

3 Installation

3.1 Choosing Proper Location for Unit

This unit is specifically designed for installation on the roof of an RV air conditioner. When determining your cooling requirements, the following should be considered:

- Size of RV air conditioner;
- Window area (increases heat gain);
- Amount of insulation in walls and roof;
- Geographical location where the RV air conditioner will be used;
- Personal comfort level required.

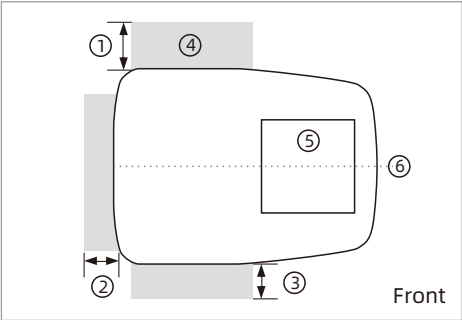
Normal locations

The unit is designed to fit over an existing roof vent opening.

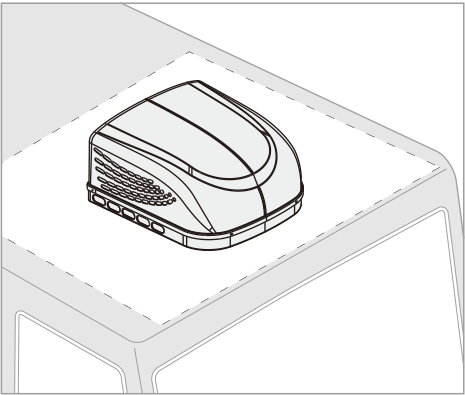
Other locations

When no roof vent is available or another location is desired, the following is recommended:

1. For one unit installation: The unit should be mounted slightly forward of center (front to back) and centered from side to side.
2. For two unit installations: Install one unit 1/3 and one unit 2/3's from front of RV air conditioner and centered from side to side. It is preferred that the unit be installed on a relatively flat and level roof section measured with the RV air conditioner parked on a level surface. The maximum inclination angle is 8°.
3. Products equipped with an auxiliary heater (PTC) must be installed to ensure a minimum distance of 13 inches between flammable materials and the machine.

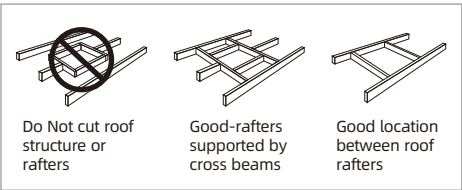


- ① 12 in. (305 mm)
- ② 4 in. (102 mm)
- ③ 4 in. (102 mm)
- ④ Keep these air flow areas free of obstructions
- ⑤ Roof opening
- ⑥ Center line of unit

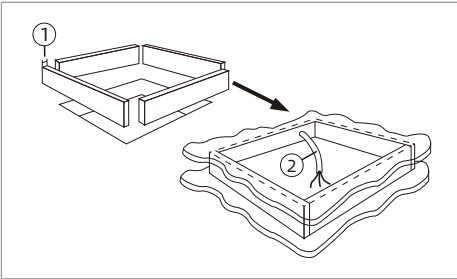


4. Maintain structural integrity. Otherwise damage to product and/or RV air conditioner could occur.

The roof must be designed to support 130 pounds when RV air conditioner is in motion. Normally a 200 lb. static load design will meet this requirement.



5. Check inside the RV air conditioner for air distribution box (hereinafter referred to as "ADB") obstructions (i.e. door openings, room dividers, curtains, ceiling fixtures, etc.).



- ① 3/4" Min. ② 15" Min at front of opening

Frame opening so it won't collapse when bolting down unit.

Leave access for power supply wiring.

3.2 Roof Preparation



WARNING

FIRE OR ELECTRICAL SHOCK HAZARD.

Make sure there are no obstacles (wires, pipes, etc.) inside RV air conditioner's [roof/floor/walls]. Shut OFF gas supply, disconnect 120 VAC power from RV air conditioner, and disconnect positive (+) 12 VDC terminal from supply battery BEFORE drilling or cutting into RV air conditioner.

Failure to obey these warnings could result in death or serious injury.

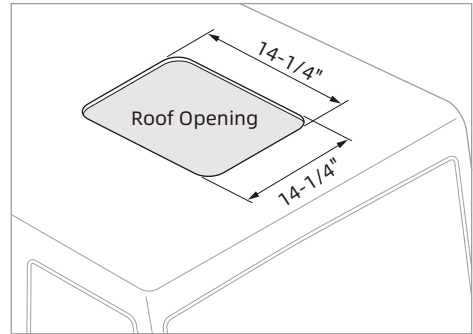
Opening Requirements

Before preparing the ceiling opening, read all of the following instructions before beginning the installation.

3.2.1 Creating a New Roof Opening

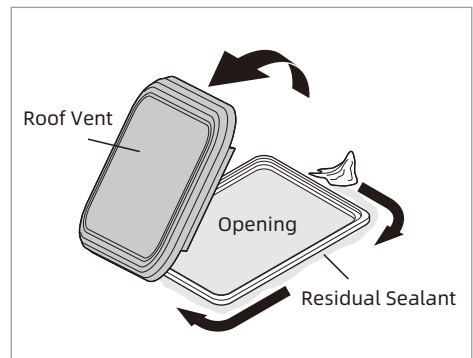
If an existing roof vent opening will NOT be used a roof opening MUST be cut through the roof and ceiling of the RV air conditioner.

This opening MUST be located between the roof reinforcing members. See "2.2 Roof Requirements"



3.2.2 Using an Existing Roof Opening

1. Unscrew and remove the roof vent.
2. Remove all caulking compound around opening.
3. Seal all screw holes and seams where the roof gasket will be located. Use a good grade of all weather sealant.



If the opening is less than 14-1/8" x 14-1/8", it must be enlarged. See "2.2 Roof Requirements".

1. Carefully mark and cut the required roof opening. See "2.2 Roof Requirements" .
2. Maintain structural integrity. Otherwise damage to product and/or RV Air conditioner could occur.



CAUTION

NEVER create a low spot on RV Air conditioner roof. Otherwise, water will pool and could cause a leak.

Using the roof opening as a guide, cut the matching hole in the ceiling.

The opening created must be framed to provide adequate support and prevent air from being drawn from the roof cavity. Framing stock 3/4" or more in thickness must be used. Remember to provide an entrance hole for power supplies at the front of the opening.

3.3 Wiring Requirements

Route a copper, with ground, 120 Vac supply wire from the time delay fuse or circuit breaker box to the roof opening. Use a listed/certified non metallic - sheathed single strand cable.

If vent fan was removed, the existing wire may be used provided it is of proper type, size, location, and correctly fused.

1. This supply wire must be located in the front portion of the roof opening.
2. The power **MUST** be on an appropriately sized separate time delay fuse or circuit breaker. See "2.1"
3. Make sure that at least 15" of supply wire extends into the roof opening. This ensures an easy connection at the junction box.
4. Protect the wire where it passes into the opening with approved method.

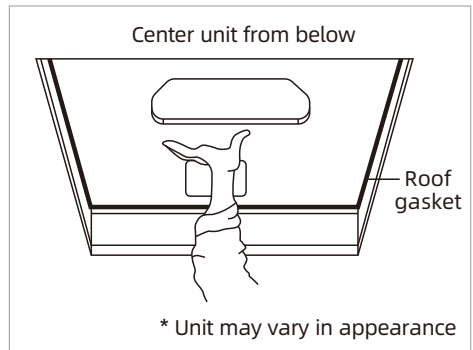
3.4 Placing Unit on Roof

1. Remove the unit from the carton and discard carton.
2. **LIFTING HAZARD.** Use proper lifting technique and control when lifting product. Failure to obey this caution could result in injury. Place unit on the roof.
3. Do **NOT** slide unit. Otherwise, damage to gasket (on bottom of unit) may occur and could cause a leak. Lift and place the unit over the prepared opening using the gasket on the unit as a guide.
4. Place the ADB kit inside the RV air conditioner. This box contains mounting hardware for the unit and will be used inside the RV air conditioner.

This completes the outside work. Minor adjustments can be done from inside the RV air conditioner if required.

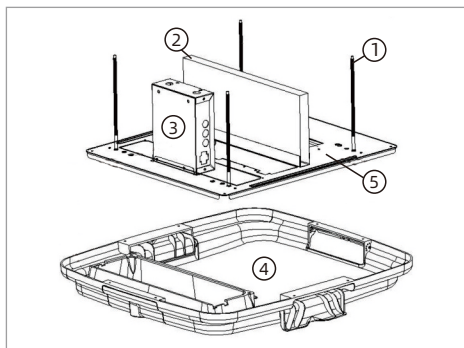
3.5 Installation Preparation

Check gasket alignment of the unit over the roof opening and adjust if necessary. Unit may be moved from below by slightly lifting.



3.6 Install Air Distribution Box

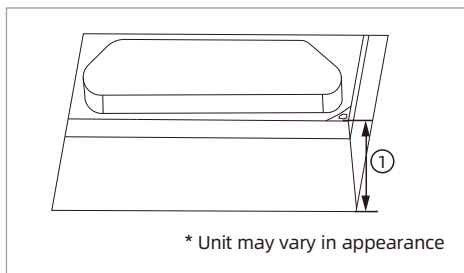
Installing Type A Air Distribution Box



- ① Mounting Bolt *4 ④ Air Distribution Box
 ② Duct Divide ⑤ Ceiling Template
 ③ Control Box

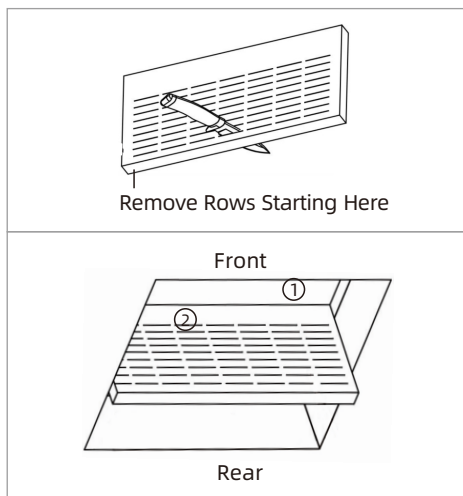
1. Install the wall control panel and route the cable into the interlayer of the air conditioner mounting port.

2. Measure the ceiling to AC bottom thickness.



- ① Measure ceiling thickness

3. Based on the measured thickness from the ceiling to the bottom of the air conditioner minus the excess height on the ceiling template. Carefully install the duct divider in the roof opening.



- ① Base pan ② Duct divider

4. Fix the electric control box on the top template and align it with the return air end of the host. Fix the top template on the ceiling with the fixing screws.

5. Wiring: First, connect all the terminal connectors.

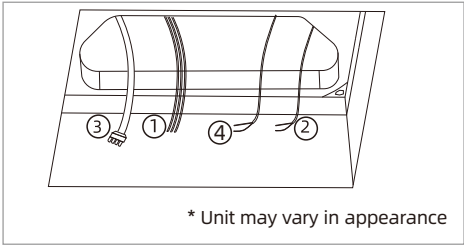
Then:

STEP 1: Connect the controller's power supply wires (red and black) to 12V DC Power Supply. Use 12 Volts DC. You may connect to the RV Battery. Please pay attention to the positive and neutral lines. Red Color = Hot, Black color = Neutral.

STEP 2: Connect the Main Power Supply to the AC3 Wires: Black= Hot, White= Neutral, and Green = Ground.

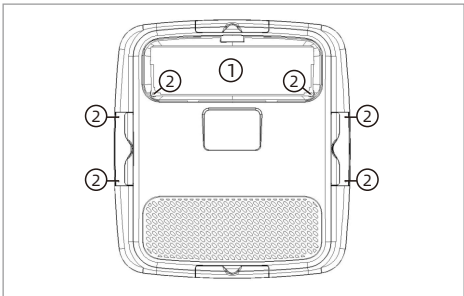
STEP 3: If applicable, locate the furnace wires from the ceiling controller, which are two separate blue wires tagged with "FURNACE". Connect them with the 12V+ wire from the furnace, and the return wire to the furnace.

NOTE: Polarity does not matter, connection can be freely made to either wire. Do not connect the two blue "FURNACE" wires together.



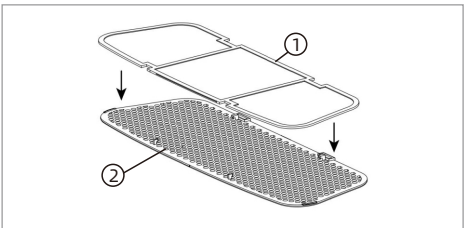
- ① Power Supply for the Whole Machine.
3 wires: Hot, Neutral and Ground.
- ② Controller Power Supply.
2 Wires: Red and Black Colors.
- ③ Wired controller 4 wires
- ④ Furnace connection wires.
two separate blue wires .

6. Install ADB panel. Cover the top template with ADB, align the air inlet with the host air return port, and fix the screws in sequence.

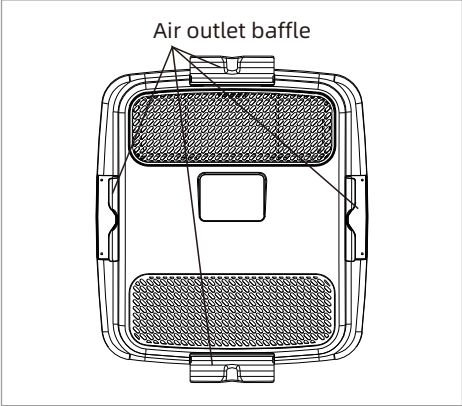


- ① Air inlet
- ② Screw *6

7. Place filter in return air vent grille. It may already be installed on some units.



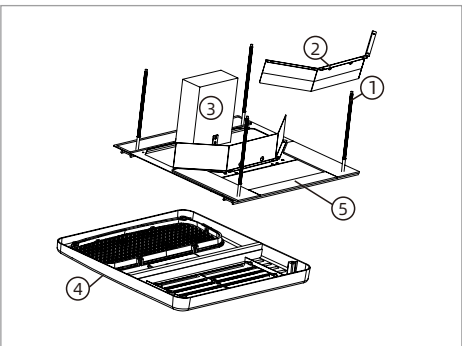
- ① Filter
- ② Return air vent grille



CAUTION

Please open the air outlet when the air conditioner is running, and the air volume can be adjusted by adjusting the angle of the air outlet baffle.

Installing Type B Air Distribution Box



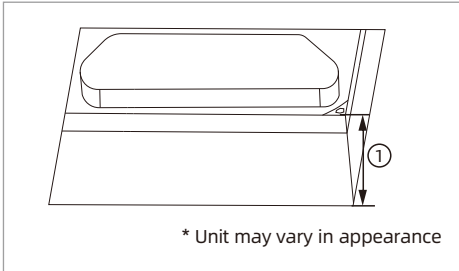
- ① Mounting Bolt *4
- ② Duct Divide
- ③ Control Box
- ④ ADB
- ⑤ Ceiling Template

1. Install the wall control panel and route the cable into the interlayer of the air conditioner mounting port.

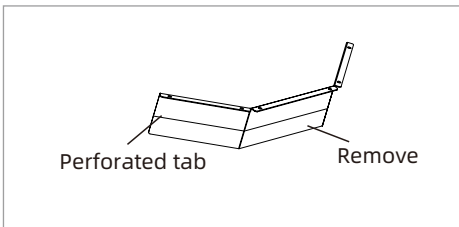
2. Installation Of Duct Divider Plate.

A. Measure the ceiling to AC bottom thickness.

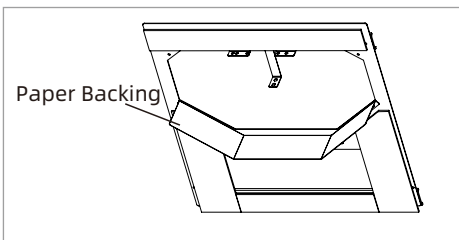
- If distance is 2-1/2" - 4-1/4", remove perforated tab from divider plate.
- If distance is 4-1/4" - 6.0", remove no tabs.



- ① The ceiling to AC bottom thickness.

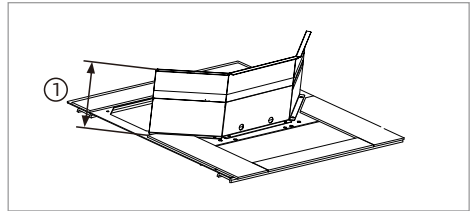


B. Remove the backing paper from the double-sided tape on the ceiling template.



C. Install the duct divide plates correctly on the ceiling template based on the measured ceiling to AC bottom thickness. incorrect installation could cause compressor to quick-cycle, and could result in supply circuit overload and reduced product performance.

The adhesive on the double-sided tape is extremely sticky. Make sure the divider plate is properly positioned before pressing into place.



- ① The ceiling to AC bottom thickness.

4. Fix the electric control box on the top template and align it with the return air end of the host. Fix the top template on the ceiling with the fixing screws.

5. Wiring: First, connect all the terminal connectors.

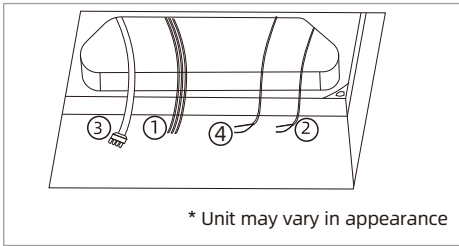
Then:

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STEP 2: Connect the Main Power Supply to the AC3 Wires: Black= Hot, White= Neutral, and Green = Ground.

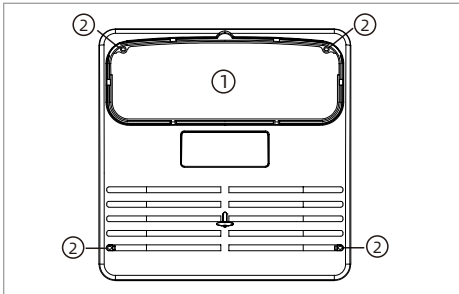
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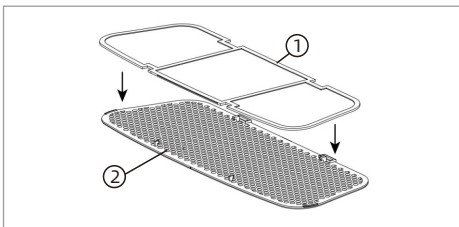
- ① Power Supply for the Whole Machine.
3 wires: Hot, Neutral and Ground.
- ② Controller Power Supply.
2 Wires: Red and Black Colors.
- ③ Wired controller 4 wires
- ④ Furnace connection wires.
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6. Install ADB panel. Cover the top template with ADB, align the air inlet with the host air return port, and fix the screws in sequence.



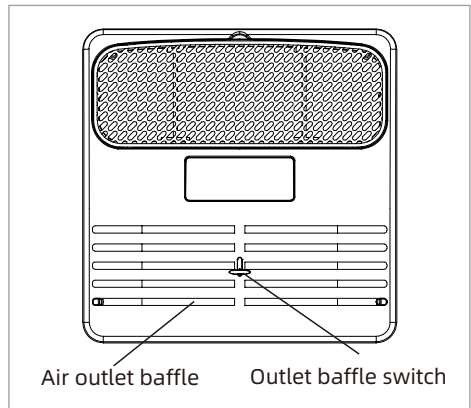
- ① Air inlet
- ② Screw *4

7. Place filter in return air vent grille. It may already be installed on some units.



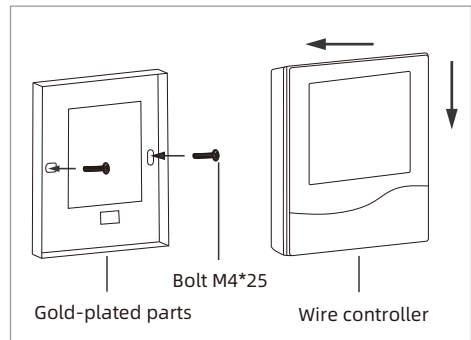
- ① Filter
- ② Return air vent grille

8. Please open the air outlet when their air conditioner is running, and the air volume can be adjusted by adjusting the size of the air outlet baffle.



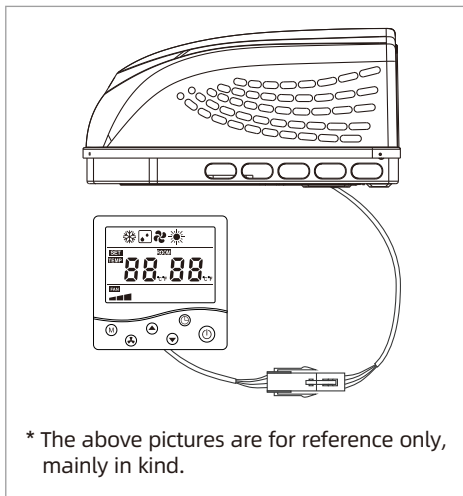
3.7 Wall Mounted Control Installation

- Step 1: Remove the cover of Wire controller box.
- Step 2: Secure the back cover with screws.
- Step 3: According to the drawing install two screws one by one.
- Step 4: Finally, the wire controller is buckled on the back cover and the installation is completed.



Remarks:

After power-off and power-on or abnormal communication returns to normal, you need to reoperate the on-off button, or after setting the timing setting, or after waiting for three minutes, you can directly operate and adjust.

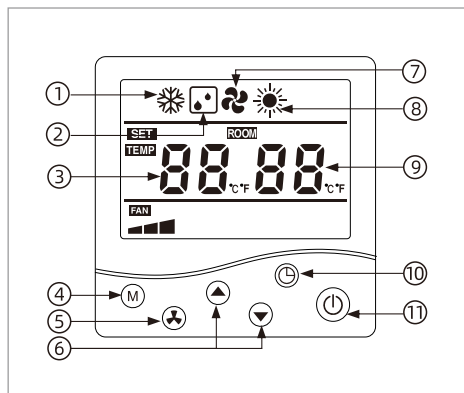
Wire connection:

4 Operation

**WARNING**

If the power cuts off suddenly during the operation of the device, please do not turn it on immediately. The device must stop running for 1 minute before turning it on; otherwise, excessive current may cause the damage of the device.

4.1 Operation Instructions



- ① Cooling
- ② Dehumidify
- ③ Set temp
- ④ Mode key
- ⑤ Wind speed key
- ⑥ Increase/decrease Temperature set-point
- ⑦ Fan speed
- ⑧ Heating
- ⑨ Room temp
- ⑩ °C/°F switching
- ⑪ Power ON/OFF