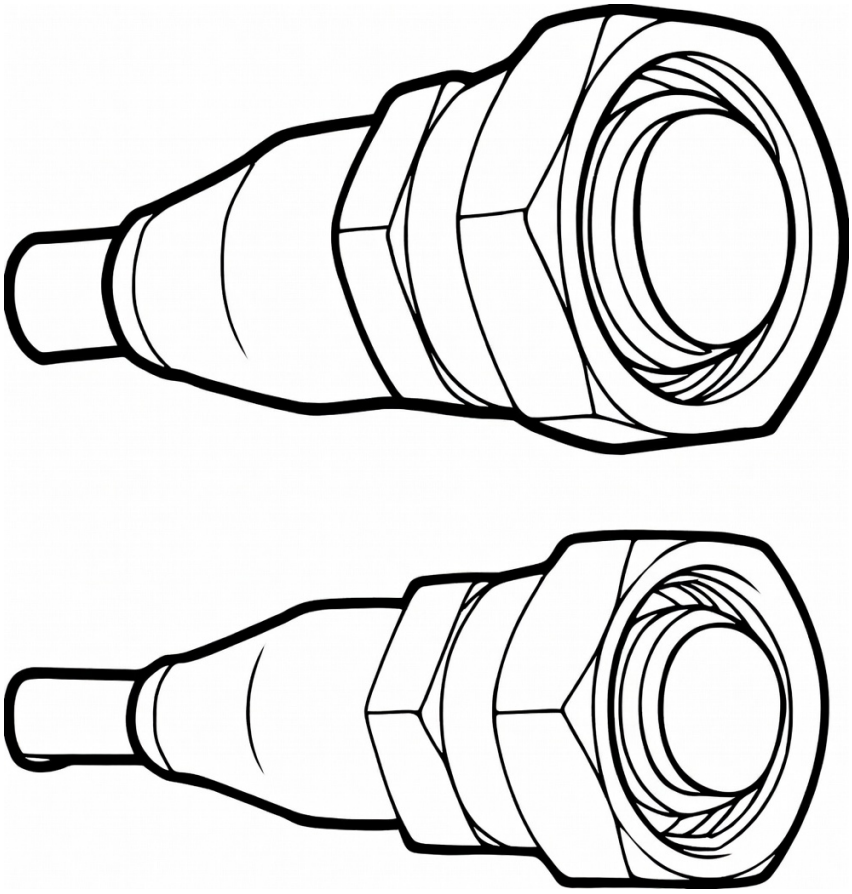
ZONE

Updated 2/24/2026

DIY Series Installation Guide: Applicable to all Zone Air Mini

Split Systems



Refrigerant Piping Connection

1

Step 1: Prepare exterior wall hole

Before the refrigerant piping can be installed and connected to the indoor and outdoor units, some additional steps are required to prepare the exterior.

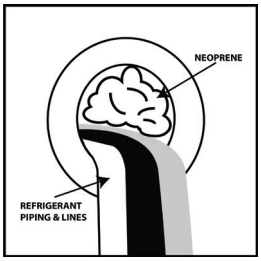
1. Install finishing ring/cap to the exterior portion of the wall hole.

2. Place your hand on the underside of the piping coming through the exterior wall hole (from indoor unit), close to the wall. With your other hand, using even pressure, carefully bend the piping downward toward the wall, being mindful not to damage or dent the piping in the process.

CAUTION

Be extremely careful not to dent or damage the piping while bending it down the exterior wall, as this could negatively affect the performance.

3. Pack the wall hole with the supplied Neoprene (or Spray Foam can be used) to seal the hole, filling any space that was not taken up by the refrigerant piping and lines.



Step 2: Unwind pre-charged line set to necessary length

1. Use your hands to slowly unwind the copper piping of one end of the line set. The end you unwind will connect to the indoor unit piping. You should unwind the end until the connectors are close to flat on the ground (with little to no bend). If this is not done, it could make the line set difficult to maneuver when aligning the connectors with the air handler piping. Only unwind as much as necessary for your application, and allow any excess to remain coiled (**Refer to Fig. 6.1**).

MINIMUM BEND RADIUS

When bending connective refrigerant piping, it needs to have a minimum bend radius of 4 inches (Refer to Fig 6.1).

CAUTION

If the pipe is repeatedly bent or extended, it will become hard and difficult to manipulate. Avoid bending or extending the pipe more than 3 times, or excessively, as it could break.

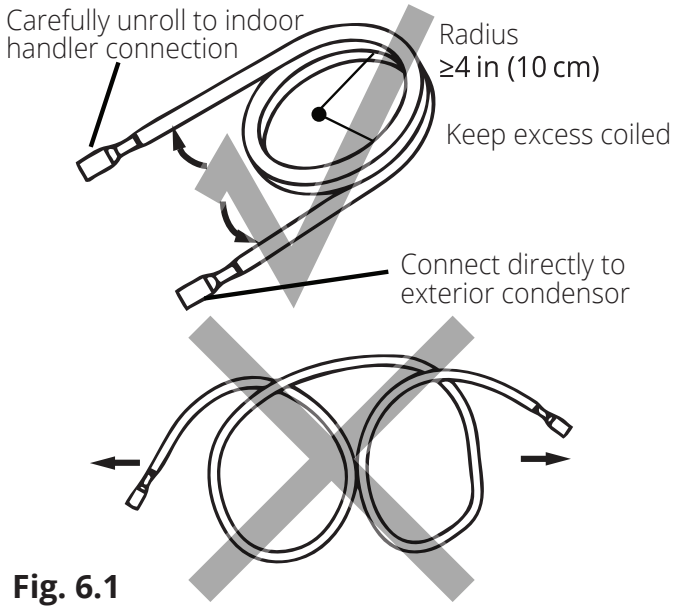


Fig. 6.1

Step 3: Connect Line Set to Indoor Unit

3.1 Tools needed

NOTE: Depending on the capacity rating of your unit, (12K, 18K, 24K, 36K) the wrench sizes needed will vary, refer to the table below (the unit uses metric sizes, the standard sizes listed are approximations). Based on the availability of wrenches in some of the sizes needed, the recommended method is to use crescent wrenches that can be adjusted to fit the size each step requires.

- Opened-ended wrench sizes needed (1x of each of these)

12K & 18K	24K & 36K
3/4" / 19 mm	3/4" / 19 mm
7/8" / 22 mm	15/16" / 24 mm
15/16" / 24 mm	1" / 26 mm
1" / 26 mm	1-1/8" / 29 mm
	1-1/4" / 31 mm

Or 2x Crescent (adjustable-type) Wrenches

- 1x HVAC Torque Wrench (if available)
- 1x Allen key, 5 mm
- 1x Phillips-head screwdriver
- 1x leak-detection spray or a soapy water solution (liquid detergent/mix, applied by brush or spray bottle)

3.2 IMPORTANT INFORMATION

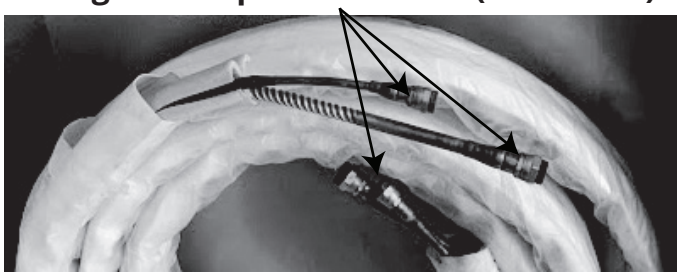
PLEASE READ FULLY BEFORE PROCEEDING TO NEXT STEP

- Follow the detailed instructions for connecting the line set to the indoor unit and outdoor units. We can only provide a warranty if the line set is installed correctly as described in the instructions.
- To prevent leaks, ensure that the connectors are free of dirt. Moisture or foreign bodies will adversely affect the function of the connectors and could lead to a risk of refrigerant loss (not covered by the warranty).
- Only install the line set outdoors in dry weather.
- The line set must not be plastered over after being installed.
- Always wear work gloves and goggles and use caution when handling refrigerant. Please make sure that refrigerant is never allowed to enter the environment. Improper handling of refrigerant may be harmful to your health.
- The equipment must never be operated without the line set connected, otherwise the equipment will be damaged immediately.
- Line set connections must only be tightened using the appropriate open-ended or crescent (adjustable-type) wrenches.

⊘ ***DO NOT*** **remove the sealing caps and stoppers from the line set or valves until immediately before they are to be connected.**

⊘ ***DO NOT*** **smoke during the installation.**

Refrigerant Pipe Connectors (both ends):



If the screw connections are tightened with too little torque, they will leak. If they are tightened with too much torque, the screw connections could suffer damage. Please refer to the torque requirements section for more information. If you do not feel confident connecting the line set connectors yourself, it is imperative that you contact the Zone Air® customer service team or an HVAC professional.

IMPORTANT:

The line sets are designed to only be installed once. The seal within the line set cannot be guaranteed if they are installed more than once. This will void the warranty. They also contain a compression fitting to seal and do not require a thread sealant (Teflon tape, etc.). Using a sealant may actually cause the connection to leak over time.

3.3 Connecting the Line Set to the piping from indoor unit

1. Do not remove the plastic seals of the piping coming from the indoor unit, or the appropriate line set connector, until immediately before they are to be connected. The plastic seals on each of the connectors should be color-coded to match the seals of the corresponding pipes they are to be connected to.
2. Align the refrigerant pipes correctly, making sure the dimensions of the connecting refrigerant pipe match. Unscrew the seals and place the screw connector of the line set just onto the threads of the piping from the indoor unit and tighten the first few threads by hands.

IMPORTANT:

Before you continue, it is essential that you read the following instructions fully and carefully.

TORQUE REQUIREMENTS

1. Excessive force can break the connector or damage the refrigerant piping. You must not exceed the torque requirements shown in the table below.
2. You can find the Outer Pipe Diameter stamped (in inches) on the valve set of the condenser. Refer to this when finding and applying the torque values in the table below.
3. Please note that there may be differences in Torque Wrenches (i.e. automotive torque wrench versus an HVAC torque wrench) and that a socket style wrench cannot be used in this installation.

NOTE: Torque ratings in the table below are to be used if you have access to an HVAC torque wrench. These are available for purchase from online retailers. However, it is possible to complete installation of refrigerant line sets with conventional open-ended/crescent wrenches. It is imperative, however, that you not overtighten the connector, and that once the lines have been fully connected, you follow the steps to check for leaks. If you do not feel comfortable attempting this, please contact a qualified HVAC technician.

3. Using the image below as a guide, and the steps outlined in this paragraph, you will now tighten the nuts of the screw connectors of the line set to the indoor unit. Using two appropriate sized open-ended wrenches (depending on the dimensions of the connector) or adjustable crescent wrenches, place one of the wrenches on the nut marked "1", and the other wrench on the nut marked "2," as shown in the image below. Now, turn the wrench marked "2" in the direction of the rotational arrows, as shown, while holding the other wrench in place. Continue to tighten the connector until snug. **NOTE: work quickly and make sure the screw connectors do not become crooked as you tighten them.**

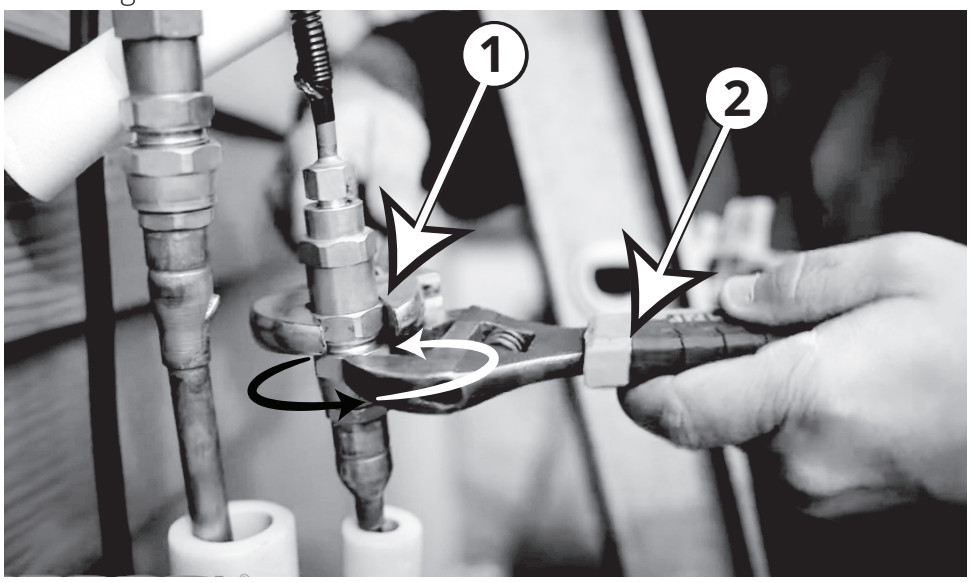
   *** If an HVAC torque wrench is available:** Once the connector is snug, using the torque wrench, tighten the connector to the specified torque rating, as listed in the table to the right (based on pipe/coupling size).

   *** If an HVAC torque wrench is NOT available:** Using two wrenches you used to tighten the connector, once the connector is snug, turn the wrench slightly beyond that point to torque the connector,but do not overtighten it.

4. Repeat the same process for the second line.

Stamp (on coupler)	Coupling Size inch (millimeter)	Tightening Torque lb-ft (N-m)
FA06	3/8 in (9.5 mm)	18-20 lb/ft (24.4-27.1 Nm)
FA09	1/2 in (12.7 mm)	30-35 lb/ft (40.6-47.4 Nm)
FA12	3/4 in (19.1 mm)	45-50 lb/ft (61.0-67.7 Nm)
FA16	1 in (25.4 mm)	60-65 lb/ft (81.3-88.1 Nm)

Note: Coupler stamp reads "FA". Line Set stamp reads "FB".

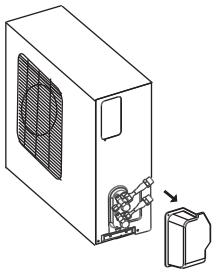


CAUTION

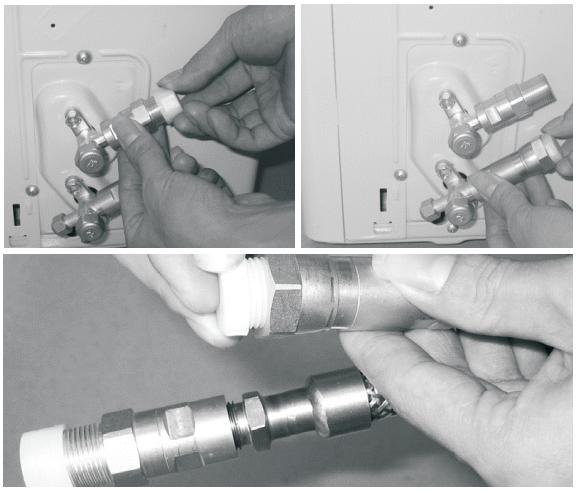
For your safety, always wear goggles and work gloves when connecting the pipes.

Step 4: Connect Line Set to the Outdoor Unit

1. First remove the water tray on the outdoor unit as shown in the illustration to the right.

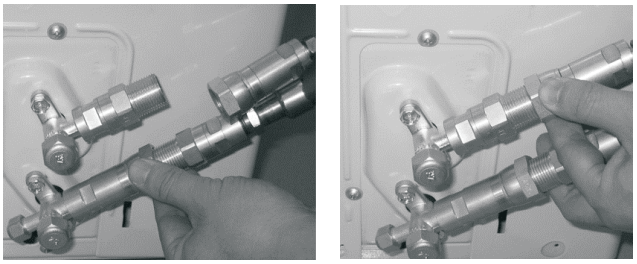


2. Do not remove the plastic seals from the outdoor unit piping connectors and corresponding refrigerant pipes (line set to be attached) until immediately before you connect them.



NOTE: Ensure the adapters attached to the outdoor valves have been tightened properly before attempting to connect the line set.

3. Align the refrigerant pipes so they line up with the corresponding valves and have enough slack. **NOTE: The refrigerant pipes must be connected to the valves with as little stress as possible.** Unscrew the plastic seals and place the screw connector of the refrigerant line just onto the threads of the outdoor unit, tightening the first few threads by hand.



IMPORTANT:

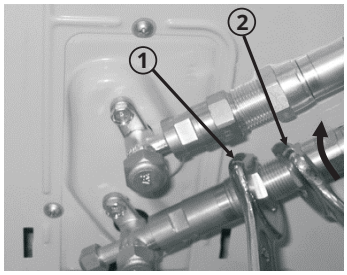
Before you continue, it is essential that you read the following instructions carefully.

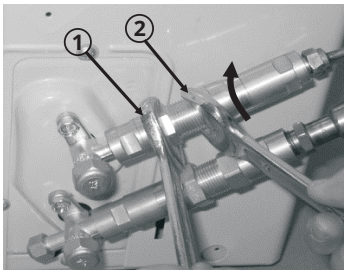
4. Using the first image below as a guide, starting with the bottom screw connector, you will now tighten the line set to the outdoor unit. Using two appropriate sized open-ended wrenches (depending on the dimensions of the connector), or adjustable crescent wrenches, place one of the wrenches on the nut marked "1", and the other wrench on the nut marked "2," Now, turn the wrench on nut "2" in the direction of the rotational arrow, while holding the other wrench in place, as seen in the first image below. Continue to tighten the connector until snug. **NOTE: work quickly and make sure the screw connectors do not become crooked as you tighten them.**

   ***If an HVAC torque wrench is available:** Once the connector is snug, using the torque wrench, tighten the connector to the specified torque rating, listed in the table on the next page (based on the pipe/coupling size).

   ***If an HVAC torque wrench is NOT available:** Using the two wrenches you used to tighten the connector, once the connector is snug, then turn the wrench slightly beyond that point to torque the connector, but do not overtighten it.

5. Repeat the same process for the top screw connector, using the second image below as a guide.





IMPORTANT

The coupling of the outdoor unit uses tapping rings, if you disconnect and reconnect the refrigerant pipes, it could cause it to leak. This will also void the warranty.

NOTE:

Keep excess refrigerant hose coiled. Wrap with protective tape and store behind the condenser in a horizontal position (flat with the ground).

TORQUE REQUIREMENTS

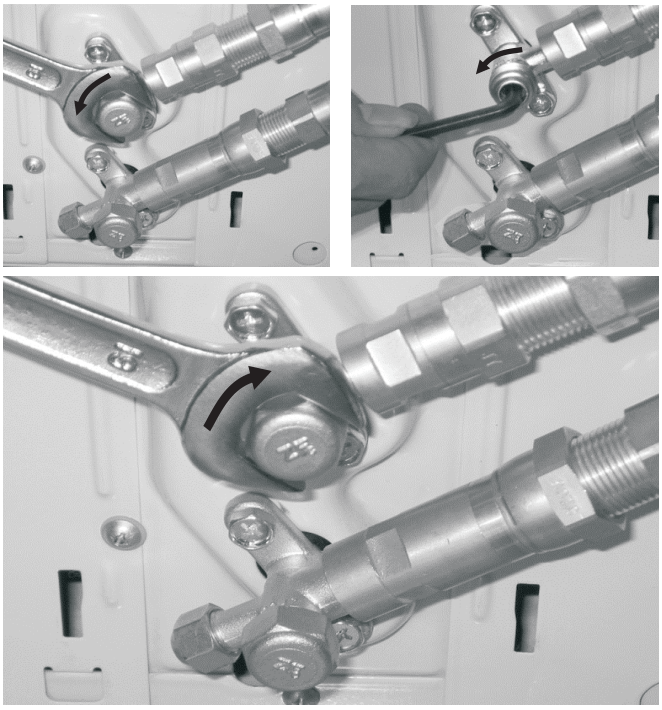
1. Excessive force can break the connector or damage the refrigerant piping. You must not exceed the torque requirements shown in the table below.
2. You can find the Outer Pipe Diameter stamped (in inches) on the valve set of the condenser. Refer to this when finding and applying the torque values in the table below.
3. Please note that there may be differences in Torque Wrenches (i.e. automotive torque wrench versus an HVAC torque wrench) and that a socket style wrench cannot be used in this installation.

NOTE: Torque ratings in the table below are to be used if you have access to an HVAC torque wrench. These are available for purchase from online retailers. However, it is possible to complete installation of refrigerant line sets with conventional open-ended/crescent wrenches. It is imperative, however, that you not over-tighten the connector, and that once the lines have been fully connected, you follow the steps to check the pipe connections for leaks (Refer to the Electrical & Gas Leak Checks section of this manual for more information). If you do not feel comfortable attempting this, please contact a qualified HVAC technician.

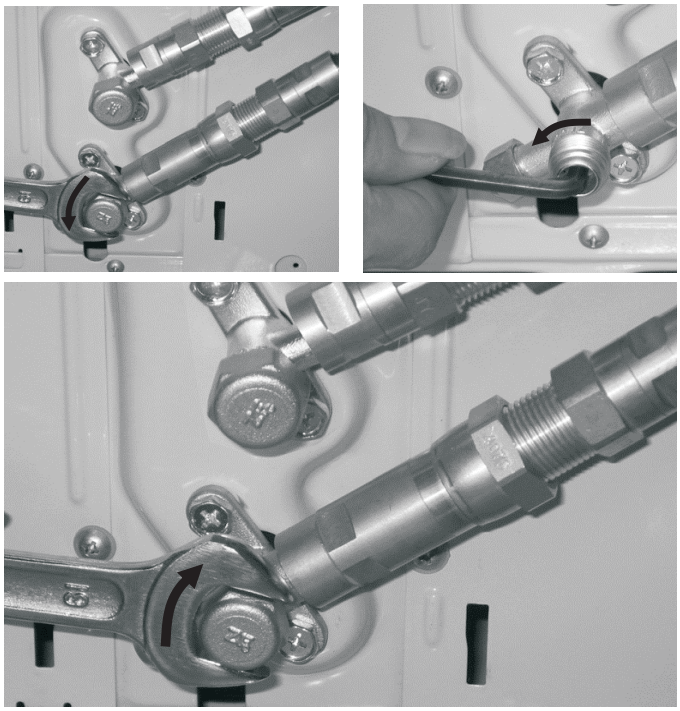
Stamp (on connector)	Coupling Size inch (millimeter)	Tightening Torque lb-ft (N-m)
FA06	3/8 in (9.5 mm)	18-20 lb/ft (24.4-27.1 Nm)
FA09	1/2 in (12.7 mm)	30-35 lb/ft (40.6-47.4 Nm)
FA12	3/4 in (19.1 mm)	45-50 lb/ft (61.0-67.7 Nm)
FA16	1 in (25.4 mm)	60-65 lb/ft (81.3-88.1 Nm)

Step 5: Opening the refrigerant valves of the outdoor unit

1. Using the images below as a guide, remove the cover on the top valve, using a 19 mm open-ended wrench or a crescent (adjustable-type) wrench. Then, insert a 5 mm Allen key and open the valve by turning it counter-clockwise as far as it will go. ***DO NOT*** **force it.** The valve is now open. Screw the cover back onto the top valve and tighten it well to ensure that it is properly sealed.



2. Using the images below as a guide, repeat the same process for the bottom valve. Remove the cover on the bottom valve, using a 19 mm open-ended wrench or a crescent (adjustable-type) wrench. Then, insert a 5 mm Allen key and open the valve by turning it counter-clockwise as far as it will go. ***DO NOT*** **force it.** Screw the cover back onto the bottom valve and tighten it well to ensure that it is properly sealed.



CAUTION

If the valves are not fully opened, it could cause the system to malfunction and suffer damage.

3. After completing steps 1 and 2, you will now need to check all of the piping connections (at indoor unit and outdoor unit) for leaks. You can do this by using leak detection spray, or applying a soapy water solution (liquid detergent/water mixture) to the connection via a spray bottle or brush. If any bubbles begin to form, that indicates there is a leak, and the connection needs to be re-tightened. Tighten the connection and recheck it for leaks. Refer to **Electrical and Gas Leaks Checks** section of this manual for more information.

IMPORTANT:

You will be asked to check for leaks at the piping connections multiple times throughout the following steps of the installation, because the pressures within the lines will change once the unit is turned on and this could reveal leaks not present during the initial check. These are imperative to make sure your connections are not allowing refrigerant to escape the system. When checking for leaks, if any bubbles form, it indicates the system has a leak and the screw connector needs to be retightened. For more information about checking for leaks, please refer to the Electrical and Gas Leak Checks section of the manual.

Step 6: Wrap Piping Connections

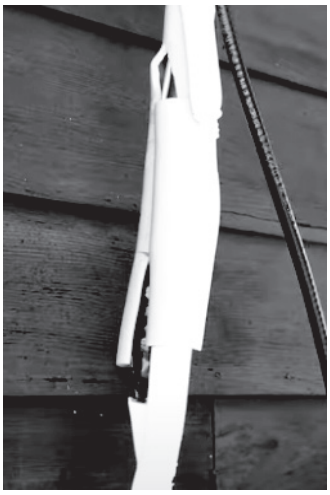
In this step you will wrap and insulate the exposed line connections coming from the indoor air handler.

IMPORTANT

Do not complete these steps until all of the refrigerant piping connections have been checked for leaks.

1. Wrap the connectors at the indoor air handler tightly with the supplied sound deadening pads.


2. Now, place the supplied insulation material over the connectors and exposed refrigrant piping

3. Now, starting where the line set is not covered with the factory plastic (close to the indoor air handler connection, you will wrap the line set upward to the wall hole, using the supplied Non-adhesive U.V. tape. This will cover the insulated line set connections, cables, and drain hose. The drain pipe will need to be at the bottom of the bundle (**Refer to Fig. 6.2**).

⃠ ***DO NOT*** **wrap the end of the drain hose.**

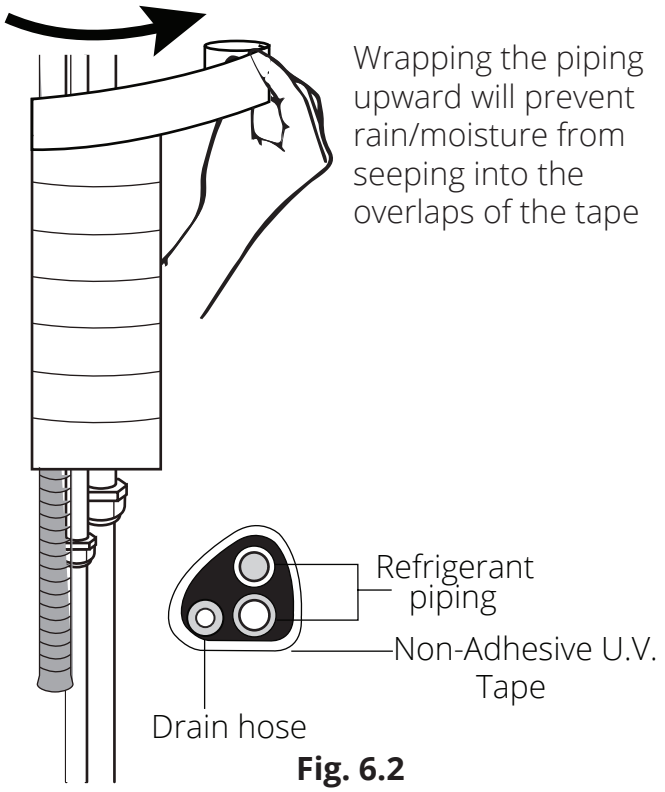
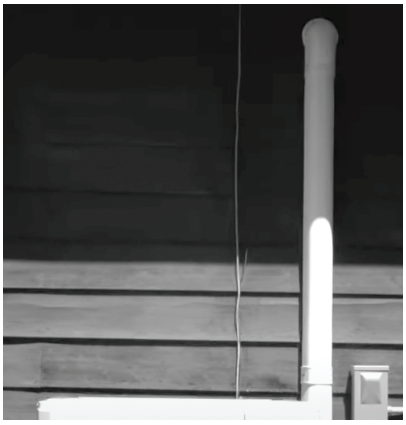



Fig. 6.2

If you would like the exterior piping on the side of your home to have a sleeker, more attractive look and add some extra protection in the process, you can purchase a **Zone Air® Line Set Cover**. This will encase your refrigerant piping and lines, protecting them from harsh weather conditions and sun exposure, which will extend the life of your system. These covers are available in various sizes to fit your particular application.



Step 7: Connect Drain Pipe

In this step you will connect the drain hose extension to the drain hose exiting from the indoor unit that is within the piping bundle you wrapped in the previous steps.

1. Securely connect the drain hose extension to the drain piping from the indoor unit.

2. Using example **Fig. 6.3a** as a guide, make sure your drain pipe is run in a similar manner. The other examples in **Fig 6.3** represent things you should avoid when installing your drain pipe.

3. Remove the air filter from the indoor unit and pour a small amount of water into the drain pan to ensure that the water exits the bottom of the unit and flows through the drain and drain pipe smoothly.

NOTE ON DRAIN HOSE PLACEMENT

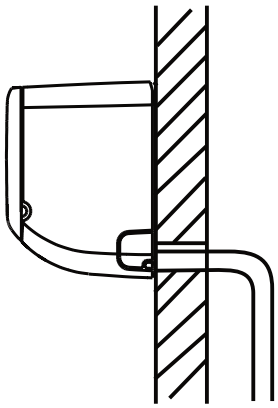
! CAUTION

Make sure to arrange the drain hose correctly according to Fig. 6.3a.

- ⊘ ***DO NOT*** **kink the drain hose.**
- ⊘ ***DO NOT*** **create a water trap.**
- ⊘ ***DO NOT*** **put the end of the drain hose in water or a container that will collect water.**

ENSURE UNUSED DRAIN HOLE IS PLUGGED

To prevent unwanted leaks, be sure that the factory installed hollow center rubber plug is installed in the unused drain hole.



Make sure there are NO kinks or dents in the hose to ensure proper drainage.

Fig. 6.3a

NOT CORRECT
KINKS in the drain hose will create water traps.

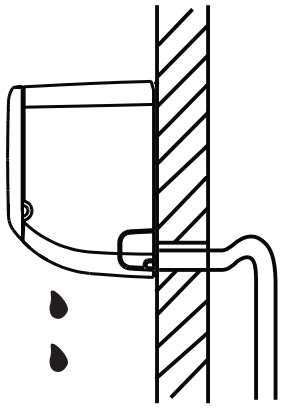
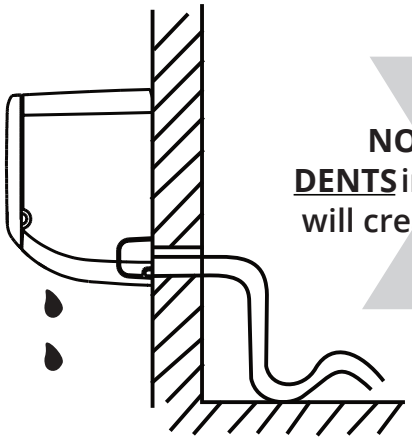


Fig. 6.3b



NOT CORRECT
DENTS in the drain hose will create water traps.

Fig. 6.3c

NOT CORRECT
DO NOT **place the end of the drain hose in water or in containers that collect water. This will prevent proper drainage.**

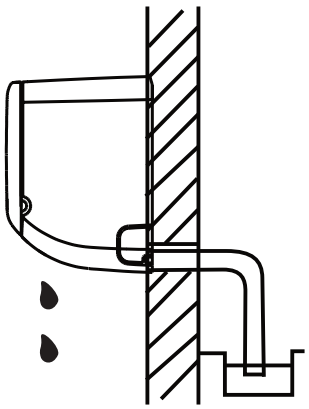
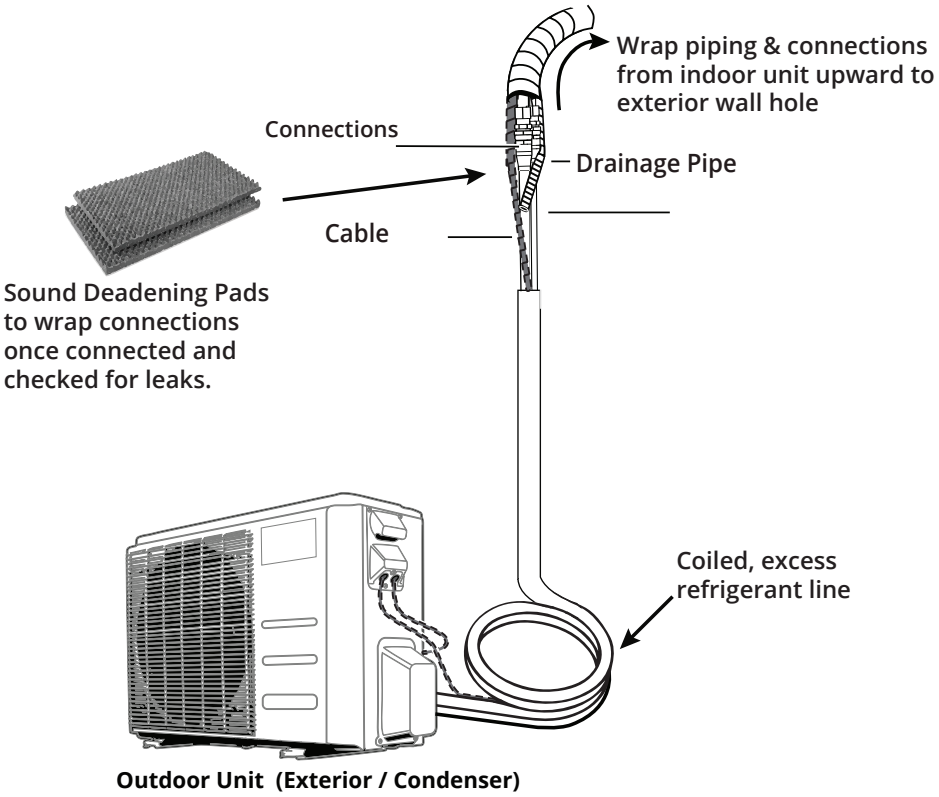


Fig. 6.3d



BEFORE PERFORMING ELECTRICAL WORK, READ THESE REGULATIONS

⊘ ***DO NOT*** **connect another appliance to the outlet for the unit. Only connect the unit to an individual branch circuit outlet.**

⊘ ***DO NOT*** **allow wires to touch or rest against the refrigerant piping, compressor, or any other moving parts within the unit.**

1. All wiring must comply with local and national electrical codes, regulations, and must be installed by a licensed electrician.
2. All electrical connections must be made according to the Electrical Connection Diagram located on the panels of the indoor and outdoor units.
3. If there is a serious safety issue with the power supply, stop work immediately. Explain the issue to the client, and refuse to continue the installation until the safety issue is properly resolved.
4. Power voltage should be within 90-110% of the rated voltage. An insufficient power supply can cause a malfunction, electrical shock, and/or fire.
5. If connecting power to fixed wiring, a surge protector and main power switch should be installed.
6. The circuit, including any switches, should have a capacity 1.5 times the maximum unit current (amps).
7. A qualified technician must use an approved circuit breaker or switch that disconnects all poles and has a contact separation of at least 1/8 in (3 mm) incorporated in the fixed wiring.
8. Make sure the unit/system is properly grounded.
9. Every wire must be firmly and securely connected. Loose wiring can cause the terminal to overheat, which could result in a malfunction and/or fire.
10. If the unit has an auxiliary electric heater, it must be installed as least 40 in (1 m) away from combustible materials.
11. To avoid electrical shock, never touch the electrical components soon after the power supply has been turned off. Always wait 10 minutes or more before touching the electrical components once the power has been turned off.