The dimensions for creating the oil return bend are as follows:

A	B	C
Ø 3/8 in	≥ 3/4 in (20 mm)	≤ 5-7/8 in (150 mm)
Ø 1/2 in	≥ 1 in (26 mm)	≤ 5-7/8 in (150 mm)
Ø 5/8 in	≥ 1-1/4 in (33 mm)	≤ 5-7/8 in (150 mm)



Installation 5

B. Unwind the Piping



Gently unwind the refrigerant piping against a flat surface instead of pulling the ends.

- Do not remove the seal caps from the pipe ends until it is time to connect them, to prevent contaminants from entering.
- Do not bend the pipe more than three times at any single point. Be extremely careful not to kink the piping.
- When bending refrigerant piping, the minimum bending radius is 4 inches (102 mm).

C. Adjust the Piping Length (Optional)

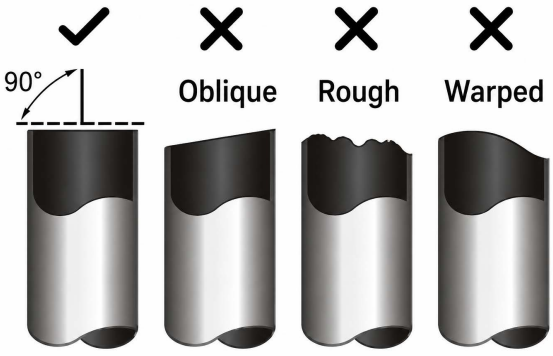
If needed, precisely cut the refrigerant pipes to the appropriate length to meet the installation requirements. This guarantees efficient operation and minimizes future maintenance.

Next, remove the burrs from the piping after cutting. This maintains an airtight seal on the refrigerant connections.

Once the piping is cut and the burrs are removed, flare the pipe ends. Proper flaring is essential to achieve an airtight seal. If pre-flared refrigerant piping arrives damaged, it can be re-flared.

Cut the Pipes

1. Measure the distance between the indoor and outdoor units.
2. Use a pipe cutter to cut the pipe a little longer than the measured distance.
3. Make sure the pipe is cut at a perfect 90-degree angle.



Note

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

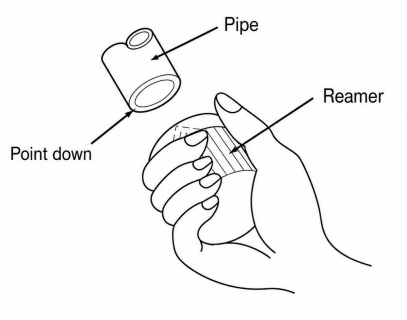
Installation

5

Remove Burrs

1. Hold the pipe at a downward angle to prevent burrs from falling into the pipe.

2. Use a reamer or deburring tool to remove all the burrs from the cut section of the pipe.



Flare Pipe Ends

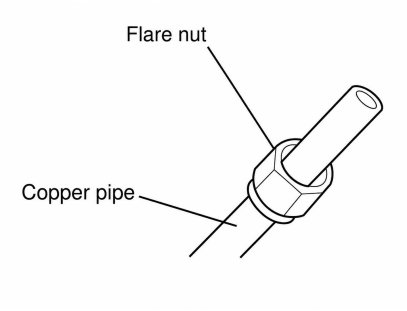
1. Seal the pipe ends with PVC tape to prevent foreign materials from entering.

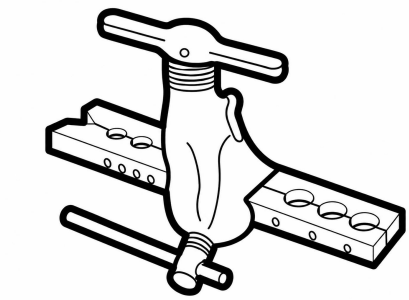
2. Confirm the pipe was sheathed properly with insulation material.

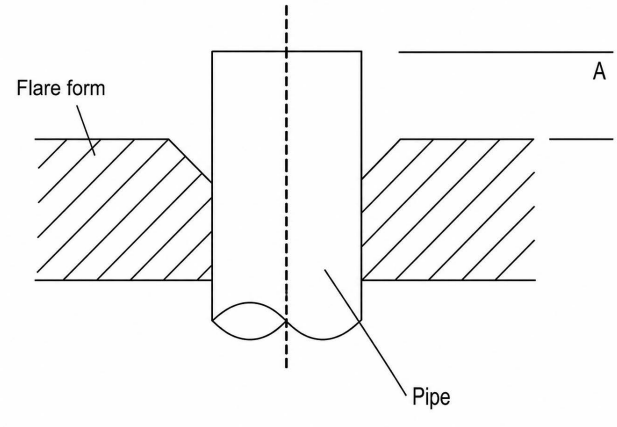
3. Place the flare nuts on both ends of the pipe. Make sure they are facing the correct direction, because it is not possible to change their direction after flaring.

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

5. Clamp the 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 tables:





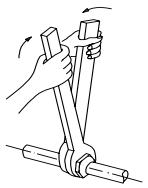


Piping Extension Beyond Flare Form

Pipe Diameter inch / mm	Flare Dimension A inch / mm	
	Min	Max
Ø1/4 / Ø6.4	0.33 / 8.4	0.34 / 8.7
Ø3/8 / Ø9.5	0.52 / 13.2	0.53 / 13.5
Ø1/2 / Ø12.7	0.64 / 16.2	0.65 / 16.5
Ø5/8 / Ø15.9	0.76 / 19.2	0.78 / 19.7
Ø3/4 / Ø19	0.91 / 23.2	0.93 / 23.7
Ø7/8 / Ø22.2	1.04 / 26.4	1.06 / 26.9

Installation

5

Pipe Diameter inch / mm	Torque N.m (lb.ft)	Sketch Map
Ø1/4 / Ø6.4	18~20 (13.3~14.8)	
Ø3/8 / Ø9.5	32~39 (23.6~28.8)	
Ø1/2 / Ø12.7	49~59 (36.1~43.5)	
Ø5/8 / Ø15.9	57~71 (42~52.4)	
Ø3/4 / Ø19	67~101 (49.4~74.5)	
Ø7/8 / Ø22.2	85-110 (62.7-81.1)	

6. Place the flaring tool onto the form.

7. Turn the flaring tool's handle 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 flaring.

D. Connect the Pipes

Connect the copper pipes to the indoor unit first, then connect it to the outdoor unit. Connect the low-pressure pipe, then the high-pressure pipe. Use both a spanner and torque wrench when connecting or disconnecting pipes to the unit.

Once the copper piping kit is unwound, refer to the instructions below:

Installation 5

Indoor Unit

1. Bring the ends of both the copper line and the indoor unit line together. Align the centers of the pipes that will be connected.

2. Remove the indoor unit piping cap and check that no debris is inside. Some gas may be heard escaping, but it is dry nitrogen to keep the lines clean.

3. Use any available leak guard or flare sealer on the piping flares.

4. Attach the flare nut and tighten as much as possible by hand. Torque correctly to the specifications found in the table below using two wrenches.

5. Repeat the process for the other copper line.

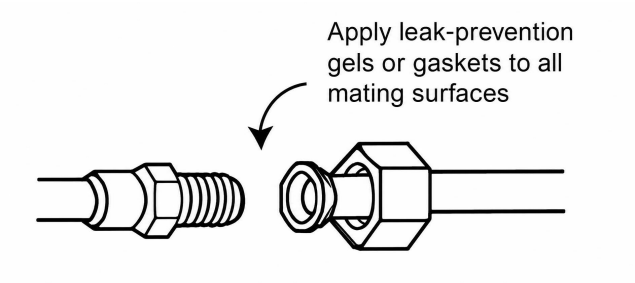
6. After connecting the copper pipes to the indoor unit, wrap the communication cable, drain line, and refrigerant piping together with binding tape. When bundling these items, do not intertwine or cross the communication cable with any other wiring. Keep the drain line at the bottom so that the water can flow freely. Ensure the bundle is exiting at a continuous downward pitch.

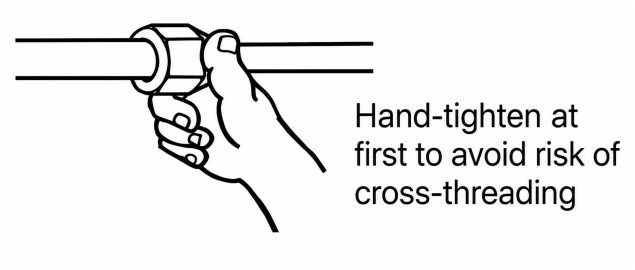
7. Thread this pipeline through the wall and connect it to the outdoor unit. The next page explains how to connect the pipes to the outdoor unit.

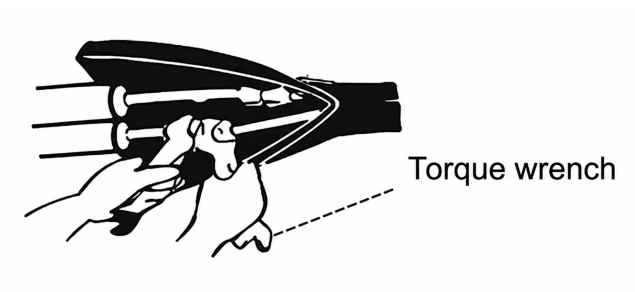
8. Optional: Attach the water receiver (supplied in the accessories box) to the indoor unit using a screw.

Do Not Use Excessive Torque

Excessive force can break the flare nut or damage the refrigerant piping. Do not exceed the torque requirements shown in the table.







Tightening Torque for Protection Caps & Flange Connection

Pipe Diameter	Tightening Torque [N x m]	Tightening Torque [ft-lbf]	Corresponding Stress (Using a 20 cm wrench)
Φ 1/4" (6.4 mm)	15 - 20	11 - 15	Wrist Strength
Φ3/8" (9.5 mm)	31 - 35	23 - 26	Arm Strength
Φ1/2" (12.7 mm)	45 - 50	33 - 37	Arm Strength
Φ 5/8" (15.9 mm)	60 - 65	44 - 48	Arm Strength

Tightening Torque [N x m] (ft-lbf)	
Service Port Nut	[7 - 9] (5-7)
Protection Caps	[25 - 30] (18-22)

Installation

5

Outdoor Unit

1. Unscrew the cover from the packed valve side of the outdoor unit.

2. Remove the protective caps from the valve ends.

3. Align the flared pipe end with each valve and tighten the flare nut as tightly as possible by hand.

4. Use a spanner to grab the body of the valve. Do not grab the nut that seals the service valve.

5. While firmly gripping the body of the valve, use a torque wrench to tighten the flare nut according to the correct torque values.

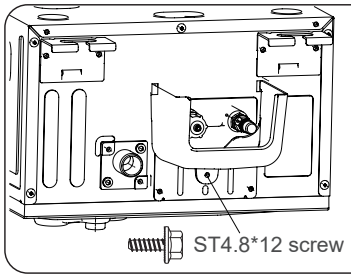
6. Loosen the flaring nut slightly, then tighten again.

7. Repeat the process for the remaining pipe.

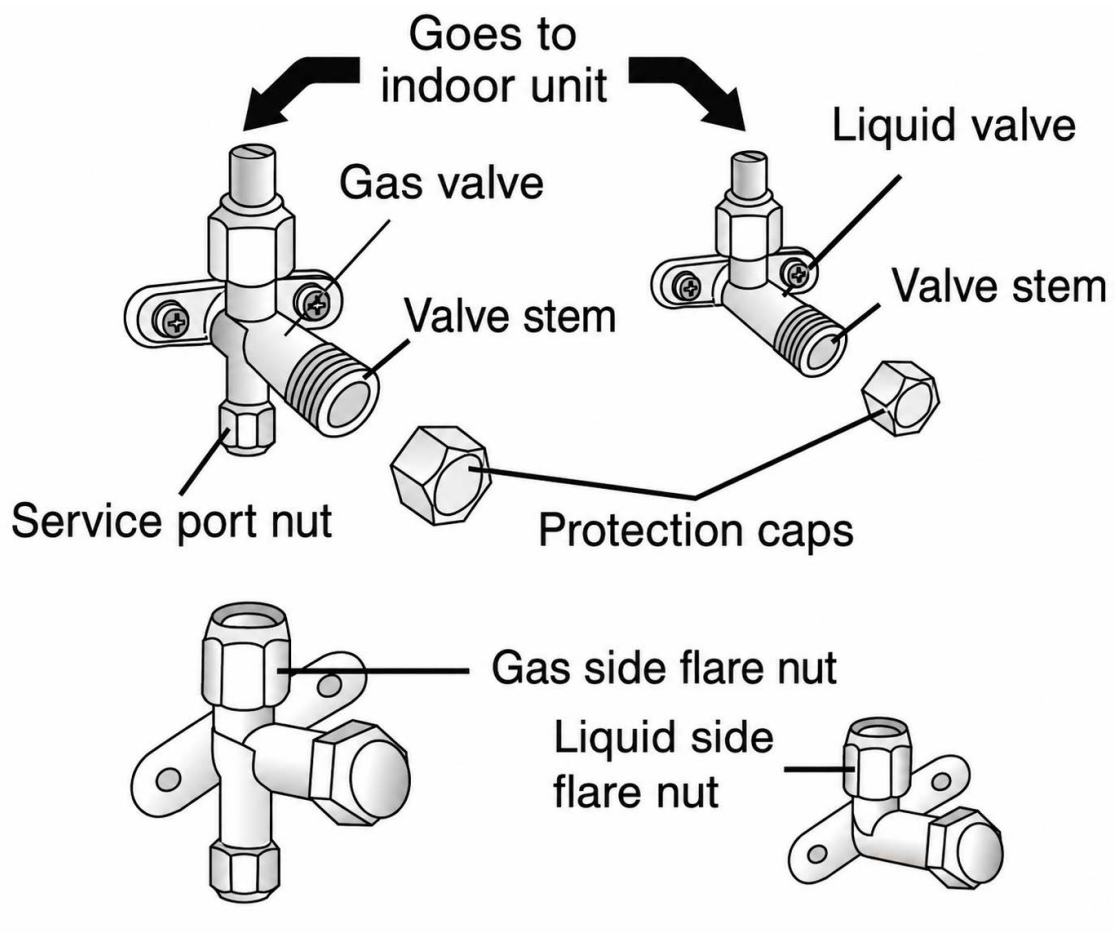
8. Open the stop valves of the outdoor unit to start the flow of the refrigerant.

CAUTION

After completing the refrigerant piping connection, check for refrigerant leaks. If a leak is detected, ventilate the area immediately and evacuate the system. Refer to **Page 58** in the *Installation* section for more information.



Two ST4.8*12 screws are supplied, one of which is spare.



Installation 5

E. Charge Additional Refrigerant (If Needed)

CAUTION

Do not mix different types of refrigerant.

Some systems require additional charging depending on the pipe lengths. In North America, the standard pipe length is 25 feet (7.5 m). Charge the refrigerant from the service port on the outdoor unit's low-pressure valve.

F. Insulate the Refrigerant Piping Joints

Notes

- Only insulate the refrigerant piping joints after the refrigerant circuit has been properly vacuumed. Refer to **Page 58** in the *Installation* section for more information.
- While Pioneer piping comes pre-insulated, installers must still insulate the joints after evacuating the refrigerant circuit.

The joint insulation should be 2~4 inches (51~102 mm) longer than the gap to ensure a proper seal.

Insert the joint insulation into the gap of the existing insulation.

Ensure the joint insulation is securely fastened to the suction and liquid pipes to prevent gaps. Use glue to paste together the linking part. Do not over-tighten the insulation material. This may compress the air out of the material, causing poor insulation and early aging.

Installation

5

5.5. Communication Cable Connection

⚠ WARNINGS

Before performing any electrical work, read these warnings:

General Warnings

- All wiring must comply with local and national electrical codes and regulations. A licensed electrician must install all the wiring.
- All electrical connections must be made according to the electrical connection diagrams located on the panels of the indoor and outdoor units.
- If there is a serious safety issue with the power supply, stop work immediately. Explain the reasoning to the client and refuse to continue the installation until the safety issue is properly resolved.

Power Warnings

- The power voltage must be within 90-110% of the rated voltage. Insufficient power supply can cause a malfunction, electrical shock, or fire.
- Only connect the unit to an individual branch circuit. Do not connect other equipment to the same power circuit.

Wiring Warnings

- Firmly connect every wire. Loose wiring can cause the terminal to overheat, resulting in product malfunction and possible fire.
- Keep the wiring away from the copper tube, as the refrigerant circuit can become extremely hot.
- Do not let wires touch or rest against the refrigerant tubing, compressor, or any moving parts.
- Do not cross the electrical wiring with the signal wiring. This may cause distortion, interference, or possibly damage the circuit boards.
- Do not house wires of different voltages within the same wire tube. Avoid using metal wire tubes in environments prone to acid or alkali corrosion; use plastic wire tubes instead.
- Do not place wire connect joints inside the tubing. If a wire connect joint is necessary, use a connection box at the point of the joint.

Installation

5

Prerequisites:

- ☑ Turn off the main power to the system. After powering off the system, wait 10 minutes or more before touching the electrical components in order to avoid electrical shock.
- ☑ Properly ground the system.
- ☑ If the unit has an auxiliary electric heater, install it at least 3-feet, 3-⅜-inches (1 m) away from any combustible materials.
- ☑ Install an external surge suppressor at the outdoor disconnect (recommended).
- ☑ When connecting power to fixed wiring, incorporate a properly rated, HACR-type circuit breaker or current leakage protection switch. It must disconnect all poles with a contact separation of at least 1/8 inch (3 mm). Use only an approved switch or circuit breaker with a capacity of 1.5 times the unit's maximum current.

The 4-lead communication cable provides two power supply wires, one signal wire, and one ground wire. The wires are individually insulated and bundled together inside the outer protective jacket. These wires are also pre-fitted with U-lugs on their ends.

Communication Cable Specifications (All Models): AWG #16 x 4 Core TC-ER cable.

When connecting the communication cable consult the nameplate on the system for detailed electrical specifications.

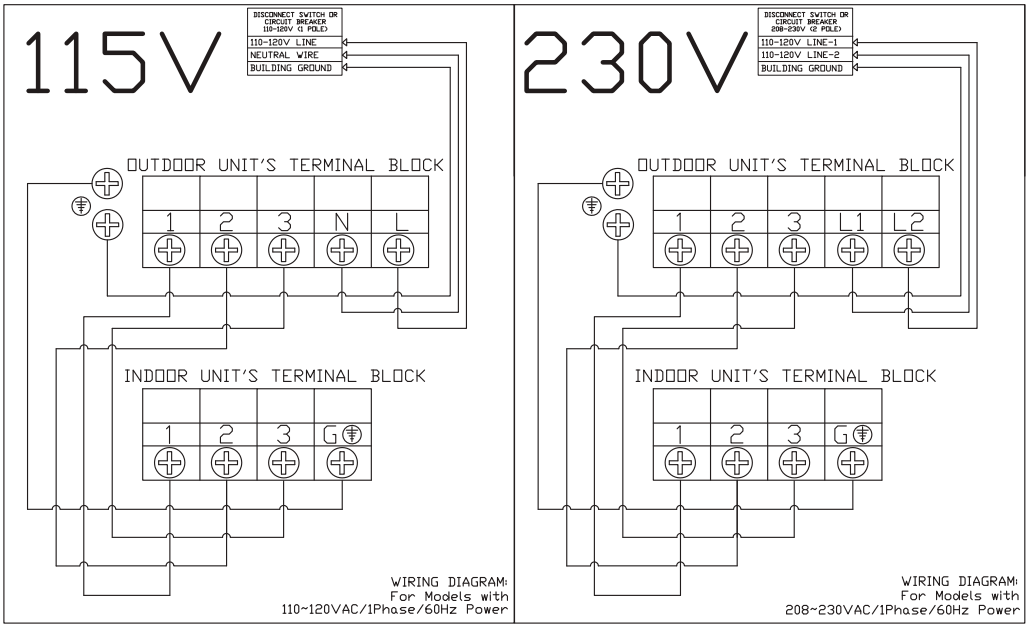
- The 115V systems take a single-pole breaker for the main circuit panel.
- The 230V systems require a double-pole breaker. The tandem-type will not work.



Single-Pole
115V Breaker



Double-Pole
230V Breaker



Installation

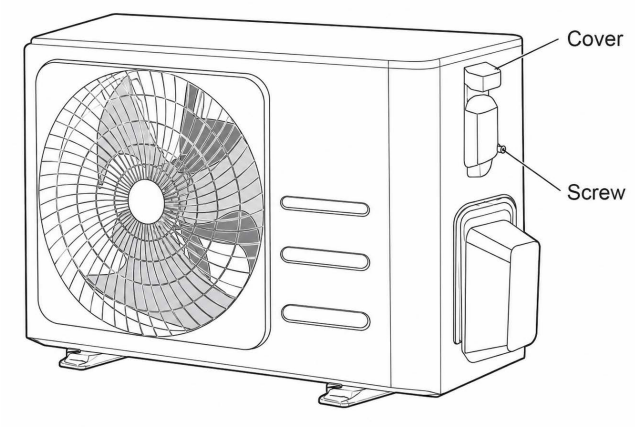
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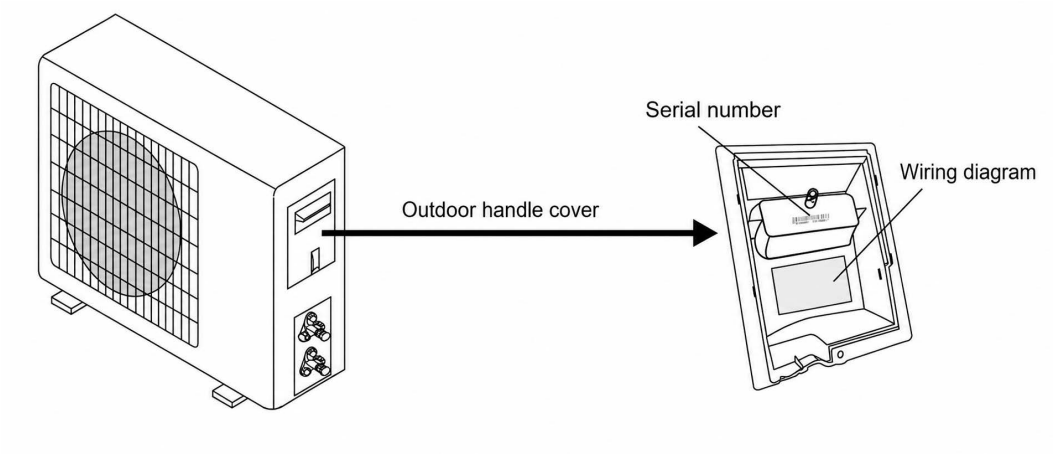
Note

Connect the outdoor unit wires before the indoor unit wires.

A. Outdoor Unit Wiring

1. Unscrew and remove the electrical wiring cover that protects the terminal block on the side of the unit. A comprehensive wiring diagram is printed on the inside of the cover.





2. Connect the U-lugs to the terminals, matching the numbers with those on the terminal block. There are three terminals (1, 2, 3) and ground (G). Firmly screw each U-lug to its corresponding terminal. Strictly follow the wiring diagram inside the electrical box cover when connecting the wires.

Select different wire colors according to the relevant regulations. Ensure the wire colors for the outdoor unit and terminals match those used for the indoor unit.

Do not connect the power wire to the signal wire terminal. If power and signal wires run parallel, place them in separate conduits and maintain a distance of at least 11-¾ inches (300 mm).

3. Secure the cable with the clamp. Ensure it is tight and does not pull on the U-lugs.

4. Reattach the cover.

Installation

5

B. Indoor Unit Wiring

1. Lift up the indoor unit's front panel and remove the terminal block cover.

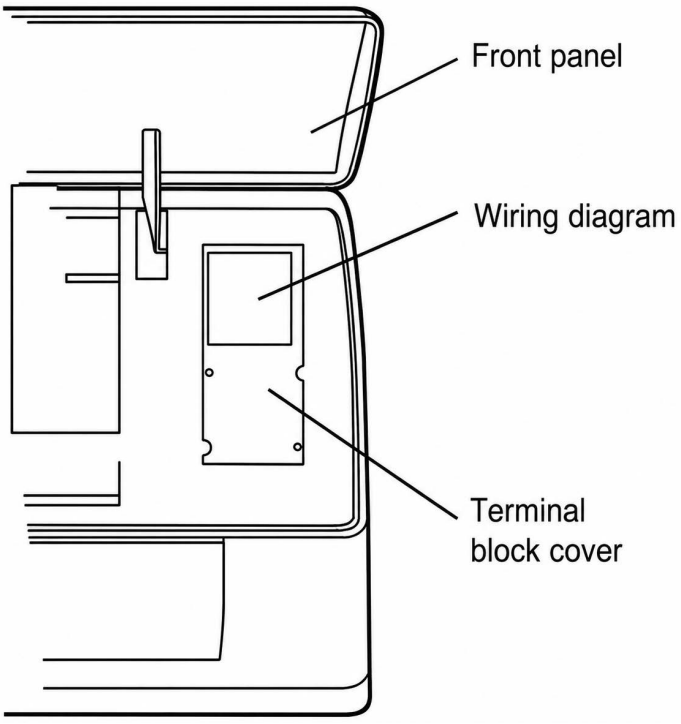
2. Connect the U-lugs to the terminals, matching the numbers with those on the terminal block. There are three terminals (1, 2, 3) and ground (G). Firmly screw each U-lug to its corresponding terminal. Strictly follow the wiring diagram inside the electrical box cover when connecting the wires.

Select different wire colors according to the relevant regulations. Ensure the wire colors for the outdoor unit and terminals match those used for the indoor unit.

Do not connect the power wire to the signal wire terminal. If power and signal wires run parallel, place them in separate conduits and maintain a distance of at least 11-¾ inches (300 mm).

3. Secure the cable with the clamp. Ensure it is tight and does not pull on the U-lugs.

4. Reattach the cover and close the front panel.



Reminder: Wrap the Lines & Mount the Indoor Unit

Once the drain line, refrigerant piping, and communication cable are installed, remember to wrap the lines and mount the indoor unit.

For instructions, refer to **Page 39** in the *Installation* section.

Installation

5

5.6. Evacuate the Refrigerant Circuit

⚠CAUTION

Qualified and well-trained personnel must complete the evacuation of the refrigerant circuit.

Prerequisites:

- ☑ Confirm the pipes connecting the indoor and outdoor units are properly attached.
- ☑ Ensure all electrical wiring is connected properly.

Note:
When opening valve stems, turn the supplied Allen wrench until the valve stem comes into contact with the stopper. Do not try to force the valve to open further.

Air and foreign matter in the refrigerant circuit can lead to 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.

Perform the evacuation after the initial installation and when relocating the unit.

1. Discharge the oxygen-free nitrogen. Evacuate the system to 8,000 microns (8 Torr) using all service valves.

2. Break the vacuum by introducing nitrogen into the port connections (liquid and gas lines) until achieving positive pressure.

3. Evacuate the system to a reading of 5000 Microns (5 Torr).

4. Break the vacuum again by introducing nitrogen into the port connections (liquid and gas lines) until achieving positive pressure.

5. Evacuate the system to a reading of 500 Microns (0.5 Torr).

6. Hold the vacuum without movement for a minimum of 4 hours to ensure a moisture-free system.

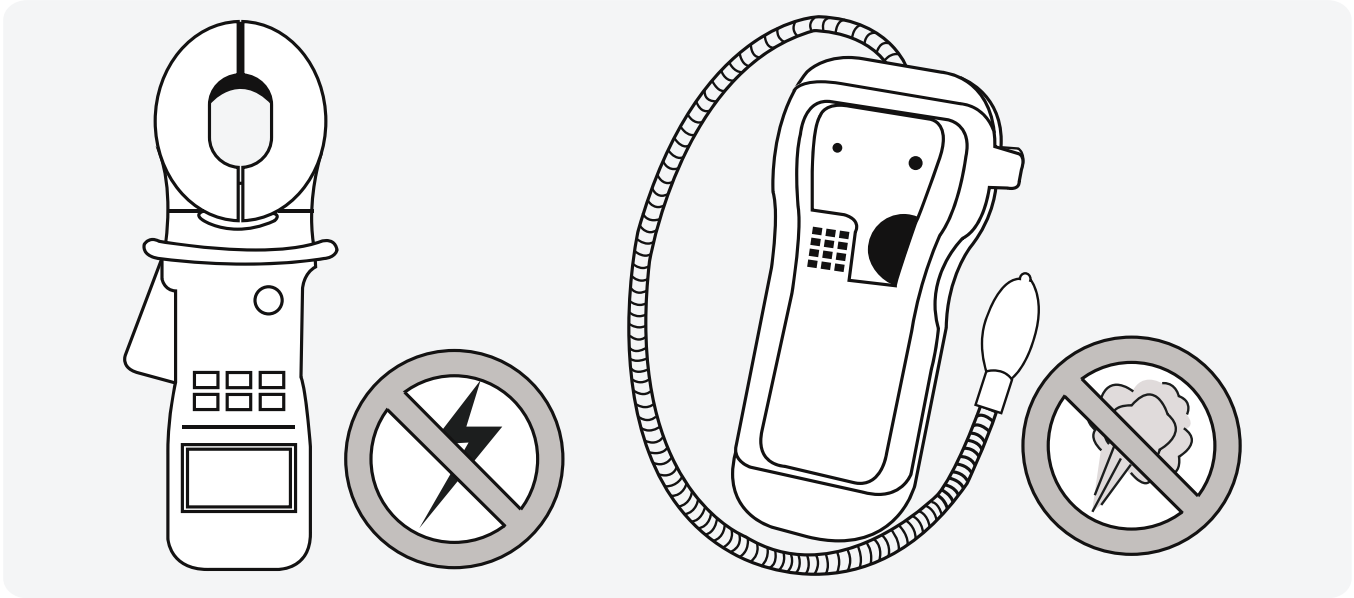
7. If the vacuum fails to hold, repeat the steps until it does.

Reminder: Insulate the Refrigerant Piping Joints

Once the refrigerant circuit is evacuated, remember to insulate the refrigerant piping joints. For instructions, refer to **Page 53** in the *Installation* section.

Leak Checks & Test Run

6



6.1. Electrical Leak Checks

After installation, confirm that the unit's electrical system is safe and operating properly. Electrical leak checks are required before and during the test run.

Before Test Run

- ☑ Check grounding work.
- ☑ Measure the grounding resistance with a grounding resistance tester. Grounding resistance must be less than 4Ω.

  This may not be required in some locations.

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.

  This may not be required in some locations.

⚠ Warning – Risk of Electric Check

All electrical wiring must comply with the installation manual and local and national regulations. All work must be performed by a licensed electrician.

Leak Checks & Test Run

6

6.2. Gas Leak Checks

Confirm the system is not leaking gas. Gas leak checks are required before and during the test run.

Before Test Run

- ☑ Check all flare nut connections to ensure the system is leak-free.
- ☑ Confirm that both the gas and liquid valves (high/low) are **100% fully opened**.

During Test Run

- ☑ During operation, the pressure of the refrigerant circuit will increase. This may reveal leaks that were not present during the initial leak check. Take time to double-check that all copper pipe connection points are leak free.

After Test Run

- ☑ After confirming that all the pipe connection points do not leak, replace the valve cover on the outdoor unit.

Gas Leak Checks

There are two methods to check for gas leakage:

- ☑ **Soap & Water Method**
  Use a soft brush to apply soapy water or liquid detergent to all pipe connection points on the indoor and outdoor units. The presence of bubbles indicates a leak.
- ☑ **Leak Detector Method**
  If using a leak detector, refer to the device's operation manual for proper usage instructions.

Leak Checks & Test Run

6

6.3. Test Run

Perform the test run only after the system is fully installed and the electrical and gas leak checks are complete.

Before Test Run

- ☑ **Electrical Safety Checks**
  Confirm the unit's electrical system is safe and operating properly.
- ☑ **Gas Leak Checks**
  Check all flare nut connections and confirm the system is not leaking.
- ☑ **Valve Checks**
  Confirm that both the gas and liquid valves (high/low) are **100% fully opened**.

Test Run Instructions

Perform the following test run for 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.
   - Cooling - Select the lowest temperature.
   - Heating - Select the highest temperature.

4. Let each function run for 5 minutes and perform the following checks:

Pass/Fail?

- **No electrical leaks or abnormal noises**
- **Unit is properly grounded**
- **All electrical terminals are properly covered**
- **Indoor and outdoor units are securely installed**
- **All pipe connections points do not leak**
- **Water drains from the drain line properly**
- **All piping is properly insulated**
- **Indoor unit responds to the remote controller**
- **Indoor unit louvers work properly**
- **System works in both Heating & Cooling mode**

After Test Run Completion

After the 10 boxes above have been checked and marked as passed, perform the following operation:

1. Use the remote control to return the system to a normal desired operating temperature.
2. Use insulation tape to wrap the indoor unit's refrigerant pipe connections that were left uncovered during the installation process.

If Ambient Temperatures Are Too High to Run a Heating Test:

If outside temperatures are too high to permit Heating mode on the remote controller, do the following:

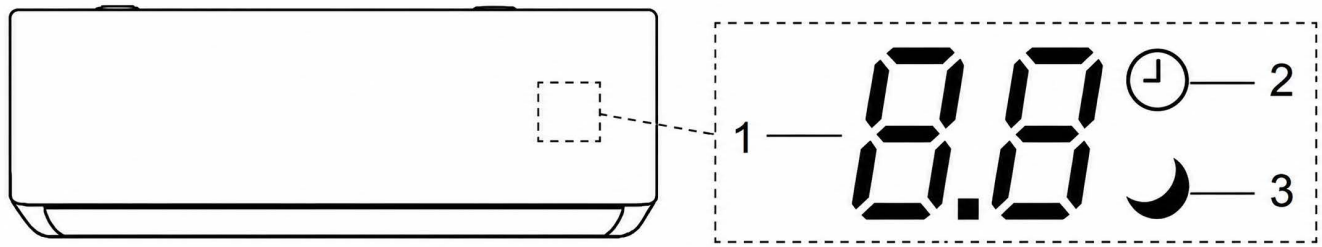
1. Turn the unit on and put it in Heating mode using the emergency button.
2. Run the Heating mode test as normal and turn the unit back off using the button when complete.

Operating Instructions 7

A. Indoor Unit Display

Notes

- Different models have different front panels and display windows. The indicators described below may not be available for your air conditioner.
- Each time the air conditioner is powered on, a buzzing sound indicates normal operation. If you do not hear this sound, the unit may be malfunctioning. Try restarting the unit or checking the circuit.



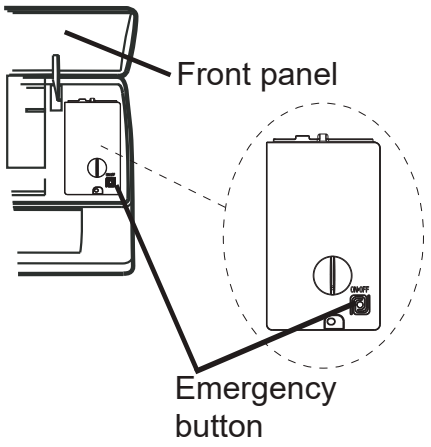
No.	LED Icon	Symbol	Description
1	Temp. Display	8.8	Displays the current set temperature or any error codes
2	Timer	⏲	Indicates that the Timer function has been set
3	Sleep	☾	Indicates that the system is currently in Sleep mode

Operating Instructions

7

B. Emergency Manual Button & Auto-Restart Function

The emergency button is under the front panel, on the unit's terminal block cover.



Emergency Manual Button

If the remote controller fails to operate the system, follow these steps:

1. Open and lift the front panel at an angle to access the emergency button.

2. Press the manual button once to start the unit in Cooling mode.

3. Press the button again within 3 seconds to start the unit in Heating mode.

4. Press the button a third time within 5 seconds to turn off the unit.

Auto-Restart Feature

This appliance is programmed with an Auto-Restart function.

In the event of a sudden power failure, the control module retains its previous settings.

When power returns, the unit automatically restarts with its previous settings intact.

C. Remote Controller

Note

- Although button shapes and positions vary by model, their features and functions remain identical.
- The display and functional features of the remote controller may vary depending upon the specific system model.
- The unit beeps to confirm each button command.
- There may be a difference between the number of digits shown on the remote control (3) and the number on the indoor unit (2).

Operating Instructions

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Remote Buttons Overview

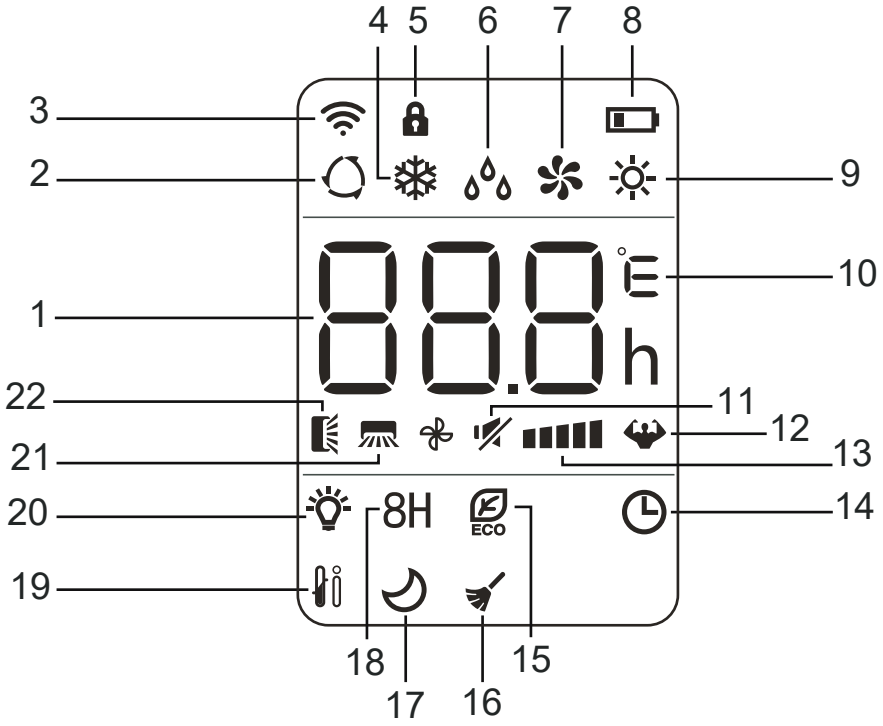
Button	Description
⏻	Turn the air conditioner on or off
TURBO	Activate/deactivate the Turbo feature to allow the system to rapidly reach set temperatures
MUTE	Put the system into Silent mode
MODE	Select the mode of operation (Auto, Cool, Dry, Fan, and Heat modes)
ECO	Activate/deactivate the ECO feature
	Long press to activate the 46°F “Away from Home” freeze protection setting
TIMER	Configure the automatic on/off times
∧	Increase set temperature and timing, as well as navigate the functional menu
∨	Decrease set temperature and timing, as well as navigate the functional menu
FAN	Configure the fan speed (Auto, Low, Mid, and High)
	Activate/deactivate the up-down louver motor
	Activate/deactivate the left-right louver motor
DISPLAY	Turn the LED display on or off
SLEEP	Toggle the system’s Sleep mode
I FEEL	Activate/deactivate the system’s Follow Me mode
MEMORY	Recall saved temperature/mode/fan settings
CLEAN	Activate/deactivate Self-Clean mode
ACC	Reserved for future usage
[LOCK]	Hold MODE+TIMER for child-lock



Operating Instructions

7

Remote Controller LED Screen & Icons



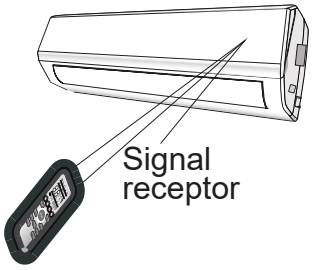
No.	Icon	Description
1	88	Temperature indicator
2		Auto mode
3		Signal transmit indicator
4		Cooling mode
5		Child lock indicator
6		Dry mode
7		Fan Only mode
8		Battery level indicator
9		Heating mode
10		Unit of temperature (°C/°F)
11		Mute function

No.	Icon	Description
12		Turbo mode
13		Fan speed (Auto or Fixed)
14		Timer active indicator
15	ECO	ECO mode
16		Self-Clean function
17		Sleep function
18	8H	8°C (46°F) Heating function
19		I Feel/Follow Me mode
20		LED display on/off
21		Left-Right swing indicator
22		Up-Down swing indicator

Operating Instructions

7

Operate the Remote Controller

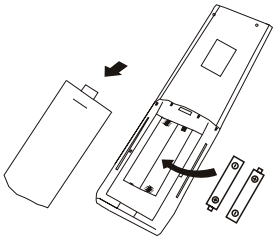


- Ensure no objects obstruct the path between the remote control and the receiver.
- Keep the remote at least 3 feet (1 m) from televisions and other electrical appliances.
- Always direct the remote controller toward the air conditioner.
- Do not leave the remote control exposed to direct sunlight.

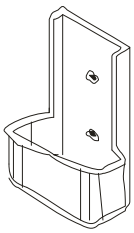
Replace Batteries

Slide the battery cover on the rear of the remote down in the direction of the arrow. Install the batteries matching the positive (+) and negative (-) markings inside. Slide the cover back into place.

Use two AAA batteries. Do not use rechargeable batteries. Replace the old batteries with new ones of the same type when the display stops working. Do not dispose of batteries as unsorted municipal waste; separate collection is required. If the system will not be used for a long time, remove the batteries to prevent leakage.



Remove batteries to avoid leakage damage when the device is not in use for a long time.



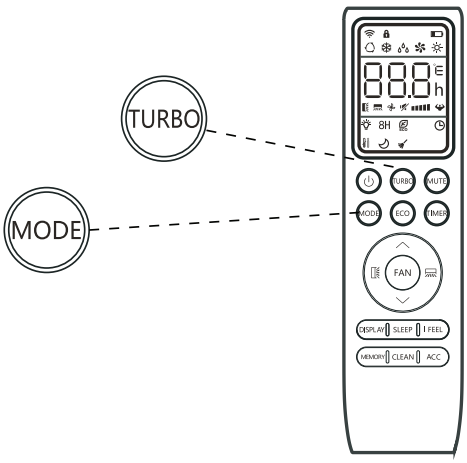
Place the remote control in the cradle when not in use (sold separately).

Configure Remote Controller Settings (Some Models)

Depending on the system, the controller buttons can configure the control type (Cooling Only or Heat Pump) and temperature unit (°C or °F).

Complete the configuration immediately after inserting the remote batteries. If needed, remove and re-insert the batteries to restart the programming process.

Press and Hold	Functional Result
Mode	When ❄ flashes, Cooling Only mode
Mode	When ☼ flashes, Heating Only mode
Turbo ↓ Turbo (press)	After 5 seconds, enter Change mode ↓ Switch between °C and °F units



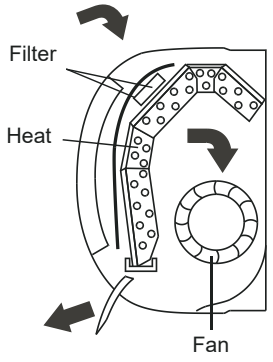
Operating Instructions 7

D. Control the Airflow

CAUTION

- Do not adjust the louvers manually, as serious damage may occur.
- Only adjust the deflector when the system is turned off.
- Never poke fingers, sticks, or other objects into the air inlet/outlet vents.

The air pulled in by the fan (the return air) enters the grille and passes through the filter. The air is then cooled, dehumidified, or heated by the heat exchanger.



Motorized louvers control the vertical airflow, while manual deflectors adjust it horizontally. Some models feature a "dual-swing" capability for fully automated horizontal and vertical airflow.

1. Press the buttons to activate the air direction adjusters.

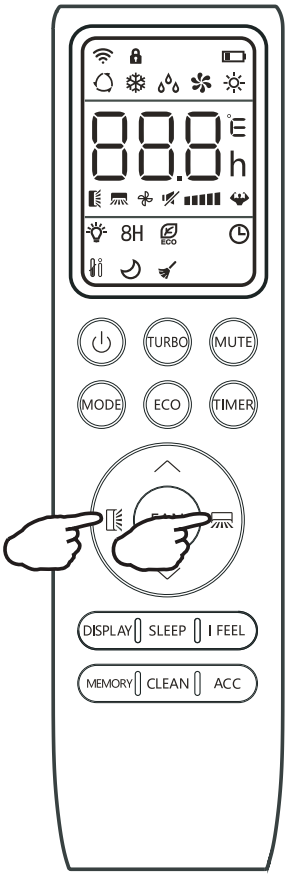
Press the Swing button to trigger the horizontal flaps to swing up and down. Press the button again to stop the swing movement at the current angle.

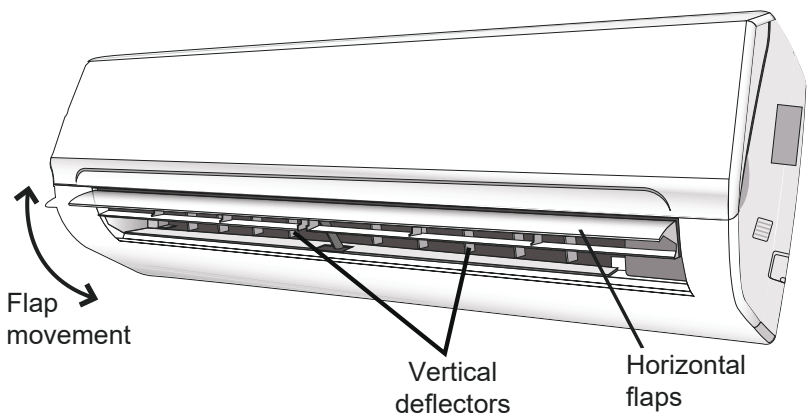
Press the Swing button to trigger the vertical flaps to swing left and right.

Press the button again to stop the swing movement at the current angle.

2. Adjusting the vertical deflectors underneath the flaps manually fixes the airflow in position before system startup.

For some models, press either of the Swing buttons for more than 3 seconds to allow more fine adjustment of the airflow angle.





Operating Instructions

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E. Operating Modes

Note

As a compressor protection measure, a 3-minute restart delay is activated upon changing the mode or cycling the power.

Cooling Mode

This mode utilizes the heat pump to cool the room while reducing air humidity.

To put the system into Cooling mode, press the MODE button until the ❄ symbol appears on the remote controller's display.

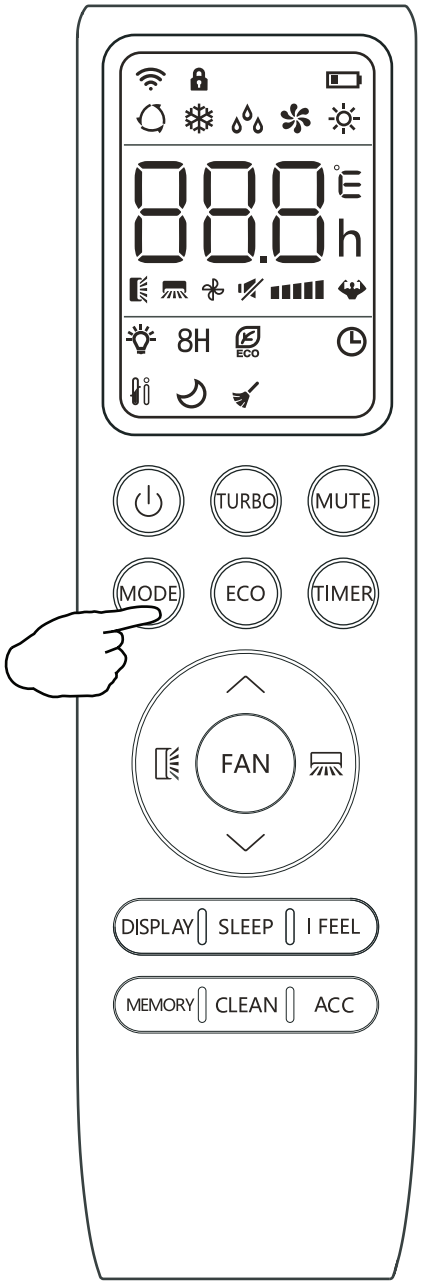
Use the ∧ and ∨ buttons to set a temperature lower than that of the room.

Heating Mode

This mode utilizes the heat pump to warm the air in the room by reversing the cooling cycle.

To put the system in Heating mode, press the MODE button until the ☼ symbol appears on the remote controller's display.

Use the ∧ and ∨ buttons to set a temperature higher than that of the room.



Notes on Heating Mode

- In Heating mode, the appliance periodically enters a defrost cycle to remove frost from the condenser and restore heat exchange efficiency. This normal process lasts between 2 and 10 minutes.
- During defrosting, the indoor unit's fan will stop. Once completed, the system will automatically resume its normal Heating mode operation. Press the ECO button 10 times in 8 seconds to trigger a forced defrost.
- The system may take up to 10 minutes to deliver heat, which allows the coil to warm up and prevents cold airflow.
- Unlike in Cooling mode, the fan speed cannot be set manually. Instead, the fan speed adjusts automatically in proportion to the temperature of the heat exchanger.

Operating Instructions 7

Dry Mode

This mode is a specialized function that rapidly reduces the room humidity and moisture.

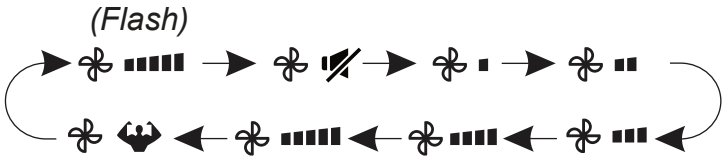
To put the system into Dry mode, press the MODE the symbol appears on the remote controller's display.

Fan-Only Mode

Use this mode to run the ventilation system without heating or cooling.

To put the system in Fan-Only mode, press the MODE button until the symbol appears on the remote controller's display.

Use the FAN button to set the desired fan speed. The system will cycle from ***Auto > Mute > Low > Low-Mid > Mid > Mid-High > High > Turbo.***



Auto Mode

In this mode, the system selects Cooling, Heating, or Fan-Only mode based on delta-T (△T) — the difference between the room and set temperatures.

ΔT (RT-ST)	ΔT>2°F	-2°F ≤ ΔT ≤ 2°F	ΔT<2°F
→MODE	Cooling	Fan-Only	Heating

To put the system in Auto mode, press the MODE button until the symbol appears on the remote controller's display. Use the and buttons to set the desired room temperature.



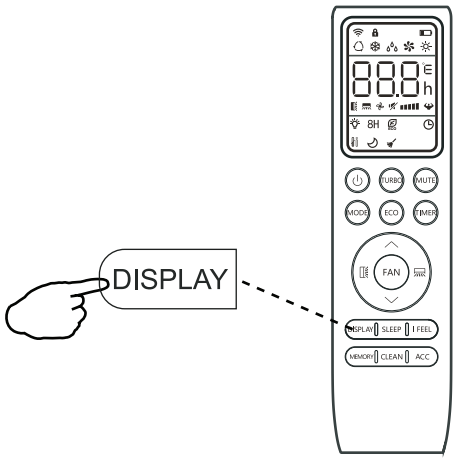
Operating Instructions

7

Turn the LED Display On or Off

The LED display on the indoor unit's front panel can be turned on or off.

Press the DISPLAY button in order to switch off the LED display on the front panel. Press the button again to turn the LED display back on.

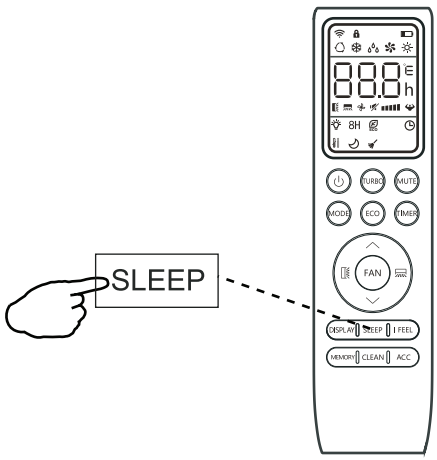


Sleep Mode

This mode is designed for periods with lower heating or cooling requirements, such as typical sleeping hours. This mode reduces energy consumption and can be activated via the remote controller or wired thermostat.

After 10 hours, the air conditioner will revert back to the previously set mode.

Press the SLEEP button and the symbol will appear on the display. Press this button again to exit from this mode.

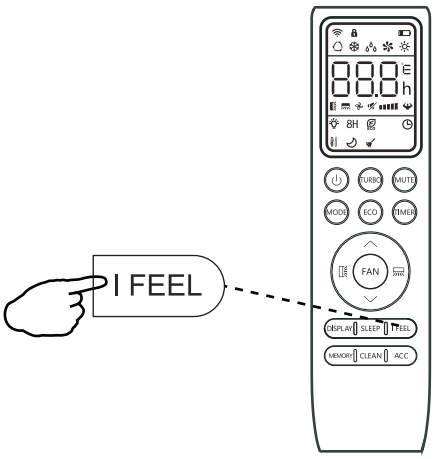


I Feel Feature

This feature enables the remote controller to act as a temperature sensor and relay the current air temperature from its physical location in the room. In some cases, this helps reduce thermal drift between the set temperature and the actual room temperature.

In order to activate this feature, press the I FEEL button and the icon will appear on the display.

This feature will automatically deactivate itself 8 hours later (or 2 hours on some models).



Operating Instructions

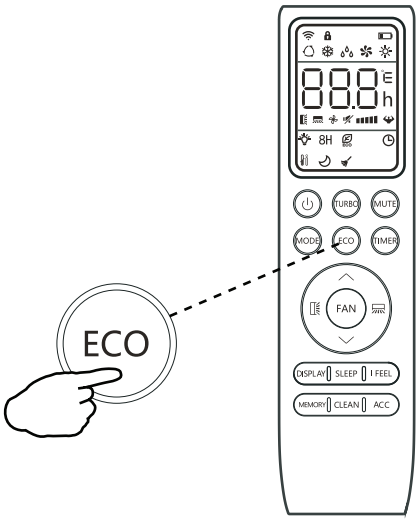
7

Energy Saver (ECO) Option

In this mode, the appliance will automatically manage its operations to conserve energy.

To turn the ECO feature on, press the ECO button on the remote controller and the ECO icon will appear. The system is now running in ECO mode. The process can be repeated to turn it off.

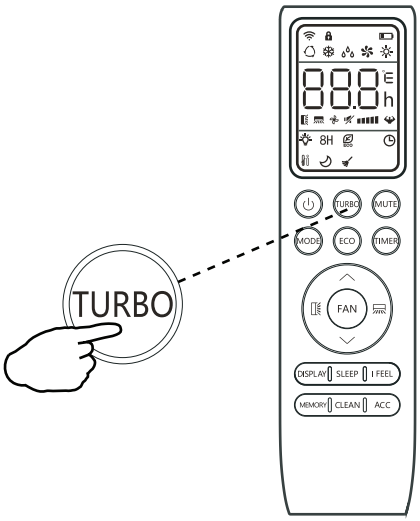
The ECO feature is available in both Cooling and Heating mode.



Turbo Option

In this mode, the appliance uses the highest fan speed to maximize output and reach the set temperature quickly.

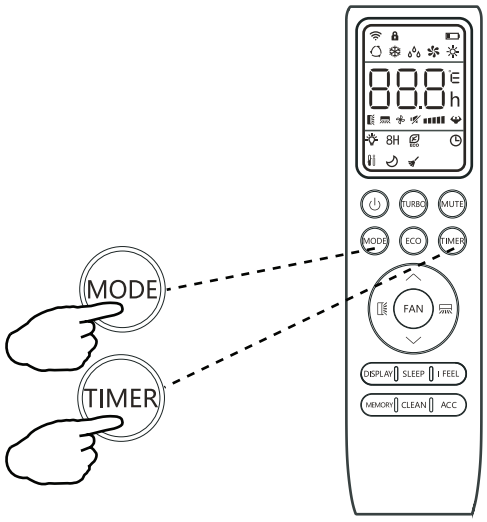
To turn the Turbo feature on, press the TURBO button on the remote controller and the icon will appear. The system is now running in Turbo mode. Repeat the process to turn off the feature.



Child-Lock Function

Press the MODE and TIMER buttons together to activate the child-lock function. When this function is turned on, the icon will display and no single button will be active.

Press the MODE and TIMER buttons together once more to deactivate the child-lock function.



Operating Instructions

7

Timer On

The Timer feature allows the user to set a time delay for the system to turn itself on or off.

To set a timer for the system to turn on in a specified number of hours, follow these steps.

1. Begin by pressing the TIMER button while the system is powered off. The ◷ symbol will then display flashing. The default setting is 6 hours.

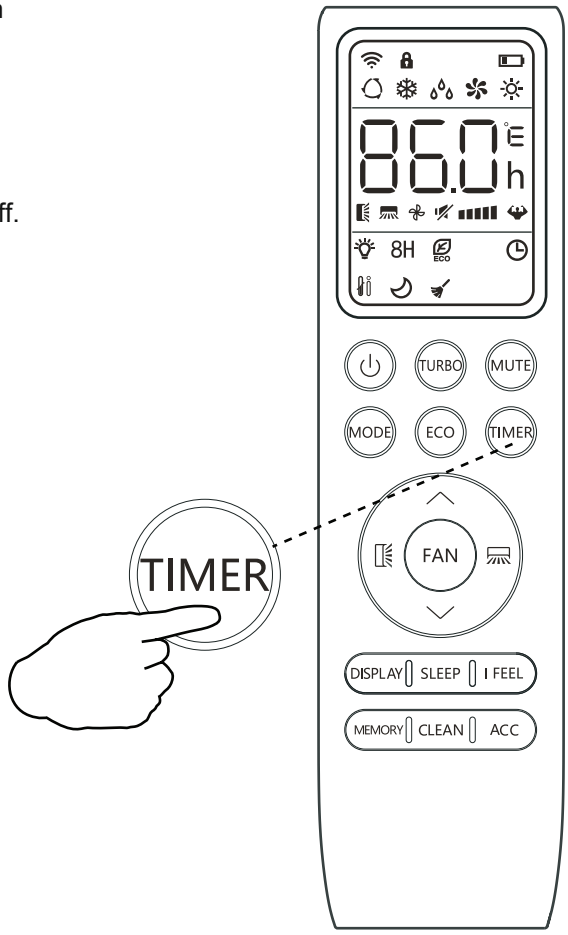
2. Use the ∧ and ∨ buttons to set the needed time delay in 30 minutes increments.

3. Press the TIMER button a second time to confirm.

4. Press the MODE button to select the desired operating mode that the unit should start up in.

5. Press the FAN button to set the desired fan speed that the unit should start up in.

6. Use the ∧ and ∨ buttons to set the desired operation temperature. The unit is now primed.



Timer Off

The Timer Off feature allows the appliance to turn off automatically after a set number of hours. The symbol ◷ will appear. To set a timer for the system to turn off automatically in a specified number of hours, follow these steps:

1. Confirm that the appliance is on and running.

2. Press the TIMER button to enter the prompt for switching off the system. Use the ∧ ∨ buttons to configure the time delay setting.

3. Press the TIMER button again to confirm. Press it once more to cancel the setting.

Press the TIMER button to cancel at any time in Timer Off.

The programming will cancel if no buttons are pressed after 5 seconds. This may require restarting the process.

Operating Instructions

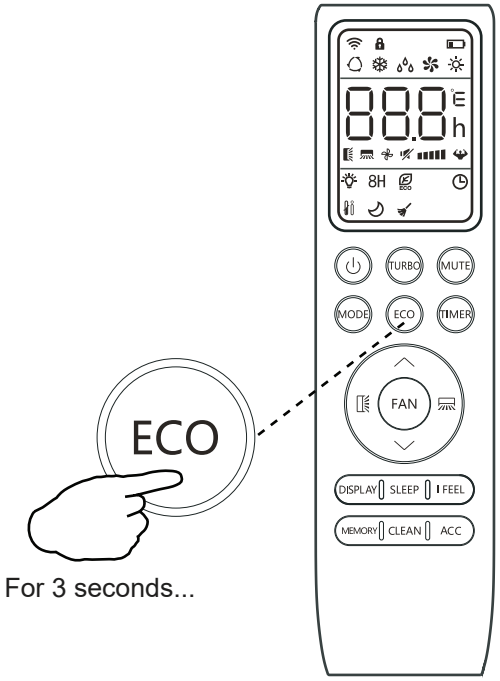
7

46°F Freeze Protection Function

Use this feature to prevent freezing while the user is away from home. When turned on, this feature sets the system to maintain a temperature of 46°F (8°C). If the unit is in standby mode, the heating mode will automatically start when the room temperature drops to 46°F (8°C) or lower. The system will then return to standby mode once the room temperature reaches 48°F (9°C)

If the room temperature reaches 64°F (18°C) or higher, the appliance automatically cancels or prevents this feature.

Press and hold the ECO button for 3 seconds to activate this feature. Repeat this to deactivate the feature. Once activated, 46°F (8°C) will appear on the display.



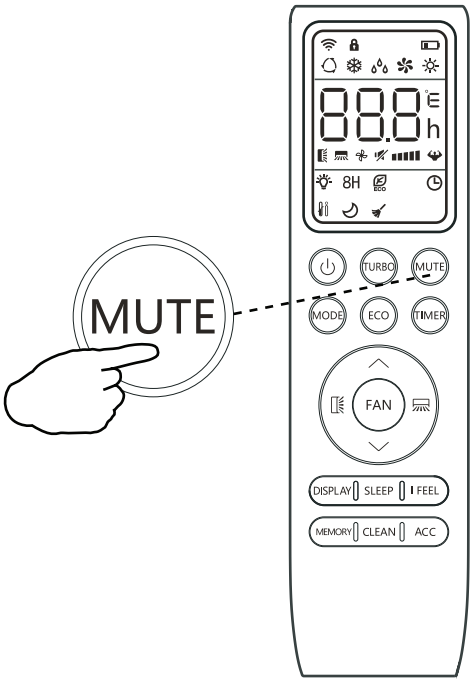
Mute Mode

When the system is muted, the remote controller will display the auto fan speed and the indoor unit will operate at its lowest fan speed in order to minimize operation noise.

Press the MUTE button in order to activate this mode. The icon will display to indicate that the system is muted.

Press either the Fan, Turbo, or Sleep button to cancel this mode.

The Mute feature cannot be activated when the system is in Dry mode.



Operating Instructions

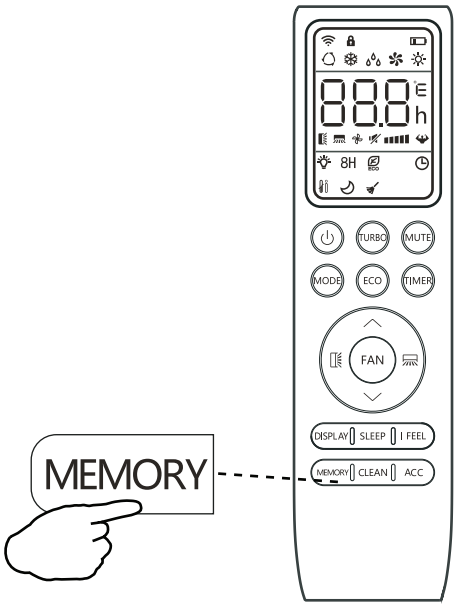
7

Memory Feature

This feature allows users to store their favorite settings and reconfigure the system to those exact parameters with a single button press. Each mode (Heating, Cooling, Fan, and Dry) can store a unique profile.

To use this feature, enter the desired mode and set the system to the preferred configuration. Press and hold the MEMORY button for 3 seconds to store the configuration. The system will flash "AU" to acknowledge that the configuration has been stored successfully.

Enter the desired mode (Heating / Cooling / Fan / Dry) and press the MEMORY button to activate the stored configuration.



Self-Clean Feature

This feature helps remove accumulated dust, dirt, bacteria, and other microbes from the indoor evaporator.

To activate this feature, press the CLEAN button until a beep is heard from the unit. The icon displays on the unit and remote controller. This procedure will operate for 30 minutes before returning to the preset mode.

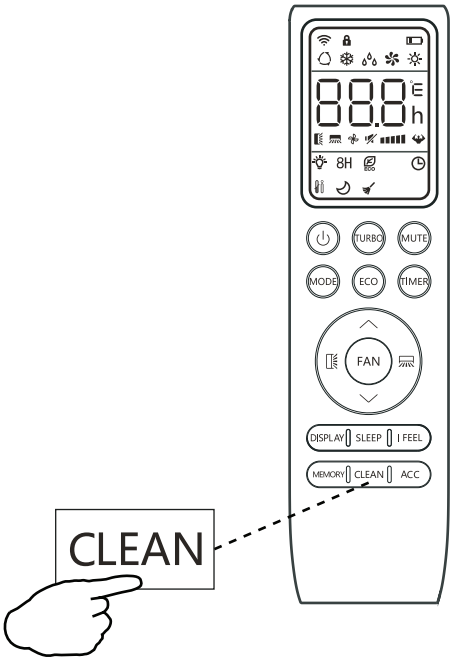
Press the button to cancel this feature during the process. Two beeps will be emitted from the machine when it is finished or canceled.

This procedure can cause uncommon noises from the machine. These noises are normal, resulting from plastic parts expanding and contracting due to temperature changes.

Only use this function when the indoor temperature is below 86°F (30°C) and the outdoor temperature is between 41-68°F (5-20°C).

It is suggested to run this feature once every 3 months.

This feature does not replace the need for regular maintenance and cleaning, especially in dusty or high-particle environments.

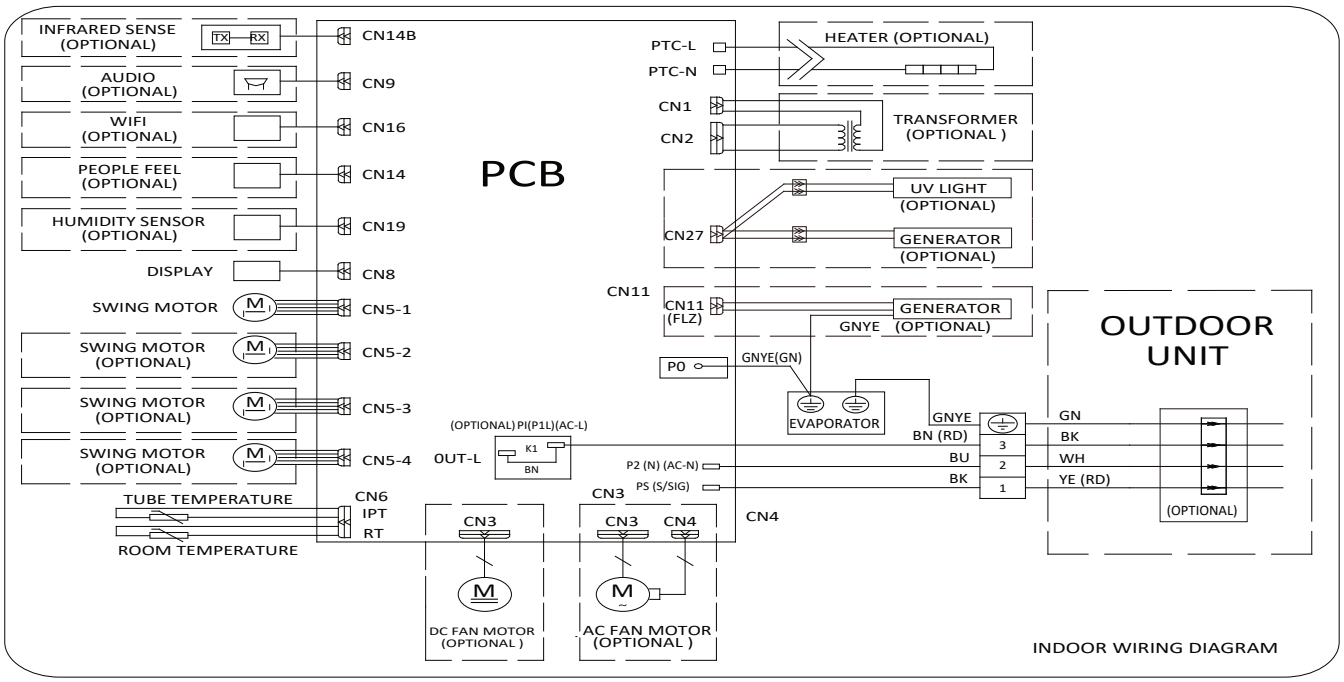


Wiring Diagrams

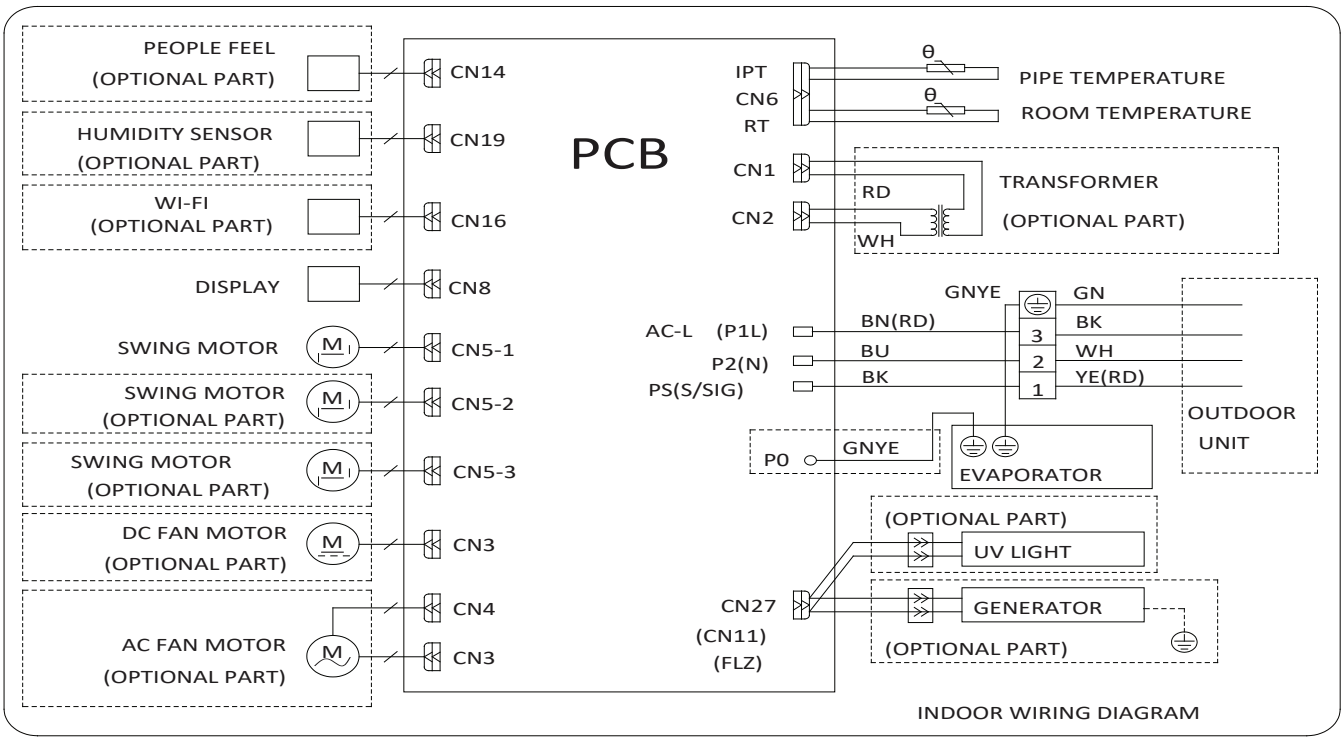
8

Control Board Wiring Diagrams

Indoor Units: WT009ALSI20HLF | WT012ALSI20HLF | WT009GLSI20HLF | WT012GLSI20HLF | WT018GLSI20HLF



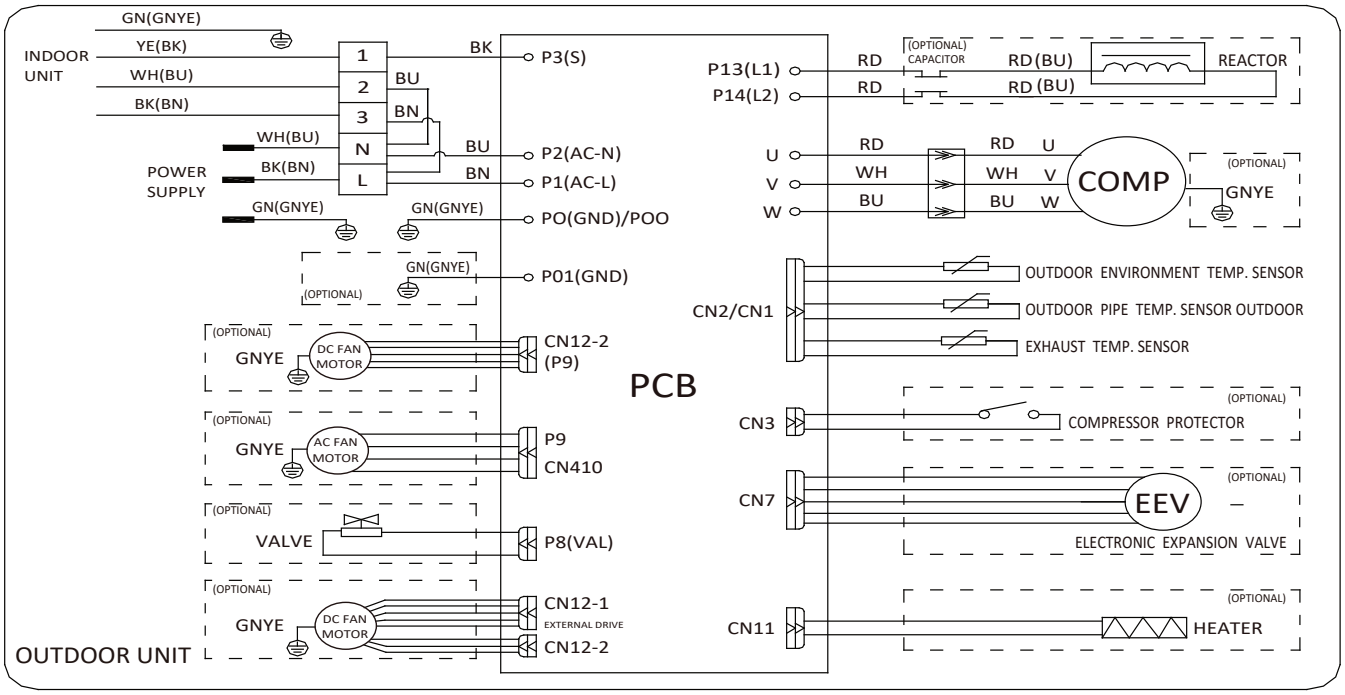
Indoor Units: WT024GLSI20HLF, WT030GLSI20HLF, WT036GLSI20HLF



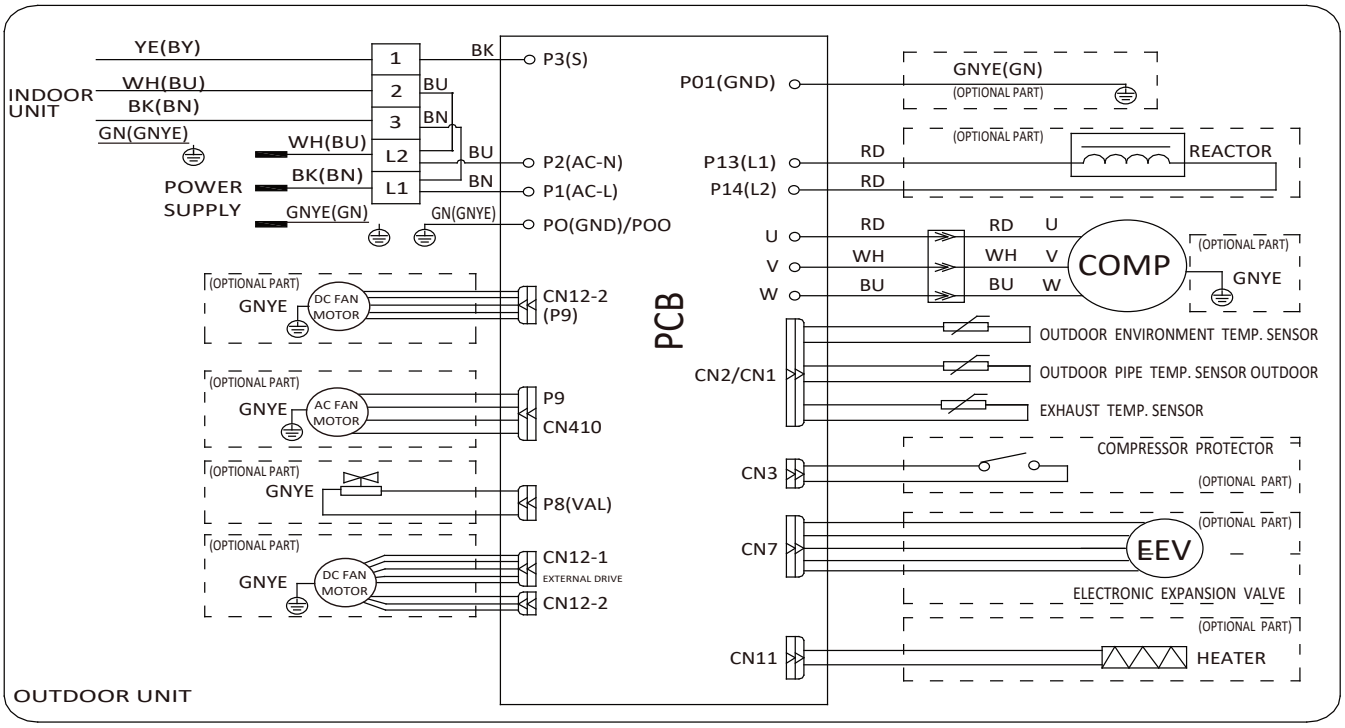
Wiring Diagrams

8

Outdoor Units: YN009ALSI20RPF, YN012ALSI20RPF



Outdoor Units: YN009GLSI20RPF, YN012GLSI20RPF, YN018GLSI20RPF, YN024GLSI20RPF, YN030GLSI20RPF, YN036GLSI20RPF



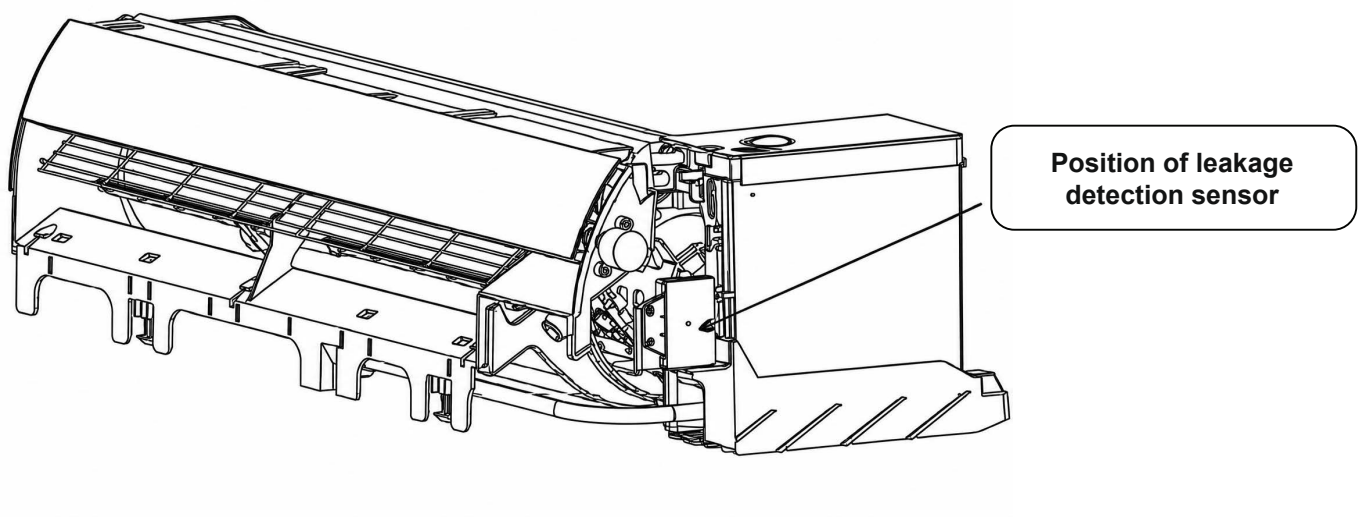
Additional Leakage Sensor

9

- Use the auxiliary refrigerant leak sensor only in specific installation scenarios. While all indoor units possess built-in leak sensing abilities, certain installations require this separate, external sensor. Qualified personnel must maintain the sensor. Use only manufacturer-specified replacements.
- The refrigerant sensor's design life is 15 years. Replace the sensor within its service life.
- The sensor automatically monitors system operation. If the refrigerant concentration exceeds the alarm threshold, the system stops the compressor and starts the circulation fan for safety.
- The alarm indicators for the refrigerant sensor are shown below:

Condition	Error Code
Refrigerant Leak Detected	Display "Hd"
Communication Error with Refrigerant Sensor	Display "Fd"

- The sensor's installation position is illustrated below. The actual location may vary depending on the model and cabinet design.

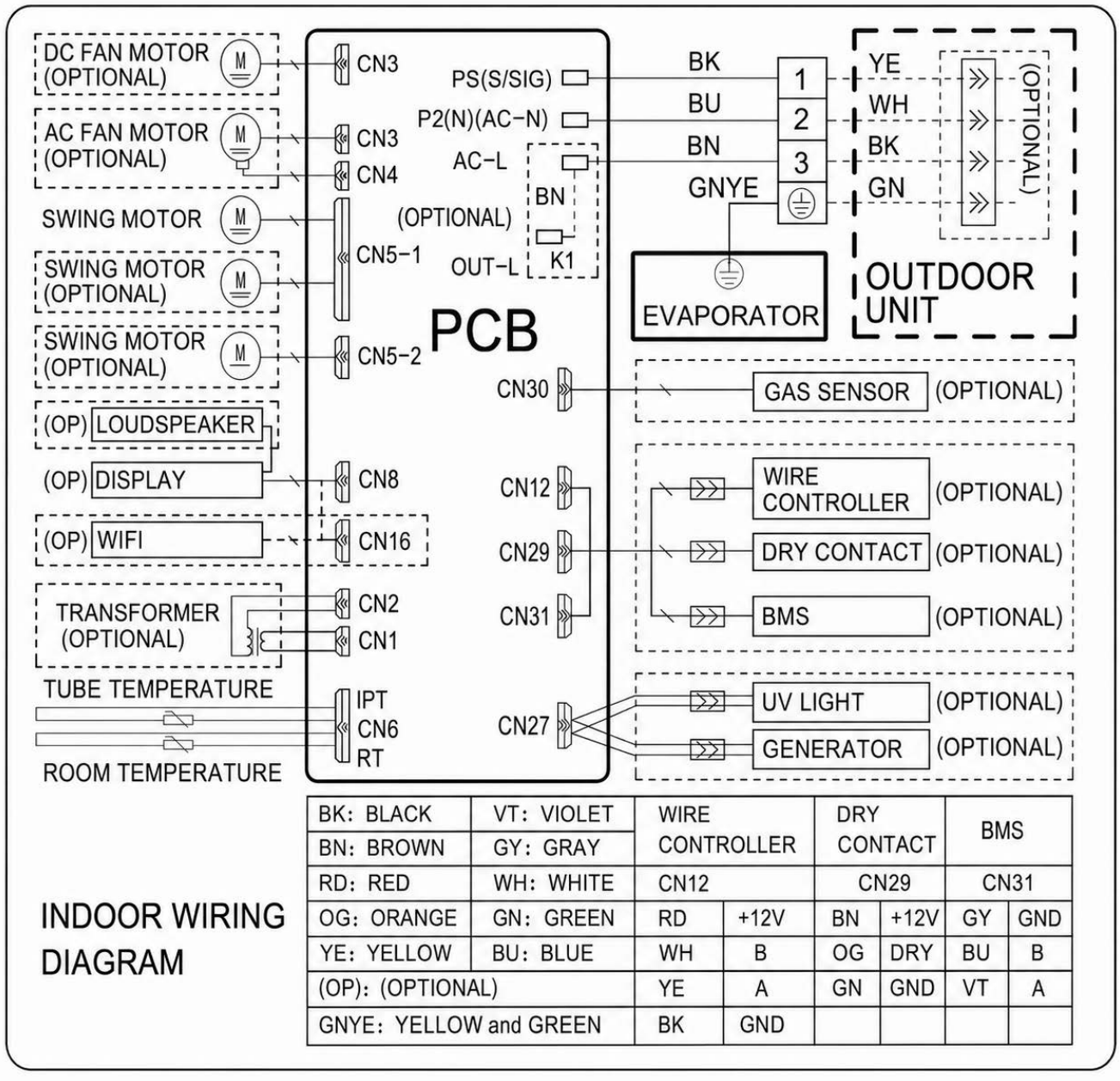


- The unit is equipped with a refrigerant leak detector for safety. The unit must remain electrically powered at all times after installation, except during service.
- Only use manufacturer-approved sensors as replacements.

Additional Leakage Sensor

9

If the air handler is configured with a refrigerant leakage detection sensor from the factory or will be configured for one later, follow the alternative control board wiring diagram shown below:



INDOOR WIRING DIAGRAM

BK: BLACK	VT: VIOLET	WIRE CONTROLLER		DRY CONTACT		BMS	
BN: BROWN	GY: GRAY						
RD: RED	WH: WHITE	CN12		CN29		CN31	
OG: ORANGE	GN: GREEN	RD	+12V	BN	+12V	GY	GND
YE: YELLOW	BU: BLUE	WH	B	OG	DRY	BU	B
(OP): (OPTIONAL)		YE	A	GN	GND	VT	A
GNYE: YELLOW and GREEN		BK	GND				

Appendix

A

Product Disposal Guidelines

This appliance contains refrigerant and other potentially hazardous materials. When disposing of the appliance, the law requires special collection and treatment. Do not dispose of this product as household waste or unsorted municipal waste.

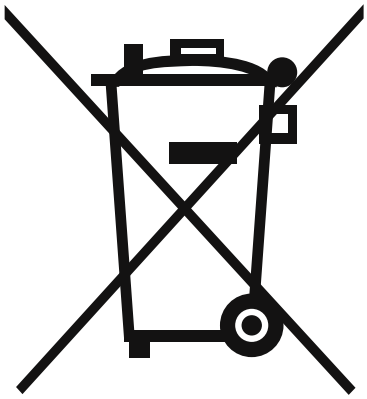
Remove all refrigerant and oil prior to disposal as outlined within this manual.

When disposing of this appliance, the following options are available:

- Dispose of the appliance at a designated municipal electronic waste collection facility.
- When purchasing a new appliance, customers can have the retailer take back the old one free of charge.
- Sell the appliance to certified scrap metal dealers.

Note

Disposing of this appliance improperly, or in other natural surroundings, endangers your health and is bad for the environment. Hazardous substances may leak into the ground water and enter the food chain. Follow proper disposal protocols.



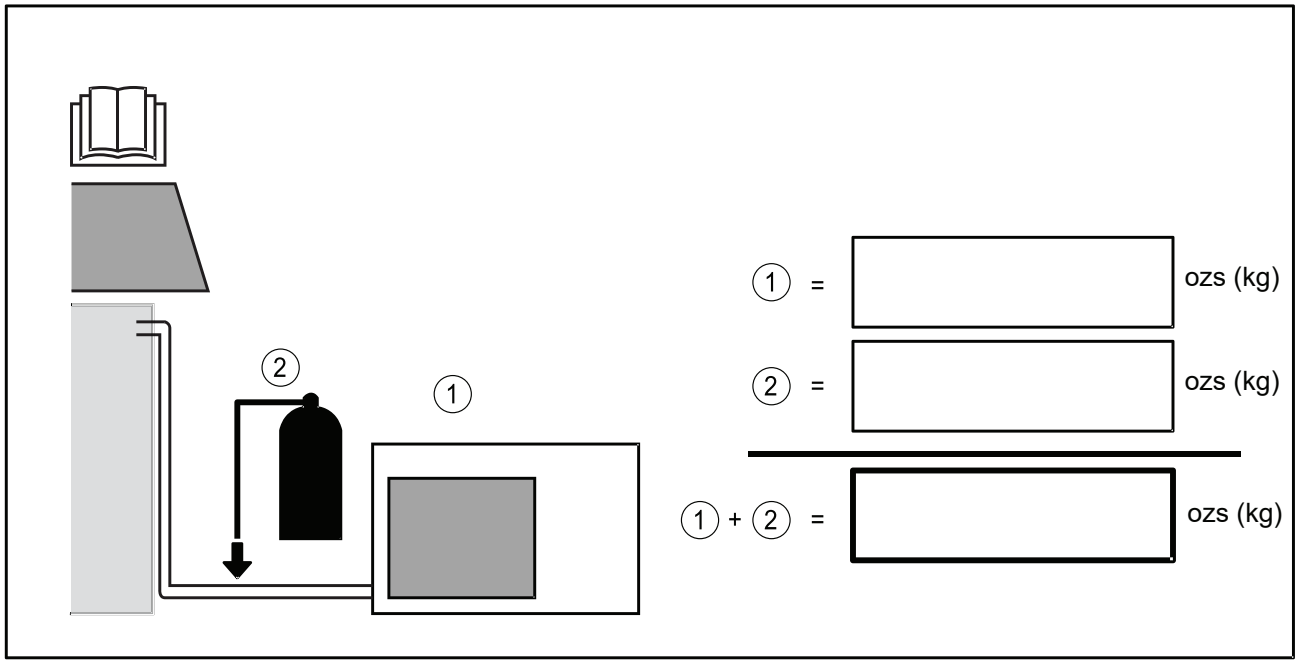
Appendix

A

If Refrigerant Has Been Added to the System During Installation

(For the Installer) fill in the following:

1) The factory refrigerant charge of the product (located on the outdoor unit nameplate).
2) The additional refrigerant charged into the product.
1+2) The total refrigerant charge.



We recommend keeping this information handy for future service and maintenance needs.

System Notes

The design and specifications of this product are subject to change without prior notice as development continues. Consult with the sales agency or manufacturer for details. Refer to the equipment nameplate for all other applicable specifications.

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www.highseer.com
www.pioneerminisplit.com

Scan the below code to visit our support page where you can find more installation materials:

SCAN ME

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