



RECORD THIS INFORMATION FOR FUTURE REFERENCE:

Model Number \_\_\_\_\_  
Serial Number \_\_\_\_\_  
ADB Model Number \_\_\_\_\_  
ADB Serial Number \_\_\_\_\_  
Date Purchased \_\_\_\_\_

**USA**  
SERVICE OFFICE  
Dometic Corporation  
1120 North Main Street  
Elkhart, IN 46514

**For Service Center Assistance Call:**  
Please Visit:  
[www.Dometic.com](http://www.Dometic.com)

Roof Top Unit			
Description	Model	Use With Air Distribution Box	
		Model	Single Zone LCD Electronic Control Kit
Air Conditioner	640312	3107561.XXX	3313189.000 Cool/Furn White
	640315		3313189.015 Cool/Furn Black

This Unit is designed for OEM installation.

# INSTALLATION INSTRUCTIONS

## MODEL

640312.30X	640315C35X
640312C35X	640315.80X
640312.80X	640315.83X
640312.83X	640315.84X
640312C85X	640315C85X
640315.30X	

**REVISION A**  
Form No. 3314438.000 8/18  
(French 3314732.000\_A)  
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LaGrange, IN 46761



**Read these instructions carefully. These instructions MUST stay with this product.**

# INTRODUCTION

This air conditioner (hereinafter referred to as “unit” or “product”) is designed and intended for installation on the roof of a Recreational Vehicle (RV) during the time it is manufactured.

This unit can be installed by one person with brief help from additional personnel. Use the following procedure to ensure a properly installed, and properly functioning product.

Dometic, LLC reserves the right to modify appearances and specifications without notice.

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# DOCUMENT SYMBOLS



Indicates additional information that is **NOT** related to physical injury.



Indicates step-by-step instructions.

# IMPORTANT SAFETY INSTRUCTIONS

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

## A. Recognize Safety Information



This is the safety alert symbol. It is used to alert you to potential physical injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

## B. Understand Signal Words

A signal word will identify safety messages and property damage messages, and will indicate the degree or level of hazard seriousness.

**⚠ WARNING** indicates a hazardous situation that, if **NOT** avoided, could result in death or serious injury.

**⚠ CAUTION** indicates a hazardous situation that, if **NOT** avoided, could result in minor or moderate injury.

**NOTICE** is used to address practices **NOT** related to physical injury.

## C. Supplemental Directives



Read and follow all safety information and instructions to avoid possible injury or death.

Read and understand these instructions before [installing / using / servicing / performing maintenance] on this product.

Incorrect [installation / operation / servicing / maintaining] of this product can lead to serious injury. Follow all instructions.

The installation **MUST** comply with all applicable local or national codes, including the latest edition of the following standards:

### U.S.A.

- ANSI/NFPA70, National Electrical Code (NEC)
- ANSI/NFPA 1192, Recreational Vehicles Code

### CANADA

- CSA C22.1, Parts I & II, Canadian Electrical Code
- CSA Z240 RV Series, Recreational Vehicles

## D. General Safety Messages



**⚠ WARNING** Failure to obey the following warnings could result in death or serious injury:

- This product **MUST** be [installed / serviced] by a qualified service technician.
- Do **NOT** modify this product in any way. Modification can be extremely hazardous.
- Do **NOT** add any devices or accessories to this product except those specifically authorized in writing by Dometic, LLC.

# SPECIFICATIONS

## A. Table - Unit Data

Model No.	Nominal Capacity (BTU HR) Cooling	Electrical Rating 120 Vac 60 Hz 1 ph	Compressor Rated Load Amps	Compressor Locked Rotor Amps	Fan Motor Rated Load Amps	Fan Motor Locked Rotor Amps	Refrigerant R-410A (Oz)	Minimum Wire Size* 12 AWG Copper Up to 24'	AC Circuit Protection ***Installer Supplied	Minimum Generator Size** 1 Unit / 2 Units
640312.30X	11,000		10.5	53.0	3.5	10.0	19.0		20 Amp	3.5 kW / 5.0 kW
640312C35X	11,000		10.5	53.0	3.5	10.0	19.0		20 Amp	3.5 kW / 5.0 kW
640312.80X	11,000		11.5	53.0	2.6	8.5	20.0		20 Amp	3.5 kW / 5.0 kW
640312.83X	11,000		12.5	63.0	2.6	8.5	18.0		20 Amp	3.5 kW / 5.0 kW
640312C85X	11,000		11.5	53.0	2.6	8.5	20.0		20 Amp	3.5 kW / 5.0 kW
640315.30X	13,500		12.5	61.0	3.5	10.0	17.5		20 Amp	3.5 kW / 5.0 kW
640315C35X	13,500		12.5	61.0	3.5	10.0	17.5		20 Amp	3.5 kW / 5.0 kW
640315.80X	13,500		12.6	63.0	2.6	8.5	18.0		20 Amp	3.5 kW / 5.0 kW
640315.83X	13,500		12.5	63.0	2.6	8.5	19.0		20 Amp	3.5 kW / 5.0 kW
640315.84X	13,500		12.5	63.0	3.5	8.5	19.0		20 Amp	3.5 kW / 5.0 kW
640315C85X	13,500		12.6	63.0	2.6	8.5	18.0		20 Amp	3.5 kW / 5.0 kW

\* For wire length over 24 ft., consult the National Electrical 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 RV must be considered. Keep in mind generators lose power at high altitudes and from lack of maintenance.

\*\*\* CIRCUIT PROTECTION: Time Delay Fuse or Circuit Breaker Required.

## B. Roof Requirements

- A 14-1/4" x 14-1/4" (±1/8") square opening (hereinafter referred to as "roof opening") is required for installing this unit. This opening is part of the return air system of the unit and must be finished in accordance with NFPA 1192.
- Roof construction with rafters/joists support frames on a minimum of 16 inch centers.
- Minimum of 2 inches and maximum of 4 inches distance between roof to ceiling of RV.

# INSTALLATION PROCEDURE

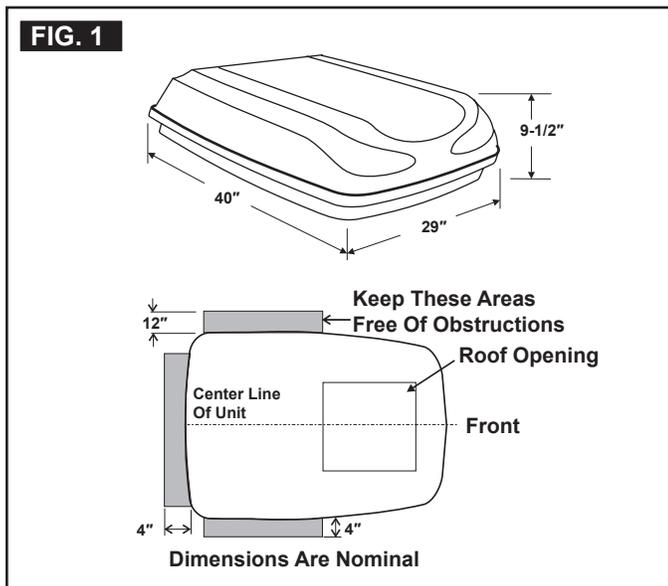
## A. Choosing Proper Location For Unit

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

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

It is preferred that the unit be installed on a relatively flat and level roof section measured with the RV parked on a level surface, but up to a 8° tilt is acceptable.

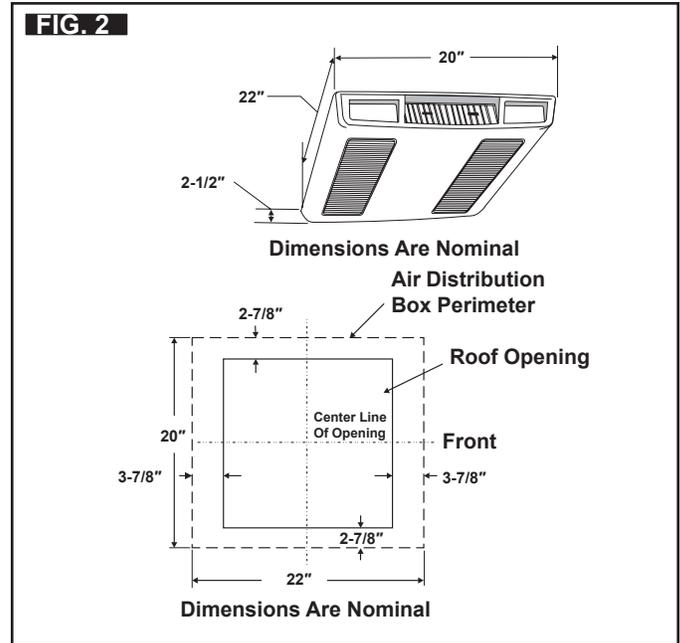
3. After Location Has Been Selected:
  - a. Check for obstructions in the area where unit will be installed. See (FIG. 1).



- b. **NOTICE** Maintain structural integrity. Otherwise damage to product and/or RV could occur.

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.

- c. Check inside the RV for air distribution box obstructions (i.e. door openings, room dividers, curtains, ceiling fixtures, etc.) See (FIG. 2).



## B. Roof Preparation

1. **WARNING** FIRE OR ELECTRICAL SHOCK HAZARD. Verify there are no obstacles inside RV roof and/or walls (wires, pipes, etc.). Shut **OFF** gas supply, disconnect 120 Vac power from RV, and disconnect positive (+) 12 Vdc terminal from supply battery **BEFORE** drilling or cutting into RV. Failure to obey these warnings could result in death or serious injury.

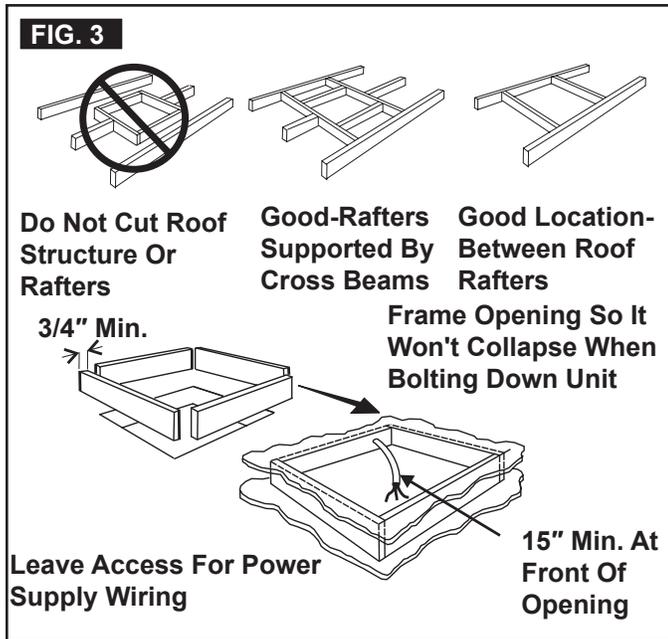
**i** Opening Requirements - Before preparing the ceiling opening, the type of system options **MUST** be decided upon. Read all of the following instructions before beginning the installation.

1. Carefully mark and cut the required roof opening. See section, "B. Roof Requirements" on page (4).
2. Using the roof opening as a guide, cut the matching hole in the ceiling.
3. **NOTICE** Maintain structural integrity. Otherwise damage to product and/or RV could occur.

**NOTICE** NEVER create a low spot on RV roof. Otherwise, water will pool and could cause a leak.

The opening created must be framed to provide adequate support and prevent air from being drawn from the roof cavity. Framing stock 3/4" or more in thickness must be used. Remember to provide an entrance hole for power supplies, 3 conductor cable, and furnace wiring (if applicable). See (FIG. 3).

# INSTALLATION PROCEDURE



## C. Wiring Requirements

1. Route a copper, with ground, 120 Vac supply wire from the time delay fuse or circuit breaker box to the roof opening. The proper size wire can be determined from chart on page 4.
  - a. This supply wire must be located in the front portion of the roof opening.
  - b. The power **MUST** be on an appropriately sized separate time delay fuse or circuit breaker. The proper size protection can be determined from the chart on page 4.
  - c. Make sure that at least 15" of supply wire extends into the roof opening. This insures an easy connection at the junction box.
  - d. Protect the wire where it passes into the opening with approved method.
2. Route a dedicated 12 Vdc supply wire (18-22 AWG) from the RV's converter (filtered side) or battery to the roof opening.
  - a. This supply wire must be located in the front portion of the roof opening.
  - b. Make sure that at least 15" of supply wire extends into the roof opening.
3. Route a 3 conductor cable, 18 to 22 AWG, from the roof opening to the Single Zone LCD (hereinafter referred to as SZLCD) thermostat mounting location. Make sure that at least 15" of the wire extends into the roof opening and 6" extend from the wall at the thermostat mounting location. See "D. Choosing Thermostat Location" on page (6).

4. If system includes a gas furnace, route two 18 gauge thermostat wires from the furnace to the roof opening of the unit that will control it. If more than one furnace is to be used, route the second set of thermostat wires to the second unit. Make sure that 15" of wire extends into the opening.

## D. Choosing Thermostat Location

The proper location of the thermostat is very important to ensure that it will provide a comfortable RV temperature. Observe the following rules when selecting a location:

1. Locate the thermostat 54" above the floor.
2. Install the thermostat on a partition, not on an outside wall.
3. **NEVER** expose the thermostat to direct heat from lamps, sun or other heat producing items.
4. Avoid locations close to doors that lead outside, windows or adjoining outside walls.
5. Avoid locations close to supply registers and the air from them.
6. When multiple single zone thermostats are being utilized, each individual thermostat **MUST** be installed in the room that the air conditioner is responsible for cooling to prevent air conditioners from attempting to turn on at the same time and overloading the breaker.

## E. Thermostat and Thermostat Cable Installation

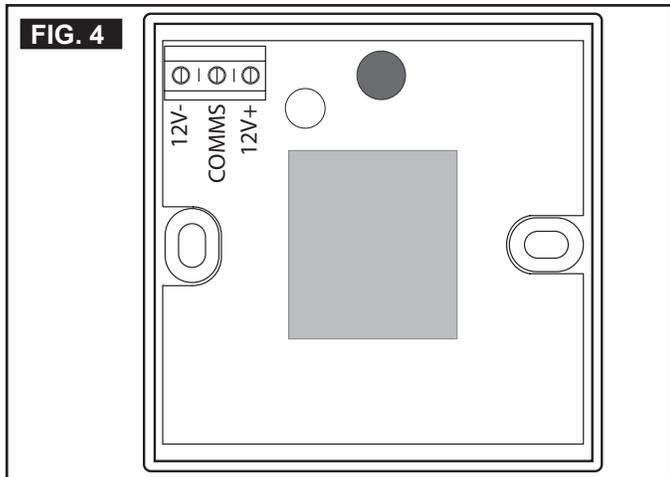
### 1. SZLCD Thermostat



Wire colors listed for the three conductor cable match the wire colors in the harness at the SZLCD electronic control box. Available wire colors may vary.

- a. Remove the cover from the SZLCD thermostat. Depress tab on bottom of thermostat and separate it from the base.
- b. Insert the previously run three (3) conductor cable through the hole in the base assembly.
- c. Cut back the outer cable shield approximately 3 inches and strip 1/4" insulation from each wire.
- d. Mount the thermostat level on the wall using the screws provided.
- e. Make the following connections to the thermostat. See (FIG. 4).

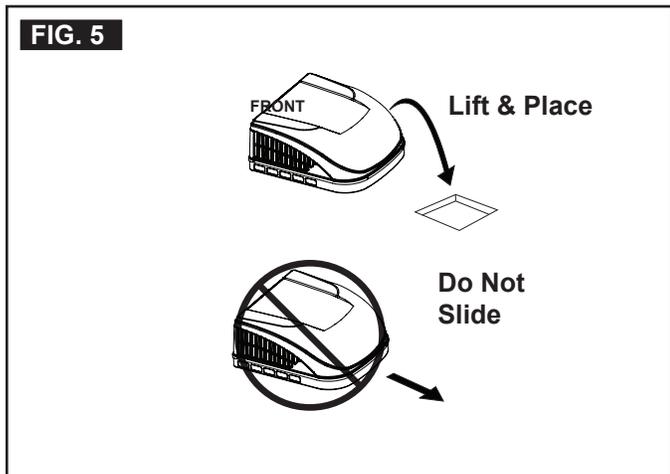
# INSTALLATION INSTRUCTIONS



- Red/white wire to the 12V+ terminal
  - Black wire to the 12V- terminal
  - Orange wire to the "COMMS" terminal
- f. Inspect all connections to make sure they are tight and not touching any other terminals or wires.
  - g. Push the wires back through the base into the wall. Place cover on the thermostat and push until an audible click is heard.

## F. Placing Unit On Roof

1. Remove the unit from the carton and discard carton.
2. **CAUTION** LIFTING HAZARD. Use proper lifting technique and control when lifting product. Failure to obey this caution could result in injury. Place the unit on the roof.
3. **NOTICE** Do **NOT** slide unit. Otherwise, damage to gasket (on bottom of unit) may occur, and could cause a leak. Lift and place the unit over the prepared opening using the gasket on the unit as a guide. See (FIG. 5).

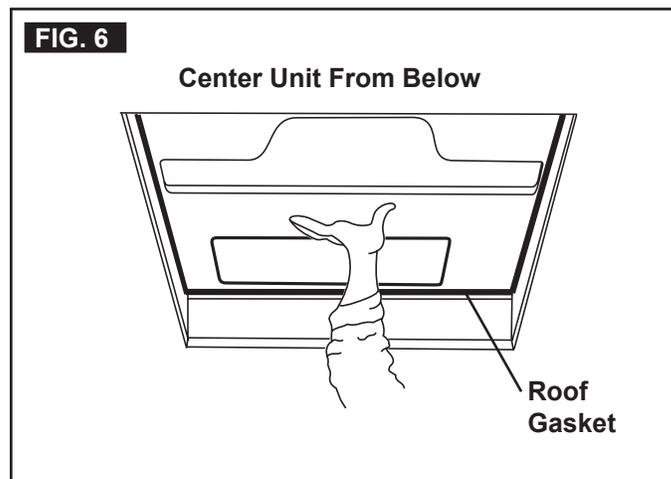


4. Place the air distribution box kit inside the RV. This box contains mounting hardware for the unit and will be used inside the RV.

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

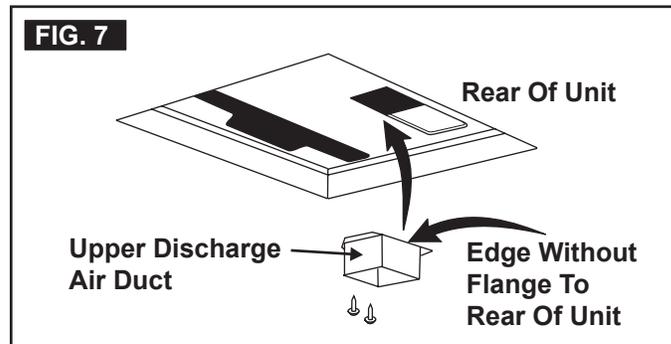
## G. Installation Preparation

1. Check gasket alignment of the unit over the roof opening and adjust if necessary. Unit may be moved from below by slightly lifting. See (FIG. 6).



2. Remove air distribution box and ceiling template from the carton. The upper duct is shipped inside the lower duct which is part of the ceiling template.
3. All models listed in this manual will use a three (3) bolt pattern for installing the air distribution box kit. These bolts along with the electronic control box cover are furnished in the SZLCD electronic control kit.
4. Remove upper duct from ceiling template and locate it over blower discharge. See (FIG. 7).

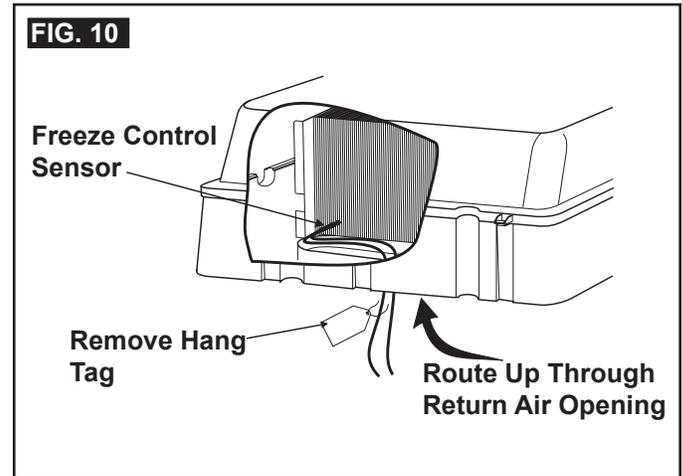
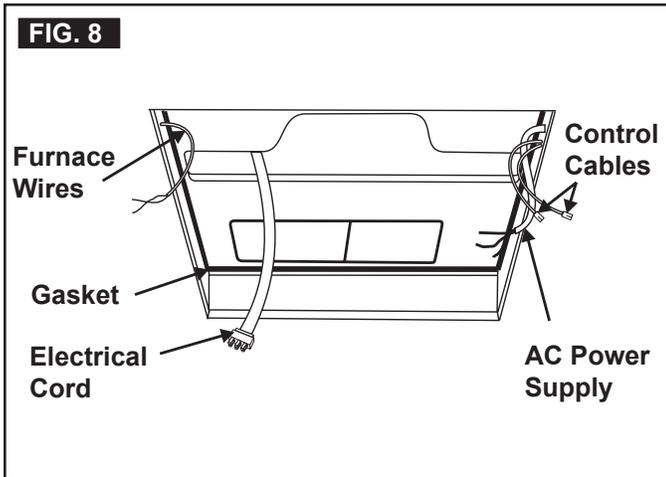
**i** Edge without flange installs toward **REAR** of opening.



# INSTALLATION PROCEDURE

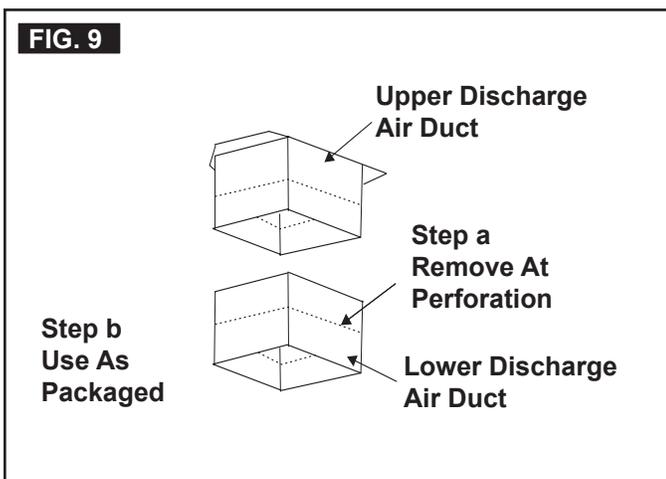
5. Use two (2) sharp pointed #10 sheet metal screws to hold duct to base pan. Screw holes are provided in bottom of base pan for these screws.
6. Reach up into the return air opening and pull the unit electrical cord down for later connection. See (FIG. 8).

10. Plug the supplied freeze control sensor into the matching connector in the SZLCD electronic control box.
11. Insert the freeze control sensor into the evaporator coil fins approximately 1" above the bottom of the coil fins and on the left side. See (FIG. 10). Bend the fins over sensor to secure in place.



**i** In some applications it may be necessary to extend the 6 pin connector. Order cable number 3105584.001 if needed.

7. Measure the ceiling to roof thickness:
  - a. If distance is 2"-3", remove perforated tabs from lower duct. See (FIG. 9).
  - b. If distance is 3"-4", install ducts as received. See (FIG. 9).
  - c. If distance is 4"-6", use optional 318556.000 Duct Adaptor and 3100895.006 Bolt Kit.



8. Remove the junction box cover from the SZLCD electronic control box.
9. Plug the electrical cord (6 pin connector) from the upper unit into the mating connector in the SZLCD electronic control box.

## H. Wiring System

### 1. 120 Vac Power Supply Connection

- a. **⚠ WARNING** ELECTRICAL SHOCK HAZARD. Verify 120 Vac power is disconnected from RV. Failure to obey this warning could result in death or serious injury.
- b. **⚠ WARNING** ELECTRICAL SHOCK HAZARD. Provide grounding in compliance with all applicable electrical codes. Failure to obey this warning could result in death or serious injury.

Route the 120 Vac supply wire through the strain relief in the SZLCD electronic control box. Tighten strain relief, making sure enough wire is inside SZLCD electronic control box to connect with unit 120 Vac wires.

- c. Connect the white to white; black to black; and green or bare copper wire using appropriate size wire connectors.
  - d. Push the wires into the SZLCD electronic control box and install the cover with the four (4) blunt point screws provided.
2. Low Voltage Wire Connections At The SZLCD Electronic Control Box.
    - a. **NOTICE** Verify the positive (+) 12 Vdc terminal is disconnected from supply battery. Otherwise, damage to unit could occur.

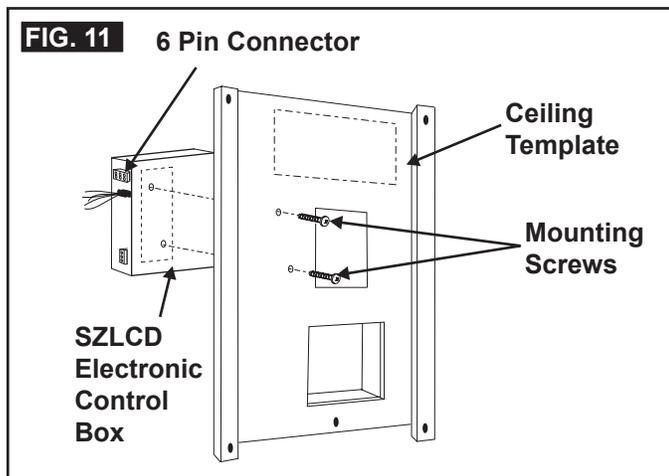
# INSTALLATION PROCEDURE

Plug the supplied 4 wire harness and the supplied 2 blue wires into their matching connectors in the SZLCD electronic control box.

- b. Connect the previously run +12 Vdc supply wire to the red wire from the SZLCD electronic control box.
- c. Connect the previously run -12 Vdc supply wire to both the black wire from the SZLCD electronic control box and to wire of the three wire cable that goes to the thermostat 12V-terminal.
- d. Connect the previously run furnace thermostat wires (if applicable) to the blue wires coming from the SZLCD electronic control box.
- e. Connect the red/white wire from the SZLCD electronic control box to wire of the three wire cable that goes to thermostat 12V+ terminal.
- f. Connect the orange wire from the SZLCD electronic control box to wire of the three wire cable that goes to thermostat COMMS terminal.

## I. Installing Unit

1. Install the SZLCD electronic control box on the ceiling template as shown in FIG. 11. Drive two (2) #6 x 3/8" blunt point Phillips head screws (provided) through the ceiling template into holes in the SZLCD electronic control box to hold into place. See (FIG. 11).

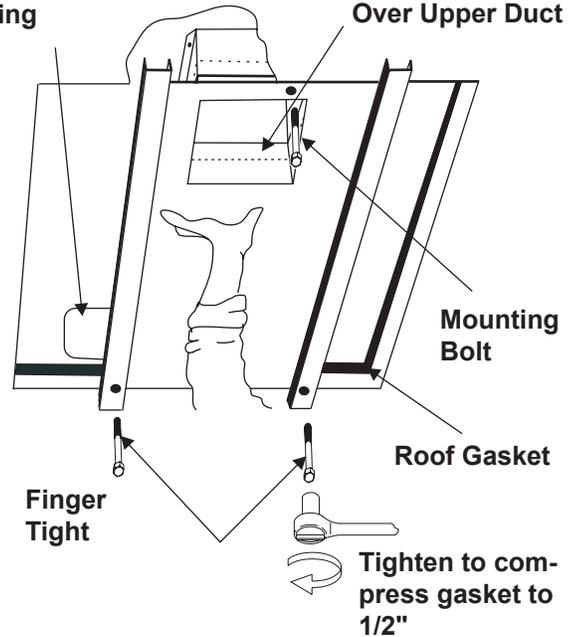


2. Install ceiling template by sliding lower duct over upper duct. See (FIG. 12).
3. Hold the ceiling template up to the roof opening.
  - a. Start each mounting bolt through the ceiling template and up into the unit base pan by hand. See (FIG. 12).

**FIG. 12**

Unit Return Air Opening

Slide Lower Air Discharge Duct Over Upper Duct



- b. **NOTICE** Tighten mounting bolts to correct torque specifications. Overtightening could damage unit's base pan or ceiling template. Not enough torque will allow an inadequate roof seal, and could cause a leak.

Tighten all three (3) mounting bolts **EVENLY** within 40 to 50 inch pounds. See (FIG. 12).

**i** This will compress the roof gasket to approximately 1/2\".

## J. Air Distribution Box Installation

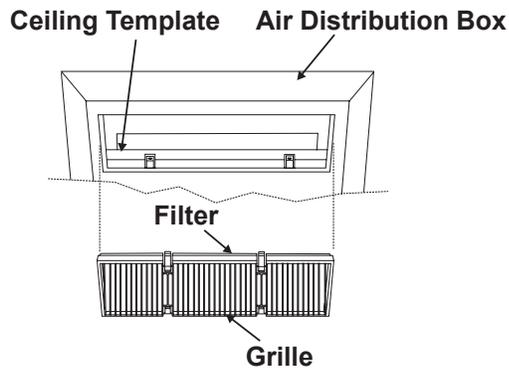
1. Remove the two filter-grilles from the air distribution box.
2. Slide the air distribution box over the ceiling template.
3. Install the four (4) sharp pointed screws through the air distribution box legs and into the pre-punched holes in ceiling template.

**i** There are four optional mounting holes on the outer edge of the return air opening for which no screws are provided. These are only required where an uneven ceiling does **NOT** allow proper fitting of the air distribution box.

4. Install the filter-grilles by pushing them into place. See (FIG. 13).

# INSTALLATION PROCEDURE

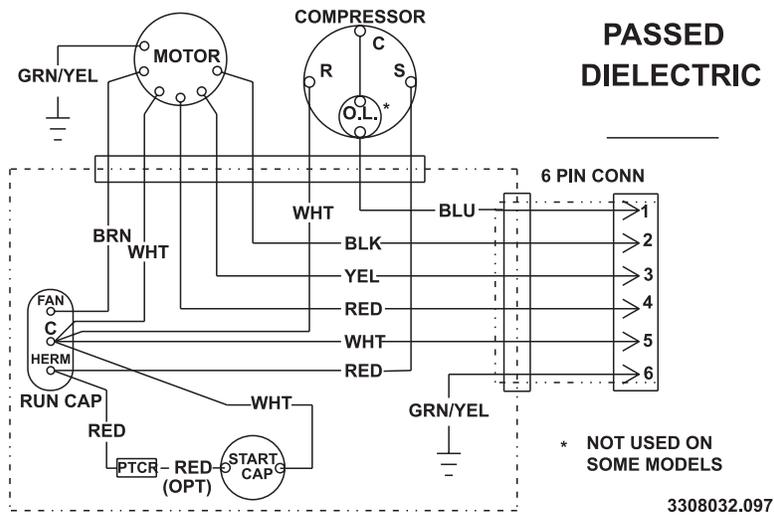
**FIG. 13**



5. The unit installation is now complete and is ready for operation. The power supply to the unit may now be turned **"ON"**.
6. Verify that all features of the installed system work. Please read the unit User's Guide or Operating Instructions before proceeding. Check fan speeds, cooling operation, and furnace operation (if applicable). If the features do not work, disconnect the 120 Vac and 12 Vdc power supplies and verify that all wiring is correct.

# WIRING DIAGRAM

## A. Unit Wiring Diagram



## B. Single Zone LCD Electronic Control Kit Cool/Furn Wiring Diagram

IF THIS PRODUCT IS SUPPLIED BY A WIRING SYSTEM THAT, IN ACCORDANCE WITH CANADIAN ELECTRIC CODE PART 1 C22.1-2009 AND THE NATIONAL ELECTRIC CODE, ANSI/NFPA NO. 70-2008, REQUIRES THE INSTALLATION OF AN EQUIPMENT GROUNDING CONDUCTOR OR CONDUCTORS, TERMINAL(S) OR GROUND SCREW(S) FOR THIS PURPOSE MUST BE INSTALLED.

