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3308120.XXX
GENESIS AIR FILTRATION SYSTEM
FOR
57XXX SERIES
59XXX SERIES
600XXX SERIES
620XXX SERIES
630XXX SERIES
AIR CONDITIONERS & HEAT PUMPS
USED WITH
3109226.005 ELECTRONIC CONTROL KIT
3109407.001 ELECTRONIC CONTROL KIT
3107541.009 ANALOG CONTROL KIT
3107541.017 ANALOG CONTROL KIT
3107546.008 ANALOG CONTROL KIT

INSTALLATION AND OPERATING INSTRUCTIONS

MODEL
3308120.XXX
GENESIS
AIR FILTRATION
SYSTEM

REVISION

Form No. 3308129.026 5/03
(Replaces 3308129.018)
(French 3308134.026)
©2003 Dometic Corporation
LaGrange, IN 46761

**Important: These instructions
must stay with unit.
Owner read carefully.**

 **Dometic**

NOTES: _____

SAFETY INSTRUCTIONS

This manual has safety information and instructions to help users eliminate or reduce the risk of accidents and injuries.

RECOGNIZE SAFETY INFORMATION



This is the safety-alert symbol. When you see this symbol in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating instructions.

UNDERSTAND SIGNAL WORDS

A signal word, **WARNING OR CAUTION** is used with the safety-alert symbol. They give the level of risk for potential injury.

WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION indicates a potentially hazardous situation which, if not avoided may result in minor or moderate injury.

CAUTION used without the safety alert symbol indicates, a potentially hazardous situation which, if not avoided may result in property damage.

Read and follow all safety information and instructions.

1. GENERAL INFORMATION

A. The Genesis Air Filtrations System is designed for:

1. Installation on a recreational vehicle at the time the vehicle is manufactured.
2. Mounting of an air conditioner or heat pump on the roof of a recreational vehicle.
3. Roof construction with rafters/joists on minimum of 16 inch centers.
4. Minimum of 2.00 inches and maximum of 5.50 inches distance between roof to ceiling of recreational vehicle. Alternate installation methods will allow for roofs more than 5.50 inches thick.

B. The ability of the air conditioner/heat pump to maintain the desired inside temperature depends on the heat gain of the RV. Some preventative measures taken by the occupants of the RV can reduce the heat gain and improve the performance of the air conditioner/heat pump. During extremely high outdoor temperatures, the heat gain of the vehicle may be reduced by:

1. Parking the RV in a shaded area
2. Using window shades (blinds and/or curtains)
3. Keeping windows and doors shut or minimizing usage
4. Avoiding the use of heat producing appliances

Operation on High Fan/Cooling mode will give optimum or maximum efficiency in high humidity or high outside temperature.

Starting the air conditioner/heat pump early in the morning and giving it a "head start" on the expected high outdoor ambient will greatly improve its ability to maintain the desired indoor temperature.

For a more permanent solution to a high heat gain, accessories like A&E outdoor patio and window awnings will reduce heat gain by removing the direct exposure to the sun. They also add a nice area to enjoy company during the cool of the evening.

C. Condensation

Note: The manufacturer of this Genesis Air Filtration System will not be responsible for damage caused by condensed moisture on ceilings or other surfaces. Air contains moisture and this moisture tends to condense on cold surfaces. When air enters the RV, condensed moisture may appear on the ceiling, windows, metal parts, etc. The air conditioner/heat pump removes this moisture from the air during normal operation. Keeping doors and windows closed when operating the air conditioner/heat pump will minimize condensed moisture on cold surfaces.

INSTALLATION INSTRUCTIONS

1. PRECAUTIONS

⚠ WARNING

Improper installation may damage equipment/could endanger life, cause serious injury and/or property damage.

- Read Installation and Operating Instructions carefully before attempting to start your air conditioner installation.
- Dometic Corporation will not be liable for any damages or injury incurred due to failure in following these instructions.
- Installation must comply with the National Electrical Code and any State or Local Codes or regulations.
- DO NOT** add any devices or accessories to this air conditioner except those specifically authorized by Dometic.
- This equipment must be serviced by qualified personnel and some states require these people to be licensed.

2. CHOOSING LOCATION FOR THE UNIT

This air conditioner/heat pump is specifically designed for installation on the roof of a recreational vehicle (RV).

A. FOR ONE UNIT INSTALLATION:

The air conditioner/heat pump should be mounted slightly forward of center (front to back) and centered from side to side.

B. FOR TWO UNIT INSTALLATIONS:

Install one air conditioner/heat pump one-third and one air conditioner two-thirds from front of RV and centered from side to side. It is preferred that the air conditioner/heat pump be installed in a relatively **flat and level** roof section measured with the RV parked on a level surface.

C. AFTER LOCATION HAS BEEN SELECTED:

- Check for obstructions in the area where air conditioner/heat pump and return air cover will be installed.
- The roof must be designed to support 130 pounds when the RV is in motion. Normally a 200 lbs. static load design will meet this requirement.

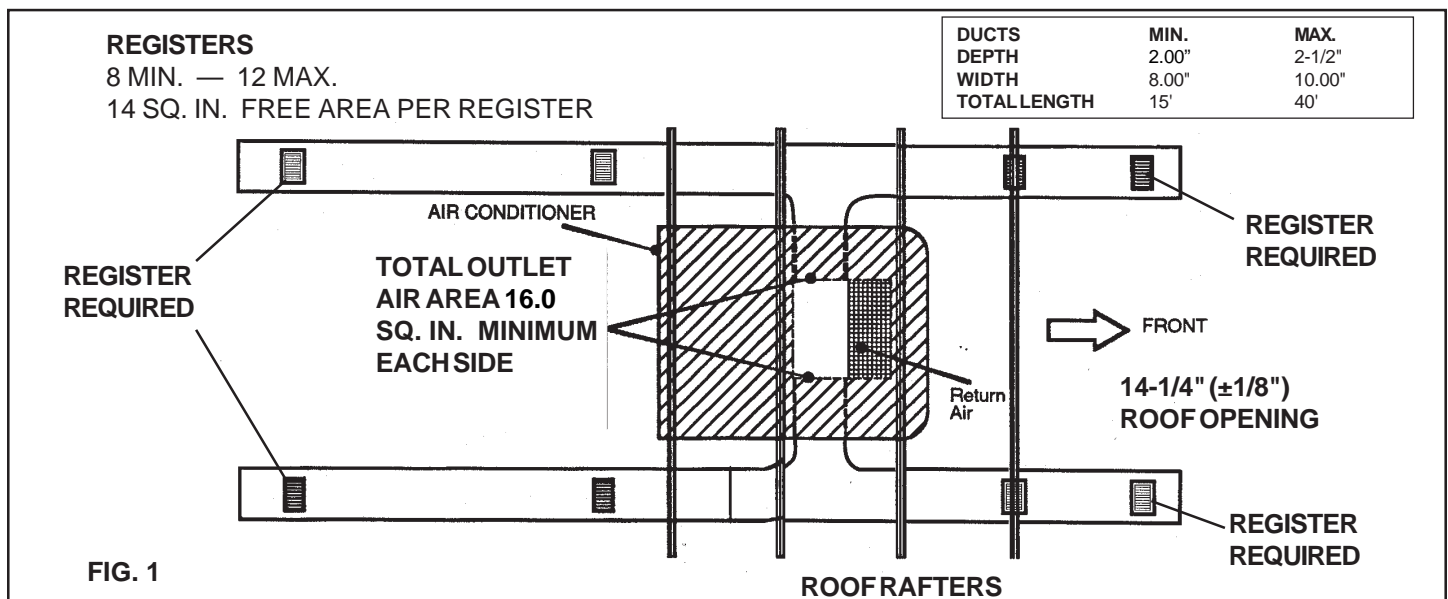
CAUTION

It is the responsibility of the installer of this air conditioner/heat pump system to ensure structural integrity of the RV roof. Never create a low spot on the roof where water will collect. Water standing around the air conditioner/heat pump may leak into the interior causing damage to the product and the RV.

3. AIR DISTRIBUTION SYSTEM SIZING & DESIGN

The Installer of this air conditioner/heat pump system must design the air distribution system for his particular application. Several requirements for this system **MUST** be met for the air conditioner/heat pump to operate properly. These requirements are as follows:

- Roof cavity thickness must be between 2.00" to 5.50". This distance is measured between roof and ceiling surface.
- The total cross-sectional discharge area of outlet ducts from the plenum area under the air conditioner/heat pump must be a minimum of 16.0 sq. inches each side.



C. DUCT SIZING REQUIREMENTS AS FOLLOWS:

NOTE: Duct sizes listed are inside dimensions.

	Min.	Max.
1. Duct Depth	2.00"	2-1/2"
2. Duct Width	8.00"	10.00"
3. Total Duct Length	15'	40'
4. Duct Length (Short Run)	1/3 Total Length	

CENTER DUCT (Penguin 620 & 630 Series Only Controls In Roof Package)

	Min.	Max.
1. Duct Depth	2.00"	2.00"
2. Duct Width	8.00"	8.00"
3. Total Duct Length	15'	40'
4. Duct Length (Short Run)	1/3 Total Length	

D. REGISTER REQUIREMENTS AS FOLLOWS:

	Min.	Max.
1. Distance from Duct End	5"	8'
2. Distance from End of Elbow	15"	—
3. Distance between Registers	24"	—
4. Total Number Required	8	12
5. Min. No. required per Run	2	—
6. Min. Free Area per Register	14 sq. in.	—

- E. The Duct material must meet or exceed any agency or RVIA Standard that may be in existence at the time the RV is produced.
- F. All Discharge Air Ducts must be properly insulated to prevent condensation from forming on their surfaces or adjacent surfaces during operation of the air conditioner/heat pump. This insulation must be R-7 minimum.
- G. Ducts and their joints must be insulated and sealed to prevent condensation from forming on adjacent surfaces during operation of the air conditioner/heat pump.

CAUTION

It is the responsibility of the installer to insure the ductwork will not collapse or bend during and after the installation. Dometic Corporation will not be liable for roof structural or ceiling damage due to improperly insulated, sealed or collapsed ductwork.

- H. Return Air to the air conditioner/heat pump must be filtered to prevent dirt accumulation on air conditioner/heat pump cooling surface.
- I. **Total System Static Air Pressure**
This is to be determined with the air conditioner/heat pump blower operating on High Speed and return air filter and grill in place. It is measured in inches of water Column.
0.55 - 0.90 In. W.C. 579 Series
0.40 - 1.10 In. W.C. 590, 591, 595 Series
0.12 - 0.65 In. W.C. 600, 630 Series

4. AIR DISTRIBUTION SYSTEM INSTALLATION

Dometic Corporation recommends the basic configuration shown in FIG. 1 for installing this air conditioner/heat pump system. We have found by testing, that this configuration works best in most applications of this air conditioner/heat pump system.

It is the responsibility of the Installer of this system to review each RV floor plan and determine the following:

- A. Duct size
- B. Duct layout
- C. Register size
- D. Register locations
- E. Thermostat location.

These items must be determined in conjunction with the Air Distribution System Sizing and Design Requirements listed in Section 3 of this manual.

Important: Alternate configurations and methods may be used which still allow the air conditioner/heat pump to operate properly. However, these alternate configurations and methods must be approved by Dometic Corporation in writing.

The following instructions are based upon the use of Dometic Genesis Air Filtration System No. 3308120.XXX.

- A. Before preparing the ceiling opening, the type of system options must be decided upon. **Read all of the instructions packaged with the system options before beginning the installation.**
- B. **ROOF AND CEILING OPENING PREPARATION**
 1. A 14-1/4" x 14-1/4" (±1/8") opening must be cut through the roof and ceiling of the RV. This opening must be located between the roof and reinforcing members.

⚠ WARNING

There may be electrical wiring between the roof and the ceiling. Disconnect 115 volt AC power cord and the positive (+) 12 volt DC terminal at the supply battery. Failure to follow this instruction may create a shock hazard causing death or severe personal injury.

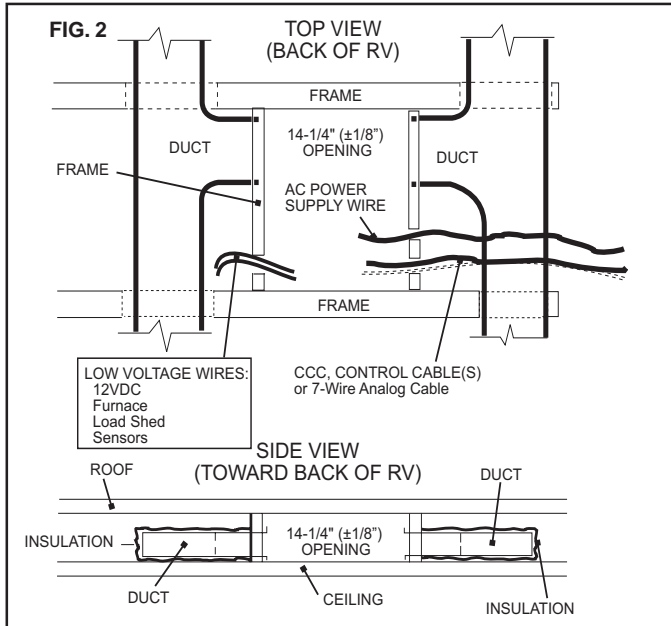
2. Mark a 14-1/4" x 14-1/4" (±1/8") square on the roof and carefully cut the opening.
3. Using the roof opening as a guide, cut the matching hole in the ceiling.
4. The opening created must be framed and sealed to provide adequate support and prevent air from being drawn from the roof cavity. Lumber 3/4" or more in thickness must be used. Remember to provide an entrance hole for power supplies and system wires as needed.

5. The 14-1/4" ($\pm 1/8$ ") opening is part of the return air system of the air conditioner and must be finished in accordance with NFPA Standard 501C Section 2.7.

C. AIR DISTRIBUTION DUCT INSTALLATION

Install the air distribution ducts in the RV roof cavity. The distribution system must meet:

1. RV's requirements
2. System requirements listed in Section 3 of this Manual. Terminate the start of the duct at the back edge of the 14-1/4" ($\pm 1/8$ ") opening previously cut.



5. PLACING THE UNIT ON THE ROOF

- A. Remove the air conditioner/heat pump from the carton.
- B. Place the air conditioner/heat pump on the roof.

⚠ WARNING

This unit weighs approximately 100 pounds. To prevent back injury, use a mechanical hoist to place air conditioner/heat pump on roof.

- C. Lift and place the unit over the prepared opening using the gasket on unit as a guide. The roof gasket on the bottom of the base pan goes toward the front of the RV. Sliding the unit on the roof will damage the roof gasket.

CAUTION

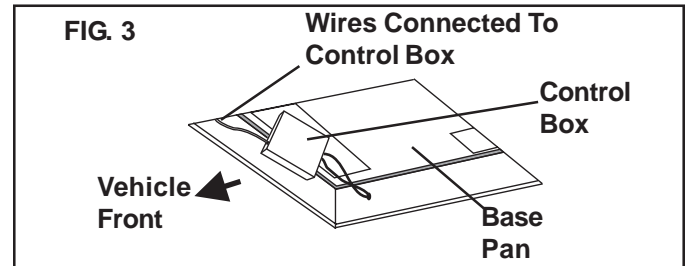
Do not slide the unit. This may damage the neoprene gasket attached to the bottom and create a leaky installation.

Note: If center duct system is being used, be sure to install duct adapter to the bottom of the base pan, before unit is placed over opening. Duct adapter 3100342.XXX and 3100262.XXX can be used. Alternate methods of duct connection are available for installation; however, they must be approved in writing by Dometic.

- D. Place the Genesis Air Filtration System and System Control Option inside the RV. These boxes contains mounting hardware for the air conditioner/heat pump and will be used inside the RV.

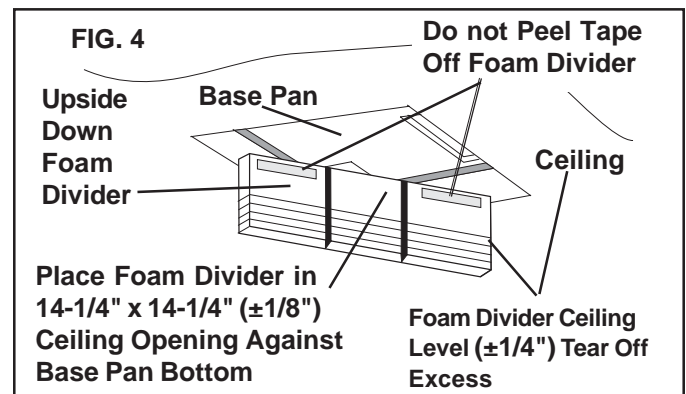
6. INSTALLATION OF UNIT

- A. Take the Genesis Air Filtration System from the carton.
- B. If the Controls are not part of the unit. Position the electrical box towards the front of the opening with all of the system control wires connected to the control box except for the DC power. See figure 3.



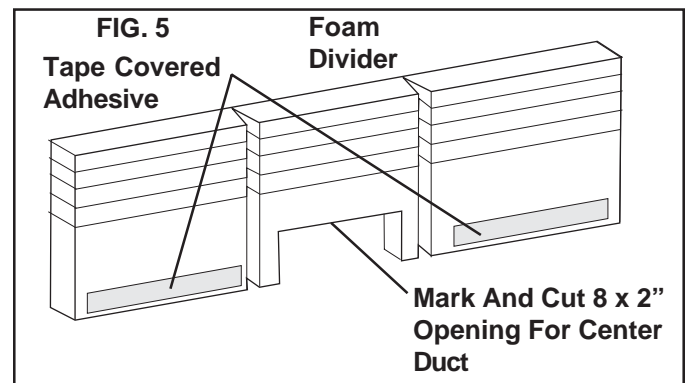
- C. Locate the foam divider and insert it corner to corner in the 14-1/4" x 14-1/4" ($\pm 1/8$ ") opening with the adhesive tape up (Do not remove paper to expose adhesive). The foam divider should be level with the ceiling ($\pm 1/4$ "). Tear off the excess at the pre-cut perforations in divider. See figure 4.

NOTE: If using center duct installation See Step C-1. If not center duct go to Step D.

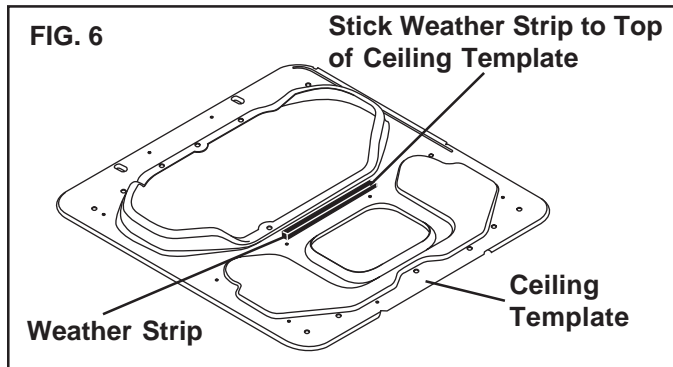


1. Center Duct Installation (Penguin 620 & 630 Series Only)

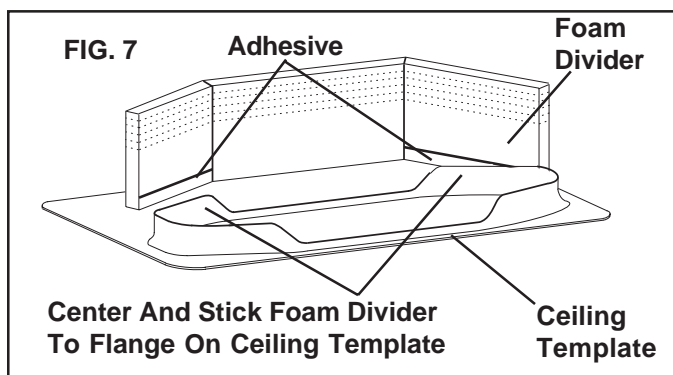
- a. See Step B.
- b. Cut notch in the center section of the foam divider to fit duct (approximately 8 x 2 inches). See figure 5.



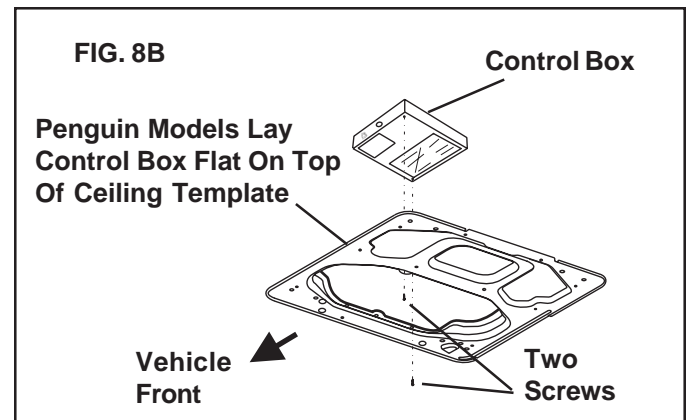
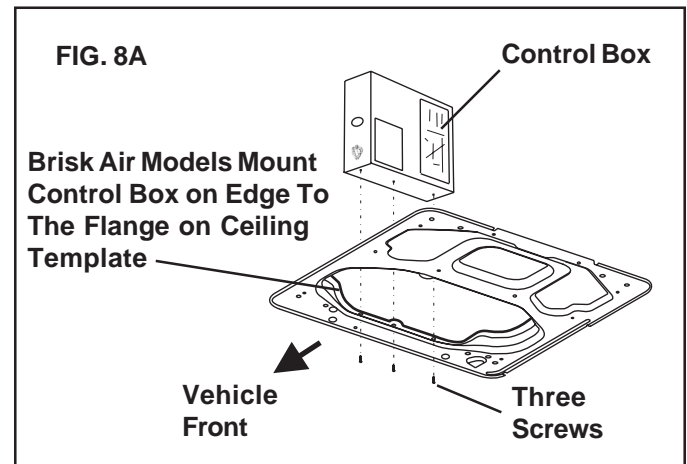
- c. Peel tape to expose adhesive. Wedge the divider between center duct and bottom of unit.
- d. Stick foam weather strip (not provided) on the top side of the ceiling template to seal the gap between it and the center duct. Use a soft piece of foam weather strip 1 x 3/4 x 10 inches. See Figure 6.



- e. Place the ceiling template over the return air opening. Start each mounting bolt through the ceiling template and up into the base pan by hand. Install a wood screw in each end of the ceiling template. This insures a tight fit of the return air cover to the ceiling. Evenly tighten mounting bolts to compress the roof gasket to 1/2", this will be a torque of 40 - 50 Inch Pounds. The bolts are self locking so over tightening is not necessary.
 - f. Cut out bottom of the center duct allowing the discharge of air to flow out the opening in the ceiling template.
 - g. Proceed on from Steps G - L.
- D. Peel the protective paper tape off of the divider and place it on the center of the rear edge of return air opening on the ceiling template. See figure 7.



- E. Place the ceiling template up into the return air opening in the ceiling. Start each mounting bolt by hand through the ceiling template and up into the base pan. Install a wood screw in each end of the ceiling template. This insures a tight fit of the return air cover to the ceiling. Secure the control box to the ceiling template with thread cutting screw. See figure 8A and 8B.

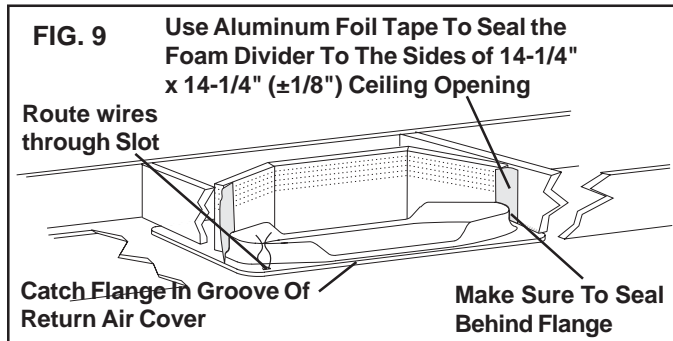


- F. Evenly tighten mounting bolts to compress the roof gasket to 1/2", this will be 40 - 50 Inch Pounds of torque. The bolts are self locking so over tightening is not necessary.

CAUTION

If bolts are left loose there may not be an adequate roof seal or if over tightened, damage may occur to the air conditioner base or ceiling template. Tighten to torque specifications listed in this manual.

- G. Use Aluminum foil tape (not provided) to seal the ends of the foam divider to the sides of the opening. Make sure the area behind the flange on the ceiling template is sealed. See Figure 9.



- H. Install the slider in the return air cover and raise it to the ceiling template. Route the wires from the return air cover through the template slot leaving about 3" of wire in between. Place the front of the return air cover against the ceiling and slide towards the rear. The flange on the ceiling template will catch in the groove on the return cover. Adjust the position (right to left) and install the front two screws. Start and tighten the remaining screws to hold it in place. Connect together the DC wires (3 Black - negative and 3 Red - positive) from the supply, control box and filter indicator. See figure 9.

Note: Number 10 cabinet screw can be used to replace the two front screws, and pull the plastic return air cover to the ceiling when the ceiling material is hard.

1. If solar panel is installed see instructions pack aged with solar panel option.
- I. Tighten the screws holding the return air cover. Slide the filter from the right side (looking toward the RV front) over the wires. Make sure the wires are above the filter and are out of its way.
- J. Place grill on return air cover and snap in place. Decal is on end over circuit board.
- K. Place slide handle through slots in grill into the slide posts. Handle will fit in either direction. See Figure 10.

OPERATING INSTRUCTIONS

1. GENERAL INSTRUCTIONS

- A. Read your Control Systems Operating Instructions carefully before attempting to start your air conditioner.
- B. The 3308120.XXX Genesis Air Filtration System is designed to allow the unit to direct the air flow through the RV's duct system; or, by opening a slide control the air will be discharged directly out from the return air cover.
1. Slide the slide handle towards the front of the RV to divert the air into the duct system.
 2. Slide the slide handle to the rear of the RV and the air will discharge out the return air cover.

- C. The "CLEAN FILTER" bulb will blink as a reminder to clean/change the air filter every 60 days. If in dusty conditions, the filter should be checked bi-weekly and clean/changed if needed.

1. To clean the filter, remove the dust using a vacuum cleaner. Wash filter with a mild detergent, rinse with clean water and allow to dry.

NOTE: Replace filter annually. See your Duo Therm Dealer for replacement filter. Filter part numbers are stamped on filter frame.

2. To reset the "CLEAN FILTER" reminder:
 - a. Depress the gray button "FILTER RESET" on the decal of the grill. The Light will blink 3 times to indicate a successful reset. See Figure 11.

