



RECORD THIS UNIT INFORMATION
FOR FUTURE REFERENCE:

Model Number _____
Serial Number _____
Date Purchased _____

520 Series DUO-THERM HP

579 Series BRISK AIR

595 Series QUICK COOL

600 Series PENGUIN

Roof Top Air Conditioners

Used With Part No.

3309697.005 Digital Control Kit, Cool/Furnace

Ducted Installation

And One

3105007 Return Air Grill Or

3105935 Quick Cool Grill Or

3308120 Genesis Air Filtration System

USA

SERVICE OFFICE
Dometic Corporation
2320 Industrial Parkway
Elkhart, IN 46516
574-294-2511

CANADA

Dometic Corporation
46, Zatonski, Unit 3
Brantford, ON N3T 5L8
CANADA
519-720-9578

For Service Center
Assistance Call:
800-544-4881

**THIS UNIT IS DESIGNED FOR OEM INSTALLATION
ALL INITIAL INSTALLATIONS MUST BE APPROVED BY
DOMETIC CORPORATION**

WARNING

This manual must be read and understood before installation, adjustment, service, or maintenance is performed. This unit must be installed by a qualified service technician. Modification of this product can be extremely hazardous and could result in personal injury or property damage.

AVERTISSEMENT

Lire et comprendre ce manuel avant de procéder à l'installation, à des réglages, de l'entretien ou des réparations. L'installation de cet appareil doit être effectuée par un réparateur qualifié. Toute modification de cet appareil peut être extrêmement dangereuse et entraîner des blessures ou dommages matériels.



INSTALLATION INSTRUCTIONS

3311303.022

REVISION:
Form No. 3311303.022 4/08
(Replaces 3311303.014)
(French 3311304.020)
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LaGrange, IN 46761

MODELS

520300.501	520316.506	57915.531	59516.736
520300.506	520316.701	57915.536	59530.532
520310.501	520316.706	57915.541	59530.536
520310.506	57908.321	57915.546	600312.331
520315.501	57908.521	57915.741	600315.331
520315.506	57912.531	57915.746	600315.336
520315.701	57912.532	59516.331	
520315.706	57915.331	59516.336	
520316.301	57915.336	59516.531	
520316.306	57915.341	59516.536	
520316.501	57915.346	59516.731	

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

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. Product features or specifications as described or illustrated are subject to change without notice.
- B. **This air conditioner is designed for:**
 - 1. Installation on a recreational vehicle at the time the vehicle is manufactured.
 - 2. Mounting on the roof of a recreational vehicle.
 - 3. Connection to an air distribution system located in the ceiling/roof cavity of the recreational vehicle.
 - 4. Roof construction with rafters/joists on minimum of 16 inch centers.
 - 5. Minimum of 2.00" and maximum of 5.50" distance between roof to ceiling of recreational vehicle. Alternate installation methods will allow for roofs more than 5.50" thick.
- C. The ability of the air conditioner 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. 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 temperatures.

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

D. Condensation

Note: The manufacturer of this air conditioner 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 removes this moisture from the air during normal operation. Keeping doors and windows closed when this air conditioner is in operation will minimize condensed moisture on cold surfaces.

SPECIFICATIONS

MODEL NO.	NOMINAL CAPACITY (BTU/HR) COOLING	ELECTRICAL RATING	COMPRESSOR RATED LOAD AMPS	COMPRESSOR LOCKED ROTOR AMPS	FAN MOTOR RATED LOAD AMPS	FAN MOTOR LOCKED ROTOR AMPS	SCFM-HIGH SPEED MAX/MIN	TOTAL STATIC MAX/MIN "W. C.	REFRIGERANT R-22 (OZ)	MINIMUM WIRE SIZE*	AC CIRCUIT PROTECTION *** USER SUPPLIED	INSTALLED WEIGHT (POUNDS)	MINIMUM GENERATOR SIZE** 1 UNIT/ 2 UNITS
520300.501	N/A	115 VAC, 60 HZ., 1PH.	7.8	49.0	3.0	8.5	375 / 275	0.55 / 1.10	20.0	12 AWG Copper up to 24'	15 Amp	89	2.5 KW / 4.0 KW
520300.506	N/A		7.8	49.0	3.0	8.5	375 / 275	0.55 / 1.10	20.0		15 Amp	90	2.5 KW / 4.0 KW
520310.501	9,000		7.8	49.0	3.0	8.5	375 / 275	0.55 / 1.10	20.0		20 Amp	89	2.5 KW / 4.0 KW
520310.506	9,000		7.8	49.0	3.0	8.5	375 / 275	0.55 / 1.10	20.0		20 Amp	90	2.5 KW / 4.0 KW
520315.501	13,500		10.3	62.0	3.0	8.5	375 / 275	0.55 / 1.10	16.5		20 Amp	91	3.5 KW / 5.0 KW
520315.506	13,500		10.3	62.0	3.0	8.5	375 / 275	0.55 / 1.10	16.5		20 Amp	92	3.5 KW / 5.0 KW
520315.701	13,500		12.0	58.0	3.0	8.5	375 / 275	0.55 / 1.10	16.5		20 Amp	91	3.5 KW / 5.0 KW
520315.706	13,500		12.0	58.0	3.0	8.5	375 / 275	0.55 / 1.10	16.5		20 Amp	92	3.5 KW / 5.0 KW
520316.301	15,000		13.2	60.0	2.8	7.6	375 / 275	0.70 / 1.10	30.0		20 Amp	105	3.5 KW / 5.0 KW
520316.306	15,000		13.2	60.0	2.8	7.6	375 / 275	0.70 / 1.10	30.0		20 Amp	106	3.5 KW / 5.0 KW
520316.501	15,000		13.2	79.0	2.8	7.6	375 / 275	0.70 / 1.10	30.0		20 Amp	105	3.5 KW / 5.0 KW
520316.506	15,000		13.2	79.0	2.8	7.6	375 / 275	0.70 / 1.10	30.0		20 Amp	106	3.5 KW / 5.0 KW
520316.701	15,000		13.2	62.0	2.8	7.6	375 / 275	0.70 / 1.10	30.0		20 Amp	105	3.5 KW / 5.0 KW
520316.706	15,000		13.2	62.0	2.8	7.6	375 / 275	0.70 / 1.10	30.0		20 Amp	106	3.5 KW / 5.0 KW
520316.706	15,000		13.2	62.0	2.8	7.6	375 / 275	0.70 / 1.10	30.0		20 Amp	106	3.5 KW / 5.0 KW
520316.706	15,000		13.2	62.0	2.8	7.6	375 / 275	0.70 / 1.10	30.0		20 Amp	106	3.5 KW / 5.0 KW
579008.321	7,180		6.9	36.0	2.5	5.8	325 / 250	0.55 / 0.90	16.0		20 Amp	75	2.5 KW / 4.0 KW
579008.521	7,100		6.6	34.0	2.5	5.8	325 / 250	0.55 / 0.90	17.0		20 Amp	75	2.5 KW / 4.0 KW
57912.531	11,000		8.0	53.0	2.5	5.8	325 / 250	0.55 / 0.90	18.5		20 Amp	94	2.5 KW / 4.0 KW
57912.532	11,000		12.1	59.0	2.5	5.8	325 / 250	0.55 / 0.90	16.5		20 Amp	94	3.5 KW / 5.0 KW
57915.331	13,500		11.4	58.0	2.5	5.8	325 / 250	0.55 / 0.90	15.5		20 Amp	100	3.5 KW / 5.0 KW
57915.336	13,500		11.4	58.0	2.5	5.8	325 / 250	0.55 / 0.90	15.5		20 Amp	101	3.5 KW / 5.0 KW
57915.341	13,500		11.5	58.0	2.5	5.8	325 / 250	0.55 / 0.90	15.5		20 Amp	100	3.5 KW / 5.0 KW
57915.346	13,500		11.5	58.0	2.5	5.8	325 / 250	0.55 / 0.90	15.5		20 Amp	101	3.5 KW / 5.0 KW
57915.531	13,500		12.1	59.0	2.5	5.8	325 / 250	0.55 / 0.90	16.5		20 Amp	94	3.5 KW / 5.0 KW
57915.536	13,500		12.1	59.0	2.5	5.8	325 / 250	0.55 / 0.90	16.5		20 Amp	95	3.5 KW / 5.0 KW
57915.541	13,500		11.3	62.0	2.5	5.8	325 / 250	0.55 / 0.90	16.0		20 Amp	94	3.5 KW / 5.0 KW
57915.546	13,500		11.3	62.0	2.5	5.8	325 / 250	0.55 / 0.90	16.0		20 Amp	95	3.5 KW / 5.0 KW
57915.741	13,500		12.2	58.0	2.5	5.8	325 / 250	0.55 / 0.90	15.5		20 Amp	94	3.5 KW / 5.0 KW
57915.746	13,500		12.2	58.0	2.5	5.8	325 / 250	0.55 / 0.90	15.5		20 Amp	95	3.5 KW / 5.0 KW
59516.331	15,000		11.5	50.0	2.5	5.8	325 / 250	0.40 / 1.10	29.0		20 Amp	94	3.5 KW / 5.0 KW
59516.336	15,000		12.7	60.0	2.0	5.6	325 / 250	0.40 / 1.10	29.0		20 Amp	95	3.5 KW / 5.0 KW
59516.531	15,000		12.9	79.0	2.0	5.6	325 / 250	0.40 / 1.10	29.0		20 Amp	101	3.5 KW / 5.0 KW
59516.536	15,000		12.9	79.0	2.0	5.6	325 / 250	0.40 / 1.10	29.0		20 Amp	102	3.5 KW / 5.0 KW
59516.731	15,000		13.3	62.0	2.0	5.6	325 / 250	0.40 / 1.10	29.0		20 Amp	101	3.5 KW / 5.0 KW
59516.736	15,000		13.3	62.0	2.0	5.6	325 / 250	0.40 / 1.10	29.0		20 Amp	102	3.5 KW / 5.0 KW
59530.532	N/A		8.0	53.0	2.5	5.8	325 / 250	0.40 / 1.10	18.5		15 Amp	94	3.5 KW / 5.0 KW

* For wire lengths over 24 ft. consult the National Electric Code for proper sizing.

** Dometic Corporation gives **GENERAL** guidelines for generator requirements. These guidelines come from experiences people have had in actual applications. When sizing the generator, the total power usage of your recreational vehicle must be considered. Keep in mind generators lose power at high altitudes and from lack of maintenance.

*** CIRCUIT PROTECTION: Time Delay Fuse or HACR Circuit Breakers Required.

SPECIFICATIONS

MODEL NO.	NOMINAL CAPACITY (BTU/HR) COOLING	ELECTRICAL RATING	COMPRESSOR RATED LOAD AMPS	COMPRESSOR LOCKED ROTOR AMPS	FAN MOTOR RATED LOAD AMPS	FAN MOTOR LOCKED ROTOR AMPS	SCFM-HIGH SPEED MAX/MIN	TOTAL STATIC MAX/MIN " W. C.	REFRIGERANT R-22 (OZ)	MINIMUM WIRE SIZE*	AC CIRCUIT PROTECTION *** USER SUPPLIED	INSTALLED WEIGHT (POUNDS)	MINIMUM GENERATOR SIZE** 1 UNIT/ 2 UNITS
59530.536	N/A	115 VAC, 60 HZ., 1PH.	7.8	53.0	2.0	5.6	325 / 250	0.40 / 1.10	19.0	12 AWG Copper up to 24'	15 Amp	95	3.5 KW / 5.0 KW
600312.331	11,000		9.5	53.0	3.5	10.0	335 / 250	.012 / 0.65	17.0		20 Amp	97	2.5 KW / 4.0 KW
600315.331	13,500		12.4	60.0	3.5	10.0	335 / 250	.012 / 0.65	15.2		20 Amp	95	3.5 KW / 5.0 KW
600315.336	13,500		12.4	60.0	3.5	10.0	335 / 250	.012 / 0.65	15.2		20 Amp	96	3.5 KW / 5.0 KW

* For wire lengths over 24 ft. consult the National Electric Code for proper sizing.

** Dometic Corporation gives **GENERAL** guidelines for generator requirements. These guidelines come from experiences people have had in actual applications. When sizing the generator, the total power usage of your recreational vehicle must be considered. Keep in mind generators lose power at high altitudes and from lack of maintenance.

*** CIRCUIT PROTECTION: Time Delay Fuse or HACR Circuit Breakers Required.

2. PRECAUTIONS

⚠ WARNING

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

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

3. CHOOSING LOCATION FOR THE AIR CONDITIONER

This air conditioner is specifically designed for installation on the roof of a recreational vehicle (RV). When determining your cooling requirements, the following should be considered:

1. Size of RV.
2. Window area (increases heat gain).
3. Amount of insulation in walls and roof.
4. Geographical location where the RV will be used.
5. Personal comfort level required.

A. For One Unit Installation:

The air conditioner 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 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 be installed on a relatively **flat and level** roof section measured with the RV parked on a level surface; however,

1. Up to a 15° slant to either side or front-to-back is acceptable on 520, 579, or 595 series air conditioners. A 8° slant to either side, or front to back, is acceptable for 600 series.

AFTER LOCATION HAS BEEN SELECTED:

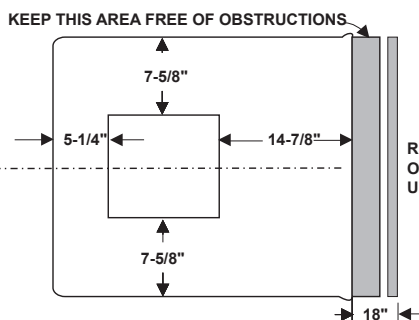
- a. Check for obstructions in the area where air conditioner will be installed. See FIG. 1.
- b. The roof must be designed to support 130 pounds when the RV is in motion. Normally 200 pound static load design will meet this requirement.

CAUTION

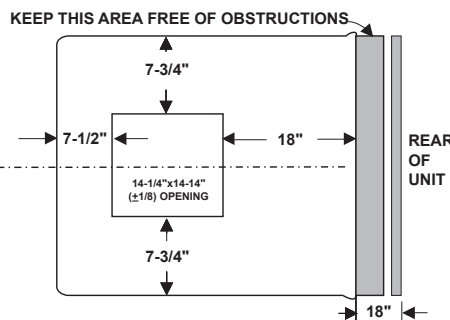
It is the responsibility of the installer of this air conditioner system to ensure structural integrity of the RV roof. Never create a low spot on the roof where water will collect. Water standing around the air conditioner may leak into the interior causing damage to the product and the RV.

FIG. 1 AIR CONDITIONER DIMENSIONS (On Top of Vehicle)

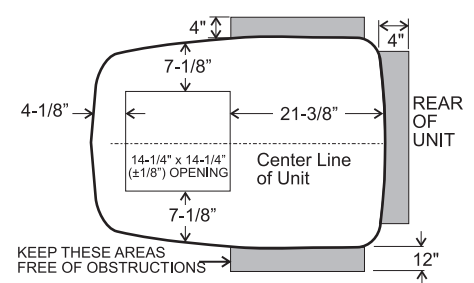
579, 590, & 595 SERIES



520 SERIES



600 SERIES



4. AIR DISTRIBUTION SYSTEM SIZING & DESIGN

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

- A. The duct material must meet or exceed any agency or RVIA Standard that may be in existence at the time the RV is produced.
- B. 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. This insulation must be R-7 minimum.
- C. Ducts and their joints must be sealed to prevent condensation from forming on adjacent surfaces during operation of the air conditioner.
- D. Return air openings must have 40 square inches minimum free area including the filter.
- E. Return air to the air conditioner must be filtered to prevent dirt accumulation on air conditioner cooling surface.

CAUTION

It is the responsibility of the installer to insure the duct work 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 duct work.

AIR DISTRIBUTION DUCT SIZING & DESIGN CHART

Return Air Cover Model	3105007.XXX 3105935.XXX	3308120.XXX Genesis Air Filtration System
Roof Cavity Depth	2.0 In. Min. - 5-1/2 In. Max.	2.0 In. Min. - 5-1/2 In. Max.
Duct Cross Sectional Area	21.0 Sq. In. Min.	32.0 Sq. In. Min.
Duct Size Depth Width Total Duct Length Duct Length (short run)	1-1/2 In. Min. - 2-1/2 In. Max. 7.0 In. Min. - 10.0 In. Max. 15.0 Ft. Min. - 40.0 Ft. Max. 1/3 Total Duct Length	2.0 In. Min. - 2-1/2 In. Max. 8.0 In. Min. - 10.0 In. Max. 15.0 Ft. Min. - 40.0 Ft. Max. 1/3 Total Duct Length
Register Requirements Number Required Per Run Register Free Air Area Distance From Duct End Distance From Elbow	4 Min. 14.0 Sq. In. 5.0 In. Min. - 8.0 In. Max. 15.0 In.	4 Min. 14.0 Sq. In. 5.0 In. Min. - 8.0 In. Max. 15.0 In.
Total System Static Air Pressure Blower at High Speed, Filter & Grill In Place	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 0.55 - 1.10 In. W.C. 520300, 520310, 520315 & 530515 Series 0.70 - 1.10 In. W.C. 520316 Series 0.70 - 0.90 In. W.C. 530516 Series	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 0.55 - 1.10 In. W.C. 520300, 520310 520315 & 530515 Series 0.70 - 1.10 In. W.C. 520316 Series 0.70 - 0.90 In. W.C. 530516 Series

Note: Duct sizes listed are inside dimensions.

5. AIR DISTRIBUTION SYSTEM INSTALLATION

- A.** Dometic Corporation recommends the basic configuration shown on page 7 for installing this air conditioner system. We have found through testing that this configuration works best in most applications of this air conditioner system. It is the responsibility of the Installer of this system to review each RV floor plan and determine the following:

1. Duct size
2. Duct layout
3. Register size
4. Register location
5. Thermostat location

These items must be determined in conjunction with the Air Distribution System and Sizing and Design Requirements listed in the chart on page 5.

Important: Alternate configurations and methods may be used which still allow the air conditioner to operate properly; however, these alternate configurations and methods must be approved by the Dometic Corporation in writing. The following instructions are based upon the use of Dometic 3105007.XXX Return Air Kits, 3105935.XXX Quick Cool Kits, or 3308120.XXX Genesis Air Filtration System. The 3309697.005 Digital Thermostat Kit has the mounting bolts supplied for use in the kit.

B. ROOF AND CEILING OPENING PREPARATION

WARNING

There may be electrical wiring between the roof and the ceiling. Disconnect 120 VAC power cord and the positive (+) 12 VDC terminal at the supply battery. Failure to follow this instruction may create a shock hazard causing death or severe personal injury.

1. A 14-1/4" x 14-1/4" ($\pm 1/8$ ") opening must be cut through the roof and ceiling of the RV. This opening must be located between the roof reinforcing members.
2. Mark a 14-1/4" x 14-1/4" ($\pm 1/8$ ") 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 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 supply wiring and thermostat cable.
5. The 14-1/4" x 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.
6. Route a copper 12 AWG (max. length 24'), with ground, 120 VAC supply line from the fuse or circuit breaker box to the roof opening.
 - a. This supply line must be located in the front portion of the 14-1/4" x 14-1/4" ($\pm 1/8$ ") opening.
 - b. The 120 VAC power supply **MUST** be on a separate 20 amp Time Delay Fuse or HACR Circuit Breaker for models 520 (except 520300), 579, 59516, and 600 series. A 15 amp Time Delay Fuse or HACR Circuit Breaker for models 520300 and 59530 series.
 - c. Make sure at least 15" of supply wire extends into the roof opening. This ensures easy connection at the junction box.
 - d. Wiring must comply with all National, State and Local Wiring Codes.
 - e. Use a steel sleeve and a grommet or equivalent method to protect the wire where it passes into the opening.
7. See Section 6. Digital Thermostat and Cable Installation.

C. AIR DISTRIBUTION DUCT INSTALLATION

1. Install the Air Distribution Ducts in the RV Roof Cavity. The Distribution System must meet:
 - a. RV's requirements
 - b. System requirements listed in Section 4 on page 5 of this Manual. Terminate the start of the Duct at the back edge of the 14-1/4" x 14-1/4" ($\pm 1/8$ ") opening previously cut. See FIG. 2, 3, & 4.

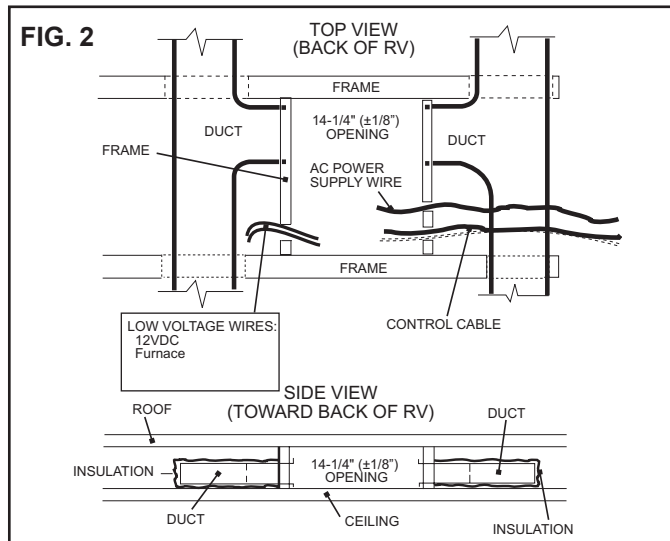


FIG. 3 Duct Size And Requirements For 3105007.XXX And 3105935.XXX Return Air Cover

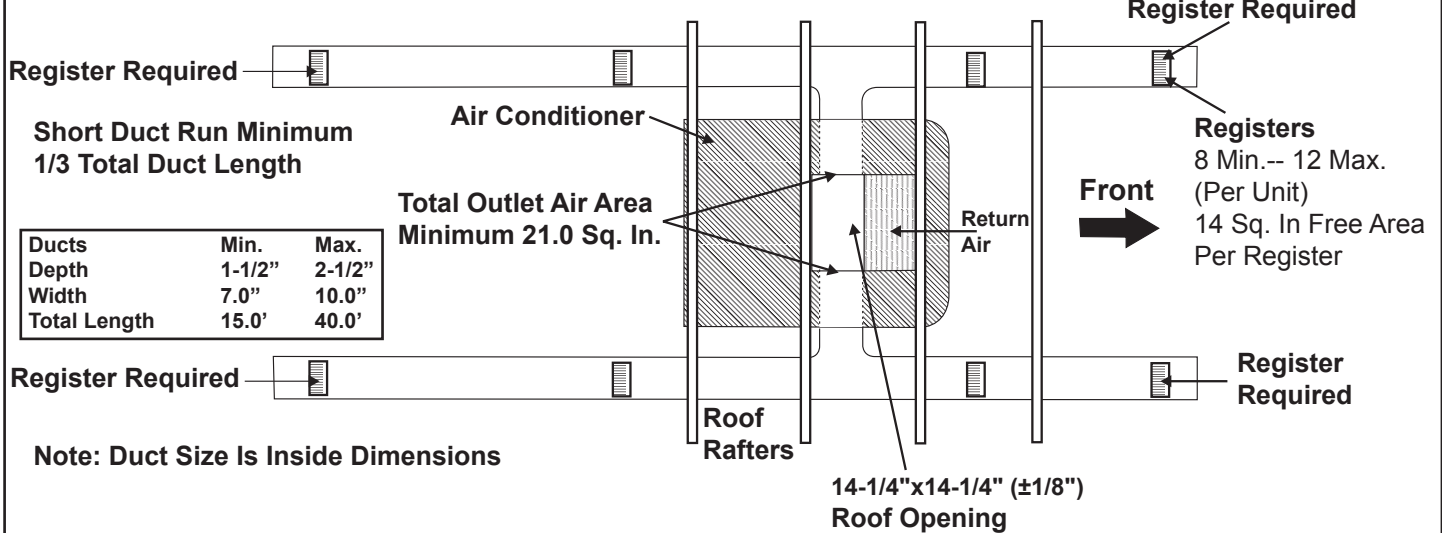
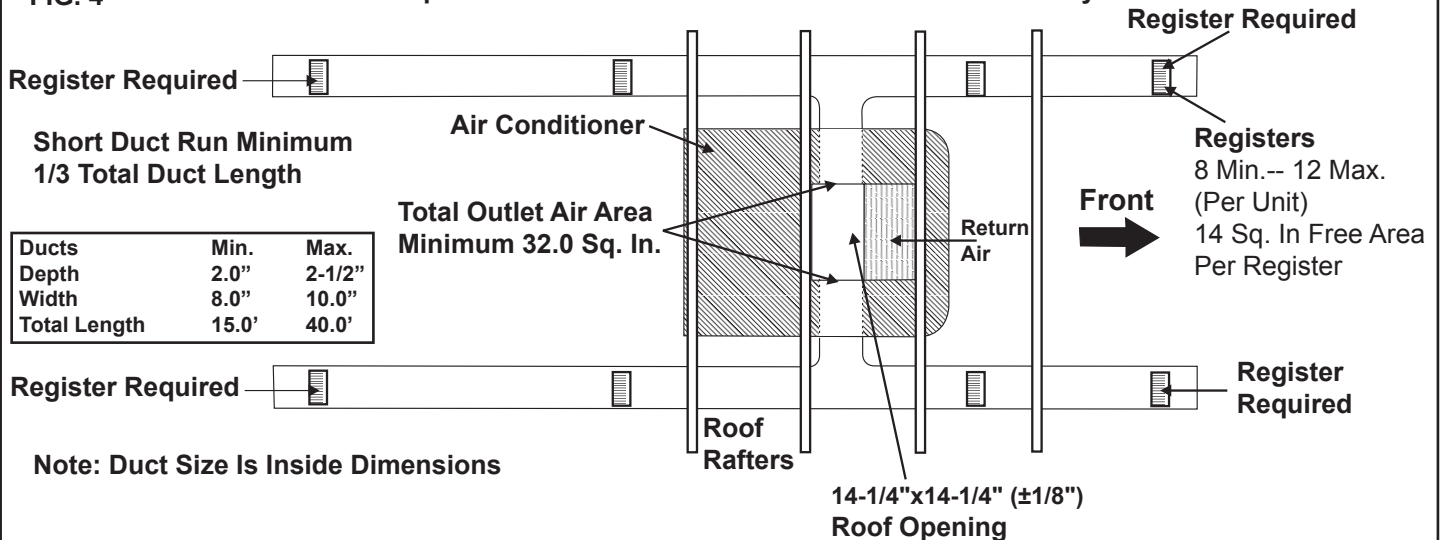


FIG. 4 Duct Size And Requirements For 3308120.XXX Genesis Air Filtration System



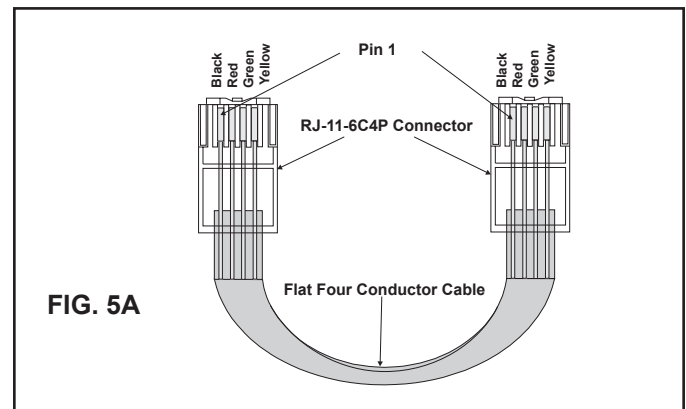
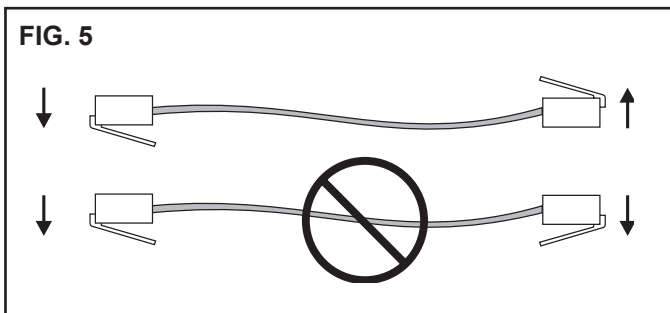
6. DIGITAL THERMOSTAT & CABLE INSTALLATION

A. LOCATION FOR DIGITAL THERMOSTAT

1. The proper location of the Digital Thermostat is very important to ensure that it will provide a comfortable RV temperature. Observe the following general rules when selecting a location for the Digital Thermostat.
 - a. Locate the Digital Thermostat 54" above the floor.
 - b. Install Digital Thermostat on a partition, **NEVER** on an outside wall.
 - c. **NEVER** expose Digital Thermostat to direct heat from lamps, sun or other heat producing items.
 - d. Avoid locations close to doors that lead outside, windows or adjoining outside walls or directly under cabinets or overhangs which limit air movement.
 - e. Avoid locations close to supply registers and the air from them.
 - f. **NEVER** locate a Digital Thermostat in a room that is warmer or cooler than the rest of the coach - such as the kitchen.
 - g. The major living area is normally a good location.

B. CONTROL CABLE

1. The cable that should be used is a flat, 4-conductor telephone type cable.
2. The cable must be terminated with two (2) RJ-11-6C4P telephone connectors. Refer to the crimp tool manufacture for crimping instructions.
3. The RJ-11-6C4P terminals must be connected to the control cable with the same polarity on both ends. **Pre-made standard telephone cable will not work.** See FIG. 5 & 5A.



C. CABLE INSTALLATION

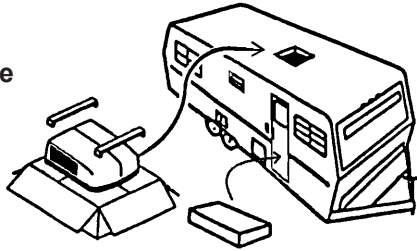
1. Route a dedicated 12 VDC supply line (18 to 22 AWG) from the RV's converter (filtered side) or battery to the roof opening.
 - a. This supply line must be located in the front portion of the 14-1/4" x 14-1/4" ($\pm 1/8$ ") opening.
 - b. Make sure that at least 15" of supply wire extends into the roof opening. Terminate the 12 VDC power supply leads with insulated 1/4" female disconnects.
2. Choose the shortest, direct route from the 14-1/4" x 14-1/4" ($\pm 1/8$ ") opening to the Digital Thermostat location selected, and route a 4-conductor flat control cable. Make sure at least 15" of wire extends into the opening and 6" extends from the wall at the Digital Thermostat location.
3. If system is to control a gas furnace, route two 18 gauge wires from the furnace to roof opening of the air conditioner that will control it. Make sure that 15" of wire extends into the opening. Terminate the furnace leads with insulated 1/4" female disconnects.

7. PLACING THE AIR CONDITIONER ON THE ROOF

- A. Remove the air conditioner from the carton and discard carton. The unit mounting bolts and literature are in a separate plastic bag with the relay kit. Be sure to place this information in the RV.
- B. Place the air conditioner on the roof.

FIG. 7

Please Recycle
All Cardboard

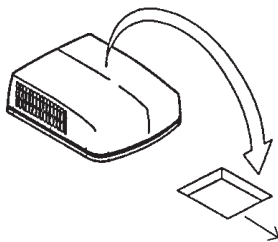


CAUTION

This unit weighs approximately 100 pounds. To prevent back injury, use a mechanical hoist to place air conditioner 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. See FIG. 8.

FIG. 8



CAUTION

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

D. AIR DISTRIBUTION DUCT INSTALLATION

1. Install the Air Distribution Ducts in the RV Roof Cavity. The Distribution System must meet:
 - a. RV's requirements
 - b. System requirements listed in Section 4 on page 5 of this Manual. Terminate the start of the duct at the back edge of the 14-1/4" x 14-1/4" ($\pm 1/8$ ") opening previously cut. See FIGS. 2, 3 & 4.

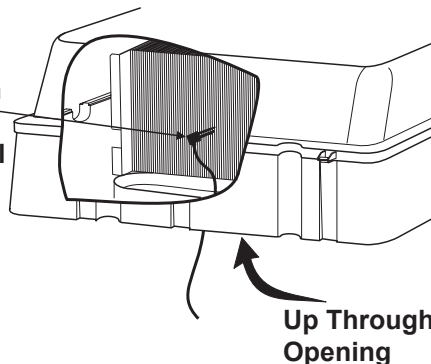
8. INSTALLATION OF COLD CONTROL

A. 520, 579, 595 & 600 SERIES

1. Insert the **Freeze Control Sensor** into the fins of the evaporator coil, 1" above the bottom center of the fins as shown in FIG. 9.

FIG. 9

Center The
Freeze Control
Switch 1" From
Bottom On
Evaporator Coil



2. Plug the freeze control sensor Blue wire into the 2 pin connector on the Electronic Control Kit labeled "**Freeze stat**". These connectors are polarized and will easily snap together. **DO NOT FORCE**.

9. WIRING OF CONTROL SYSTEM

A. CONNECTION OF 120 VAC SUPPLY

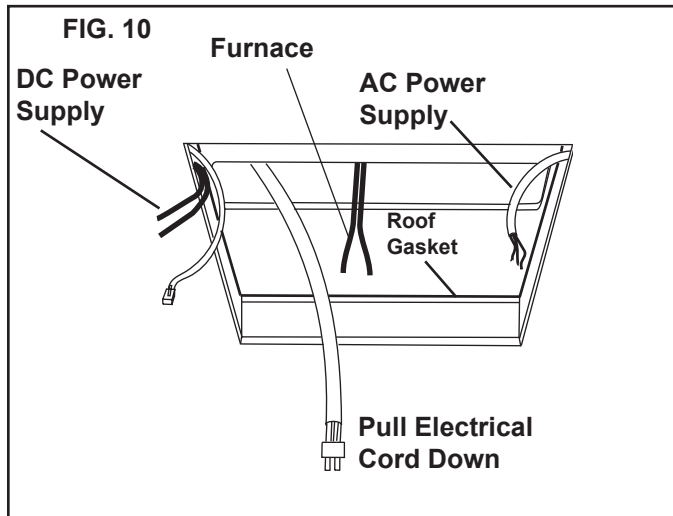
1. Reach up into the return air opening of the air conditioner and pull the unit electrical cord down for later installation. See FIG. 10.

⚠ WARNING

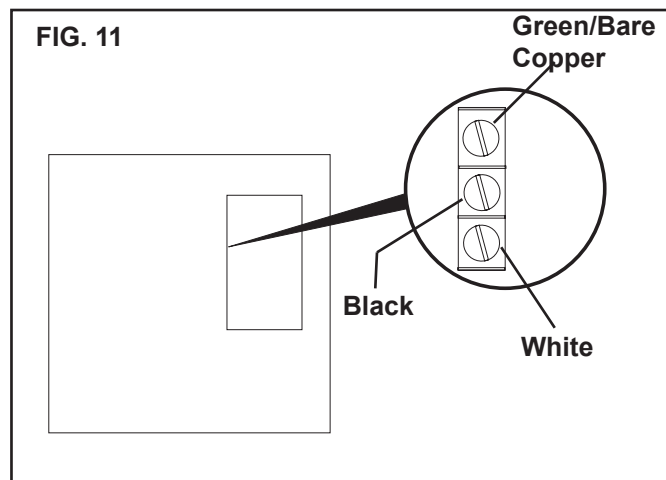
Disconnect 120 VAC. Failure to follow these instructions could create a shock hazard causing death or severe personal injury.

⚠ WARNING

This product is equipped with a 3-wire (grounded) system for protection against shock hazard. Make sure that the appliance is wired into a properly grounded 120 VAC circuit and the polarity is correct. Failure to do so could result in death, personal injury or damage to the equipment.



2. Route the previously run AC power supply line through the Romex Connector and into electronic control junction box.
3. Terminate the Green/bare copper, Black and White wires with a spade terminal that will fit a #8 screw. See FIG. 11.
4. Tighten screws on Romex connector being careful not to pinch and cut into the insulation on power supply leads.
5. Push excess wires into junction box. Install junction box cover.



B. CONNECTION OF LOW VOLTAGE WIRES

CAUTION

Disconnect the positive (+) 12 VDC terminal at the supply battery. Damage to equipment could occur if the 12 VDC is not shut off.

Note: If solar panel is installed see instructions packaged with solar panel option.

Note: If using the Genesis Air Filtration System step "a" is to be completed when installing the decorative cover.

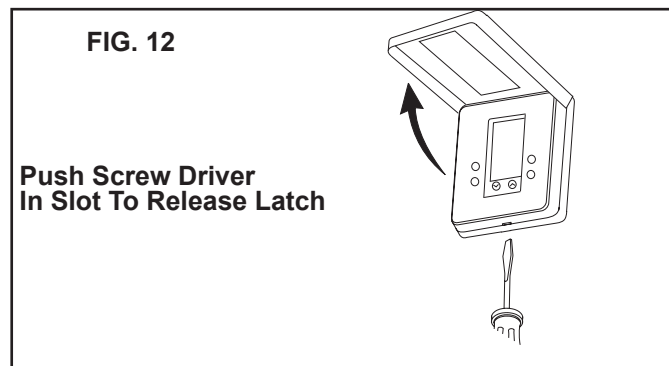
1. Terminate the 12 VDC leads from the RV supply with 1/4" insulated, female disconnects. Connect the positive lead to the spade terminal labeled +12V and negative lead to the spade terminal labeled COM at the control box.
2. Terminate the furnace leads (if applicable) from the RV with 1/4" insulated, female disconnects. Connect to the spade terminals labeled Furnace at the control box. The polarity of these connections does not matter.
3. The 4-conductor control cable(s) protruding into the 14-1/4" x 14-1/4" (±1/8") roof opening must be terminated with a telephone RJ-11-6C4P connector. Refer to the crimp tool manufacturer for crimping instructions.

Important: RJ-11-6C4P connectors must be installed as shown in FIG. 5 & 5A.

4. Plug the control cable into the telephone jack on the control box labeled TSTAT.
5. Attach the freeze control plug to the connector labeled Freeze Control on the control box.

C. DIGITAL THERMOSTAT INSTALLATION

1. Carefully remove the base plate from the Digital Thermostat. This may be accomplished by inserting a small screwdriver in the slot on the bottom edge of the front cover. Gently push to unlock latch and remove thermostat off the base. See FIG. 12.

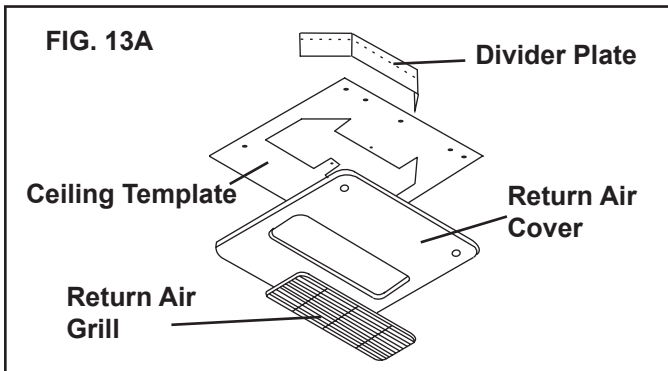


2. Insert the control cable through the hole in the base plate and mount the plate to the wall with the two screws provided. Check the alignment to ensure level installation.
3. Install the previously terminated 4-conductor control cable RJ-11-6C4P connector into the back of the Digital Thermostat. Gently press the Digital Thermostat onto the base plate.

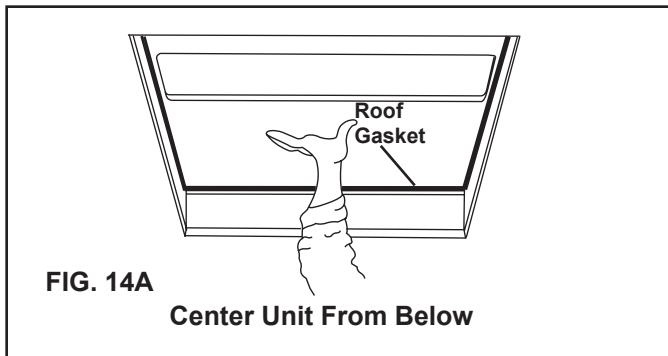
10. INSTALLATION OF AIR CONDITIONER

Installing unit with 3105007.XXX or 3105935.XXX Return Air Cover

A. INSTALLATION OF CEILING TEMPLATE



1. Check gasket alignment of the air conditioner over the roof opening and adjust if necessary. Unit may be moved from below by slightly lifting and sliding. See FIG. 14A.



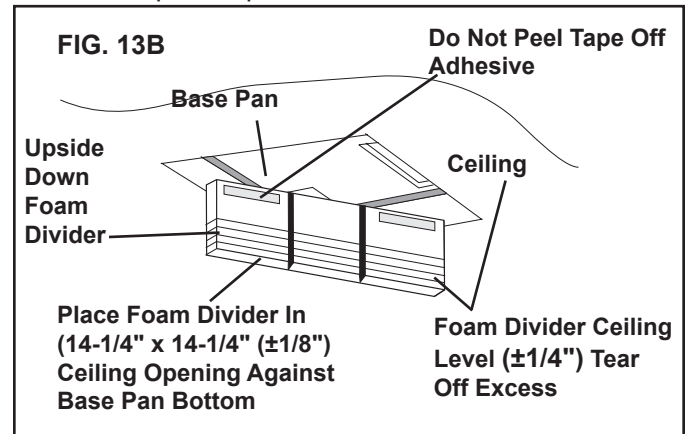
2. Remove return air cover and ceiling template from the 3105007.XXX or 3105935.XXX kit carton.
3. Locate 1/4" mounting bolts.
4. Hold the ceiling template up to the 14-1/4" x 14-1/4" ($\pm 1/8$ ") opening. Be sure the large plate faces the rear of the RV. See FIG. 13A.
5. Start each mounting bolt through the ceiling template and up into the unit base pan by hand. Install wood screw in each end of the ceiling template. This insures a tight fit of the return air cover to ceiling.

Installing unit with 3105007.XXX or 3105935.XXX Return Air Cover, continued on page 13, column A.

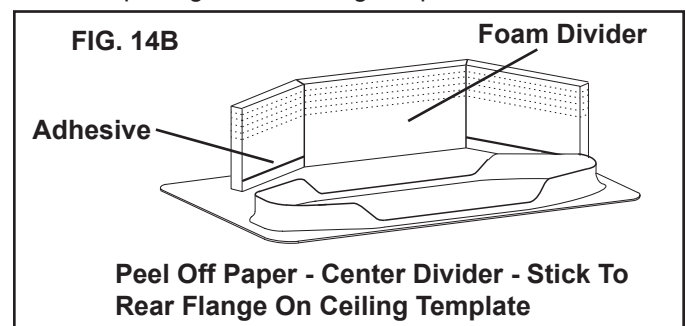
Installing unit with 3308120.XXX Genesis Air Filtration System.

A. INSTALLATION OF FOAM DIVIDER

1. Check gasket alignment of the air conditioner over the roof opening and adjust if necessary. Unit may be moved from below by slightly lifting and sliding. See FIG. 14A.
2. 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 FIG. 13B.

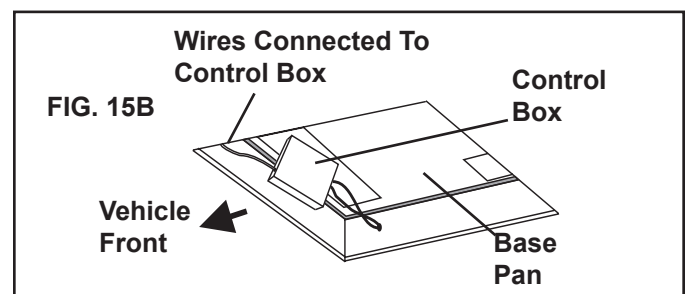


3. Peel the paper off of the foam divider and stick it in place on the center of the rear edge of the return air opening on the ceiling template See. FIG. 14B.



B. INSTALL CEILING TEMPLATE

1. 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 12 VDC power. See FIG. 15B.



Installing unit with 3308120.XXX Genesis Air Filtration System, continued on page 13, column B.

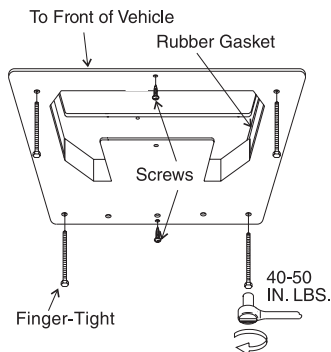
Installing unit with 3105007.XXX or 3105935.XXX Return Air Cover, continued from page 12, column A.

6. Evenly tighten mounting bolts to compress gasket to 1/2" this will be a torque of 40 - 50 inch pounds. See FIG. 15A.

CAUTION

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

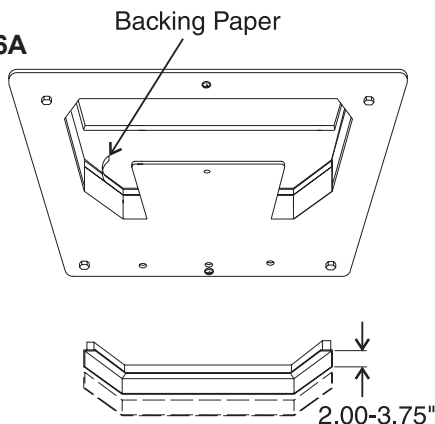
FIG. 15A



B. INSTALLATION OF DIVIDER PLATE

1. Measure the ceiling to roof thickness:
 - a. If distance is 2" - 3-3/4", remove perforated tab from divider plate.
 - b. If distance is 3-3/4" - 5-1/2", remove no tabs.
2. Remove the backing paper from double sided tape located on ceiling template. See FIG. 16A.

FIG. 16A



Installing unit with 3105007.XXX or 3105935.XXX Return Air Cover, continued on page 14, column A.

Installing unit with 3308120.XXX Genesis Air Filtration System, continued from page 12, column B.

2. Install electronic control box on ceiling template with blunt self tapping screws. See FIG. 16B for 579, & 595, series and Fig. 17B for 520 and 600 series.

FIG. 16B 579 and 595 Series

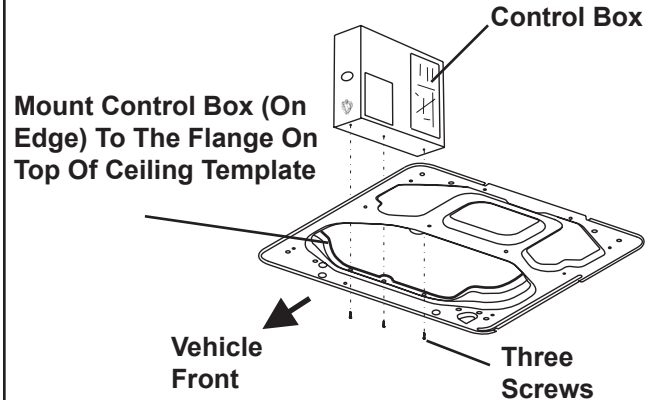
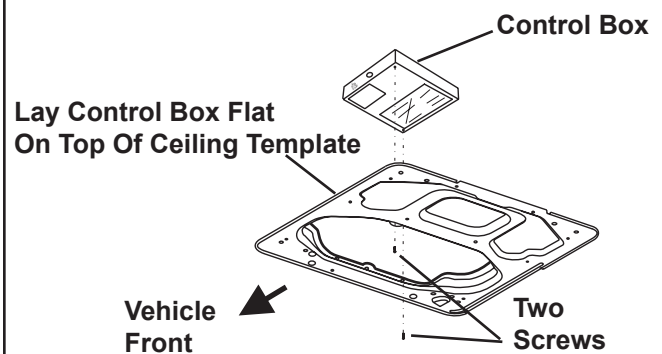


FIG. 17B 520 and 600 Series



3. Start each mounting bolt through the ceiling template and up into the unit base pan by hand. **Evenly tighten mounting bolts to compress gasket to 1/2" this will be a torque of 40 - 50 inch pounds.**

CAUTION

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

Installing unit with 3308120.XXX Genesis Air Filtration System, continued on page 14, column B.

Installing unit with 3105007.XXX or 3105935.XXX Return Air Cover, continued from page 13, column A.

- Place divider plate up to bottom of air conditioner base pan firmly. The foam tape on the divider plate must seal to bottom of base pan. See FIG. 17A.

CAUTION

Improper installation and sealing of divider plate will cause the compressor to quick cycle on the cold control. This may result in fuse or circuit breaker opening and/or lack of cooling.

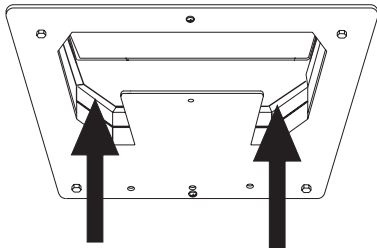


FIG. 17A

Push Divider Plate firmly onto Base Pan

Note: The adhesive on the insulation is extremely sticky. Be sure the part is located where desired before pressing into place.

- With slight pressure push the divider plate against the double sided tape on the ceiling template.
- Locate the 1/8" x 7" x 18" self-adhesive insulation supplied with the return air kit. Remove the backing paper from the insulation and carefully stick onto the ceiling template divider panel. See FIG. 18A.

Place insulation in position
(Do not Cover unit rating plate)

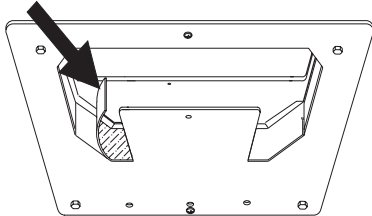


FIG. 18A

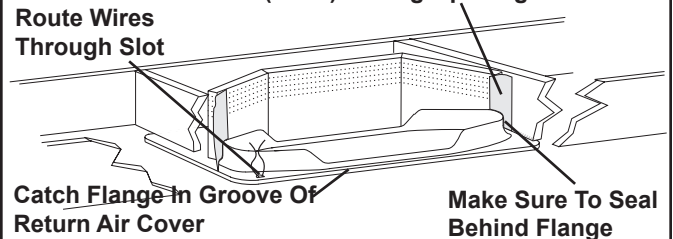
- Excess width is intended to seal the divider plate to the sides of the 14-1/4" x 14-1/4" ($\pm 1/8$ ") opening. This is to help prevent cold air discharge from circulating into the air conditioner return air opening.
- If the insulation is too high, stick excess height of insulation to the air conditioner base pan. Do not cover up unit rating plate.

Installing unit with 3105007.XXX or 3105935.XXX Return Air Cover, continued on page 15, column A.

Installing unit with 3308120.XXX Genesis Air Filtration System, continued from page 13, column B.

- Use Aluminum foil tape (not supplied) 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 FIG. 18B.

FIG. 18B Use Aluminum Foil Tape To Seal The Foam Divider To The Sides Of 14-1/4" x 14-1/4" ($\pm 1/8$ ") Ceiling Opening



C. INSTALLATION OF INSIDE DECORATIVE COVER

- 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" between. Position wires where they can be reached after plastic cover is installed. See FIG. 18B. 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.

Note: Number 10 cabinet screw can be used to replace the two front screws to hold the plastic cover flush to the ceiling. Connect the wires from the thermostat, control box and filter indicator.

- Cut both of the 12 VDC supply wires 6"-8" from the terminated end of the wire. Strip both ends of the cut wires 1/2". See FIG. 18B.
- Splice together the + 12VDC supply and red wire from the filter indicator and the red terminated wire. Do the same on the black leads. Tape wire connectors to prevent them from becoming loose.

Note: If solar panel is installed see instructions packaged with solar panel option.

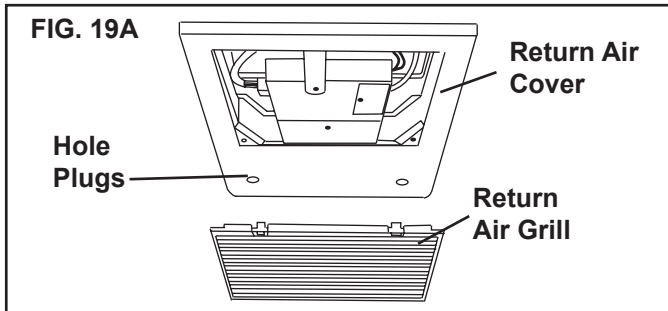
Installing unit with 3308120.XXX Genesis Air Filtration System, continued on page 15, column B.

**Installing unit with 3105007.XXX or 3105935.XXX
Return Air Cover, continued from page 14, column A.**

7. Position the electronic control box on the tabs of the ceiling template. Secure the control box to the template with 2 blunt self tapping screws. See FIG. 19A.

C. INSTALLATION OF INSIDE DECORATIVE COVER.

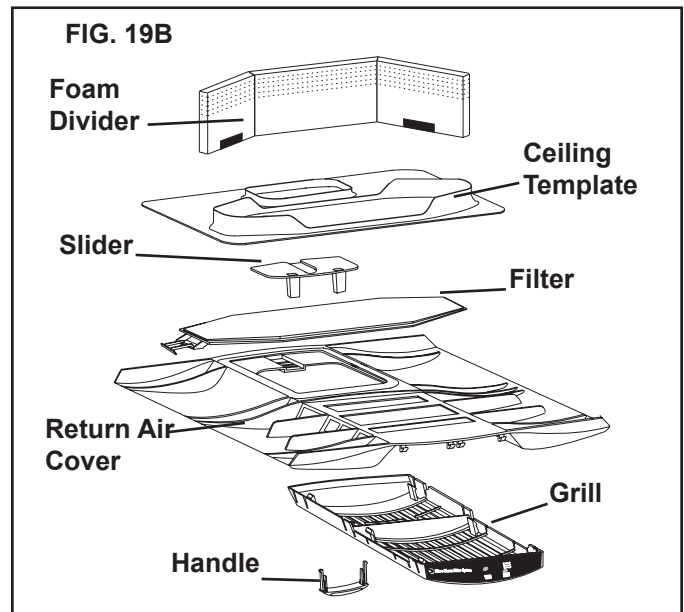
1. Remove the return air grill from the return air cover.
2. Place the return air cover up to the ceiling template.
3. Install cover to template with #8 x 3/8" pointed Phillips head screws provided (6 required).



4. Reinstall filter return air grill into return air cover. Align tabs with mating notches and snap into place
5. Install two hole plugs into screw holes in back of return air cover. See FIG. 19A.
6. This completes the installation of the air conditioner. We recommend that power be supplied to the air conditioner and check for proper operation. Refer to Operating Manual or User's Guide for a description of the air conditioner operation.

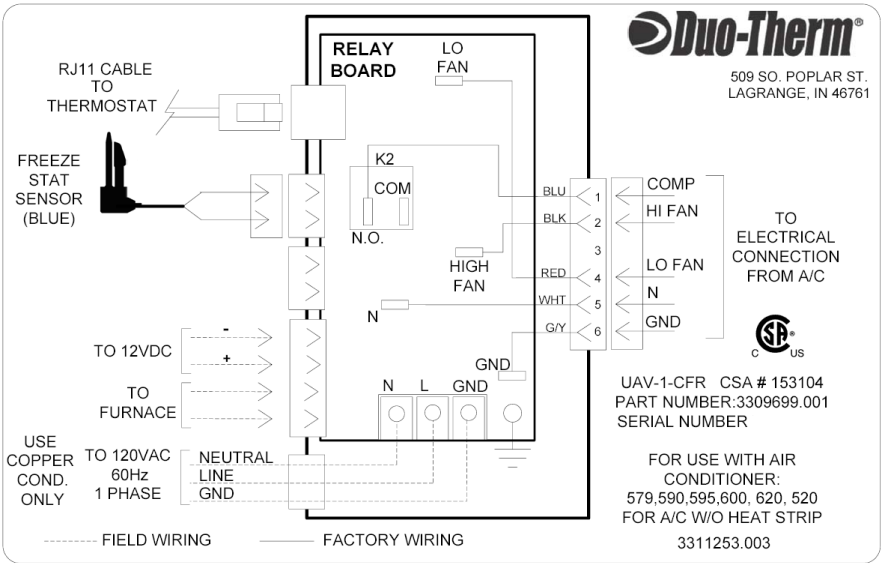
Installing unit with 3308120.XXX Genesis Air Filtration System, continued from page 14, column B.

2. Slide the filter from the right side (looking toward the RV front) over the wires. Make sure the wires are secured above the filter and are out of its way. See FIG. 19B.
3. Place grill on return air cover and snap in place. Decal is on end over circuit board.
4. Place slide handle through slots in grill into the slide posts. Handle will fit in either direction. See FIG. 19B.

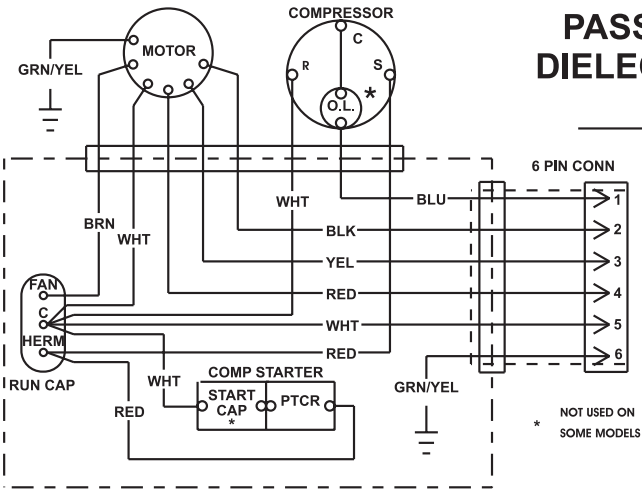


5. This completes the installation of the air conditioner. We recommend that power be supplied to the air conditioner and check for proper operation. Refer to Operating Manual or User's Guide for a description of the air conditioner operation.

ELECTRONIC FIELD WIRING DIAGRAM



579, 595, 520 SERIES FIELD WIRING DIAGRAM (A/C)



600 SERIES FIELD WIRING DIAGRAM (A/C)

