



RECORD THIS INFORMATION FOR FUTURE REFERENCE
BEFORE INSTALLING THE UNIT:

Model Number _____
Serial Number _____
Date Purchased _____
Place of Purchase _____

BRISK AIR®
59528 Series
59529 Series
59530 Series

**ROOF TOP AIR CONDITIONER
USED WITH**

3107210 AIR DISTRIBUTION BOX KIT and
3106481 ELECTRONIC KIT
3106463.007 COMFORT CONTROL CENTER

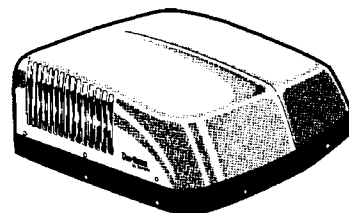
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**For Service Center
Assistance Call:**
800-544-4881



**UNDERWRITERS
LABORATORIES**
LISTED INC.



⚠ 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**

MODELS

59528.601
59529.601
59530.601

REVISION

Form No. 3108499.017 12/99
(Replaces 3108499.009)
(French 3108983.002)
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LaGrange, IN 46761

Important: 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: means if the safety information is not followed someone could be injured or killed.

CAUTION: means if the safety information is not followed someone might be injured.

Read and follow all safety information and instructions.

1. GENERAL INFORMATION

A. THIS AIR CONDITIONER IS DESIGNED FOR:

1. Installation on a recreational vehicle during the time the vehicle is manufactured.
2. Mounting on the roof of a recreational vehicle.
3. Roof construction with rafters/joists on minimum of 16 inch centers.
4. Minimum of 1.00 inches and maximum of 4.00 inches distance between roof to ceiling of recreational vehicle. Alternate installation methods will allow for roofs more than 6.00 inches thick.

B. 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

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.

C. 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 NUMBER	59528.601	59529.601	59530.601
Electrical Rating	115 VAC, 60 Hz., 1 PH. *		
Compressor Rated Load Amps	6.0	6.0	8.0
Fan Motor Rated Load Amps	2.0	2.0	2.0
Compressor Locked Rotor Amps	45.6	46.5	48.3
Fan Motor Locked Rotor Amps	5.6	5.6	5.6
Refrigerant (R22) oz.	16.5	16.5	19.0
Minimum Wire Size **	12 AWG Copper up to 24 ft.		
AC Circuit Protection (User Supplied)	15 Amp Time Delay Fuse or HACR Circuit Breaker		
DC Circuit Protection (User Supplied)	3 Amps		
Installed Weight (Pounds)	92	92	94
Minimum Generator	1 UNIT	2.5 KW	
Size ***	2 UNITS	4.0 KW	

* Maximum unit performance achieved at full rated voltage.

** For lengths over 24 ft., consult the National Electrical Code.

*** The Dometic Corp. 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. Also keep in mind generators lose power at high altitudes and from lack of maintenance.

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.
- The 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 PROPER LOCATION FOR THE AIR CONDITIONER

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

A. NORMAL LOCATION

The air conditioner is designed to fit over an existing roof vent opening. When the vent is removed, it normally creates a 14-1/4" X 14-1/4" (±1/8") opening.

B. OTHER LOCATIONS

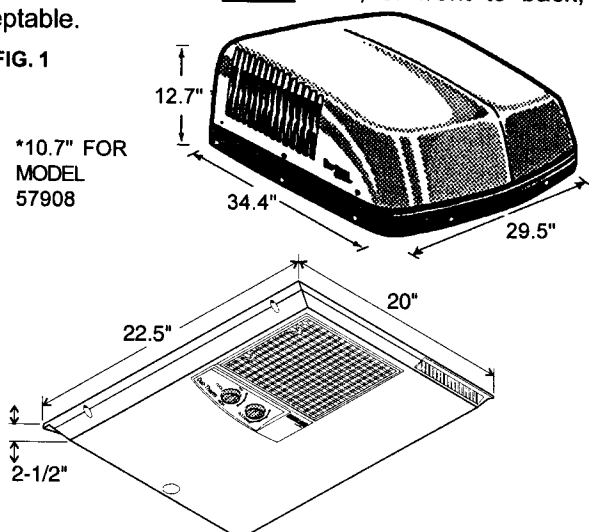
When no roof vent is available or another location is desired, the following is recommended:

- For one unit installation: The air conditioner should be mounted slightly forward of center (front to back) and centered from side to side.
- For two unit installations: Install one Air Conditioner 1/3 and one Air Conditioner 2/3's from front of RV and centered from side to side.

It is preferred that the air conditioner be installed in a relatively **flat and level** roof section measured with the RV parked on a level surface.

Note: A 15° slant to **either** side, or front to back, is acceptable.

FIG. 1



C. AFTER LOCATION HAS BEEN SELECTED:

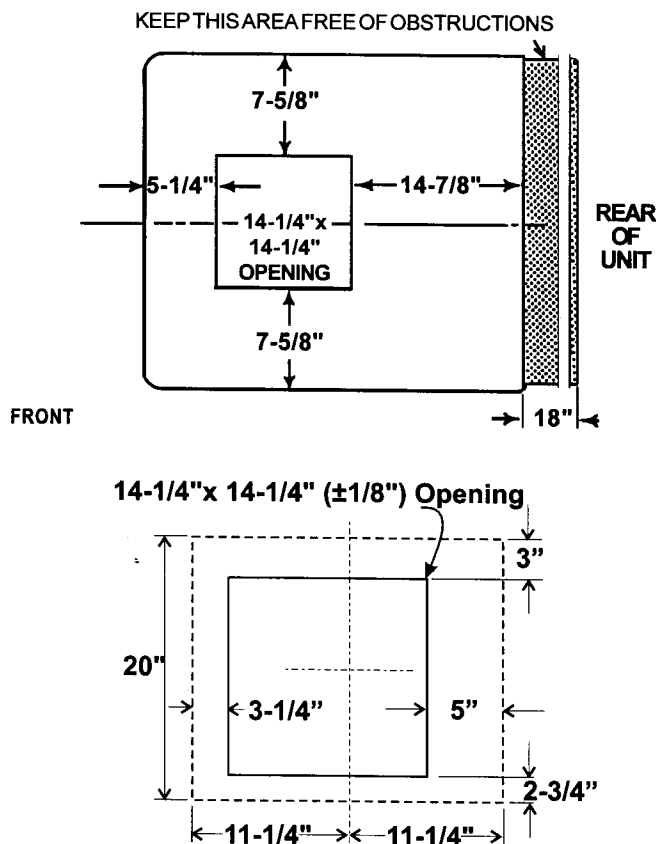
1. Check for obstructions in the area where air conditioner will be installed.
2. The roof must be designed to support 130 pounds when the RV is in motion. Normally a 200 lb. static load design will meet this requirement.

⚠ 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.

3. Check inside the RV for air box obstructions (i.e. door openings, room dividers, curtains, ceiling fixtures, etc.)

FIG. 2



3. ROOF PREPARATION

Before preparing the ceiling opening, the type of system options must be decided upon. If a remote sensor is to be used, provision must be made for it. If the load shed option is to be used, wires must be run from the load shed control to the Dometic A/C. If a furnace is to be connected, wires must be run from the furnace to the Dometic A/C. Read all of the following instructions before beginning the installation.

⚠ 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.

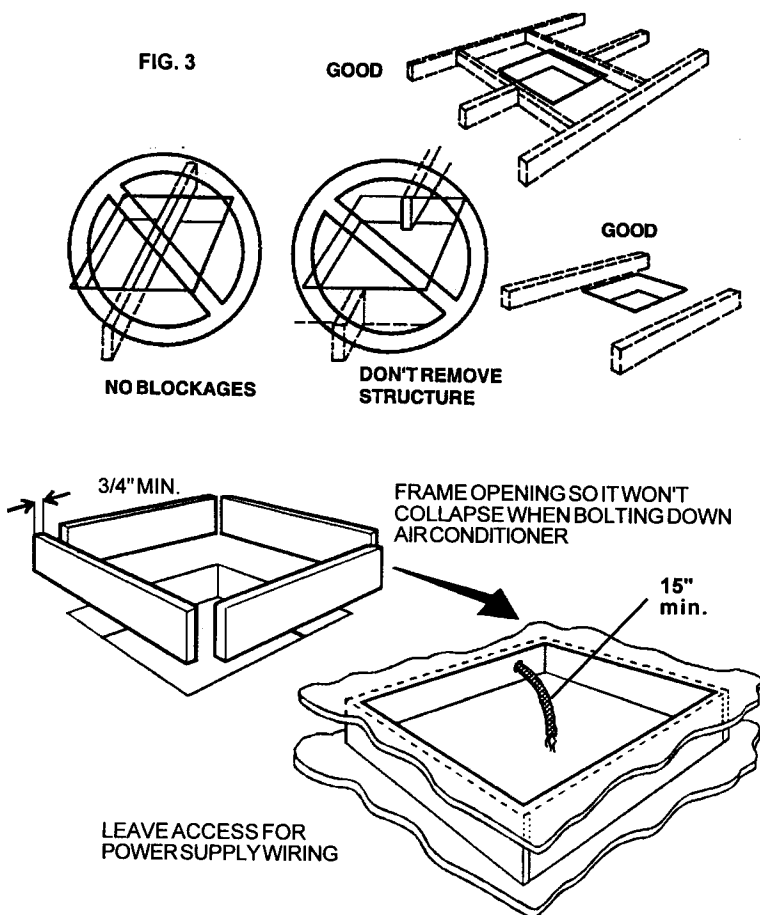
A. CEILING OPENING REQUIREMENTS

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 reinforcing members.
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.

B. OPENING PREPARATION

1. If the opening exceeds 14-3/8" x 14-3/8", it will be necessary to install spacers.
2. If the opening is less than 14-1/8" x 14-1/8", it must be enlarged.
3. Route a copper 12 AWG, with ground, 115 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" (±1/8") opening.
 - b. The power MUST be on a separate 20 amp time delay fuse or HACR circuit breaker.
 - c. Make sure that 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 methods to protect the wire where it passes into the opening.
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 supplies, furnace wiring, 4-conductor telephone cable, remote sensing and load shed (Energy Management System) options as desired.

FIG. 3



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.

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 dedicated 12 VDC supply line (18-22 AWG) from the RV's converter or battery to the roof opening.
 - a. Wire must be fused at 3 Amps.
 - b. This supply line must be located in the front portion of the 14-1/4" ($\pm 1/8$ ") opening.
 - c. Make sure that at least 15" of supply wire extends into the roof opening.
 - d. In a multiple zone installation, this wiring is required in only one of the 14-1/4" ($\pm 1/8$ ") openings.
7. If a Remote Temperature Sensor is used, the connector end must be routed to the roof opening of the system which it will control. Make sure that at least 15" of the sensor cable extends into the roof opening. Refer to the Remote Sensor Instructions for details of the installation.

8. If a furnace is to be controlled by the system, the two furnace thermostat leads must be routed to the roof opening of the air conditioner that will control it. Make sure that at least 15" of the furnace thermostat wires extend into the roof opening.
9. If an Energy Management System (load shed feature) is to be used with the control, two wires must be routed to the roof opening of the zone to be managed. The signal required for this function is normally open relay contact. When the EMS calls for the compressor to shut off, the relay contacts should close. Make sure at least 15" of the EMS wires extend into the roof opening.
10. Route a 4-conductor telephone cable from the **Comfort Control Center™** mounting position into the 14-1/4" ($\pm 1/8$ ") roof opening. Make sure that at least 15" of the wire extends into the roof opening and 6" extend from the wall at the mounting position of the **Comfort Control Center™**.
11. In the event that other Air Conditioners are installed (additional zones) an additional 4-conductor telephone cable must be routed to the other Air Conditioners. Make sure that at least 15" of the wire extends into the roof opening. (See Fig. 19)

4. DOMETIC COMFORT CONTROL CENTER™ & CABLE INSTALLATION

A. LOCATION

1. If the system is to be used **WITHOUT** a **Remote Temperature Sensor**, the proper location of the **Comfort Control Center™** is very important to ensure that it will provide a comfortable RV temperature. Observe the following rules when selecting a location:
 - a. Locate the **Comfort Control Center™** 54" above the floor.
 - b. Install the **Comfort Control Center™** on a partition, not on an outside wall.
 - c. **NEVER** expose it 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.
 - e. Avoid locations close to supply registers and the air from them.
2. If the system is to be used **WITH** a **Remote Temperature Sensor** in **ALL** zones, the comfort control Center may be mounted anywhere that is convenient in the coach. Try to avoid hard to reach and hard to see areas.
 - a. Refer to the instructions provided with the **Remote Temperature Sensor** for details of installation.

3. A 3/8" diameter hole will be needed to route the cable through the wall.

B. CONTROL CABLE INSTALLATION

A 4-conductor telephone cable must be routed from the roof opening to the **Comfort Control Center™**.

1. Choose the shortest, most direct route from the 14-1/4" (±1/8") opening to the **Comfort Control Center™** location selected. Leave 6" of cable extending through the wall.
2. The cable that should be used is a flat, 4-conductor telephone cable.
3. The cable must be terminated with a telephone RJ-11 connector. Refer to the crimp tool manufacturer for crimping instructions. Ensure that the cable is installed into the connector correctly before crimping. (See FIG. 4).

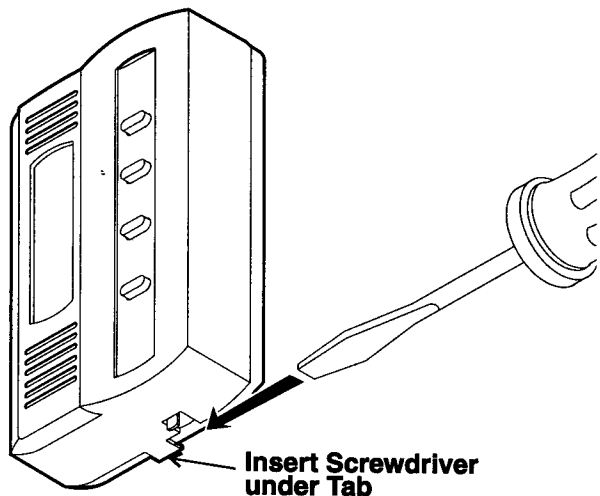
FIG. 4



C. COMFORT CONTROL CENTER™ INSTALLATION

1. Carefully remove the base plate from the **Comfort Control Center™**. This may be accomplished by inserting a small screwdriver under the tab on the bottom edge of the front cover and gently prying. (See FIG. 5).

FIG. 5

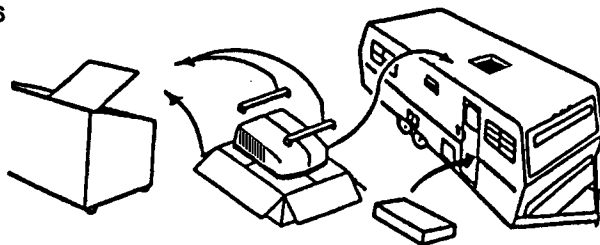


2. Insert the telephone cable through the hole in the base plate and mount the plate to the wall with the two screws provided. Check the alignment to ensure level installation.
3. Install the control cable RJ-11 connector into the back of the **Comfort Control Center™** and gently press onto the base plate.

5. PLACING THE AIR CONDITIONER ON THE ROOF

- A. Remove the Air Conditioner from the carton and discard.
- B. Place the Air Conditioner on the roof.

FIG. 6



⚠ CAUTION

This unit weighs approximately 100 pounds. To prevent back injury, use a mechanical hoist to place Air Conditioner on roof.

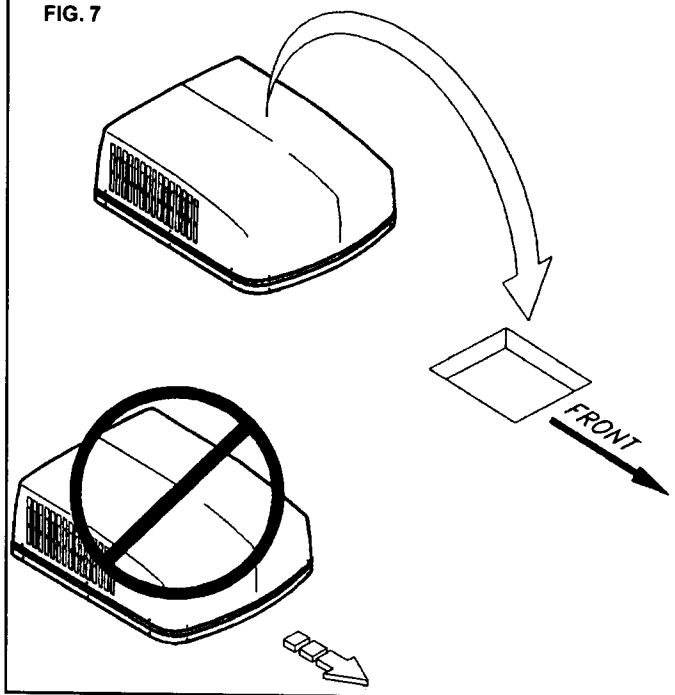
- C. Lift and place the unit over the prepared opening using the gasket on unit as a guide. The exposed coil goes toward the rear of the RV.

⚠ CAUTION

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

- D. Place the 3107210 Air Box Kit and Electronic Control Kit inside the RV. Both kits contain mounting hardware for the air conditioner and will be used inside the RV.

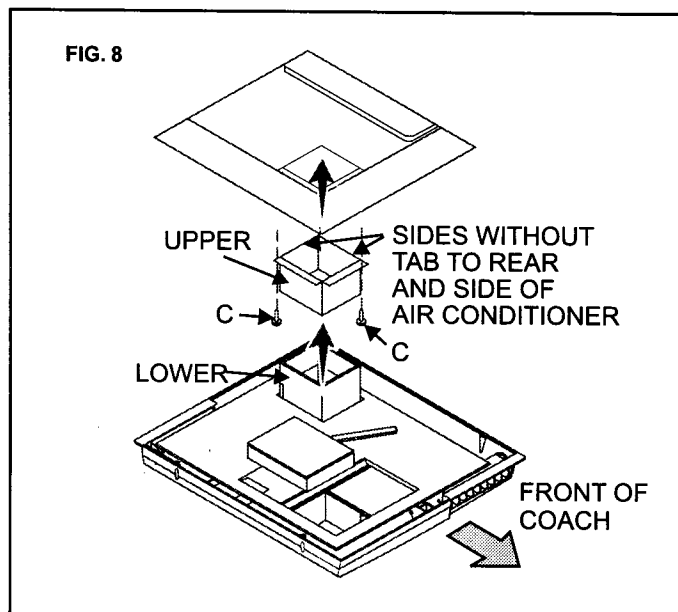
FIG. 7



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

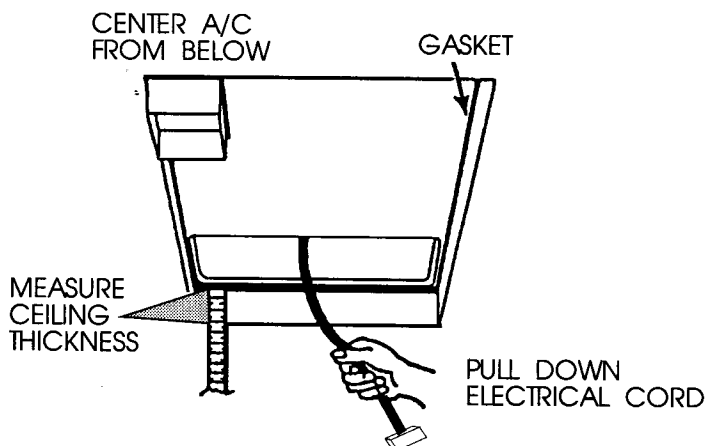
6. DISCHARGE DUCT & CEILING TEMPLATE INSTALLATION

- A. Remove the air box and mounting hardware from their carton. The upper duct is shipped inside the lower duct which is part of the ceiling template.



- B. Remove the upper duct from the ceiling template and locate it over the blower discharge. NOTE: The edge without the flange installs toward the **rear and side** of the opening.
- C. Use two of the sharp pointed sheet metal screws to hold the duct to the base pan. The holes are prepunched in the pan for each location.
- D. Check gasket alignment over roof opening and adjust if necessary (roof gasket centers over opening). Unit may be moved from below by lifting and sliding.

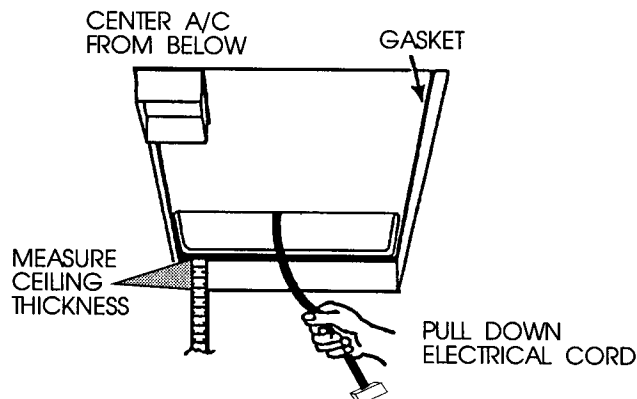
FIG. 9



- E. Reach up into the return air opening and pull the conduit power cable down for later connection. See FIG. 10

Note: In some applications it may be necessary to extend the 6 pin cable. Order cable number 3105584.001 if needed.

FIG. 10



- F. Measure the ceiling thickness:

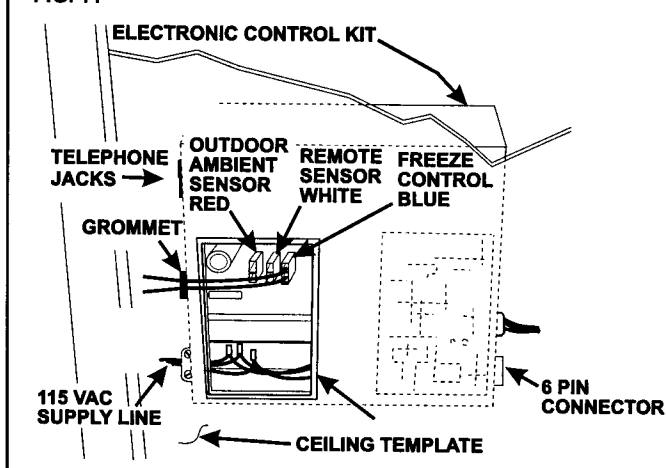
- 1) If the distance is 2" to 3" remove the perforated tabs from the bottom duct only.
- 2) If the distance is 3" to 4" install ducts as received.
- 3) If the distance is 4" to 6" (maximum thickness), optional duct and bolt kits are available:

Bolts (Part No. 3100895.006)

Duct (Part No. 313606.000)

- G. Remove the junction box cover from the Electronic Control Kit. See FIG. 11
- H. Plug the electrical conduit (6 pin connector) from the upper unit into the mating connector in Electronic Control Kit. See FIG. 11
- I. Terminate the 4-conductor telephone cable(s) protruding into the 14-1/4" (±1/8") roof opening. The cable(s) must be terminated with a telephone RJ-11 connector. Refer to the crimp tool manufacturer for crimping instructions. Ensure that the cable is installed into the connector correctly before crimping. See FIG. 4

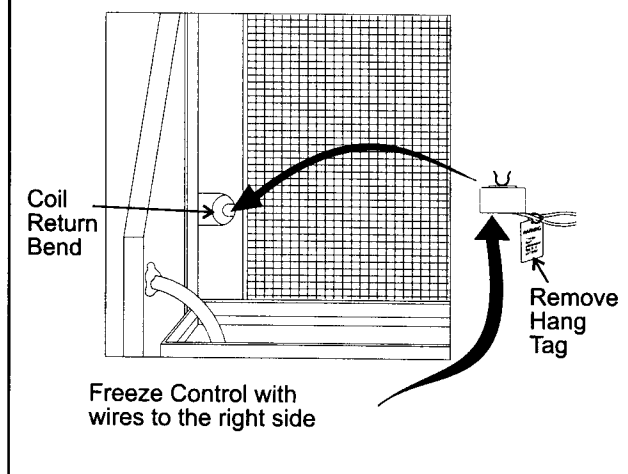
FIG. 11



- J. Plug the telephone cable(s) into the telephone jack(s) on the Electronic Control Kit. (It does not matter which one.)

- K. Route the Remote Temperature Sensor cable, if applicable, through the same round grommet where freeze control wires go into the Electronic Box.
- L. Connect Remote Temperature Sensor cable, if applicable, to the connector that matches its color.
- M. Snap the Freeze Control Sensor onto the return bend of the evaporator coil located on the left side of the evaporator. See FIG. 12
 1. Locate "D" shaped notch in flange of evaporator coil.
 2. Place the horseshoe end of freeze control through this notch and snap onto coil return bend. When positioned correctly, control wires will be 90° to direction of coil fin surface.

FIG. 12



N. CONNECTION OF LOW VOLTAGE WIRES

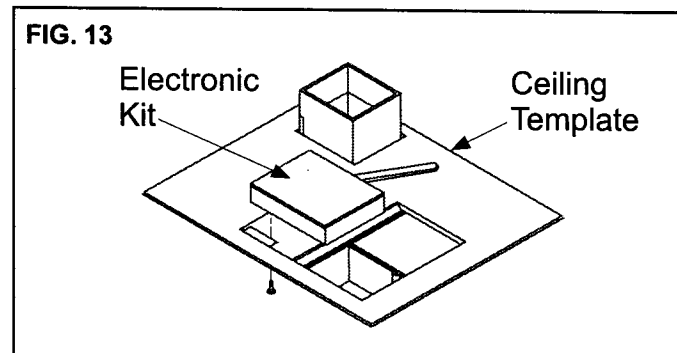
⚠ CAUTION

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

1. Connect the previously run 12 VDC to the red and black wires protruding from the Electronic Control Kit. (In multiple zone installations, this needs to be done at only one zone.) Connect +12 VDC to the red wire; -12 VDC to the black wire. See FIG. 11
2. Connect the previously run furnace thermostat wires (if applicable) to the blue wires protruding from the Electronic Control Kit. The polarity of these connections does not matter. If not used, terminate wire with twist connector.
3. Connect the previously run Energy Management System wires (if applicable) to the yellow wires protruding from the Electronic Control Kit. The polarity of these connections does not matter. If not used, terminate wire with twist connector.

- O. Locate the electronic Kit 3106481 on the ceiling template as shown in FIG. 13. Drive two #10 x 3/8 blunt point Phillips head screws (provided) through ceiling template into holes in electronic kit to hold in place.

FIG. 13



- P. Take the ceiling template and slide the lower unit over the upper duct.
- Q. Hold the ceiling template with one hand and with the other, install the four 1/4" mounting bolts through the template and into the base pan.
 1. Finger-tighten the (4) bolts and check alignment. There should be an equal opening on each side and the rear flange must be tight against the roof opening.
 2. **EVENLY** tighten the bolts to a torque of 40 to 50 inch pounds. This will compress the roof gasket to approximately 1/2". See FIG. 13

⚠ 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.

7. WIRING OF SYSTEM

A. CONNECTION OF 115 VOLT POWER SUPPLY

⚠ WARNING

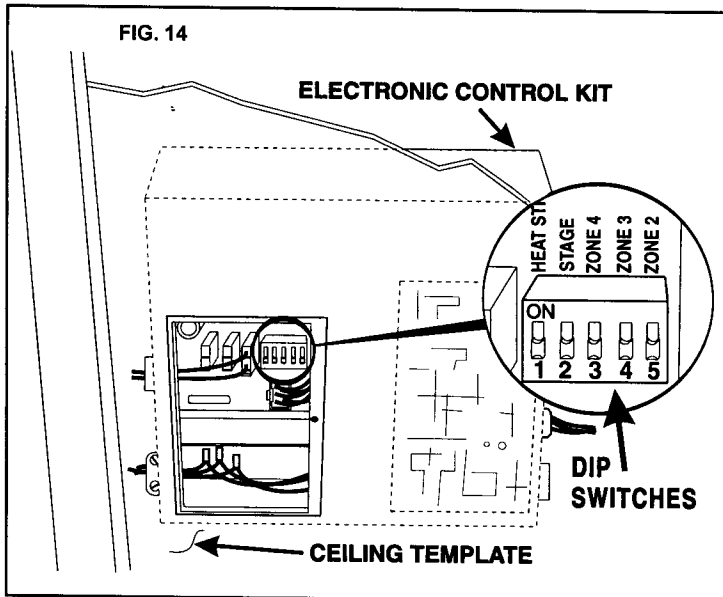
Disconnect 115 volt AC. Failure to follow these instructions could create a shock hazard causing death or severe personal injury.

⚠ WARNING

This appliance is equipped with a 3-wire (grounded) system for protection against shock hazard. Make sure that the appliance is wired into a properly grounded 115 volt AC circuit and the polarity is correct. Failure to do so could result in death, personal injury or damage to the equipment.

1. Route the 115 VAC supply line through the strain relief in Electronic box. Tighten strain relief, making sure enough wire is inside electronic box to connect with unit 115 VAC wire. Tighten screws on strain relief connector being careful not to pinch and cut into the insulation on power supply leads.
2. Connect the white to white; black to black; and green to green or bare copper wire using appropriately sized twist wire connectors. **Tape** the twist wire connectors to the supply wiring to assure they do not vibrate off. See FIG. 14.
3. Push the wires into the box and tighten the strain relief.
4. Install the cover (part of the mounting hardware) with the one blunt point screw provided.

FIG. 14



8. SYSTEM CHECKOUT & CONFIGURATION

Now that the system is installed, it is necessary to check all operations and then configure the electronics.

If the installation is a single zone and without heat strip no adjustments to the dip switches are necessary.

A. ELECTRONIC CONTROL CONFIGURATION

1. If there is more than one zone, the dip switch for each successive zone must be set. See FIG. 16. Adjust the dip switches on the electronic control board to set the ZONE desired. See FIG. 14. Placing the switch in the ON position selects that ZONE.

Note: Dip switches are shipped from the factory in the "OFF" position.

2. Selection of ZONE 2 identifies this unit as ZONE 2; likewise, zone 3 and 4.
3. STAGE is not used on these units. Leave in the "OFF" position.
4. Install electrical box cover.

B. RESET COMFORT CONTROL CENTER™

Simultaneously depress **UP** and **DN** pushbuttons on the **Comfort Control Center™** for one second. Holding the **UP** and **DN** pushbuttons, add the **Mode** pushbutton and hold all three for one second. Release all three and push **Mode** again. This completes the system configuration.

C. SYSTEM CHECKOUT

Verify that all features of the installed system work. Check fan speeds, cooling mode, furnace (if connected) and heat strip. If the features do not work, check all wiring and confirm that the correct options have been selected on the Electronic Control Board. See **Comfort Control Center™** Operating Instructions.

9. AIR BOX INSTALLATION

- A. Remove return air grille from air box by pulling in on half-round finger catches.
- B. Hold air box up to ceiling template and install three (3) #10 x 3/8" (C) screws at air box mounting point.
- C. Snap hole plug (E) into place at rear of air box.
- D. Install four (4) wood screws (B) which hold the air box tight to ceiling, if desired.
- E. Reinstall return air grille and filter into air box.
- F. The air conditioner installation is now complete. Turn on power to the unit for operational check. Please read Unit Operating Instructions before proceeding.

Note: There are four optional mounting holes on the outer edge of the return air opening for which screws are provided. These are only required where an uneven ceiling does not allow proper fitting of the air box.

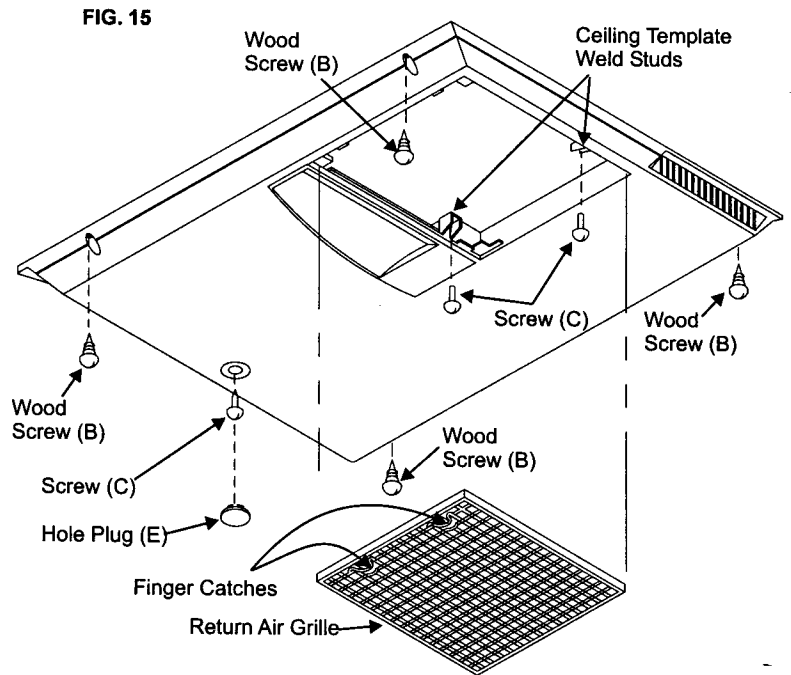
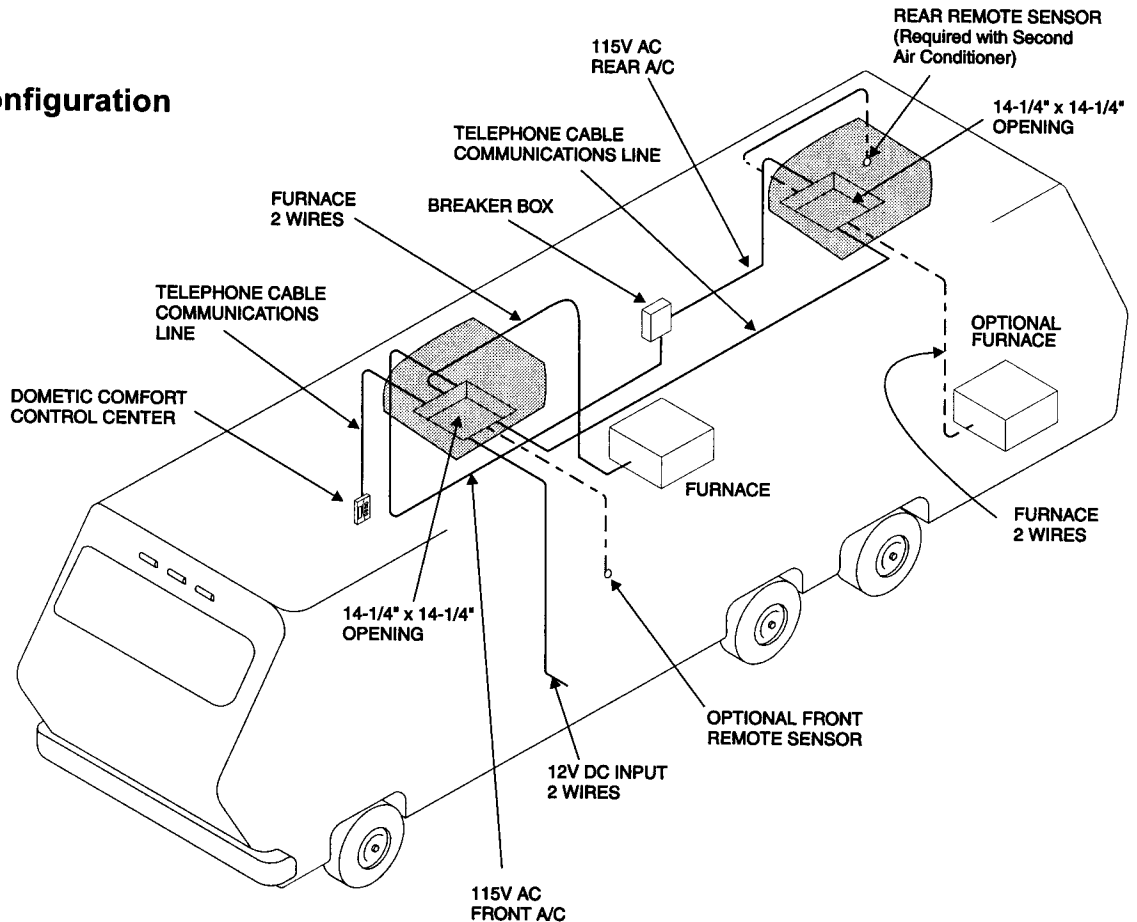


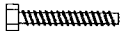
FIG. 16

Two Zone Configuration



MOUNTING PARTS

- A. (4) 1/4" — #20 x 7" bolts



- B. (4) #8 x 5/8" long sharp point wood screws



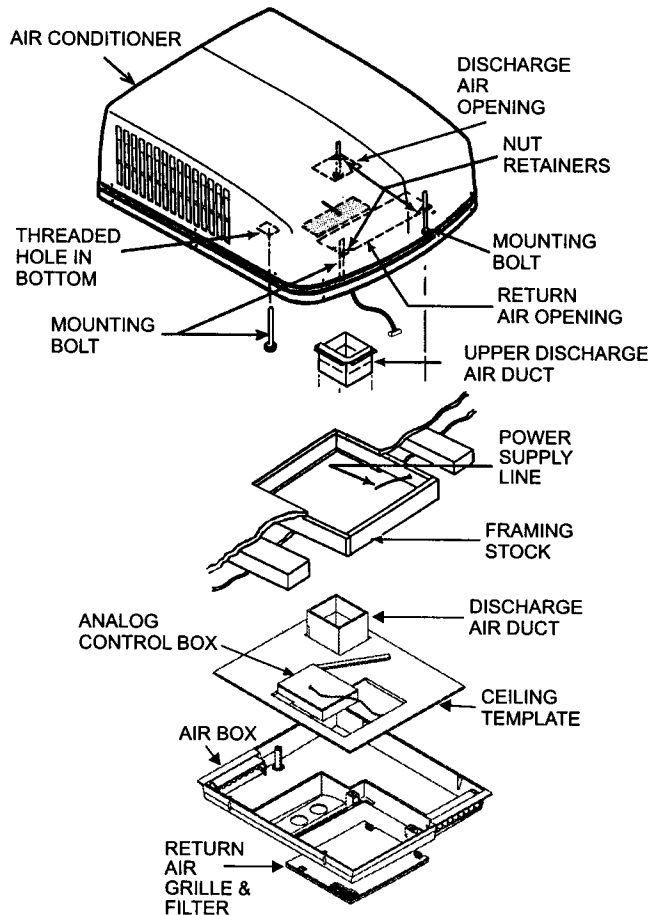
- C. (7) #10 x 3/8" blunt point tapping screws



- D. (1) Hole Plug



AIR CONDITIONING UNIT



ELECTRONIC CONTROL KIT

