



RECORD THIS UNIT INFORMATION FOR FUTURE REFERENCE:

Model Number _____
Serial Number _____
Date Purchased _____

600 Series PENGUIN
Roof Top Air Conditioner
USED WITH
Part No. 3105457
Air Distribution Box Kit
Mechanical

PRE-WIRED FOR OPTIONAL HEAT PACKAGE



USA
SERVICE OFFICE
The Dometic Corp.
509 So. Poplar St.
LaGrange, IN 46761
(219) 463-4858

CANADA
Dometic Dist.
866 Langs Dr.
Cambridge, Ontario
CANADA N3H 2N7
(519) 653-4390

For Service Center
Assistance Call:
800-544-4881

⚠ 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 & OPERATING
INSTRUCTIONS**

MODELS
600312.321
600312.421
600315.321
600315.326
600315.421

REVISION

Form No. 3105448.041 5/01

(Replaces 3105448.033)

(French 3108189.022)

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LaGrange, IN 46761

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 and/or damage to equipment could occur.

CAUTION: means if the safety information is not followed someone might be injured and/or damage to equipment might occur.

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 or after 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 4.00 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

Operation on High Fan/Cooling mode will give optimum or maximum efficiency in high humidity or high outside temperatures.

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

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

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.

1. SPECIFICATIONS

MODEL NUMBER	600312.421	600312.321	600315.321 600315.326	600315.421
Nominal Capacity (BTU/HR)	11,000	11,000	13,500	13,500
Electrical Rating	115 VAC, 60 Hz., 1 PH.			
Compressor Rated Load Amps	10.7	9.5	12.4	11.5
Fan Motor Rated Load Amps	3.1	3.1	3.1	3.1
Compressor Locked Rotor Amps	50.0	53.0	60.0	50.0
Fan Motor Locked Rotor Amps	8.8	8.8	8.8	8.8
Heater Amps/Watts @ 120V AC	12.7 / 1530			
Refrigerant (R22) oz.	16.0	16.5	15.5	17.0
Minimum Wire Size *	12 AWG Copper up to 24 ft.			
AC Circuit Protection	20 Amp Time Delay Fuse or 20 HACR Circuit Breaker			
Installed Weight (Pounds)	101	95	96	102
Minimum Generator	1 UNIT	2.5 KW	2.5 KW	3.5 KW
Size **	2 UNITS	4.0 KW	4.0 KW	5.0 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 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.

- A. Read installation and operating instructions carefully before attempting to start 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.
- D. **DO NOT** add any devices or accessories to this air conditioner except those specifically authorized by Dometic.
- E. This equipment must be serviced by qualified personnel and some states require these people to be licensed. discharge louver of Air Distribution Box.

2. CHOOSING LOCATION FOR THE AIR CONDITIONER

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

A. NORMAL LOCATIONS:

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:

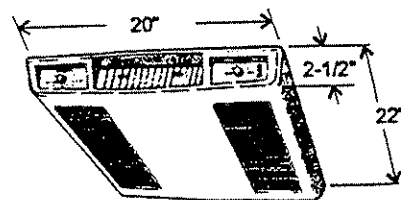
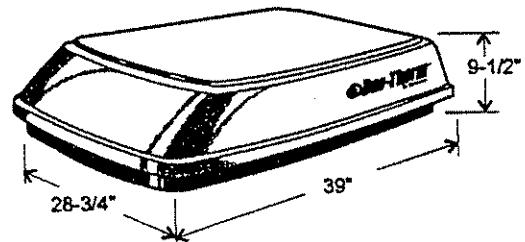
When no roof vent is available or another location is desired, the following is recommended:

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 conditioners 1/3 and one air conditioner 2/3's from front of RV and centered from side to side.

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

Note: A 8° slant to either side, or front to back, is acceptable for 600312 and 600315 series.



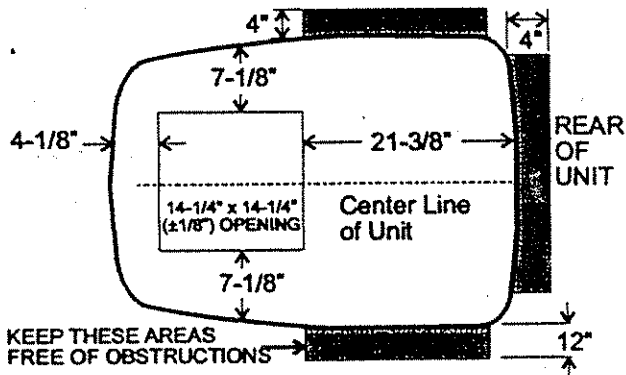
C. AFTER LOCATION SELECTION:

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.

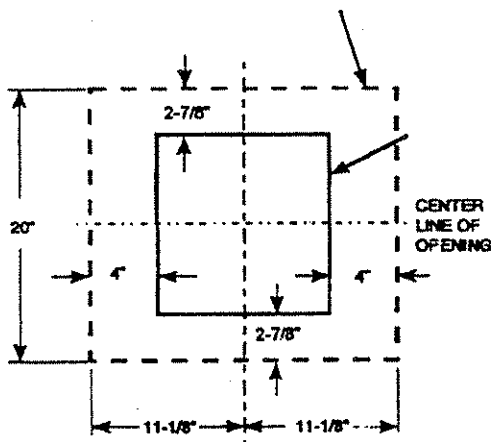
CAUTION

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.)



AIR BOX PERIMETER



3. ROOF PREPARATION

Read all of the following instructions before beginning the installation.

WARNING

There may be electrical wiring between the roof and 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. 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 will be located. Use a good grade of all weather sealer.

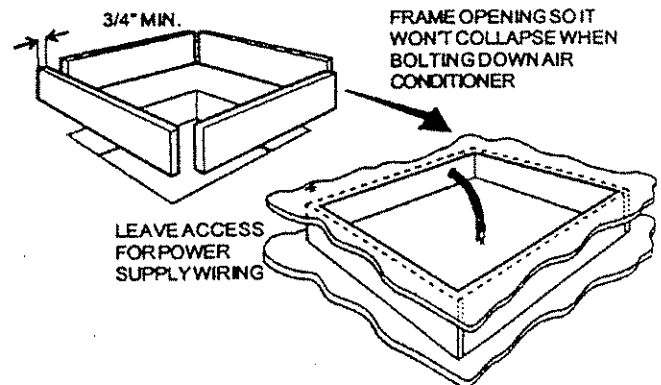
B. NEW OPENING:

(Installations Other Than Vent Openings)

1. A 14-1/4" x 14-1/4" ± 1/8" opening must be cut through the roof and ceiling of the RV. It is recommended this opening be located between 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.

C. 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, supply line from the fuse or circuit breaker box 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 15" 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 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.

⚠ 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" ± 1/8" roof opening is part of the return air duct and must be finished in accordance with NFPA standard 501C, Standard for Recreational Vehicles, Section 2-7.

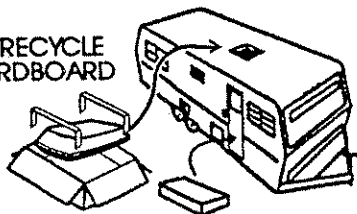
4. PLACING THE AIR CONDITIONER ON THE ROOF

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

⚠ CAUTION

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

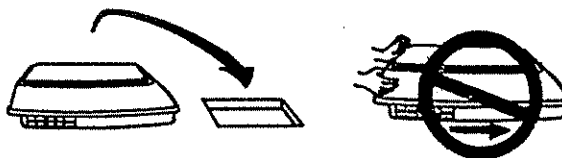
PLEASE RECYCLE
ALL CARDBOARD



- C. Lift and place the unit over the prepared opening using the gasket as a guide. The condenser 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 3105457 Air Box Kit inside the RV. This box contains mounting hardware for the air conditioner and will be used inside the RV.

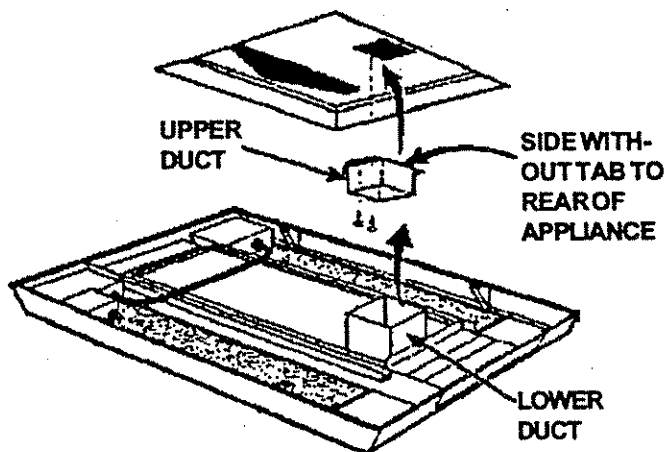
This completes the outside work. Minor adjustments can be done from the inside if required.

5. DISCHARGE DUCT AND CEILING TEMPLATE INSTALLATION

- A. Remove air box and mounting hardware from carton. The upper duct is shipped inside the lower duct which is part of the ceiling template.
- B. Remove upper duct from ceiling template and locate it over blower discharge.

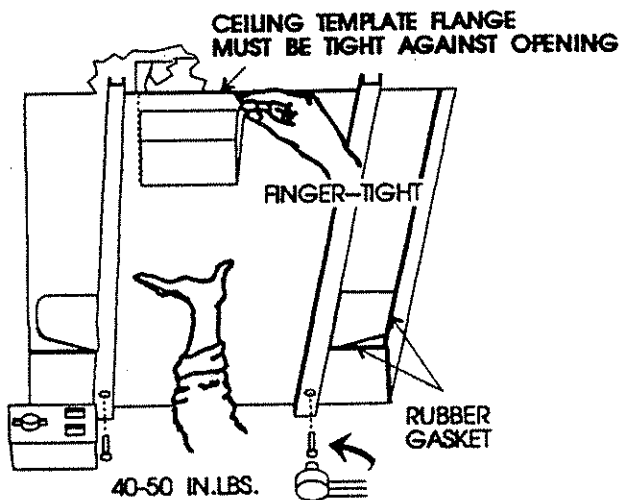
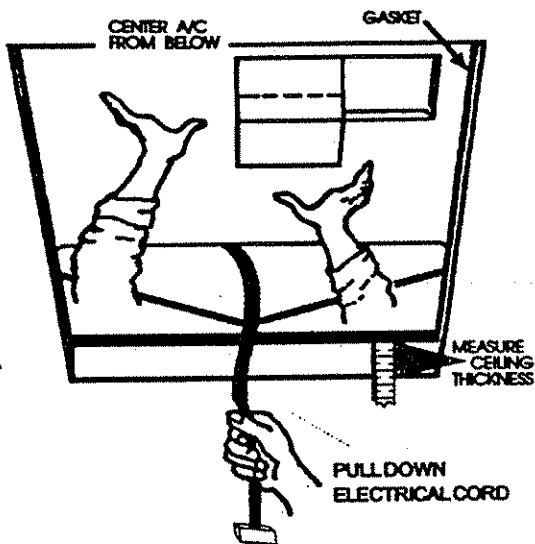
Note: Edge without flange installs toward REAR of opening.

- C. Use two (2) sharp pointed #10 sheet metal screws (A) to hold duct to base pan. Holes provided in bottom of base pan for these screws to go into.



- D. Check for correct alignment and adjust the unit as necessary (Roof Gasket centers over 14-1/4" ± 1/8" opening).
- E. Reach up into return air opening of the air conditioner and pull the unit electrical cord down for later connection.
- F. Measure the ceiling to roof thickness:
1. If distance is 1"-2", remove perforated tabs from both upper and lower ducts.

2. If distance is 2"-3", remove perforated tabs from bottom duct only.
 3. If distance is 3"-4", install ducts as received.
 4. If distance is 4"-6", use optional duct adaptor, Part No. 318556.000 and Bolt Kit, Part No. 3100895.006.
- G. Install ceiling template by sliding lower duct over upper duct.
- H. Hold the ceiling template with one hand and with the other, install the three 1/4" mounting bolts through the template and into the base pan.



1. Finger-tighten the 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 three bolts to a torque of 40 to 50 inch pounds. This will compress the roof gasket to approximately 1/2". The bolts are self locking so over tightening is not necessary.

⚠ CAUTION

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

6. Wiring Of System

A. CONNECTION OF POWER SUPPLY

⚠ WARNING

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

Note: All wiring must comply with the National Electrical Code and any State or Local Codes or regulations.

1. Route supply line into junction box through provided Romex Connector. Leave 15" inside opening. This insures easy air conditioner attachment.

⚠ 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.

2. Connect white wire in junction box to white or neutral wire from supply line.
3. Connect black wire in junction box to black or hot wire from supply line.
4. Connect supply ground wire to identified ground screw in junction box.
5. Tape the connectors to the wire with electrician's tape.
6. Push the wires into the box and tighten the strain relief.
7. Install the cover (part of the mounting hardware) with the one blunt point screw provided.
8. Plug unit electrical cord into mating connector on control box.

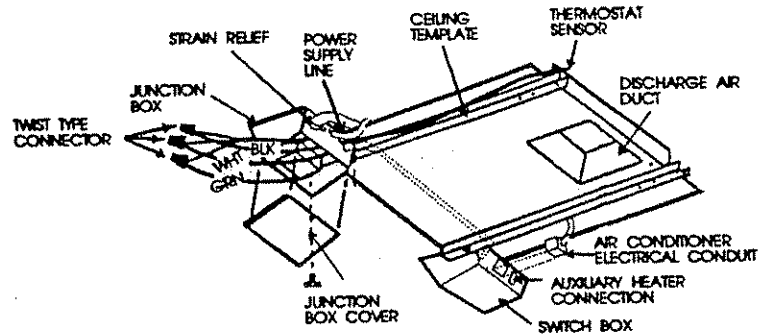
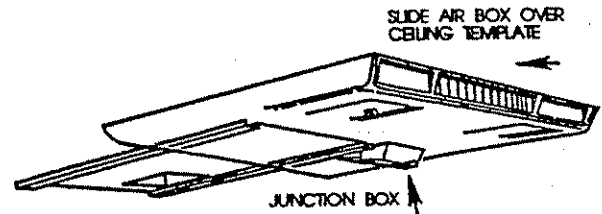
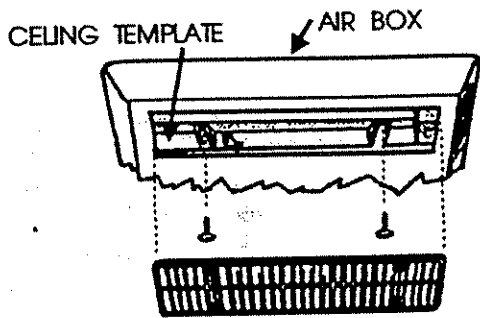
Note: If optional heater is part of this installation, now is the time to install it. Installation instructions are provided with the heater kit.

7. INSTALL AIR BOX

- A. Remove the two filter-grilles from the air box.
- B. Slide the air box over the shafts of the thermostat and selector switch.
- C. Install the four (4) sharp pointed screws through the air box legs and into the prepunched holes in 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.

- D. Install the filter-grilles by pushing them into place.
- E. Install the two knobs by pushing them onto the shafts.
- F. The air conditioner installation is now complete. Turn on power to the air conditioner for operational check.



1. CONTROLS:

- A. The Selector Switch has eight positions including "OFF". This controls fan speed, heating mode, and cooling modes.
 - B. The thermostat controls the compressor ON/OFF operation in cooling temperature range of 65° to 90°F.
- Note:** The thermostat does not control the unit optional electric heater if installed.

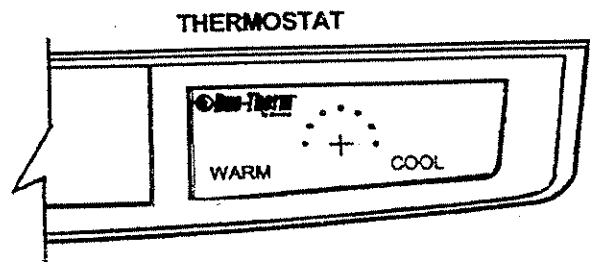
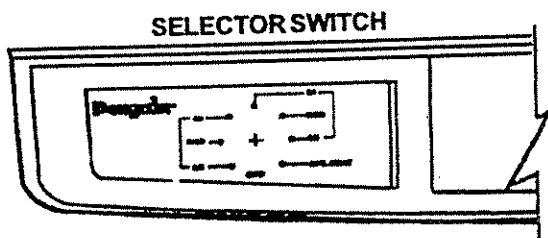
OPERATING INSTRUCTIONS

2. COOLING OPERATION:

- A. Set the thermostat at the desired temperature level.
- B. Select the fan speed that best satisfies your needs:
 1. **HIGH COOL:** Selected when maximum cooling and dehumidification required.

2. **MED. COOL:** Selected when normal or average cooling required.
3. **LOW COOL:** Selected when room at desired comfort level and needs to be maintained. Normally this speed 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.



CAUTION

After shutting the air conditioner down with either selector switch or thermostat, wait at least two (2) minutes before restarting. This allows the refrigerant pressure to equalize and compressor to restart easily. Failure to follow this instruction may cause fuse or circuit breaker to open.

3. FAN OPERATION:

- A. This will circulate the air in your RV without cooling or heating. There are three positions: HIGH FAN, MED. FAN or LOW FAN to select from, depending upon personal choice.

4. 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.

- A. Turn the selector switch to "OPT. HEAT".
- B. The Heater will come on and begin heating.
- C. When desired temperature level in RV is reached, move the selector switch to off position or fan position.

Note: Thermostat does not control heater ON/OFF cycle.)

5. "OFF" POSITION:

- A. This is to turn Unit off.

MAINTENANCE

1. AIR FILTER:

- A. Periodically remove the return air filter located above the removable panel in the air box. Wash the filter with soap and warm water, let dry and the reinstall.

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

2. AIR BOX HOUSING:

- A. Clean air box housing and control panel with a soft cloth dampened with a mild detergent. Never use furniture polish or scouring powders.

3. FAN MOTOR:

- A. Factory lubricated and requires no service under normal use.

4. FROST FORMATION ON COOLING COIL:

- A. Under certain conditions, frost may form on the evaporator coil. If this should occur, inspect the filter and clean if dirty. Make sure air louvers are not obstructed. Air conditioners have a greater tendency to frost when the outside temperature is relatively low. This may be prevented by adjusting the thermostat control knob to a warmer setting (counter clockwise). Should frosting continue, operate on LOW, MED. or HIGH FAN setting until the cooling coil is free of frost.

SERVICE

1. Unit Does Not Operate

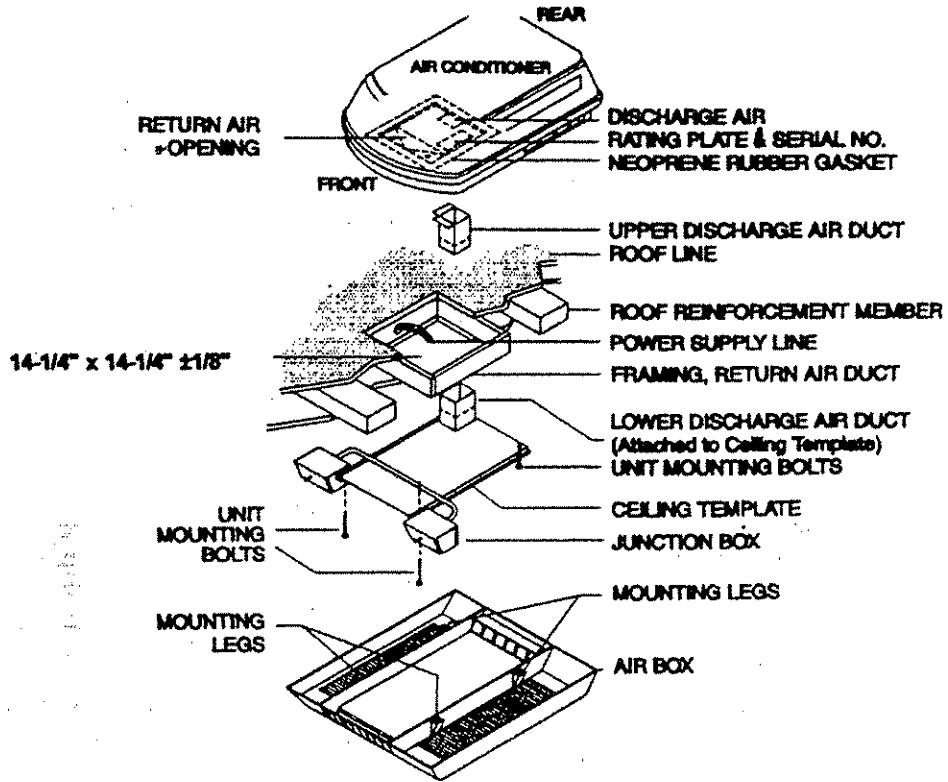
If your unit fails to operate or operated improperly, check the following before calling your service center.

- A. If RV connected to motor generator, check to be sure motor generator is running and producing power.
- B. If RV connected to power supply by a land line, check to be sure line is sized properly 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. After the above checks, call your local service center for further help. This unit must serviced by qualified service personnel only.

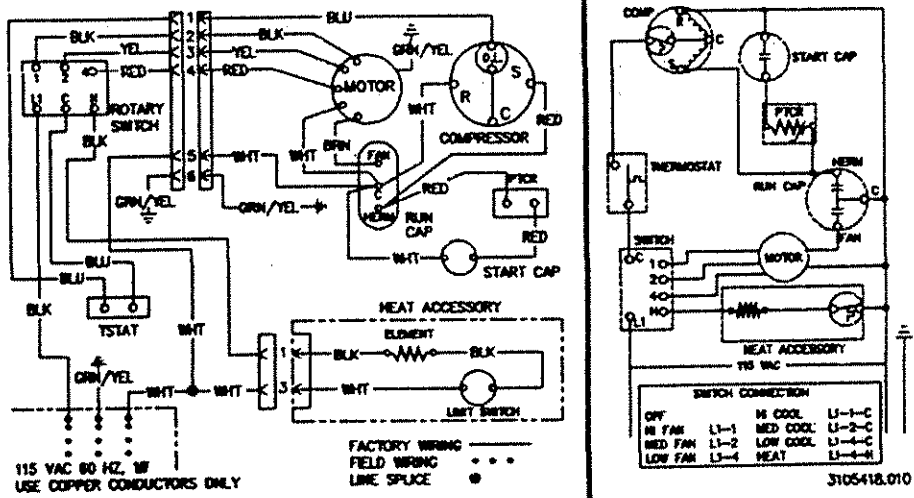
2. When calling for service, always give the following:

- A. Air Conditioner Model and Serial Number found on rating plate located on base pan of air conditioner bottom.
- B. Air Distribution Box Kit Part and Serial Number found on rating plate located on ceiling template. Observe this rating plate through the air

ROOF MOUNT ASSEMBLY



WIRING DIAGRAM





LIMITED THREE-YEAR WARRANTY AIR CONDITIONERS & HEAT PUMPS

THE SELLER NAMED BELOW MAKES THE FOLLOWING WARRANTY WITH
RESPECT TO THE DOMETIC PRODUCT:

1. This warranty is made only to the first purchaser (herein after referred to as the "Original Purchaser") who acquires the product for his own use and is installed and operated within the continental United States and Canada.
2. This warranty will be in effect for three years on parts and freight and two years on labor from the date of purchase by the Original Purchaser. It is suggested that the Original Purchaser retain a copy of the dated bill of sale as evidence of the date of purchase.
3. This warranty covers only specified Dometic parts, which shall be free from defects in material and workmanship under normal use. This warranty does not cover conditions unrelated to the material and workmanship of the product. Such unrelated conditions include, but are not limited to: (a) damage not reported within 7 days; (b) faulty installation or installation that does not comply to the RVIA standards and any damage resulting from such; (c) the need for normal maintenance and any damage resulting from the failure to provide such maintenance; (d) failure to follow Sellers instructions for use of this product; (e) any accident to or misuse of any part of this product and any alteration by anyone other than the Seller or its authorized representative; (f) damage or failure caused by installation of accessories or parts not manufactured and marketed by the Seller will void any warranty, implied or written; (g) corrosion, salt water; (h) radio frequency interference (RFI) or electromotive interference (EMI) and (i) installation on semi trucks or off-road vehicles.
4. The specified parts covered by this warranty are as follows: switches, thermostats (excluding infrared remote controls, which are covered for a period of one year, not including batteries), relays, capacitors, motors, electronic module boards, solar panels and the sealed system; compressor, evaporator coil, condenser coil, refrigerant lines, capillary tubes and reversing valve.
5. It is suggested the Original Purchaser provide preventative maintenance on a yearly basis. Suggested preventative maintenance is: (a) check mounting/anchor bolts for proper torque; (b) inspect/clean and comb condenser fins; (c) inspect/clean and comb evaporator fins; (d) inspect/clean evaporator blower wheel and condenser fan blade/blower wheel; (e) clean return air filter. The cost of preventative maintenance is the Original Purchaser's responsibility and should take about one hour.
6. In order to obtain the benefits of this warranty, the Original Purchaser must return the product which is found defective to the Seller named below or to a Dometic Authorized Service Center during the period that this warranty is in effect. The Original Purchaser is responsible for all charges incurred in delivery of the product to the Seller or Dometic Authorized Service Center, and in pick up after the warranty service has been completed. To obtain the location of the nearest Authorized Service Center, please call 1-800-544-4881 or in Canada call 1-519-653-4390.
7. Any item returned in the manner described in paragraph 6 will be examined by the Seller or the Authorized Dometic Service Center. If it is found that the returned item was defective in material and workmanship, the Seller or the Authorized Dometic Service Center will repair the product per the terms outlined in paragraph 4. **CONFIRM THE SERVICE AGENCY IS AN AUTHORIZED DOMETIC SERVICE CENTER. DO NOT PAY THE SERVICE AGENCY FOR WARRANTY REPAIRS. SUCH PAYMENTS WILL NOT BE REIMBURSED.**
8. The Seller does not authorize any person or company to create any warranty obligations or liability on their behalf. This warranty is not extended by the length of time which you are deprived of the use of the product. Repairs and replacement parts provided under the terms of this warranty shall carry only the non-expired portion of this warranty.
9. In no event shall either Seller be liable for incidental or consequential damages. This includes any damage to another product or products resulting from such a defect. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply.
10. Any implied warranty, including the implied warranty of merchantability and fitness for any purpose, is limited to the duration of this limited warranty. Some states do not allow limitations on how long an implied warranty can last, so the above limitation may not apply.
11. **THIS WARRANTY GIVES SPECIFIC LEGAL RIGHTS, YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.** No action to enforce this warranty shall be commenced later than ninety (90) days after the expiration of the warranty period. Claims must be submitted in writing to the Dometic Warranty Department for arbitration.
12. All products (except those specifically built for commercial use) are warranted only when installed on vehicles built to R.V.I.A and C.R.V.A, Z-240 Standards.
13. The Seller reserves the right to change the design of any product without notice and with no obligation to make corresponding changes in products previously manufactured.

REVISION:

Form. No. 3307601.017 8/03
(Replaces 3307601.009)
(French 3307602.015)
©2003 Dometic Corporation
LaGrange, IN 46761

DOMETIC CORPORATION

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