

QUICK CHECK LIST FOR AIR CONDITIONER PROBLEMS

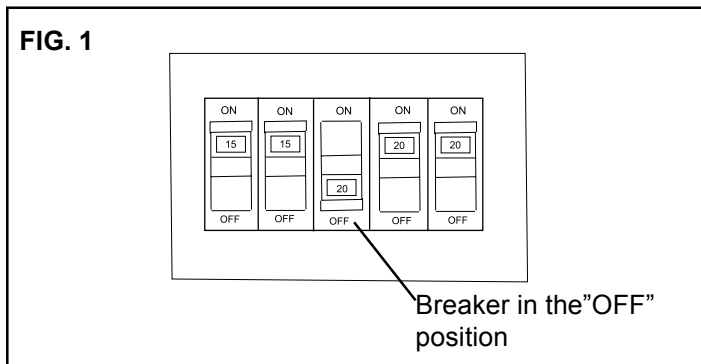


**AIR CONDITIONER
BULLETIN A28/0A
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Duo Therm and the manufacturer of your recreational vehicle want your Air Conditioner to operate to your satisfaction. Together they have compiled a check list of items that may cause your roof mount Duo Therm Air Conditioner not to operate properly.

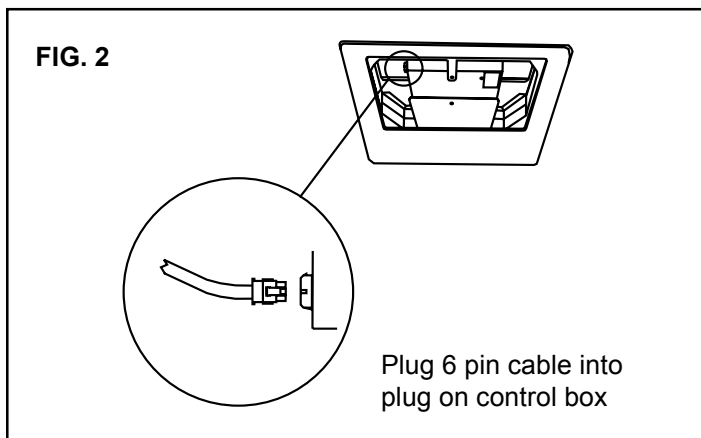
BREAKERS

In many instances it may not be caused by a defective part, but by a something as simple as a breaker that needs to be reset. Many times during the manufacturing of the recreational vehicle the breakers are connected and left in the off position. They should be checked by turning the breaker "OFF" and "ON". This will reset the breaker and restore power to the air conditioner. See Figure 1.



POWER CONNECTION

Duo Therm air conditioners are manufactures so they can be installed in different manners using a variety of control options. The Air Conditioner is plugged up to the control system with a short connector cable. In some instances this six pin plug on the cable is not connected properly.



Turn off the generator or unplug the power to prevent shock. Remove the grill and filter off of the ceiling cover, and check

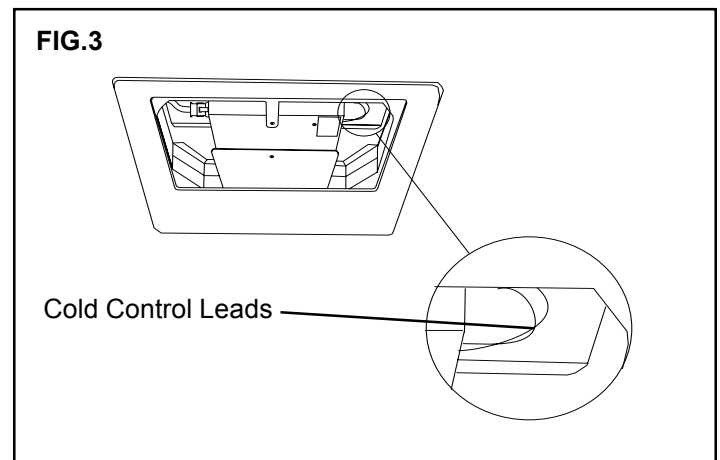
the integrity of the control connector cable on the control box. If the plug is loose or not connected, plug the six pin connector in to the control box. The plug is polarized and will only fit in one direction and cannot be connected incorrectly. See Figure 2.

LACK OF AIR FLOW AND COOLING

Operation of the air conditioner with air flow restrictions, it may be possible for the cooling coil to ice up. Duo therm has equipped the Analog Control System with a Cold Control/ Low Temperature Switch that will terminate the compressor operation long enough for a slight frost coating to melt away.

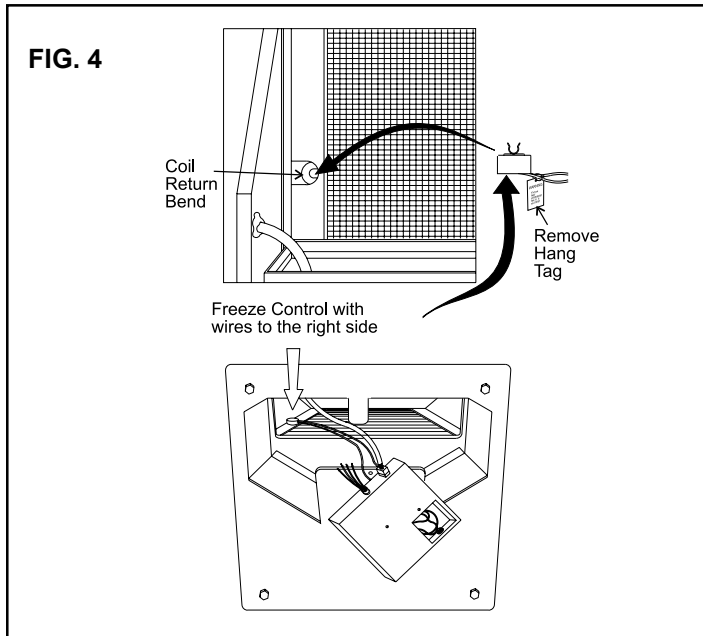
If the cold control is not placed on the cold coil or it is loose, the sensing of the coil temperature will not be possible. The compressor will continue to operate and the frost buildup on the coil will choke off all the air movement resulting in an increase of the inside coach temperature.

Turn off the generator or turn off the breaker. Remove the grill and filter off the ceiling cover. The cold control has two black wires coming out of the side of the control box and extends up through the roof and is attached to the coil on the air conditioner. See figure 3.



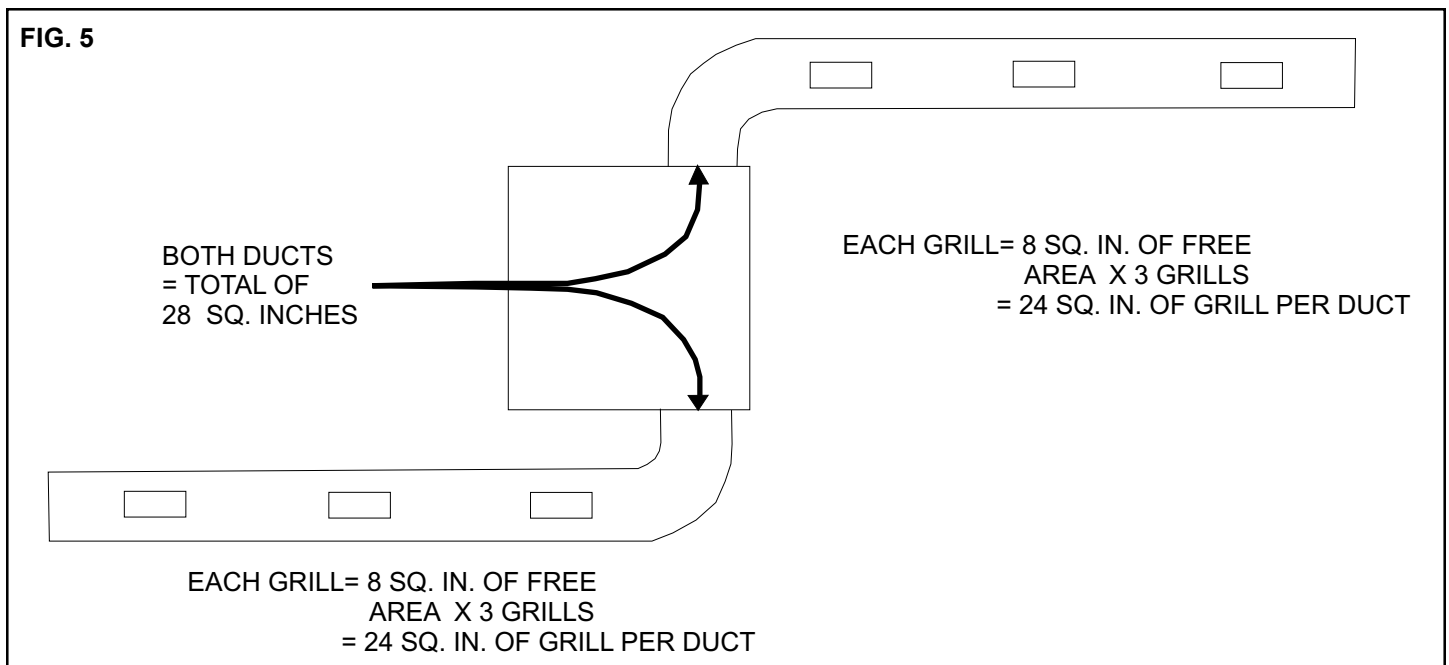
When installing the controls, the cold control may not have been snapped to the coil. Pull gently on the wires of the cold control. If the cold control is not attached to the coil it should come out of the return air opening.

If the cold control is loose it should be snapped onto the copper elbow of the coil as shown in figure 4. This can be made easier by removing the control box from its mounting while snapping the cold control in place. See figure 4.



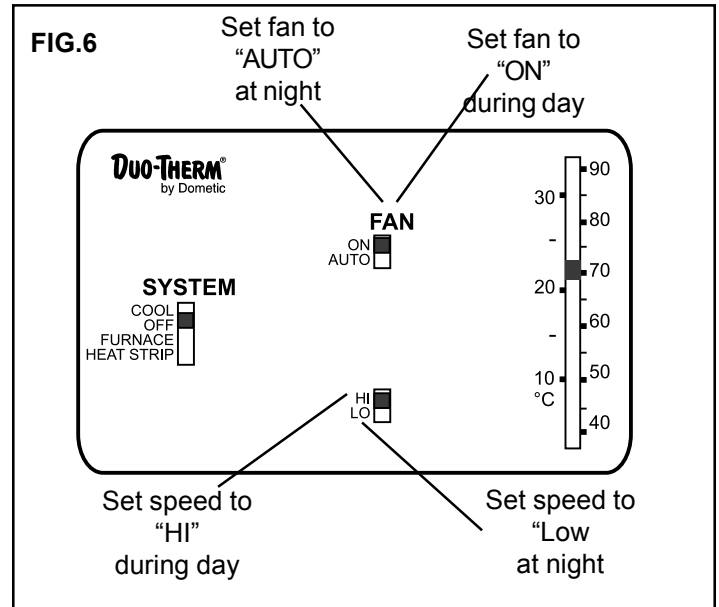
If the filter is not clean, restriction of air will cause the coil to become too cold. The Cold Control should prevent frost formation on the coil but the maximum performance will be possible with a clean air filter. It should be cleaned regularly or whenever dust is visible.

Duo Therm requires a minimum of 3 registers (total of 6) on each side of the air conditioner. The user can cause frosting by closing registers to prevent cold air from exiting. An example could be a discharge register in the bath area that may blow directly on a person. Closing of this register will cut down the air flow through the coil causing the unit to cycle on the cold control and lower performance. See figure 5.



The constant operation of the air conditioner blower will keep the air inside the living space moving and eliminate stagnant pockets of warmer air.

Duo Therm recommends that the thermostat "FAN" switch be set to "ON" and the fan speed switch set to "HI" during the day. Night time operation set the thermostat "FAN" to "AUTO" and fan speed to "LO". See figure 6.



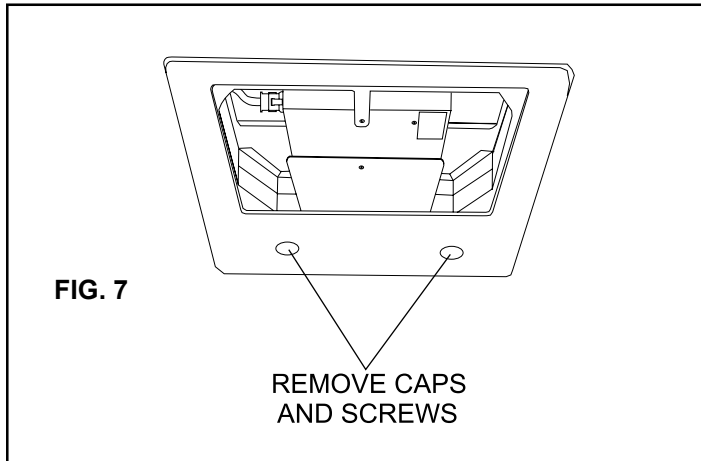
If the duct system is less than the 28 square inches total, the performance of the air conditioner can be increased with the installation of a Duo Therm Quick Cool Grill.

The quick cool grill has a register that will allow air to be distributed directly out of the air conditioner. The quick cool grill can be added to an existing system by changing the ceiling template and the cover.

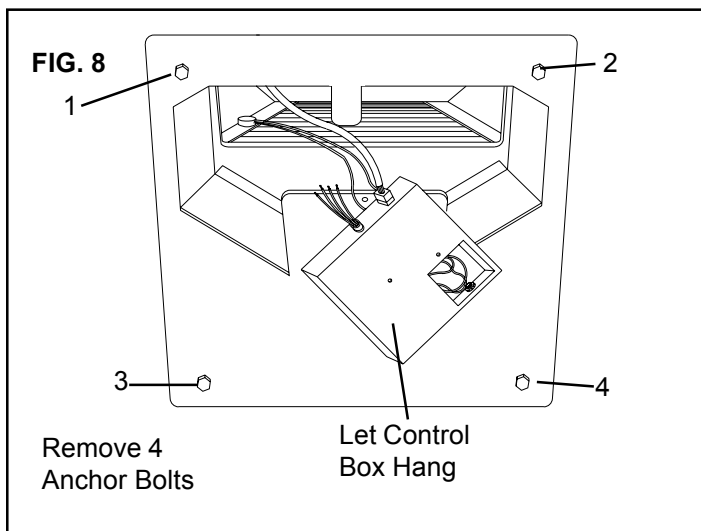
REPLACEMENT PROCEDURE OF RETURN AIR COVER

1. When ever repairs are done on the air conditioner the DC and AC power should be disconnected to prevent electrical shock.

2. Remove the screw caps off of the ceiling cover and take out the screws holding it to the ceiling template. See figure 7.



3. Remove the screws holding the control box to the ceiling template. let the box hang. remove the four anchor bolts that secure the template to the air conditioner. See figure 8.

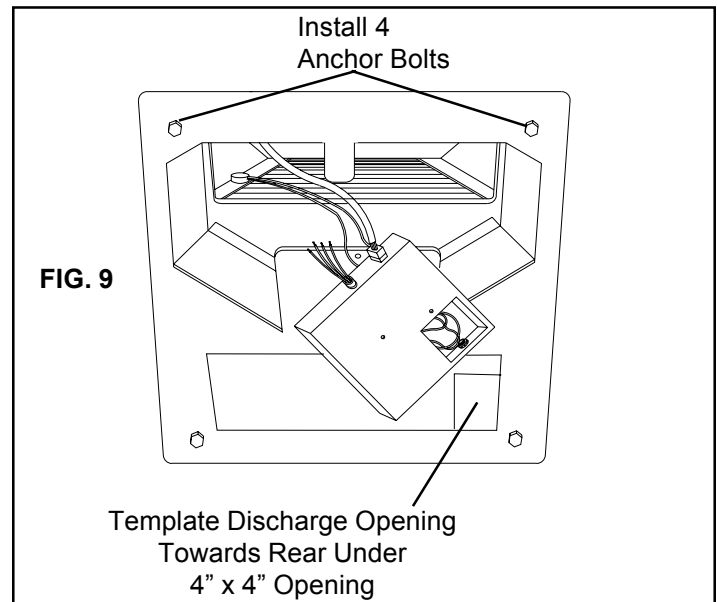


4. The Ceiling template can be removed from the ceiling. the foam insulation may need to be cut with a knife to free the template from the air conditioner base and sides of the 14" x 14" opening.

5. Use a flat bladed putty knife and clean the sides of the opening and base of any tape left after the template and divider plates are removed.

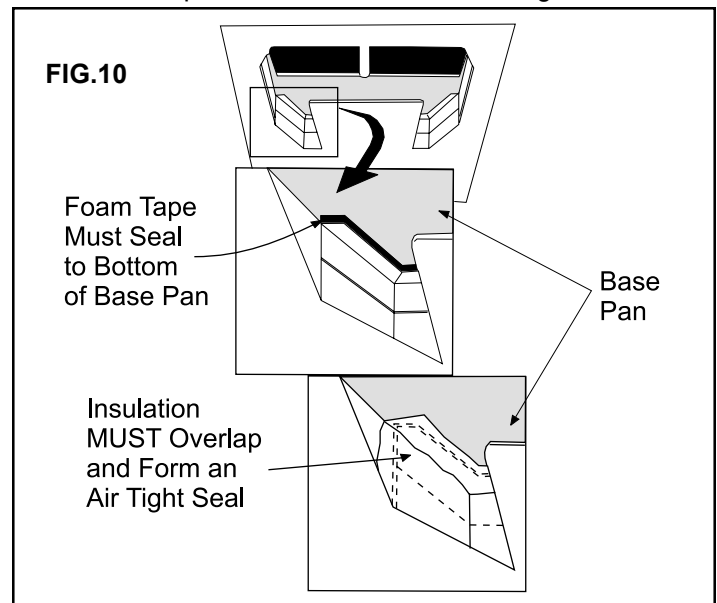
6. The new template for the Quick Cool Grill will be the same size as the one just removed; however the discharge side will have an opening for air to discharge through it. Place the new ceiling template over the opening in the ceiling. Besure that the discharge is towards the rear of the air conditioner under the 4" x 4" discharge hole in the base

pan. See figure 9.



7. Reinstall the 4 Anchor Bolts and finger tighten. Check alignment, and tighten Anchor Bolts to 40 to 50 inch pounds. See Figure 9.

8. Peel the paper off of the double stick tape on divider plate on the ceiling template . Position the foam tape edge of the divider tightly against the air conditioner base pan. Press the the upper portion of the divider against the double stick tape on the lower divider. See figure 10.



9. Cover the divider with the sticky backed foam insulation. Laps the insulation over the ends of the divider and on the base pan, making an air tight seal. See figure 10.

10. Position the control box on the mounting brackets on the new template and fasten with the screws. Place new Quick Cool Grill over the new template and fasten with the screws. Snap covers over the screws.

11. Restore DC and AC power. Adjust loover in Quick Cool Grill as needed for best cooling.