

# DUO-THERM

## INSTALLATION & OPERATING INSTRUCTIONS

ROOF MOUNT AIR CONDITIONER

MODELS 600312.1XX  
600315.1XX



PATENT No. 4641502

Pre-Wired For Optional Heat Package



— IMPORTANT INSTRUCTIONS—  
MUST STAY WITH UNIT  
OWNER—READ CAREFULLY

### 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.

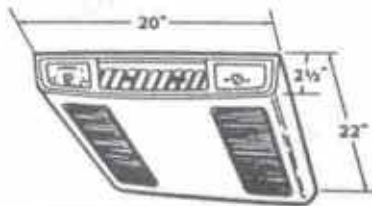
### AVIS:

Cet appareil doit être réparé seulement  
par un réparateur autorisé. Modification  
de l'appareil pourrait être extrêmement  
dangereuse, et pourrait causer mal ou  
mort.

# 1. GENERAL INFORMATION

## SPECIFICATIONS

MODEL NUMBER	600315	600312
NOMINAL CAPACITY (BTU/HR)	13,500	11,000
ELECTRICAL RATING	115 VAC, 60 HZ., 1 PH.	
COMPRESSOR RATED LOAD AMPS	12.4	10.1
FAN MOTOR RATED LOAD AMPS	3.1	3.1
COMPRESSOR LOCKED ROTOR AMPS	83.6	66.6
FAN MOTOR LOCKED ROTOR AMPS	8.8	8.8
HEATER AMPS @ 120 VAC	12.7	12.7
POWER, COOLING (kW)	1.7	1.7
POWER, HEATING (kW)	1.6	1.6
REFRIGERANT (R12) OZ.	17.5	18.5
MINIMUM WIRE SIZE	12 AWG COPPER UP TO 24'	
CIRCUIT PROTECTION	20 AMP TIME DELAY FUSE OR HACR CIRCUIT BREAKER	
INSTALLED WEIGHT POUNDS	109.	109.
ROOF THICKNESS - MIN./MAX. *	1" TO 6"	1" TO 6"
MINIMUM GENERATOR	1 UNIT	2.5 KW
SIZE **	2 UNITS	4.0 KW



\*\* For lengths over 24' consult the National Electrical Code.

\*\* Dometic gives general guidelines for generator requirements. These guidelines come from experience people have had in actual applications. When sizing the generator, the total power usage must 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.

- Read installation and operating instructions carefully before starting your air conditioner installation.
- Dometic will not be liable for any damages or injury incurred due to failure in following these instructions.
- Installation must comply with the National Electrical Code and any State or Local codes or regulations.
- DO NOT** add any devices or accessories to this air conditioner except those specifically authorized by Dometic.
- This equipment must be serviced by qualified personnel and some states require these people to be licensed.

# 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:

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

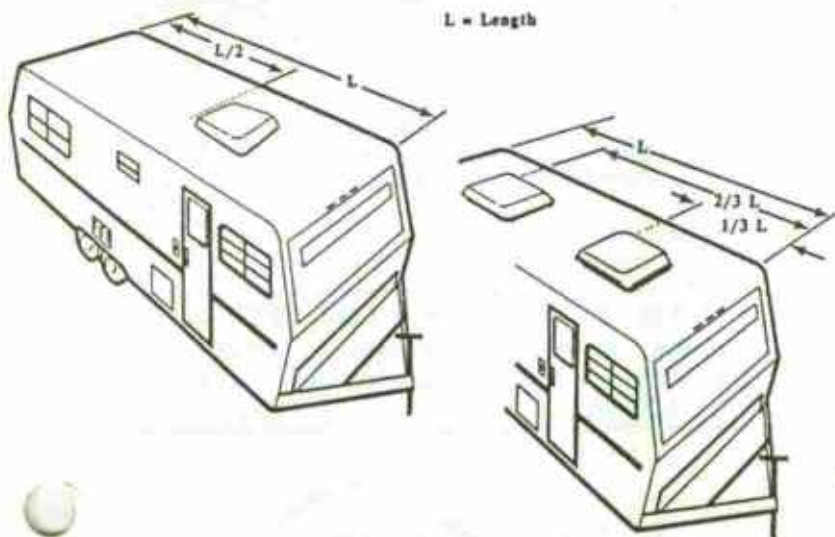


## B. Other Locations

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

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

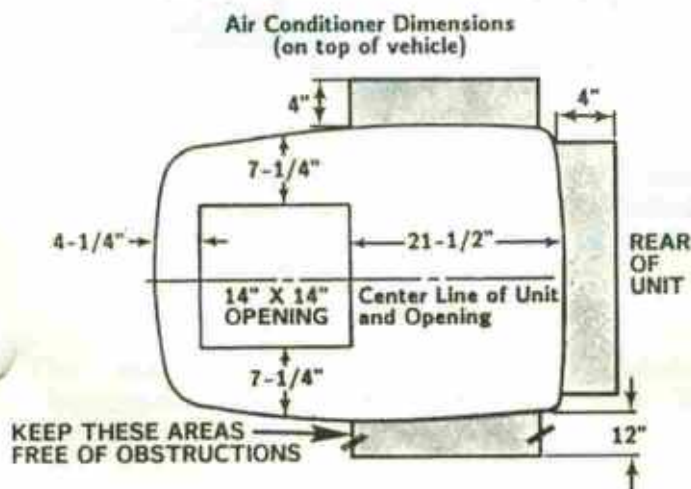
For two unit installations: Install one Air Conditioner 1/3 and one Air Conditioner 2/3's from front of RV and centered from side to side.



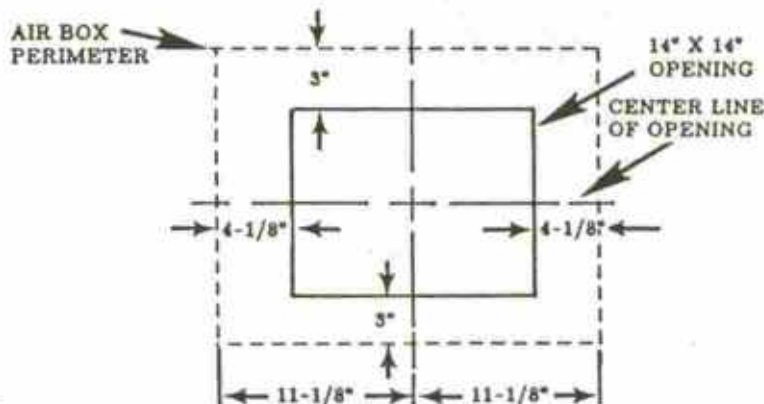
In all cases always choose a relatively flat and level roof section measured with the RV parked on a level surface. NOTE: a 20° slant to either side is acceptable, front to back must be level.

## C. After location has been selected:

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



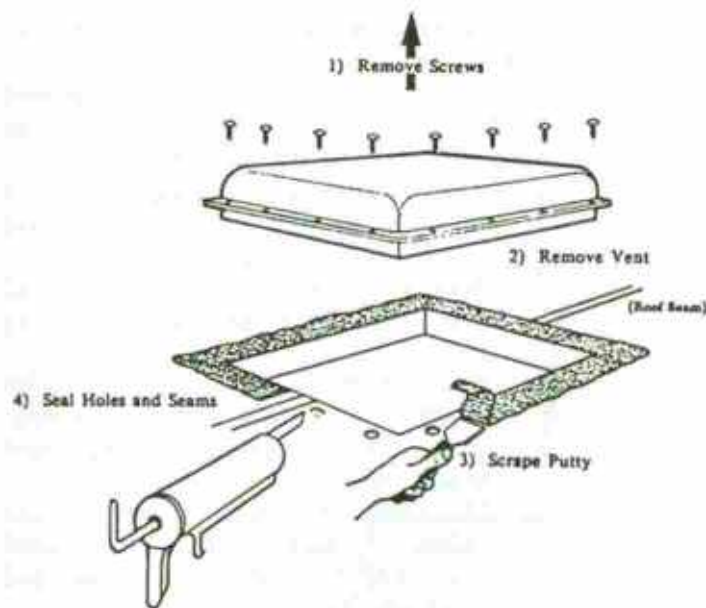
2. The roof must be designed to support 130 lbs. when the RV is in motion. Normally 200 lb. static load design will meet this requirement.
3. Check inside the RV for air box obstructions (i.e. door openings, room dividers, curtains, ceiling fixtures, etc.)



## 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.

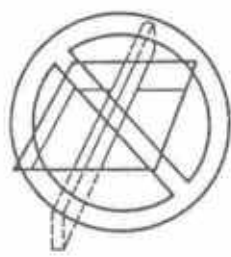




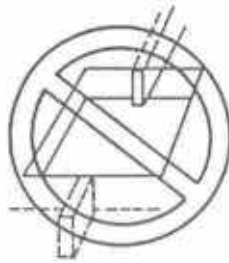
## B. NEW OPENING

### (Installation Other Than Vent Opening)

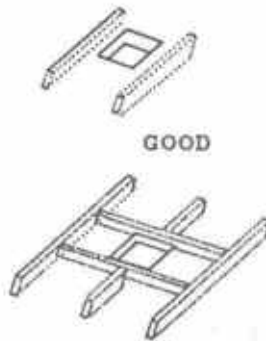
1. A 14" X 14" opening must be cut through the roof and ceiling of the RV. It is recommended this opening be located between roof reinforcing members.



NO BLOCKAGES

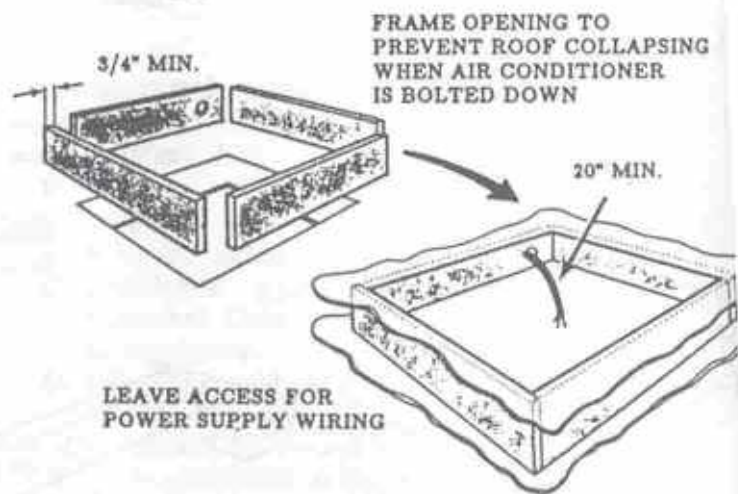


DON'T REMOVE STRUCTURE



GOOD

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.



LEAVE ACCESS FOR POWER SUPPLY WIRING

### 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

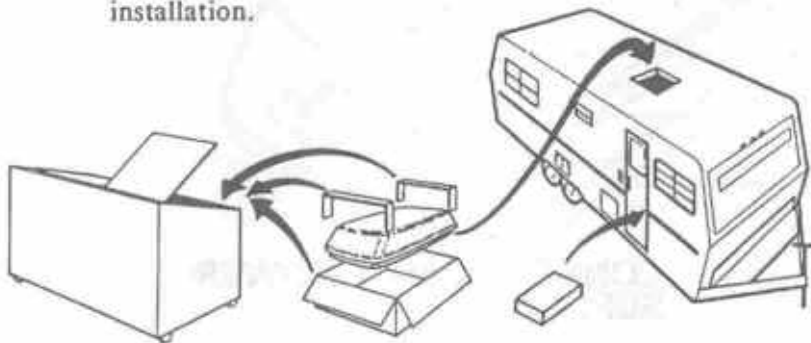
1. If the opening exceeds 14-1/2" X 14-1/2", it will be necessary to install spacers.
2. If the opening is less than 14" X 14", it must be enlarged.
3. Route a copper 12 AWG with ground supply line from the fuse box or circuit breaker to the roof opening.
  - a. The power supply must be on a separate 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.

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

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

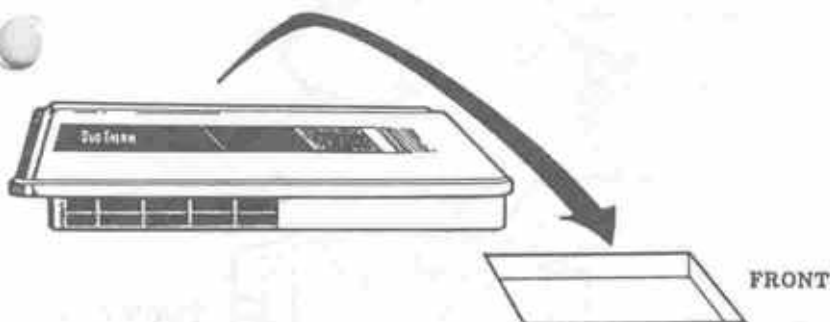
- A. Remove and discard the carton. The air box and mounting parts are in a separate box located in the carton. These parts will be used for the inside portion of the installation.



- 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.

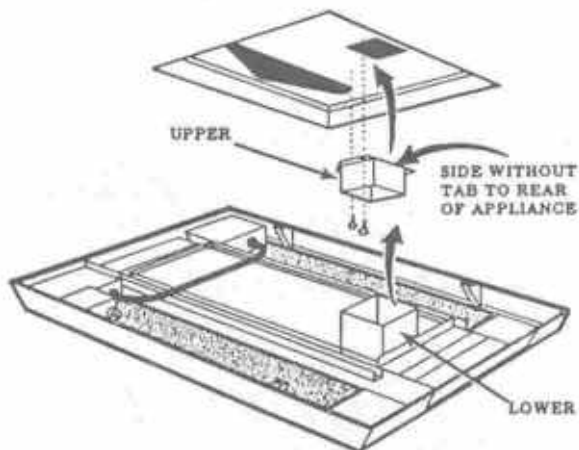
This completes the outside work. Minor adjustments can be done from the inside if required.

## 6. DISCHARGE DUCT AND 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. The mounting hardware is in a plastic bag.

### MOUNTING HARDWARE:

- 6 Sharp pointed sheet metal screws
- 3 1/4-20 X 6" 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.

