3 Installation Precaution

WARNING

- Observe all governing codes and ordinances.
- Do not use damaged or non-standard power cord.
- Be caution during installation and maintenance. Prohibit incorrect operation to prevent electric shock, casualty and other accidents.

3.1 Working Temperature Range

Suggested working temperature range: 23 ~ 115 °F (-5 ~ 46 °C).

Heating: 23 ~ 75 °F (-5 ~ 24°C);

Cooling: 64 ~ 115 °F (+18 ~ 46 °C).

Outdoor unit may stop operation, due to various kinds of protection within working temperature range.

3.2 Selection of Installation Location

Basic requirement

Installing the unit in the following places may cause malfunction. If it is unavoidable, please consult the local dealer:

a. The place with strong heat sources, vapors, flammable or explosive gas, or volatile objects spread in the air.

b. The place with high-frequency devices (such as welding machine, medical equipment).

c. The place near coast area.

d. The place with oil or fumes in the air.

e. The place with sulfureted gas.

f. Other places with special circumstances.

g. This air conditioner unit is only used for the vehicle without and convex surface on the top of it.

h. Prohibit operating this air conditioner unit when starting up the vehicle or when the vehicle is driving.

I. Prohibit supplying the power for the air conditioner unit with the vehicle power supply.

Requirement of air conditioner

a. Air inlet should be far away from obstacles and do not put any objects near air outlet. Otherwise, it will affect the radiation of heat-removal pipe.

b. Select a location where the noise and outflow air emitted by the outdoor unit will not affect neighborhood.

c. Please try your best to keep far away from fluorescent lamp.

d. The appliance shall not be installed in the laundry.

3.3 Requirements for Electric Connection

Safety precaution

1. Must follow the electric safety regulations when installing the unit.
2. According to the local safety regulations, use qualified power supply circuit.
3. For appliances with type Y attachment, the instructions shall contain the substance of the following. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
4. Properly connect the live wire, neutral wire and grounding wire of power socket.
5. Be sure to cut off the power supply before proceeding any work related to electricity and safety.
6. Do not put through the power before finish installation.

7. The air conditioner is first class electric appliance. it must be properly grounding with specialized grounding device by a professional. Please make sure it is always grounded effectively, otherwise it may cause electric shock.
8. The yellow-green wire or green wire in air conditioner is grounding wire, which can't be used for other purposes.
9. The grounding resistance should comply with national electric safety regulations.
10. The appliance shall be installed in accordance with national wiring regulations.
11. Specification of fuse on the main board:T3.15AH250V; the maximum current passes through the fuse can't be more than 3.15A.
12. Installation must be performed in accordance with the requirement of NEC and CEC by authorized personnel only.

4 Installation

4.1 Before Installation

Test run the unit with proper power supply. Refer to the operation instruction section in the Owner's Manual Operation & Installation. Make sure all the controls operate correctly then disconnect the power supply of the unit.

WARNING

1. Moving parts may cause personal injury. Be careful when test the unit. Do not operate the unit with exterior cover removed.
2. Outdoor unit can't be installed at the low recess of the roof of vehicle. It must be mounted at the flat surface on the roof of vehicle to make sure the rain, car-washing water, condensate water, etc. can be drained smoothly. No water is allowed to be accumulated around the outdoor unit; otherwise, it will cause malfunction or safety hazards as the water will pour into the air conditioner.

4.2 Stick Sponge (Sealing Strip) and Sponge on The Outdoor Unit

1. Before sticking, clean up the sundries at the sticking position (as shown in Figure 1) of the chassis of the outdoor unit to ensure that the sticking position is clean.
2. Take out one piece of sponge (sealing strip) and one piece of sponge from the accessories, and tear off the paper on the glue surface and align at the edge of the position as shown in Figure 1 to stick the sponge. If the sponge (sealing strip) is damaged or not stuck on the proper position, you must replace it with a new one and stick it properly.

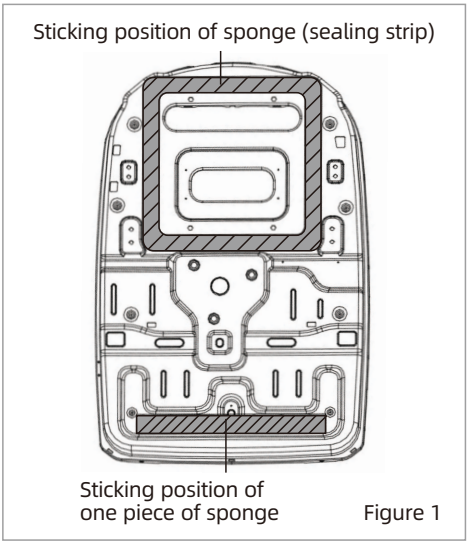


Figure 1

3. Check whether the sponge (sealing strip) and the sponge are tightly adhered, and ensure that they will not fall off.

4.3 Installing The Roof Top Air Conditioner

Your air conditioner has been designed for use in recreational vehicles.

Check the roof of the vehicle to determine if it can support both the roof top unit and the ceiling assembly without additional support. Make sure the interior ceiling mounting area will not interfere with existing structures.

Once the location for your air conditioner has been determined. A reinforced and framed roof.

Hole must be cut (if there is no hole, please refer to CASE B) or you may use existing vent holes (See CASE A).

■ CASE A

If a roof vent is already present in the desired mounting location for the air conditioner the following steps must be performed:

1.Remove all screws which secure the roof vent to the vehicle. Remove the vent and any additional trim. Carefully remove all chalking from around the opening so the surface is clear.

2.It may be necessary to seal some of the old roof vent mounting screw holes which may fall outside of the air conditioner base pan gasket.

3.Examine the roof opening size, if the opening is small than 14-1/4" × 14-1/4", the opening must be enlarged.

■ CASE B

If a roof vent opening is not used, a new opening(see figure 1-1)will be cut into the vehicle roof.

A matching opening will also have to be cut into the interior vehicle ceiling, be careful when cutting the ceiling opening because if the ceiling opening is carpeted, snagging could occur. After the opening in the roof and interior ceiling are the correct size, a framed support structure must be placed between the exterior roof top and interior ceiling. The reinforced framed structure must follow the following guidelines:

1. It must be capable of supporting both the weight of the roof top air conditioner and the interior ceiling assembly.

2. It must be capable of holding the roof outer surface and interior ceiling apart and supporting them, so that when the roof top air conditioner and ceiling assembly are bolted together, no collapsing occurs. A typical support frame is shown in Figure 1-1 .

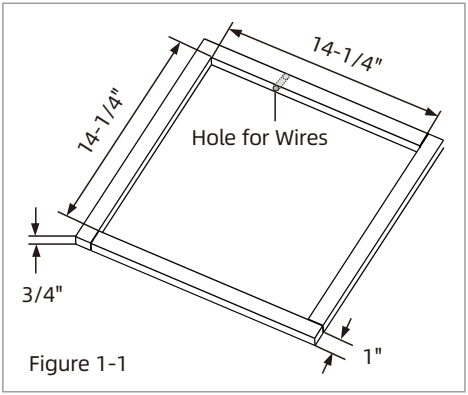


Figure 1-1

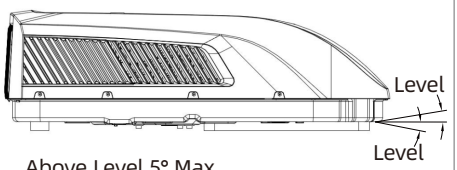
3. There must be an opening through the frame for the power supply wiring. Route the supply wiring through the frame at the same time the support frame is being installed.

CAUTION

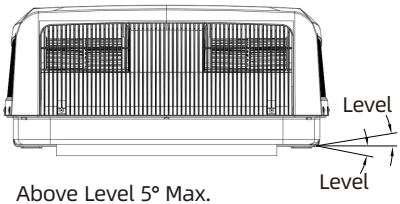
1. The roof top air conditioner must be mounted on a level plane from front to rear and side to side when the vehicle is parked on a level plane. Figure 2 shows maximum allowable degrees that the unit can be mounted above or below level.
2. If the roof of the vehicle is sloped (not level) such that the roof top air conditioner cannot be mounted within the maximum allowable degree specifications, an exterior leveling shim will need to be added to make the unit level. A typical leveling shim is shown in Figure 3.
3. Once the roof top air conditioner has been leveled, some additional shimming may be required above the interior ceiling assembly. The roof top air conditioner and the interior ceiling assembly must be square with each other before they are secured together.
4. After the mounting hole area is properly prepared, remove the carton and shipping pads from around the roof top air conditioner. Carefully lift the unit on top of the vehicle. Do not use the outer plastic shroud for lifting. Place the roof top air conditioner over the prepared mounting hole.
5. The front section of outdoor unit of air conditioner must be in the same direction as the vehicle,which is useful for reducing wind resistance.

NOTICE

Try you best to put the unit on the horizontal surface for operation. The unit can only operate for a short time at the maximum sloping angle of 5° for preventing water leakage.



Above Level 5° Max.
Below Level 0° Max.



Above Level 5° Max.
Below Level 5° Max.

Figure 2

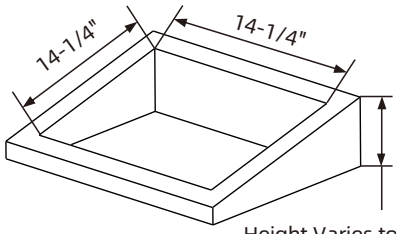


Figure 3

Height Varies to Make Unit Level

Note air conditioner dimensions (roof of unit)

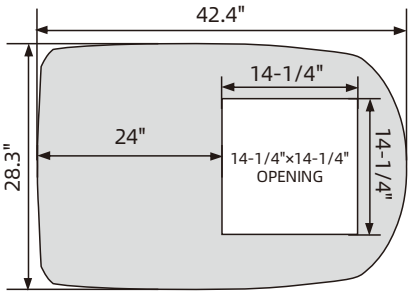


Figure 4

4.4 Mounting Outdoor Unit

1. Open the package and take out the outdoor unit.

• When taking out the outdoor unit after unpacking, do not lift the air outlet grille at the back of outer case (see Figure 4-1).

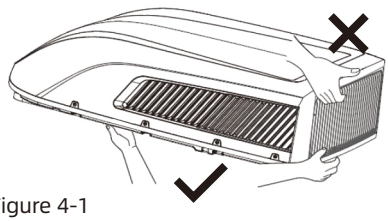


Figure 4-1

2. Fix the outdoor unit at the roof of vehicle and then drill holes.

• Place the outdoor unit at the roof of vehicle; lift the outdoor unit and then place the outdoor unit after drilling holes at the roof of vehicle. Do not drag the outdoor unit. Otherwise, the seal may fall off (see Figure 4-2).

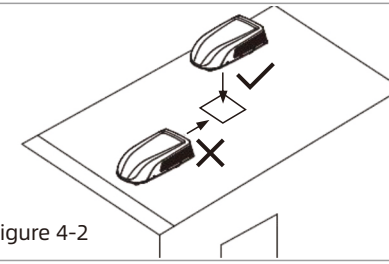


Figure 4-2

4.5 Installing The Ceiling Assembly

Make sure that you have properly matched the roof top air conditioner and interior ceiling assembly. Caution before tightening bolts:

1. The applicable thickness of vehicle roof ranges from 1.2" ~ 5".
2. Before tightening bolts, screw in the four bolts manually and prohibit screwing forcibly.
3. When screwing bolts, you can use automatic tool. Do not tighten one bolt completely and then tighten other bolts, in order to prevent sticking of screw thread.
4. The max torque for tightening ranges from 2.3 Nm ~ 2.5 Nm. The following step by step instructions must be performed in the following sequence to ensure proper installation.

1. Carefully take the ceiling assembly out of the carton(The remote control packed with the ceiling assembly). Remove the ceiling grille from the ceiling assembly.
2. Before the ceiling assembly can be mounted to the roof top air conditioner, the fabric duct collar must be fastened to the basepan of the roof top air conditioner with 4 screws by upper duct plate (see Figure 5-2、Figure 6-1、Figure 5、Figure 5-1).
3. Before lifting the ceiling assembly, pull the fabric duct collar so it hangs out of the way and does not get caught under the ceiling assembly frame.
5. Secure the ceiling assembly frame to the roof top air conditioner with the mounting bolts (see Figure 5). You must start (thread) the mounting bolts by hand to avoid cross threading. **DO NOT START THE MOUNTING BOLTS WITH AN AIR GUN.** The mounting bolts should be tightened, process is completed when the base pan gasket has been evenly compressed.
6. Set the fabric air duct into the duct opening of installation plate sub-assy and cut off four corner of fabric air duct. Because the thickness of vehicle top is different, the distance between the opening and the installation plate sub-assy is shown in figure 6.
7. Fasten each side of the fabric duct with fitting the bottom duct plate to the ceiling assembly frame with 4 screws (see Figure 6).Trim any excess fabric that may extend beyond edge of bottom duct plate.

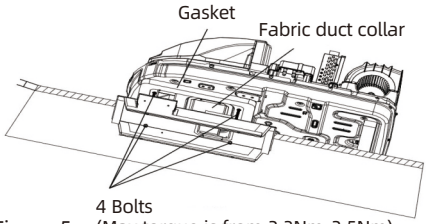


Figure 5

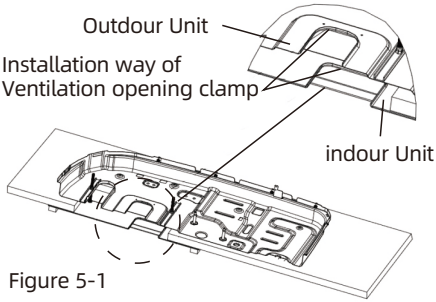


Figure 5-1

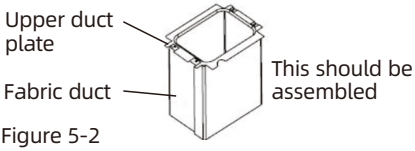


Figure 5-2

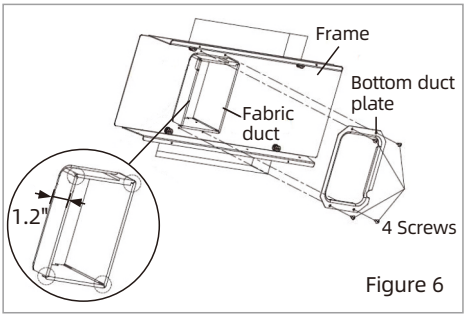


Figure 6

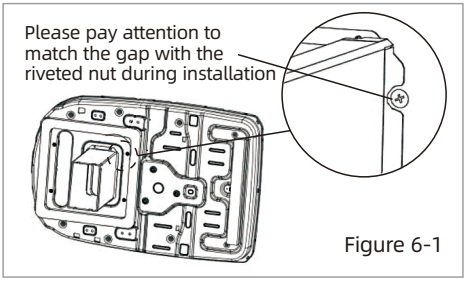


Figure 6-1

4.6 Electrical Wiring

ROUTING 115V AC WIRING

WARNING

Make sure that all power supply to the unit is disconnected before performing any work on the unit to avoid the possibility of shock or injury and/or damage to the equipment. When the interior ceiling assembly frame is properly secured to the roof top air conditioner, the following electrical connections must be performed.

1. As shown in Figure 7, the outdoor unit has two sets of outgoing wires, which are power cord (high current) and the control signal wires respectively. The former one should be directly connected to terminal box while the latter one should be connected to the control signal wire of the indoor unit.

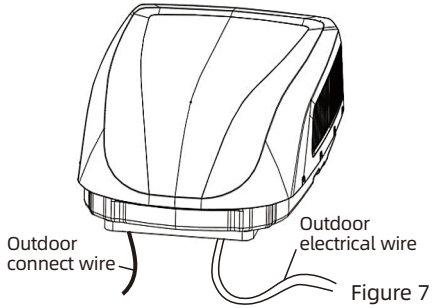


Figure 7

2. Route a copper ,with ground, supply wiring with minimum #14 AWG , the wiring from its power source to the junction box. Do not attach them at this time.
3. Take the roof top air conditioner power cord to connect to the side of the junction box.

4. Remove the junction box cover (2 screws). Take the power cord and make it get into the box through the strain relief that is provided (see Figure 8).

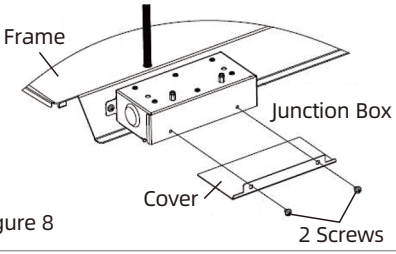


Figure 8

5. Connect the power cord to the black, white and ground wires found in the junction box with a terminal board.

   CAUTION Connect black wire to black wire (brown wire), white wire to white wire (blue wire) and the ground wire to earth. (see Figure 9)

NOTICE
When connecting the power cord, please use the pipe for preventing cutting power wire.

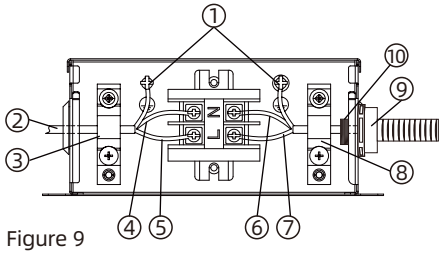


Figure 9

① Ground Wire (Yellow-Green Wire)
② Power Cord Come From Roof Top Air Conditioner
③ Strain Relief (Clamp)
④ White Wire
⑤ Black Wire
⑥ White Wire (Blue Wire)
⑦ Black Wire (Brown Wire)
⑧ Strain Relief (Clamp)
⑨ Pipe
⑩ Power Supply Cord

6. Tighten the strain relief clamp to secure the supply power cord. DO NOT OVERTIGHTEN. Reinstall the junction box cover.
7. Connect connector and secure the clamp (see Figure 10 and Figure 10-1).

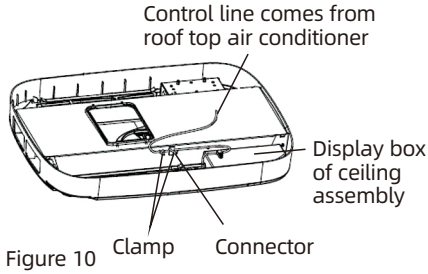


Figure 10

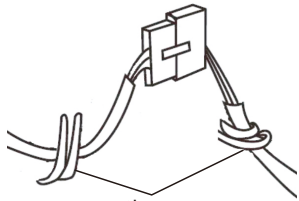


Figure 10-1

4.7 Completing The Installation

To complete the installation and system checkout requirements, the following steps must be performed.

1. Check the thermostat position. Make sure the thermostat is routed through the holding guide and is not touching any metal surface.
2. Make sure the guide louver and the filters are properly positioned in the ceiling grille.
3. Secure the ceiling grille to the ceiling assembly frame with 4 screws. (see Figure 11).
4. Install screw caps into four screw holes.
5. Switch on the power supply and check the unit work or not.

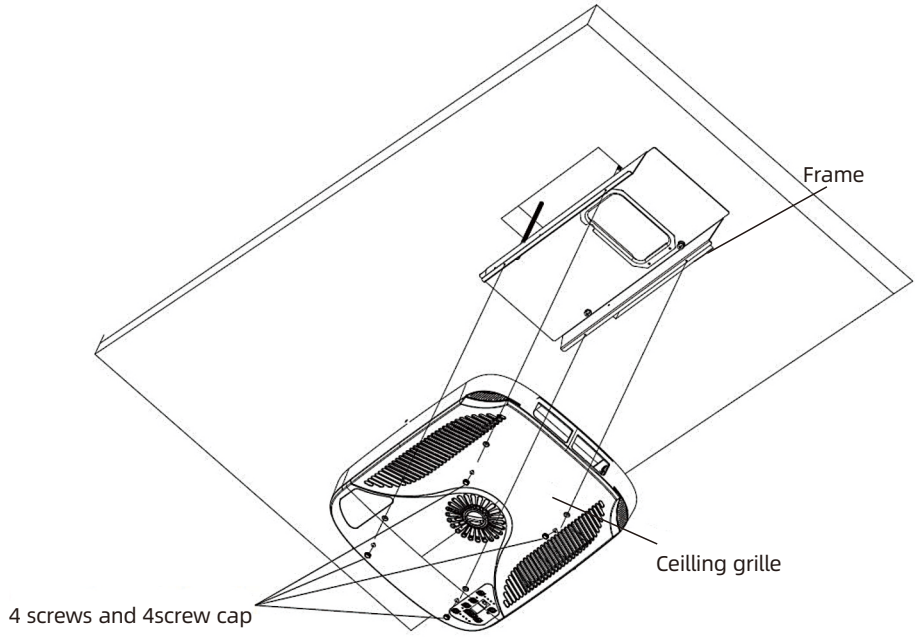


Figure 11