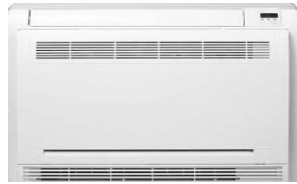




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Dallas, Texas, USA



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# INSTALLATION/USER INSTRUCTIONS

## MLA/MPB and MFMA Series

SINGLE-ZONE MINI-SPLIT SYSTEMS  
(208/230V) --  
Floor Mount Console  
508048-01 7/2020

**THIS MANUAL MUST BE LEFT WITH THE OWNER FOR FUTURE REFERENCE**

### **!WARNING**

Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life.

Installation and service must be performed by a licensed professional HVAC installer (or equivalent) or a service agency.

#### **General**

Refer to the Product Specifications bulletin (EHB) for more product information.

These instructions are intended as a general guide and do not supersede local or national codes in any way. Authorities having jurisdiction should be consulted before installation.

The MFMA Floor Mount Console unit is matched with an outdoor heat pump unit to create a mini-split system that uses HFC-410A refrigerant.

#### **Use of Mini-Split System During Construction**

Lennox does not recommend the use of its mini-split systems during any phase of construction. Very low return air temperatures, harmful vapors and operation of the unit with clogged or misplaced filters will damage the system.




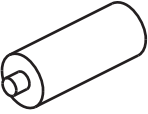
However, mini-split systems may be used for cooling of buildings under construction, if the following conditions are met:

- Air filter must be installed in the system and must be maintained during construction.
- Air filter must be replaced upon construction completion.
- The indoor wall unit assembly must be thoroughly cleaned following final construction clean-up.
- All mini-split operating conditions must be verified according to these installation instructions.

## Included Parts

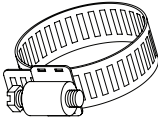



Package 1 of 1 contains the following:

1 - Assembled Indoor Unit

Parts	Figure	Quantity	Parts	Figure	Quantity
M0STAT60Q-1 Wireless controller		1	Installation and owner's manual		1 ea.
Wireless control holder with 2 mounting screws		1	Batteries (AAA)		2

The assembled indoor unit will include the following items:

1 - Assembled Outdoor Unit and the following items:

Parts	Figure	Quantity	Parts	Figure	Quantity
Band Clamps		2	Condensate Flex Hose Adapter		1
Drain connector		1	Seal ring		1

## Optional Accessories

Component	Catalog Number
M0STAT64Q-1 Programmable Wired Controller	15D30
Wired Controller Extension Cable (20 feet long)	Y8738

## Indoor / Outdoor Unit Match-Ups

Outdoor Unit	Indoor Unit	Voltage
MPB012S4S-*P	MFMA012S4-P	208/230V
MLA012S4S-*P	MFMA012S4-P	208/230V

## ! WARNING

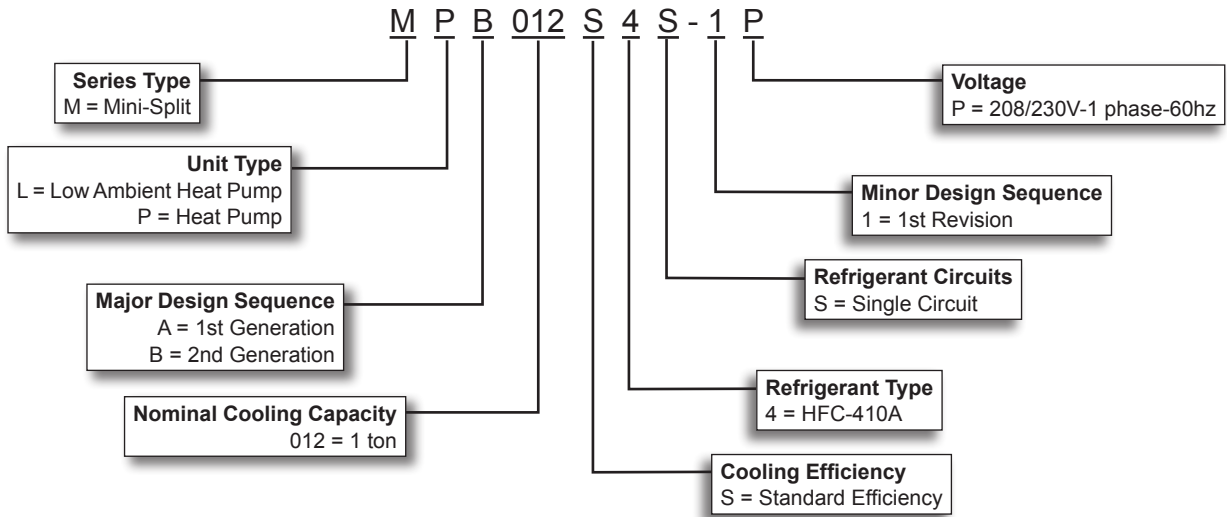
The clean Air Act of 1990 bans the intentional venting of refrigerant (CFCs, HCFCs, and HFCs) as of July, 1992. Approved methods of recovery, recycling or reclaiming must be followed. Fines and/or incarceration may be levied for non-compliance.

## ! CAUTION

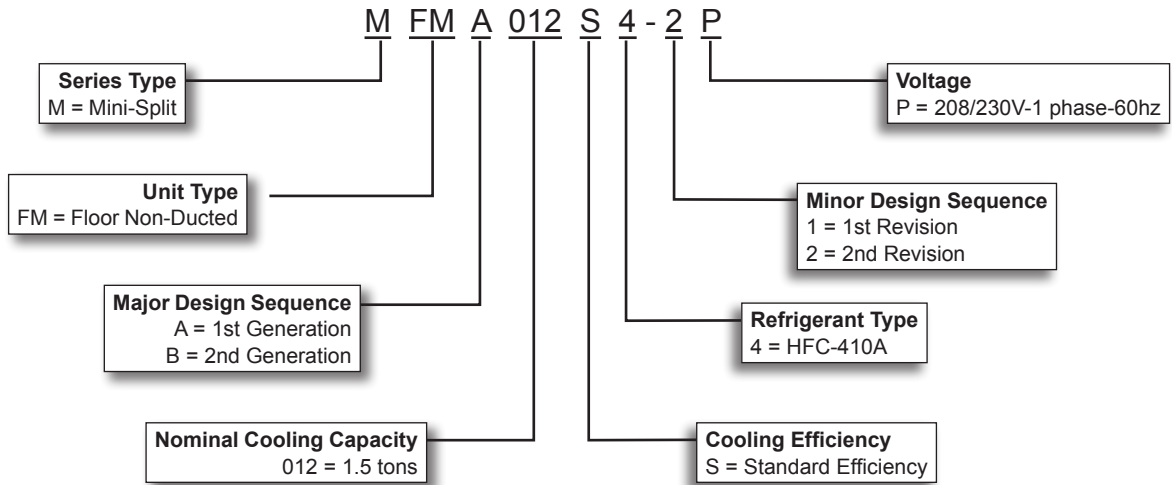
As with any mechanical equipment, contact with sharp sheet metal edges can result in personal injury. Take care while handling this equipment and wear gloves and protective clothing.

## Model Number Identification

### OUTDOOR SINGLE ZONE HEAT PUMP UNITS



### CEILING/FLOOR NON-DUCTED INDOOR UNITS



# Typical Single-Zone System Components

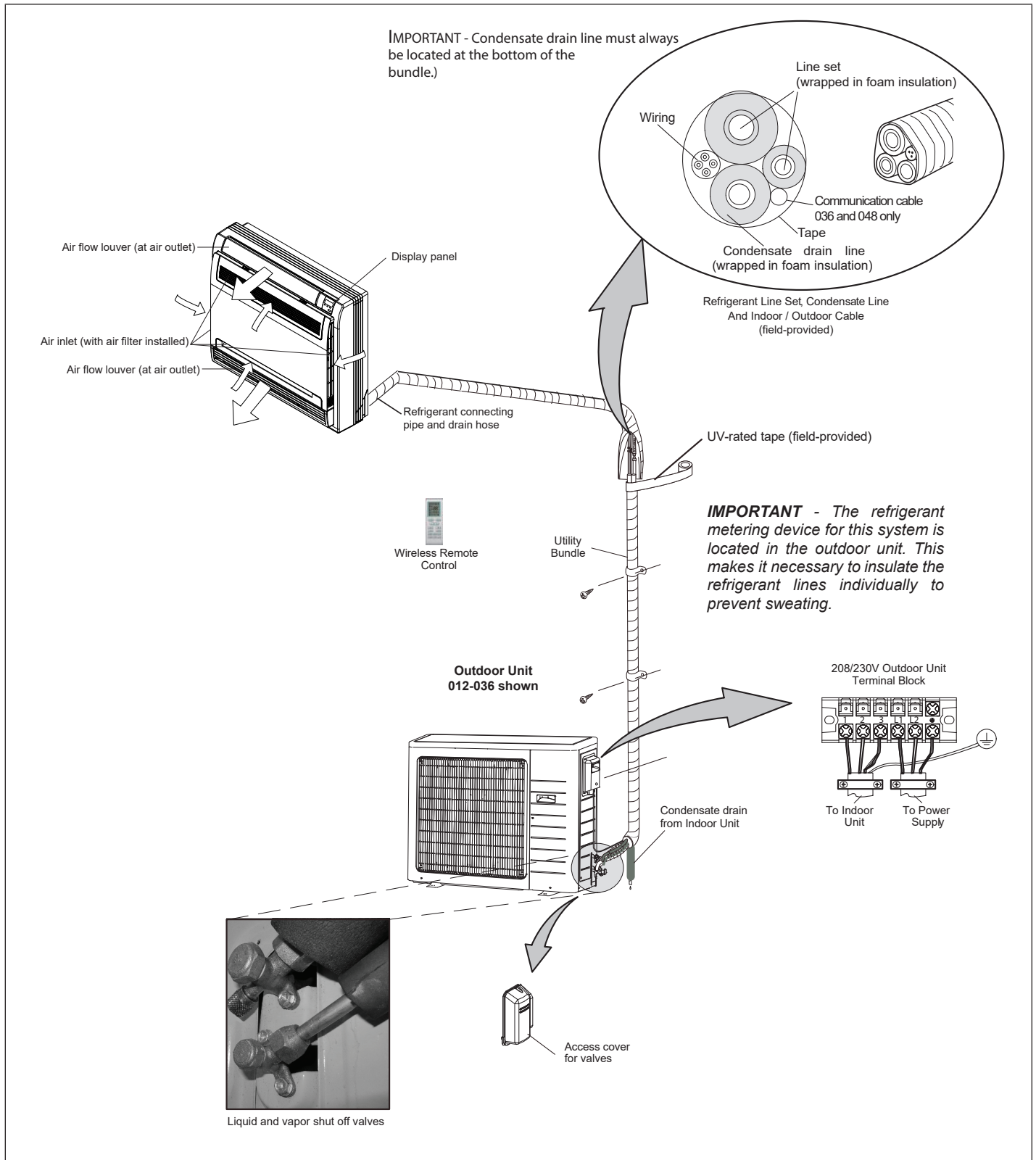
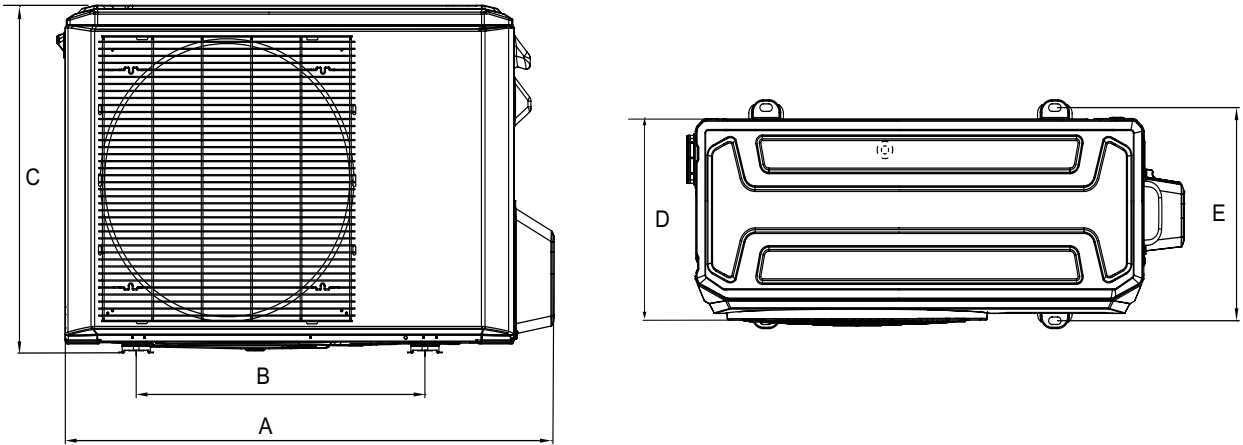


Figure 1. Typical System Shown

## System Dimensions

### Outdoor Units

Table 1. Outdoor Unit Dimensions - Inches (mm)



TYPICAL APPEARANCE OF UNITS

Model	Unit of Measurement	A	B	C	D	E
MPB012S4S-*P	inches	34-1/4	20-1/4	21-7/8	13-1/8	13-3/8
	mm	870	514	556	333	340
MLA012S4S-*P	inches	34-1/4	20-1/4	21-3/4	12-1/4	13-3/8
	mm	870	514	552	311	594

### Indoor Units

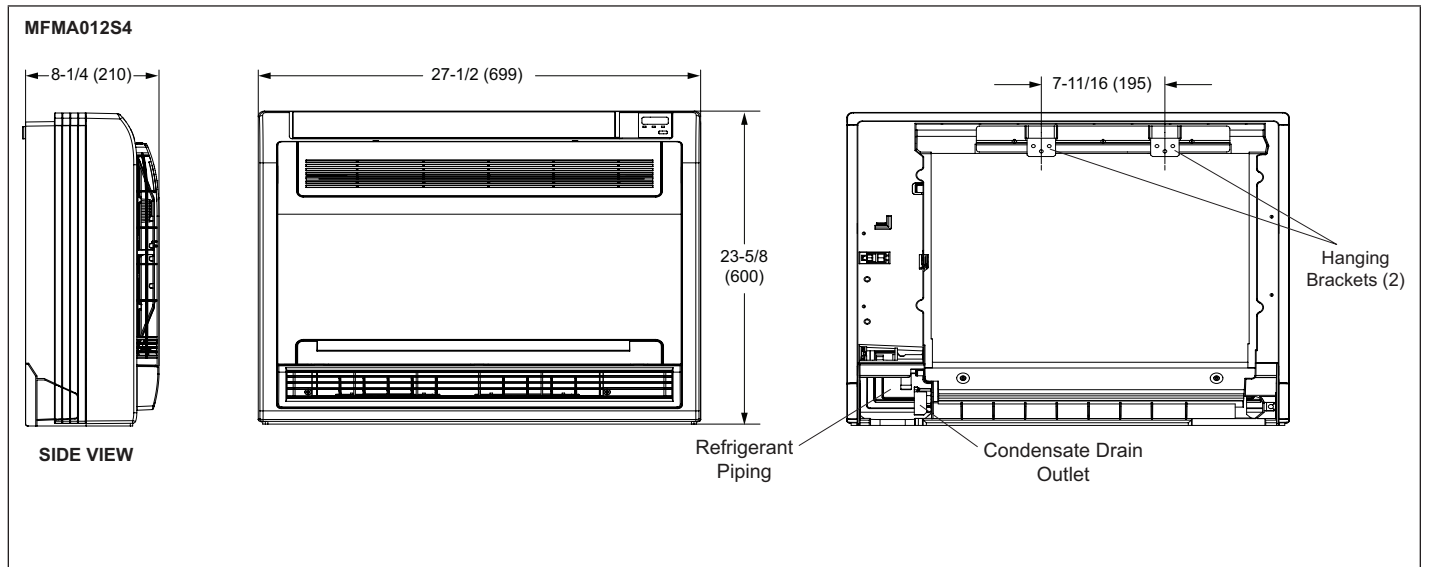


Figure 2. MFMA Indoor Unit Dimensions - Inches (mm)

## System Clearances

### Outdoor Unit

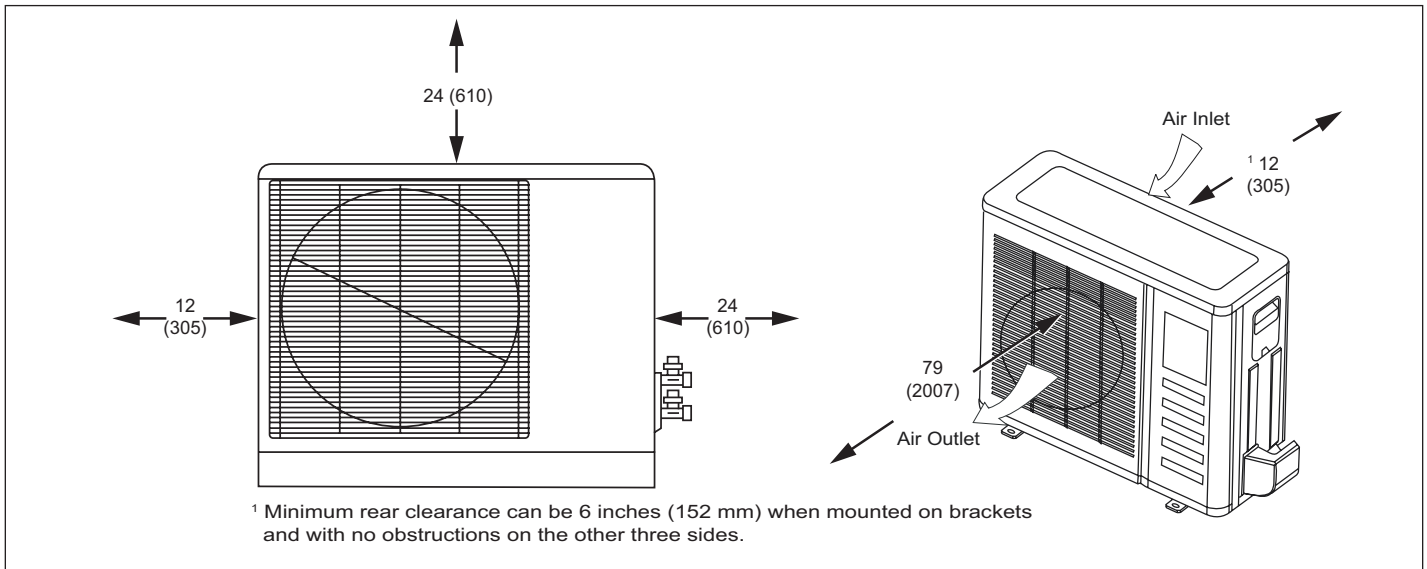


Figure 3. Outdoor Unit Clearances - Inches (mm)

### Indoor Unit

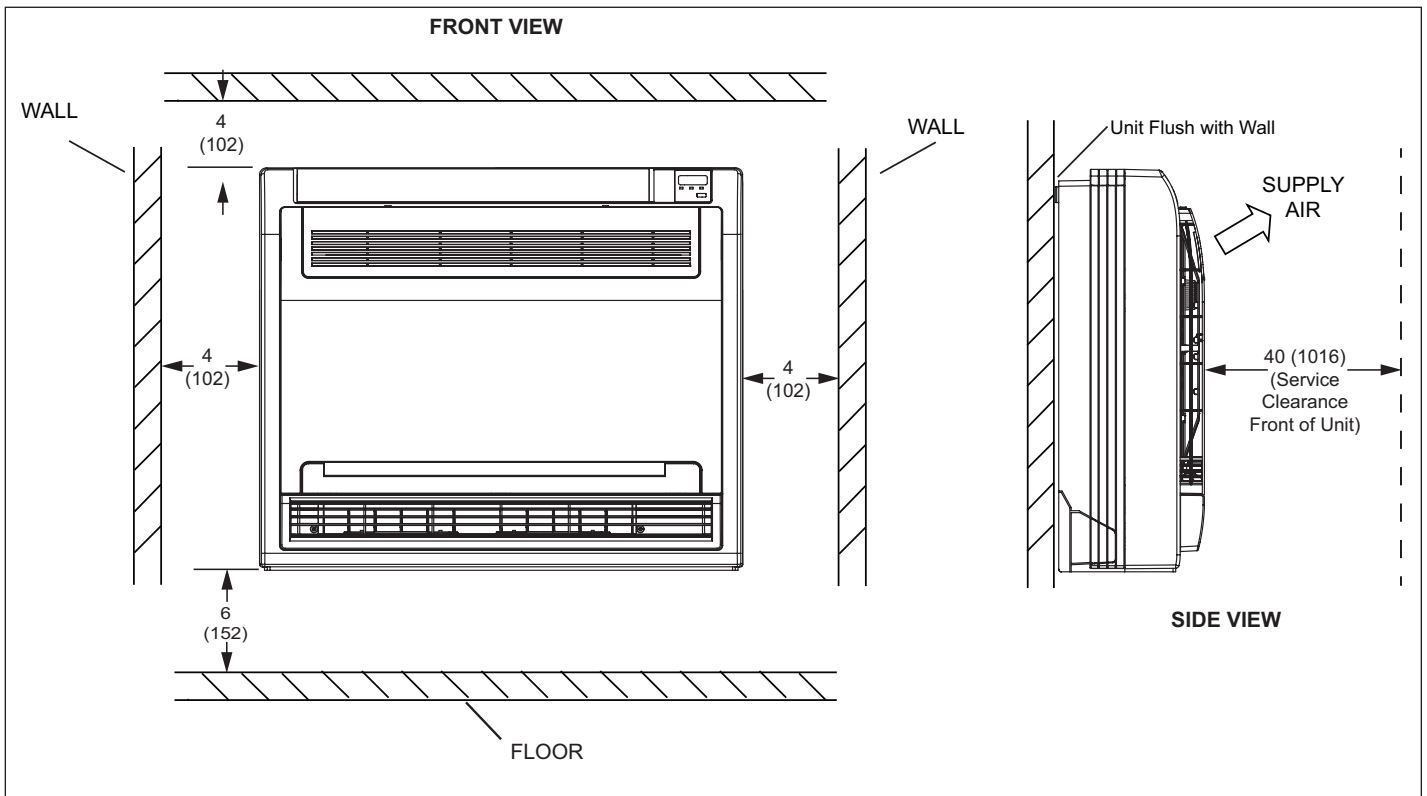


Figure 4. Indoor Unit Clearances - Inches (mm)

## Torque Requirements for Caps and Fasteners

When servicing or repairing HVAC components, ensure the fasteners are appropriately tightened. "Table 1. Torque Requirements" provides torque values for fasteners.

### IMPORTANT

Only use Allen wrenches of sufficient hardness (50Rc - Rockwell scale minimum). Fully insert the wrench into the valve stem recess.

Service valve stems are factory-torqued from 9 ft.-lbs. (12 N) for small valves, to 25 ft.-lbs. (34 N) for large valves) to prevent refrigerant loss during shipping and handling. Using an Allen wrench rated at less than 50Rc risks rounding or breaking off the wrench, or stripping the valve stem recess.

See the Lennox Service and Application Notes C-08-1 for further details and information.

**Table 1. Torque Requirements**

Parts	Recommended Torque	
	U.S.	Newton-Meter- N
Service valve cap	8 ft.-lb.	11
Sheet metal screws	16 in.-lb.	2
Machine screws #10	27 in.-lb.	3
Compressor bolts	7 ft.-lb.	10
Gauge port seal cap	8 ft.-lb.	11

## Indoor Unit Installation

### CAUTION

In order to avoid injury, take proper precaution when lifting heavy objects.

## Unit Placement Considerations

### AVOID

Do not install the unit in the following locations:

- Areas exposed to petrochemicals or petrochemical products.
- Areas exposed to salt or other corrosive materials or caustic gases.
- Areas exposed to extreme voltage variations (such as factories).
- Tightly enclosed areas that may impede service of the unit.
- Areas exposed to fossil fuels (such as oil or gas in kitchens).
- Areas exposed to strong electromagnetic forces.
- Areas exposed to acids or alkaline detergents.

### DO

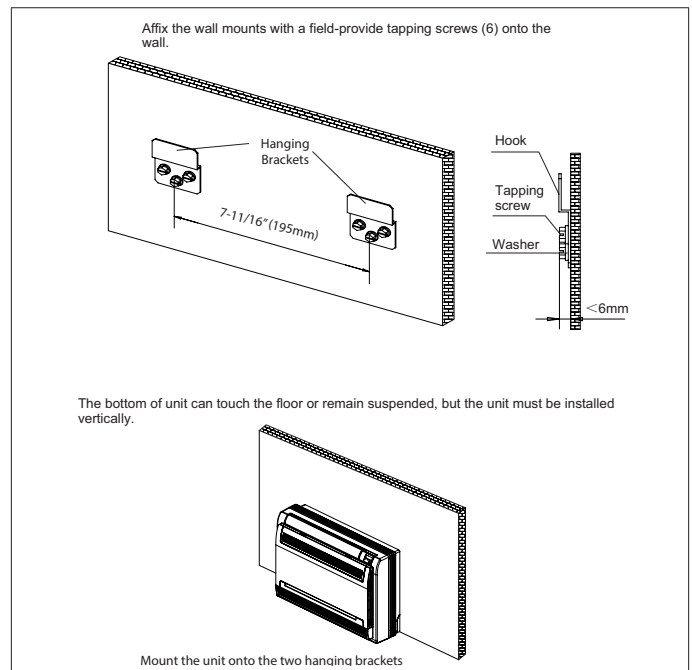
- Place the unit so that it is not exposed to direct sunlight.
- Ensure the structural ceiling can support the weight of the unit.
- Select a location where condensate line will have the shortest run to a suitable drain per local codes.
- Allow sufficient space around unit for proper operation and maintenance.
- Install unit a minimum of 3 feet (1m) away from any antenna, power cord (line) radio, telephone, security system, or intercom. Electrical interference and radio frequencies from any of these sources may affect operation.

Be sure to instruct customers how to properly operate the unit (especially maintenance of air filter, and operation procedure) by having them carry out operations themselves while looking at the manual provided with the controller

## Floor Installation

- Locate a suitable position within the space where maintenance access and supply air will not be restricted or affected by obstacles. See "Figure 4. Indoor Unit Clearances - Inches (mm)" on page 6 for minimum clearances.
- Place the MFMA on a wall which is both capable of supporting the unit's weight and which is constructed to enable the unit to fit flush on the wall. An uneven wall may lead to vibration and subsequent unit damage.

Units are wall mounted using two **factory-provided** hanging brackets.



**Figure 5. Mounting Unit to Wall**

## Indoor Unit Condensate Piping Connections

### IMPORTANT

Make sure that drain piping is properly routed and insulated to prevent both leaks and condensation.

1. Use a field-provided hose clamp to secure the drain line stub on the side of the cassette base to a field-supplied 1" (25 mm) drain line.

**NOTE:** Take care not to over-tighten the hose clamp as this may damage the drain line stub.

**NOTE:** Connection between stub and drain line must be watertight. Apply non hardening plumbing joint compound if needed to ensure a watertight seal.

2. Confirm proper slope (not less than 1/4 inch per foot (18 mm per m)) and routing of condensate lines to ensure moisture is drained away from the indoor unit.
3. Drain should be as short as possible and should not have any droops or kinks that would restrict condensate flow and shall be approved resistant pipe. **There must be a 2-inch (51 mm) space between the end of the condensate drain and the final termination point (ground, open drain, etc.) to ensure that the line will drain freely.**
4. After the system installation is complete, the condensate drain line must be checked for leaks and proper drainage. If a field-provided condensate pump has been installed, it must be checked to ensure proper operation. This check is part of the start-up process which must be done by the installing contractor.

### IMPORTANT

Drain should have a slope of at least 1/4 inch per foot and should be approved corrosion-resistant pipe. You must confirm operation of every drain and pump in the system as part of the commissioning procedure.

## Outdoor Unit Installation

### Placement Considerations

### ! CAUTION

In order to avoid injury, take proper precaution when lifting heavy objects.

Consider the following when positioning the unit:

- In coastal areas or other places with salty atmosphere of sulfate gas, corrosion may shorten the life of the unit. In coastal areas, the coil should be cleaned with potable water several times per year to avoid corrosive buildup (salt).
- Some localities are adopting sound ordinances based on the unit's sound level registered from the adjacent property, not from the property where the unit is installed. Install the unit as far as possible from the property line.

- When possible, do not install the unit directly outside a window. Glass has a very high level of sound transmission.
- Install unit level.

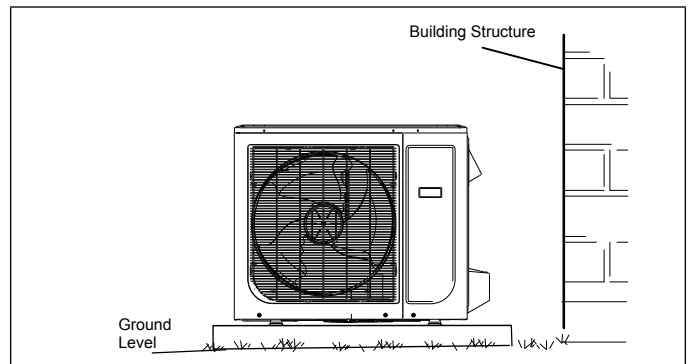


Figure 6. Install Unit Level

- Choose a place solid enough to bear the weight and vibration of the unit, where the operation noise will not be amplified.
- Choose a location where the hot air discharged from the unit or the operation noise will not be a nuisance to neighbors.
- Avoid installing the outdoor unit near a bedroom or other places where noise may cause a problem
- There must be sufficient space to carry the unit into and out of the site.
- There must be unobstructed air flow around the air inlet and the air outlet.
- The unit must not be installed in areas where a flammable gas leak may occur.
- Install the outdoor unit a minimum of 3 feet (1m) away from any antenna, power cord (line), radio, telephone, security system, or intercom. Electrical interference and radio frequencies from any of these sources may affect operation.
- Since water drains from the outdoor unit during various stages of operation, do not place anything which may be damaged by moisture under the unit.

### Direct Sunlight, Rain, Snow and Ice Protection

- If the outdoor unit is subjected to prolong exposure to direct sunlight with temperatures over 100°F (38°C) a canopy is suggested as illustrated in "Figure 7. Outdoor Unit on Pedestal (Stand) and Protective Canopy" or "Figure 12. Dog House-Style Shelter" on page 10.

### IMPORTANT

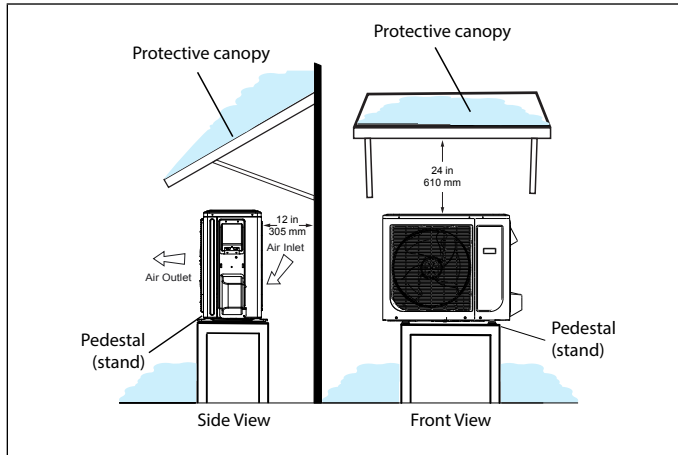
The construction of a canopy or shade is necessary because of an ambient limit control set to 122°F (50°C) to protect the electronics. If the outdoor unit is placed in direct sunlight it is possible that the limit may activate and shut down the unit.

- Place unit away from overhanging roof lines which would allow water or ice to drop on, or in front of, coil

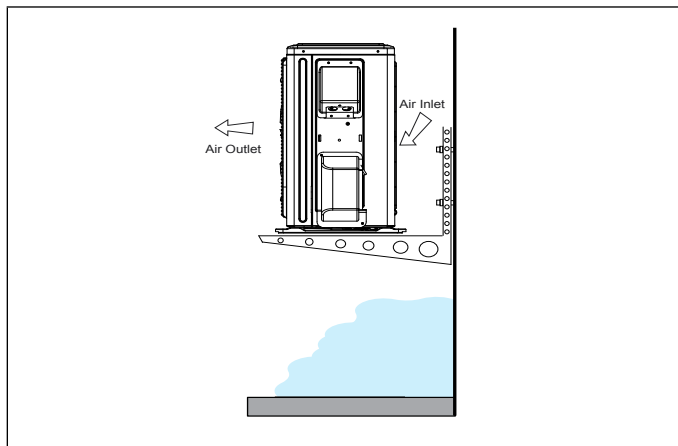


or into unit. Construct a canopy as illustrated in “Figure 7. Outdoor Unit on Pedestal (Stand) and Protective Canopy”.

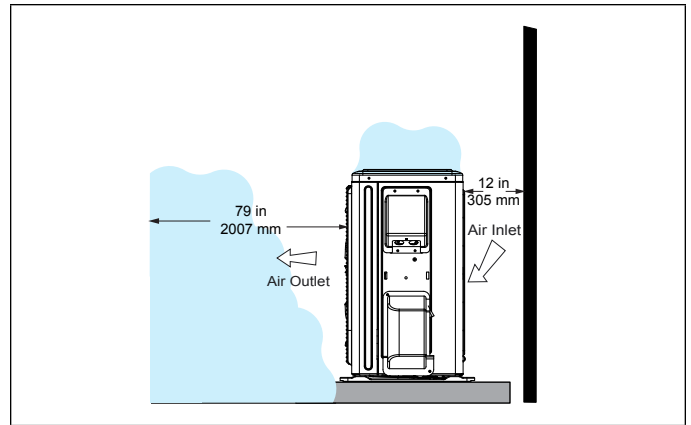
- The unit base should be elevated above the depth of average snows as illustrated in “Figure 8. Outdoor Unit on Brackets above Snow Line”.
- In heavy snow areas, do not place the unit where drifting will occur as illustrated in “Figure 9. Outdoor Unit Air Flow Obstructed by Snow” on page 9.
- Carefully consider how to manage defrost water disposal to prevent ice from blocking walkways or creating a safety hazard near the outdoor unit as illustrated in “Figure 10. Avoid Defrost Water Ice Hazard” on page 9.



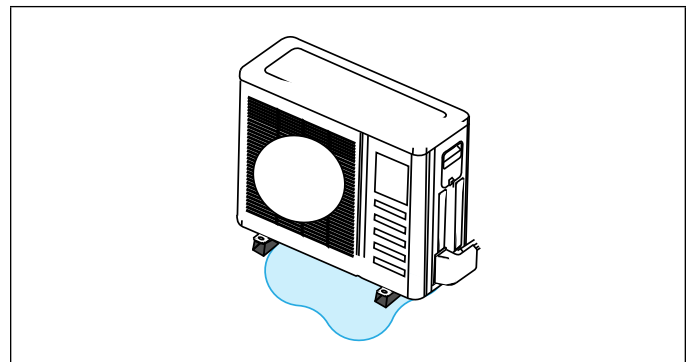
**Figure 7. Outdoor Unit on Pedestal (Stand) and Protective Canopy**



**Figure 8. Outdoor Unit on Brackets above Snow Line**



**Figure 9. Outdoor Unit Air Flow Obstructed by Snow**



**Figure 10. Avoid Defrost Water Ice Hazard**

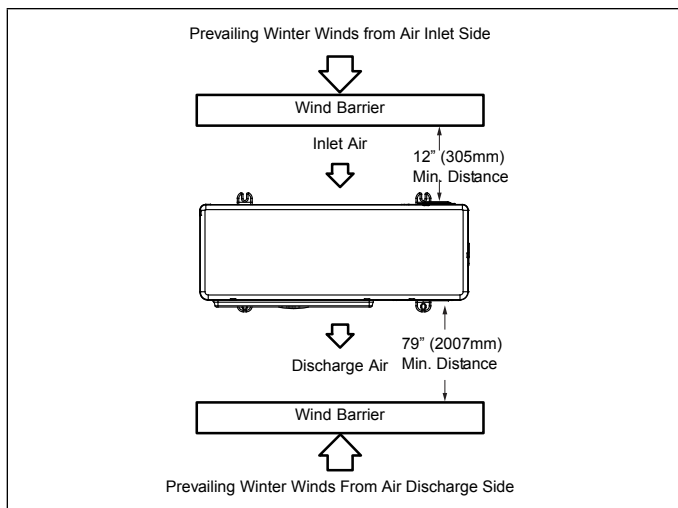
### Prevailing Winds

Normally wind baffles are not required for a outdoor unit. However, in order to maximize reliability and performance, the following best practices should be followed.

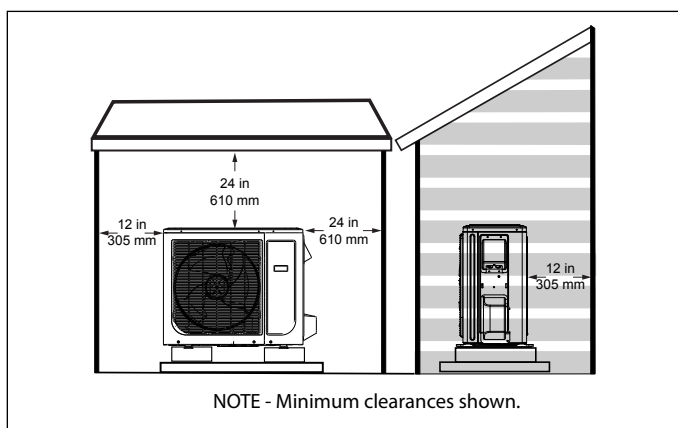
If unit coil cannot be installed away from prevailing winter winds, some method of protecting the coil is recommended. However, minimum clearances as reference in “Figure 3. Outdoor Unit Clearances - Inches (mm)” on page 6 must be observed at all times.

Common application examples are:

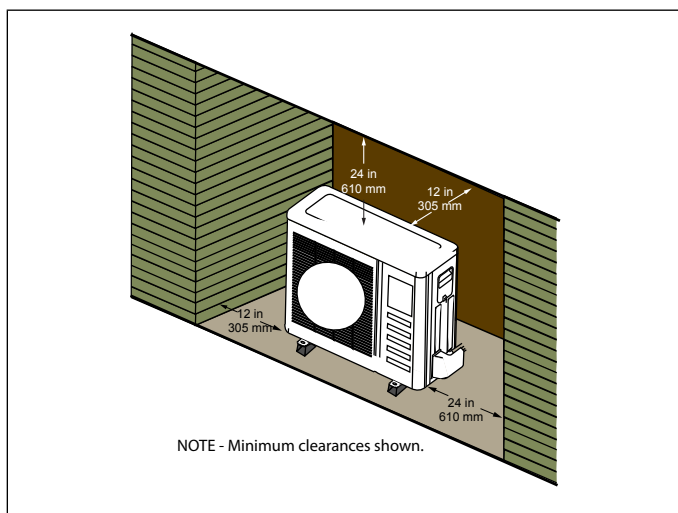
- When prevailing winds are from the air inlet side, then position the wind barrier a minimum of 12 inches (305 mm) from the unit as illustrated in “Figure 11. Wind Barrier”.
- When prevailing wind is into the discharge side, then position the wind barrier a minimum 79 inches (2007 mm) from the front of the unit as illustrated in “Figure 11. Wind Barrier”.
- Outdoor unit can be installed in a dog house style shelter as illustrated in “Figure 12. Dog House-Style Shelter”.
- a roof overhang as illustrated in “Figure 13. Unit installed in Alcove”.



**Figure 11. Wind Barrier**



**Figure 12. Dog House-Style Shelter**



**Figure 13. Unit installed in Alcove**

### Buried Refrigerant Pipe Protection

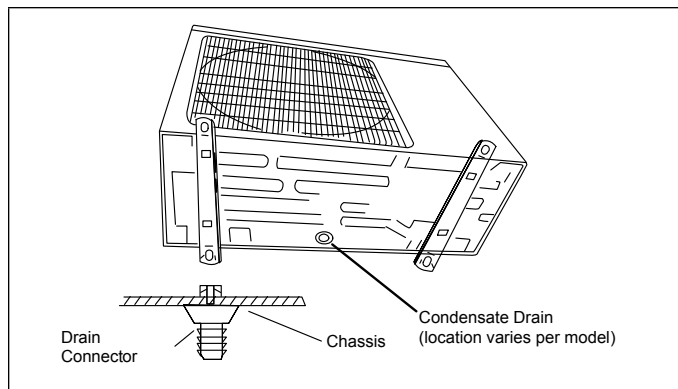
- All refrigerant lines must be insulated regardless of if it is buried.
- In addition to insulating each line of piping, buried lines must rest inside a **sealed, watertight** conduit.

- The conduit must be designed so it cannot collect and retain water.

### Outdoor Unit Condensate Piping

Condensate formed during the heating and defrost processes must be drained from heat pump units. Drain holes are provided in the base of the units to ensure proper drainage.

- Heat pumps must be raised when installed on a concrete pad or the ground to allow drainage to occur. I
- If the heat pump unit is installed on wall mounting bracket, insert the provided drain connector into one of the 1 inch (25 mm) drain holes and attached a field-provided insulated drain hose to the connector. Use field-provided rubber plugs to cover any unused drain holes if the unit is installed over a walk way or door.



**Figure 14. Condensate Drain**

### Securing the Outdoor Unit

#### Slab or Roof Mounting

Install the unit a minimum of 4 inches (102 mm) above the roof or ground surface to avoid ice build-up around the unit. Place the unit above a load bearing wall or area of the roof that can adequately support the unit. Consult local codes for rooftop applications.

## ! CAUTION

#### Roof Damage!

This system contains both refrigerant and oil. Some rubber roofing material may absorb oil. This will cause the rubber to swell when it comes into contact with oil. The rubber will then bubble and could cause leaks. Protect the roof surface to avoid exposure to refrigerant and oil during service and installation. Failure to follow this notice could result in damage to roof surface.

#### Securing Outdoor Unit to Slab, Frame, or Rails

If the outdoor unit is installed on a field-provided slab or frame, use lag bolts or equivalent to secure the outdoor unit to the slab or frame.

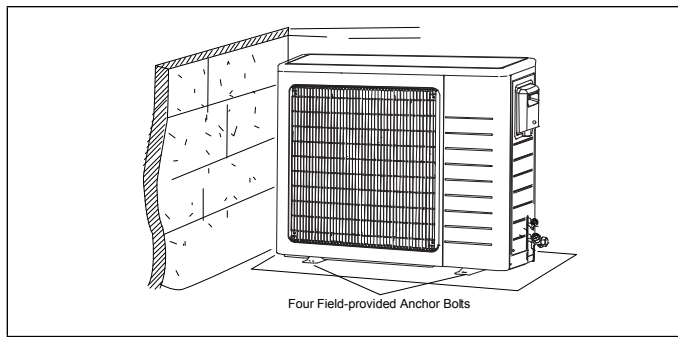


Figure 15. Securing Outdoor Unit to Slab

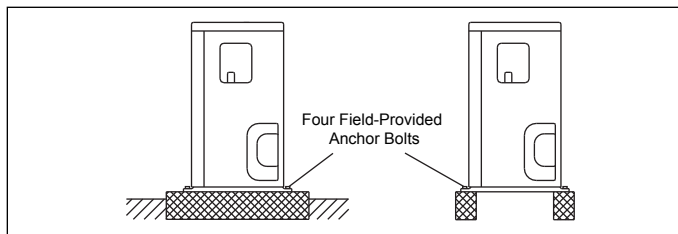


Figure 16. Securing Outdoor Unit to Rails

### Securing Outdoor Unit To Hanging Brackets

If the outdoor unit is installed on field-provided wall mounting brackets, use lag bolts or equivalent to secure the outdoor unit to the bracket. Minimum rear clearance can be reduced to 6 inches (152 mm) when mounted on brackets and with no obstructions on the other three sides. Allow for condensate disposal when placing units above one another.

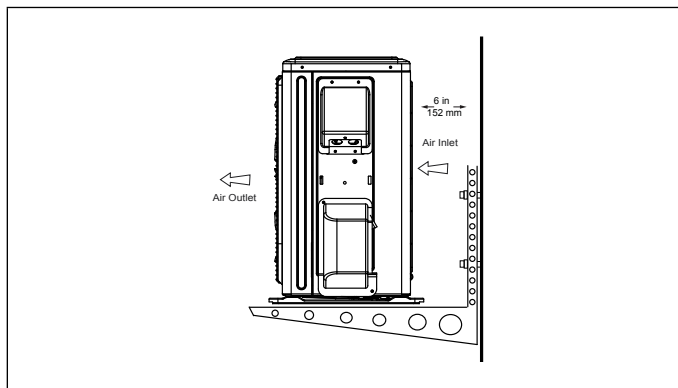


Figure 17. Securing Outdoor Unit to Brackets

## Refrigerant Piping Connections

Line sets consists of two copper pipes connecting the outdoor unit to the indoor unit. "Table 3. Refrigerant Piping and Indoor Unit Connection Sizes" lists the connection sizes. The connections are made using the provided brass flare nuts at the end of the refrigerant piping connections.

1. Choose the correct pipe sizes for your application using "Table 3. Refrigerant Piping and Indoor Unit Connection Sizes" on page 12.
2. Confirm that you are using the correct diameter piping.
3. Determine the necessary piping length required for the application.
4. Cut the selected pipes with a pipe cutter. Make the cuts flat and smooth as illustrated in "Figure 18.

### Cutting Pipe".

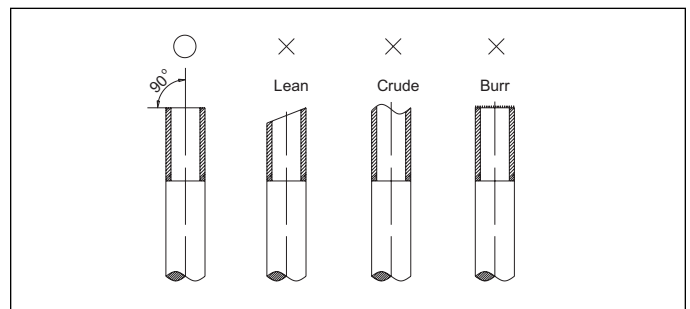


Figure 18. Cutting Pipe

5. Insulate the copper piping.
6. Insert a flare nut onto each pipe before flaring.
7. Use "Table 2. Flaring Piping" on page 11 to properly flare the pipe.

Table 2. Flaring Piping

Pipe Diameter	Flare Dimension A (mm)		Flare Shape
	Min	Max	
1/4" (6.35)	8.3	8.7	
1/2" (9.52")	15.4	15.8	

8. After flaring the pipe, temporarily sealed pipe ends with adhesive tape to avoid contaminants from entering the pipes.
9. The seal on the unit refrigerant piping connections should remain in place until the last possible moment.
10. This will prevent dust or water from getting into the refrigerant piping before it is connected.
11. **CAREFULLY** adjust refrigerant piping connections to suit the application.
12. Slowly loosen one of the flare nuts to release the factory nitrogen charge from the indoor units only.
13. Remove the flare nuts from the connections on the unit and discard the seal from each of the piping connections.
14. Slide the flare nuts onto the ends of the field-provided refrigerant piping before using a suitable flaring tool to flare the end of the copper pipe.
15. Apply recommended HFC-410A refrigerant lubricant to the outside of the flared refrigerant lines.

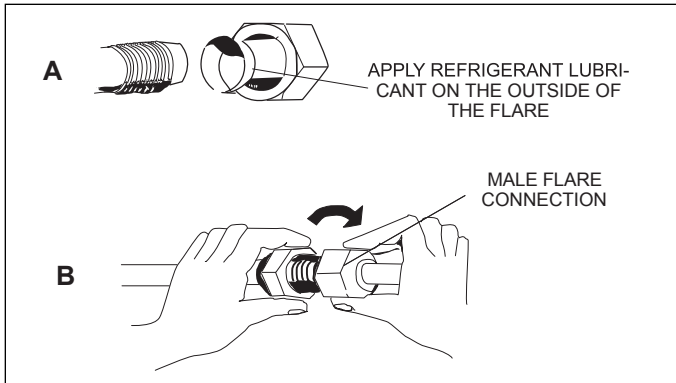
# IMPORTANT

The compressor in this unit contains PVE oil (Polyvinylether). PVE oil is formulated for hydrofluorocarbon (HFC) refrigerants, such as HFC-410A, which this system contains. While it may have some miscibility properties with mineral-based oil and POE oil (Polyolester), it is not recommended to mix PVE oil with any other type of refrigerant oil.

16. Align the threaded connections with the flared refrigerant lines. Tighten the flare nuts lightly at first to obtain a smooth match as illustrated in “Figure 19. Making Connections (Male to Female Connection)”.

**Table 3. Refrigerant Piping and Indoor Unit Connection Sizes**

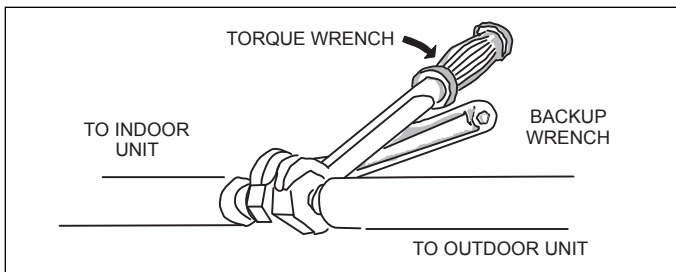
Size (Btuh)	Liquid Line in.	Gas Line in.
12000	1/4	1/2



**Figure 19. Making Connections (Male to Female Connection)**

17. Once snug, continue another half-turn on each nut which should create a leak-free joint. A torque wrench may be used to tighten flare nuts using “Table 4. Flare Nut Torque Recommendations” on page 12. **Do not over-tighten a flared joint. Flared connections should always be accessible and must be insulated to prevent condensation.**

18. After refrigerant piping has been installed and checked for leaks, apply insulation over all flared connections.

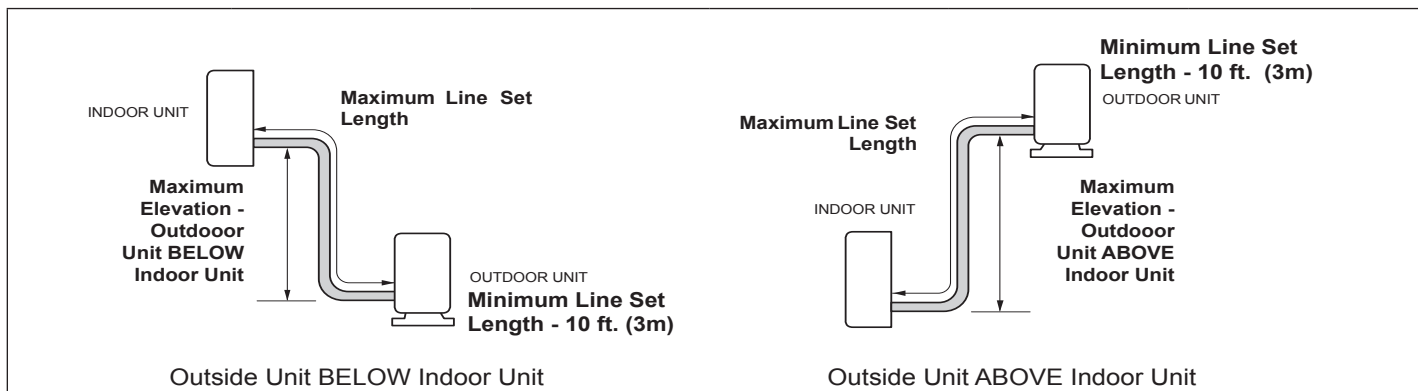


**Figure 20. Tighten Flare Nut**

**Table 4. Flare Nut Torque Recommendations**

Outside Diameter	Recommended Torque	No torque wrench available Finger tighten and use an appropriately sized wrench to turn an additional:
Inches		
1/4	15 ft.-lb. (20 N)	1/4 turn
1/2	41 ft.-lb. (56 N)	7/8 turn

**Table 5. Refrigerant Line Set Requirements**



**IMPORTANT**

Do not allow for excess length of line sets to be left rolled up as part of the required distance, or in general. This will also cause additional performance issues.

Each system size has a line set length and vertical elevation parameters.

System Size (KBtu)	Line Set Diameters (in.)		Maximum Elevation Outdoor Unit BELOW Indoor Unit - Feet (Meter)	Maximum Elevation Outdoor Unit ABOVE Indoor Unit - Feet (Meter)	Maximum Line Set Length - Feet (Meters)
	Liquid	Gas			
012	1/4	1/2	33 (10)	33 (10)	82 (25)

**Leak Test and Evacuation**

Air and moisture remaining in the refrigerant system will have undesirable effects as indicated below:

- Pressure in the system rises.
- Operating current rises.
- Cooling or heating efficiency drops.
- Moisture in the refrigerant circuit may freeze.
- Water may lead to corrosion of parts in the refrigeration system.

The line set between the indoor and outdoor units must be leak tested and evacuated to remove any non-condensables and moisture from the system.

**Leak Test**

Use the following procedure to test for system leaks:

1. Connect the manifold gauge set and dry nitrogen gas cylinder to the liquid and gas service ports.
2. Open valve on nitrogen cylinder.
3. Pressurize the system per the pressure test specifications in "Table 6. Pressure Test Specifications".
4. Check that the system pressure remains stable. If there is any movement check system for leaks.
5. After the system is found to be free of leaks:
  - Close valve on nitrogen cylinder
  - Relieve the nitrogen pressure by: loosening the charge hose connector at the nitrogen cylinder

- When the system pressure is reduced to normal, disconnect the hose from the cylinder

**Table 6. Pressure Test Specifications**

	Bar	Psig	kPa	Duration
1	3	44	303	Minimum of 10 minutes
2	15	220	1517	Minimum of 10 minutes
3	32	470	3241	Minimum of 10 minutes
4	45	650	4482	1 hour. Stress test to prove the integrity of the complete installation.
5	32	470	3241	24 hours. Lower system pressure test, after confirmation No. 4 was successfully completed.

**IMPORTANT**

Use only oxygen-free nitrogen (OFN).

**Triple Evacuation Procedure**

- A Micron or Torr gauge must be used for this procedure.
1. Discharge the oxygen-free nitrogen and evacuate the system to a reading of 8000 Microns (8 Torr) using all service valves.
  2. Break the vacuum by allowing nitrogen into the port connections (liquid and gas line pipes) until a positive pressure is achieved.
  3. Evacuate the system to a reading of 5000 Microns (5 Torr).

4. Break the vacuum by allowing nitrogen into the port connections (liquid and gas line pipes) until a positive pressure is achieved
5. Evacuate the system to a minimum reading of 500 Microns (0.5 Torr).
6. For a moisture-free system, ensure the vacuum is held without movement for a minimum of 4 hours.
7. If vacuum fails to hold, carry out steps 2 through 6 until vacuum holds.

## Wiring Connections

### ⚠ WARNING

Electric Shock Hazard. Can cause injury or death. Unit must be grounded in accordance with national and local codes.

Line voltage is present at all components when unit is not in operation. Disconnect all remote electric power supplies before opening access panel. Unit may have multiple power sources.

### ⚠ CAUTION

All terminal connections must be made as illustrated in the following diagrams. Improperly connected wiring could damage unit or cause communication errors between indoor and outdoor units.

In the U.S.A., wiring must conform with current local codes and the current National Electric Code (NEC). In Canada, wiring must conform with current local codes and the current Canadian Electrical Code (CEC).

#### Outdoor Unit

- Refer to unit nameplate for minimum circuit ampacity and maximum over-current protection size.
- Make all electrical power wiring connections at the outdoor unit.
- Be sure to reattach all electrical box covers after connections are complete.

#### Indoor Unit

- All indoor units are powered by the outdoor unit.
- Communication Wiring (Indoor Units 30K and Below): Use one stranded 4-conductor wire to provide power and communication.
- Communication Wiring (Indoor Units 36K and Above): Use one stranded 3-conductor wire to provide power and one stranded 2-conductor wire to provide communication.
- Use minimum of 15 GA stranded wiring.
- When installing a condensate pump, wire in-line with the CN5 float switch.

## IMPORTANT

This unit must be properly grounded and protected by a circuit breaker. The ground wire for the unit must not be connected to a gas or water pipe, a lightning conductor or a telephone ground wire.

Do not connect power wires to the outdoor unit until all other wiring and piping connections have been completed.

Do not install the unit near a lighting appliance that includes a ballast. The ballast may affect remote control operation.

## IMPORTANT

Install unit so that unit disconnect is accessible.

Use specified wiring and cable to make electrical connections. Clamp cables securely and make sure that connections are tight to avoid strain on wiring. Insecure wiring connections may result in equipment failure and risk of fire.

Wiring must be installed so that all cover plates can be securely closed.

## IMPORTANT

All diagrams are typical. Refer to the wiring diagram on the unit for actual wiring.

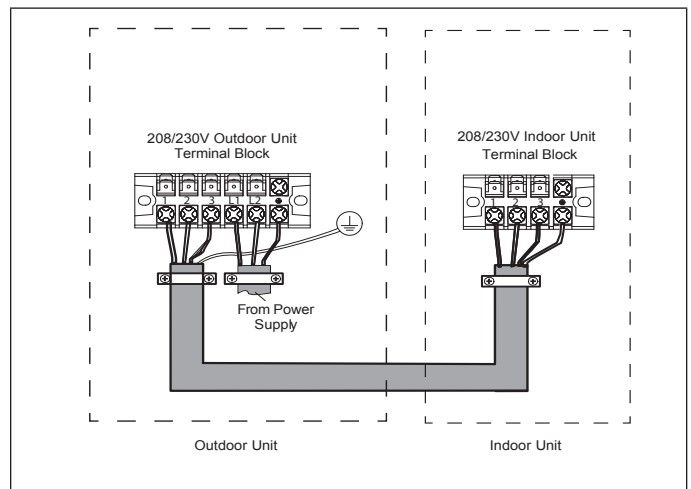
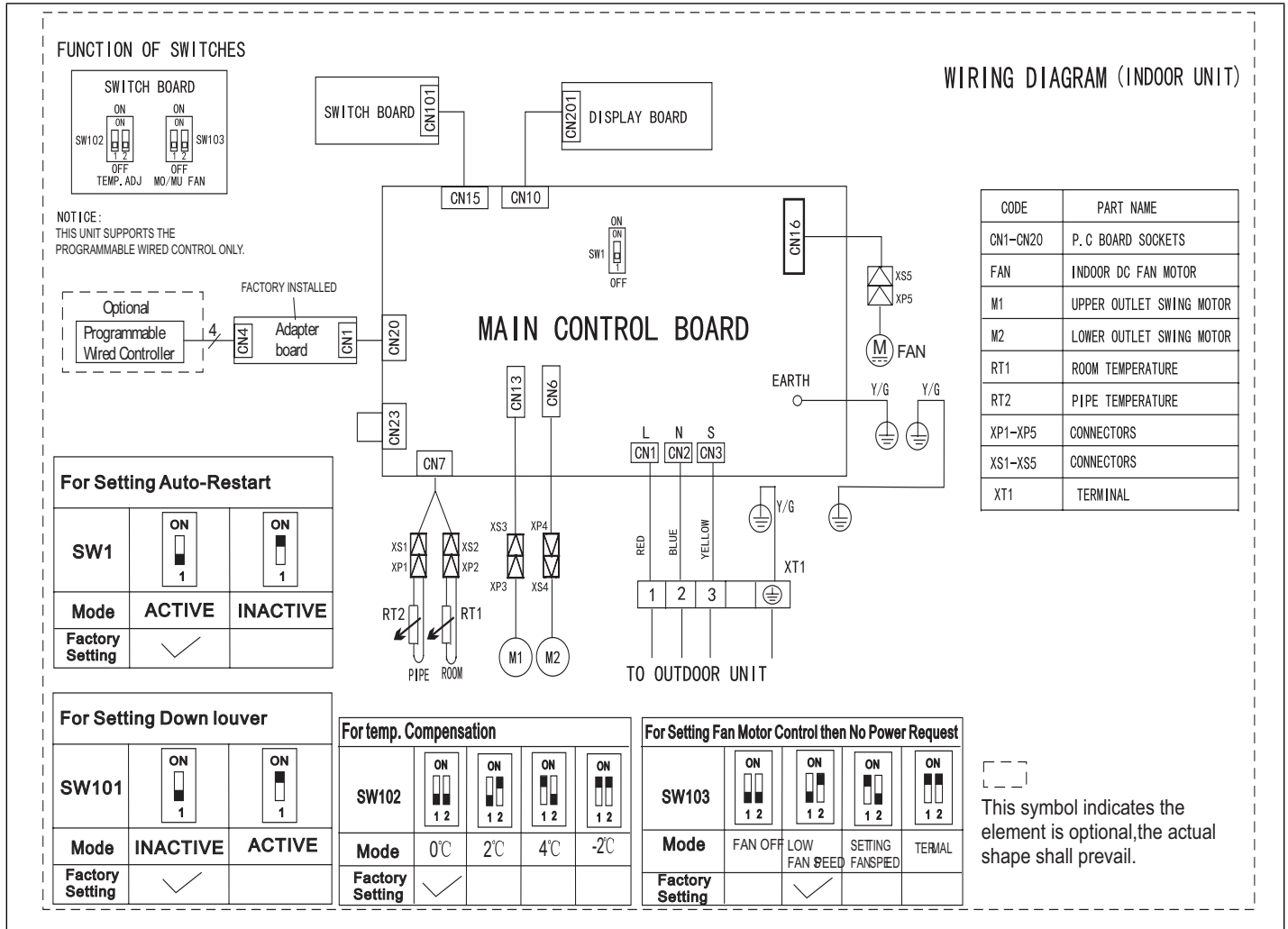


Figure 21. Single-Zone Wiring 12K

**Table 7. Single Zone Installation Wiring Requirements**

System and Terminal Designations	System Capacity	System Voltage	Number of Conductors	Wire Type	Wire Gauge / MCA
Indoor to Outdoor Wiring (Communication/ Power) 1, 2, 3 and GND	12K	208/230VAC	4	Stranded and unshielded	16AWG
Outdoor to Main Power L1, L2 and GND	12K	208/230VAC	3	Stranded and unshielded	16AWG / 9A



**Figure 22. MFMA012-S4-2P Unit Wiring Diagram**

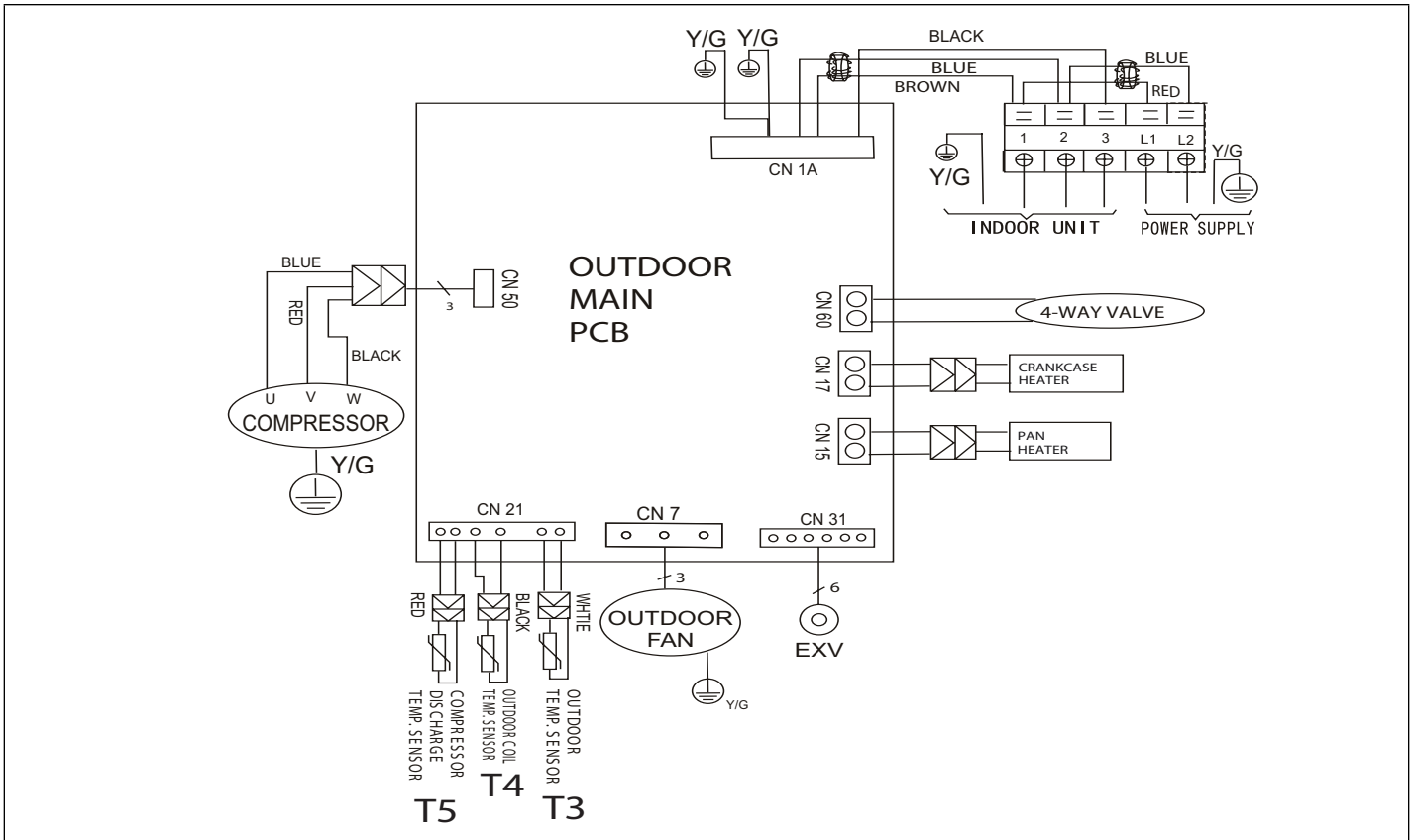


Figure 23. 208/230V MPB012S4S-\*P Outdoor Unit Wiring Diagram

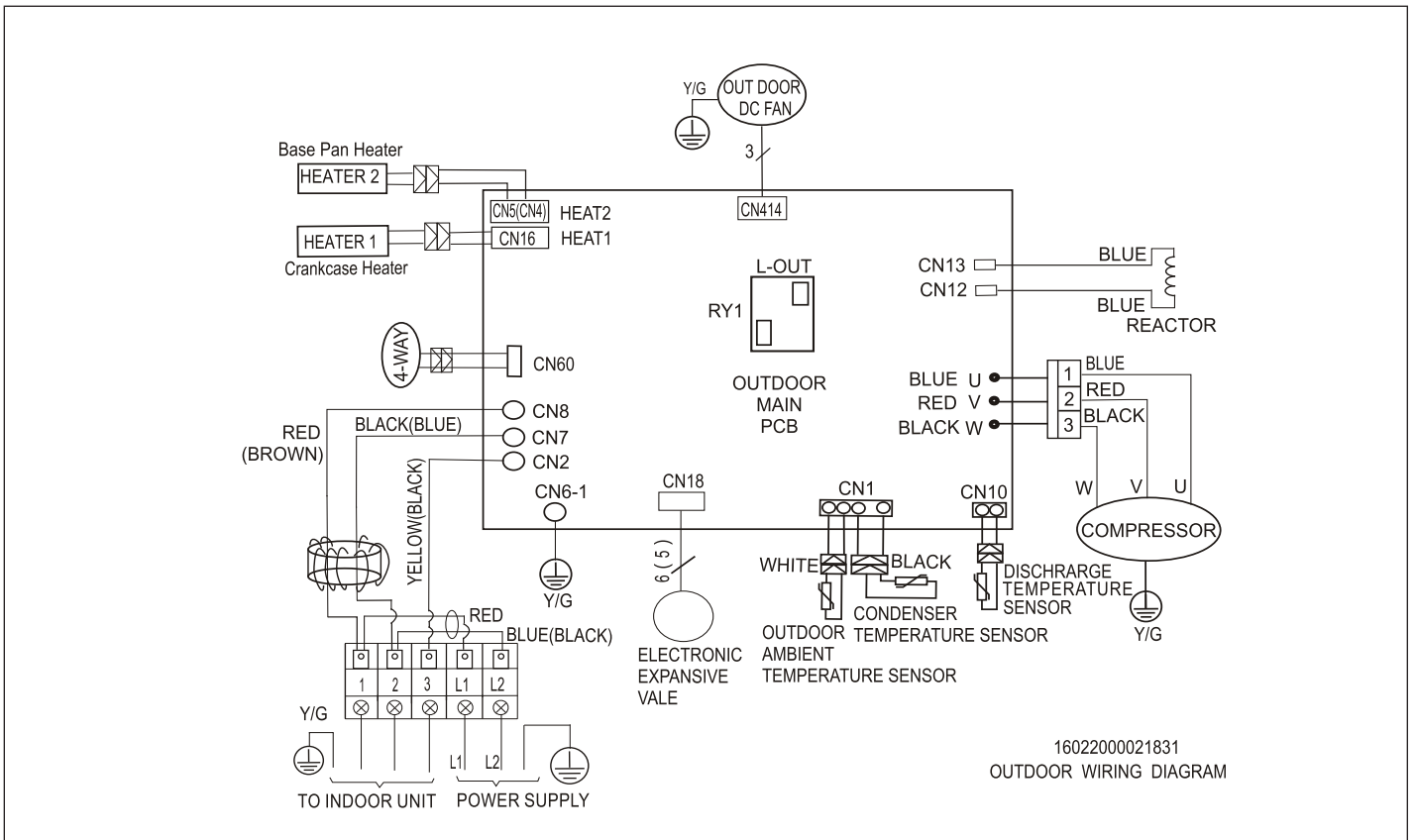


Figure 24. 208/230V MLA012S4S-\*P Outdoor Unit Wiring Diagram



## Unit Start-Up

# IMPORTANT

Units should be energized 24 hours before unit start-up to prevent compressor damage as a result of slugging.

1. Inspect all factory- and field-installed wiring for loose connections.
2. Verify that the manifold gauge set is connected.
3. Add additional refrigerant charge if required before opening valves and while system is still under a vacuum.
4. Open the liquid and gas line service valves to release the refrigerant charge contained in outdoor unit into the system.
5. Replace the stem caps and tighten to the value listed in "Table 4. Flare Nut Torque Recommendations" on page 12.
6. Check voltage supply at the outdoor unit terminal strip. The voltage must be within the range listed on the unit's nameplate. If not, do not start the equipment until you have consulted with the power company and the voltage condition has been corrected.
7. Refer to the included user guide to operate the system using the provided remote control.
8. Visually check for binding of both indoor and outdoor fans.

## Adding Refrigerant for Longer Line Set

The outdoor unit is factory-charged with refrigerant. Calculate the additional refrigerant required according to the diameter and the length of the liquid pipe between the outdoor unit and indoor unit connections.

Be sure to add the proper amount of additional refrigerant. Failure to do so may result in reduced performance.

**Table 8. Additional Refrigerant Charge**

System Size (KBtu)	Pipe Length (feet / meters)	Amount of Refrigerant to add
12	>25 (7.5)	0.161 oz/ft (15g/m)

## Troubleshooting

See "Error Codes" on page 19 for details on troubleshooting.

## Test Run

### Pre-Checks

Only perform test run after you have completed the following steps:

- Electrical Safety Checks – Confirm that the unit's electrical system is safe and operating properly
- Refrigerant Leak Checks – Check all flare nut connections and confirm that the system is not leaking
- Confirm that liquid and gas valves are fully open

### Procedure

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

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

**Table 9. Test Run Checklist**

Checks	Pass	Fail
No electrical leakage		
Unit is properly grounded		
All electrical terminals properly covered		
Indoor and outdoor units are solidly installed		
All pipe connection points do not leak	Outdoor (2):	Indoor (2):
Water drains properly from drain hose		
All piping is properly insulated		
Unit performs COOL function properly		
Unit performs HEAT function properly		
Indoor unit louvers rotate properly		
Indoor unit responds to remote controller		

## Dry Mode Operation (Dehumidification)

### Procedure

1. Use the provided wireless remote control and press the **MODE** button and select **DRY** mode.
2. Press the **UP/ DOWN** button to select the desired temperature. The temperature setting range is from 62°F (17°C) to 86°F (30°C) in one degree increments.

**NOTE:** The blower is preset at a low speed and cannot be changed therefore it will get cold and most likely will over shoot the temperature setting by 6-10°F (3-5°C) depending on the room size or other various factors. Also the **Follow Me** mode does not operate in this mode.

**NOTE:** In addition, the indoor units do not have a humidistat installed therefore they are unable to determine humidity levels. This product is not recommend as a main source for dehumidification.

### Sequence of Operation

When in dry mode operation the unit is actually in cooling mode with a low speed blower operation. Set remote temp to a lower room temp to begin the dry mode operation. The compressor will stop when the room temperature is 4°F (2°C) lower than the temperature setting.

However there is a temperature compensation for cooling mode that is 4°F (2°C). So the unit will stop when the temperature is 8°F (4°C) lower than the room temperature settings.

## User Guide

### Default Settings

When the system restarts after a power failure, it will default to the factory settings - AUTO mode, AUTO fan, 24°C (76°F). This may cause inconsistencies on the remote control and unit panel. Use your remote control to update the status.

### Auto-Restart

In case of power failure, the system will immediately stop. When power returns, the Operation light on the indoor unit will flash. To restart the unit, press the ON/OFF button on the remote control. If the system has an auto restart function, the unit will restart using the same settings.

### Louver Angle Memory Function

Some models are designed with a louver angle memory function. When the unit restarts after a power failure, the angle of the horizontal louvers will automatically return to the previous position.

The angle of the horizontal louver should not be set too small as condensation may form and drip into the machine. To reset the louver, press the manual button, which will reset the horizontal louver settings.

The louvers can be in automatic swing function and will swing with in a preset open and close in both heat and

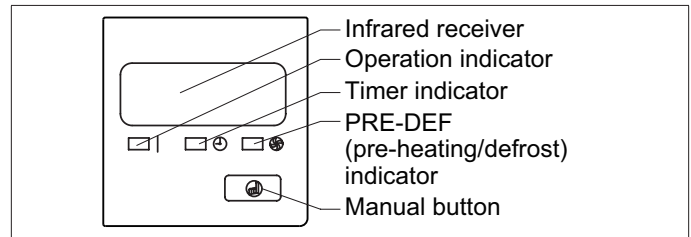
cooling. If you chose to position the louvers in one place. see manual mode.

### Refrigerant Leak Detection System

In the event of a refrigerant leak, the LCD screen will display "EC" and the LED indicator light will flash.

### Manual Operations

This display panel on the indoor unit can be used to operate the unit in case the remote control has been misplaced or is out of batteries.



**Figure 25. Console Display**

- **MANUAL** - This button selects the mode in the following order: AUTO, FORCED COOL and OFF.
- **FORCED COOL** - In FORCED COOL mode, the Operation light flashes. The system will then turn to AUTO after it has cooled with a high wind speed for 30 minutes. The remote control will be disabled during this operation.
- **OFF** - When the panel is turned OFF, the unit turns off and the remote control is re-enabled.

## Adjusting Airflow Direction

**Manual Swing** - Press Air Direction to put the louver at a desired angle. The louver swings (upward or downward) at a different angle with each press of the button.

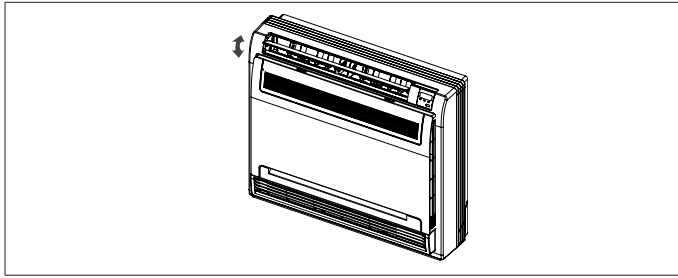


Figure 26. Manual Swing

### When cooling

Adjust the louver downwards (horizontally).

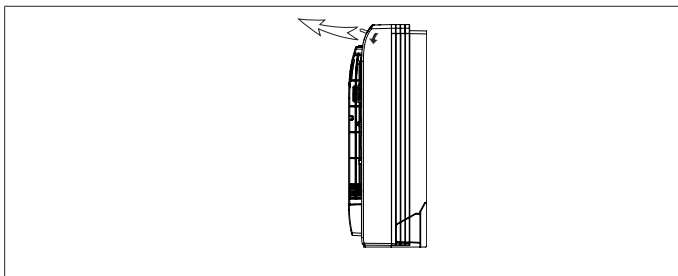


Figure 27. Manual Swing - Cooling

### When heating

The vertical blades are not automatic and can be adjusted manually as shown below. Adjust the louver vertically.

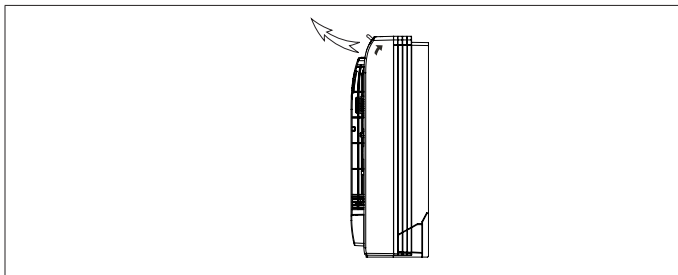


Figure 28. Manual Swing - Heating

## Adjust the Air Flow Direction Left and Right

To adjust the horizontal louvers, hold the knob and move the louver. You will find a knob on the left-side and the right-side blades.

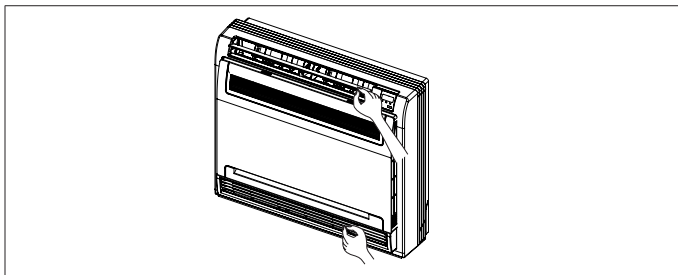


Figure 29. Airflow Adjustment - Left and Right

## How to Clean the Air Filter

The filter prevents dust and other particles from entering the indoor unit. Dust buildup can reduce the efficiency of the air conditioner. For optimum efficiency, clean the air filter every two weeks or more frequently if you live in a dusty area. Replace the filter with a new one if it's heavily clogged and cannot be cleaned.

1. Open the front panel.

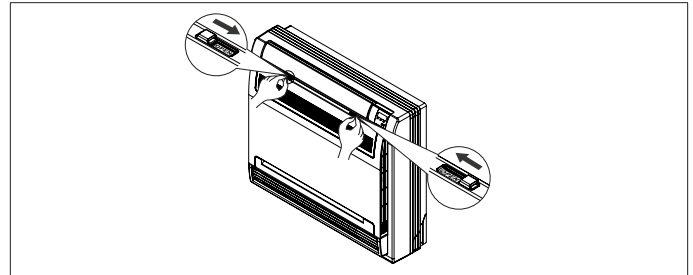


Figure 30. Open Front Panel

2. Remove the Air Filter: Press the clamps on the right and left sides of the air filter down slightly, then pull upward to remove the air filter.

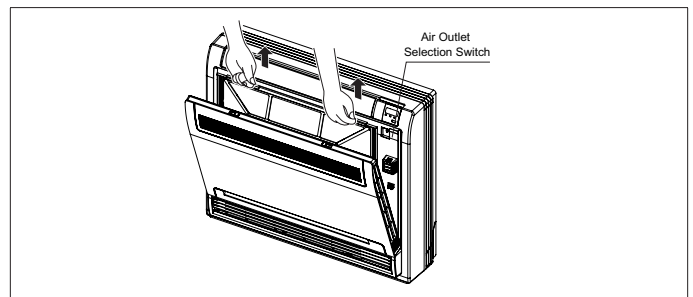


Figure 31. Open Front Panel

## Error Codes

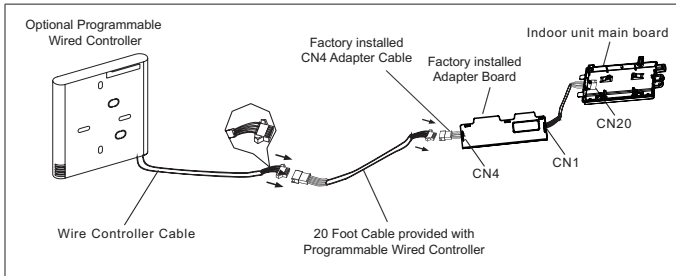
Number	Cause	The number of flashes per second	Timer indicator
1	Indoor EEPROM (Electrically Erasable Programmable Read-Only Memory) error	1	Off
2	Indoor and outdoor unit communication malfunction	2	Off
3	Indoor fan speed malfunction	4	Off
4	Indoor room temperature sensor error	5	Off
5	Evaporator coil temperature sensor error	6	Off
6	Refrigerant leak detection system malfunction	7	Off
10	Overload protection	1	On
11	Outdoor temperature sensor error	2	On
12	Outdoor condenser pipe sensor error	3	On
13	Discharge air temperature sensor error	4	On
14	Outdoor EEPROM (Electrically Erasable Programmable Read-Only Memory) error	5	On
15	Outdoor fan speed (DC fan motor only) malfunction	6	On
16	T2b sensor error	7	On
17	Inverter module IPM protection	1	Flash
18	High/Low voltage protection	2	Flash
19	Compressor top overheating protection	3	Flash
20	Outdoor low temperature protection	4	Flash
21	Compressor drive error	5	Flash
22	Mode conflict	6	Flash
23	Compressor low-pressure protection	7	Flash

Figure 32. Error Codes

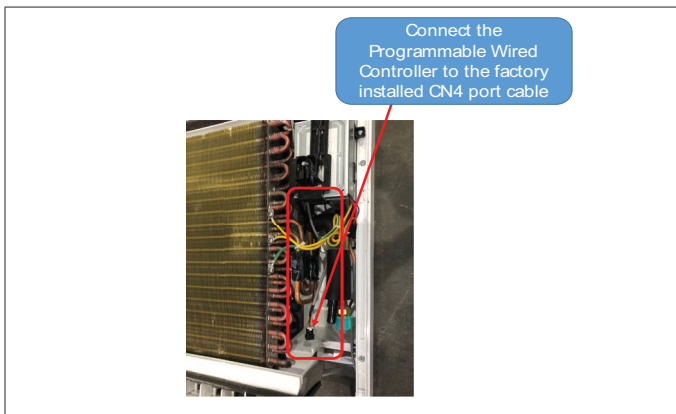
## Optional Programmable Wired Controller

### Programmable

If your choice is to use the M0STAT64Q-1 programmable wired controller then connect the wired controller to the adapter board's CN4 connector.



**Figure 33. Connecting Optional Programmable Wired Controller**



**Figure 34. MFMA Main Board**

See "Figure 22. MFMA012-S4-2P Unit Wiring Diagram" on page 15 for locations of connections.

### Non-Programmable

This unit is not compatible with the M0STAT61Q-1 non-programmable wired controller.