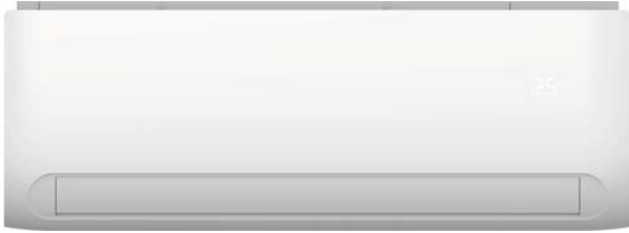


# DLFEHA

## INSTALLATION INSTRUCTIONS

### High Wall Ductless System – Sizes 09 to 24



**NOTE:** Read the entire instruction manual before starting the installation.

**NOTE:** Images are for illustration purposes only. Actual models may differ slightly.

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## SAFETY CONSIDERATIONS

Installing, starting up, and servicing air-conditioning equipment can be hazardous due to system pressures, electrical components, and equipment location (roofs, elevated structures, etc.).


Only trained, qualified installers and service mechanics should install, start-up, and service this equipment.

Untrained personnel can perform basic maintenance functions such as cleaning coils. All other operations should be performed by trained service personnel.

When working on the equipment, observe precautions in the literature and on tags, stickers, and labels attached to the equipment.

Follow all safety codes. Wear safety glasses and work gloves. Keep quenching cloth and fire extinguisher nearby when brazing. Use care in handling, rigging, and setting bulky equipment.

Read these instructions thoroughly and follow all warnings or cautions included in literature and attached to the unit. Consult local building codes and National Electrical Code (NEC) for special requirements.

Recognize safety information. This is the safety-alert symbol . When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury. Understand these signal words: **DANGER**, **WARNING**, and **CAUTION**. These words are used with the safety-alert symbol. **DANGER** identifies the most serious hazards which **will** result in severe personal injury or death. **WARNING** signifies hazards which **could** result in personal injury or death. **CAUTION** is used to identify unsafe practices which **may** result in minor personal injury or product and property damage. **NOTE** is used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.



## WARNING

### ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death.

Before installing, modifying, or servicing system, main electrical disconnect switch must be in the OFF position. There may be more than 1 disconnect switch. Lock out and tag switch with a suitable warning label.



## WARNING



### EXPLOSION HAZARD

Failure to follow this warning could result in death, serious personal injury, and/or property damage.

Never use air or gases containing oxygen for leak testing or operating refrigerant compressors. Pressurized mixtures of air or gases containing oxygen can lead to an explosion.



## CAUTION

### EQUIPMENT DAMAGE HAZARD

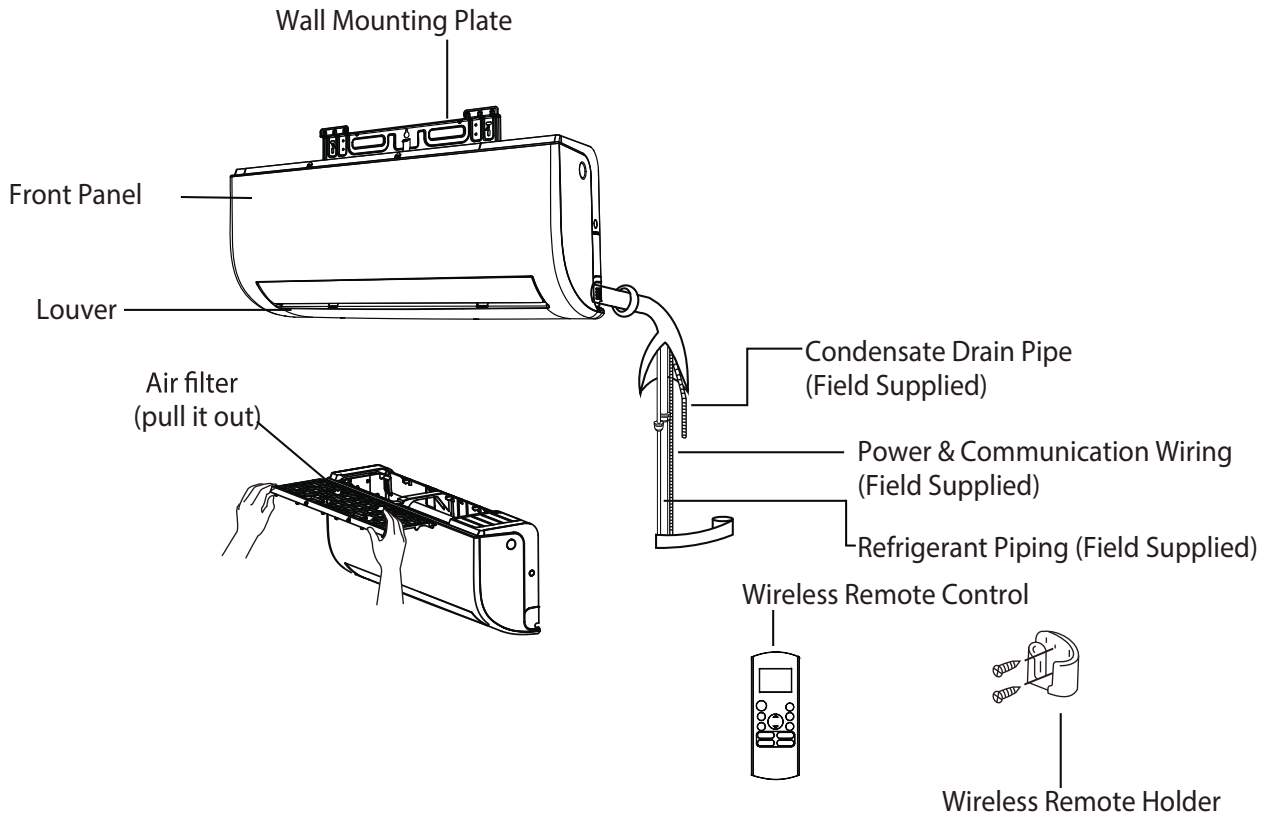
Failure to follow this caution may result in equipment damage or improper operation.

Do not bury more than 36 in. (914 mm) of refrigerant pipe in the ground. If any section of pipe is buried, there must be a 6 in. (152 mm) vertical rise to the valve connections on the outdoor units. If more than the recommended length is buried, refrigerant may migrate to the cooler buried section during extended periods of system shutdown. This causes refrigerant slugging and could possibly damage the compressor at start-up.

## PARTS LIST

**Table 1—Parts List**

PART NAME	Qty
Indoor Unit	1
Wall Mounting Plate	1
Wall Mounting Screw A ST3.9x25	5
Anchor	5
Air Filter	1
Wireless Remote Control	1
Wireless Remote Control Holder	1
Remote Control Mounting Screw B ST2.9x10	2
Battery AAA.LR03	2
Multi-function board	1



**Fig. 1 — Parts List**

**Note:**

- If the outdoor unit is higher than the indoor unit, prevent rain from flowing into the indoor unit along the connection pipe by making a downward arc in the connection pipe before it enters the wall to the indoor unit. This ensures that rain drips from the connection pipe before it enters the wall.
- Piping and the interconnecting wiring are field supplied.
- The illustration above is only a sketch. Different models may be slightly different.

The following units are covered in these installation instructions.

**Table 2—Indoor Units**

DESCRIPTION	kBTUh	V—Ph—Hz	ID MODEL No.
High Wall Cooling Only	12	115—1—60	DLFEHAA12XAJ
	12	208/230—1—60	DLFEHAA12XAK
	18		DLFEHAA18XAK
	24		DLFEHAA24XAK
High Wall Heat Pump	12	115—1—60	DLFEHAH12XAJ
	09	208/230—1—60	DLFEHAH09XAK
	12		DLFEHAH12XAK
	18		DLFEHAH18XAK
	24		DLFEHAH24XAK

## SYSTEM REQUIREMENTS

Allow sufficient space for airflow and servicing unit. See Fig. 6 for minimum required distances between unit and walls or ceilings.

### Piping

**IMPORTANT: Both refrigerant lines must be insulated separately.**

- Table 3 lists the pipe sizes for the indoor unit. Refer to the outdoor unit installation instructions for other allowed piping lengths and refrigerant information.

**Table 3—Indoor Unit Pipe Sizes**

UNIT SIZE		12K (115V)	9K (208/230V)	12K (208/230V)	18K (208/230V)	24K (208/230V)
Gas Pipe	in.	1/2	3/8	1/2	1/2	5/8
	(mm)	12.7	9.52	12.7	12.7	16
Liquid Pipe	in.	1/4	1/4	1/4	1/4	3/8
	(mm)	6.35	6.35	6.35	6.35	9.52

**NOTE: The 9K unit is available only as a Heat Pump model.**

## WIRING

All wires must be sized per NEC (National Electrical Code) or CEC (Canadian Electrical Code) and local codes. Use Electrical Data table MCA (minimum circuit amps) and MOCP (maximum over current protection) to correctly size the wires and the disconnect fuse or breakers respectively.

### Recommended Connection Method for Power and Communication Wiring:

The main power is supplied to the outdoor unit. The field supplied 14/3 stranded wire with ground with a 600 volt insulation rating, power/communication wiring from the outdoor unit to indoor unit consists of four (4) wires and provides the power for the indoor unit. Two wires are line voltage AC power, one is communication wiring (S) and the other is a ground wire. Wiring between indoor and outdoor unit is polarity sensitive. The use of BX wire is NOT recommended.

If installed in a high Electromagnetic field (EMF) area and communication issues exists, a 14/2 stranded shielded wire can be used to replace L2 and (S) between outdoor unit and indoor unit landing the shield onto ground in the outdoor unit only.

## CAUTION

**EQUIPMENT DAMAGE HAZARD**

Failure to follow this caution may result in equipment damage or improper operation.

Wires should be sized based on NEC and local codes.

## CAUTION

**EQUIPMENT DAMAGE HAZARD**

Failure to follow this caution may result in equipment damage or improper operation.

Be sure to comply with local codes while running wire from the indoor unit to the outdoor unit.

Every wire must be connected firmly. Loose wiring may cause the terminal to overheat or result in unit malfunction. A fire hazard may also exist. Ensure all wiring is tightly connected.

No wire should touch the refrigerant tubing, compressor or any moving parts.

Disconnecting means must be provided and shall be located within sight and readily accessible from the air conditioner.

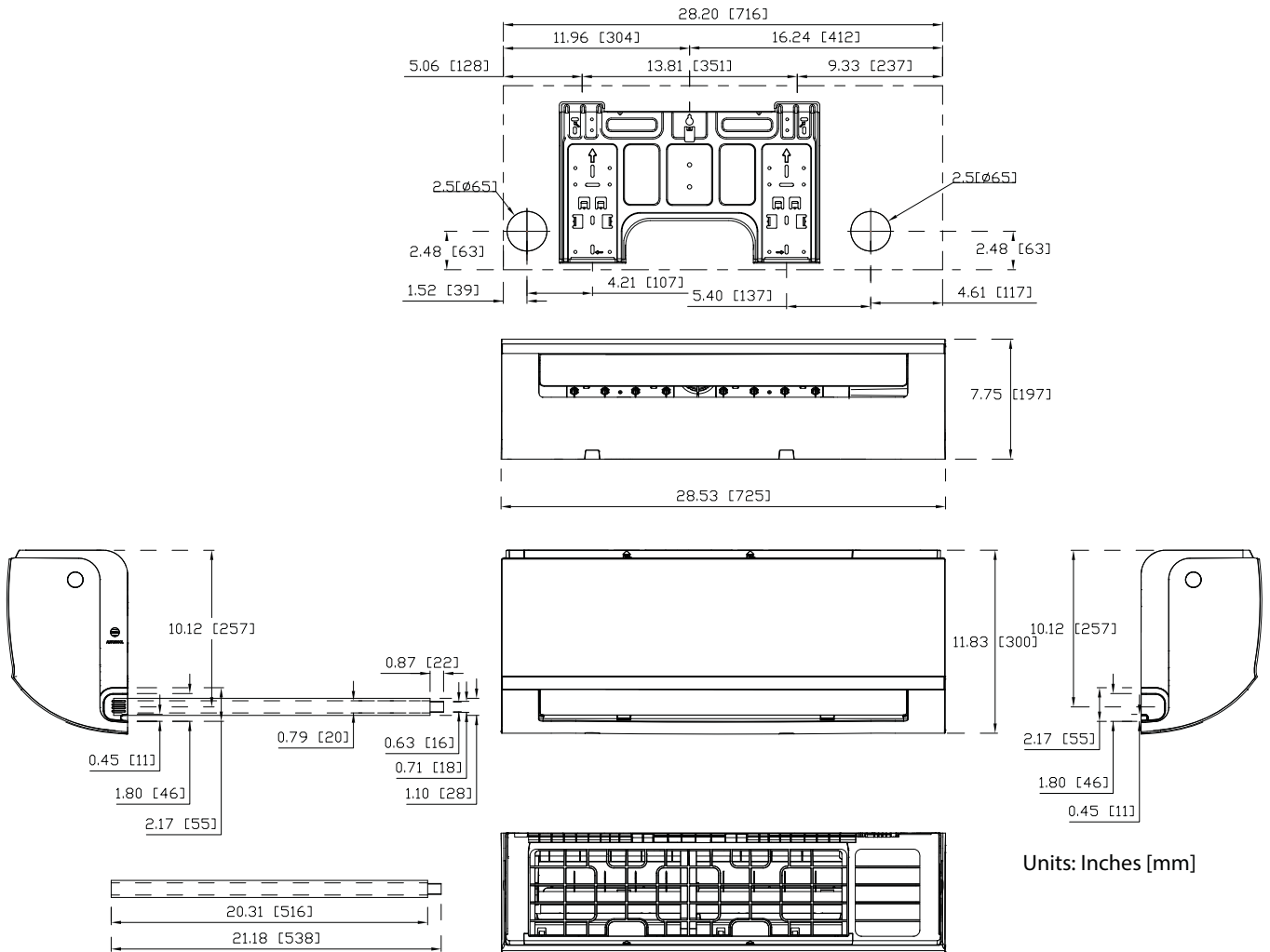
Connecting cable with conduit shall be routed through the hole in the conduit panel.

# DIMENSIONS

**Table 4—Indoor Unit Dimensions**

HIGH WALL UNIT SIZE		12K	9K	12K	18K	24K
Voltage		(115V)	(208/230V)	(208/230V)	(208/230V)	(20/230V)
Height	In. (mm)	11.81(300)	11.81(300)	11.81(300)	12.8(325)	13.41(341)
Width	In. (mm)	32.00(813)	28.53(725)	32.00(813)	38.36(974)	43.83(1113)
Depth	In. (mm)	7.75(197)	7.75(197)	7.75(197)	8.87(225)	9.22(234)
Weight—Net (Cooling Only)	Lbs (kg)	17.64(8)	N/A	17.64(8)	23.15(10.5)	30.86(14)
Weight—Net (Heat Pump)	Lbs (kg)	22.49(10.2)	21.16 (9.6)	22.49(10.2)	31.97(14.5)	40.12(18.2)

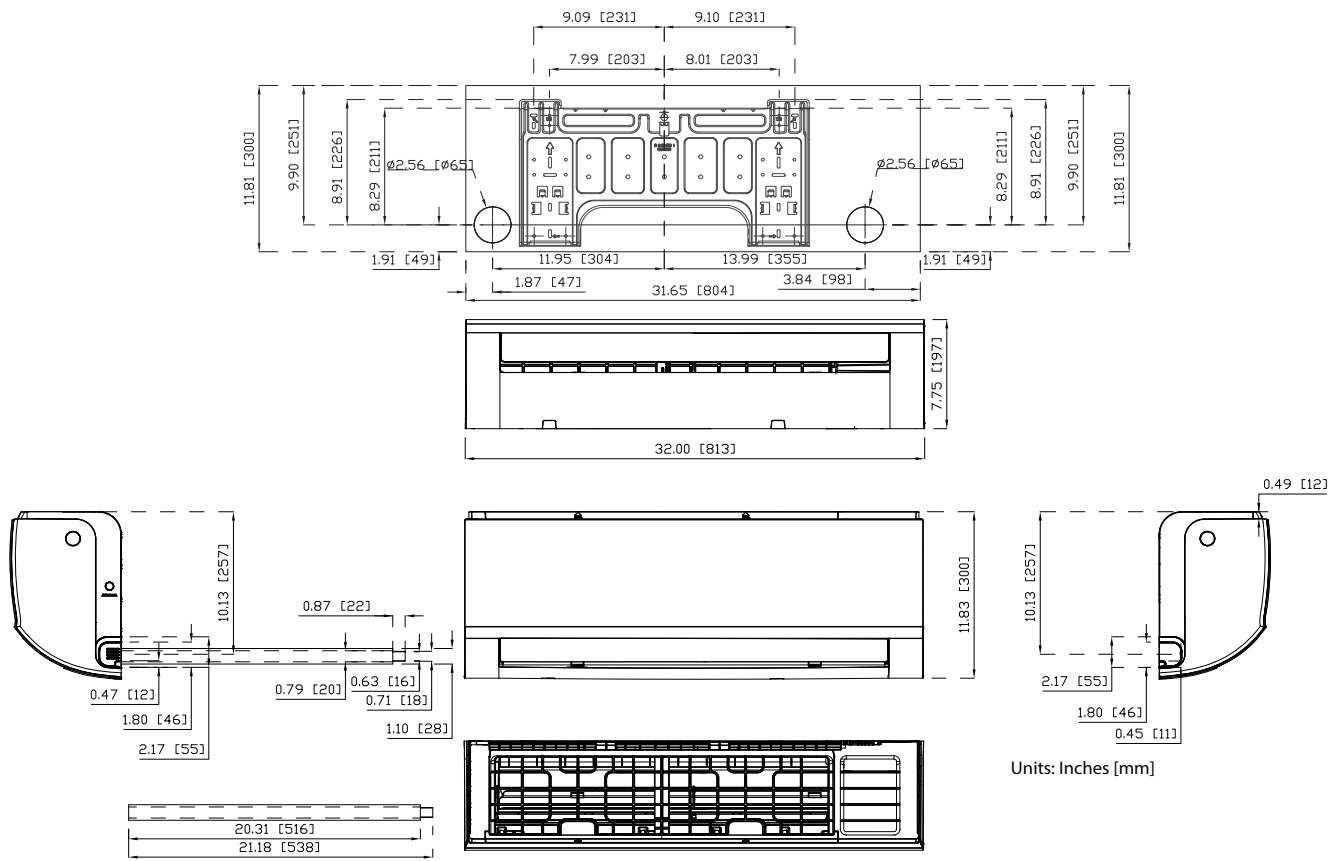
**NOTE:** The 9K unit is available only as a Heat Pump model.



Units: Inches [mm]

**Fig. 2 – Size 9K (heat pump only available)**

# DIMENSIONS (CONT)



Units: Inches [mm]

Fig. 3 – Size 12K

# DIMENSIONS (CONT)

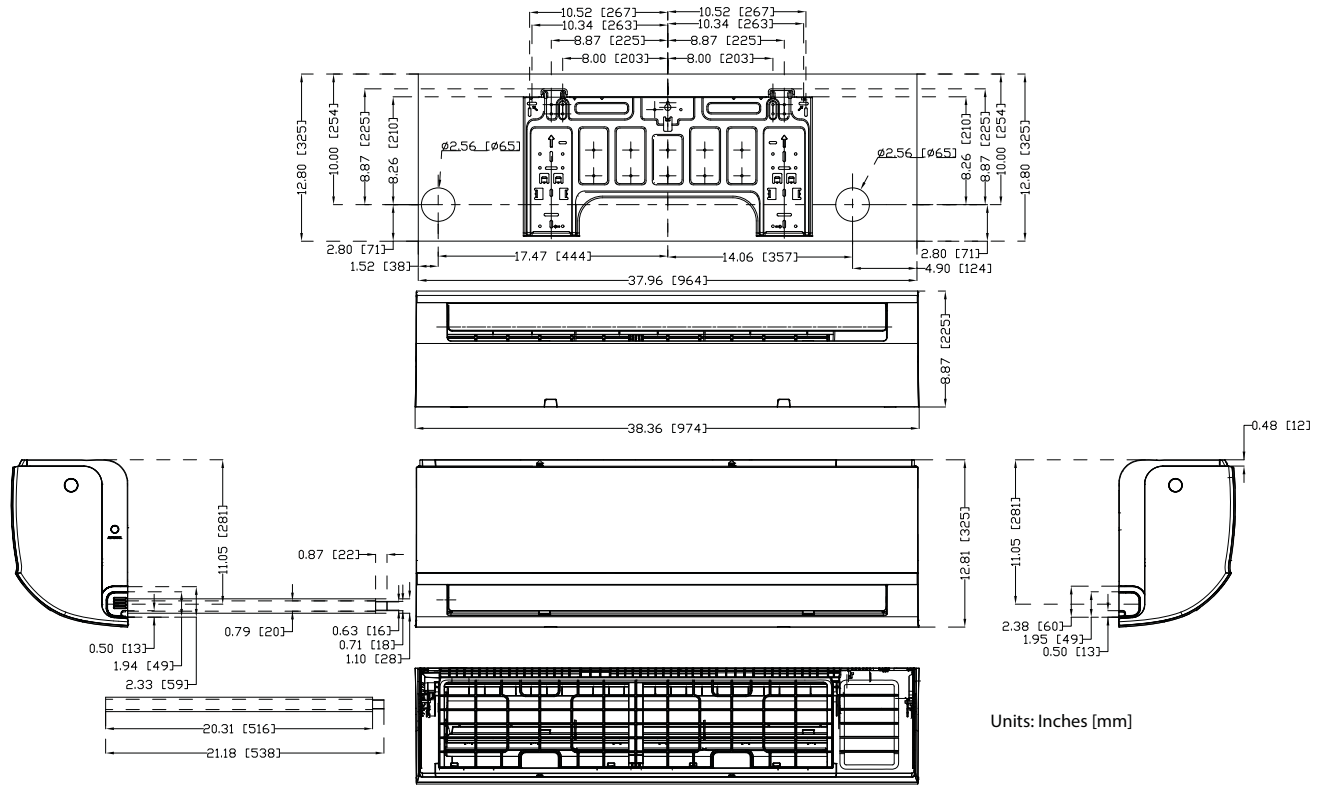


Fig. 4 – Size 18K

# DIMENSIONS (CONT)

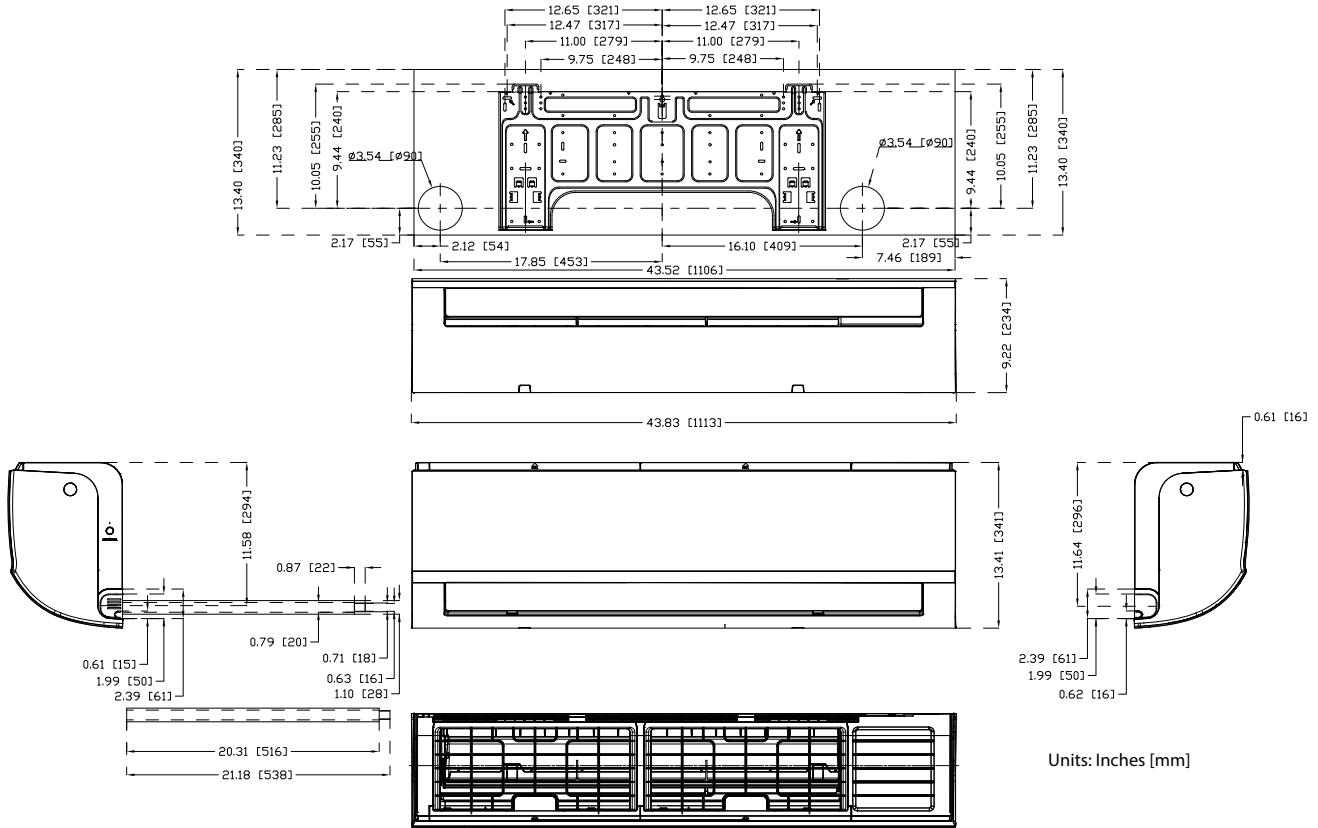
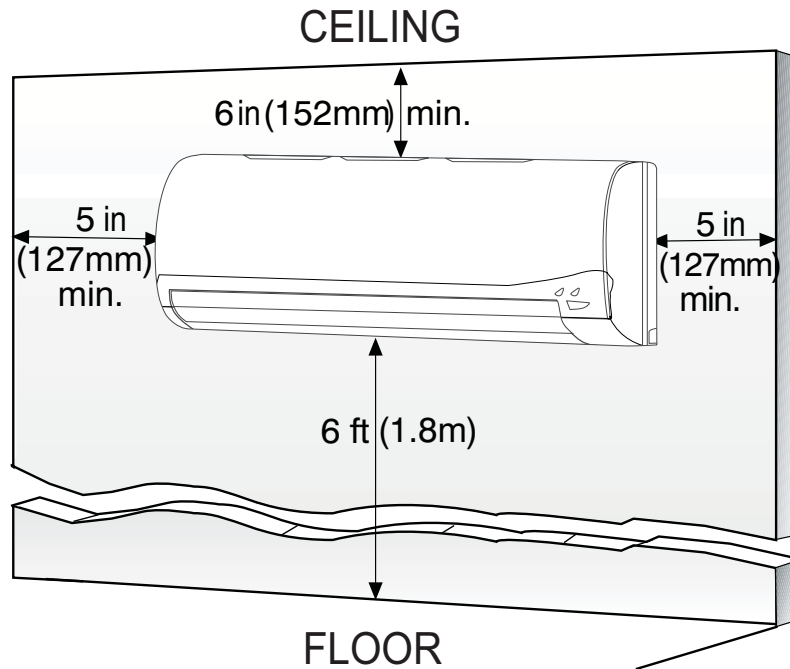


Fig. 5 – Size 24K



## CLEARANCES



**Fig. 6 – Indoor Unit Clearance**

**NOTE:** The top clearance recommended for proper return airflow is 5.9in (15cm). Reduction of this clearance may decrease unit performance. This may be reduced to 3.2in (80mm) as long as the right and left clearances are achieved.

## INSTALLATION TIPS

Ideal installation locations include:

### Indoor Unit

- A location where there are no obstacles near inlet and outlet area.
- A location which can bear the weight of indoor unit.
- Do not install indoor units near a direct source of heat such as direct sunlight or a heating appliance.
- A location which provides appropriate clearances (see Fig. 6.)

## INDOOR UNIT INSTALLATION

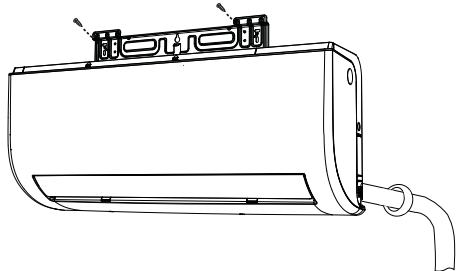


Fig. 7 – High Wall Unit

### PRIOR TO INSTALLATION

Before installing the indoor unit, ensure the compatibility with the Outdoor unit using the product data as a reference.

#### Select the Installation Location:

Before installing the indoor unit, choose an appropriate location. The following are standards that should help you choose an appropriate location for the unit. Proper installation locations must meet the following standards:

1. Good air circulation
2. Convenient drainage
3. Noise from the unit will not disturb others
4. Firm and solid—the location will not vibrate
5. A site strong enough to support the weight of the unit
6. A location at least 3.28 ft. (1m) from all other electrical devices (e.g., TV, radio, computer)
7. **DO NOT** install the unit in the following locations:
  - a. Near any source of heat, steam, or combustible gas
  - b. Near flammable items such as curtains or clothing
  - c. Near any obstacle that might block air circulation
  - d. Near the doorway
  - e. In a location subject to direct sunlight

**NOTE: Wall Holes: If there is no fixed refrigerant piping. While choosing a location, you should leave ample room for a wall hole (refer to the Drill wall hole for connective piping step) for the signal cable and refrigerant piping that connect the indoor and outdoor units. The default position for all piping is the right side of the indoor unit (while facing the unit). However, the unit can accommodate piping to both the left and right.**

#### Attach the Mounting Plate to the Wall:

1. Carefully remove the mounting plate, which is attached to the back of the indoor unit.
2. The mounting plate should be located horizontally and level on the wall. All minimum spacings shown in Fig. 6 should be maintained.
3. If the wall is block, brick, concrete or similar material, drill 0.2" (5 mm) diameter holes and insert anchors for the appropriate mounting screws.
4. Attach the mounting plate to the wall.

### Mounting Plate Dimensions

Different model sizes have different mounting plates. Ensure there's enough room to mount the indoor unit (refer to Fig. 2–5). The following measurements can be located on these figures:

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

Correct orientation of Mounting Plate

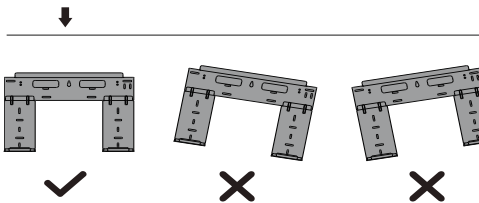


Fig. 8 – Mounting Plate Orientation

### DRILL HOLE IN WALL FOR THE INTERCONNECTING PIPING, DRAIN AND WIRING

#### Refrigerant Line Routing

The refrigerant lines may be routed in any of the four directions shown in Fig. 10.

For maximum serviceability, it is recommended to have refrigerant line flare connections and the drain connections on the outside of the wall that the fan coil can be mounted on.

#### If piping is going through the back:

1. Determine the pipe hole position using the mounting plate as a template. Drill pipe hole diameter per values given in Fig. 2 through 5. The outside pipe hole is 1/2-in. (13 mm) min. lower than inside pipe hole, so it slants slightly downward (see Fig. 9).

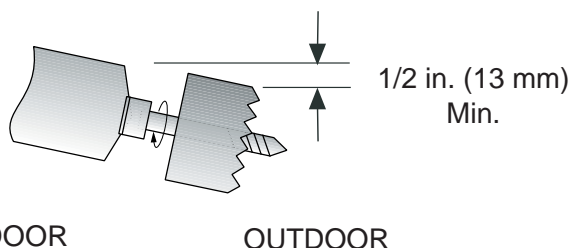


Fig. 9 – Drill Holes

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#### If piping is going through the right or left side:

1. Use a small saw blade to carefully remove the corresponding plastic covering on side panel and drill the appropriate size hole where the pipe is going through the wall.

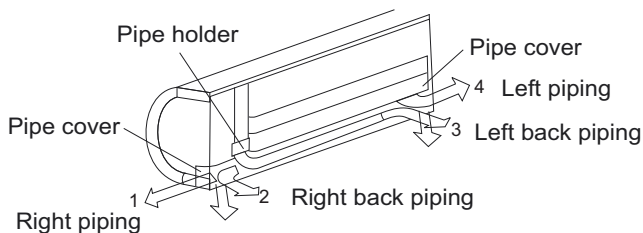


Fig. 10 – Piping Locations

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## Prepare the Refrigerant Piping

The refrigerant piping is inside an insulating sleeve attached to the back of the unit. You must prepare the piping before passing it through the hole in the wall.

**NOTE: (Piping Angle)** Refrigerant piping can exit the indoor unit from four different angles (see Fig. 11):

- (1.) Left-hand side
- (2.) Left rear
- (3.) Right-hand side
- (4.) Right rear

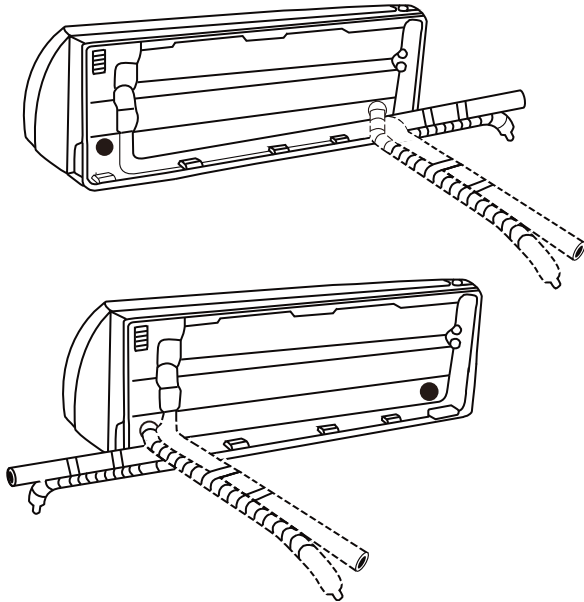


Fig. 11 – Piping Angle

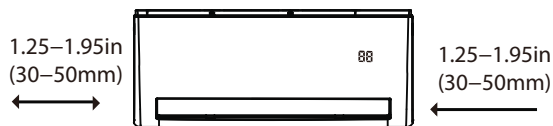
## ⚠ CAUTION

### ELECTRICAL OPERATION HAZARD

Be extremely careful not to dent or damage the piping while bending them away from the unit. Any dents in the piping will affect the unit's performance.

If the refrigerant piping is already embedded in the wall, perform the following steps:

1. **Hook the indoor unit on the mounting plate.** Keep in mind that the hooks on the mounting plate are smaller than the holes on the back of the unit. If you find that you do not have ample room to connect the embedded pipes to the indoor unit, the unit can be adjusted left or right by about 1.25–1.95in. (30–50mm), depending on the model (see Fig. 12).



Move to left or right

Fig. 12 – Hook Indoor Unit to Mounting Plate

## 2. Prepare the Refrigerant Piping

- (1.) Disassemble the louver.

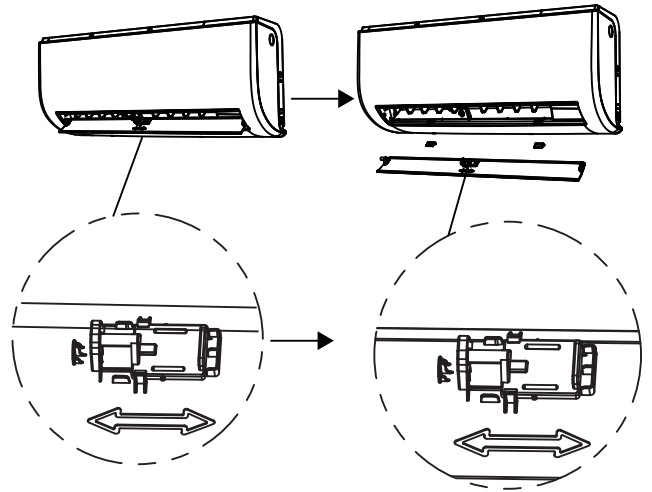


Fig. 13 – Disassemble the Louver

- (2.) Open and fix the position of the panel. First, unscrew the two screws (see Fig. 14), then open the panel, and fix the position of the panel by the latch.

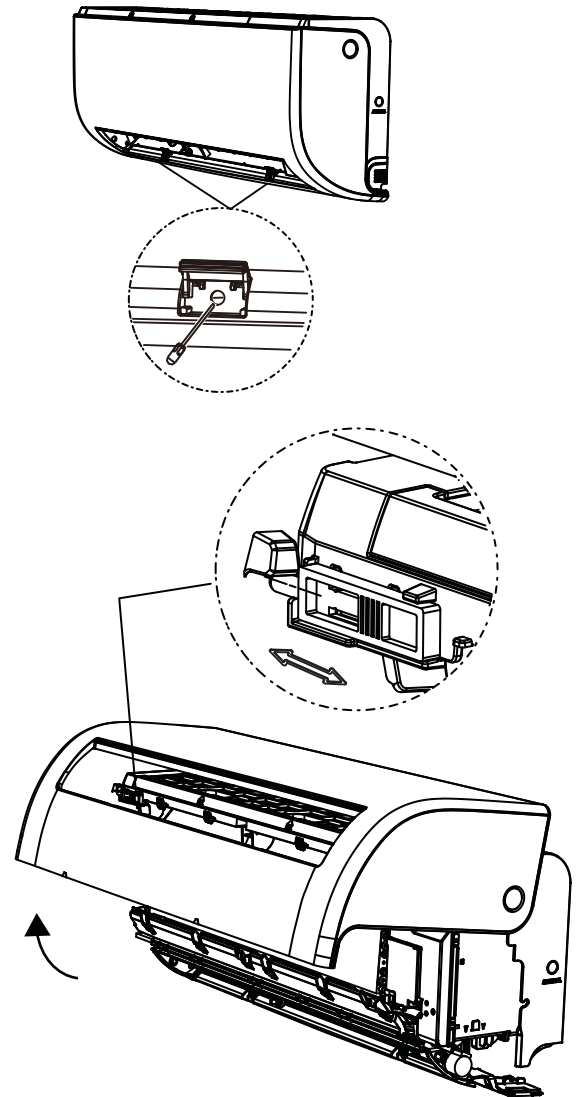
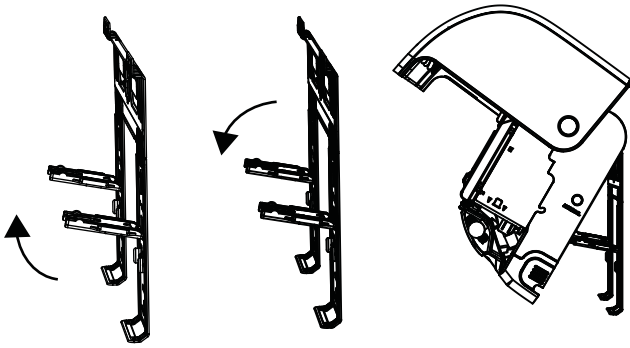


Fig. 14 – Panel Position

- (3.) Use the holder in the mounting plate to prop up the unit, allowing you enough space to connect the refrigerant piping, signal cable, and the drain hose.

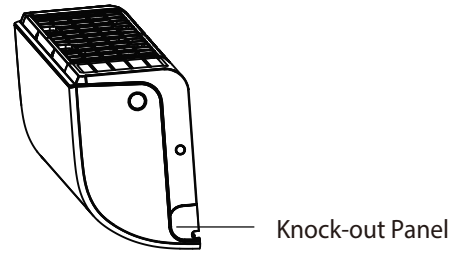


**Fig. 15 – Use Holder to Prop up the Unit**

3. Connect the drain hose and refrigerant piping.
4. Keep the pipe connection point exposed to perform the leak test.
5. After the leak test, wrap the connection point with insulation tape.
6. Remove the bracket or wedge that is propping with insulation tape.
7. Using even pressure, push down on the bottom half of the unit. Keep pushing down until the unit snaps onto the hooks along the bottom of the mounting plate.

If there is no refrigerant piping embedded in the wall, perform the following steps:

1. Based on the position of the wall hole relative to the mounting plate, choose the side from which the piping will exit the unit.
2. If the wall hole is behind the unit, keep the knock-out panel in place. If the wall hole is to the side of the indoor unit, remove the plastic knock-out panel from that side of the unit (see Fig. 16). This creates a slot through which your piping can exit the unit. Use needle nose pliers if the plastic panel is too difficult to remove by hand.



**Fig. 16 – Knock-out Panel**

3. Use scissors to cut down the length of the insulating sleeve to reveal about 1.57in. (40mm) of the refrigerant piping. This serves two purposes:
  - (1.) To facilitate the refrigerant piping connection process
  - (2.) To facilitate Gas Leak Checks and enable you to check for dents.
4. Connect the indoor unit's refrigerant piping to the connective piping that joins the indoor and outdoor units.
5. Based on the position of the wall hole relative to the mounting plate, determine the necessary angle of your piping.
6. Grip the refrigerant piping at the base of the bend.
7. Slowly, with even pressure, bend the piping towards the hole. Do not dent or damage the piping during the process.

# ELECTRICAL DATA

Table 5—Electrical Data

HIGH WALL UNIT SIZE		INDOOR FAN			MAX FUSE CB AMP
		V-Ph-Hz	FLA	HP	
Cooling Only Models	12K	115-1-60	0.425	0.02	Refer to outdoor unit installation instructions – Indoor unit powered by the outdoor unit
	12K	208/230-1-60	0.235	0.027	
	18K		0.4	0.037	
	24K		0.6	0.061	
Heat Pump Models	12K	115-1-60	0.47	0.027	
	9K	208/230-1-60	0.25	0.027	
	12K		0.34	0.027	
	18K		0.4	0.037	
	24K		0.45	0.078	

**LEGEND**

FLA – Full Load Amps

## CONNECTION DIAGRAMS

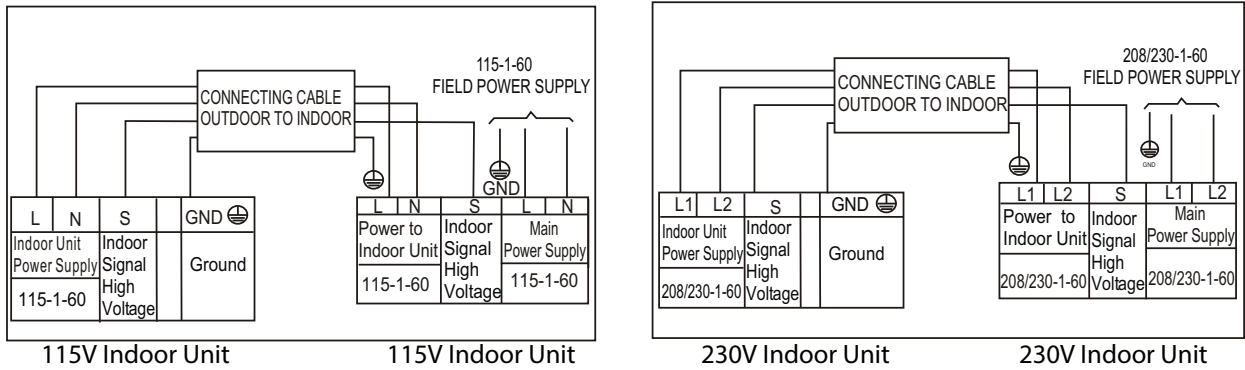


Fig. 17 – Connection Diagrams

**Notes:**

1. Do not use thermostat wire for any connection between indoor and outdoor units.
2. All connections between indoor and outdoor units must be as shown. **The connections are sensitive to polarity and will result in a fault code.**

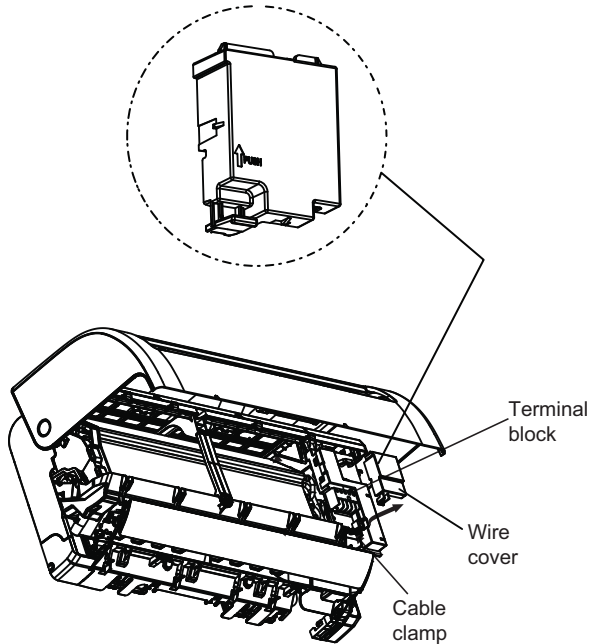


Fig. 18 – Wiring Diagram Location

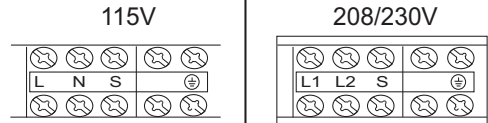
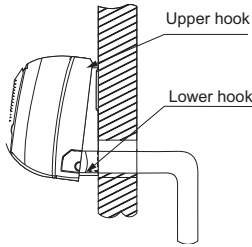


Fig. 19 – Control and Power Wiring on the Indoor Unit

# INSTALL ALL POWER, INTERCONNECTING WIRING, AND PIPING TO THE INDOOR UNIT

1. Run interconnecting piping and wiring from outdoor unit to indoor unit.
2. Run interconnecting cable through hole in wall (outside to inside).
3. Lift indoor unit into position and route piping and drain through hole in wall (inside to outside). Fit the interconnecting wiring into back side of indoor unit.
4. Put upper claw at back of indoor unit on upper hook of Mounting Plate, move indoor unit from side to side to see that it is securely hooked.
5. Open the indoor unit's front panel by loosening the screws, which provides a large space for wiring connection.
6. Open the wire box cover to connect the cable.
7. Pull interconnecting wire up from back of indoor unit and position in close to the terminal block on indoor unit.
8. Push lower part of indoor unit up on wall, then move indoor unit from side to side, up and down to check if it is hooked securely (see Fig. 20).



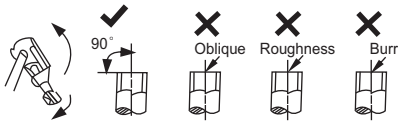
**Fig. 20 – Indoor Unit Installation**

A07347a

9. Connect wiring from outdoor unit per connection diagram (see Fig. 17 and Fig. 18).
10. Replace the wire cover on the front of the unit, and the plastic panel on the back.

## PIPING

- a. Cut the pipe, with a pipe cutter, at 90 degrees (see Fig. 21).
- b. Remove the service connection, if provided with the unit.



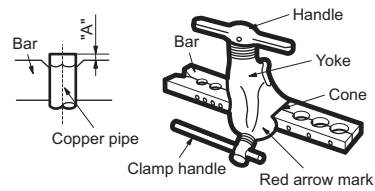
**Fig. 21 – Pipe Cutting**

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- c. Remove all the burrs from the cut cross section of the pipe avoiding any burrs inside the tubes.
- d. Remove the flare nuts attached to the indoor and outdoor units.
- e. Install the correct size flare nut onto the tubing and make the flare connection. Refer to Table 6 for the flare nut spaces.

**Table 6—Flare Nut Spacing**

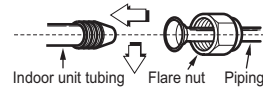
OUTER DIAM. inch (mm)	A inch (mm)	
	Max.	Min.
Ø 1/4" (6.35)	0.05 (1.3)	0.03 (0.7)
Ø 3/8" (9.52)	0.06 (1.6)	0.04 (1.0)
Ø 1/2" (12.7)	0.07 (1.8)	0.04 (1.0)
Ø 5/8" (15.88)	0.09 (2.2)	0.08 (2.0)



**Fig. 22 – Flare Nut Spacing**

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- f. Apply a small amount of refrigerant oil to the flare connection on the tubing.
- g. Align center of the pipes and/or service valve.



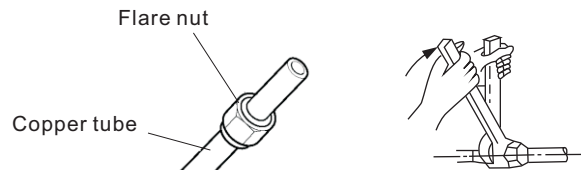
**Fig. 23 – Align Pipe Center**

A150769

- h. Connect both the liquid and gas piping to the indoor unit
- i. Tighten the flare nut using a torque wrench as specified in Table 7.

**Table 7—Tightening Torque**

PIPE DIAMETER INCH (mm)	TIGHTENING TORQUE	
	Ft-lb	N-m
Ø1/4" (6.35)	10 to 13	13.6 to 17.6
Ø3/8" (9.52)	24 to 31	32.5 to 42.0
Ø1/2" (12.7)	37 to 46	50.1 to 62.3
Ø5/8" (15.88)	50 to 60	67.7 to 81.3



**Fig. 24 – Tighten the Flare Nut**

A150770

For additional diagnostic information, refer to the Service Manual.

⚠ **CAUTION**

**UNIT DAMAGE HAZARD**

Failure to follow this caution may result in equipment damage or improper operation.

Never use the system compressor as a vacuum pump.

Refrigerant tubes and indoor coil should be evacuated using the recommended deep vacuum method of 500 microns. The alternate triple evacuation method may be used if the procedure outlined below is followed. Always break a vacuum with dry nitrogen.

## FINAL TUBING CHECK

**IMPORTANT:** Ensure certain factory tubing on the indoor unit has not shifted during shipment. Ensure tubes are not rubbing against each other or any sheet metal. Pay close attention to feeder tubes, making sure wire ties on feeder tubes are secure and tight.

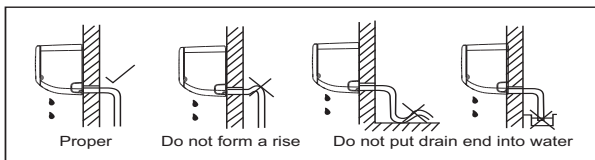
## DRAIN CONNECTIONS

Connect the drain line. The drain line must not have a trap anywhere in its length, must pitch downwards, and must be insulated up to the outside wall (see Fig. 25). By default, the drain hose is attached to the left-hand side of unit (when facing the back of the unit). However, it can also be attached to the right-hand side.

- To ensure proper drainage, attach the drain hose on the same side that your refrigerant piping exits the unit.
- Attach a drain hose extension (purchased separately) to the end of drain hose.
- Wrap the connection point firmly with Teflon tape to ensure good seal and to prevent leaks.
- For the portion of the drain hose that will remain indoors,
- Wrap it with foam pipe insulation to prevent condensation.
- Remove the air filter and pour a small amount of water into the drain pan to ensure that water flows from the unit smoothly.

## Plug the Unused Drain Hole

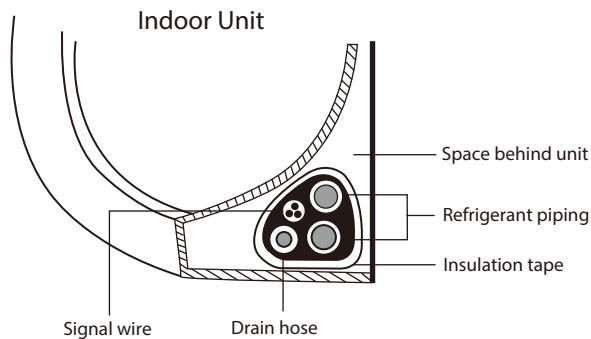
To prevent unwanted leaks you must plug the unused drain hole with the rubber plug provided.



A14351

**Fig. 25 — Proper Drain Hose Installation**

**NOTE:** For proper orientation of the refrigerant piping, electrical cable and drain lines, refer to Fig. 26.



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**Fig. 26 — Bundle drain hose, refrigerant pipes, & signal cable**

**NOTE:** For applications where gravity cannot be used for drainage, a condensate pump accessory is available. Consult the condensate pump Installation Instructions for more information.

## WIRELESS REMOTE CONTROL INSTALLATION

### Mounting Bracket (if installed on the wall)

- Use the two screws supplied with control to attach the mounting bracket to the wall in a location selected by customer and within operating range.
- Install batteries in the remote control.
- Place the remote control into the remote control mounting bracket.

**NOTE:** For remote control operation, refer to the unit Owner's Manual.

## WIRED REMOTE CONTROLLER INSTALLATION

For setup instructions, refer to the wired controller installation manual.

- Use the multi-function board supplied.



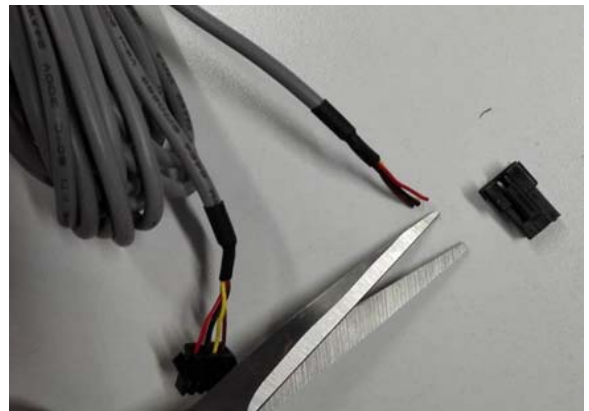
**Fig. 27 — Multi-Function Board**

- Use needle nose pliers to cut a hole on the multi-function board for wiring.



**Fig. 28 — Cut a hole on the multi-function board**

- Cut the female plug from the cable supplied with the wired remote controller and strip the wires to connect to the adaptor board.



**Fig. 29 — Cut the female plug and strip the wires**

4. Connect the wired remote controller cable to the multi-function board using:

- (1.) X—Brown
- (2.) Y—Yellow
- (3.) E—Black (ground)
- (4.) 5V—Red (power)



**Fig. 30 — Connect the cable to the board**

5. Install the multi-function board on the bracket located above the coil.



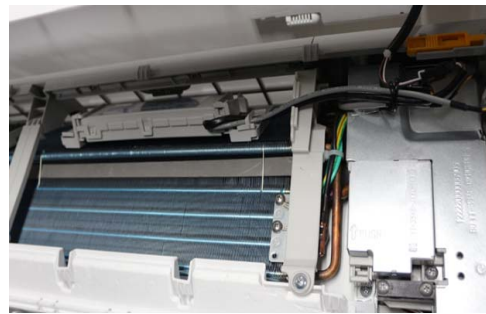
**Fig. 31 — Install the multi-function board**

6. Connect the multi-function board to the display board (black cable) and the main control board (gray cable).



**Fig. 32 — Connect the multi-function board**

7. Use the ties in the control box to keep the wiring in the right position.



**Fig. 33 — Use ties to keep wiring aligned**

## START-UP

### Test Operation

Perform a test operation after completing gas leak and electrical safety check (see Fig. 34).

1. Push the “ON/OFF” button on the remote control to begin testing.

**NOTE:** A protection feature prevents air conditioner from being activated for approximately 3 to 4 minutes.

2. Push **MODE**, select **COOLING, HEATING, FAN** mode to check that all functions work correctly.

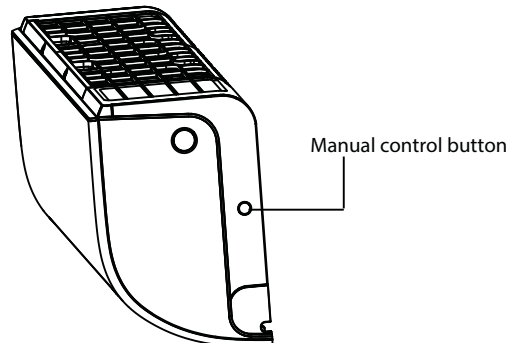
3. To run the test using the manual button in the indoor unit:

- (5.) Open front panel of the indoor unit;
- (6.) Push the manual switch once to energize the unit. The set conditions of manual operation are as follows:
  - Preset set point: 76°F (24°C)
  - Fan speed: **AUTO**
  - Discharge air direction: Pre-set position based on operation in “COOL” or “HEAT” mode.

4. Be sure to set manual switch to “OFF” (by pushing it twice again) after finishing test operation.

**NOTE:** If the ambient temperature is below 63°F (17°C). The remote controller can not be used to turn on the **COOL** function when the ambient temperature is below 63°F (17°C). In this instance the **MANUAL CONTROL** button can be used to test the **COOL** function.

1. The **MANUAL CONTROL** button is located on the right-hand side panel of the unit (see Fig. 34). Press the button two times to select the **COOL** function. Perform a Test Run as normal.



**Fig. 34 — Test Operation**



## SYSTEM CHECKS

1. Conceal the tubing where possible.
2. Make sure that the drain tube slopes downward along its entire length.
3. Ensure all tubing and connections are properly insulated.
4. Fasten tubes to the outside wall, when possible.
5. Seal the hole through which the cables and tubing pass.

## INDOOR UNIT

1. Do all remote control buttons function properly?
2. Do the display panel lights work properly?
3. Does the air deflection louver function properly?
4. Does the drain work?

## Explain Following Items To Customer (with the aid of the Owner's Manual):

1. How to turn air conditioner on and off; selecting **COOLING**, **HEATING** and other operating modes; setting a desired temperature; setting the timer to automatically start and stop air conditioner operation; and all other features of the remote control and display panel.
2. How to remove and clean the air filter.
3. How to set air deflection louver.
4. Explain care and maintenance.
5. Present the Owner's Manual and installation instructions to customer.

## TROUBLESHOOTING

For ease of service, the systems are equipped with diagnostic code display LEDs on both the indoor and outdoor units. The indoor diagnostic display is a combination of flashing LEDs on the display panel or the front of the unit.

Some indoor units display error codes specifying failure modes in outdoor units. If possible, always check the diagnostic codes displayed on the indoor unit first.

The diagnostic codes displayed in the indoor and outdoor units are listed in the Table 8.

## INDOOR UNIT DIAGNOSTIC GUIDES

Table 8—ID Units Error Code Display

OPERATION LAMP	TIMER LAMP	DISPLAY	LED STATUS
☆ 1 time	X	E0	Indoor unit EEPROM parameter error
☆ 2 times	X	E1	Indoor / outdoor units communication error
☆ 3 times	X	E2	Zero-crossing signal detection error
☆ 4 times	X	E3	Indoor fan speed is out of control
☆ 5 times	X	E4	Indoor room temperature sensor T1 open circuit or short circuit
☆ 6 times	X	E5	Evaporator coil temperature sensor T2 open circuit or short circuit
☆ 7 times	X	EC	Refrigerant leakage detection
☆ 1 time	O	F0	Overload current protection
☆ 2 times	O	F1	Outdoor ambient temperature sensor T4 open circuit or short circuit
☆ 3 times	O	F2	Condenser coil temperature sensor T3 open circuit or short circuit
☆ 4 times	O	F3	Compressor discharge temperature sensor T5 open circuit or short circuit
☆ 5 times	O	F4	Outdoor unit EEPROM parameter error
☆ 6 times	O	F5	Outdoor fan speed is out of control
☆ 1 time	☆	P0	IPM malfunction or IGBT over-strong current protection
☆ 2 times	☆	P1	Over voltage or over low voltage protection
☆ 3 times	☆	P2	High temperature protection of the compressor top diagnosis and solution (only for 9k,12k models)
☆ 5 times	☆	P4	Inverter compressor drive error

O (on – light)    X(off – light)    ☆ (flash)

