



RECORD THIS UNIT INFORMATION
FOR FUTURE REFERENCE:
Type Number _____
Product Number _____
Serial Number _____
Control Number _____
Control Serial Number _____
Date Purchased _____

CARAVAN ROOF MOUNT

Air Conditioner Model B3200

Heat Pump Model B3300

used with

3311671 Air Distribution Box

and

3310086 ANALOG RELAY KIT COOL FURNACE, HEAT STRIP
3310137 ANALOG RELAY KIT, COOL, FURNACE, HEAT PUMP.

SERVICE OFFICE

Dometic Corporation
For Information
Contact:
www.dometic.com

Note: Air Box installation requires a #2 Phillips screwdriver with
a 7 mm maximum diameter x 35 mm minimum length.

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 INSTRUCTIONS

TYPE
3253.336
AIR CONDITIONER
3254.341
HEAT PUMP

Revision:

3311958.015

Form No. 3311958.015 4/08
(Replaces 3311958.000)
©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.

1. GENERAL INFORMATION

- A. Product features or specifications as described or illustrated are subject to change without notice.
The following are the basic requirements:
1. Installation opening. Cut through the roof and ceiling.
 2. Additional wiring.
220-240 VAC, 50Hz., 10Amps
 3. Power with the air conditioner/heat pump on must be above 209 VAC and the frequency must be at 50 Hz. at all times.
- B. THIS AIR CONDITIONER/HEAT PUMP IS DESIGNED FOR:
1. Installation on a caravan during the time the vehicle is manufactured.
 2. Mounting on the roof of a caravan.
 3. Roof construction with rafters/joist on minimum of 40.6 cm centers.
 4. Minimum of 5 cm and maximum of 10 cm distance between roof to ceiling of the caravan.
- C. The ability of the air conditioner/heat pump 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/heat pump. During extremely high outdoor temperatures, the heat gain of the vehicle may be reduced by:
1. Parking the caravan in a shaded area.
 2. Use window shades (blinds and/or curtains).
 3. Keeping windows and doors shut or minimizing usage.
 4. Avoid 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/heat pump 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.
- D. CONDENSATION
- Note:** The manufacturer of this air conditioner/heat pump will not be responsible for damage caused by condensed moisture on the 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/heat pump removes this moisture from the air during normal operation. Keeping doors and windows closed when the air conditioner/heat pump is in operation will minimize condensed moisture on cold surfaces.

SPECIFICATIONS

Type	3253.336	3254.341
	Air Conditioner	Heat Pump
Nominal Capacity (KW) Cooling	3.2	3.2
Electrical Heat Capacity (KW)	1.6	----
Electrical Rating	220 - 240 VAC 50 Hz. 1Ph.	
FL Amps (Comp/Motor)	5.2/1.1	5.2/1.1
LR Amps (Comp/Motor)	26/3.8	26.0/3.8
Power (KW) (Comp/Motor)	1.3	1.3
Power (KW) (Heater)	1.5	----
Refrigerant Grams/Oz	R407 496/17.5	R407 595/21.0
Min. Wire Size	Up to 8 meters, use 1.5 mm ² Copper	
Circuit Protection	10 Amp Time Delay Fuse or 10 Amp Circuit Breaker	
Generator Size	1 Unit 3.5 KW 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 increase above sea level, high outside temperatures and lack of maintenance.

2. INSTALLATION INSTRUCTIONS

A. PRECAUTIONS

1. Read Installation Instructions carefully before attempting to start your air conditioner/heat pump installation.
2. Dometic Corporation 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 the national wiring regulation **IEC 335-2-40, CI, 4.12.1**. Installation must comply with all applicable codes and/or regulations.
4. **DO NOT** add any devices or accessories to this air conditioner/heat pump except those authorized by Dometic Corporation.
5. This equipment must be serviced by qualified personnel and some states require these people to be licensed.

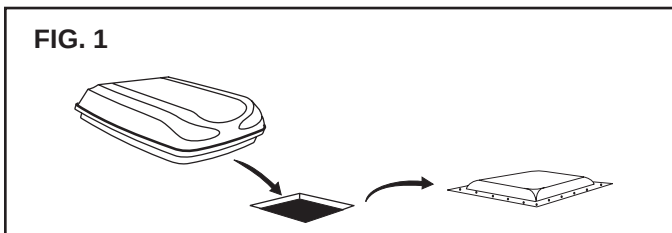
⚠ WARNING

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

B. CHOOSING THE PROPER LOCATION FOR THE AIR CONDITIONER/HEAT PUMP

This air conditioner/heat pump is specifically designed for installation on the roof of a caravan. See FIG. 1.

FIG. 1



1. NORMAL LOCATION

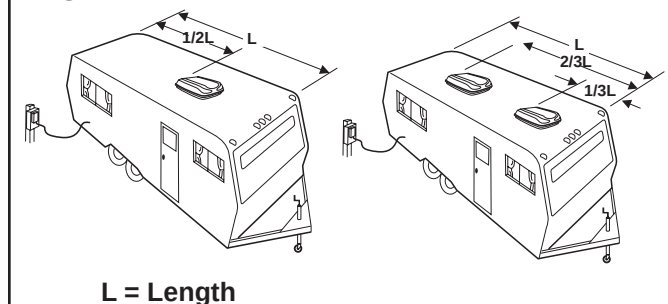
The air conditioner/heat pump is designed to fit over an existing roof vent opening. When the vent is removed, it normally creates a 36.2 cm x 36.2 cm opening.

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/heat pump should be mounted slightly forward of center (front to back) and centered from side to side.
- b. For two unit installations: Install one air conditioner/heat pump 1/3 and one air conditioner/heat pump 2/3 from the front of the caravan and centered from side to side. See FIG. 2.

FIG. 2

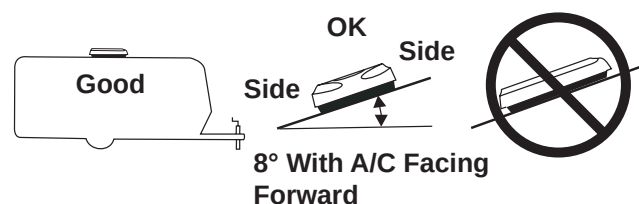


L = Length

It is preferred that the air conditioner/heat pump be installed in a relatively flat and level roof section, measured with the caravan parked on a level surface.

Note: A sideways pitch or forward pitch up to 8° can be tolerated, but a backward pitch can **never** be accepted. See FIG. 3.

FIG. 3 Types 3254.341 & 3253.336



3. AFTER LOCATION HAS BEEN SELECTED

- a. Check on the roof to insure there are no obstructions in the area where the air conditioner/heat pump will be installed. See FIG. 4, & 5.

FIG. 4

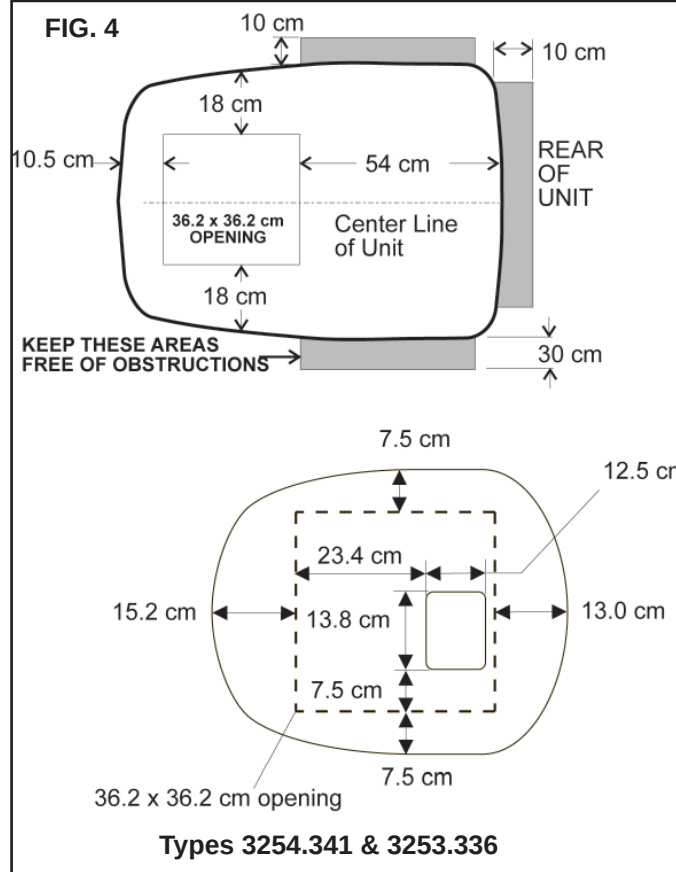
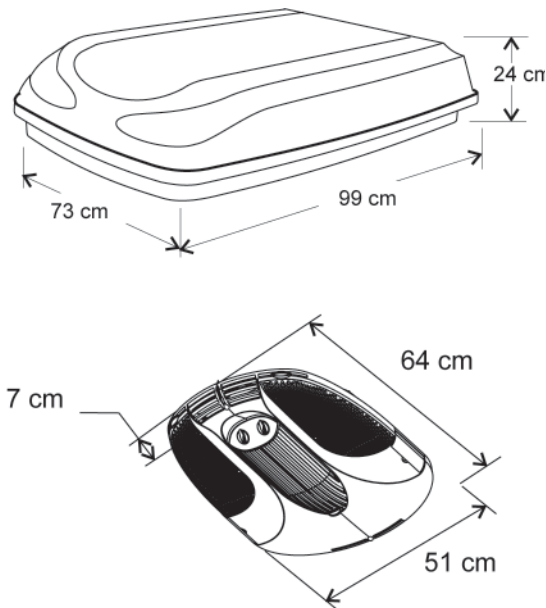


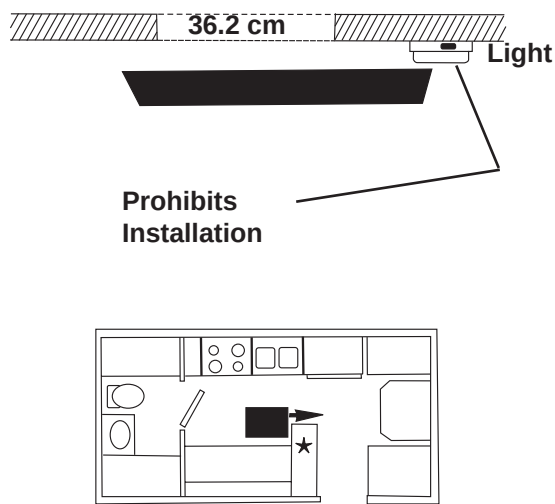
FIG. 5



Types 3254.341 & 3253.336

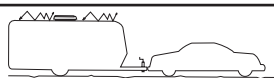
- b. Check inside the caravan for air box obstructions (i.e. door openings, room dividers, curtains, ceiling fixtures, etc.). See FIG. 6.

FIG. 6



★ Cabinet - Prohibits Use

- c. The roof must be designed to support 60 KG when the caravan is in motion. Normally a 90 KG static load design will meet this requirement.



Force While Moving



Weight of A/C
Plus Service Personnel

C. ROOF PREPARATION

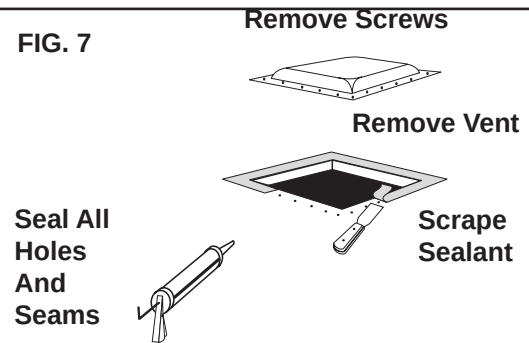
Read all of the following instructions before beginning the installation.

⚠ WARNING

There may be electrical wiring between the roof and the ceiling. Disconnect 220 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.

1. The 36.2 cm x 36.2 cm opening is part of the return air system of the air conditioner/heat pump and must be finished in accordance with all national or local codes.
 - a. Roof Vent Locations
 - Remove all screws that secure the vent to the roof and remove the vent from the opening.
 - Remove all sealing compound from around the vent opening.
 - Seal all screw holes and roof seams with a quality all weather sealant. See FIG. 7.

FIG. 7



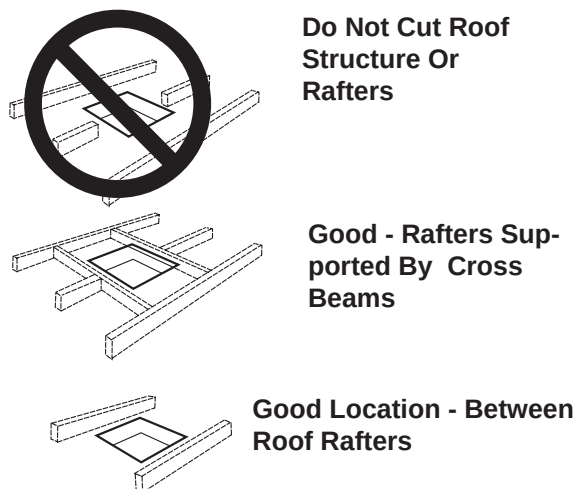
- If the opening is less than 35.8 cm x 35.8 cm, it must be enlarged.
 - If the opening exceed 36.5 cm x 36.5 cm, it will be necessary to install spacers.
- b. New Roof Opening (Installation other than vent opening.)

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.

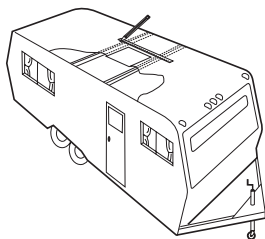
- If a roof vent will not be used a 36.2 cm x 36.2 cm opening must cut through the ceiling of the caravan. This opening must be located between the roof reinforcing members. See FIG. 8.

FIG. 8



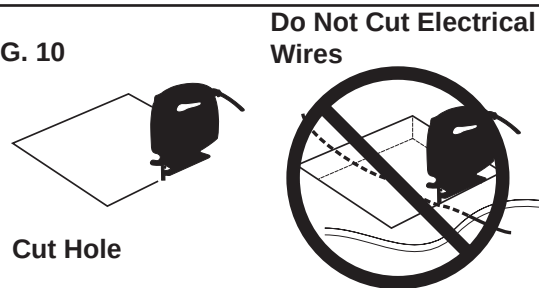
- Mark a 36.2 cm x 36.2 cm square on the roof and carefully cut the opening. See FIGS. 9, 10, & 11.

FIG. 9



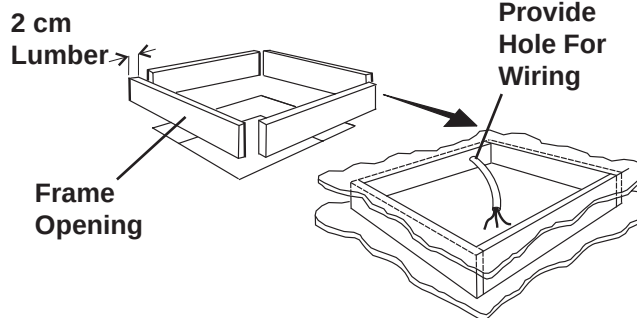
- Using the roof opening as a guide, cut the matching hole in the ceiling. See FIG. 10.

FIG. 10



- The opening created must be framed to provide adequate support and prevent air from being drawn from the roof cavity. Lumber 2 cm or more in thickness must be used. See FIG. 11.

FIG. 11



- Remember to provide an entrance hole for the power supply, furnace wiring and control cable.
- If a furnace is to be connected, two (0.5 mm² to 0.7 mm²) wires must be run from the furnace to the 36.2 cm x 36.2 cm opening of the air conditioner/heat pump that will control it. Make sure that at least 38 cm of the furnace thermostat wires extend into the roof opening.

D. Thermostat And Cable Installation

1. Thermostat Location

The proper location for the thermostat is very important to insure that it will provide a comfortable temperature in the caravan. Observe the following general rules when selecting a location.

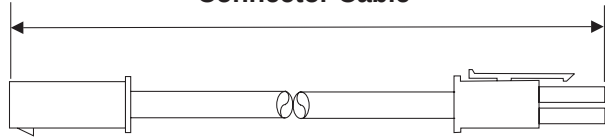
- Locate the thermostat about 140 cm above the floor.
- Install the thermostat on a partition, **Never** on an outside wall.
- Never** expose it to direct heat from lamps, sun or other heat producing items.
- Avoid locations close to doors that lead outside, windows or adjoining outside walls.
- Avoid locations close to supply registers and the air from them.
- Never locate thermostat in a room that is warmer or cooler than the rest of the coach - such as the kitchen.
- The major living area is normally a good location.
- A 2.5 cm diameter hole is needed to route the female connector end through the wall.

2. Thermostat Connector And Cable Installation

- A thermostat connector cable is provided to connect the air conditioner/heat pump control box to the thermostat. The male end of the cable goes to the thermostat. The female end of the cable goes to the control box. See FIG. 12.

FIG. 12

**5 M Thermostat
Connector Cable**

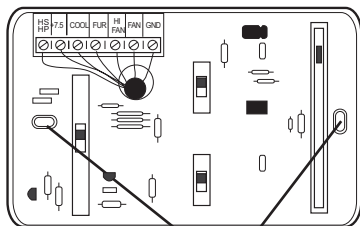


**Female End To Air
Conditioner**

**Male End To Ther-
mostat**

- b. Choose the shortest direct route from the 36.2 cm x 36.2 cm opening to the thermostat location.
 - c. Consider where screws, nails or staples might contact the cable.
 - d. Leave approximately 10 cm of cable extending through the wall to the thermostat.
 - e. Leave approximately 38 cm of cable extending into the 36.2 cm x 36.2 cm opening at this time.
 - f. If the system is to control a gas furnace: Route two (0.5 mm² or 0.7 mm² wired from the furnace to the 36.2 cm x 36.2 cm opening at this time.
3. Analog Thermostat Installation
- a. Connect the thermostat cable protruding from the wall onto the pre-wired thermostat connector.
 - b. Gently push the two connectors together until a snap is heard and the lock on the male connector is latched on the female connector.
 - c. Gently feed the connectors through the 2.5 cm hole in the wall until the thermostat can be mounted flush.
 - d. Remove the cover from the thermostat by starting at one corner and lifting it off the base.
 - e. Mount the thermostat level on the wall using the screw provided in the locations shown in FIG. 13.

FIG. 13



Screw Locations

- f. Place the cover on the thermostat and push until an audible click is heard.

**E. PLACING THE AIR CONDITIONER/HEAT PUMP ON
THE ROOF**

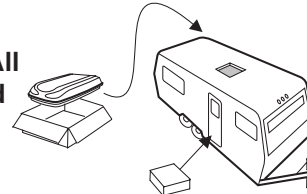
⚠ CAUTION

This unit weighs approximately 45 Kg. To prevent back injury, use a mechanical hoist to place Air Conditioner on roof.

1. Remove the air conditioner/heat pump from the carton and recycle. See FIG. 14.

FIG. 14

**Recycle All
Cardboard**

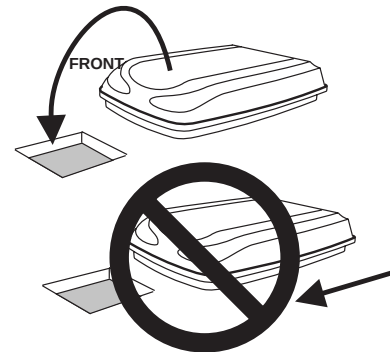


2. Place the air conditioner/heat pump on the roof. See FIG. 14.
3. Lift and place the unit over the prepared opening using the gasket on the unit as a guide. The blunt end goes toward the rear of the caravan. See FIG. 15.

CAUTION

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

FIG. 15



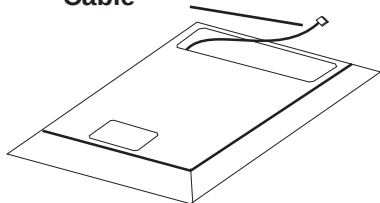
4. Place the air box kit inside the caravan. This box contains the mounting hardware for the air conditioner/heat pump. See FIG. 14. This completes the outside work. Minor adjustments can be done from the inside of the caravan if required.

F. INSTALLATION OF THE AIR DISTRIBUTION BOX.

1. Remove the air box and mounting hardware from their carton. Remove the wire tie securing the rear aluminum bracket to the plastic.
2. Check for correct alignment and adjust as necessary (Roof gasket centered over the 36.2 cm x 36.2 cm opening).
3. Reach up into the return air opening and pull down the units electrical cord for connection later. See FIG. 16.

FIG. 16

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



4. 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. 17.

**Discharge Open-
ing Place Flange
Of Duct On RH
Side When Facing
Front**

**Install Duct
With Notch To
Rear**

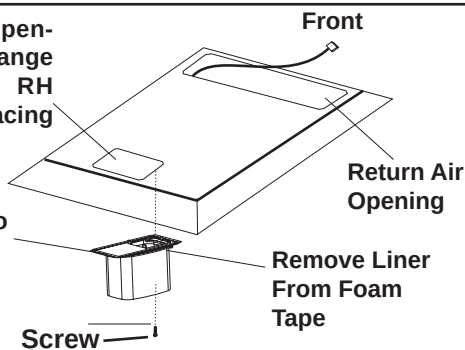


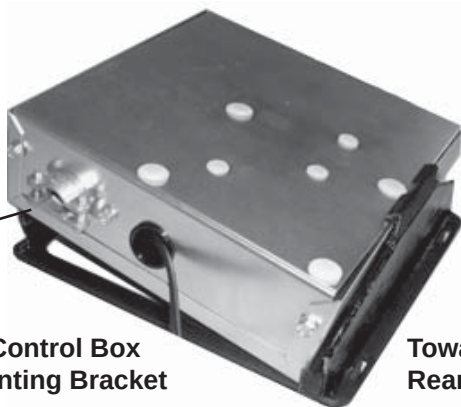
FIG. 17

5. Install screw to help hold duct adapter to base pan.
6. Remove wire tie from ceiling template and remove the duct adapter.

FIG. 18

**Snap In
Bracket**

**Place Control Box
In Mounting Bracket**



**Towards
Rear**

7. Install the mounting bracket onto the control box see FIG. 18.
8. Plug the 6 pin connector of the adapter cable (6 pin to 9 pin) into the analog control box.
9. Plug the 9 pin end of the adapter harness into the units 9 pin plug.
10. Plug the wall thermostat cable female end into the male connector on the control box.
11. Route the 220 VAC supply line through the strain relief in the junction box of the control box. Tighten the screws on the strain relief making sure enough wire is inside to make the connection. Be careful not to pinch and cut into the insulation of the power supply leads.
12. Freeze Control Installation (not used in 3310137)
 - a. Place the cold control switch up through the base pan and on the second refrigerant tube from the bottom in the center of the evaporator coil. Make sure the spring clip is fastened securely to the tubing and the cold control surface is making contact with the aluminum fins on evaporator coil. See FIGS. 19 & 20.

FIG. 19

**Snap The Open Loop
Of Spring Clip On
Second Tube In
Center Of Evapora-
tor Coil**

**Wrap Closed Cell Foam
Insulation Around Cold
Control Switch**

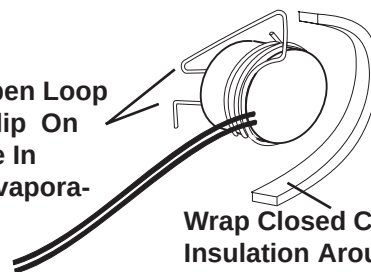
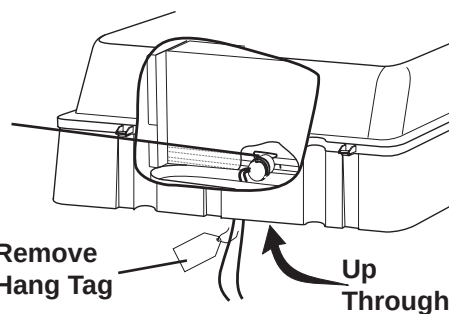


FIG. 20

**Place Cold
Control In
Center Of
Coil On 2nd
Tube From
Bottom**

**Remove
Hang Tag**

**Up
Through**



- b. Keep wires away from heat strip (if applicable) to prevent damaging the wires. Use wire ties if necessary. See FIG. 19 & 20.
 - c. Remove installation notice hang tag from freeze control. See FIG. 19 & 20.
13. Install the flange on the control box on the front edge of the ceiling template Snap the rear of the control box mounting bracket into the ceiling template.
 14. Install the ceiling template with the opening to the rear.

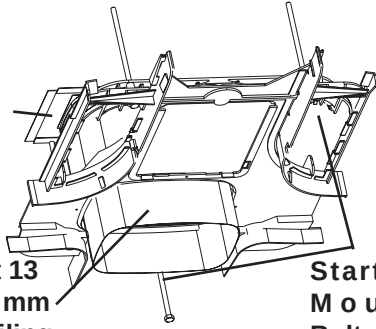
15. Start the mounting bolts by hand before tightening. The threaded inserts in the base pan can be seen to aid in starting the bolts. See FIG. 21.

FIG. 21

Ceiling
Template

Trim Duct 13
mm to 25 mm
Below Ceiling
Template

Start Three
Mounting
Bolts By Hand



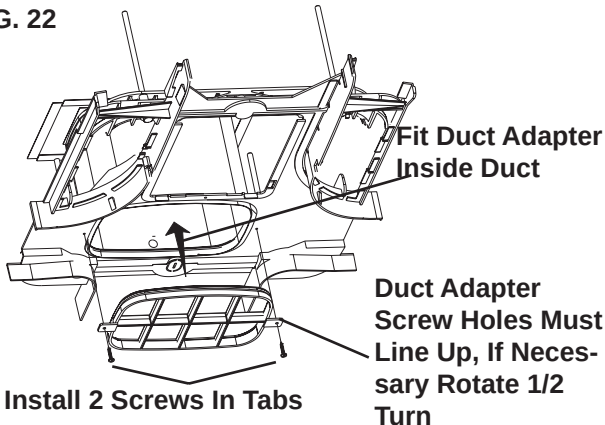
- a. Finger tighten the 3 bolts and check alignment.
- b. Tighten the bolts to a torque of 4.5 to 5.0 NM. The bolts are self locking so over tightening is not necessary. This will compress the roof gasket to approximately 1.3 cm.

CAUTION

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

16. Cut the duct 13 mm to 25 mm below the ceiling template.
17. Align the duct adapter with the duct hole making sure the screw holes line up (if not rotate the duct adapter 1/2 turn). Insert duct adapter into the duct with one loop of wire below the groove in the duct adapter. Do not insert tabs inside of the duct.
18. Snap duct adapter into template and install 2 screws through the duct adapter into the ceiling template. See FIG. 22.

FIG. 22



19. Connection of low voltage wires.

CAUTION

Disconnect the positive (+) 12 volt DC terminal at the supply battery. Damage to equipment could occur if the 12 volt DC is not shut off.

- a. Connect the previously run +12 VDC to the red wire labeled +12 protruding from the control box.
- b. Connect the previously run -12 VDC to the black wire labeled -12 protruding from the control box.
- c. Connect the control box blue/white wires to the two furnace control wire (if applicable).

20. Connection of 220 volt power supply.

WARNING

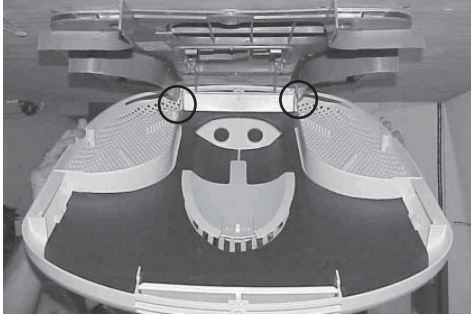
Disconnect 220 volt AC. Failure to follow these instructions could create a shock hazard causing death or severe personal injury.

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 220 volt AC circuit and the polarity is correct. Failure to do so could result in death, personal injury or damage to the equipment.

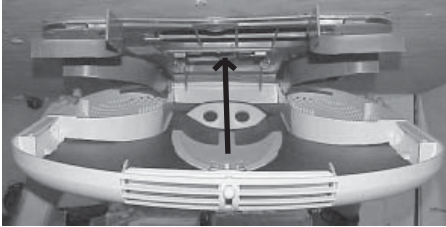
- a. Route power supply line through strain relief into junction box on side. Tighten connector, being careful not to pinch or short wires.
 - b. Connect the control box white to Blue; black to brown and green to green/yellow or bare copper wire using twist connectors. Tape the twist connectors to the supply wire to assure they don't vibrate off.
 - c. Push the supply wires into the control box. Be careful not to pinch or short wires.
 - d. Remove the cover off from the control box rotate and reinstall it with the narrow end inserted into the control box.
21. Air Distribution Box Installation
 - a. 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. 23.
 - b. 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. 23A.

FIG. 23



Position ADB Walls Inside And Against End Of Template Walls

Raise Back End Of ADB To Ceiling

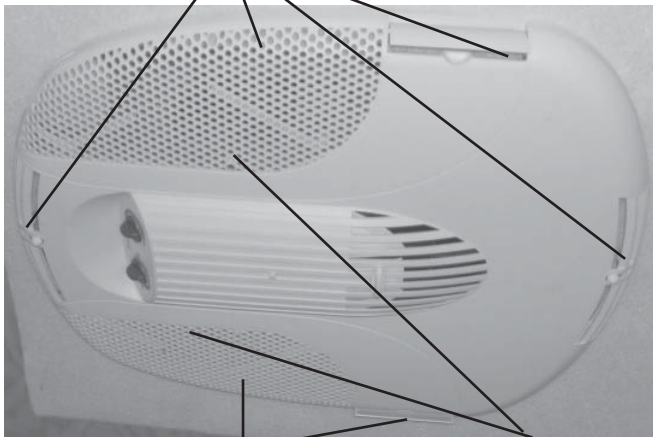


If Not Flush, Wiggle Side To Side.



FIG.23A

Screw Locations



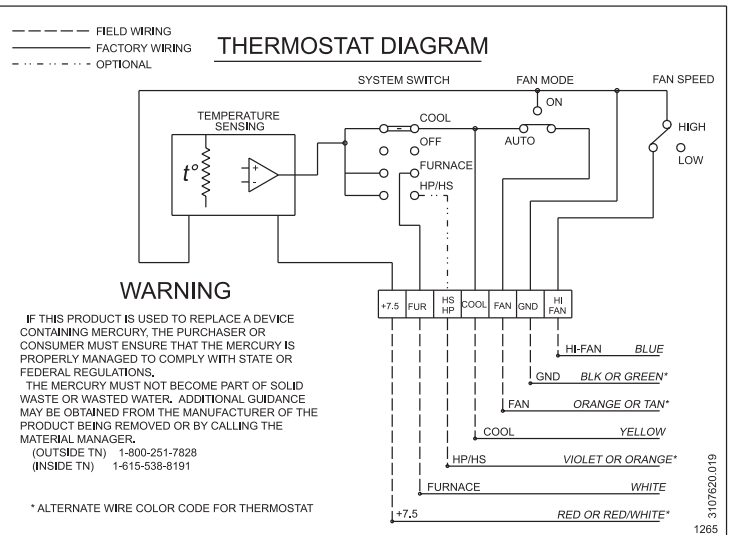
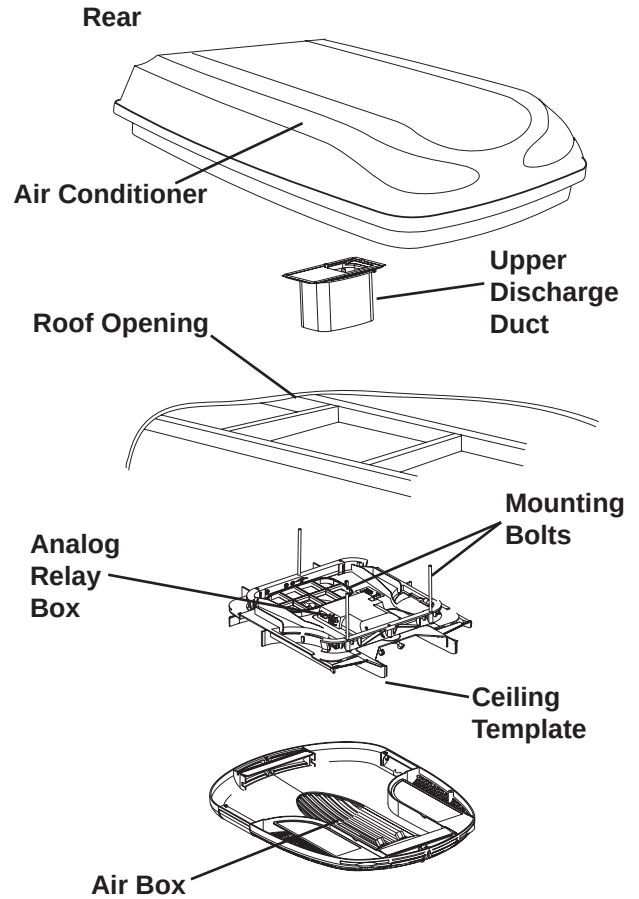
Screw Locations

Install These 2 Screw First

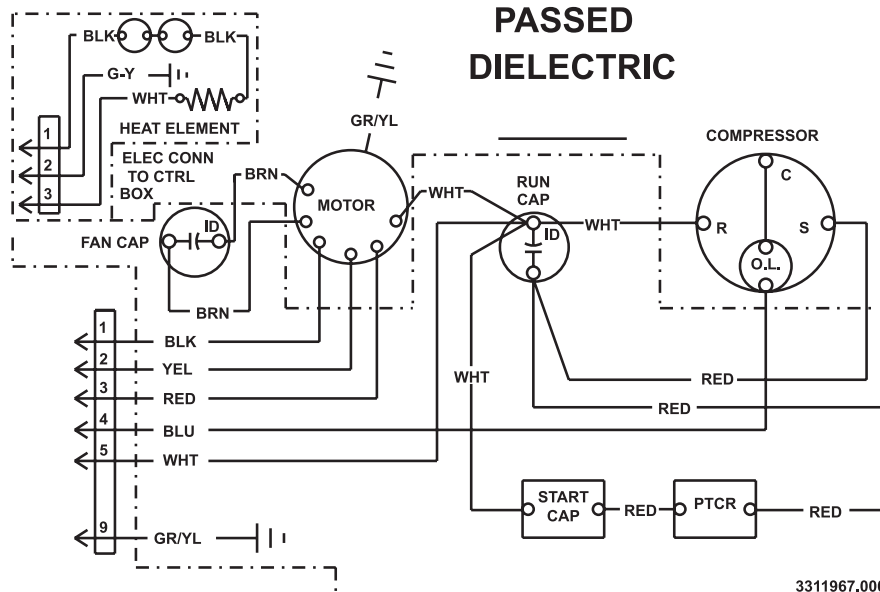
- c. Install the remaining screws provided in the air distribution box. Take care not to over tighten screws.
- d. Insert filters into air distribution box with domed portion of the handle up towards the ceiling. See FIGS. 23 & 23A.

FIG. 24

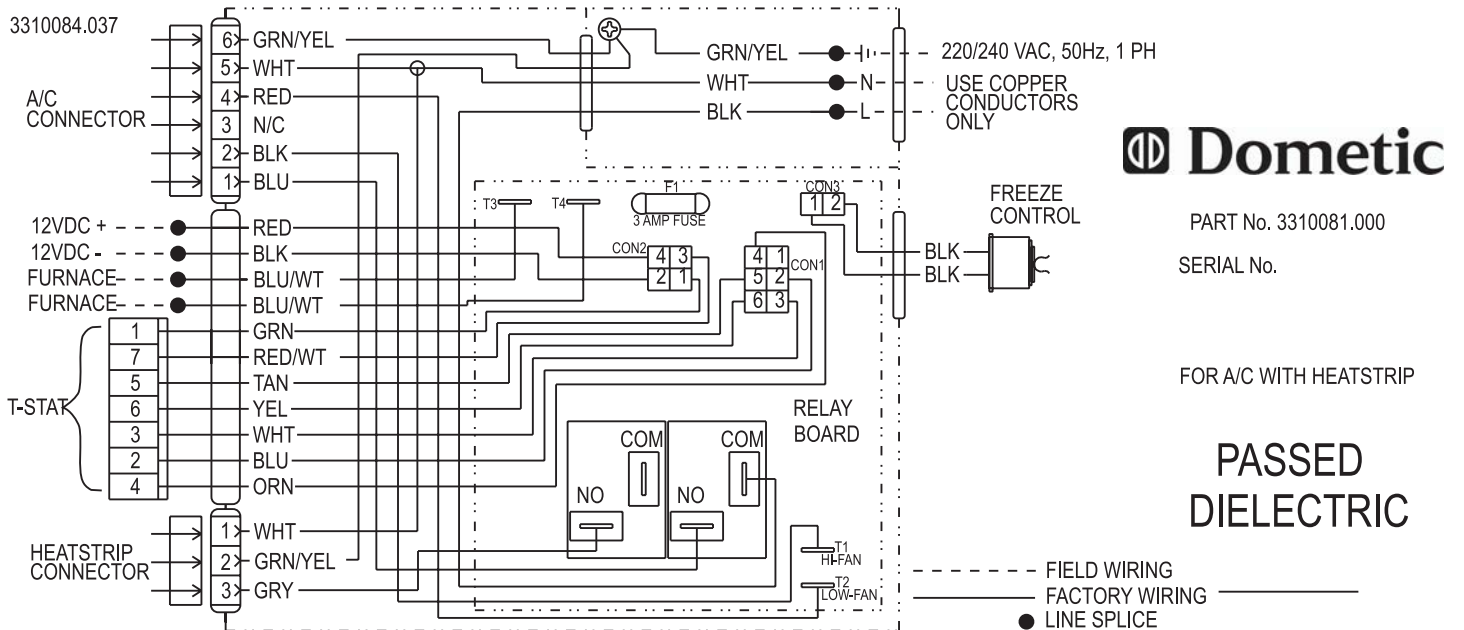
Types 3254.341 & 3253.336
Roof Mount Assembly



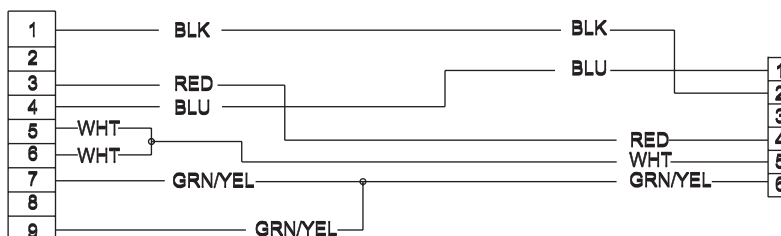
TYPES 3253.336 AIR CONDITIONER WIRING DIAGRAM



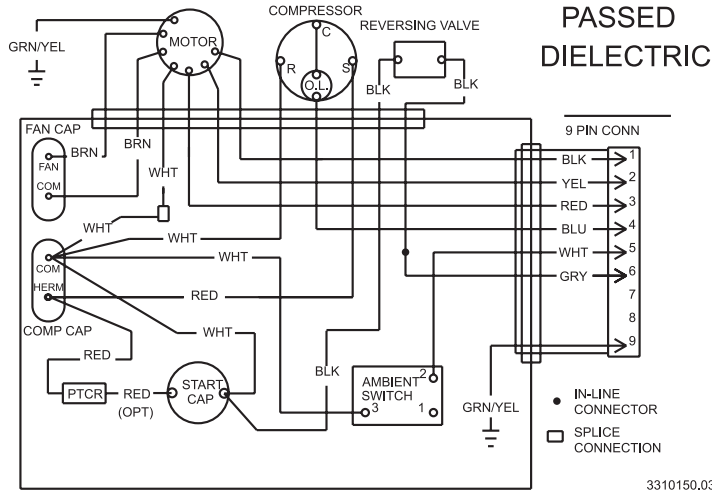
WIRING DIAGRAM FOR 3310086 HEAT STRIP RELAY KIT



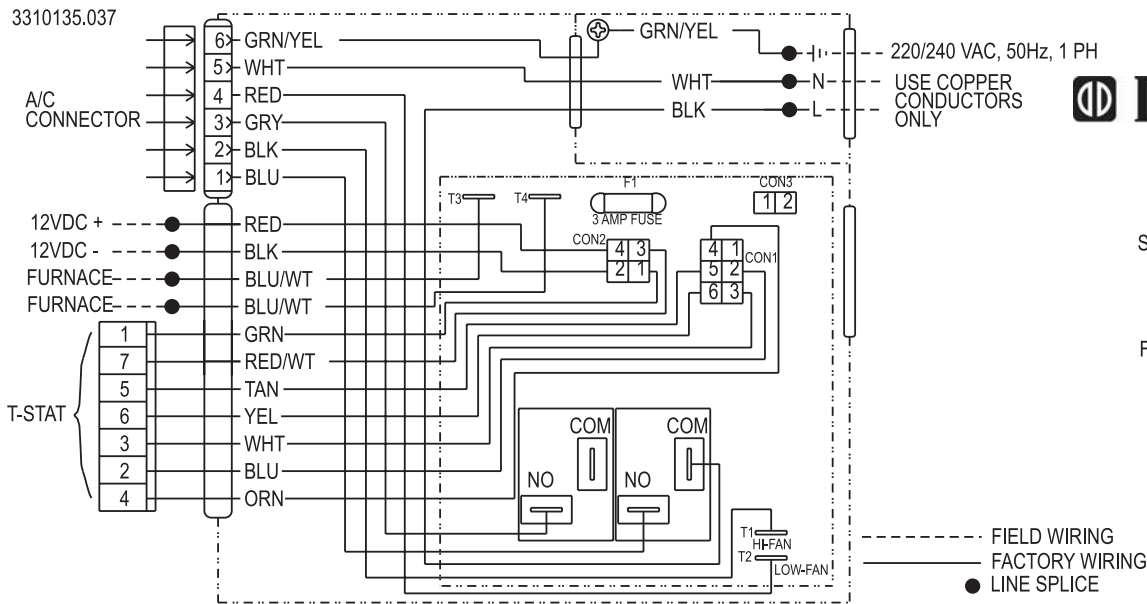
3312234.000 AIR CONDITIONER 6-9 PIN ADAPTER



TYPES 3254.341 HEAT PUMP WIRING DIAGRAM



WIRING DIAGRAM FOR 3310137 HEAT PUMP RELAY KIT



Dometic

PART No. 3310136.000

SERIAL No.

FOR A/C WITH HEATPUMP

3108179.015 HEAT PUMP 6-9 PIN ADAPTER

