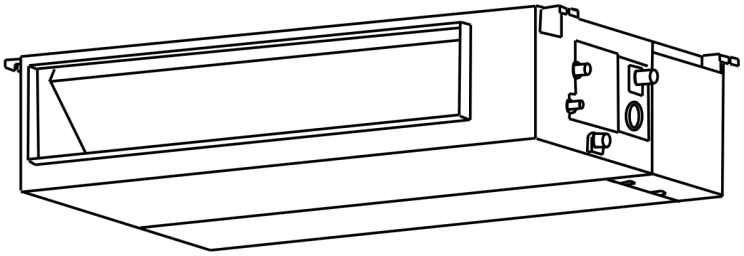
S4 CONCEALED DUCT QUICK INSTALL GUIDE

S4 Concealed Duct Mini-Split for Heating & Cooling

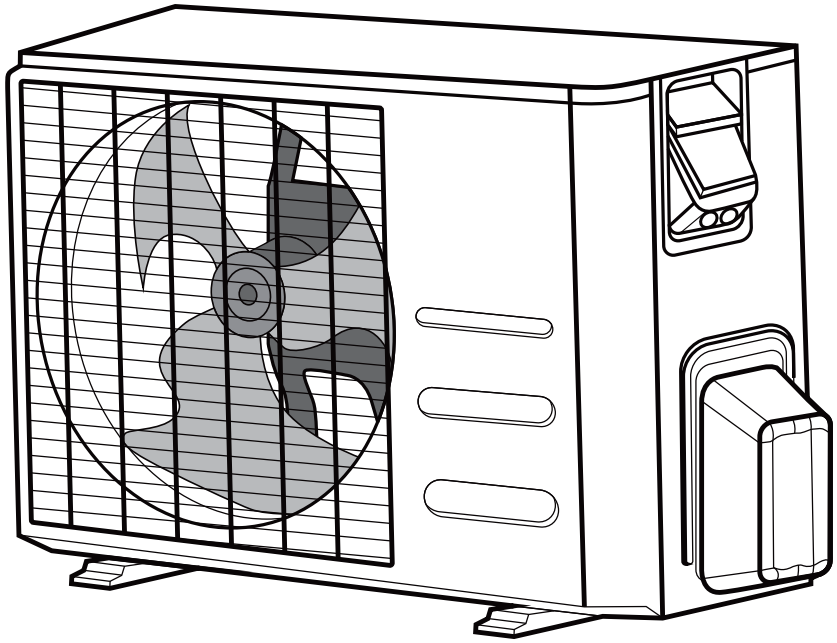


MODELS

BMY12HH22CD

BMY18HH20CD

BMY24HH21CD



LISTED

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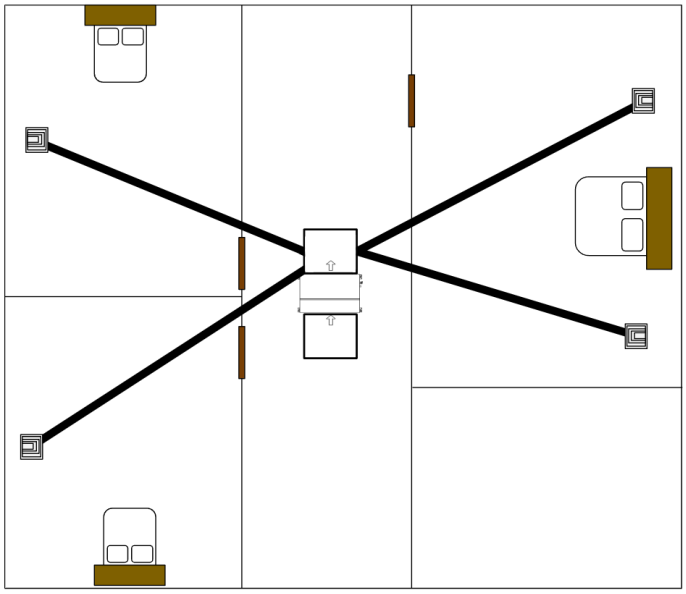
PREP FOR INSTALL

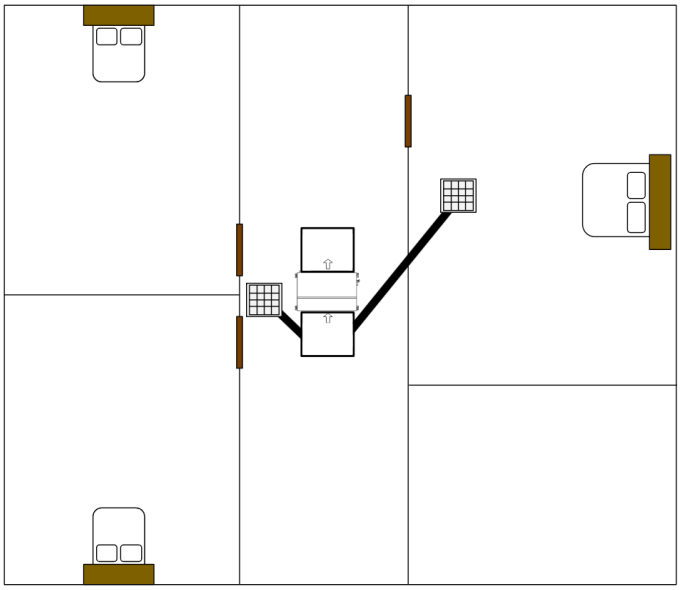
1

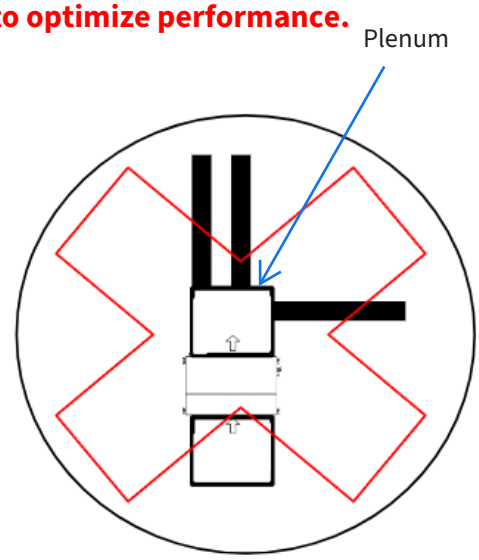
Correct positioning of the indoor unit is critical for optimal performance.

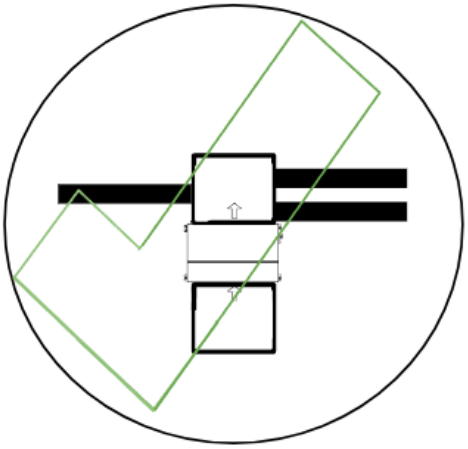
These are low static air handlers. Proper ductwork is critical to optimize performance.

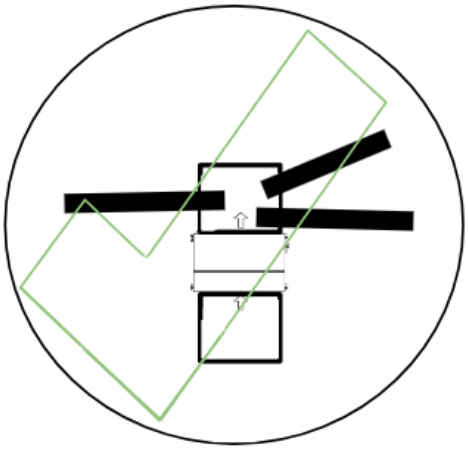
- These indoor units aren't designed for long duct runs.
- A maximum length of 15 feet per duct run is recommended for optimal performance. Although you can go up to 25 feet if needed.
- Try to keep the ducts delivering the air into each room similar in length.
- Do not connect ducts to the end of the plenum. Instead connect them to the top or the sides.
- Keep the ducts delivering the air into each main space the same diameter.
- If you are using flex duct, stretch the duct out as much as you can during your duct run in order to reduce resistance to air flow."
- Do not install ducts that pull the air back into the unit in the bathroom, laundry room, or kitchen. Place ducts pulling air back into the unit in a central location to the ducts delivering the air into the rooms, and/or in multiple rooms.





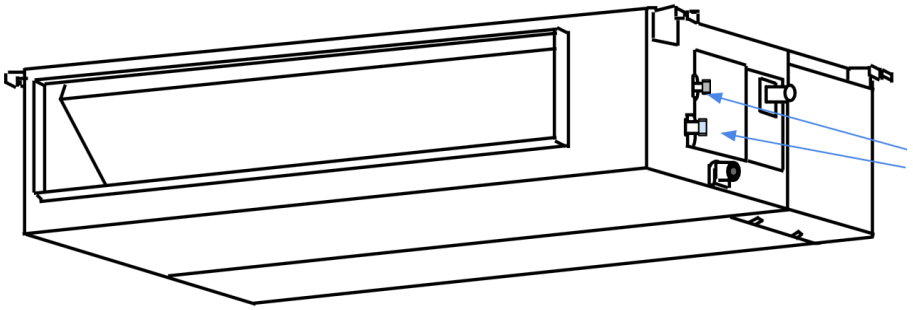






2

Your indoor air handler has been pre-pressurized with nitrogen.



- Locate the copper tubes on the side of the indoor unit.
- Loosen the cap on either of the 2 copper tubes.
- You should hear a hissing noise, which is the release of this harmless gas.
- Allow all of the nitrogen to escape the line.
- Put the the cap back on securely, and repeat this process for the other connection.

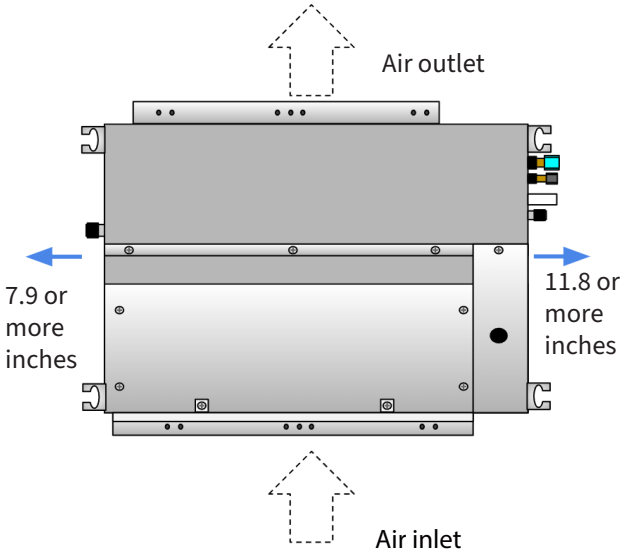
Copper tubes

If you don't hear a hissing noise when loosening the cap, please call us at 800.865.5931.

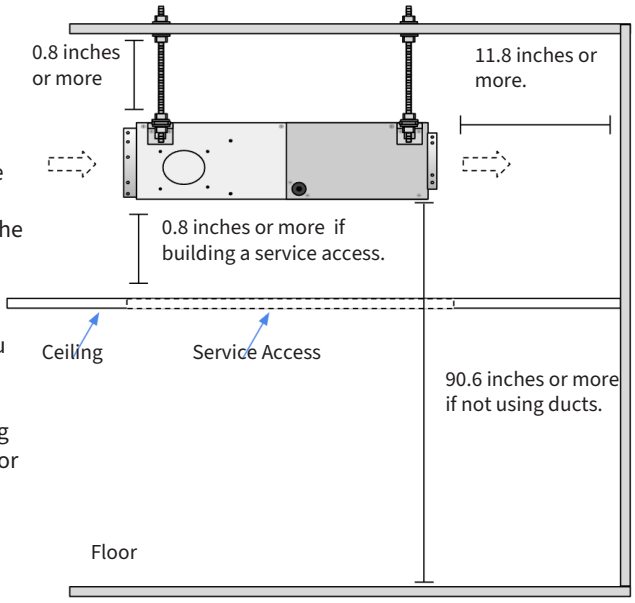
3

These units are designed to be suspended via threaded rod. They must be installed flat. Follow the minimum or greater recommended clearances.

View from the bottom looking up.



A minimum clearance of 6 inches from the bottom of the indoor unit to the ceiling is recommended for service. Alternately, you can build a service access into your ceiling below the indoor unit.

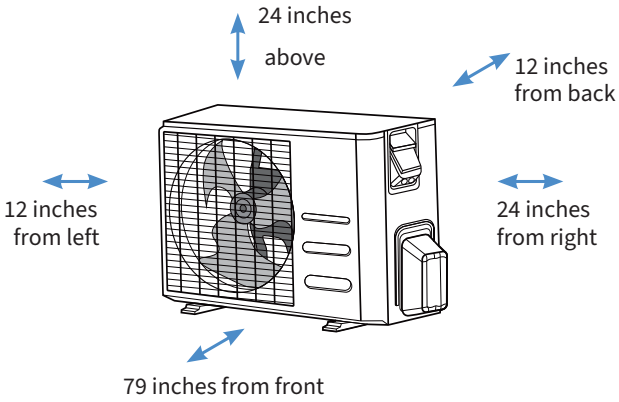


If suspending the indoor unit directly into the space with no ductwork, a minimum clearance from the floor to the bottom of the indoor unit is 90.6 inches or more.

PREP FOR INSTALL

4

Choose the location to place the outdoor unit.



If used for heating, it is recommended to raise the outdoor unit to allow for proper drainage and keep it clear of expected snowfall (if applicable).

! Maintain listed clearances

5

Secure the needed ducting supplies.

Including but not limited too:

- Supply (air blown out) and return (air pulled back in) plenums
- Typically 6,7,or 8 inch round duct for the supply
- Typically 10, 12, or 14 inch round ducts for the return
- Take off collars designed for your plenum material and round duct sizes
- Cable ties
- Foil tape and or duct sealant
- Return air box or boxes
- Filter grille or grilles to use with the return air boxes.

6

Supply = air blowing out of the indoor unit.

Return = air being pulled back into the indoor unit.

Recommended duct sizes and quantity per indoor unit btu rating.

12000 BTU
Supply ducts:

- 3 six inch round ducts
- 2 seven inch round ducts

18000 BTU
Supply ducts:

- 5 six inch round ducts
- 3 seven inch round ducts
- 2 eight inch round ducts

24000 BTU
Supply ducts:

- 7 six inch round ducts
- 4 seven inch round ducts
- 3 eight inch round ducts

12000 BTU
Return ducts:

- 1 ten inch round duct
- 1 twelve inch round duct
- 2 or more eight inch round ducts

18000 BTU

- Return ducts: 1 twelve inch round duct
- 1 fourteen inch round duct
- 2 or more ten inch round ducts
- 4 or more eight inch round ducts

24000 BTU
Return ducts:

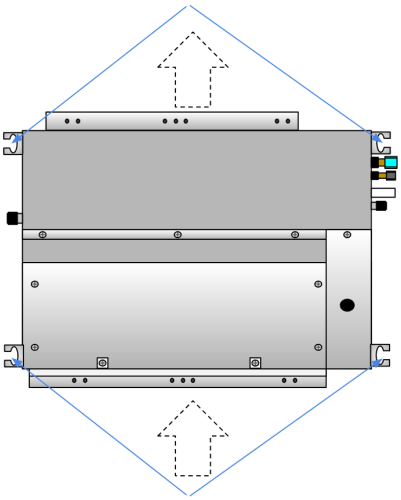
- 1 fourteen inch round duct1
- sixteen inch round duct
- 2 or more twelve inch round ducts
- 3 or more ten inch round ducts5 or more
- eight inch round ducts

If you use a different duct design, please consult with your technician to ensure proper static pressure and system operation. **Reducing the airflow relative to these designs is not recommended.**

7

Key measurements.

Note the spacing between where the threaded rod will connect to the indoor unit.

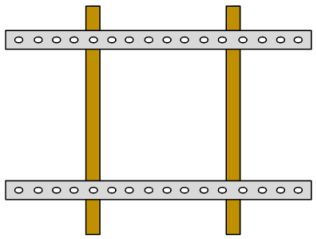


You will need to mirror this spacing when suspending the threaded rod.

8

Prepare the hanging support structure.

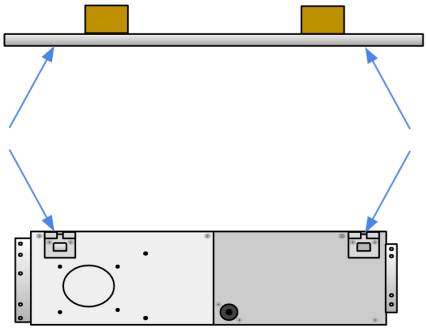
Bottom up viewpoint.



Above where the indoor unit will be installed, you need to use unistrut or 2x4 lumber to create a **solid, secure, level** structure for the threaded rod to install into. Hanging hardware does not come with the system.

9

Measure the distance from the support structure to the hanging brackets and add 12 inches.

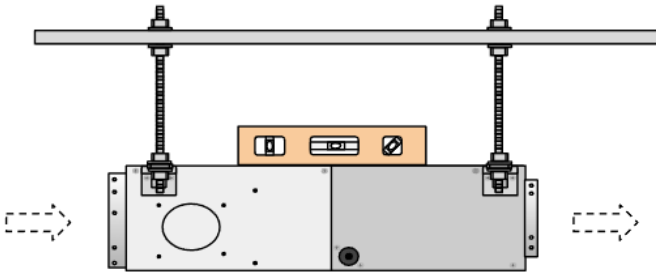


Select 3/8 inch threaded rods that match the last measurement x4 . This will allow for flexibility during the installation. It is common to cut the threaded rod to size using a hacksaw or sawzall.

10

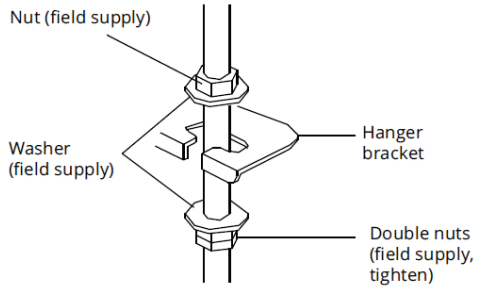
Hang the indoor unit. This is a 2 person job.

The bottom of the indoor unit needs to be installed level; make sure to follow the recommended clearances.



11

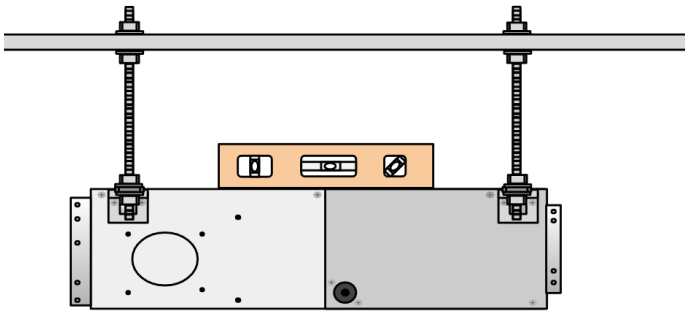
Hang the indoor unit.



Attach the hanger brackets to the threaded rods. Be sure to fix it securely by using a nut and washer from the upper and lower sides of the hanger bracket.

12

Adjust the unit to the right position for installation.

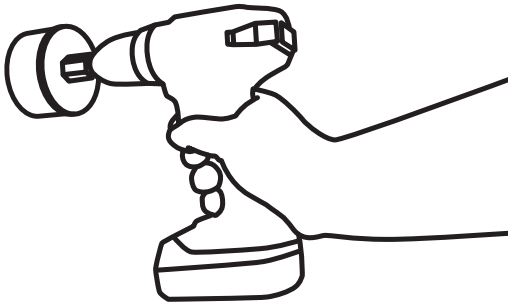


Ensure that the unit is level. Failure to do so can cause operational issues and condensation leaks.

13

Drill a hole through the wall, maintaining a slight pitch downwards to aid outside drainage.

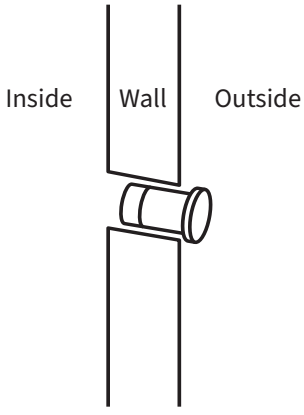
Another common installation practice for these models is drilling a vertical hole and feeding the copper tubing, along with the 14/4 stranded wire, through the soffit



Hole must be free of electrical wiring, plumbing, or other obstructions.

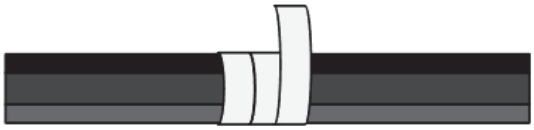
14

Insert wall sleeve through the wall with the flange facing the exterior. A wall sleeve isn't typically needed if drilling a vertical hole into a soffit.



15

Bundle the copper tubes and connection wires together. Feed the bundle through the wall to the outside.



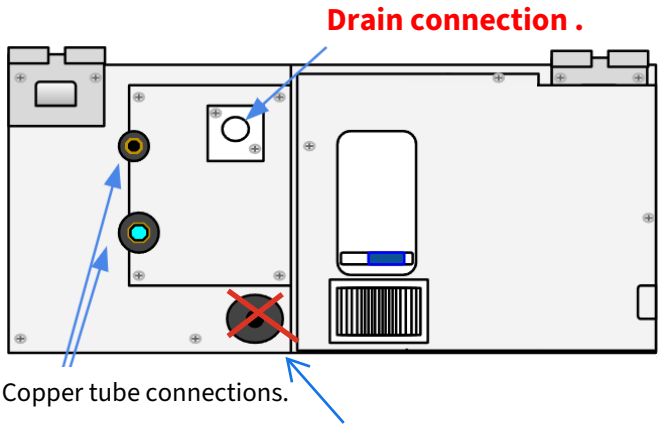
Leave enough copper tubing and 14/4 stranded wire to easily connect to the indoor unit.

Use PVC electrical tape to secure the bundle. Do so every 5 feet.

The minimum copper tubing is 10 feet. If that is longer than needed, reposition the outoor unit or horizontally coil the refrigerant lines after connection.

16

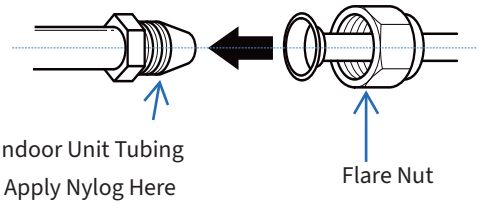
Prepare to connect the copper tubes and the drain.



17

Connect the the copper tubes to the indoor unit.

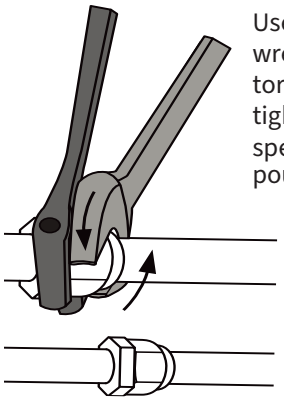
Remove caps from the line set connections on air handler.



Apply a couple of drops of Nylog sealant to the male side of the flare connection.

18

Secure the copper tubing to the indoor unit.



Use a standard wrench and a torque wrench to tighten to the specified foot pounds of torque.

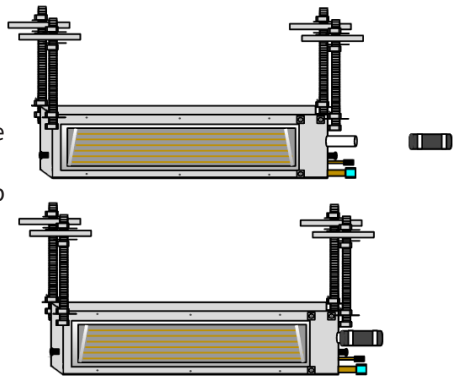
Do not over-tighten

19

Connect the condensate drain line.

Use 3/4 inch PVC and the short drain adapter.

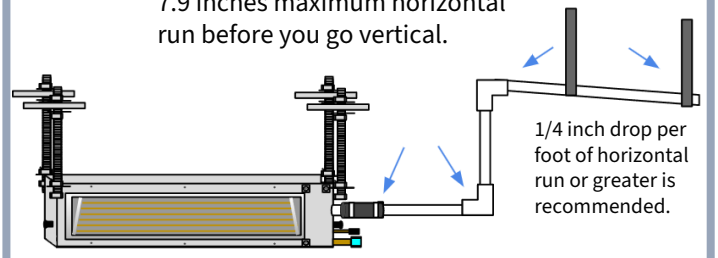
These models have a factory installed condensate pump with a float switch designed to pump the water up to 18 inches vertically. After the up to 18 inches of rise, you must gravity drain. A minimum downwards pitch of 1/4 inch per foot or greater is recommended.



Seat the adapter as far on the drain connection as you can. Use the included metal clamp to secure the adapter

20

Connect the drain line.



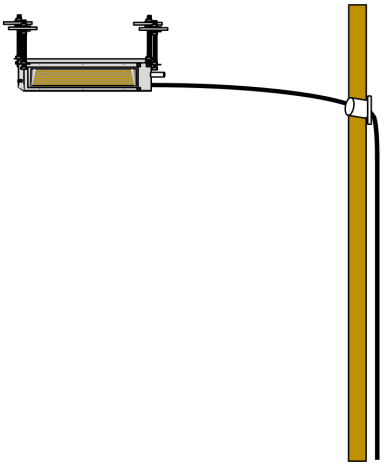
The water must terminate outside and away from the structure or into a drain.

Use PVC cement to attach the 3/4 inch PVC to the adapter and to assemble the drain.

21

Bend the copper tubes .

Bend the copper tubes on the exterior of the wall towards the outdoor unit.

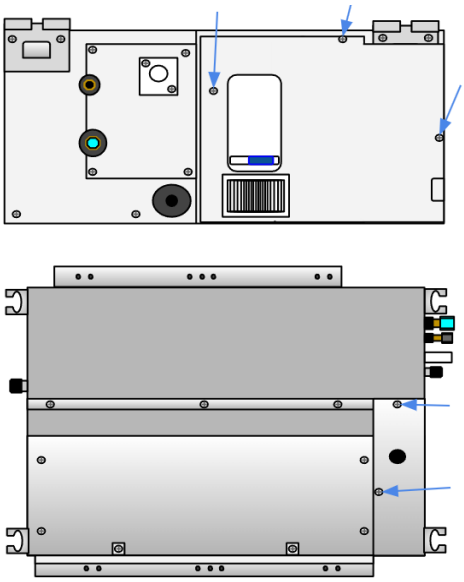


Do not kink the line set.

With lines larger than 3/8 inch OD, use of a tubing bender is recommended.

22

Expose the wiring connections.

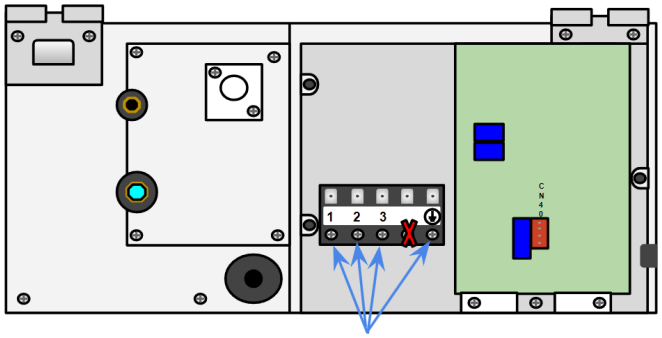


Remove the three screws on the side and the two screws on the bottom to expose the wiring connections.

23

Connect the 14/4 wire.

You must use 14/4 stranded wire.



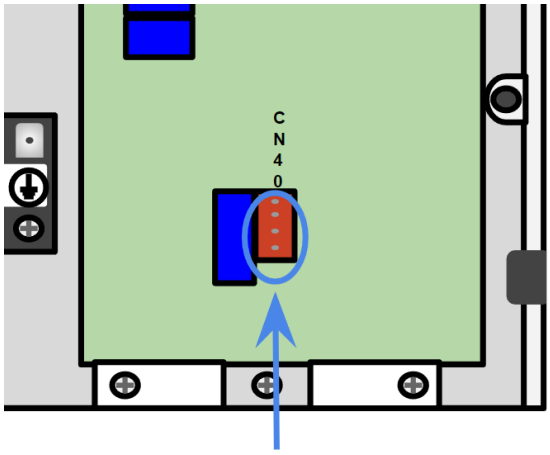
Wire as following:

- Black to 1
- Red to 2
- White to 3
- Green to ground

The blank connection (X) is not used.

24

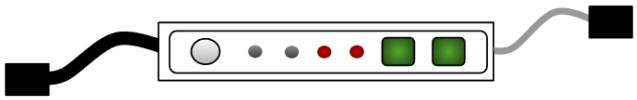
Connect the wall controller.



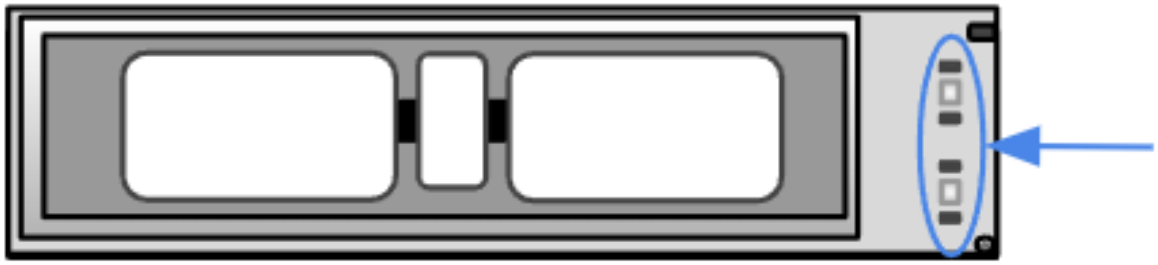
Red 4 pin connector from the wall controller to the red 4 pin CN40 port.

25

Save the display panel.



This system comes with a display panel that can be used as an emergency system control and if you need to troubleshoot in the future. **Do not wire this to the indoor unit.** Instead, clip it to the indoor unit near the air inlet.

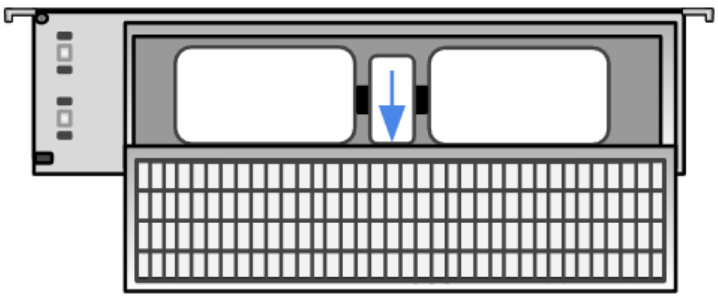


The images above are not to scale.

26

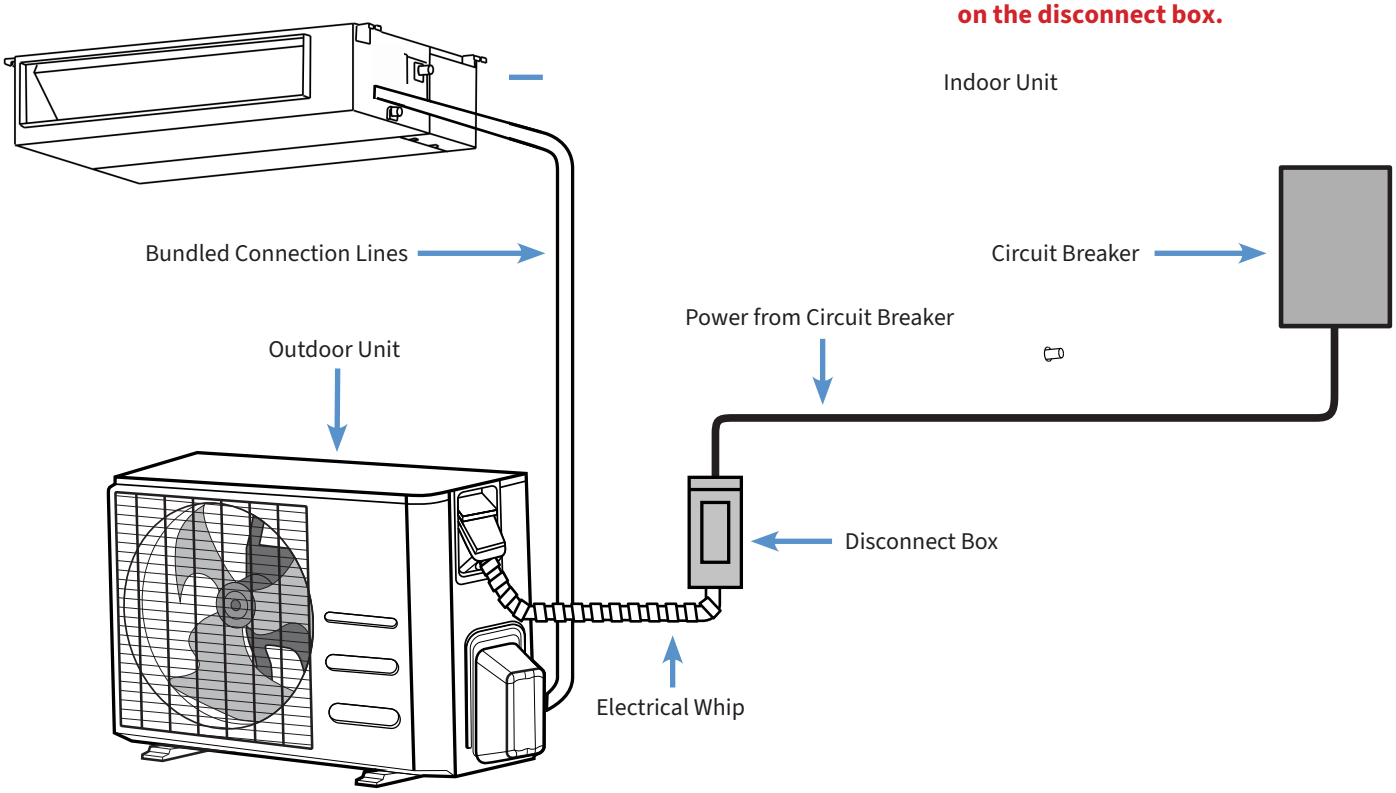
Included filter.

This system comes with a permanent, washable filter that is designed to be installed on the air inlet and accessed from below. Do not use this filter if you are installing return air filter grille(s) in the living space. If using the included filter, install a service access panel below the unit or leave at least a 12 inch clearance from the bottom of the unit to the ceiling.



ELECTRICAL

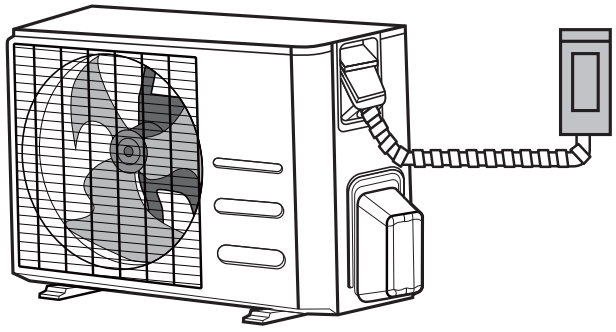
- **Any high voltage electrical installation should be performed by an electrician or contractor.**
- **Make sure the electricity is off.**
- **Follow all local and national electrical codes.**
- **Always verify line and load lug locations on the disconnect prior to wiring.**
- **Wiring shown is based on load, line, line, load on the disconnect box.**



27

Using correct size breaker and wire, run the power to the disconnect box mounted beside the outside unit.

- Connect the indoor unit to the outdoor unit.
- Connect the outdoor unit to the disconnect box with the electrical whip.

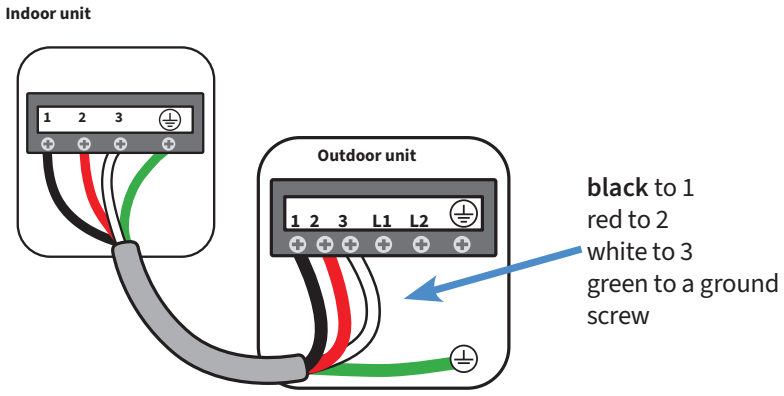


See next page for wiring diagrams

FOR 208/240 VOLT SYSTEM

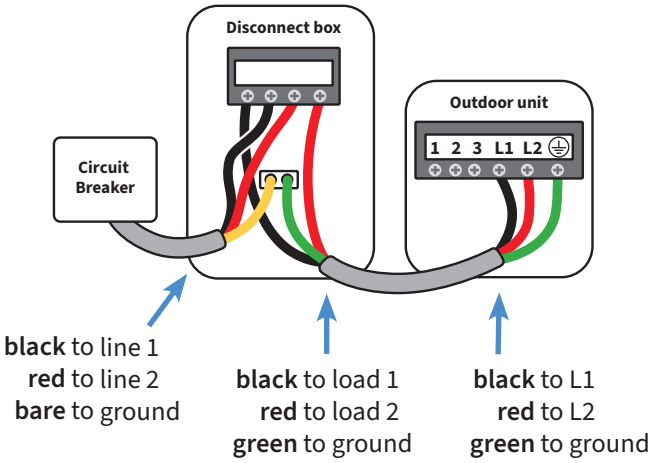
28

Connect indoor unit to the outdoor unit.



29

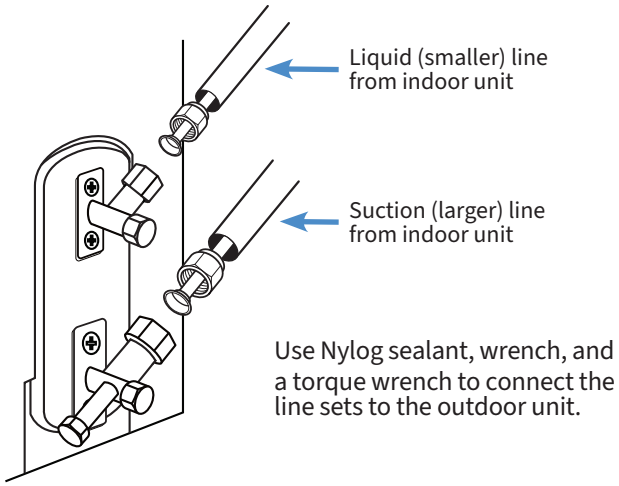
Connect outdoor unit to disconnect box.



Wiring shown is based on load, line, line, load on the disconnect box.

30

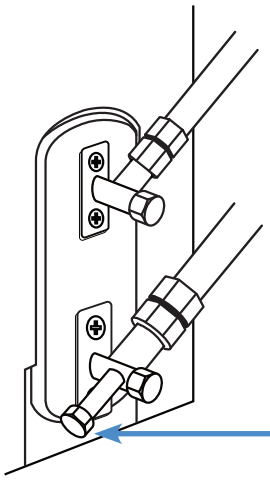
Remove caps from the outdoor unit .



Use Nylog sealant, wrench, and a torque wrench to connect the line sets to the outdoor unit.

31

Remove cap from the service port on the suction line and perform a pressure test to 300 - 350 psi from the outdoor unit.



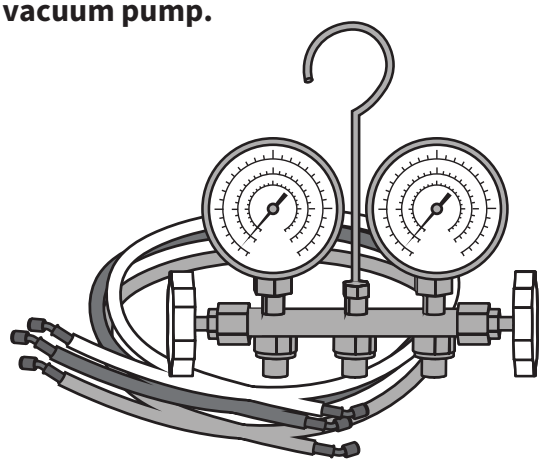
- Spray all joints with a soapy water solution and look for bubbles.
- If no bubbles are present, pull a vacuum down to 500 microns or lower.

After a successful pressure test and vacuum, reconnect the back corner of the cabinet of the indoor unit.

Warning: Refrigerant handling should be done by a trained professional.

32

After creating the vacuum, close the valves to the vacuum pump.

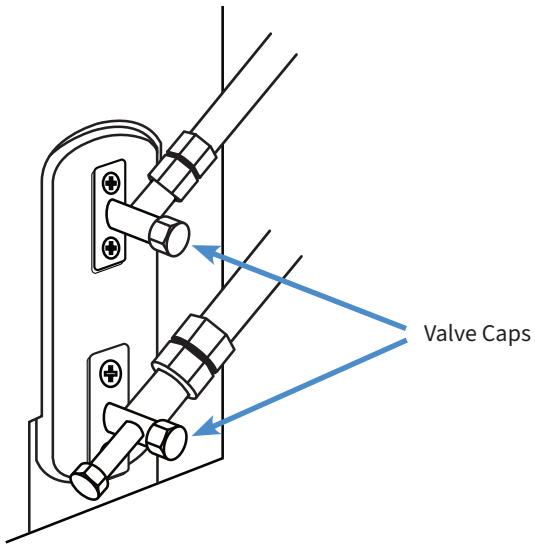


Add refrigerant if the line set used is more than 25 feet in length.

- Add 0.16 oz per foot past 25 if using 1/4 inch OD liquid lines (In 0.75, 1.0, and 1.5 ton models)
- Add 0.32 oz per foot past 25 if using 3/8 inch OD liquid lines (In 2.0 ton models)

33

Open horizontal facing valve caps.



- Use a 5mm allen wrench (hex key) to fully open the lower and then upper valve, releasing the refrigerant into the system .
- Replace caps over open valves.

34

Power up and start the system.

Please call 1.800.865.5931 if you have any questions prior to or during the installation process of your Blueridge Mini-Split System.

Because of the Blueridge promise for continuous product innovation and improvement, some specifications and instructions may change without notification.