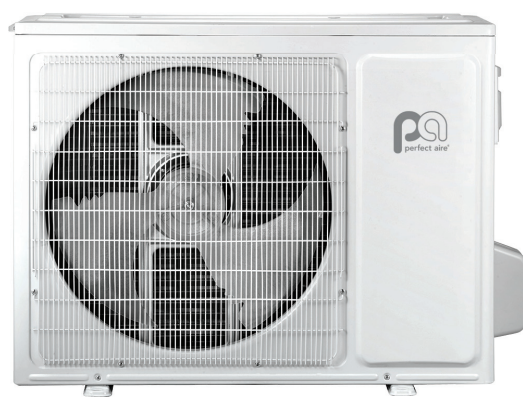




## OWNER'S MANUAL

# MULTI-ZONE QUICK CONNECT DUCTLESS MINI-SPLIT SYSTEM

---



---

MODELS: 3PAMSHHQC18-MZ02 / 3PAMSHHQC24-MZ03

# CONTENTS

**IMPORTANT NOTE:** Read the manual carefully. Make sure to save this manual for future reference. Illustrations in this manual are for explanatory purposes only, your actual product may look slightly different.

Safety Instructions.....4

Safety Precautions .....5

Preparation Before Use .....7

Parts Breakdown By Box .....8

Informational Quick Guide.....9

## INSTALLATION INSTRUCTIONS

**STEP 1:** Marking the Wall (Using Template)..... 16

**STEP 2:** Installing the Wall Bracket..... 17

**STEP 3:** Drilling the Line Set Bundle Hole ..... 18

**STEP 4:** Installing the Wall Unit..... 18

**STEP 5:** Securing the Outdoor Unit ..... 19

**STEP 6:** Installing a Drain Joint (Optional) ..... 20

**STEP 7:** Installing the Line Set, Opening Unit Valve Caps ..... 22

**STEP 8:** Electrical Connections ..... 26

**STEP 9:** Connecting the Drain Tube..... 30

**STEP 10:** Turning on the Wall Unit ..... 30

**STEP 11:** Checking for Leaks ..... 30

Maintenance.....31

Protection.....32

Troubleshooting.....33

Identification of Parts .....34

Display Introduction .....35

**NOTE:** For detailed remote control instructions, see the **Remote Control Manual**.

# SAFETY INSTRUCTIONS

1. To guarantee the system will function properly, please read this manually carefully before installation.
2. Properly ground the air conditioner.
3. Check connecting wires and pipes carefully, making sure they are secured before connecting power to the air conditioner.
4. After installation, the consumer must operate the air conditioner correctly according to this manual.

Required Fuse for the System:

MODEL	MAXIMUM FUSE OF OUTDOOR UNIT
18K BTU (3PAMSHHQC18-MZ02)	30A 230V
24K BTU (3PAMSHHQC24-MZ03)	30A 230V

5. **WARNING:** Risk of electric shock may cause serious injury or death; disconnect all electric power supply before servicing.
6. The maximum length of the connecting pipe between the indoor and outdoor unit varies per model. See page 10 for details.
7. The appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience or knowledge, unless they have been given supervision or instruction concerning the use of the appliance by a guardian. Children should be supervised to ensure they do not play with the appliance.
8. This appliance can be used by children aged 8 or above, and persons with reduced physical, sensory or mental capabilities if they have been given supervision or instruction concerning safe use of the appliance and understand the hazards involved. Children should not play with the appliance. Cleaning and user maintenance should not be made without supervision.
9. Batteries for the remote control must be recycled or disposed of properly. For disposal of scrap batteries, please discard batteries as sorted municipal waste at an accessible collection point.
10. The appliances must be fitted with disconnection from the supply mains having a contact separation in all poles that provide full disconnection under over-voltage category III conditions. This must be incorporated in proper wiring in accordance with wiring guidelines.
11. The appliance should not be installed in a laundry room.
12. The appliances shall be installed in accordance with local electrical safety regulations and National Electrical Codes (NEC).
13. The air conditioner must be repaired by a professional or a qualified person.

# SAFETY PRECAUTIONS

## SYMBOLS IN THIS USE AND CARE MANUAL ARE INTERPRETED AS SHOWN BELOW.



Do NOT do.



Grounding is essential.



Watch out for the following situation.



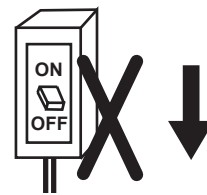
Warning: Incorrect handling could cause serious hazards such as serious injury or even death.



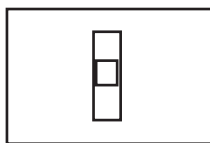
Use the correct power supply in accordance with the rating plate requirements. Otherwise, serious faults or hazards may occur, or fire may break out.



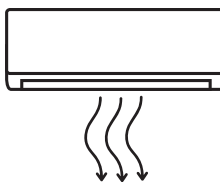
Keep the power supply circuit breaker or plug away from dirt or debris. Firmly and correctly connect power supply cord to circuit breaker, to avoid fires and electric shock due to insufficient contact.



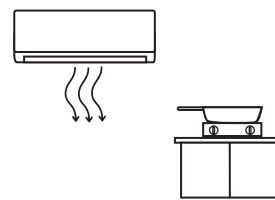
Do not use the power supply circuit breaker to turn off the unit.



It is the user's responsibility to ground the appliance according to local codes or ordinances by a licensed technician.



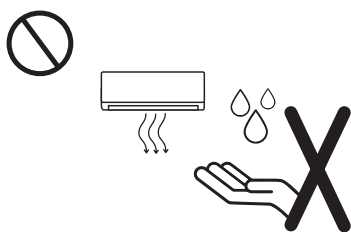
It may be harmful to your health to allow cool air to blow directly on a person for long period of time. It is advised to allow air to flow unrestricted throughout the room.



Prevent air flow from the indoor unit (evaporator) from reaching gas burners or stoves.

# SAFETY PRECAUTIONS

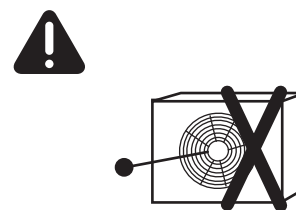
(Continued)



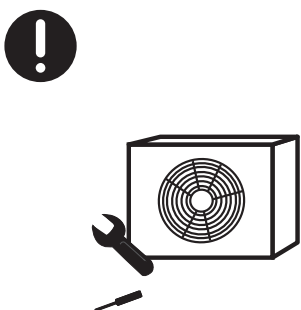
Do not touch any part of the system with wet hands.



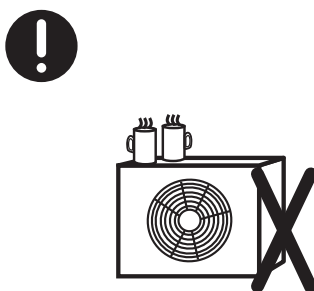
Turn off the system by remote control first before cutting off power supply in cases of malfunction.



Never insert a stick or similar object into the condensing unit. As the fan inside rotates at a high speed, injury may occur when obstructed.



Do not repair the system by yourself, hire a qualified HVAC technician. If repairs are done incorrectly, this may result in electric shock and voiding of the warranty.



Do not put any object on top of the outdoor condensing unit



Do not cut, pull, or press the power supply cord, as it may break. An electric shock or fire can be caused by a broken power supply cord.

# PREPARATION BEFORE USE

## SAFEGUARDING THE ENVIRONMENT

---

This appliance is made of recyclable or re-usable material. Scrapping must be carried out in compliance with local waste disposal regulations.

For more detailed information on handling and recycling this product, contact your local waste management offices.

This marking indicates that this product should not be disposed of with other household waste items throughout North America. To prevent possible environmental or human harm from uncontrolled waste disposal, recycle responsibly to promote the sustainable reuse of material resources.




## TOOLS REQUIRED

---




- Pencil/Nail (To mark wall)
- Level
- Drill
- Stud Finder
- Phillips Head Screwdriver
- Dry Wall Anchors & Screws
- 2.5" Hole Saw
- 2 Adjustable Wrenches
- 5 mm Allen Wrench
- Duct Tape
- Surge Protector (Optional/Highly Recommended)

# PARTS BREAKDOWN BY BOX

## INDOOR UNIT

	<ul style="list-style-type: none"> <li>• 1x Indoor Evaporator Unit</li> </ul>
	<ul style="list-style-type: none"> <li>• 1x Mounting Bracket + Template</li> </ul> <p>Note: Mounting Bracket comes attached to indoor unit.</p>
	<ul style="list-style-type: none"> <li>• 1x Optional Extra Foam Insulation (For Insulating Valve Connections)</li> </ul>
	<ul style="list-style-type: none"> <li>• 1x Drain Joint</li> </ul>
	<ul style="list-style-type: none"> <li>• 1x Drain Joint Rubber Seal</li> </ul>
	<ul style="list-style-type: none"> <li>• 4x Flare Nuts (For flared type Installations)</li> </ul>
	<ul style="list-style-type: none"> <li>• 1x Bag of Wall Anchors &amp; Screws</li> </ul>
	<ul style="list-style-type: none"> <li>• 1x Remote Control Wall Bracket</li> </ul>
	<ul style="list-style-type: none"> <li>• 1x Remote Control</li> </ul>
	<ul style="list-style-type: none"> <li>• 1x Waterproof Cord Connector</li> </ul>
	<ul style="list-style-type: none"> <li>• 1x FA09 Quick Connect Adaptor (Only included with 18K BTU, use FA09 adaptor instead of FA12)</li> </ul>



## OUTDOOR UNIT

	<ul style="list-style-type: none"> <li>• 1x Outdoor Unit</li> </ul>
	<ul style="list-style-type: none"> <li>• 4x Outdoor Unit Anti-Vibration Pads (May or may not be factory installed)</li> </ul>
	<ul style="list-style-type: none"> <li>• 1x Switch Tie (Only used with flared connections &amp; 24K outdoor unit)</li> </ul>

### NOTE:

- 18K and 24K units will have rubber pads on the feet (factory installed)
- 24K outdoor unit will have 1 switch tie included for 18K unit indoor unit; This is only used for flare type connections.

### Line Set

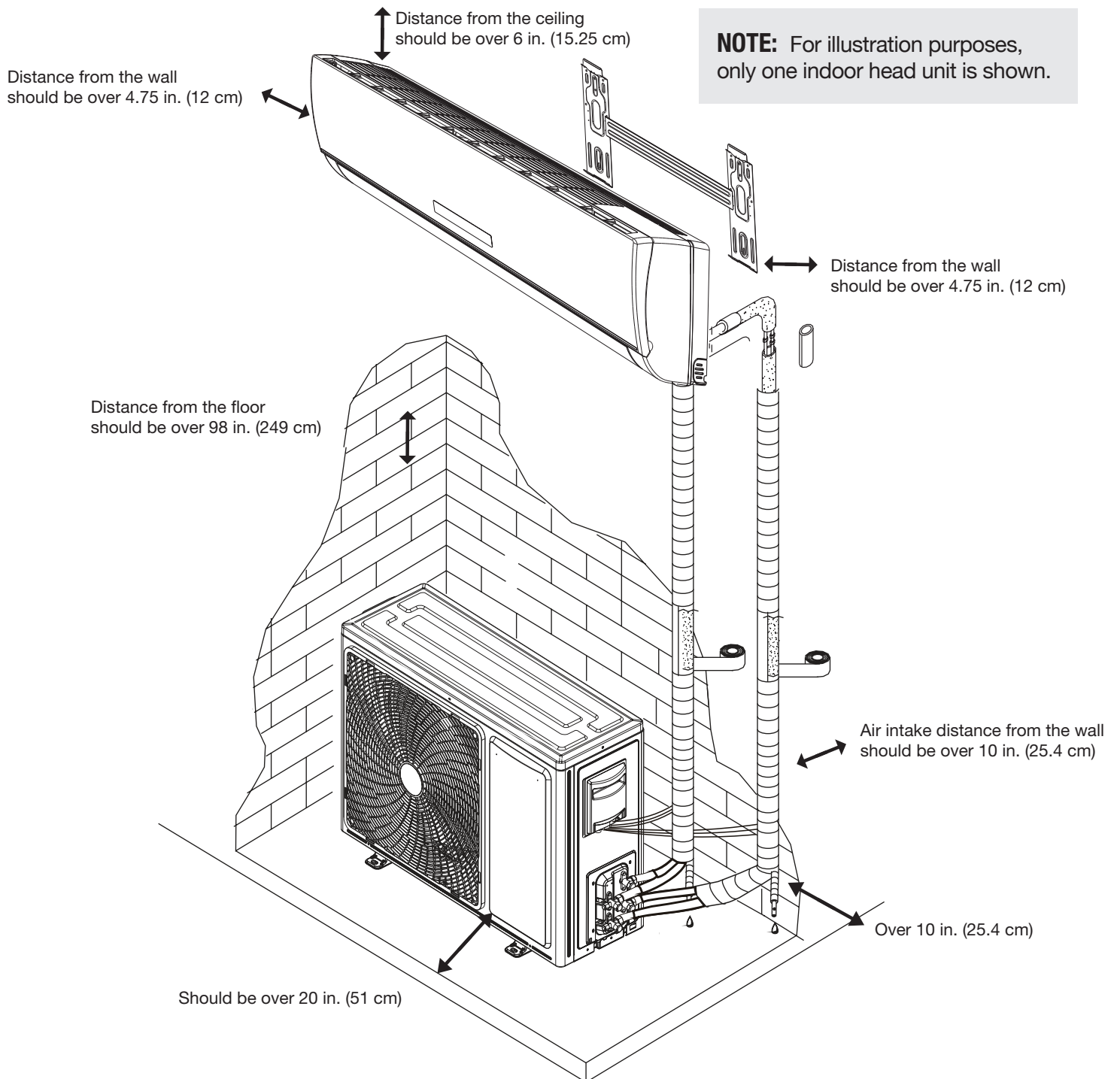
	<ul style="list-style-type: none"> <li>• 1x 25 ft. Line Set (with quick connect fittings installed)</li> </ul>
	<ul style="list-style-type: none"> <li>• 2x Male Condenser Couplers</li> </ul>

### MZ Quick Connect Accessory Kit (MZQCACC-KIT)

	<ul style="list-style-type: none"> <li>• 2x Vinyl Wrap</li> </ul>
	<ul style="list-style-type: none"> <li>• 1x Wall Collar</li> </ul>
	<ul style="list-style-type: none"> <li>• 1x Drain Tube (15 ft. / 4.5 m)</li> </ul>
	<ul style="list-style-type: none"> <li>• 1x Duct Seal</li> </ul>

# INFORMATIONAL QUICK GUIDE

## INSTALLATION DIAGRAM



### NOTE:

- The above figure is a simple representation of the unit, it may not match the external appearance of the unit you purchased.
- Installation must be performed in accordance with the national wiring standards by authorized personnel only.



# INFORMATIONAL QUICK GUIDE

## PRE-PLANNING QUICK GUIDE FOR INSTALLATION

Make sure you have adequate power to run the mini split system. Your Multi-zone system requires a 230V dual pole 30-amp breaker.

1. Determine the square foot of each room and pick the appropriate indoor unit for that room. Oversizing is not always better. If the room is too small and the head is too large, the unit will short cycle and not remove the humidity from the room.
  - Up to 350 sq. feet = 9,000 BTU
  - Up to 500 sq. feet = 12,000 BTU
  - Up to 750 sq. feet = 18,000 BTU
2. Determine where to install the indoor head in each room.
  - An exterior wall works best. If it must be on an interior wall you may need a condensate pump to remove the condensation in the summer. This is purchased separately.
3. Determine where the outdoor unit will be placed.
  - Try to place the outdoor unit centrally to all of the indoor units.
  - Keep in mind you will need to run 230v power to the unit, so try to keep it close to your electrical panel in the house.
4. Now that you have the location of the heads in the building and the outdoor unit outside, you will need to figure out how long each of the line sets will be.

**NOTE:** For the ultimate flexibility of your Perfect Aire Multi-Zone Mini Split, we offer the following line set lengths and communication cables to help you achieve the perfect multi-zone system.

### 15 FT. Line Sets for shorter runs

DESCRIPTION	SKU	LENGTH	REFRIGERANT AMT.
Line set 1/4 + 3/8	1DALS14-38-15	16ft./5m.	1.058oz./30g.
Line set 1/4 + 1/2	1DALS14-12-15		

### 15 Ft. Line Sets with refrigerant added for longer runs

DESCRIPTION	SKU	LENGTH	REFRIGERANT AMT.
Line set 1/4 + 3/8	1DALS14-38-15-75G	16ft./5m.	2.65oz./75g.
Line set 1/4 + 1/2	1DALS14-12-15-75G		

### Longer Communication Cables (Indoor head comes with 25ft communication cable attached by default)

DESCRIPTION	SKU	LENGTH
70' Communication Cable	1PRCOM70	70 ft.
85' Communication Cable	1PRCOM85	85 ft.

5. Measure from the indoor unit down the wall and over to the outdoor unit. Make sure you measure the exact route you plan on running the line set from the indoor unit to the outdoor unit. If the length is longer than 25 feet, you will need to purchase additional line set and communication cables.

**NOTE:** Longer is better than shorter, you can always coil the additional line set.

- If the line set run is shorter than 25 ft., you can opt for a 15 ft. line set.
- If your line set will be longer than 25 ft., you will need to purchase additional lengths in 15-foot increments.



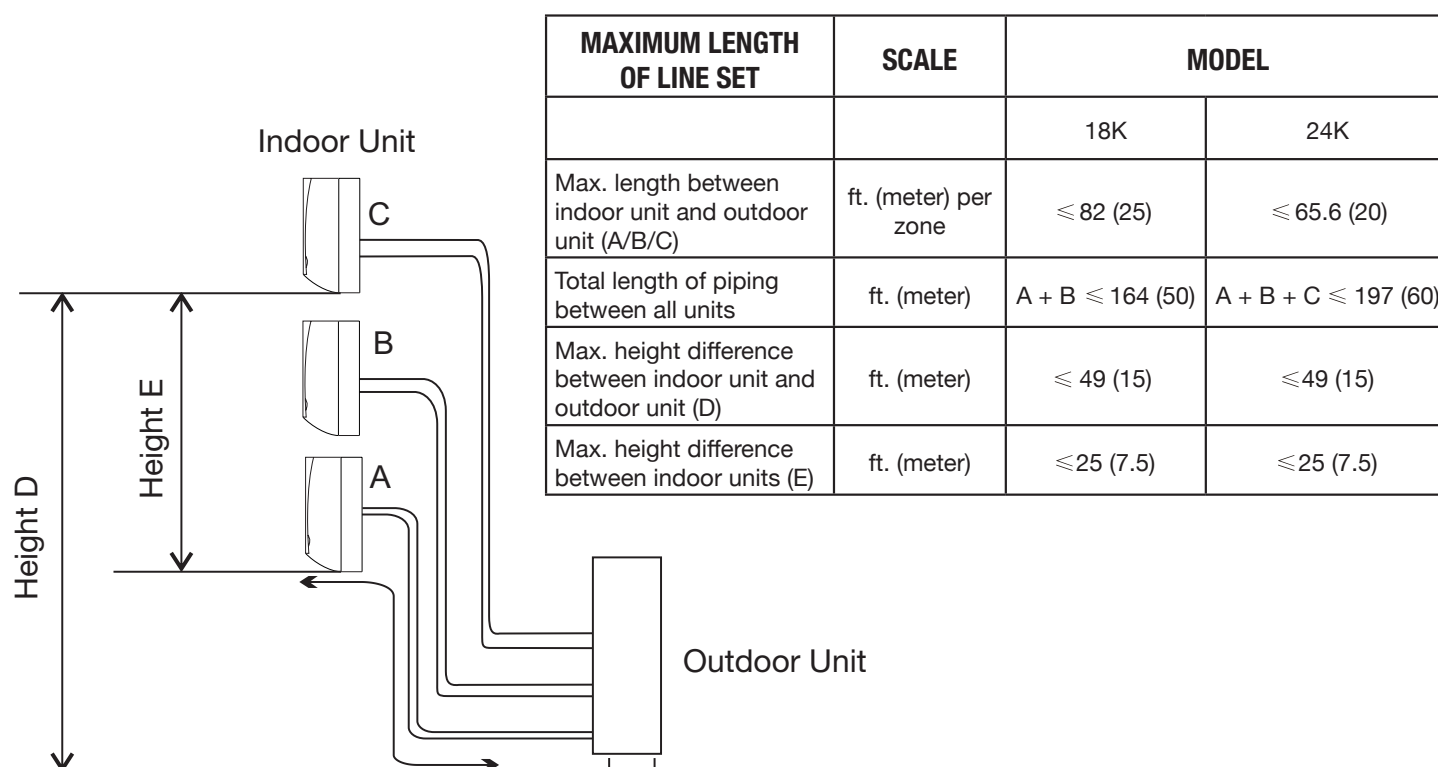
## WARNING

Do not try to solder/braze 2 line sets together to make it longer.  
This will void the warranty.

**NOTE:** You will also need to purchase new communication cables since the default length that comes attached to the indoor unit from the factory is 25 ft. Refer to the chart below regarding max line set lengths for each system. See page 9 for longer communication cable sku number.

6. Follow step one for each indoor unit and make sure you purchase the correct lengths needed to do your job. Then go to steps on how to install the Mini-Split.
  - Hang the indoor units
  - Place the outdoor unit
  - Run the line sets
  - Etc.

**NOTE:** Refrigerant pipe should be as short as possible with a 10 ft minimum.



## CHOOSING INSTALLATION LOCATIONS FOR INDOOR WALL UNITS

---

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

The location should also meet these standards:

- A space with good air circulation.
- A space with convenient drainage for indoor condensate (tube that will go to the outside with the line set bundle).
- A wall strong enough to support the weight of the unit:
- A location at least 3.5 ft. (1.1 m) from all other electrical devices (e.g., TV, radio, computer)
- **DO NOT** install the unit in the following locations:
  - Near any source of heat, steam or combustible gases.
  - Near flammable items such as curtains or clothing.
  - Near any obstacles that might block air circulation.
  - Near a doorway or window.
  - In a location in direct sunlight.

Find an area on an exterior wall, at least 6 inches (15.25 cm) from the ceiling and 4.75 inches (12 cm) from the adjacent wall.

**NOTE about the wall hole:** While choosing a location, be aware that you need to leave ample room for a wall hole to pass the communication cable and refrigerant piping (line set) that connect the indoor and outdoor units. The default position for all piping is the right side of the indoor unit (while facing the unit).

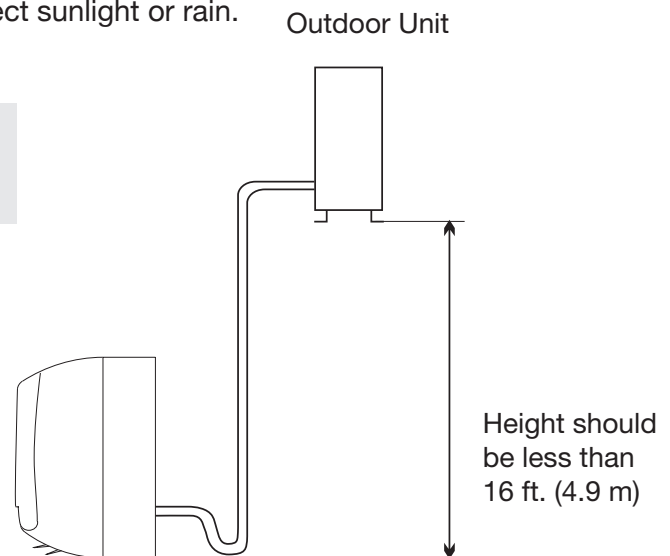
**NOTE:** The unit can only be installed on an interior wall, if a 3rd party condensate pump (sold separately) is sourced and installed.

## CHOOSING THE LOCATION FOR THE OUTDOOR UNIT

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

- Accessible to the main electric panel.
- An area with good air circulation and ventilation.
- A firm and solid location to support the unit and prevent from vibration.
- An area where noise from the unit will not disturb you and others.
- An area protected or away from prolonged periods of direct sunlight or rain.

**NOTE:** If the outdoor unit is higher than the indoor unit, the max height is 16 ft.



## DO NOT INSTALL THE UNIT IN THE FOLLOWING LOCATIONS:

- Near an obstacle that will block air inlets and outlets.
- Near a public street, in alley ways, crowded areas or where noise from the unit will disturb others.
- Near animals or plants that may be harmed by hot air discharge.
- Near any source of combustible gas or flammable materials.
- Near a heat source or ventilation fans.
- In a location that is exposed to large amounts of dust.
- In a location exposed to an excessive amount of salty air.
- Near a power transformer

## SPECIAL CONSIDERATIONS FOR EXTREME WEATHER:

### If the outdoor unit will be exposed to heavy wind:

Install unit so that air outlet fan is at a 90° angle (adjacent) to the direction of the wind. For extremely heavy winds, build a barrier in front of the outdoor unit for added protection.

### If the outdoor unit will frequently be exposed to heavy rain or snow:

Build a shelter above the unit to protect it from rain or snow, be careful not to obstruct airflow around the unit.

POWER SUPPLY

Before beginning installation of your mini-split, it is important to make sure you have enough room in your electric panel to support the system. If you are unsure about your location’s electrical capabilities, call a certified electrician.

MODEL	MAXIMUM FUSE OF OUTDOOR UNIT
18K BTU (3PAMSHHQC18-MZ02)	30A 230V
24K BTU (3PAMSHHQC24-MZ03)	30A 230V

POWER SURGE PROTECTION (RECOMMENDED)

To ensure proper function and the longevity of your mini split, a single-phase surge protector is highly recommended on the disconnect box to prevent electrical failure.

In the case of unpredicted power fluctuations, power surges or other electrical mishaps, a surge protector can help protect your mini-split from damage.



MAIN ELECTRICAL CONNECTION

CHOOSE THE RIGHT CABLE SIZE

The size of the power supply cable, signal cable, fuse, and switch needed is determined by the maximum current of the unit. The maximum current is indicated on the nameplate located on the side panel of the unit. Refer to this nameplate to choose the right cable, fuse, or switch.

Run power from the disconnect box to the unit.

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

**ATTENTION:** A surge protector is strongly recommended to prevent electrical failure. You must first choose the right cable size before preparing it for connection. Outdoor Power Cable: H07RN-F North America

APPLIANCE AMPS (A)	AWG
10	18
13	16
18	14
25	12
30	10
40	8

MODEL	MAXIMUM FUSE OF OUTDOOR UNIT
18K BTU (3PAMSHHQC18-MZ02)	30A 230V
24K BTU (3PAMSHHQC24-MZ03)	30A 230V

# INSTALLATION INSTRUCTIONS

## STEP 1. MARKING THE WALL (USING TEMPLATE)

The mounting bracket is the device on which you will mount the indoor unit, it is the silver bracket on the back of the indoor unit. A mounting template has been provided to assist you with proper hole and indoor unit placement to assist you with the proper location of the holes for the indoor unit mounting bracket and the power cable / condensate drain pipe.

In the location chosen during pre-planning, locate studs in the wall using a stud finder. If you cannot find a stud, you will need to use wall anchors.

1. Place the mounting plate template against the wall, in a location:
  - On an exterior wall, at least 6 inches (15.25 cm) from the ceiling and 4.75 inches (12 cm) from adjacent wall (refer to Figure 1.1).
  - Where two studs can be drilled directly into to support the mounting bracket.
  - Where the line set hole, as marked on the template, will be free of electrical wiring, plumbing, and other sensitive components that may be hidden in the wall.

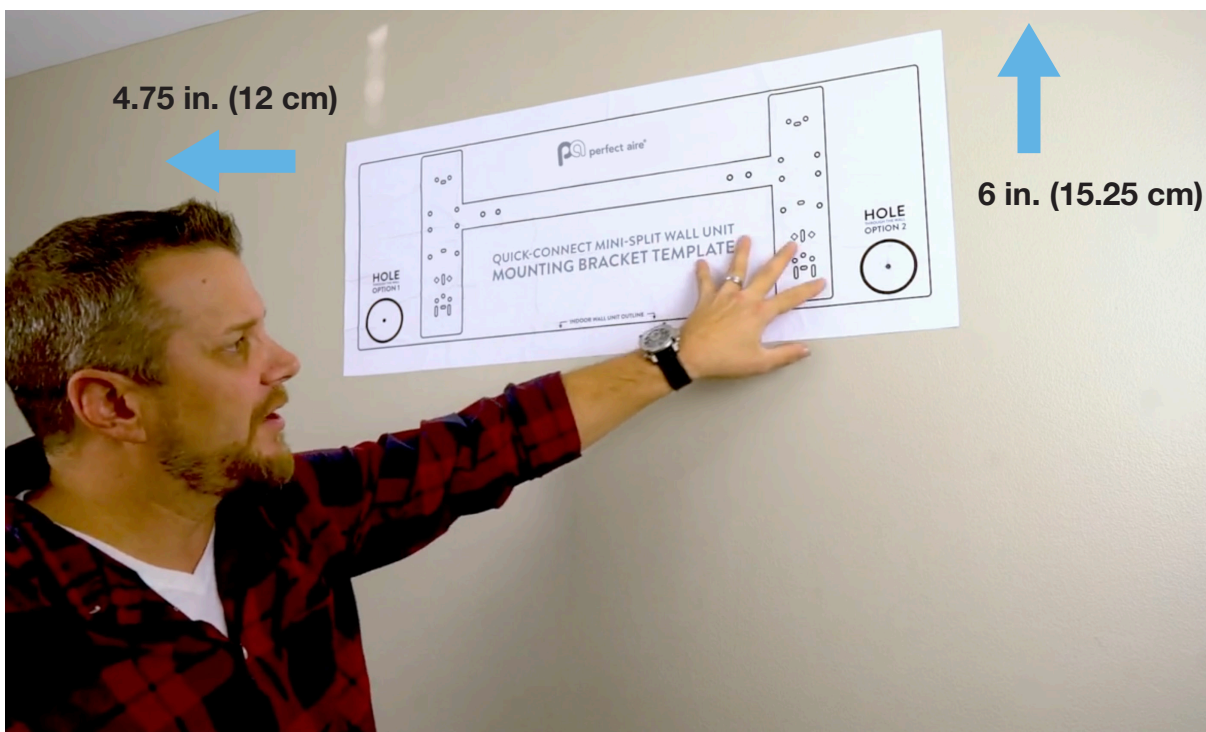


Figure 1.1

**NOTE:** We strongly advise using the hole located on the right side of the template, as this is where the indoor unit will have the line set bundle located. If you choose to move the bundle to the left side of the unit, then you will need to make your line set connections inside, before mounting the unit.

2. Use a level to make sure your template is level.
3. Using something sharp like a nail, mark the areas of the wall where you will be drilling your screws and the line set hole.
4. Remove the mounting template from the wall.

## STEP 2. INSTALLING THE WALL BRACKET

1. Detach the silver mounting bracket attached to the back of your indoor unit.
2. Line up the bracket with the screw and hole locations marked previously on your wall.
3. Mount the bracket on the wall using the 6 screws provided. Be sure that you are screwing directly into the two studs found earlier. If your wall does not have a stud, you will need to use wall anchors (Mollies) to secure the mounting bracket. (see Figure 2.1)

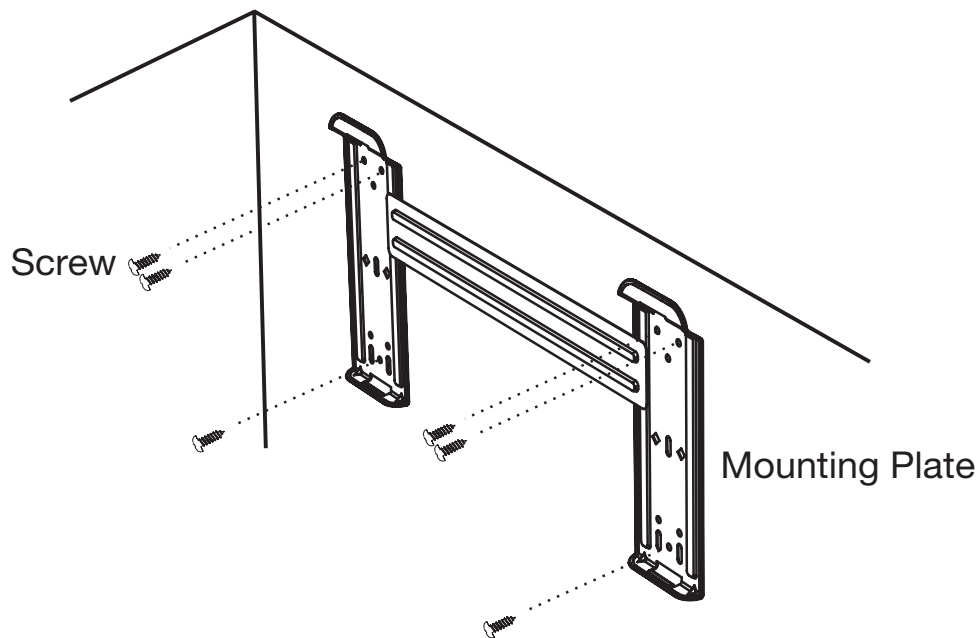


Figure 2.1

### CONCRETE OR BRICK WALLS

If the wall is made of brick, concrete, or similar material, drill 5/16 in diameter holes in the wall and insert the sleeve anchors provided. Secure the mounting plate to the wall by tightening the screws directly into the wall anchors.

**NOTE:** The shape of your mounting plate may be different from the one above, but the installation method is similar.



STEP 3. DRILLING THE LINE SET BUNDLE HOLE

**CAUTION** When drilling the wall hole, you will need to make sure to avoid electrical wiring, plumbing, and other sensitive components that may be hidden in the wall.

- 1. Using a 2.5 in. (63.5mm) core drill, drill a hole in the wall (Figure 3.1). Make sure that the hole is drilled at a slight downward angle so that the outdoor end of the hole is lower than the indoor end by about 1/2 in. (5 – 7mm) to ensure proper drainage for water condensation.
- 2. From the outside, place the protective wall cuff/sleeve in the hole. This protects the edges of the hole and seals it when you finish the installation process.

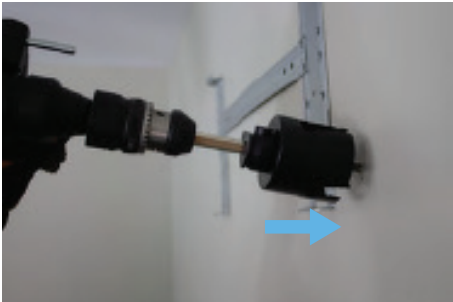


Figure 3.1

STEP 4. INSTALLING THE WALL UNIT

**NOTE:** Your unit comes with a 25 ft. communication cable attached. If you are adding line set length, you will need to change the communication cable with a longer separately purchased cable.

For more information on how to change the communication cable for longer runs, scan this QR code with your smartphone to view our installation videos at [https://perfectaire.us/resource\\_category/videos/](https://perfectaire.us/resource_category/videos/)



**NEED HELP?**  
 **WATCH OUR EASY INSTALLATION VIDEO!**

CABLES	ADDITIONAL LINE SET LENGTHS WITH REFRIGERANT
1PRCOM70 = 70 ft.	1DALS14-38-75G (9 and 12K indoor unit)
1PRCOM85 = 85 ft.	1DALS14-12-15-75G (18K indoor unit)

The communication cable, the beginning of the drain tube and the beginning of the copper line set is inside an insulated sleeve attached to the back of the unit. You must prepare the bundle before passing it through the hole in the wall.

- 1. Grip the refrigerant copper piping at the base of the bend.
- 2. Slowly, with even pressure, bend the piping perpendicular to the indoor unit. Do not kink or damage the piping during the process.
- 3. **CAUTION:** Be extremely careful not to kink or damage the piping while bending them away from the unit. Any kinks in the piping will affect the unit’s performance.

## STEP 5. PREPARING THE BUNDLE

**NOTE:** Double-check that the ends of the refrigerant pipes are sealed with color coded caps, preventing dirt or foreign materials from entering the pipes. Do not remove these caps.

Before passing the refrigerant piping, drain hose and communication cable through the wall hole, you must bundle them together to save space. Make sure that the drain hose is at the bottom of the bundle. Putting the drain hose at the top of the bundle can cause the drain pan to overflow and backup, which can lead to fire, water damage or both. (Figure 5.1)

1. Double-check that the ends of the refrigerant pipes are sealed with color coded caps, preventing dirt or foreign materials from entering the pipes. Do not remove these caps.
2. Slowly pass the wrapped bundle of refrigerant pipes, drain hose, and communication cable through the hole in the wall. (Figure 5.2)
3. Hook the top of the indoor unit on the top hook of the mounting plate.
4. Check that the unit is hooked firmly on the mounting plate by applying slight pressure to the left and right sides of the unit. The unit should not move or shift.
5. Using even pressure, push down on the bottom half of the unit. Keep pushing down until the unit snaps onto the hooks along the bottom of the mounting plate.
6. Double-check that the unit is firmly mounted by applying slight pressure to the left and the right sides of the unit.

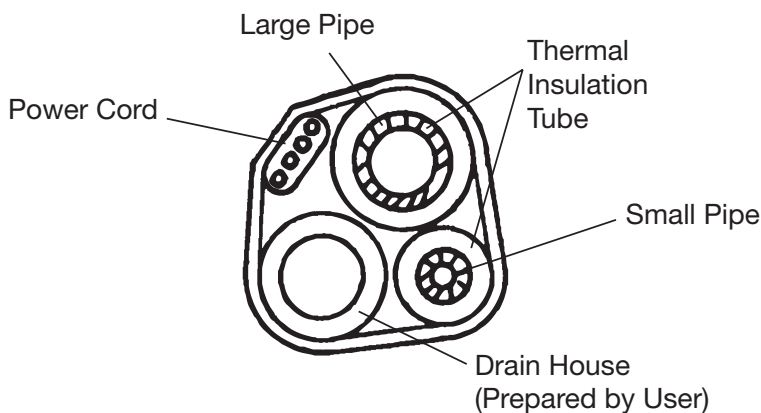


Figure 5.1

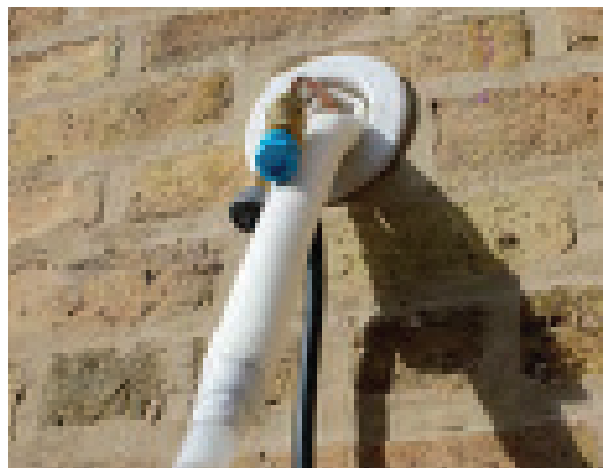


Figure 5.2

## STEP 6. SECURING THE OUTDOOR UNIT

---

### Anchor the Outdoor Unit

The outdoor unit can be anchored multiple ways\* — a pad on the ground, a wall bracket, or a stand/blocks (\*not included).



## WARNING

**WHEN DRILLING INTO CONCRETE, EYE PROTECTION IS HIGHLY RECOMMENDED.**

### Installing the unit on a concrete condenser pad:

1. Mark the positions of the four feet.
2. Pre-drill holes for expansion bolts, clean any dust away from holes.
3. Place a nut on the end of each expansion bolt.
4. Hammer expansion bolts into the pre-drilled holes.
5. Remove the nuts from expansion bolts. Place outdoor unit on bolts.
6. Put washer on each expansion bolt, then replace the nuts.
7. Using a wrench, tighten the nuts until snug.

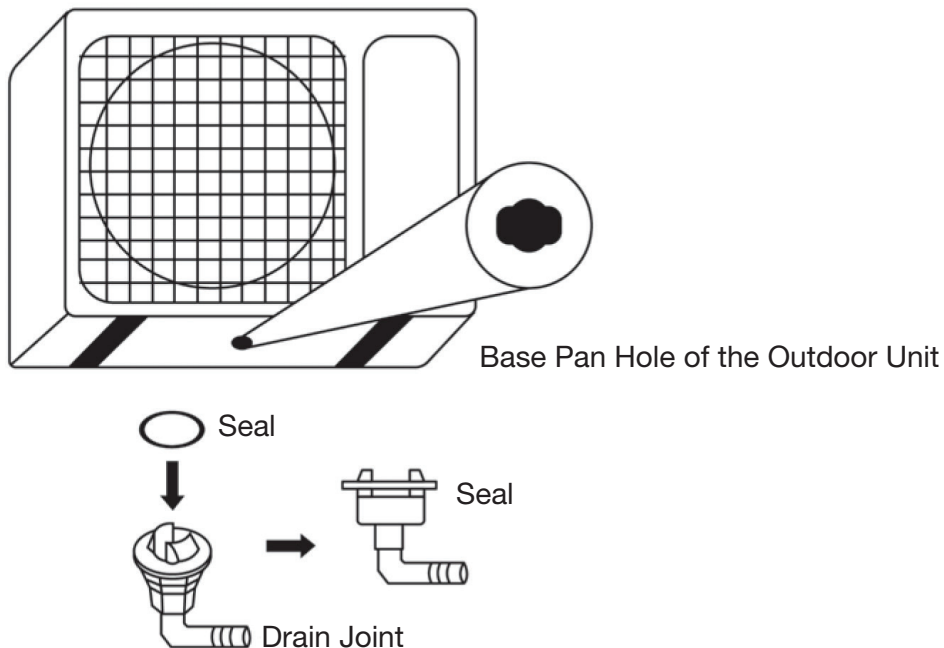
### Installing the unit on a wall-mounted bracket?

Please refer to the bracket manufacturer's directions for installation.

## OPTIONAL: INSTALLING A DRAIN JOINT

### NOTE:

- The drain joint cannot be used unless you are mounting the outdoor unit on a wall bracket or blocks. The outdoor unit must be elevated to accommodate the drain joint.
  - The drain joint is optional. If you would like to redirect water from the outdoor unit to another location, install the drain joint.
  - The drain joint only needs to be used if you need to redirect water.
1. Fit the rubber seal to the end of the drain joint that will connect to the outdoor unit.
  2. Insert the drain joint into the hole in the base pan of the unit.
  3. Rotate the drain joint 90° until it clicks in place facing the front of the outdoor unit, away from the house.
  4. Connect a 3/8" ID drain hose (not included) to the drain joint to redirect water from the outdoor unit during heating mode.



## FOR COLD CLIMATES

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

## STEP 7. CONNECTING THE LINE SETS

---

### Important Information — Read Before Proceeding

Follow the detailed instructions for connecting the refrigerant pipes to the indoor unit and outdoor unit. The warranty is only honored if the lines are installed correctly as described in the instructions.



### CAUTION

For your safety, always wear goggles and work gloves when connecting the pipes.

- Do not remove the sealing caps until immediately before you install the lines.
- To prevent leaks, ensure that the male condenser couplers are completely free of dirt. Moisture or foreign bodies will adversely affect the function of the male condenser couplers, leading to a risk of refrigerant loss (not covered by the warranty).
- Only install refrigerant lines outdoors, in dry weather.
- The refrigerant lines must not be installed and then plastered over. Line hide can be used to help disguise the line set outdoors if wanted.
- Please make sure that refrigerant is never allowed to enter the environment. Improper handling of refrigerant may be harmful to your health and the environment. Always wear work gloves and goggles when handling refrigerant.
- Do not smoke during the installation work.
- The equipment must never be operated without the refrigerant lines connected, otherwise the equipment will be greatly damaged.
- The screw connections may only be tightened using the appropriate open-ended wrench. Remember that if they are tightened with too little torque they will leak.
- If you are not confident about connecting the refrigerant line yourself, it is imperative that you contact our customer service team, refrigeration contractor or a certified HVAC technician.
- **IMPORTANT!** The male condenser couplers are only designed for one-time installation. Their seal cannot be guaranteed if they are installed on more than one occasion. This will also void the warranty.

## CONNECTING THE REFRIGERANT LINE SET TO OUTDOOR AND INDOOR UNIT

---

For unparalleled ease and flexibility, your Perfect Aire Multi-Zone Ductless Mini-Split system offers two installation options for connecting the refrigerant lines to the indoor and outdoor units. The QUICK CONNECT METHOD offers the quickest and easiest installation solution. To accommodate the many and varied installation site conditions the FLARED CONNECTION METHOD is still an option, but this must be performed by an HVAC professional.

**IMPORTANT** - This product has been designed and manufactured to meet ENERGY STAR® criteria for energy efficiency only when installed using the FLARED CONNECTION METHOD and matched with appropriate coil components. However, proper refrigerant charge and proper air flow are critical to achieve rated capacity and efficiency. Installation of this product should follow Perfect Aire's refrigerant charging and air flow instructions. Failure to confirm proper charge and airflow may reduce energy efficiency and shorten equipment life.

## QUICK CONNECT METHOD

- Out of the box the system is setup for this method.
- Simply connect one end of the line set to the indoor unit.
- Install the included quick connect fittings to the outdoor unit.
- Simply connect the other end of the line set to the outdoor unit.

## FLARED CONNECTION METHOD (REQUIRES CERTIFIED HVAC TECHNICIAN)

- The refrigerants lines are connected using the quick connect method described above.
- Refrigerant within the indoor unit and line set is removed and recovered
- A flare type line set can then be installed.

**NOTE:** The flare type of connection allows for a minimum line set length of 10 ft. (3 m) to a maximum system length of 82 ft. (25 m) per zone, for 2 zone and 66 ft. (20 m) per zone for 3 zone systems.

- Connect the one end of the flared line set to the indoor unit.
- Connect the one end of the flared line set to the outdoor unit.

Ensure the screw connectors do not skew as you tighten them. See below chart for proper torque.

**IMPORTANT** - Because the coupling works with tapping rings, it may leak if you undo and reconnect the lines — this will void the warranty.

Pipe Size [inch(mm)]	Torque
1/4(φ 6.35)	14.75ft-lb (20N·m)
3/8(φ 9.52)	29.5ft-lb (40N·m)
1/2(φ 12.7)	44.25ft-lb (60N·m)
5/8(φ 15.88)	59ft-lb (80N·m)

Tightening Torque for Flare Nut

**NOTE:** There is NO need to add refrigerant unless you are using a flared connection.

**NOTE:** Be sure to note which indoor unit is connected to each zone, you will need this information during the wiring portion of the installation. (Example: Unit A line set & Unit A communication cable must connect to same indoor unit)

**NOTE:** For 18K indoor unit, use FA09 Quick Connect fitting that comes with the indoor unit. The FA12 Quick Connect fitting cannot be used for the 18K indoor unit.

1. Remove the valve cover on the right side of the outdoor unit using a Phillips screwdriver. This will expose the valves to connect the refrigerant lines and also the electrical panel to connect your power and communication cables.
2. Locate the 2 male condenser couplers that are inside the line set box. Screw the male condenser couplers on to the outdoor unit in the order of Figure 7.1 until it stops — then give it another 1/4 turn making sure it is fully sealed.
3. Unrolling the Line Set. Locate line-set box, remove it from the packaging. Once out of the box, carefully unroll the line-set to the length needed. Be extremely careful not to kink or damage the copper piping while unrolling the line set.  
**⚠** Any kinks in the piping will affect the unit's performance.
4. Align the refrigerant pipes with the corresponding valves so they are not stressed. The caps are color coded to ensure the proper connection.
5. Slide a piece of the extra insulation included over the line set, then connect the line set to the indoor unit. Remove the caps according to color, 1 from the indoor unit, and 1 from the line set. Screw these together without cross threading them. Once they are tight, give another 1/4 turn to fully seal. (There should be no threads showing.)

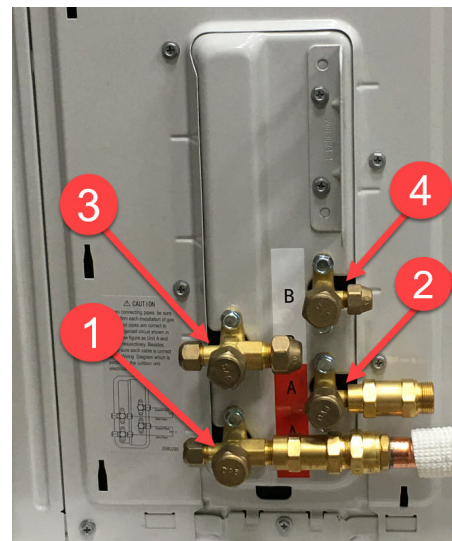
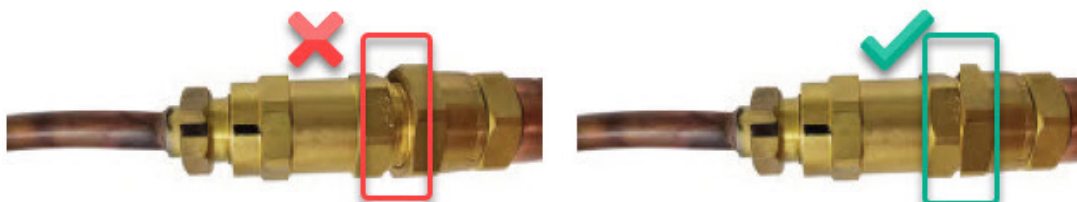


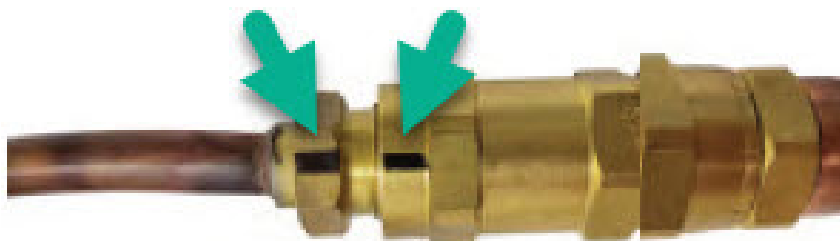
Figure 7.1

**NOTE:** There should be no threads showing. Triple confirm that they are fully tightened. Warranty will be void if the connections are not fully tightened.



**IMPORTANT:** Cover up any exposed refrigerant lines with the optional extra foam insulation. Follow the same steps to connect the other lines.

**ATTENTION:** Once you have made the connections from the line set to the indoor unit, ensure that the black lines on the fittings are aligned. If they are not you must re-tighten them until they are aligned.



**NOTE:** The refrigerant lines must be connected to the valves on the outdoor unit and indoor unit with as little stress as possible, leave slack.



6. Remove the caps on the bottom valves using an adjustable wrench. Using a 5 mm Allen key, place key inside of the bottom and turn counter-clockwise slowly until you reach a stop. Open valves in order as per figure 7.2. Then screw the cap back on the top of the valve and tighten to ensure a proper seal. Repeat the same procedure for the rest of the zones.



## WARNING

Failure to properly open the valves before operation will cause damage to the unit and will void your warranty.

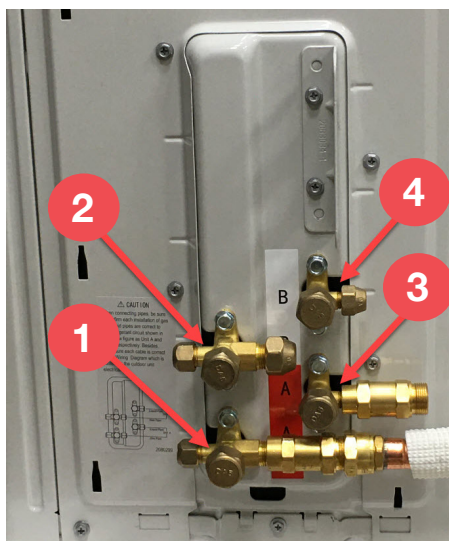


Figure 7.2

**NOTE:** The conical ring on the valve has a sealing function with the sealing seat in the caps. Take precaution not to damage the cone and keep it free of dirt and other debris.

7. After steps 1-6, double check that all connections are properly sealed using leak detection spray or soap suds. If bubbles form, the system has a leak, and the screw connectors must be tightened again using an open-ended wrench. (Refer to Step 11 on page 31 on Checking for Leaks)

## NOTE:

- If the system is installed using the quick connect method there is no need to pull a vacuum.
- If the system is installed using flare fittings then a vacuum should be pulled.



## STEP 8. ELECTRICAL CONNECTIONS

---



### **WARNING**

Please read all power regulations on this page. We recommend having a qualified electrician connect power to the unit.

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

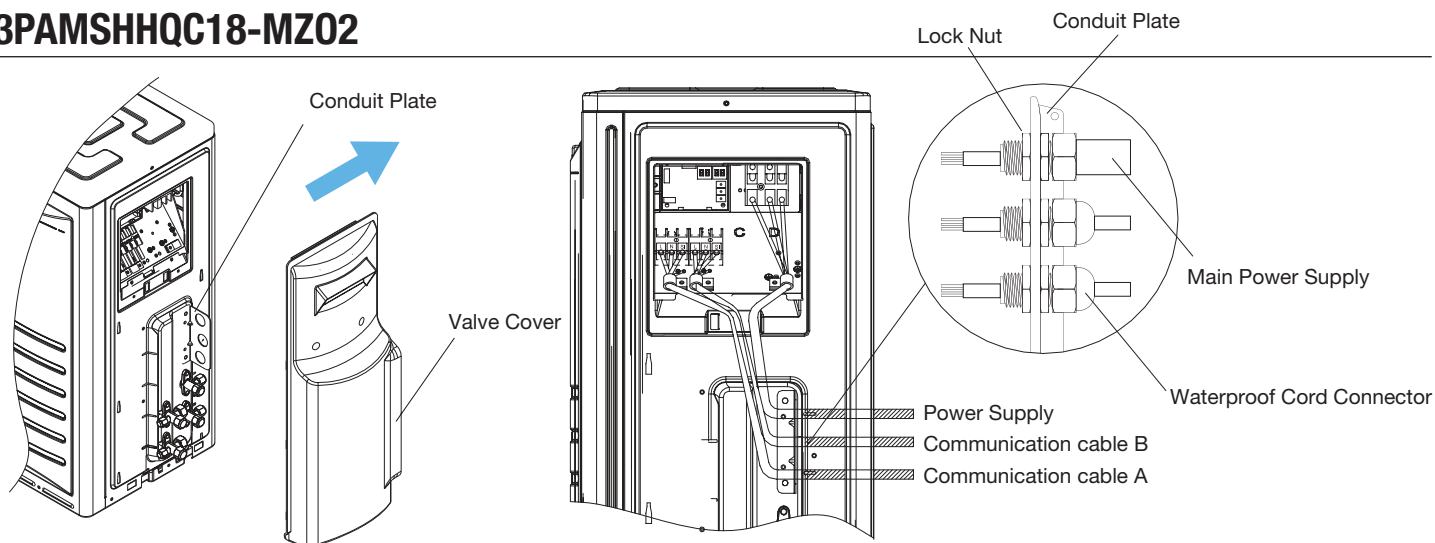
- All wiring must comply with local and national electrical codes and must be installed by a licensed electrician.
- All electrical connections must be made according to the Electrical Connection Diagram located on the side panels of the indoor and outdoor units.
- If there is a serious safety issue with the power supply, stop work immediately.
- Power voltage should be within 90%–110% of rated voltage. Insufficient power supply can cause electrical shock or fire.
- If connecting power to fixed wiring, install a surge protector and main power switch with a capacity of 1.5 times the maximum current of the unit.
- If connecting power to fixed wiring, a switch or circuit breaker that disconnects all poles and has a contact separation of at least 1/8 in. (3mm) must be incorporated in the fixed wiring. The qualified technician must use an approved circuit breaker or switch.
- Only connect the unit to an individual branch circuit outlet. Do not connect another appliance to that outlet. Make sure to properly ground the air conditioner.
- Every wire must be firmly connected. Loose wiring can cause the terminal to overheat, resulting in product malfunction and possible fire.
- Do not let wires touch or rest against refrigerant tubing, the compressor, or any moving parts within the unit.
- If the unit has an auxiliary electric heater, it must be installed at least 40 in. (1 m) away from any combustible materials.

## CONNECTING COMMUNICATION WIRES FROM INDOOR UNIT TO OUTDOOR UNIT

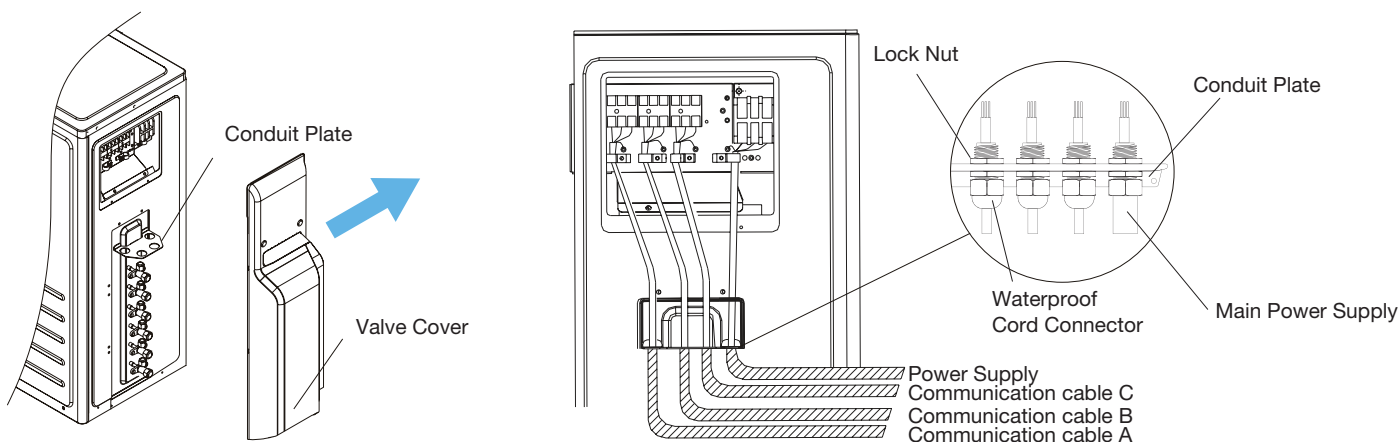
**NOTE:** Line set and communication cable must go to the same unit. (Example: Unit A line set & Unit A communication cable must connect to same indoor unit)

1. Connect the supplied gray waterproof cord connectors (see Figure 8.1 on page 27) to the conduit plate by removing the plastic nut on the waterproof cord connector and fasten it to the bottom side of the conduit plate.
2. Run the communication cable from the A-zone, through the appropriate hole and connect the wires to the outdoor unit matching the wires to the terminal block. The wire marked L goes to L, wire N goes to N and wire SI goes to SI on the terminal block. Then the ground wire goes to the metal plate below marked ground. (See Figure 8.2 on page 27)
3. Repeat Step 2 for the rest of the zones.

### 3PAMSHHC18-MZ02



### 3PAMSHHC24-MZ03



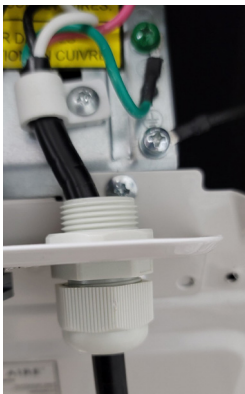


Figure 8.1

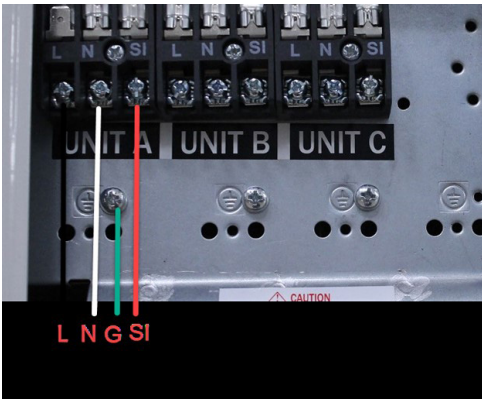


Figure 8.2

MAIN ELECTRICAL CONNECTION

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

**ATTENTION:** A surge protector is strongly recommended to prevent electrical failure. You must first choose the right cable size before preparing it for connection. Outdoor Power Cable: H07RN-F North America

CHOOSE THE RIGHT CABLE SIZE

The size of the power supply cable, signal cable, fuse, and switch needed is determined current of the unit. The maximum current is indicated on the nameplate located on the side panel of the unit. Refer to this nameplate to choose the right cable, fuse, or switch.

RUN POWER FROM THE DISCONNECT BOX TO THE UNIT.

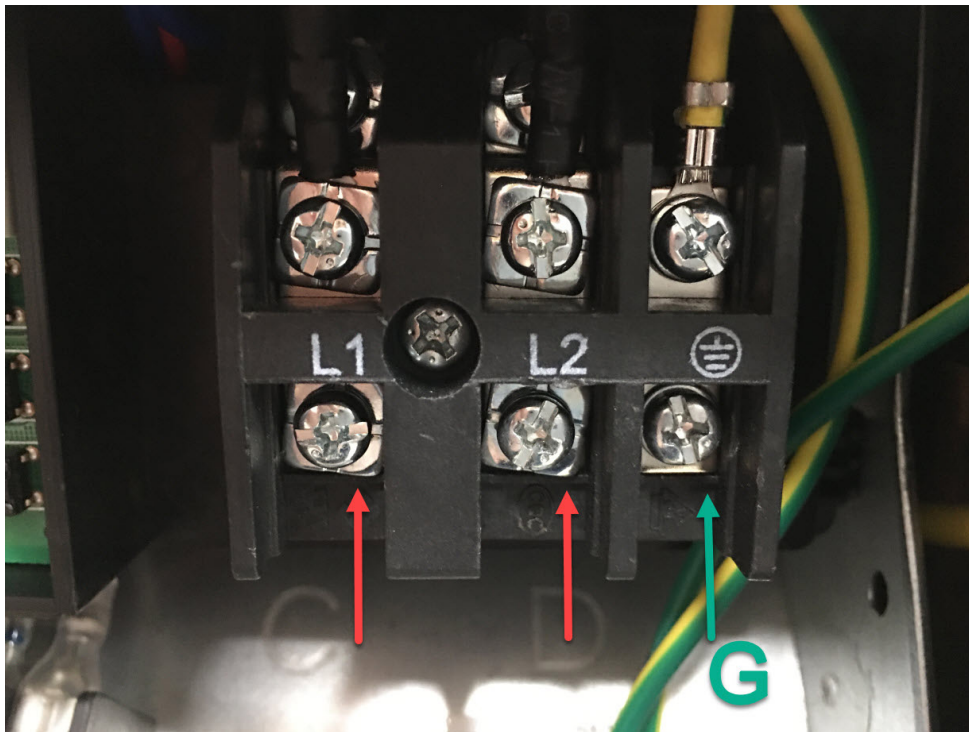
APPLIANCE AMPS (A)	AWG
10	18
13	16
18	14
25	12
30	10
40	8

MODEL	MAXIMUM FUSE OF OUTDOOR UNIT
18K BTU (3PAMSHHQC18-MZ02	30A 230V
24K BTU (3PAMSHHQC24-MZ03)	30A 230V

## CONNECTING TO MAIN POWER SUPPLY

---

1. Fasten the Power Supply to the conduit holder using field supplied connectors.
2. Connect the power wires and ground wire from the disconnect to the L1, L2 and ground terminals on the outdoor unit.
3. Unit can now be powered on.



## STEP 9. CONNECTING THE DRAIN TUBE

---

Connect the provided drain tube to the tube on the back of the indoor unit and secure with duct tape.



## STEP 10. TURNING ON THE INDOOR UNIT

---

1. When the outside work has been concluded, be sure to re-check all wiring and valves.
2. Go inside and turn on the indoor unit using the provided remote control (see figure 10.1).
3. Set the temperature to the lowest temperature in cool mode.
4. Wait for unit to run and assure unit blows cool air and all functions and modes are in working conditions.



Figure 10.1

## STEP 11. CHECKING FOR LEAKS

---

Once the unit is up and running, it is important to check for refrigerant leaks.

There are two methods to check for gas leaks:

1. **Soap and Water Method:** Fill a spray bottle with dish soap and water. Spray all line set connection fittings to make sure there is no bubbling, bubbling implies there is a leak.
2. **Leak Detector Method:** When using a leak detector, please refer to the device's user manual for proper instructions.

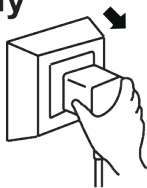
Once confirmed that no leaks are present, replace the valve cover on the outside unit.

# MAINTENANCE

## FRONT PANEL MAINTENANCE

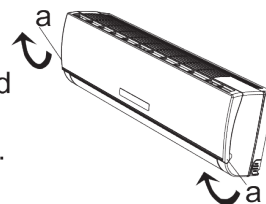
### 1 Cut off the power supply

Turn off the appliance first before disconnecting from the power supply.



### 2

Grab the points marked "a" and pull outward to remove the front panel.



### 3 Wipe with a soft, dry cloth.

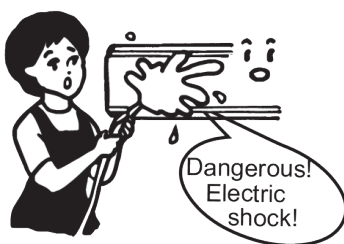
Use a soft, dry cloth to clean the front panel if dirty.



### 4 Never use volatile substances such as gasoline or polishing powder to clean the appliance.

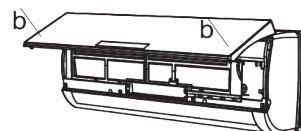


### 5 Never sprinkle water onto the indoor unit



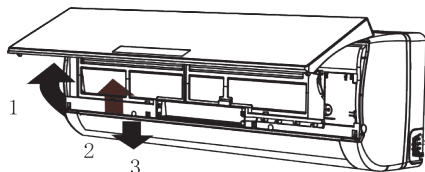
### 6 Reinstall and shut the front panel.

Reinstall and shut the front panel by pressing points labeled "b" downward.



## AIR FILTER MAINTENANCE

### 1 Stop the appliance, cut off the power supply and remove the air filter.



1. Open the front panel.
2. Press the handle of the filter gently from the front.
3. Grab the handle and slide out the filter.

### 3 Close the front panel again.

- ❑ Clean the air filter every two weeks if the air conditioner operates in an extremely dusty environment.

### 2 Clean and reinstall the air filter.

If dirt is present, wash filter with a solution of soft-detergent and lukewarm water, or clean with vacuum. After cleaning, dry well in a shaded area.



It is necessary to clean the air filter after using it for 250 hours or more in a dirty environment.

## OPERATING CONDITION

### Operating Temperatures

TEMPERATURE		COOLING OPERATION	HEATING OPERATION	DRYING OPERATION
Indoor Temperature	max	89.6°F (32°C)	80.6°F (27°C)	89.6°F (32°C)
	min	69.8°F (32°C)	44.6°F (7°C)	64.4°F (18°C)
Outdoor Temperature	max	109.4°F (43°C)	75.2°F (24°C)	109.4°F (43°C)
	min	14°F(-10°C)	-13°F(-25°C)	69.8°F (21°C)

#### NOTE:

- Optimum performance will be achieved within these operating temperatures. If the air conditioner is used outside the above conditions, the protective device may trip and stop operation of the appliance.
- The temperature of some products is allowed beyond this range for specific situations. Please consult the merchant. When relative humidity is above 80%, and the air conditioner is running in **COOL** or **DRY** mode with the door of window open for a long period of time, dew may drip down from the outlet.

## FEATURES OF PROTECTOR

The protective device will work in the following circumstances:

- Wait 3 minutes before restarting operation after the unit stops, or when changing modes.
- Connect to power supply and turn on the unit at once, it may start 20 seconds later.

If all operation has stopped, press ON/OFF button again to restart, Timer should be set again as if it has been canceled.

## FEATURES OF HEATING MODE

### PREHEAT

At the beginning of the HEATING operation, the airflow from the indoor unit will be discharged in 2-5 minutes.

### DEFROST

In **HEATING** operation, the appliance will defrost (de-ice) automatically to raise efficiency. This procedure usually lasts 2-10 minutes. During defrost, fans stop operation. After defrost completes, it returns to HEATING mode automatically.



# TROUBLESHOOTING

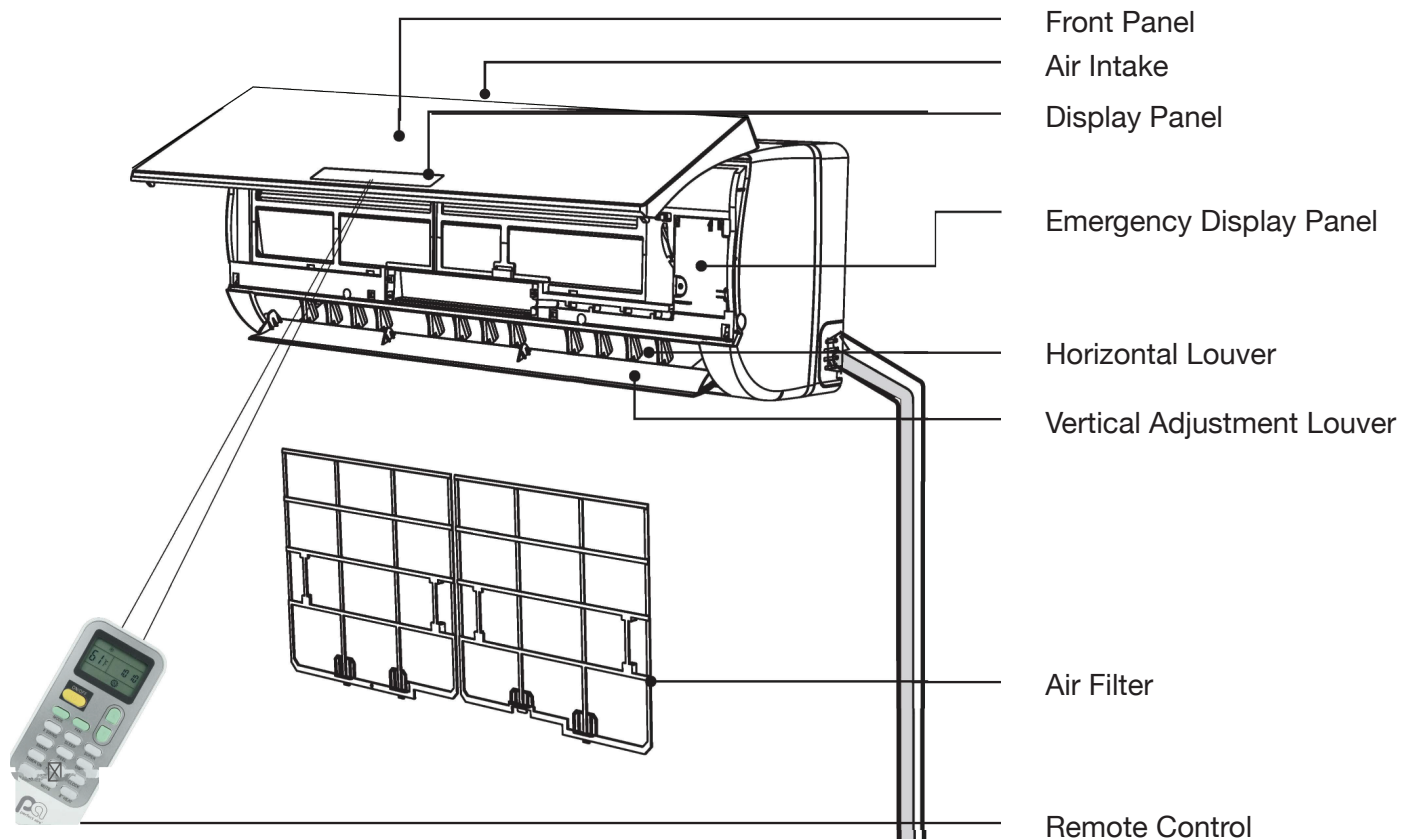
Before calling for service, review this list. It may save your time and expense. This list includes common occurrences that are not the result of defective workmanship or materials in this appliance.

Problem	Solution
Unit does not run	Check to see if the protector trip fuse is blown. Please wait 3 minutes and start again. The protector device may be preventing the unit from working.
No cooled or heated air is coming out	The batteries in the remote control may be dead.
	Is the air filter dirty?
	Are the intakes and outlets of the air conditioner blocked?
	Is the temperature set properly? Is the unit programmed for the correct mode?
Ineffective control	If strong interference (from excessive static electricity discharge, power supply voltage abnormality) presents, operation will be abnormal. At this time, disconnect from the power supply and connect back 2-3 seconds later.
	Air filter may be dirty. Clean filter. Refer to <b>Care and Cleaning Section</b> . To defrost, set to FAN ONLY mode.
	Thermostat set too cold for night-time cooling. To defrost the coil, set to FAN ONLY mode. Then, set temperature to a higher setting.
Unit does not operate immediately	Changing modes during operation will cause a 3-minute delay.
Strange odor	This odor may come from another source such as furniture, cigarettes etc., which are sucked into the unit and blows out with the air.
	Outside temperature extremely hot. Set FAN speed to a higher setting to bring air past cooling coils more frequently.
The sound of flowing water	Caused by the flow of refrigerant in the air conditioner, not an issue. Defrosting sound in heating mode.
Cracking sound is heard	The sound may be generated by the expansion or contraction of the front panel due to changes in temperature.
Mist is spraying from the outlet	Mist appears when the room air becomes very cold because of cool air discharged from indoor unit during COOLING or DRY operation mode.
The compressor indicator (red) light is on constantly, and indoor fan stops.	The unit is shifting from heating mode to defrost. The indicator light will turn off within ten minutes and return to heating mode.

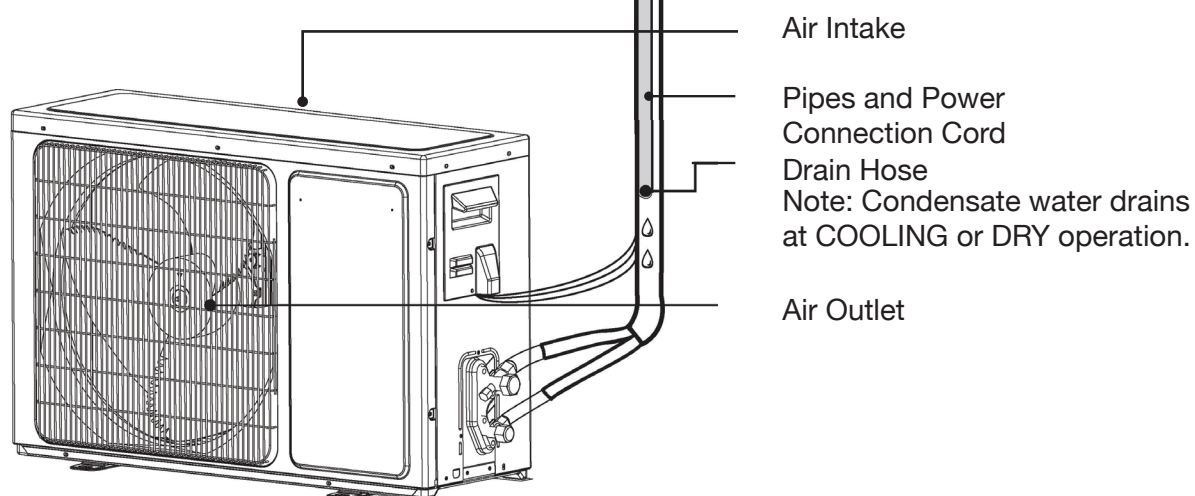


# IDENTIFICATION OF PARTS

## INDOOR UNIT













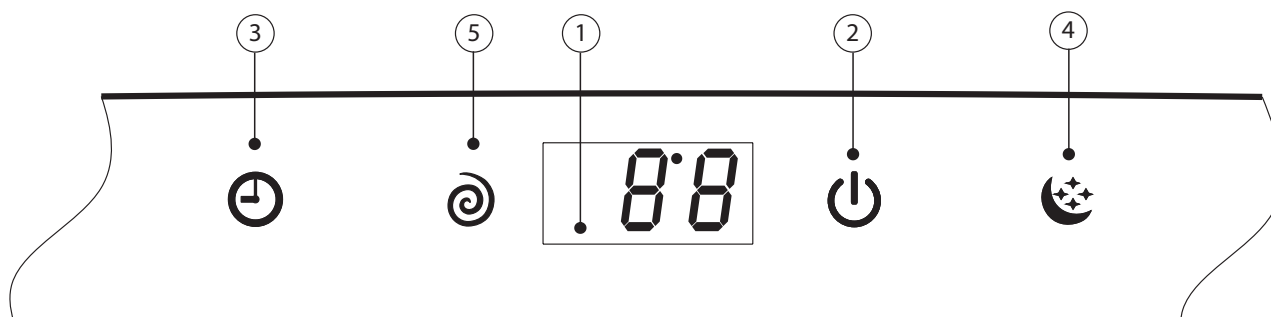
## OUTDOOR UNIT



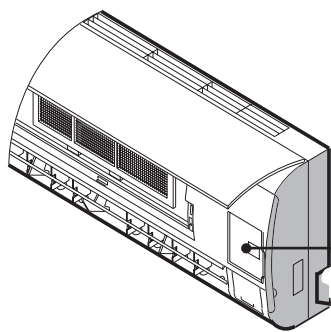
**NOTE:** The figures in this manual are based on the external view of a standard model. Consequently, the shape may differ from that of the air conditioner you have selected.

# DISPLAY INTRODUCTION

	<b>1. Temperature Indicator</b> Displays set temperature. It shows FC after 200 hours of usage as a reminder to clean the filter. After cleaning the filter, cleaning press the filter reset button located on the indoor unit behind the front panel in order to reset the display.
	<b>2. Running Indicator</b> Lights up when the AC is running. It flashes during defrosting.
	<b>3. Timer Indicator</b> Lights up during set time.
	<b>4. Sleep Indicator</b> Lights up in sleep mode.
	<b>5. Compressor Indicator</b> Lights up when the compressor is on.
	<b>6. Mode Indicator</b> Heating displays orange, other modes display white.
	<b>7. Fan Speed Indicator</b>
	<b>8. Signal Receptor</b>
	<b>9. Smart Indicator</b> Lights up during Smart operation.
	<b>10. FAN ONLY mode indicator</b> Lights up in FAN ONLY mode.



**NOTE:** The symbols may be different from these models, but the functions are similar.



## ON/OFF

ON/OFF To let the AC run or stop by pressing the button.

Emergency Button

**NOTE:** The symbols may be different from these models, but the functions are similar.



5401 Dansher Road  
Countryside, IL 60525

844-4PA-AIRE | 844-472-2473 | [support@perfectaire.us](mailto:support@perfectaire.us)  
CANADA SUPPORT 877-997-2473 | [supportcanada@perfectaire.us](mailto:supportcanada@perfectaire.us)  
**[www.perfectaire.us](http://www.perfectaire.us)**