



RECORD THIS UNIT INFORMATION FOR
FUTURE REFERENCE:
Model Number _____
Serial Number _____
Date Purchased _____

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

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

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

59530.542 & 59530.546

MODEL

ROOF TOP AIR CONDITIONER

USED WITH

3107210 AIR DISTRIBUTION BOX KIT and

3109407 COMFORT CONTROL CENTER™

ELECTRONIC KIT

3109228 Comfort Control Center™

⚠ 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

59530.542
59530.546

3312807.000

Form No. 3312807.000 10/08
(French 3312808.000)
©2007 Dometic, LLC
LaGrange, IN 46761

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" (hereinafter referred to as the "unit") 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 2.00 inches and maximum of 4.00 inches distance between roof to ceiling of recreational vehicle. Alternate installation methods will allow for roofs more than 4.00 inches thick.
- C. The ability of the unit 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 unit. 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 unit 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.

D. Condensation

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

SPECIFICATIONS

Model Number	Normal Capacity (BTU/HR Cooling)	Electrical Rating	Compressor Rated Load Amps	Compressor Locked Rotor Amps	Fan Motor Rated Load Amps	Fan Motor Locked Rotor Amps	Refrigerant R-22 (Oz.)	Minimum Wire Size*	AC Circuit Protection *** User Supplied	Installed Weight (Pounds)	Minimum Generator Size** 1 Unit/2 Units
59530.542	N/A	120VAC 60Hz. 1 Phase	8.0	53.0	2.5	5.8	18.5	12 AWG Copper Up To 24'	15 Amp	93	2.5 KW / 4.0 KW
59530.546	N/A		8.0	53.0	2.5	5.8	18.5		15 Amp	94	2.5 KW / 4.0 KW

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

** Dometic, LLC 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.

INSTALLATION INSTRUCTIONS

1. 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 unit installation.
- B. The Dometic, LLC 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 unit except those specifically authorized by Dometic.
- E. This equipment must be serviced by qualified personnel and some states require these people to be licensed.

2. CHOOSING PROPER LOCATION FOR THE UNIT

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

A. NORMAL LOCATION

The unit 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. It is preferred that the unit 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.

B. OTHER LOCATIONS

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

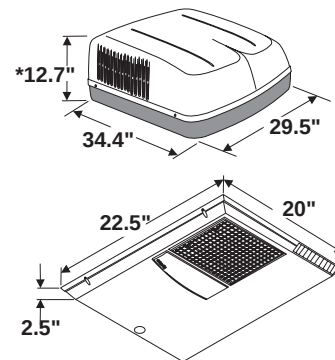
1. For one unit installation: The unit should be mounted slightly forward of center (front to back) and centered from side to side.

2. For two unit installations: Install one Unit 1/3 and one Unit 2/3's from front of RV and centered from side to side.

C. AFTER LOCATION HAS BEEN SELECTED:

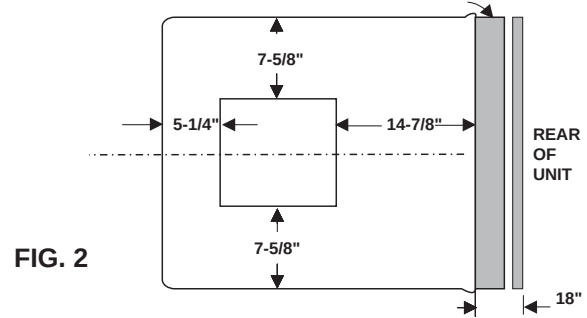
1. Check for obstructions in the area where unit will be installed. See FIGS. 1 & 2.

FIG. 1



UNIT DIMENSIONS (On Top of Vehicle) Dimensions Are Nominal

KEEP THIS AREA FREE OF OBSTRUCTIONS



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 unit 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 unit 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.)

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 and understand all of the following instructions before beginning the installation.**

⚠ WARNING

There may be electrical wiring between the roof and the ceiling. Disconnect 120 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.

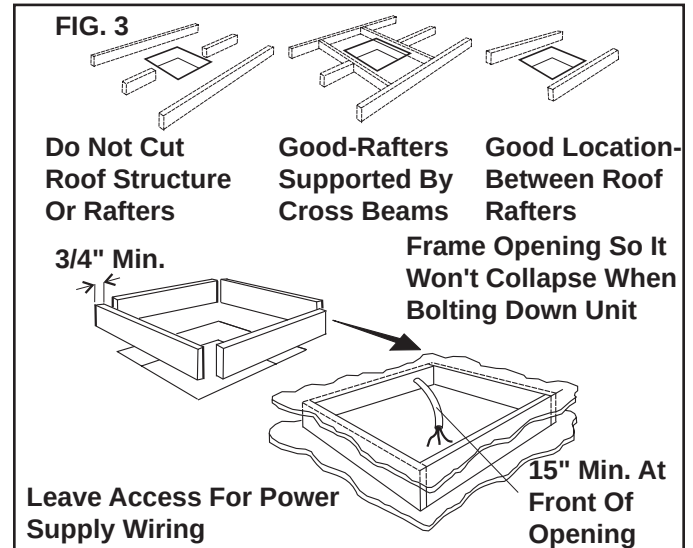
A. CEILING OPENING REQUIREMENTS

1. A 14-1/4" x 14-1/4" ($\pm 1/8$ ") 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.

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, 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" ($\pm 1/8$ ") opening.
 - b. The power **MUST** be on a separate 15 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 control cable, remote sensing and load shed (Energy Management System) options as desired. See FIG. 3.



5. The 14-1/4" x 14-1/4" ($\pm 1/8$ ") opening is part of the return air system of the Unit 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. This supply line must be located in the front portion of the 14-1/4" ($\pm 1/8$ ") opening.
 - b. Make sure that at least 15" of supply wire extends into the roof opening.
 - c. **In a multiple zone installation, this wiring is required in only one of the 14-1/4" x 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 unit 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 control 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 Units are installed (additional zones) an additional 4-conductor control cable must be routed to the other Units. Make sure that at least 15" of the wire extends into the roof opening. See FIGS. 3 & 19.
12. If an automatic generator start kit (AGS) will be installed, a 4-conductor control cable must be routed from the last unit to location of AGS kit. Follow AGS kit instructions for installation.

4. DOMETIC COMFORT CONTROL CENTER™ & CABLE INSTALLATION

A. LOCATION

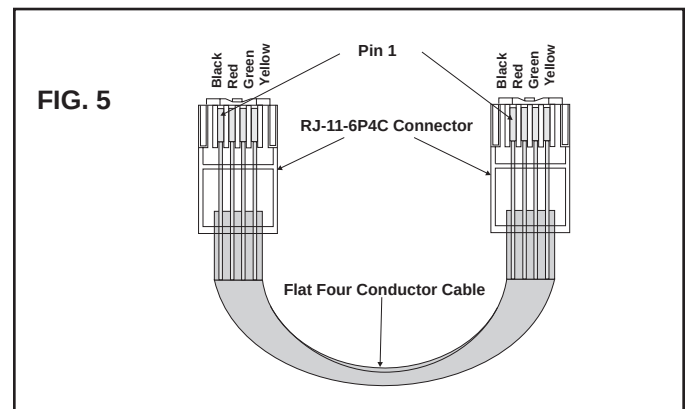
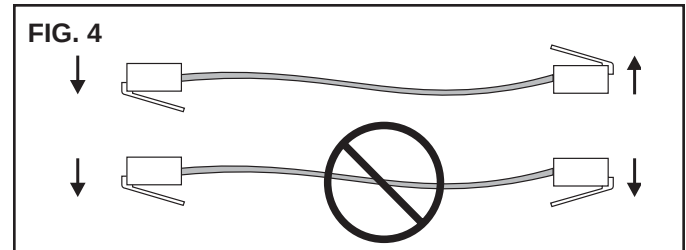
1. If the system is to be used **WITHOUT** a **Remote Temperature Sensor**, the proper location of the **Comfort Control Center™** is very important to ensure that it will provide a comfortable RV temperature. Observe the following rules when selecting a location:
 - a. Locate the **Comfort Control Center™** 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 control 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" ($\pm 1/8$ ") opening to the **Comfort Control Center™** location selected. Leave 6" of cable extending through the wall.
2. The control cable that should be used is a flat, 4-conductor telephone cable.
3. The control cable must be terminated with two (2) RJ-11-6P4C telephone connectors. Refer to the crimp tool manufacturer for crimping instructions.

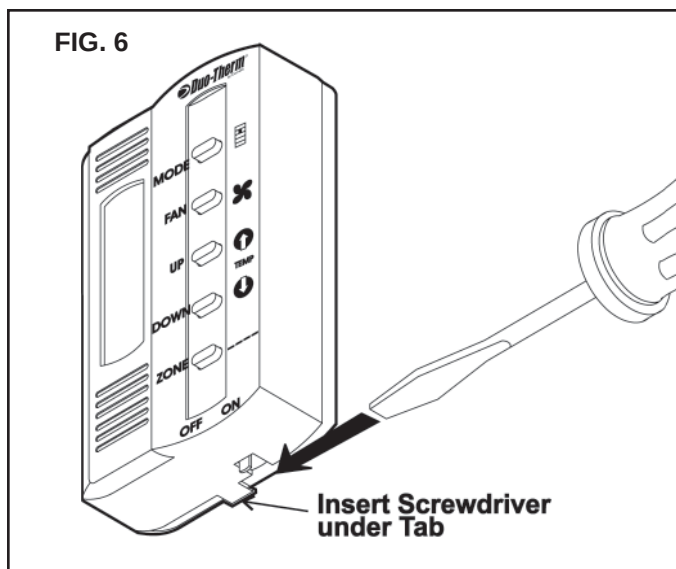
Important: RJ-11-6P4C connectors must be installed as shown in FIGS. 4 & 5.



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. 6.
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.

FIG. 6



3. Install the control cable RJ-11-6P4C connector into the back of the **Comfort Control Center™** and gently press onto the base plate

5. PLACING THE UNIT ON THE ROOF

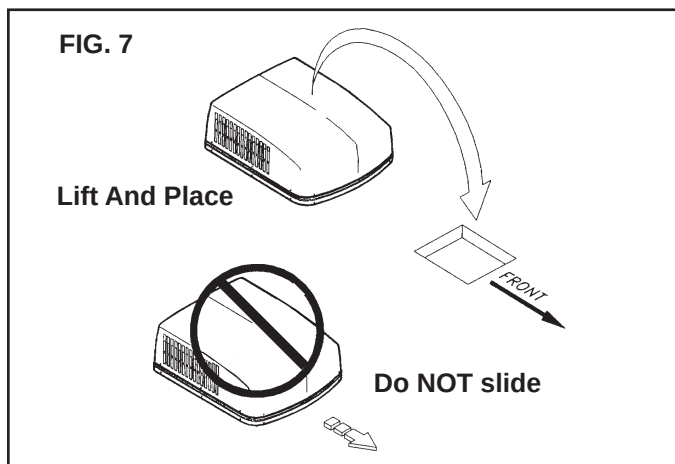
- A. Remove the Unit from the carton.

⚠ WARNING

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

- B. Place the Unit on the roof.
- C. Lift and place the unit over the prepared opening using the gasket on unit as a guide. The **shroud end** without louvers goes **toward the front** of the RV. See FIG. 7.

FIG. 7



CAUTION

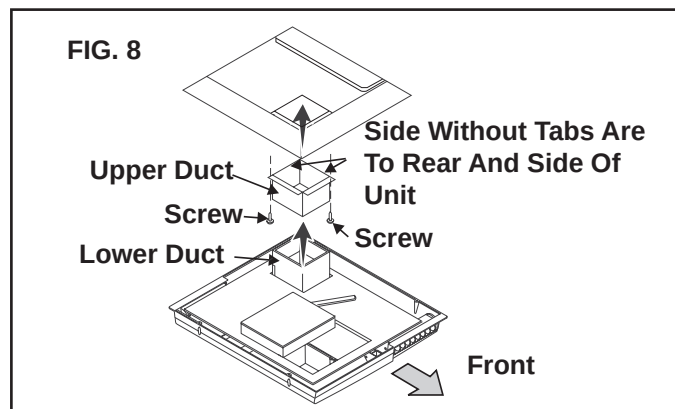
Do not slide the unit. This may damage the neoprene gasket attached to the bottom and create a leaky installation.

- D. Place the Air Box Kit and Electronic Control Kit inside the RV. Both kits contain mounting hardware for the unit and will be used inside the RV. 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. See FIG. 8.

FIG. 8

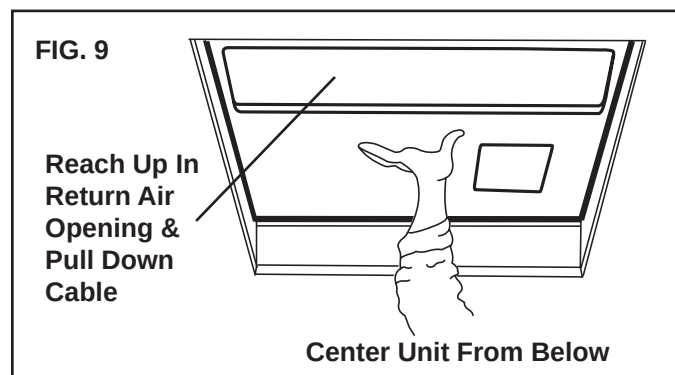


- B. Remove the upper duct from the ceiling template and locate it over the blower discharge.

Note: The edge without the flange installs toward the **rear and side** of the opening. See FIG. 8.

- C. Use two of the sharp pointed sheet metal screws to hold the duct to the base pan. The holes are pre-punched 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. See FIG. 9.

FIG. 9

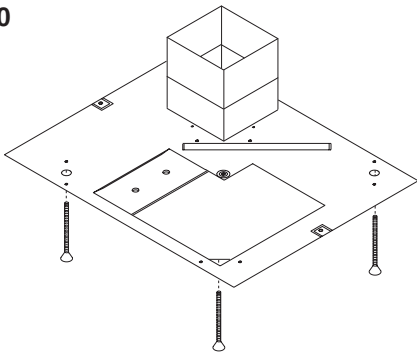


- E. Reach up into the return air opening and pull the conduit power cable down for later connection. See FIG. 9.

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

- 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 Kit and Bolt Kit are available:
 Duct Kit (Part No. 3106775.004)
 Bolt Kit (Part No. 3100895.006)
- G. Take the ceiling template and slide the lower unit over the upper duct.
- H. 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. See FIG. 10.

FIG. 10



1. Finger-tighten the four (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".

CAUTION

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

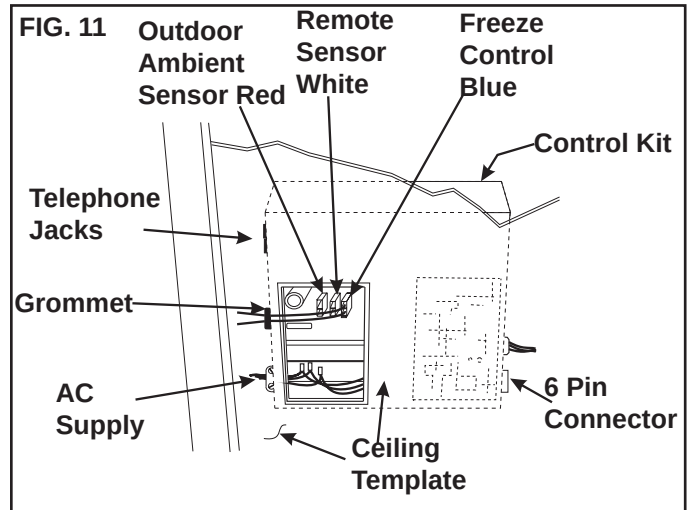
7. INSTALLATION OF ELECTRONIC CONTROL KIT

- A. If your installation included the optional electric heat kit, install it at this time. Follow the instructions with the heat package for its installation procedure.
- B. Terminate the 4-conductor control cable(s) protruding into the 14-1/4" x 14-1/4" (±1/8") roof opening. The cable(s) must be terminated with an RJ-11-6P4C telephone connector. Refer to the crimp tool manufacture for crimping instructions.

Important: RJ-11-6P4C connectors must be installed as shown in FIGS. 4 & 5.

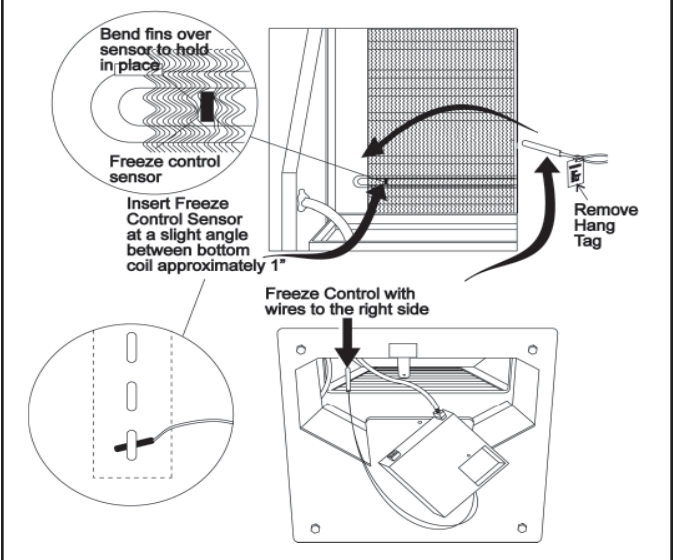
- C. Remove the junction box cover from the Electronic Control Kit. See FIG. 11.

- D. Plug the electrical conduit (6-pin connector) from the upper unit into the mating connector in Electronic Control Kit. See FIG. 11.



- E. Plug the control cable(s) into the telephone jack(s) on the Electronic Control Kit. (It does not matter which one.)
- F. Route the Remote Temperature Sensor cable, if applicable, through the same round grommet where freeze control wires go into the Electronic Box. Connect it to the connector that matches its color. See FIG. 11.
- G. Insert the Freeze Control Sensor approximately 1" into the evaporator coil fins as shown in FIG. 12.

FIG. 12



- H. Locate the electronic control kit on the ceiling template as shown in FIG. 13. Drive two (2) #10 x 3/8" blunt point phillips head screws (provided) through ceiling template into holes in electronic control kit to hold it in place.

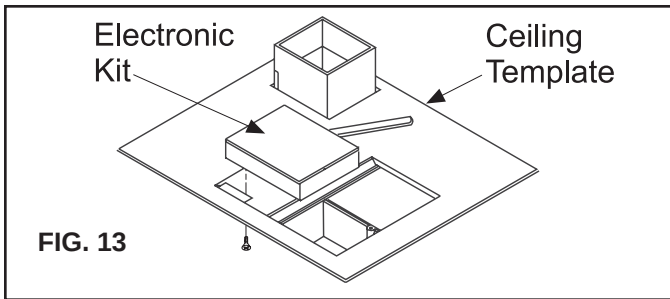


FIG. 13

8. WIRING OF SYSTEM

A. CONNECTION OF 120 VOLT POWER SUPPLY

⚠ WARNING

Disconnect 120 volt AC. 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 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 120 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 120 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 "listed" wire connectors. See FIG. 11.
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.

B. 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.

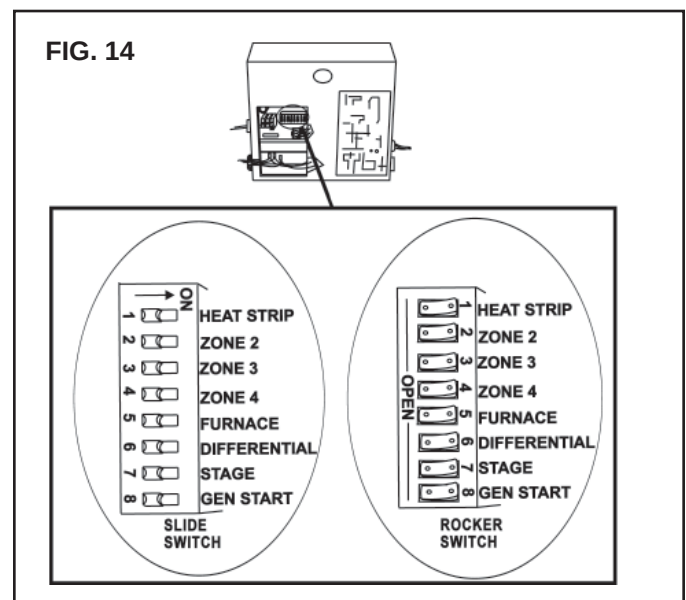
2. Connect the previously run furnace thermostat wires (if applicable) to the blue wires protruding from the electronic Control Kit. The polarity of these connections does not matter. If wires not used, cap wires with "listed" connectors.
3. Connect the previously run Energy Management System wires (if applicable) to the yellow wires protruding from the Electronic Control Kit. The polarity of these connections does not matter. If wires not used, cap wires with "listed" connectors.

9. SYSTEM CONFIGURATION, RESET & CHECKOUT

A. ELECTRONIC CONTROL KIT CONFIGURATION

Depending on the equipment options installed by the recreational vehicle manufacturer, the appropriate dip switches will need to be switched to the "ON" position. See FIG. 14. Placing the switch in the "ON" position selects that option.

FIG. 14



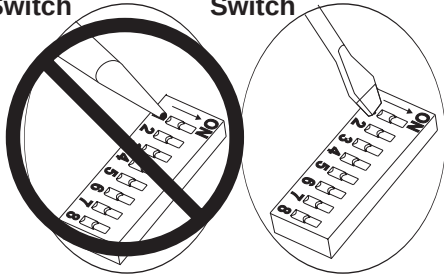
Note: Dip switches are in the "OFF" position when shipped from the factory. See FIG. 14.

Note: The dip switches are visible through the opening in the ceiling template into the control box. Dip switches can be either a rocker or slide style switch. See FIG. 14.

Important: Dip switch damage will occur if they are not set in proper manner. A ball point pen or similar object that will slip in the switch slot can damage the switch causing loss of connection. Use only a small flat blade screw driver (wider than the dip switch slot) to move the dip switch. See FIG. 15.

FIG. 15
DO NOT USE
A BALL POINT
PEN To Move
Dip Switch

Use Flat Blade
Screw-driver Wider
Than Dip Switch
Slot to Move Dip
Switch

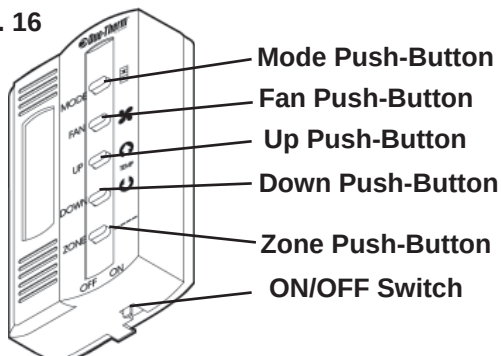


1. Zone selection - when two or more units are installed and controlled by one Comfort Control Center, the second unit becomes Zone 2, the third unit Zone 3 and the fourth unit Zone 4. The appropriate zone dip switch must be set in each electronic control kit for Zone 2, 3 and 4.
 2. Furnace selection - when a furnace has been connected to a zone, place the furnace dip switch "ON" for that zone.
 3. Differential - differential is the temperature difference between the "ON/OFF" cycle of the thermostat. The normal differential is preset in the circuit board with the dip switch set to the "OFF" position. In some situations, it may be necessary to decrease the Differential. The location of the thermostat may create a condition where the normal Differential will not maintain your comfort zone. If this occurs, the Differential can be shortened by placing the Differential dip switch to the "ON" position.
- Note:** Setting the Differential dip switch should only be required when installation conditions are less than desirable and is not covered under the limited warranty.
4. Stage selection - stage is not used on these units. Leave in the "OFF" position.
 5. Gen start selection - leave in the "OFF" position.

B. SYSTEM RESET

After setting the dip switches in the electronic control kit, do a system reset. Refer to FIG. 16.

FIG. 16



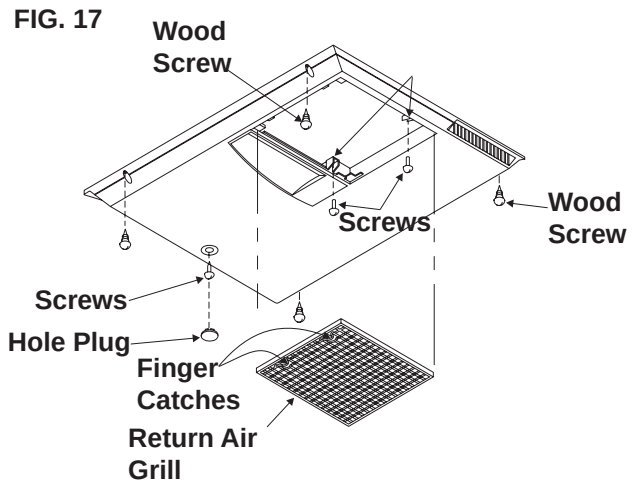
1. Turn the ON/OFF switch to the "OFF" position.
2. Simultaneously depress and hold the MODE and ZONE push-buttons while turning the ON/OFF switch to "ON". FF should appear in LCD display until the mode and zone push-buttons are released.
3. When a dip switch is turned on after initial configuration, a system reset will need to be done before the **Comfort Control Center™** will recognize the updated selection.

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 Box. See **Comfort Control Center™** Operating Instructions.

10. AIR BOX INSTALLATION

- A. Remove return air grill from air box by pulling in on half-round finger catches. See FIG 17.



MOUNTING PARTS

(4) 1/4" — #20 x 7" bolts



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



(3) #10 x 3/8" blunt point tapping screws

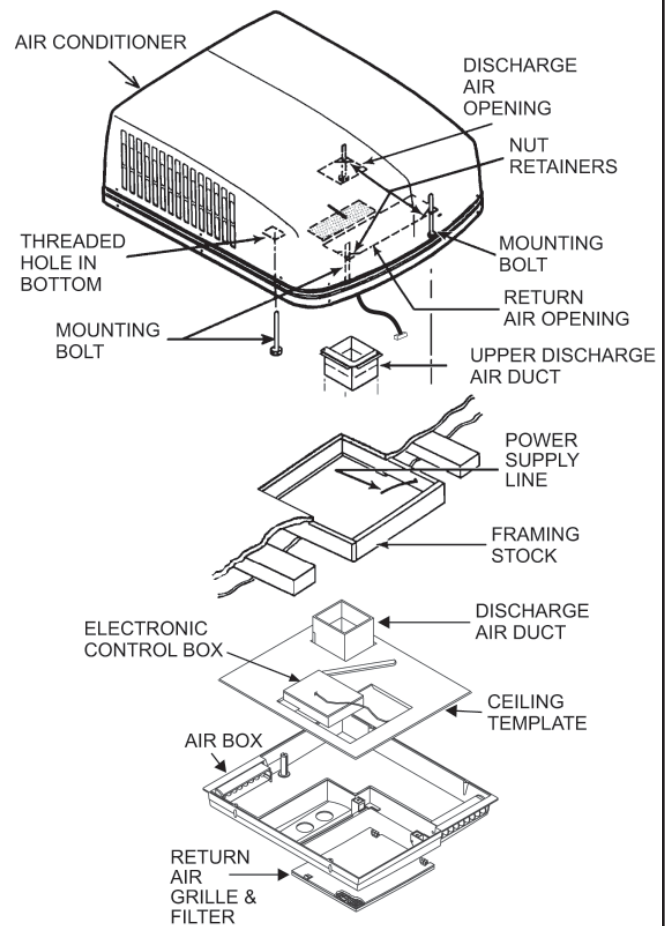
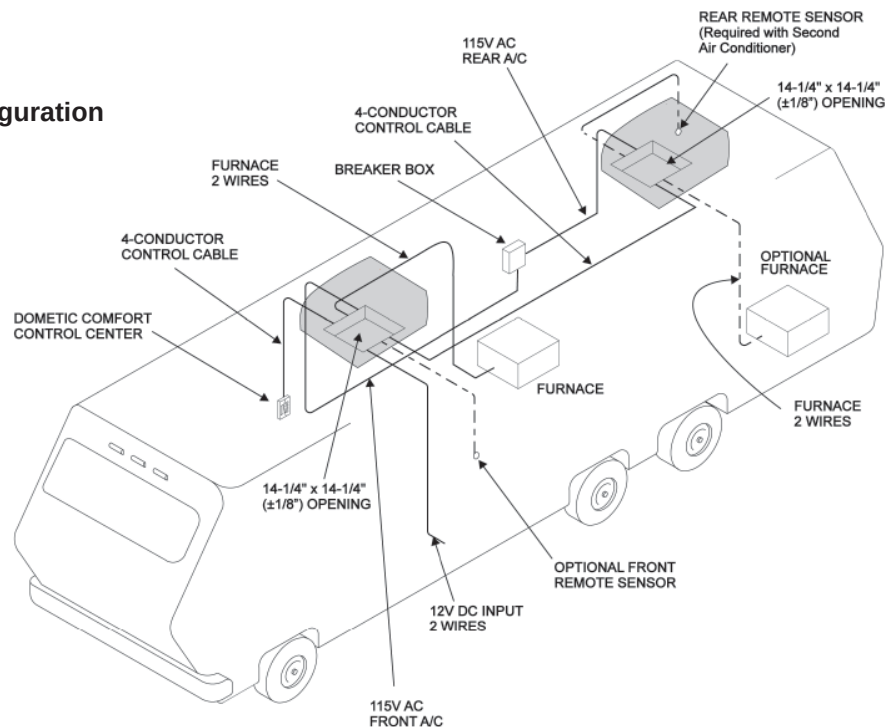


(1) Hole Plug



- B. Hold air box up to ceiling template and install three (3) #10 x 3/8" screws at air box mounting point.

- C. Snap hole plug into place at rear of air box.
- D. There are four mounting holes on the outer edge of the return air opening for which screws are provided. These are required for all applications.
- E. Reinstall return air grill and filter into air box.
- F. Verify that all features of the installed system work. Please read Unit Operating Instructions before proceeding. Check fan speed, cooling and furnace (if connected). If the features do not work disconnect the 12 VDC and 120 VAC power supplies and verify that all wiring is correct.

FIG. 18**AIR CONDITIONING UNIT****FIG. 19****Two Zone Configuration**

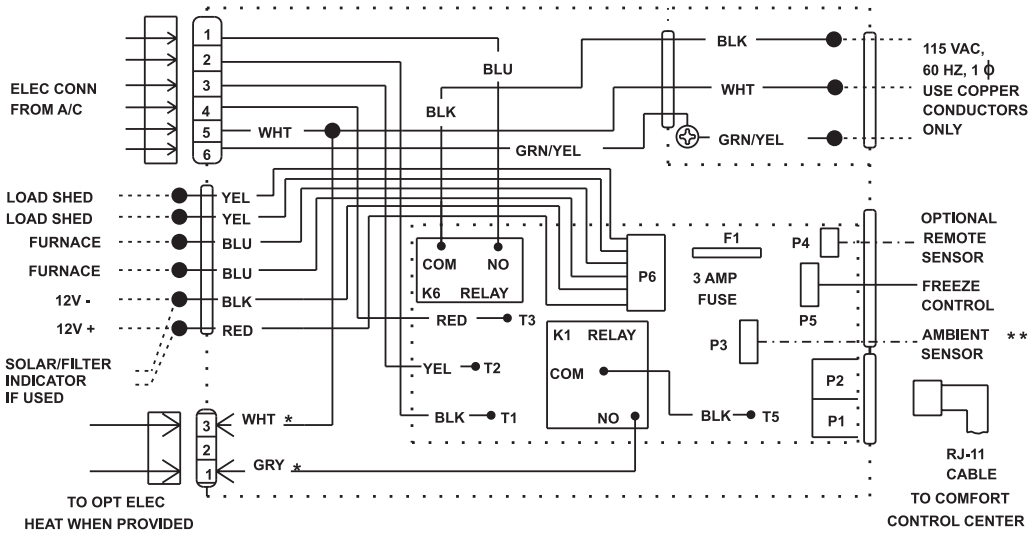
ELECTRONIC CONTROL KIT

3106515.061 * -NOT USED ON SOME MODELS
** -HEATPUMP MODELS ONLY

----- FIELD WIRING
----- OPTIONAL WIRING
----- FACTORY WIRING
● LINE SPLICE

Dometic
115VAC, 60Hz, 1 φ

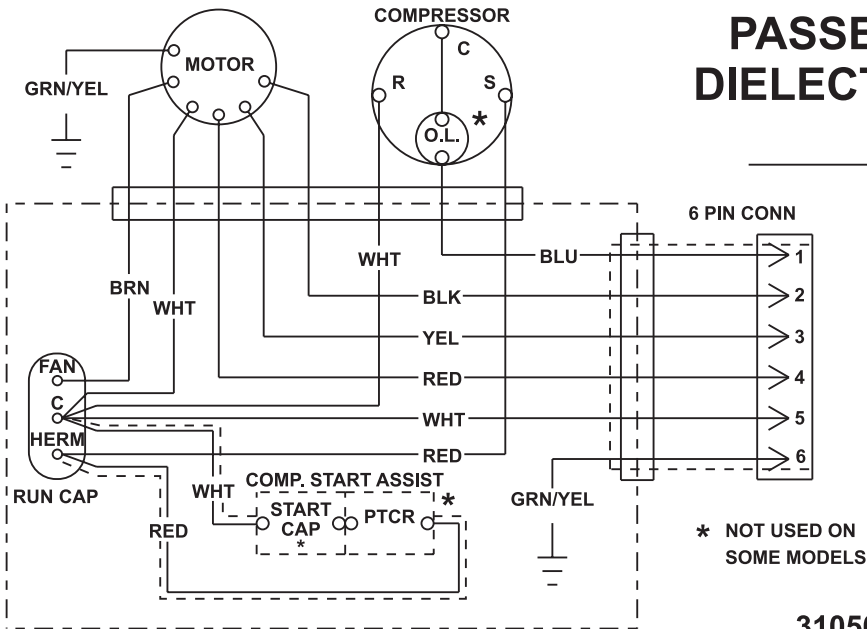
509 S. POPLAR ST.
LAGRANGE, IN 46761



PART No.
SERIAL No.
FOR USE WITH AIR CONDITIONER:
579, 590, 591, 595, 4579,
4590, 4591, 4595, 520,
5305, 540, 5505, 630, 650
OR
600 & 640 W/O ELECTRIC HEAT

**PASSED
DIELECTRIC**

UNIT FIELD WIRING DIAGRAM



**PASSED
DIELECTRIC**

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