

Concealed duct (multi room air handler) duct installation kit Install manual.

Each concealed duct (multi room) air handler will have specific supply and return kit options that are designed around the mid level speed setting of the air handler. You simply pick the supply kit and return kit option that best fits your installation.

Each supply side kit includes:

1. Multiple flexible ducts
2. An equal number of duct board take off collars with dampers
3. An equal number of ceiling diffusers (to deliver air into your rooms)
4. Cable zip ties
5. A gallon of duct sealant

EX: The 12000 btu concealed duct (multi room) air handler supply side duct installation kit model "Alpine 12CD Kit1 " includes:

1. Three 25 foot lengths of metalized, R8 insulated, flexible duct
2. Three 6 inch, duct board, takeoff collars , with dampers built in
3. Three 8 inch x 8 inch, three way ceiling diffusers
4. A 50 pack of cable zip ties to help secure the duct work
5. A gallon of duct sealant

Each return side kit includes:

1. One or more larger diameter flexible duct(s)
2. An equal number of duct board take off collars (with no damper, a damper is not needed on the return side)
3. An equal number of 12 inch x 12 inch (filter size) R8 insulated ceiling return boxes with a built in take off collar that matches the flex duct in the kit
4. An equal number of 12 inch x 12 inch ceiling grilles with built in filter slots
5. A roll of professional foil tape

EX: The 12000 btu concealed duct (multi room) air handler return side duct installation kit model "Alpine 12CD Kit3 " includes:

1. One roll of 25 foot, metalized, R8 insulated, flexible duct
2. One 12 inch, duct board take off collar (with no damper)
3. One 12 inch x 12 inch (filter size) R8 insulated ceiling return box with a 12 inch built in take off collar
4. One 12 inch x 12 inch ceiling grille with a filter slot built into it
5. One roll of professional foil tape

Description of product choice per kit:

The concealed duct (multi room) air handlers are part of ductless mini split systems. The best way to run these units to optimize efficiency and performance is in "auto mode" where the system will automatically increase and decrease capacity and fan speed as needed to maintain

the temperature in your space. Mini split systems are designed to run for extended periods of time at low output levels . This improves the efficiency of the system, makes them very quiet, improves air mixture in the space, and enhances dehumidification when in cooling mode.

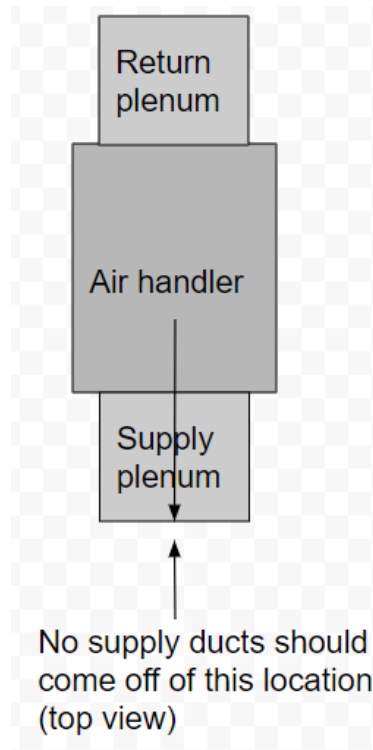
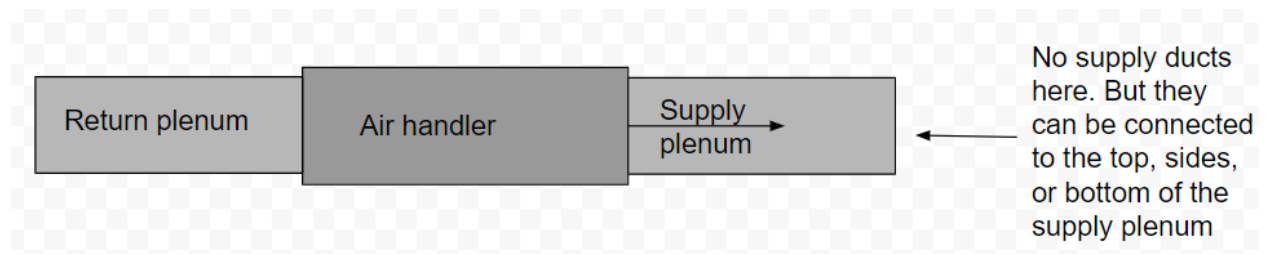
All of the supply side kits are based around the middle speed setting for the air handler to try and provide the best balance in duct size when operating in “auto mode”.

Depending on the room sizes you are conditioning you may need one or more supply ducts but don't exceed the number of supply ducts included in the kit (with the exception of running a 4 inch duct to a small space such as a bathroom, laundry room , or closet.)

All of the Return kits are designed to exceed the maximum air flow of the system. This helps to reduce strain on the blower motor and will help to further reduce the sound level of the already quiet system.

Installation recommendations:

1. These kits are designed to be used with 1 inch duct board and are compatible with the supply and return plenum kits accessorized to the matching concealed duct (multi room) air handler.
2. If you are building your own supply and return plenums please use 1 inch duct board if using these kits.
3. ***These duct install kits aren't compatible with sheet metal plenums.***
4. Please ensure that all **supply ducts** are trimmed to the same length or as close as possible to the same length. This will help to even out the air flow in the duct system.
5. Please do not extend the supply duct any longer than the 25 foot length included in the kit and ideally all supply ducts will be trimmed to 20 feet or shorter to provide minimum resistance to air flow.
6. All supply ducts included in the kits are the same diameter. This is designed to even out resistance to airflow and optimize air distribution.
7. If you have a small space such as a bathroom or closet you can add a 4 inch round duct to the supply side of the system (that duct and matching accessories will need to be sourced locally)
8. Supply ducts should never be connected to the side of the supply plenum where the air is flowing. Instead air should flow from the air handler into the supply plenum, hit the end of it, pressurize the plenum box and flow out the sides and/or top where the ducts are connected



9. The length of the **return duct(s)** does not need to match the supply duct lengths
10. Return ducts can be connected to any side of the return plenum that is large enough to connect the take off collar to. Typically the top or bottom of the return plenum.
11. Filters will need to be sourced locally.
12. Return and supply plenums are sold separately.

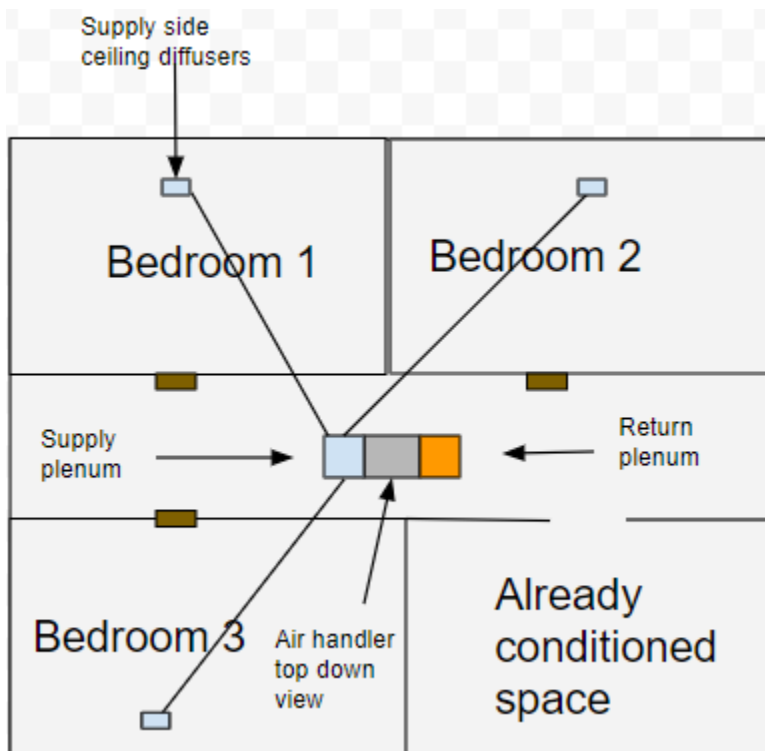
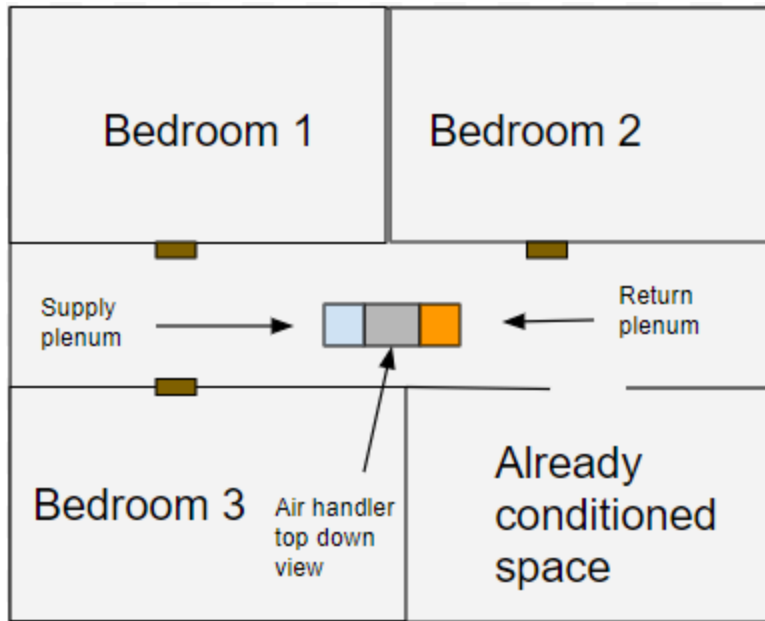
Example duct installation supply side 12000 btu system with Alpine 12CD Kit1 (assuming the supply and return plenums are already in place using our accessorized duct board plenums).

Three bedrooms that share a common hallway:

Top view of the rooms:



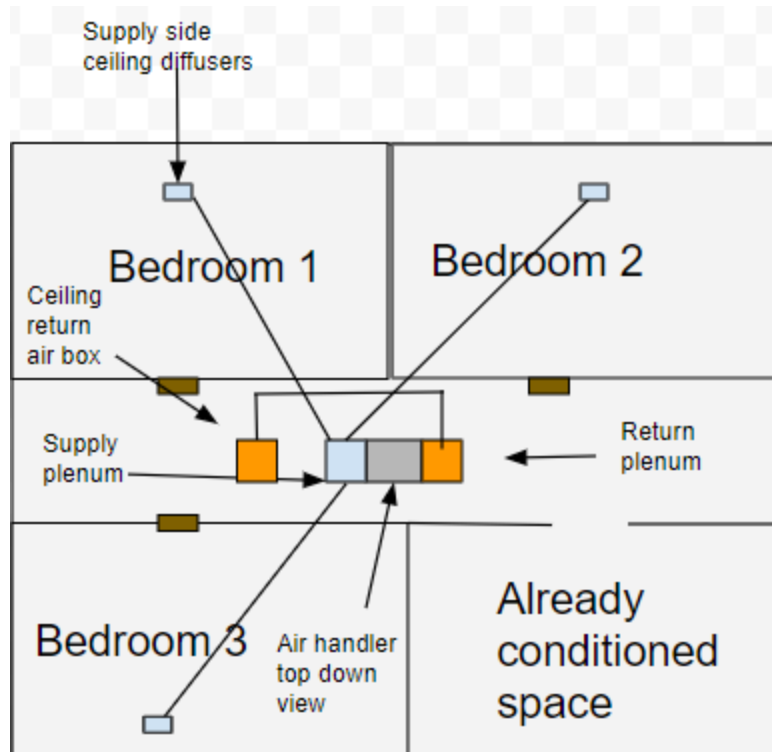
1. Find a location in the attic space above the rooms that you want to condition.
2. If possible select a centralized location in the attic between the rooms to simplify keeping the supply ducts approximately the same length



3. Then you need to cut out circles in the supply plenum so the fingers from the take off collar can be inserted through the hole. The flange should be flush with the supply plenum.



4. Then fold the fingers so that they are bent parallel with the interior of the supply plenum to secure them in place.
5. Slide the 6 inch flexible duct over the take off collar, pull it down to the flange.
6. Use the cable ties (large zip ties) to secure the flex duct to the flange. For larger ducts you may need to connect and use 2 cable ties.
7. Cover over that connection with foil tape.
8. Use an inexpensive paint brush to spread the duct sealant over the tape and where the flange of the take off collar connects to the supply plenum
9. The supply take off collars have dampers built into them which allow you to adjust airflow if needed.
10. Stretch the flexible duct(s) to the location(s) in the ceiling of each room you are installing a ceiling diffuser. Either lay the flex duct flat or if suspending it please source the strapping material locally and support it every 5 feet or so to reduce sagging over time.
11. Cut out a round hole in the ceiling large enough to snugly pull the 6 inch, flexible duct through.
12. Secure the 6 inch round duct to ceiling diffuser 81913 per its installation instructions <chrome-extension://efaidnbmnnnibpcajpcgclefindmkaj/https://documents.alpinehomeair.com/product/Instructions1.pdf> . Once again you will use the cable ties, foil tape and duct sealant to secure the flexible duct to the ceiling diffuser.
13. Return side: Using Alpine 12CD KIT3
14. Select a return air location that is in a central point between the rooms. In this scenario the return will be located in the hallway. Returns should never be placed directly in kitchens, bathrooms, and laundry rooms.



15. Starting at the top of the return plenum cut out a circular opening so you can pass the fingers of the take off collar through the return plenum and then bend the fingers parallel with the interior of the return plenum to secure it in place.



16. Slide the 12 inch diameter flexible duct over the take off collar to the flange.
17. Use the cable ties to secure the flex duct to the flange. Connect and use two if extra length is required.
18. Cover over that connection with foil tape.
19. Use an inexpensive paint brush to spread the duct sealant over the tape and where the flange of the take off collar connects to the return plenum
20. Stretch the flexible duct to the location in the hall Where you are installing the ceiling return air box.. Either lay the flex duct flat or if suspending it please source the strapping material locally and support it every 5 feet or so to reduce sagging over time.

21. Cut out an opening in your ceiling so that the body of the ceiling return air box will slide snugly through the opening and so the flange is flush with the ceiling.



22. Make sure to install the Rectorseal A29012X12 grille with filter slot into the ceiling return air box prior to installing the return into the ceiling. The Grille fits tightly into the return box with some effort applied and it's best to do this in advance. Make sure to secure the filter grille to the ceiling return box with the included metal screws (if needed drill a small pilot hole into the ceiling box), taking care not to block where the filter will be housed in the grille. This is designed to accept a 12 inch x 12 inch x 1 inch thick filter (sourced locally).



23. The 12 x 12 R8 insulated ceiling box is designed to be installed between joists that are 16 inches apart or greater. Make sure to secure it in place to a structural piece such as the joists. ***Do not secure this into the ceiling material only.***
24. Once the grille is installed and the ceiling return air box is securely installed pull the 12 inch flex duct over the take off collar attached to the return air box. Pull the duct down to the top of the box. Secure the duct in place with cable ties, tape over the connection and use an inexpensive paint brush to apply a coat of duct sealant over the foil tape and where the tape contacts the return air ceiling boc and the flexible duct.

There are multiple supply and return side kits options available per concealed duct (multi room) air handlers. Larger capacity systems will typically have more supply and return air ducts. However, the basic methods described are applicable to those models as well.

1. Each supply air duct is the same diameter
2. Each supply air duct should be as close to the same length as possible
3. Larger rooms may require more than one supply air duct
4. Don't add additional supply ducts to the system with the exception of a 4 inch duct (sourced locally) if you want to run air directly into a small space such as a bathroom, closet, or laundry room.
5. Supply ducts should never be installed on the side of the supply plenum that the air is blowing towards
6. It's Best to lay the flexible duct flat or support it in many locations in the run to reduce sagging over time (strapping can be easily sourced locally).
7. For multiple return duct systems try to find a centralized location for those returns, or one could also be placed in a larger room that is being conditioned.
8. Return duct length doesn't need to match to supply duct length.
9. Make sure to install the filter grille into the ceiling return box prior to installing the box in the ceiling

EX2 (less fine details): This is another 3 bedroom application but it requires a higher capacity 18000 btu system and one of the rooms is approximately 2 times the size of the other two rooms.

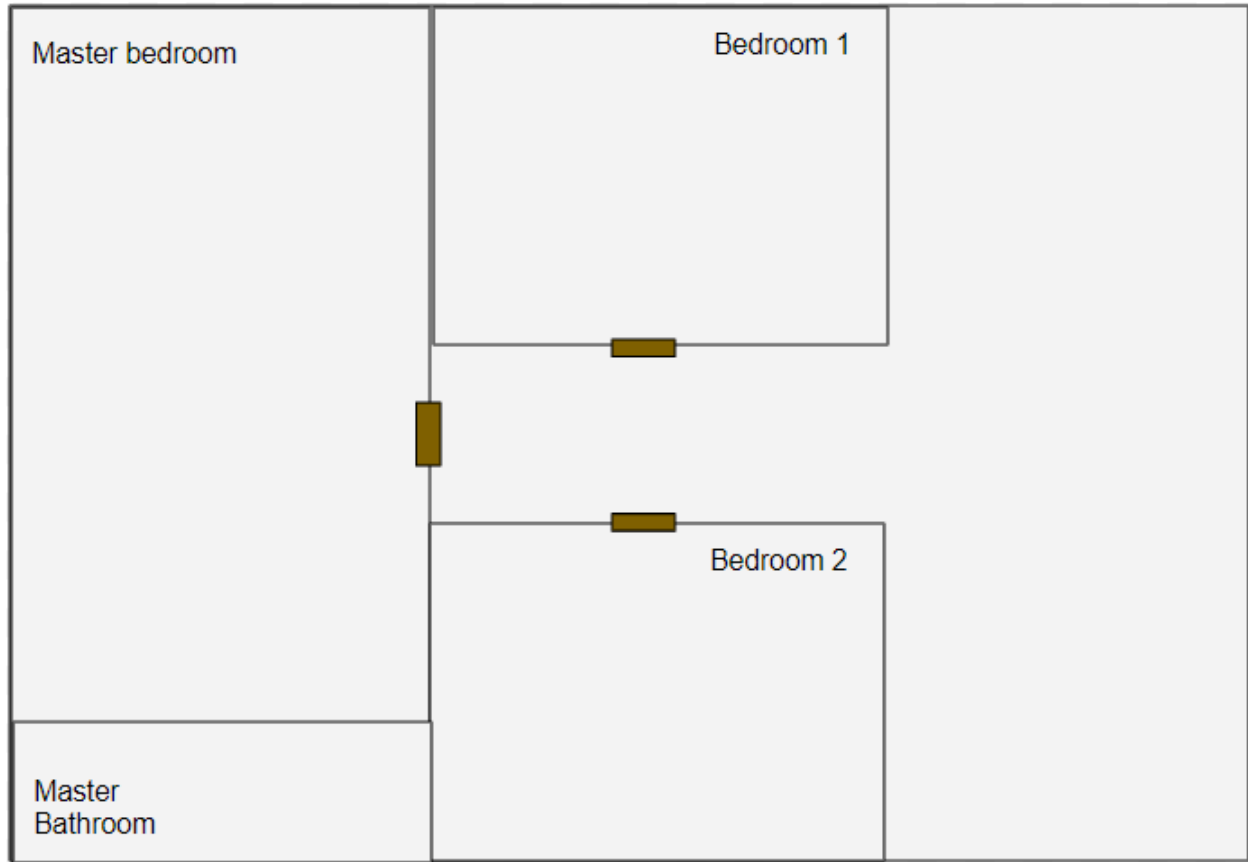
For the supply side we are using Alpine 18CD KIT1:

1. Five 25 feet of 6 inch R8, metalized flex duct
2. Five 6 inch duct board take off collars with dampers
3. Five 8x8 3 Way Ceiling Diffuser
4. Cable Ties
5. Gallon of Duct Sealant

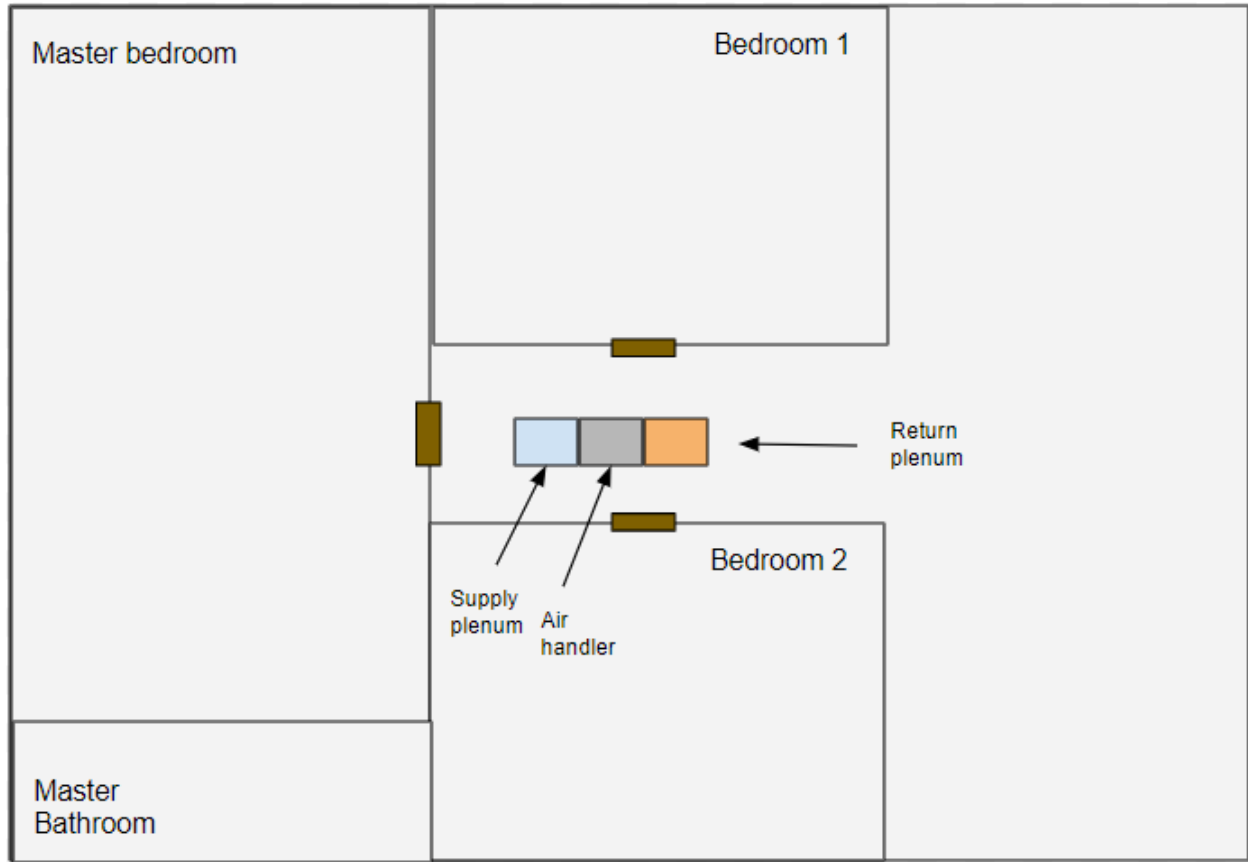
For the return side we are using Alpine 18CD KIT3:

1. Two 25 feet of 12 inch R8 metalized flex duct
2. Two 12 inch duct board takeoff collar no damper
3. Two 12 x 12 x 12 (round connection) R8 insulated ceiling box
4. Two 12 x 12 x 1 Ceiling Filter Grille
5. Foil Tape

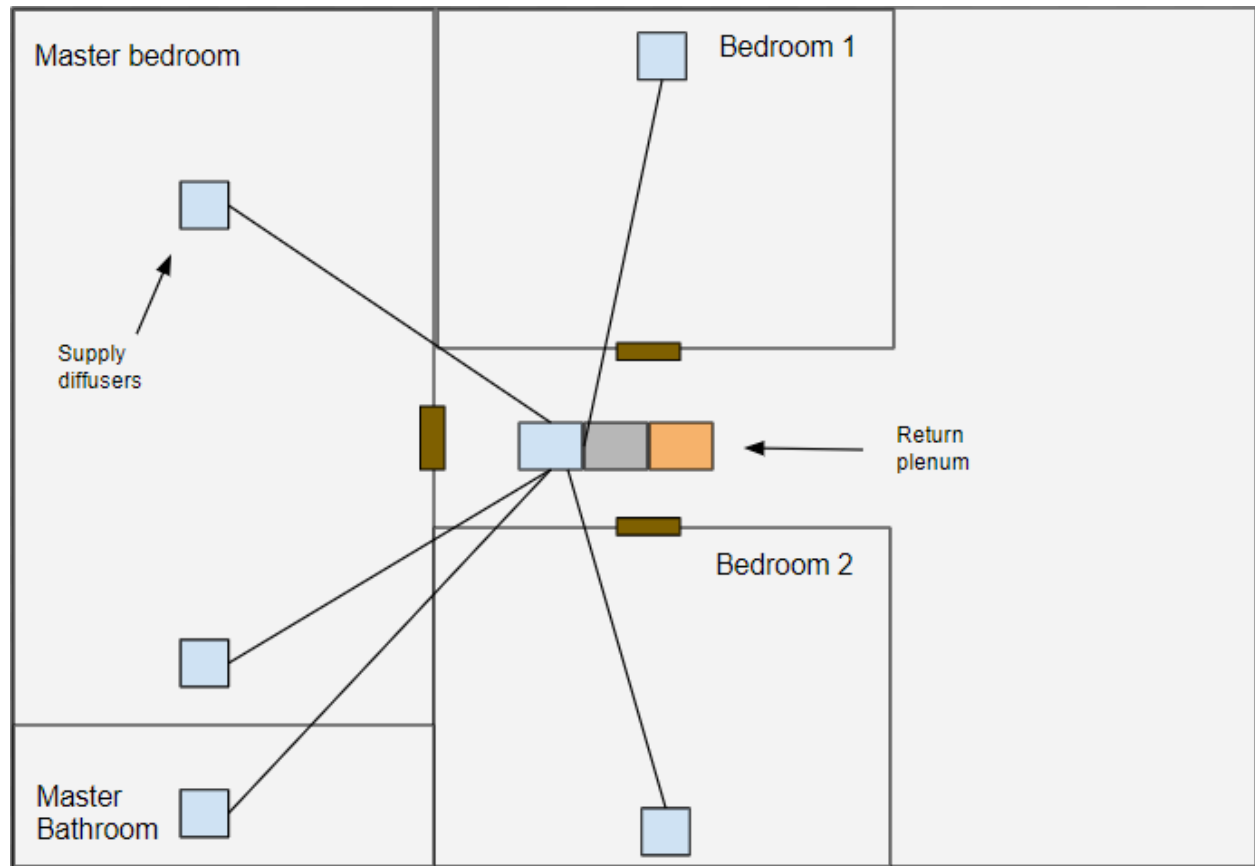
Top view of the rooms:



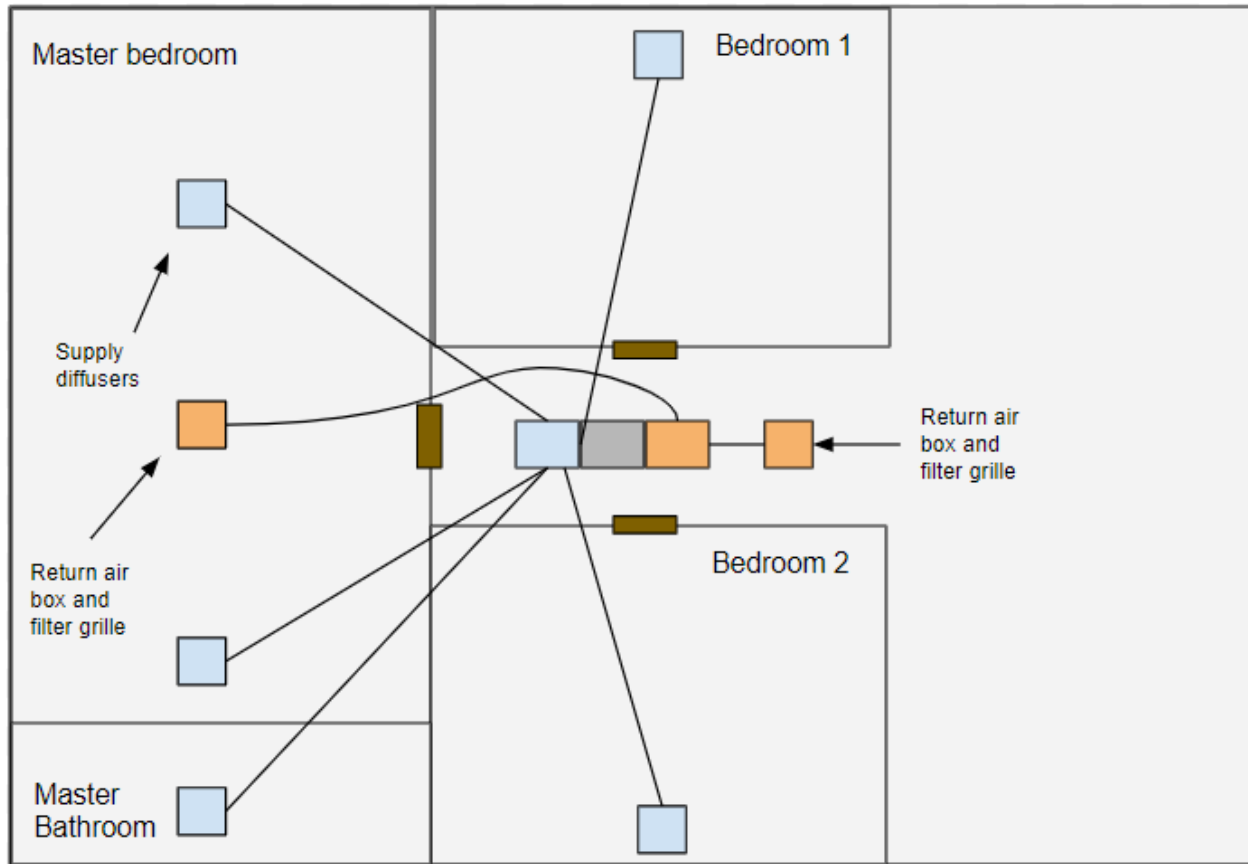
Find a centralized place (or close to it) in the attic to locate the air handler:



Based on the difference in room size we will run 1 supply duct to bedroom1, bedroom 2, the master bathroom, and two into the Master bedroom. Keep all of the supply ducts as close to the same length as you can. You can also use the dampers in the supply take off collars to adjust airflow if needed.



This is a 2 return air duct kit so we will locate one return in the hall wall between the rooms and one in the master bedroom.



All images included in this manual are **not** to scale.

The examples included are meant to assist you in planning and executing your installation. However, some adjustments may need to be made when you are installing your system.

