



RECORD THIS UNIT INFORMATION
FOR FUTURE REFERENCE:

Type Number _____
Product Number _____
Serial Number _____
ADB Number _____
ADB Serial Number _____
Date Purchased _____

CARAVAN MODEL B3200
Roof-Top Air Conditioner
TYPE 3273.332 INCLUDES ELECTRIC HEAT
Used with
3311672 Mechanical Air Distribution Box

SERVICE OFFICE
Dometic Corporation
For Information
Contact:
www.dometic.com

⚠ 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.

**INSTALLATION & OPERATING
INSTRUCTIONS**

Model
B3200
Series

3311994.028

REVISION:
Form No. 3311994.028 2/08
(Replaces 3311994.010
©2008 Dometic Corporation
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.

GENERAL INFORMATION

A. Product features or specifications as described or illustrated are subject to change without notice.

B. This Air Conditioner Is Designed For:

1. Installation on a recreational caravan during the time the caravan is manufactured.
2. Mounting on the roof of a recreational caravan.
3. Roof construction with rafters/joists on minimum of 406 mm centers.
4. Minimum of 25 mm and maximum of 125 mm distance between roof to ceiling of recreational caravan.

C. The ability of the air conditioner to maintain the desired inside temperature depends on the heat gain of the caravan.

Some preventative measures taken by the occupants of the caravan can reduce the heat gain and improve the performance of the air conditioner. During extremely high outdoor temperatures, the heat gain of the caravan may be reduced by:

1. Parking the caravan 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 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.

D. 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 caravan, 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.

SPECIFICATIONS

Model No.	B3200		Electric Heater	
Type	3273.332			
Electrical Rating	100 Volts, 1 Phase			
	50Hz.	60Hz	50Hz.	60Hz.
Nom. Capacity (KW)	3.2	3.8	1.5	1.5
FL Amps (Comp./Heat)	12.6	12.8	15.3	15.3
FL Amps (Motor)	3.4	3.6	3.4	3.6
LR Amps (Comp)	71.0	66.0	--	--
LR Amps (Motor)	8.0	9.0	8.0	9.0
Input Power (KW)	1.6	1.6	1.9	1.9
Refrigerant R22` Grams/Oz	439 /15.5		--	--
Min. Wire Size	Up to 8 meters use 2.5mm ² , Copper			
Circuit Protection	20 Amp Time Delay Fuse or Circuit Breaker			
**Generator Size Minimum	1 Unit-- 3.5KW 2 Units--5.0 KW			

** The manufacturer gives only general guidelines for generator requirements. These generator requirements come from experiences consumers have with our equipment in field applications. When sizing generators, the total electrical power consumption of the caravan must be considered. Keep in mind that generators lose power because of altitude increases above sea level, high outside temperatures and lack of maintenance.

INSTALLATION INSTRUCTIONS

A. Precautions

⚠ WARNING

Improper installation may damage equipment, could endanger life, cause serious injury and/or property damage.

1. Read installation and operating Instructions carefully before attempting to start your air conditioner installation.
2. The manufacturer will not be liable for any damages or injury incurred due to failure in following these instructions.
3. The equipment shall be installed in accordance with nation wiring regulation per **IEC 335-2-40, 7.12.1**. Installation must comply with all applicable codes and/or regulations.
4. **DO NOT** add any devices or accessories to this air conditioner except those specifically authorized by the manufacturer
5. This equipment must be serviced by qualified personnel and some local codes and regulations require these people to be licensed.

B. Choosing Proper Location For The Air Conditioner

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

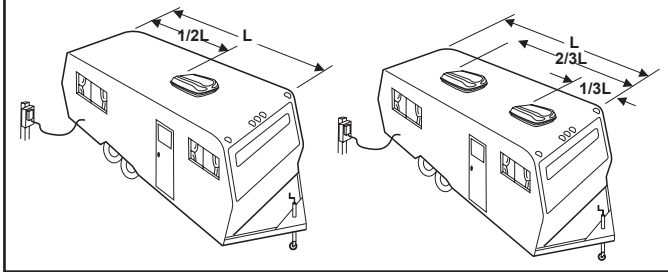
- Size of caravan;
 - Window area (increases heat gain);
 - Amount of insulation in walls and roof;
 - Geographical location where the caravan will be used;
 - Personal comfort level required.
1. Normal Location-The air conditioner is designed to fit over an existing roof vent opening. See FIG. 1.

FIG. 1



2. Other locations-When no roof vent is available or another location is desired, the following is recommended:
 - a. For one unit installation: The air conditioner should be mounted slightly forward of center (front to back) and centered from side to side.

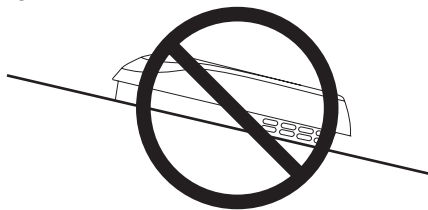
FIG. 2



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

Note: A 8° slant to **either** side is acceptable, but a **Front to Back** slant **is not** acceptable. See FIG. 3.

FIG. 3



Front to Back Slope Is NOT ACCEPTABLE

3. After Location Has Been Selected:

- Check for obstructions in the area where air conditioner will be installed. See FIG. 4 and 5.
- The roof must be designed to support 65 Kg. when the caravan is in motion. Normally a 100 Kg. static load design will meet this requirement.
- Check inside the caravan for return air kit obstructions (i.e. door openings, room dividers, curtains, ceiling fixtures, etc.) See FIG. 4 & 5.

CAUTION

It is the responsibility of the installer of this air conditioner system to ensure structural integrity of the caravan 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 caravan.

C. Roof Preparation

1. Opening Requirements

Before preparing the ceiling opening, read all of the following instructions before beginning the installation.

- If a roof vent opening is not present, a 362 x 362 mm (± 3.2 mm) opening must be cut through the roof and ceiling of the caravan. This opening must be located between the roof reinforcing members.

FIG. 4

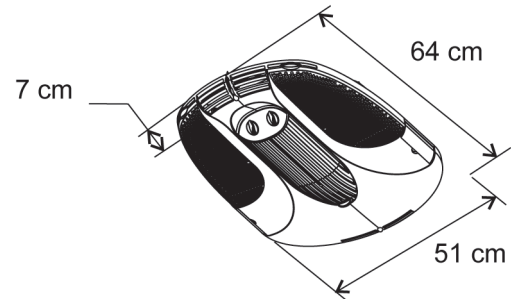
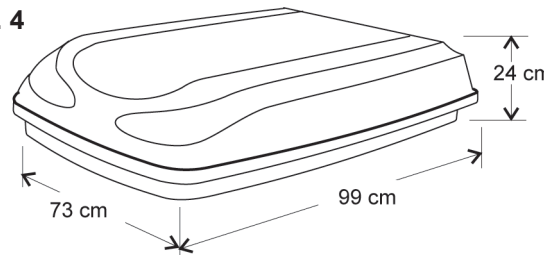
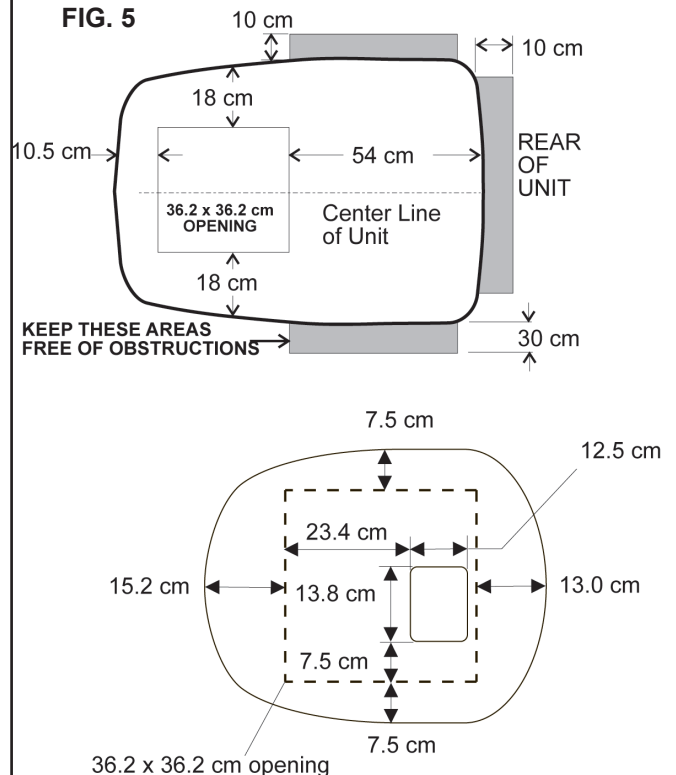


FIG. 5

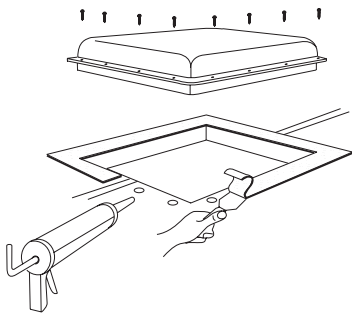


- The 362 x 362 mm (± 3.2 mm) opening is part of the return air system of the air conditioner and must be finished in accordance with all national and local codes and/or regulations.

2. Roof Vent Removal

- Unscrew and remove the roof vent.
- Remove all caulking compound around opening.
- Seal all screw holes and seams where the roof gasket is located. Use a good grade of all weather sealant. See FIG. 6.

FIG. 6



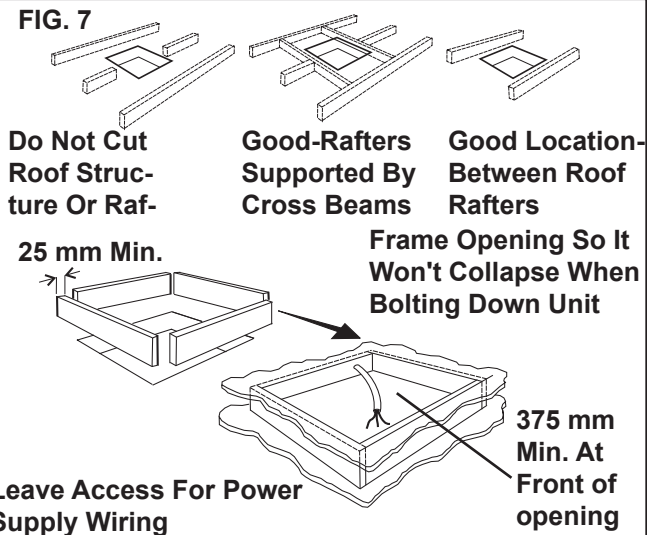
- d. If the opening exceeds 365.2 x 365.2 mm, it will be necessary to re-size the opening to 362 x 362 mm (± 3.2 mm).

⚠ WARNING

There may be electrical wiring between the roof and the ceiling. Disconnect 100 Volt AC power cord. Failure to follow this instruction may create a shock hazard causing death or

- e. If the opening is less than 358.8 x 358.8 mm, it must be enlarged.
3. New opening- (Installation other than vent opening)
- Mark a 362 x 362 mm (± 3.2 mm) square on the roof and carefully cut the opening.
 - Using the roof opening as a guide, cut the matching hole in the ceiling.

FIG. 7



CAUTION

It is the responsibility of the installer of this air conditioner system to ensure structural integrity of the caravan 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 caravan.

D. Wiring Requirements

- 100 VAC Supply Line

Route a copper 2.5 mm², with ground, 100 VAC supply line from the time delay fuse or circuit breaker box to the roof opening.

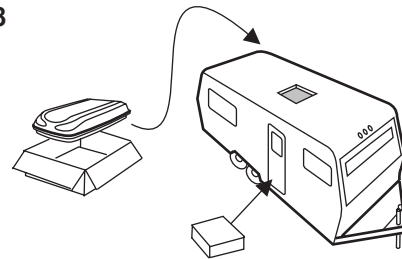
 - This supply line must be located in the front portion of the 362 x 362 mm (± 3.2 mm) opening.
 - The power **MUST** be on a separate 20 Amp time delay fuse or HACR circuit breaker.
 - Make sure that at least 375 mm of supply wire extends into the roof opening. This ensures an easy connection at the junction box.
 - Wiring must comply with all national and local wiring codes and/or regulations.
 - Use a steel sleeve and a grommet or equivalent methods to protect the wire where it passes into the opening.

E. Placing Air Conditioner On The Roof

⚠ CAUTION

This unit weighs approximately 45 Kilograms. To prevent back injury, use a mechanical hoist to place air conditioner on roof.

FIG. 8

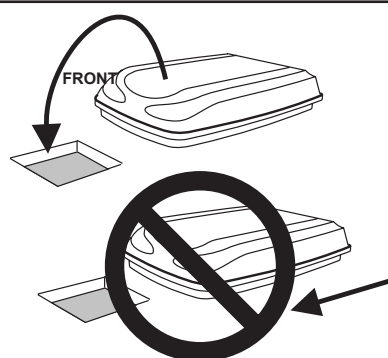


- Remove the air conditioner from the carton and discard carton. See FIG. 8.
- Place the air conditioner on the roof.

CAUTION

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

FIG. 9



3. Lift and place the unit over the prepared opening using the gasket on the unit as a guide. See FIG. 9.
4. Place the 3311672 mechanical air distribution box kit inside the caravan. This box contains mounting hardware for the air conditioner and will be used inside the caravan. See FIG. 8.

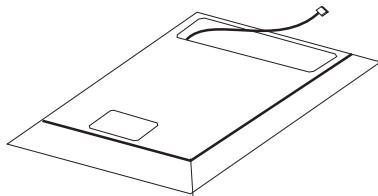
This completes the outside work. Minor adjustments can be done from the inside of the caravan if required.

F. DISCHARGE DUCT AND CEILING TEMPLATE INSTALLATION

1. Remove air distribution box and mounting hardware from carton.
2. Check for correct alignment and adjust the unit as necessary (Roof gasket centers over the 36.2 cm x 36.2 cm opening).

FIG. 10

Reach In The Return Air Opening, Pull Down The Unit Electrical Cable



3. Reach up into the return air opening and pull the unit electrical and heater cord down for connection later. See FIG. 10.
4. Base Duct
 - a. The flange notches are always to the rear when facing the front of the caravan. Remove the liner from the foam tape and position on the base so screw hole is aligned. See FIG. 11.

Discharge Opening Place Flange Of Duct on RH Side

Install Duct With Notches To Rear

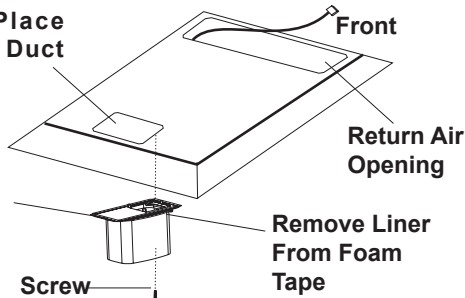
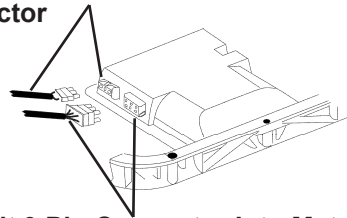


FIG. 11

- b. Install screw if required to help hold the duct adapter to base pan.
5. Install ceiling template. The large center hole goes to the rear. Remove wire tie holding center of rear aluminum bracket to plastic. Insure that the thermostat bulb is not moved during installation.
 - a. Plug the 9 pin cable from the unit and 3 pin heater cable into the ceiling template. See FIG. 12.

FIG. 12

Plug 3 Pin Heater Connector Into Matching Connector



Plug Unit 9 Pin Connector Into Matching Connector On Ceiling Template

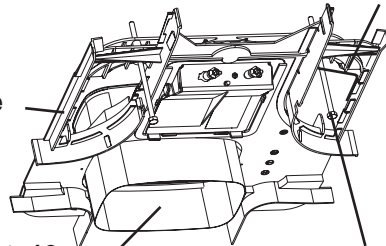
- b. Start each mounting bolt by hand before tightening them. The 3 threaded inserts in the base pan can be seen to aid in starting the bolts. See FIG. 13.

FIG. 13

Do Not Disturb Thermostat Bulb

Ceiling Template

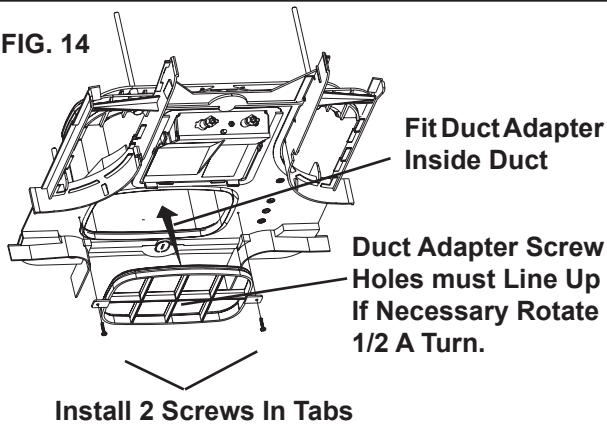
Trim Duct 13 mm to 25 mm Below Ceiling Template



Start Three Mounting Bolts By

- c. **EVENLY TIGHTEN MOUNTING BOLTS TO A TORQUE OF 4.5 TO 5.5 NM** (Newton Meters). This will compress the roof gasket to approximately 13 mm. The bolts are self locking so further tightening is not necessary.
6. Template/duct adapter
 - a. Pull duct down through the template opening.
 - b. Cut the duct 13 mm to 25 mm below the template opening. See FIG. 13.
 - c. Align the template duct adapter with the template duct hole making sure the screw holes line up (if not, rotate 1/2 turn). Insert template duct adapter into duct. Leave one loop of wire below the duct adapter groove. Do not insert tabs inside the duct.
 - d. Insert duct adapter into template and install 2 screws through the duct tabs into the ceiling template. See FIG. 14.

FIG. 14



G. CONNECTION OF POWER SUPPLY TO AIR CONDITIONER

Important: The electrical installation must be done by an authorized electrician. In some areas they must be licensed.

⚠ WARNING

Disconnect 100 Volt AC. Failure to follow these instructions could create a shock hazard causing death or severe personal injury.

1. You may either wire direct into the junction box for a permanent connection or wire a molded plug into the junction box for a plug-in connection.
 - a. If a permanent connection: Route the power supply line, previously installed to the roof opening, into the junction box on the ceiling template. Connect as described in paragraph 2.
 - b. If a plug-in connection: Use the electric supply line, of "D. wiring requirements", to power an electrical outlet installed, according to applicable law, at the end of the roof opening furthest from the junction box.

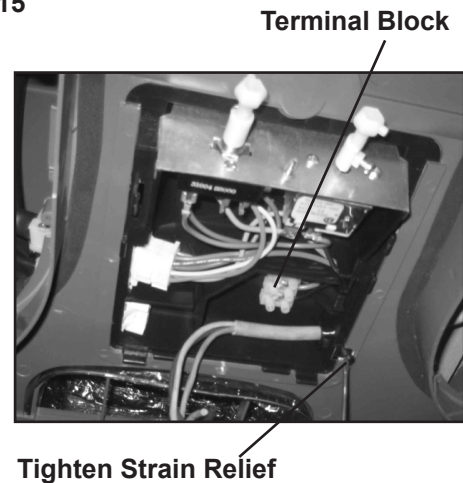
⚠ WARNING

Shock Hazard: Do not plug the molded cord in until you have completely installed the air conditioner and are ready for an operational check. (Operating Instructions)

- Route the molded plug set from the electric outlet into the junctions box insuring not to coil excess wire so it will block air flow. Connect the plug set to the terminal block as described in paragraph 2.
2. Connect the power supply line to the air conditioner at the terminal block provided in the junction box. Connect to white, black and green/bare copper wire (P. P. and $\perp$ respectively).

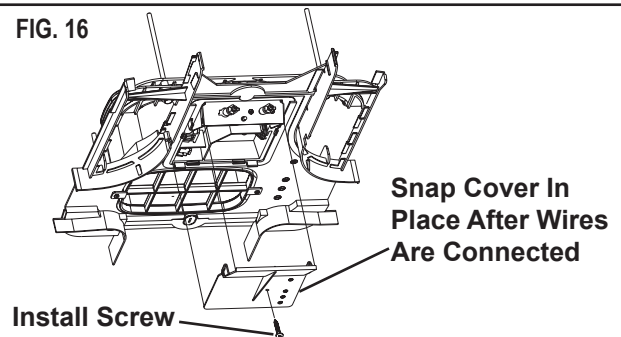
3. Tighten the strain relief onto the power supply line to hold firmly in place. Be careful not to pinch and short wires. See FIG. 15.

FIG. 15



4. Carefully push all excess wire back into the junction box and snap cover in place. Secure cover with screw (provided). See FIG. 16.

FIG. 16

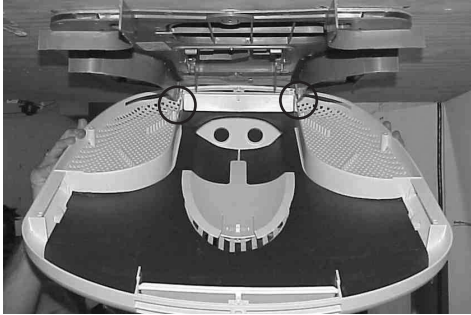


H. Air Distribution Box Installation

Important: The inner walls go inside the walls of the ceiling template

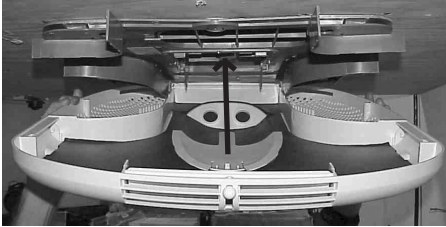
1. With the rear tipped down 8 cm place the air distribution box inner wall against the inside of the template wall. Slide the air distribution box backwards until it touches the template. Raise the air distribution box to the ceiling while wiggling side to side. See FIG. 17 & 17A.
2. Hold the air distribution box to the ceiling with one hand and install two coarse threaded 3.5 mm x 19 mm sharp pointed screws in the location shown in FIG. 17A.
3. Install the remaining screws provided in the air distribution box. Take care not to over tighten screws.
4. Insert filters into air distribution box with domed portion of the handle up towards the ceiling. See FIGS. 17 & 17A.

FIG. 17



Position ADB Walls Inside And Against End Of Template Walls

Raise Back End Of ADB To Ceiling



If Not Flush, Wiggle Side To Side.

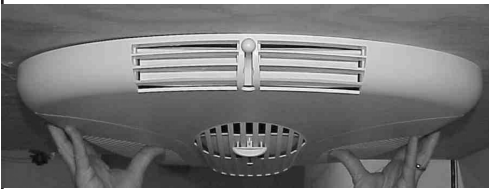
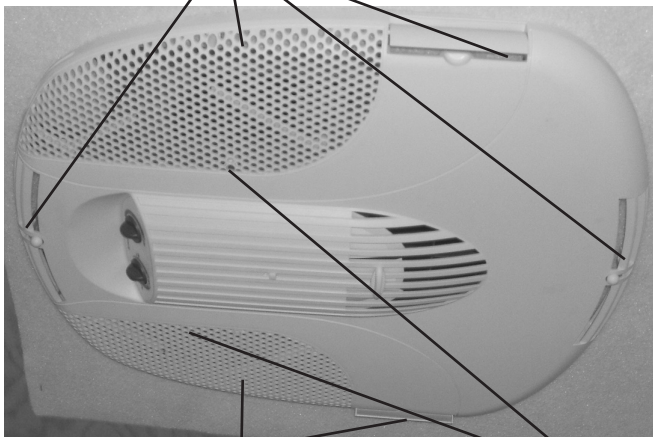


FIG. 17A

Screw Locations



Screw Locations

Install These 2 Screws First

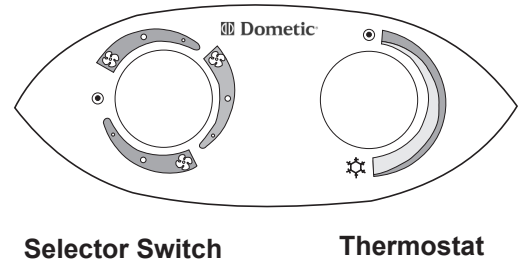
4. Install the two knobs provided on the ends of the thermostat and selector switch shafts.
5. The power supply to the air conditioner may now be turned **"ON"**.
6. Your air conditioner is now installed and ready for operation. Please read the following instructions before attempting to run the unit.

OPERATING INSTRUCTIONS

A. Controls

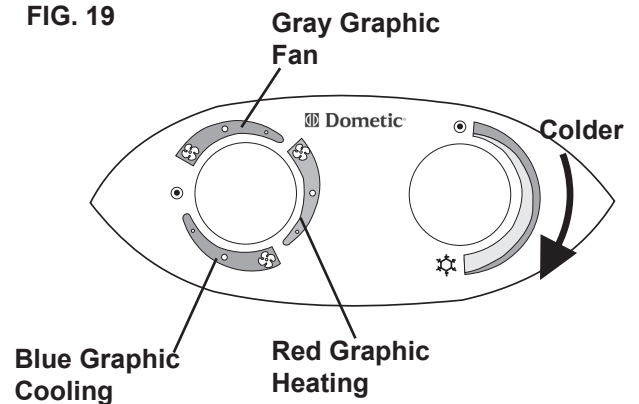
1. The selector switch has ten positions including **"OFF"**. This controls fan speed, heating mode, and cooling modes. See FIG. 18.

FIG. 18



2. The thermostat controls the compressor ON/OFF operation in cooling temperature range of 18.5° C to 32.5° C. See FIG. 19.

FIG. 19



B. Cooling Operation (Blue Graphic)

1. Set the thermostat at the desired temperature level. See FIG. 19.
2. Select the fan speed that best satisfies your needs:
 - a. **HIGH COOL**: Selected when maximum cooling and dehumidification required.
 - b. **MED COOL**: Selected when normal or average cooling required.
 - c. **LOW COOL**: Selected when room at desired comfort level and needs to be maintained. Normally this speed used for night time operation.

Important: When the air conditioner is turned on and the thermostat calls for cooling, the fan and compressor start at the same time. After shutting the air conditioner down manually by either the selector switch or the thermostat, always wait 2-3 minutes before turning on the air conditioner. This allows the refrigerant pressures in the air conditioner system to equalize so the compressor may restart.

C. Fan Operation (Gray Graphic)

1. This will circulate the air in your caravan without cooling or heating. There are three positions: **HIGH FAN**, **MED FAN** or **LOW FAN** to select from, depending upon personal choice. See FIG. 19.

D. Heating Operation (Red Graphic)(Heat Strip)

Note: The electric heater will not replace a furnace for heating your caravan in cold weather. The intent is to remove the chill on cool days or mornings. The low fan speed is used with the electric heat strip (Use of high speed may make the outlet air feel cool, but all heating speeds deliver the same watts of electric heat to the caravan).

1. Turn the selector switch to **"HEAT"**. There are three positions: **HIGH FAN**, **MED FAN** or **LOW FAN** to select from, depending upon personal choice. See FIG. 19.
2. The blower will cycle with the thermostat.
3. The heating element will cycle **ON/OFF** according to the thermostat setting.

E. "OFF" Position

1. This is to turn Unit off.

F. Customer Maintenance

1. Periodically slide out the return air filters located on the end of the air distribution box. Wash the filters with soap and warm water, let dry and then reinstall.

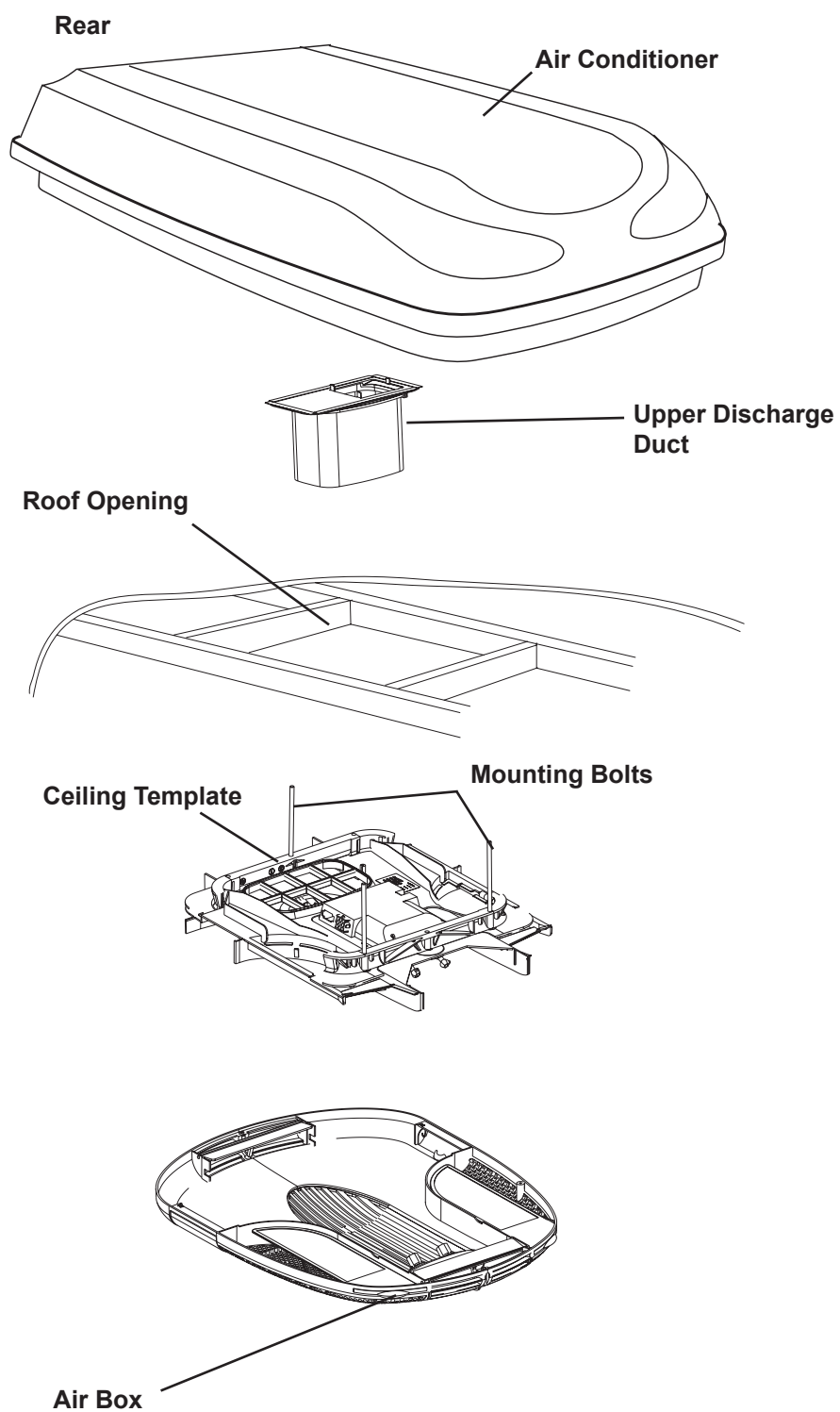
Note: Never run the air conditioner without return air filters in place. This may plug the unit evaporator coil with dirt and may substantially affect the performance of the unit.

2. Clean air box housing and control panel with a soft cloth dampened with a mild detergent. Never use furniture polish or scouring powders.
3. The blower motor is factory lubricated and requires no service under normal use.
4. Under certain conditions, frost may form on the evaporator coil. If this should occur, inspect the filters 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** only setting until the cooling coil is free of frost.

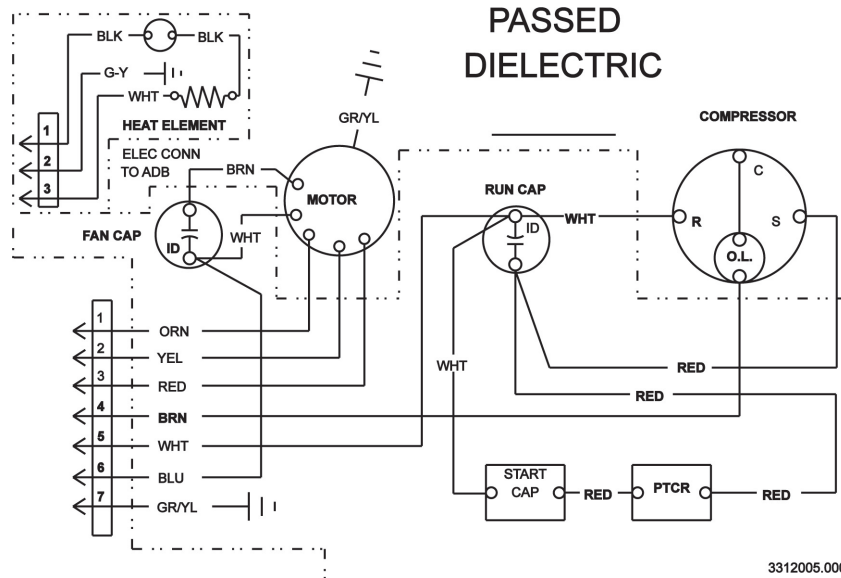
5. If your unit fails to operate or operated improperly, check the following before calling your service center.
 - a. If caravan connected to motor generator, check to be sure motor generator is running and producing power.
 - b. If caravan connected to power supply by a land line, check to be sure 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 be serviced by qualified service personnel only.
6. If any wiring or supply cord is damaged and needs to be replaced, it must be replaced by the manufacturer or its service agent or a similarly qualified person.
7. When calling for service, always give the following:
 - a. Air conditioner type, product and serial number found on rating plate located on bottom of the base pan.
 - b. The air distribution box model and serial number located inside the air distribution box right side vent.

FIG. 20

Roof Mount Assembly



AIR CONDITIONER WIRING DIAGRAM



AIR BOX WIRING DIAGRAM

