DUO-THERM®

by Dometic

RECORD THIS INFORMATION FOR FUTURE REFERENCE BEFORE INSTALLING THE UNIT:

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

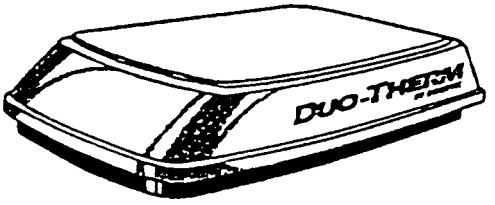
ROOF MOUNT AIR CONDITIONER

MODELS 600312.304
600312.404
600315.304
600315.404

Pre-Wired for Optional Heat Package

USA
SERVICE OFFICE
The Dometic Corp.
509 So. Poplar St.
LaGrange. IN 46761

CANADA
Dometic **Dist**
866 Langs Dr.
Cambridge, Ontario
CANADA N3H 2N7



WARNING

This unit must be serviced by an authorized serviceman. Modification of the appliance can be extremely hazardous and could lead to serious Injury or death.

AVIS

Cet appareii dolt etre repare seulement par un reparateur autorise. Modification de l'appareil pourrait Etre extremement dangereuse, et pourrait causer mal ou mort.

UL® UNDERWRITERS LABORATORIES INC.® LISTED

CSA®

INSTAL.LATION&OPERATING INSTRUCTIONS

MODELS

600312.304
600312.404
600315.304
600315.404

IMPORTANT INSTRUCTIONS MUST STAY WITH UNIT
OWNER — READ CAREFULLY

3102896.036

Form No. 3102896.036 8/93

1. GENERAL **INFORMATION**

SPECIFICATIONS

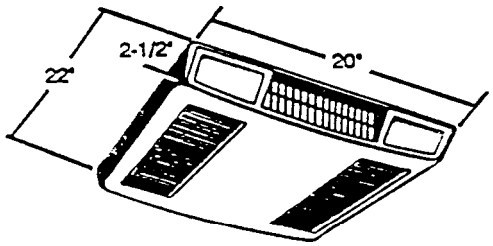
MODEL NO.		600315.304	600315.404	600312.304	600312.404
Nominal Capacity (BTU/HR)		13,500	13,500	11,000	11,000
Electrical Rating		115 VAC, 60 Hz., 1 ph.			
Compressor Rated Load Amps		12.4	11.5	9.5	10.7
Fan Motor Rated Load Amps		3.1	3.1	3.1	3.1
Compressor Locked Rotor Amps		60.0	50.0	53.0	50.0
Fan Motor Locked Rotor Amps		8.8	8.8	8.8	8.8
Heater Amps @ 120VAC		12.7	12.7	12.7	12.7
Power, Cooling (kw)		1.7	1.7	1.4	1.7
Power, Heating (kw)		1.6	1.6	1.6	1.6
Refrigerant (R22) Oz.		15.5	17.0	16.5	16.0
Minimum Wire Size***		12AWG Copper Up to 24ft.			
Circuit Protection		20 Amp Time Delay Fuse or HACR Circuit Breaker			
Installed Weight (Pounds)		108	114	106	114
Roof Thickness (Min./Max.)*		1" to 6"	1" to 6"	1" to 6"	1" to 6"
Minimum Generator Size —	1 Unit	3.5 KW	3.5 Kw	2.5 KW	2.5 KW
	2 Units	5.0 Kw	5.0 Kw	4.0 KW	4.0 KW

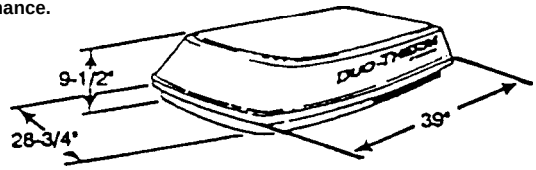
*** For lengths over 24 ft. consult the National Electrical Code.

** 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 mud be considered. Also keep in mind generators lose power at high altitudes and from lack of maintenance.

* For roofs 4-1/4" to 6" thick. an optional duct (Part No. 318556) and bolt kit (Part No. 318557) are required.

This air conditioner is prewired for an Optional Electric Heater.





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 starting your air conditioner installation.

B. The 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.

3. DO NOT add any devices or accessories to this air conditioner except those specifically authorized by The Dometic Corporation.

E. This equipment must be serviced by qualified personnel and some states require these people to be licensed.

3. CHOOSING PROPER LOCATION FOR THE AIR CONDITIONER

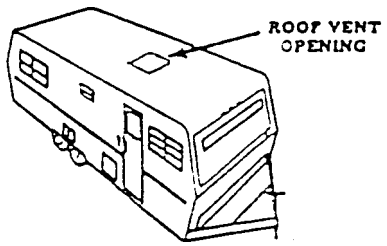
This air conditioner is specifically designed for installation on the roof of a recreational vehicle (RV). When determining your cooling requirements, the following should be considered:

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

From this information the size of air conditioner(s) and the number of air conditioners needed can be determined.

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" x 14" opening.

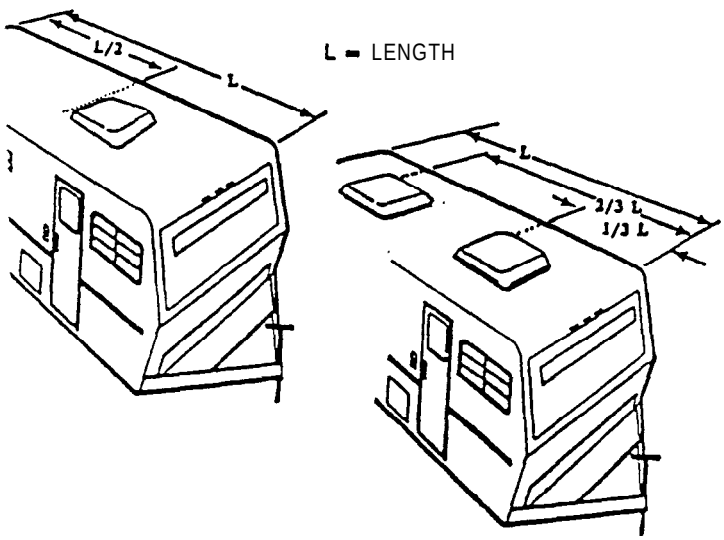


Other Locations

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

(1) one unit installation: The air conditioner should e mounted slightly forward of center (front to ack) and centered from side to side.

(2) two unit installations: Install one Air nditioner 1/3 and one Air Conditioner 2/3's from nt of RV and centered from side to side.



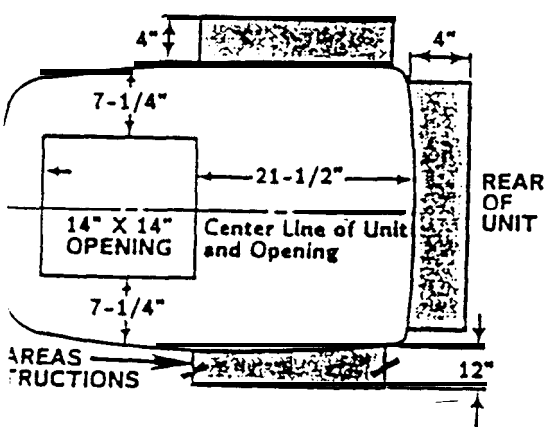
ed that the air conditioner be installed in a it and level roof section measured with the RV level surface. NOTE: a 8° slant to either side, ack, is acceptable.

r location has been selected:

Check for obstructions in the area where air conditioner will be installed.

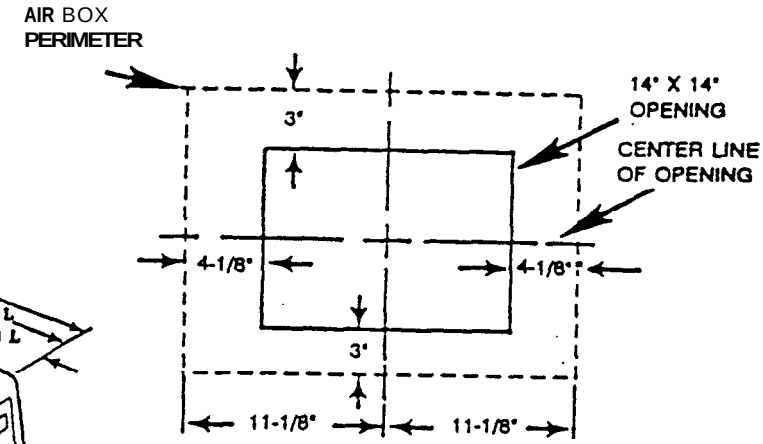
-- --

Air Conditioner Dimensions
(on top of vehicle)



2 The roof must be designed to support 140 lbs. when the RV Is in motion. Normally 220 lb. static load design will meet this requirement.

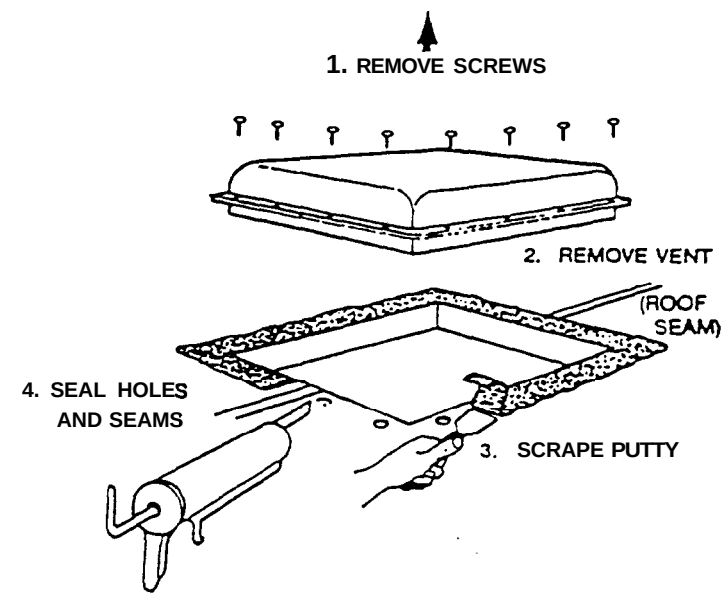
3. Check inside the RV for air box obstructions (i.e. door openings, room dividers, curtains, ceiling fixtures, etc.)



4. ROOF PREPARATION

A. ROOF VENT REMOVAL

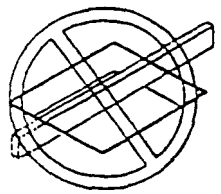
1. Unscrew and **remove the roof vent.**
2. **Remove all caulking compound around opening.**
3. **Seal all screw holes and seams where the roof gasket is located.** Use a good grade of all **weather sealant.**



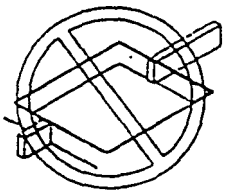
B. NEW OPENING

(Installation Other Than Vent Openlng)

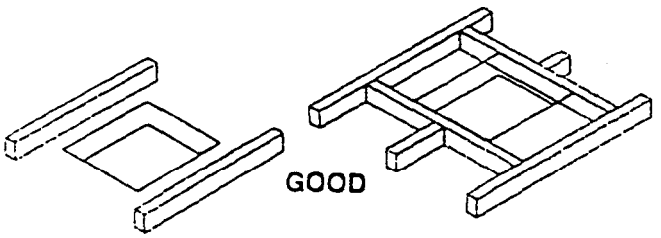
1. A 14" X 14" opening must be cut through the roof and ceiling of the RV. It is recommended this opening be located between roof reinforcing members.



NO BLOCKAGES



DON'T REMOVE STRUCTURE



WARNING

Disconnect all power supplies and the positive (+) terminal from the supply battery. Failure to follow this instruction may create a shock hazard.

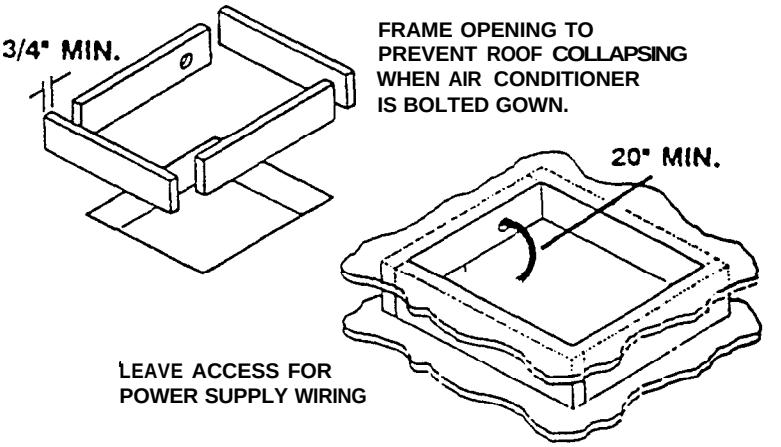
2. Mark a 14" X 14" square on the roof and carefully cut the opening.
3. Using the roof opening as a guide, cut the matching hole in the ceiling.

CAUTION: **There may be electrical wiring between** the roof and **ceiling.**

C. OPENING PREPARATION

1. If the opening exceeds 14-1/2" X 14-1/2", it will be necessary to install spacers.
2. If the opening is less than 14" X 14", it must be enlarged.
3. Route a copper 12 AWG with ground supply line from the fuse box or circuit breaker to the roof opening.
   a. The power supply must be on a separate 20 amp Time Delay Fuse or HACR Circuit Breaker.
   b. Wiring must comply with all National, State and Local wiring codes.
   c. Make sure at least 20' of wire extend into the roof opening. This insures easy air conditioner attachment.
   d. If vent fan was removed, the existing wire may be used provided it is of proper size and correctly fused.

4. The roof opening must be framed to provide adequate support and prevent air from being drawn from the roof cavity. Lumber 3/4" thick or more and long enough to bridge the opening must be used. Remember to provide an entrance hole for the power supply wire.



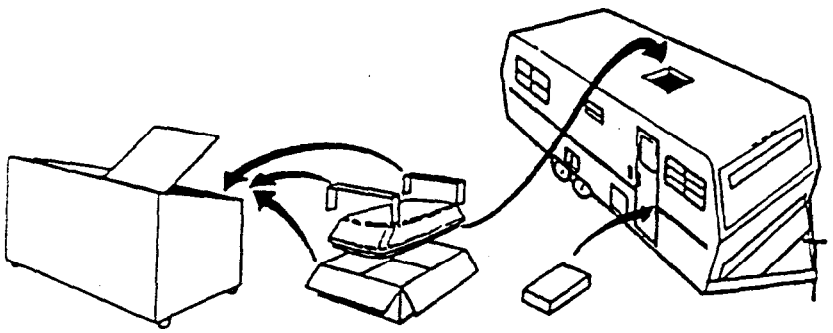
NOTE: NEVER create a LOW SPOT on the roof where water will collect. Water standing around the air conditioner may leak into the RV Interlor.

5. The 14" X 14" roof opening is part of the return air and must be finished in accordance with NFPA Standard 501C Standard for recreational vehicles, Section 2-7.

6. Use a steel sleeve and a grommet (or equivalent methods) to protect the wire where it passes through the return air duct.

5. PLACING THE AIR CONDITIONER ON THE ROOF

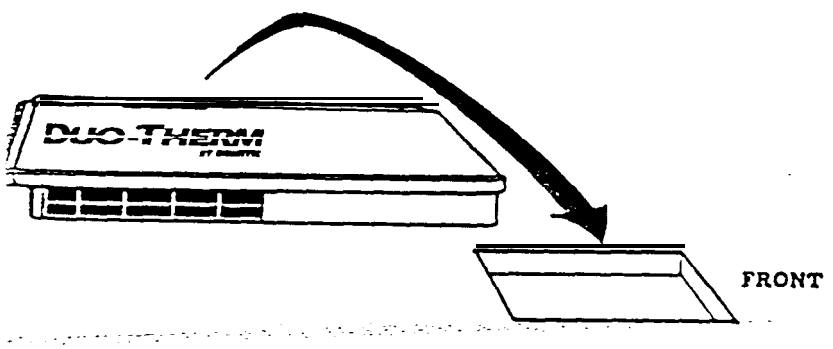
A. Remove and discard the carton. The air box and mounting pans are in a separate box located in the carton. These parts will be used for the inside portion of the installation.

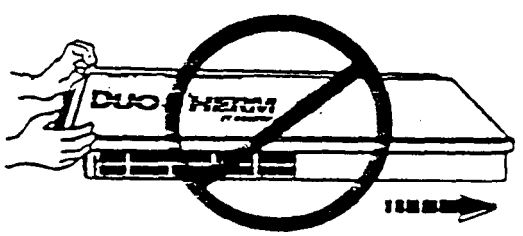


B. **Place the air conditioner on the roof.**

CAUTION: Use care In lifting - this unit weighs approximately one hundred (100) pounds.

C. Lift and place the unit over the prepared opening using the gasket as a guide. The blunt end 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.

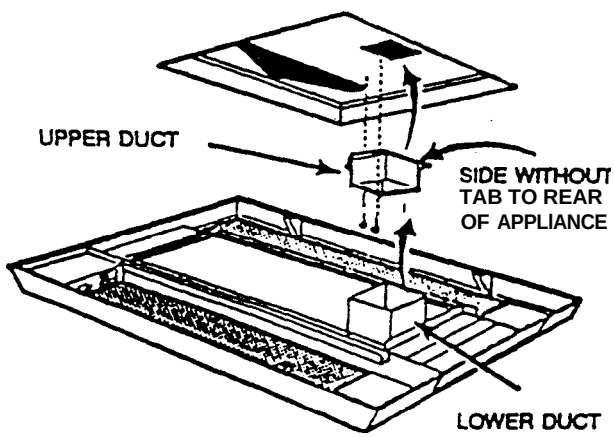
This completes the outside work. Minor adjustments can be done from the inside if required.

6. DJSCHARGE DUCT AND CEILING TEMPLATE INSTALLATION

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

MOUNTING HARDWARE:

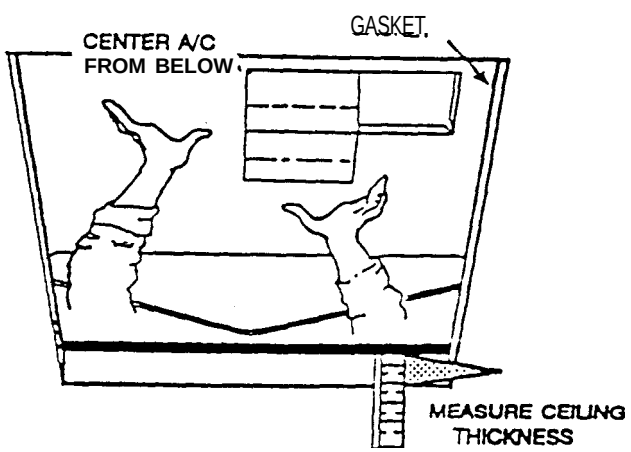
6	Sharp pointed sheet metal screws
3	1/4-20 X 7" Mounting Bolts
3	Wire nuts
1	Junction box cover
1	Blunt point sheet metal screw
2	Knobs



1. **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 of the RV.**
2. **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 ease of location.**

B. **Check for correct alignment and adjust the unit if necessary.**

C. **Reach up into the return air opening and pull the conduit power cable down for later connection.**

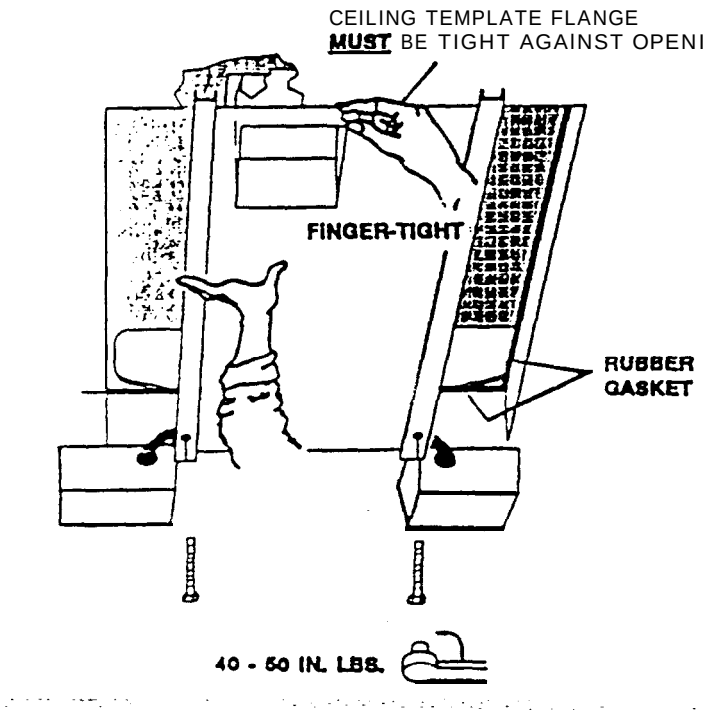


D. Measure the **ceiling thickness:**

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

   Duct (Part No. 318556)
   Bolts (Part No. 318557)

E. **Take the ceiling template and slide the lower duct over the upper duct.**



F. Hold the ceiling template with one hand and with the other install the three 1/4" x 7" mounting bolts through the template and into the base pan.

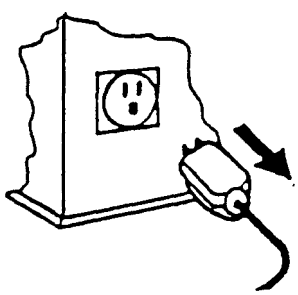
1. Finger-tighten the botts and check alignment. There should be an equal opening on each side and the rear flange must be tight against the roof opening.
2. Evenly tighten the three bolts to a torque of 40 to 50 inch pounds. This will compress the roof gasket to approximately 1/8.

CAUTION: **If bolts are left loose there may not be an adequate roof seal. If bolts are over-tightened damage may occur to the air conditioner base or ceiling template.**

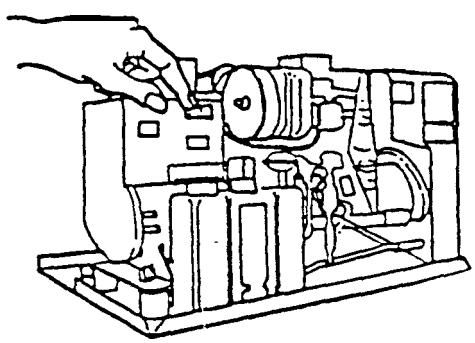
7. CONNECTION OF POWER SUPPLY

WARNING

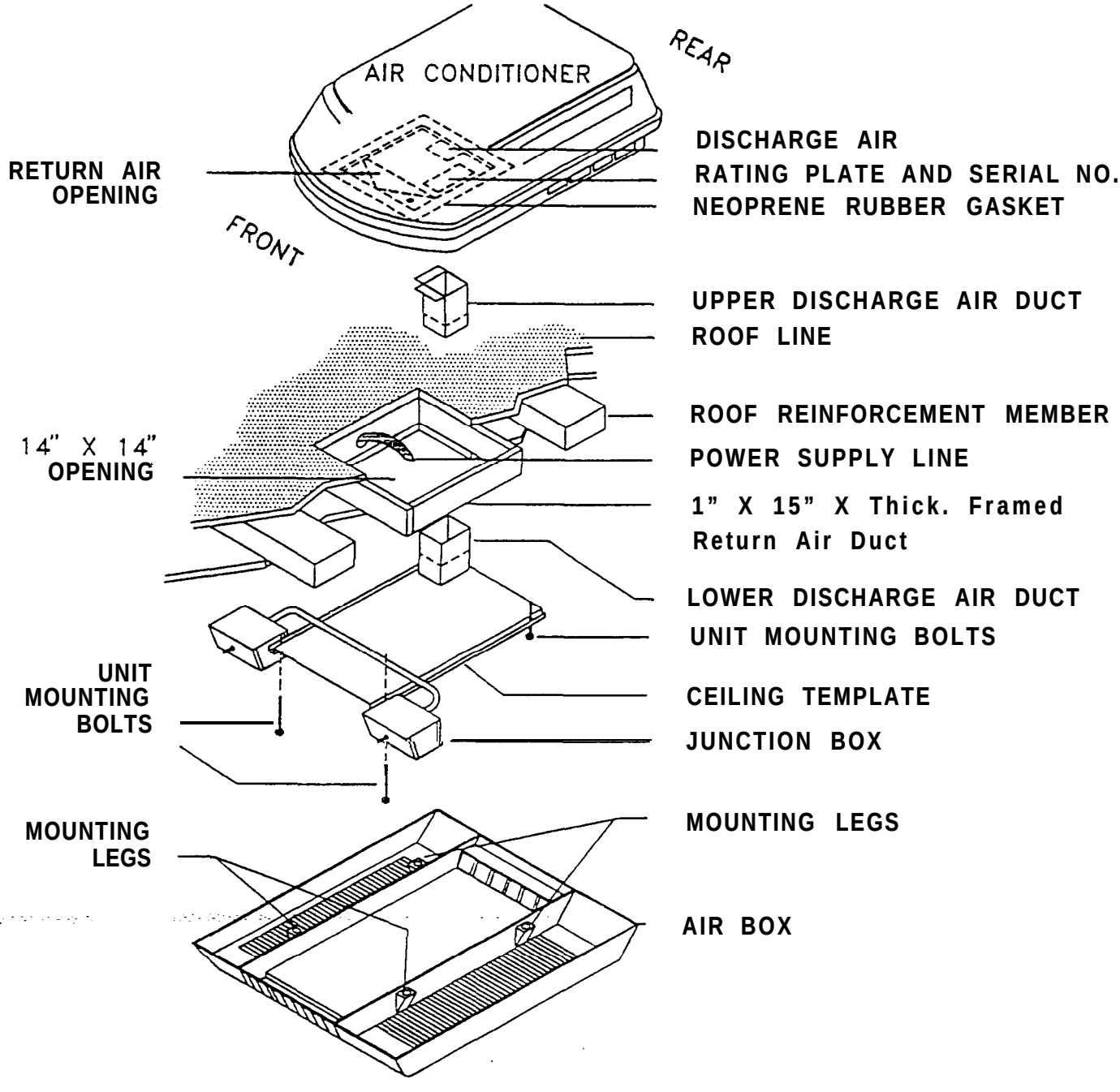
Disconnect ALL power before wire leads are connected.

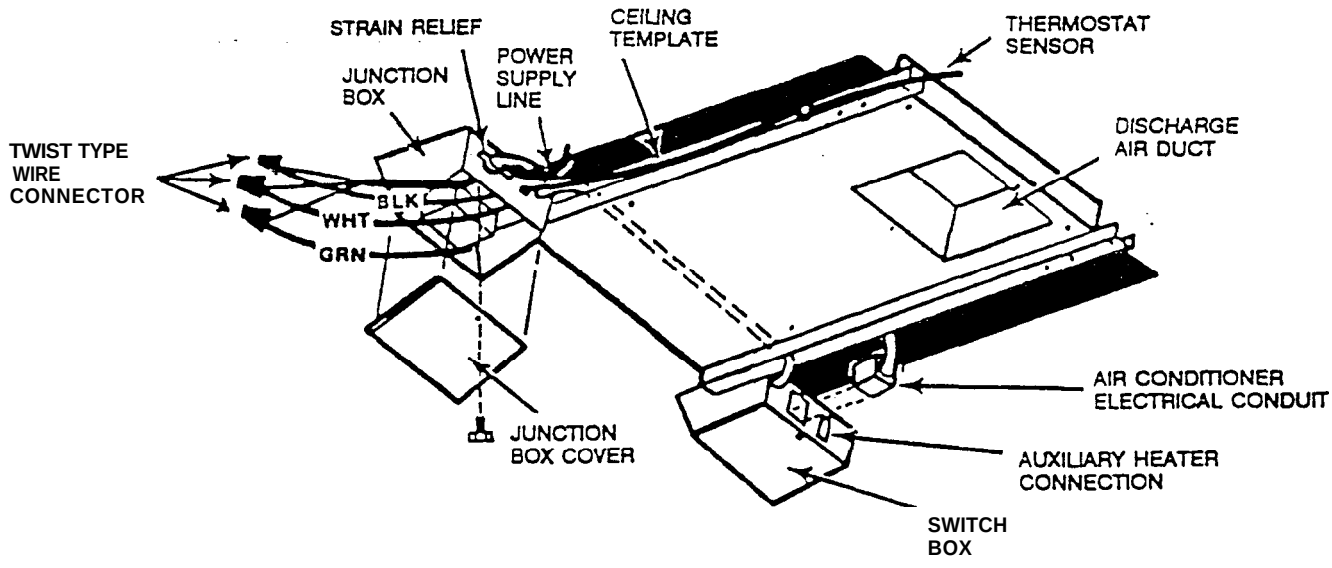


UNPLUG ALL POWER TO COACH



TURN OFF GENERATOR SETS

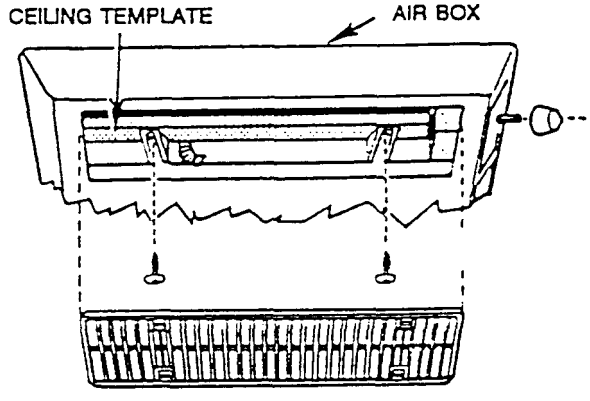

AIR CONDITIONER
REAR
FRONT
RETURN AIR OPENING
DISCHARGE AIR
RATING PLATE AND SERIAL NO.
NEOPRENE RUBBER GASKET
UPPER DISCHARGE AIR DUCT
ROOF LINE
ROOF REINFORCEMENT MEMBER
14" X 14" OPENING
POWER SUPPLY LINE
1" X 15" X Thick. Framed Return Air Duct
LOWER DISCHARGE AIR DUCT
UNIT MOUNTING BOLTS
UNIT MOUNTING BOLTS
CEILING TEMPLATE
JUNCTION BOX
MOUNTING LEGS
MOUNTING LEGS
AIR BOX



A. Route supply line into junction box on ceiling template.
B. Connect white to white: black to black; and green to green or bare copper wire using appropriate sized twist connectors.
C. Tape the connectors to the wire with electrician's tape.
D. Push the wires into the box and tighten the strain relief.
E. Install the cover (part of the mounting hardware) with the one blunt point screw provided.

NOTE: If optional heater is part of this installation, now is the time to install it. Installation instructions are provided with the heater kit.

C. Install the four (4) sharp pointed screws through the air box legs and into the prepunched ceiling template. NOTE: 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 box.

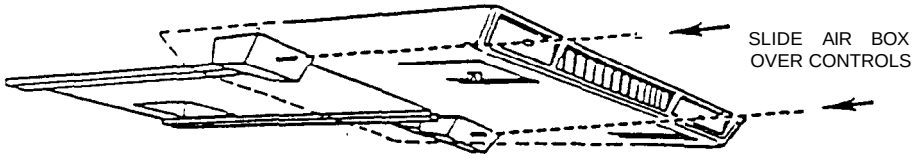


8. AIR BOX INSTALLATION

A. Remove the two filter-grills from the air box.

B. Slide the air box over the shafts of the thermostat and selector switch.

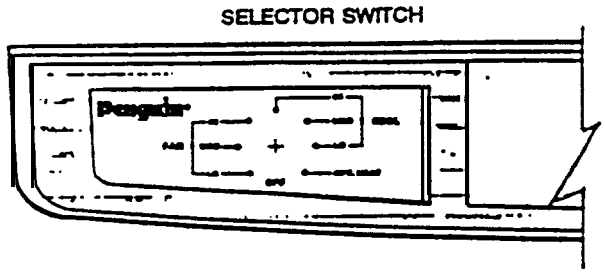
D. Install the filter-grills by pushing them into place.
E. Install the two knobs by pushing them onto the shafts.
F. Turn on power to the air conditioner for operational check. Please read the following operating **Instructions** before proceeding.



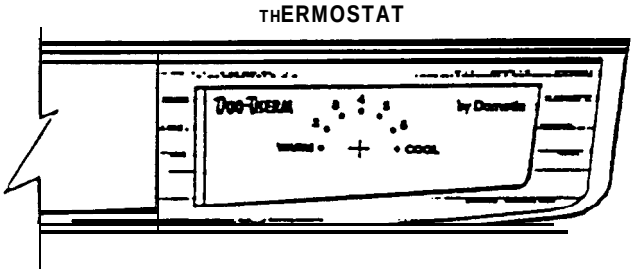
9. OPERATING INSTRUCTIONS

A. CONTROLS:

1. The selector switch has eight positions including 'OFF. This is the left hand knob and controls fan speeds, heating mode and cooling mode.



2 The thermostat is located on the right side and controls the temperature range from 65' on the coldest side to 90' on the warmest side. The compressor ON/OFF is controlled by the thermostat setting in the cooling mode.



B. COOLING OPERATION

1. Set the thermostat at the desired temperature level.
2. Select the fan speed- that- best satisfies your- needs:
   a. HI COOL: Selected when maximum cooling and dehumidification are required.
   b. MED COOL: Selected when normal or average cooling is required.
   c. LO COOL: Selected when room is at desired comfort level and needs to be maintained. Normally this speed is used for night time operation.

NOTE: The blower runs continuously to circulate air and maintain an even temperature. The compressor will come on as cooling is required to maintain the selected temperature level.

C. FAN OPERATION:

This will circulate the air in your RV without cooling or heating. There are three positions: HI FAN; MED FAN; OR LO FAN to select from.

D. HEATING OPERATION: (With optional Heat Kit installed)

NOTE: This electric heater will not replace a furnace for heating your RV in cold weather. The intent is to remove the chill on cool days or mornings.

Turn the selector switch to 'OPT. HEAT.

The fan and heater will run continuously on low speed.

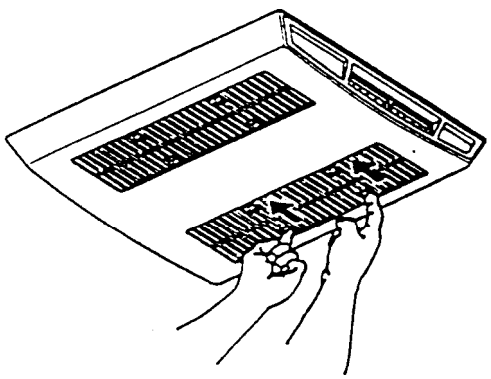
NOTE: If the optional heater is not installed and "OPT. HEAT is selected, the fan will run as a 'LO FAN' operation.

E. "OFF" POSITION: All power to the air conditioner is Off.

F. After shutting the air conditioner down with either the selector switch or thermostat, wait at least two (2) minutes before restarting. This allows the refrigerant pressure to equalize and the compressor to easily restart.

10. MAINTENANCE

AIR FILTERS: Periodically remove the filter/grille assemblies located in the air box and clean. Remove the assemblies by placing fingers on the long portion of latches and with an over-and-downward pressure, unlatch the catches. After assemblies are removed, wash the filter/grille assemblies with soap and warm water. Let assemblies dry and then reinstall.



FROST FORMATION ON COOLJNG COIL: Under certain conditions, frost may form on the evaporator coil. If this should occur, inspect the fitter and clean if ditty. Make sure air louvers are not obstructed. Air conditioners have a tendency to frost when the outside temperature is relatively low. This may be prevented by adjusting the thermostat control knob to a warmer setting (counterclockwise). Should frosting continue, operate on low, med., or high FAN setting until the cooling coil is free of frost.

NOTE: **Never run the air conditioner without return air filters in place. This may plug the unit evaporator coil with dirt and may substantially affect the performance of the unit**

The ability of the air conditioner to maintain the desired inside temperature depends not only on the heat gain of the vehicle but also some preventative measures taken by the occupants. During extreme outdoortemperatures, the heat gain of the vehicle may be reduced by:

- Parking the vehicle in a shaded area:
- Using window shades (blinds and/or curtains):
- Keeping windows and door shut;
- Awiding the use of heat producing appliances.

Starting the air conditioner early in the morning and giving the system a “head start’ on the expected high outdoor ambient will greatly improve its ability to maintain the desired indoor temperature.

CAUTION

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 vehicle, condensed moisture may appear on air registers, ceilings, windows, 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.

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

11. SERVICE - Unit Does Not Operate

If your unit fails to operate or operates improperty, check the following before calling your service center.

A If RV is connected to motor generator, check to be sure motor generator is running and producing **power.**

B. If RV is connected to power supply by a land line, check to be sure line is sized property to run air conditioner load and it is plugged into power supply.

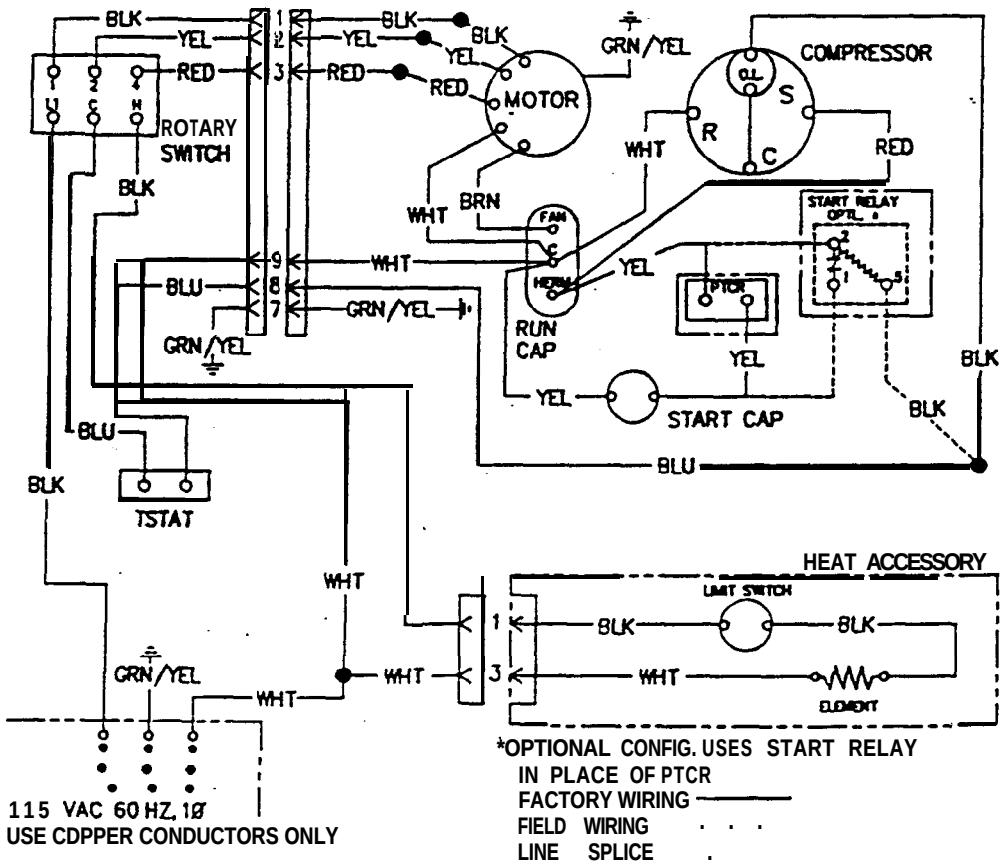
C. Check your fuse or circuit breaker to see if it is open.

D. In the air conditioner air box, check to be sure the air conditioner conduit is plugged into the selector switch box. (Reference Figure on Page 8.)

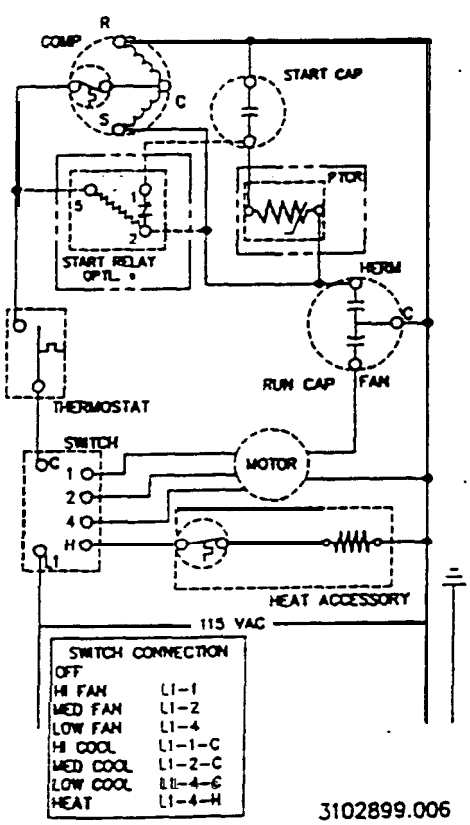
E After the above checks, call your local service center for further help. This unit must be serviced by qualified service personnel only.

When calling for service always give the air conditioner Model Number and Serial Number. This information can be found on unit rating plate located on the air conditioner base pan. To locate, remove return air grill from. air box and look up through the 14" X 14" opening in the ceiling. (Reference Figure on Page 7).

WIRING DIAGRAM



WIRING SCHEMATIC



3102899.006

Electric Heat

WILL TAKE THE CHILL OFF THOSE COOL NIGHTS AND MORNINGS

Did you purchase an Electric Heat Strip for your new air conditioner? Contact your Dealer and ask for a 3101121 Heat Strip.

You won't regret having it to remove the chill from the air on those cool morning and evening hours during the camping season.

It's simple to add our 5600 BTU Heat Strip to your air conditioner as your unit is completely pre-wired.