

Duo-THERM[®]

by Dometic

**RECORD THIS UNIT INFORMATION FOR FUTURE
REFERENCE:**

Model Number _____
Serial Number _____
Date Purchased _____

579 Series BRISK AIR 590 Series QUICK COOL 595 Series QUICK COOL Roof Top Air Conditioner

USED WITH

Part No. 3105637

Air Distribution Box Kit

WITH REMOTE BI-METAL THERMOSTAT

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

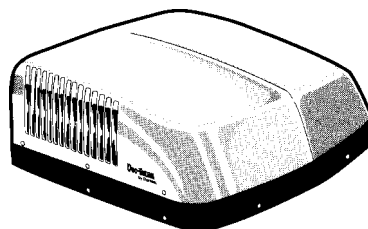
**For Service Center
Assistance Call:**
800-544-4881



**UNDERWRITERS
LABORATORIES
INC. [®]**
LISTED
637G



CERTIFIED
LR 23565



⚠ WARNING

Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage. Refer to this manual. For assistance or additional information consult a qualified installer or service agency.

⚠ AVERTISSEMENT

Une mauvaise installation, de mauvais réglages, modifications ou opérations d'entretien peuvent endommager les biens ou même blesser. Se reporter à la notice. Pour obtenir de l'aide ou des renseignements complémentaires, consulter un installateur qualifié ou une agence de service après-vente.

INSTALLATION & OPERATING INSTRUCTIONS

MODELS

57908.521	59016.526
57912.621	59016.621
57912.622	59016.626
57915.421/.426	59516.501
57915.422	59516.506
57915.521/.526	59516.601
57915.522	59516.606
57915.621/.626	59528.601
57915.622	59530.601
59016.521	

1. SPECIFICATIONS

MODEL NUMBER	57908.521	57912 .612 / .622	59528.601	59530.601	57915 .421 / .422 .426 /	57915 .521 / .522 .526 /	57915 .621 / .622 .626 /	59016.521 59016.526 59016.621 59016.626	59516.501 59516.506 59516.601 59516.606
Nominal Capacity (BTU/HR)	7,100	11,000			13,500	13,500	13,500	15,000	15,000
Electrical Rating	115 VAC, 60 Hz., 1 PH.								
Compr. Rated Load Amps	6.6	8.5	6.0	8.0	11.5	12.1	11.0	12.9	12.9
Fan Motor Rated Load Amps	2.5	2.5	2.0	2.0	2.5	2.5	2.5	2.5	2.5
Compr.Locked Rotor Amps	34.0	48.3	45.6	48.3	50.0	59.0	54.4	71.0	71.0
Fan Motor Locked Rotor Amps	5.8	5.8	5.6	5.6	5.8	5.8	5.8	6.0	6.0
Refrigerant (R22) oz.	17.0	16.0 / 18.5	16.5	19.0	13.5 / 14.5	16.0 / 16.5	16.0 / 16.5	26.5	31.0
Minimum Wire Size *	12 AWG Copper up to 24 ft.								
Circuit Protection ***	20 Amp		15 Amp		20 Amp				
Installed Weight (Pounds)	75	93	92	94	100	95	95	110	111
Minimum Generator 1 UNIT	2.5 KW				3.5 KW				
Size ** 2 UNITS	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.

*** CIRCUIT PROTECTION: Time Delay Fuse or HACR Circuit Breaker Required.

2. PRECAUTIONS

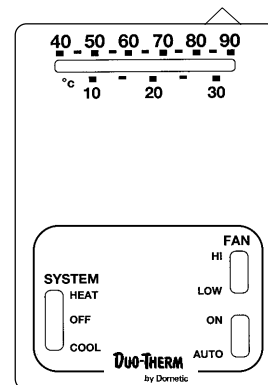


IMPROPER INSTALLATION MAY DAMAGE EQUIPMENT, COULD ENDANGER LIFE, CAUSE SERIOUS INJURY AND/OR PROPERTY DAMAGE.

- Read installation and operating instructions carefully before attempting to start your air conditioner.
- The Dometic Corporation 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.

- Select **Auto/On Switch** operation as follows:
(Lower right switch at bottom of thermostat)
 - Auto Position:** Air conditioner fan runs whenever cooling is required and stops whenever cooling is not required.
 - On Position:** Air conditioner fan runs continuously to circulate air in RV.
- Set the **Heat/Off/Cool Switch** to cool position (located at lower left side of thermostat).

The air conditioner compressor will now come on when cooling is required and cycle off when the temperature level selected is reached.



3. OPERATING INSTRUCTIONS

A. COOLING OPERATION

- Place the **Temperature Set Lever** to desired temperature level (located at top of thermostat).
- Select fan speed that best satisfies your needs: (Upper right switch at bottom of thermostat).
 - High Speed:** Selected when maximum cooling and dehumidification are required.
 - Low Speed:** Selected when RV reaches desired comfort level and needs to be maintained. Normally this speed is used for night-time operation.



Wait at least two (2) minutes before restarting the air conditioner after shutting off with either the Heat/Off/Cooling Switch or the Temperature Set Lever. This allows the refrigerant pressure in the air conditioner to equalize and will allow the compressor to restart easily. Failure to follow this instruction may cause circuit breaker or fuse to open.

B. HEATING OPERATION

(If Furnace is connected to Thermostat)

1. Set the **Temperature Set Lever** to desired temperature level (locate at top of thermostat).
2. Set the **Heat/Off/Cool** switch to heat position (located at lower left side of thermostat).

The furnace will now come on when heat is required and cycle off when temperature level selected is reached.

C. SPECIAL FEATURE:

When thermostat:

1. **Heat/Off/Cool Switch:** is in the OFF or HEAT position and
2. **Auto/On Switch:** is in the ON position,

. . . the air conditioner fan will run continuously at the selected fan speed to circulate the air inside the RV.

4. MAINTENANCE

A. AIR FILTER:

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 then 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.

B. AIR BOX HOUSING:

Clean air box housing and control panel with a soft cloth dampened with a mild detergent. Never use furniture polish or abrasive cleaning materials.

C. FAN MOTOR:

Factory lubricated and requires no service under normal use.

D. FROST FORMATION ON COOLING COIL:

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 to a warmer setting. Should frosting continue, operate on LOW or HIGH FAN setting until the cooling coil is free of frost.

5. GENERAL INFORMATION

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:

- a. Parking the RV in a shaded area
- b. Using window shades (blinds and/or curtains)
- c. Keeping windows and doors shut or minimizing usage
- d. Avoiding the use of heat producing appliances

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.

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.

6. SERVICE - Unit Does Not Operate

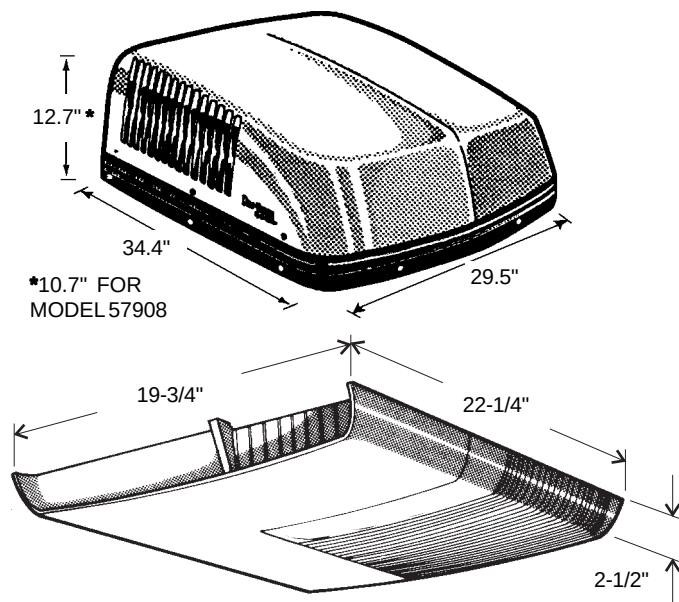
If your unit fails to operate or operated improperly, check the following before calling your service center.

- 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.

When calling for service, always give the following:

- 1) **Air conditioner Model Number and Serial Number found on rating plate located on base pan of air conditioner bottom. Remove return air grille to observe this rating plate.**
- 2) **Air distribution Box Kit Part and Serial Number found on rating plate located on ceiling template. Observe this rating plate through the air discharge louver of ADB.**

7. 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 starting your air conditioner installation.
2. The Dometic Corporation will not be liable for any damages or injury incurred due to failure in following these instructions.
3. Installation must comply with the National Electrical Code and any State or Local Codes or regulations.
4. DO NOT add any devices or accessories to this air conditioner except those specifically authorized by Dometic.
5. This equipment must be serviced by qualified personnel and some states require these people to be licensed.

B. CHOOSING LOCATION FOR THE AIR CONDITIONER

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

1. 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" x 14" opening.

2. OTHER LOCATIONS:

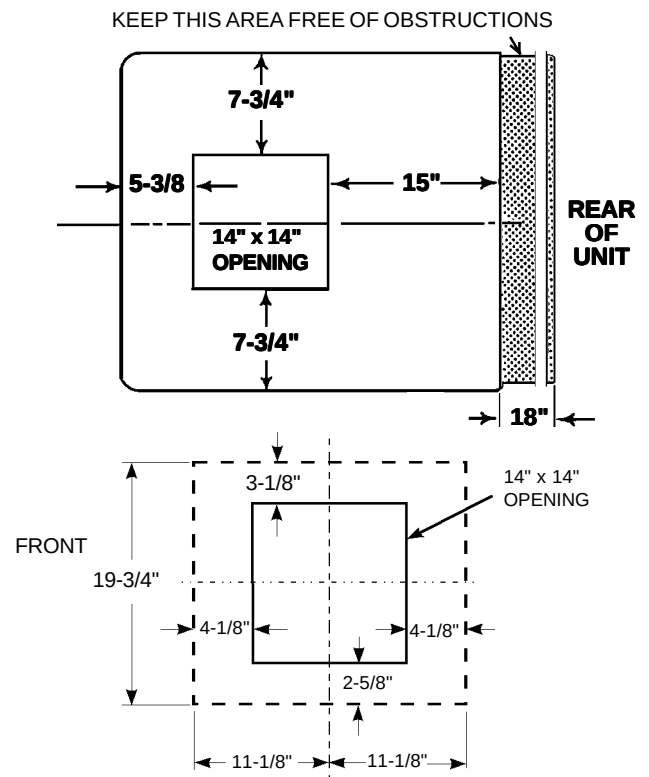
When no roof vent is available or another location is desired, the following is recommended:

- a. For one unit installation: The air conditioner 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 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; however, up to 15° slant to either side, or front-to-back, is acceptable.

3. AFTER LOCATION SELECTION:

- a. Check for obstructions in the area where air conditioner will be installed.
- b. 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.
- c. Check inside the RV for air box obstructions. (i.e. door openings, room dividers, curtains, ceiling fixtures, etc.)



C. ROOF PREPARATION

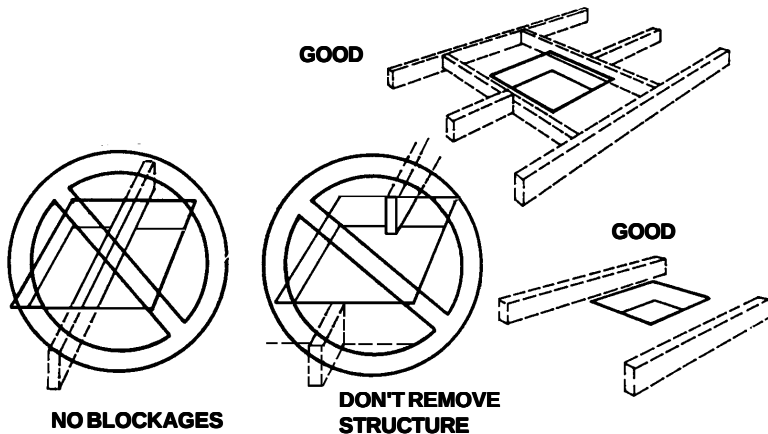
1. ROOF VENT REMOVAL:

- a. Unscrew and remove the roof vent.
- b. Remove all caulking compound around opening.
- c. Seal all screw holes and seams where the roof gasket will be located. Use a good grade of all weather sealer.

2. NEW OPENING

(Installation Other Than Vent Opening)

- a. 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.



! WARNING

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

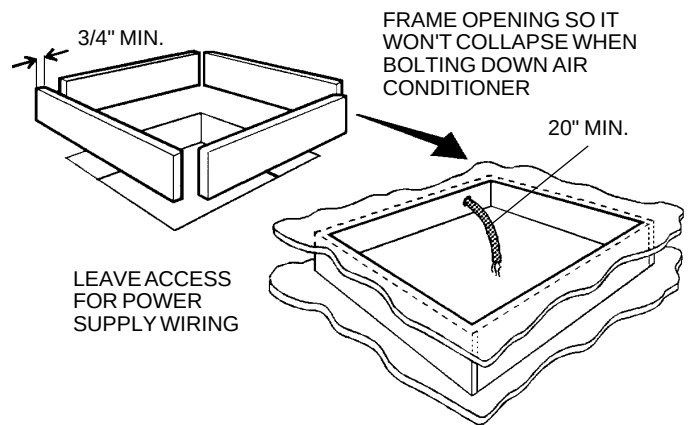
- b. Mark a 14" X 14" square on the roof and carefully cut the opening.
c. Using the roof opening as a guide, cut the matching hole in the ceiling.

! WARNING

There may be electrical wiring between the roof and ceiling.

3. OPENING PREPARATION

- a. If the opening exceeds 14-1/2" X 14-1/2", it will be necessary to install spacers.
b. If the opening is less than 14" X 14", it must be enlarged.
c. Route a copper 12 AWG with ground supply line from the fuse box or circuit breaker to the roof opening.
1. The power supply must be protected by a 15 or 20 amp Time Delay Fuse or HACR Circuit Breaker as specified on unit rating plate.
2. Wiring must comply with all National, State and Local wiring codes.
3. Make sure at least 20" of wire extend into the roof opening. This ensures easy air conditioner attachment.
4. If vent fan was removed, the existing wire may be used provided it is of proper size and correctly fused.
d. 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 interior.

- e. The 14" X 14" roof opening is part of the return air and must be finished in accordance with NFPA Standard 501 C, Standard for recreational vehicles, Section 2-7.
f. Use a steel sleeve and a grommet (or equivalent methods) to protect the wire where it passes through the return air duct.

D. THERMOSTAT LOCATION

The proper location of the thermostat is very important to ensure that it will provide a comfortable RV temperature. Observe the following general rules when selecting a location.

1. Locate the thermostat 54" above the floor.
2. Install thermostat on a partition, not on an outside wall.
3. NEVER expose it to direct heat from lamps, sun or other heat producing items.
4. Avoid locations close to doors that lead outside, windows or adjoining outside walls.
5. Avoid locations close to supply registers and the air from them.
6. Never locate thermostat in a room that is warmer or cooler than the rest of the coach - such as the kitchen.
7. The major living area is normally a good location.

E. CABLE INSTALLATION (OEM)

1. A four-conductor cable, 18 to 22 AWG is to be used for low voltage connections.
2. Choose the shortest, direct route from the 14" opening to the thermostat location selected.
3. Consider where screws, nails or staples might contact the cable.
4. Leave approximately 3" of cable extending through the wall for connection to the thermostat.
5. Leave approximately 10" of cable extending into the 14" opening for connection at unit.
6. If system is to control a gas furnace: Route 18 gauge thermostat wire from furnace to wall thermostat location at this time.

F. CABLE INSTALLATION (AFTERMARKET)

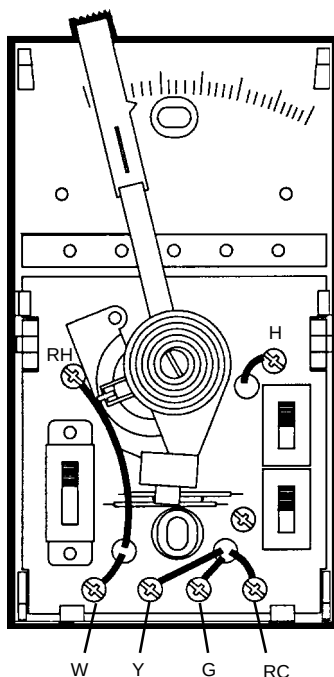
The same steps must be taken as for OEM installation but routing through the ceiling and walls may not be practical. There are metal or plastic raceways available at most electrical distributors. This will allow routing along the interior surface of your ceiling and wall to the thermostat.

G. THERMOSTAT INSTALLATION

The provided thermostat is a "heat/cool thermostat". These instructions cover only the cooling connections required. If connection of furnace is required, follow the instructions provided with the furnace. Normally the furnace will connect to the "RH" and "W" terminals on the thermostat.

1. Remove the cover of the provided thermostat.
2. Connect the **"RED"** wire from the air conditioner to the **"RC"** terminal on the thermostat.
3. Connect the **"YELLOW"** wire from the air conditioner to the **"Y"** terminal on the thermostat.
4. Connect the **"BLUE"** wire from the air conditioner to the **"H"** terminal on the thermostat.
5. Connect the **"ORANGE"** wire from the air conditioner to the **"G"** terminal on the thermostat.
6. Push the thermostat wires into hole in wall and fill excess hole with insulation.
7. Mount thermostat base to the wall with screws provided.
8. Check all thermostat wires on base to insure they are completely clear of the bi-metal coil of the thermostat. Adjust if necessary.
9. Replace thermostat cover.

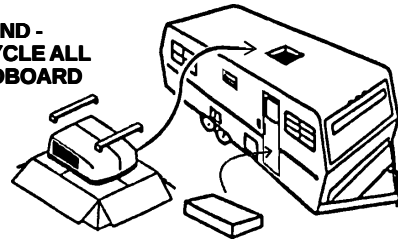
THERMOSTAT BASE



H. PLACING THE AIR CONDITIONER ON THE ROOF

1. Remove the air conditioner from the carton and discard carton.
2. Place air conditioner on the roof.

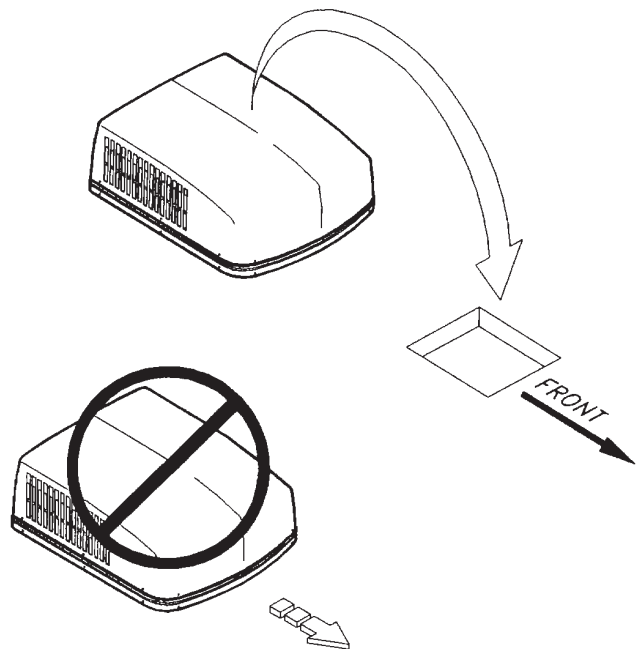
**BE KIND -
RECYCLE ALL
CARDBOARD**



WARNING

Use care in lifting. This unit weighs approximately one hundred (100) pounds.

3. 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.

4. Place the 3105637 Air Box Kit inside the RV. This box contains mounting hardware for the air conditioner and will be used inside the RV.

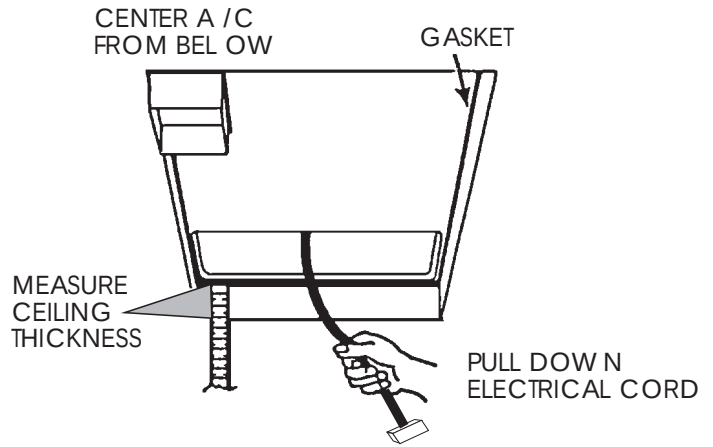
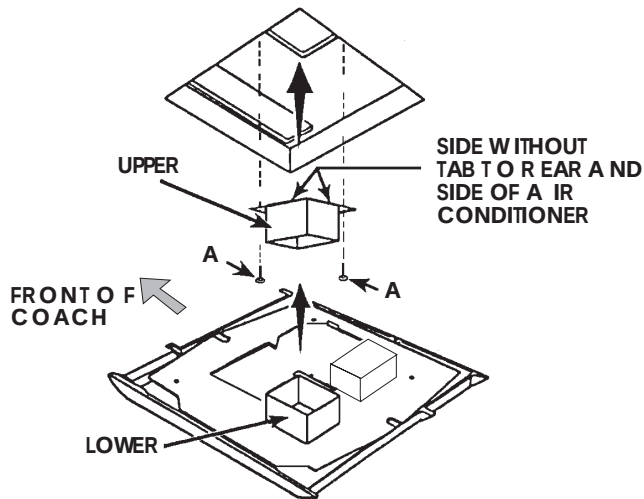
This completes the outside work. Minor adjustments can be done from the inside if required.

I. DISCHARGE DUCT AND CEILING TEMPLATE INSTALLATION

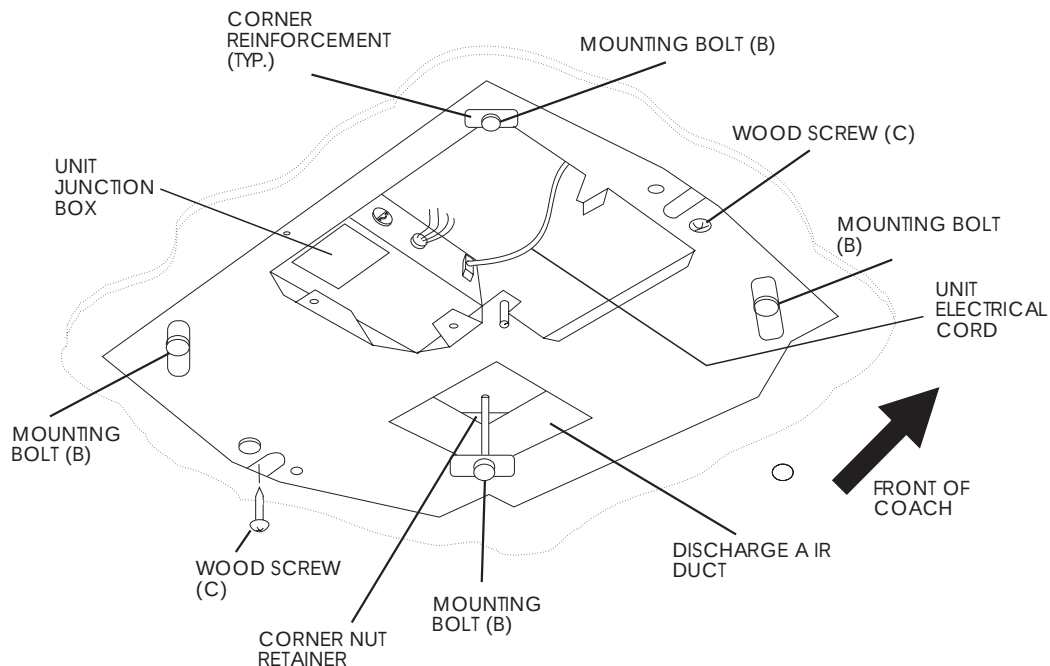
1. Remove air box and mounting hardware from carton. The upper duct is shipped inside the lower duct which is part of the ceiling template.
 - a. Remove upper duct from ceiling template and locate it over blower discharge.

NOTE: Edges without flanges install toward REAR and SIDE of opening.

- b. Use two (2) sharp pointed #10 x 1/2" sheet metal screws (A) to hold duct to base pan. Holes provided in bottom of basepan for these screws to go into.



2. Check for correct alignment and adjust the unit as necessary (Roof Gasket centers over 14" opening).
3. Reach up into return air opening of the air conditioner and pull the unit electrical cord down for later connection.
4. Measure the ceiling to roof thickness:
 - a. If distance is 2"-3", remove perforated tabs from bottom duct only.
 - b. If distance is 3"-4", install ducts as received.
 - c. If distance is 4"-6", use optional duct adaptor, Part No. 313606.000 and Bolt Kit, Part No. 3100895.006.
5. Install ceiling template by sliding lower duct over upper duct.
6. Start each mounting bolt by hand before tightening any of them. The four (4) threaded inserts in the base pan can be seen to aid in starting the bolts.



EVENLY TIGHTEN MOUNTING BOLTS TO A TORQUE OF 40 TO 50 INCH POUNDS.

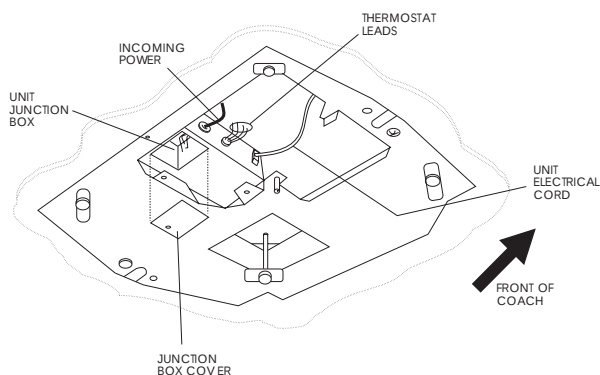
This will compress the roof gasket to approximately 1/2". The bolts are self locking so over tightening is not necessary.

7. Install wood screws (C) in each end of ceiling template and into junction box. This insures a tight fit of air box to ceiling.

J. CONNECTION OF POWER SUPPLY

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 thru provided Romex Connector. Six (6) inch leads are sufficient for connection to unit wires and ground screws.
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 green wire in junction box.
5. Install junction box cover with one (1) blunt point screw (D).
6. Plug unit electrical cord into the mating connector on control box. Make sure connector is fully engaged with side locking tabs secured.

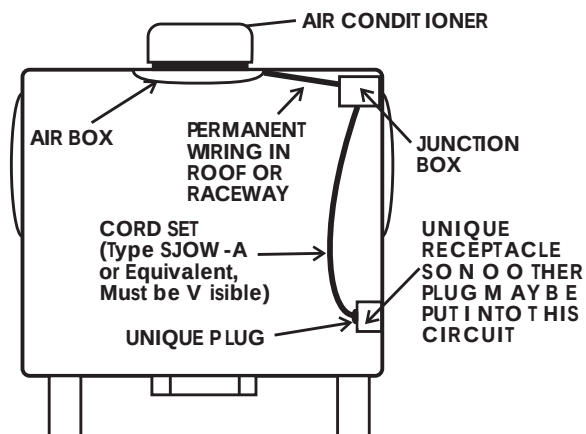
K. CONNECTION OF THERMOSTAT CABLE

1. Connect "RED" wire from the Relay Kit to wire coming from "RC" terminal on thermostat.
2. Connect "YELLOW" wire from Relay Kit to wire coming from "Y" terminal on thermostat.
3. Connect "BLUE" wire from Relay Kit to wire coming from "H" terminal on thermostat.
4. Connect "ORANGE" wire from Relay Kit to wire coming from "G" terminal on thermostat.
5. Use wire nuts to assure good connections.

L. INSTALL AIR BOX

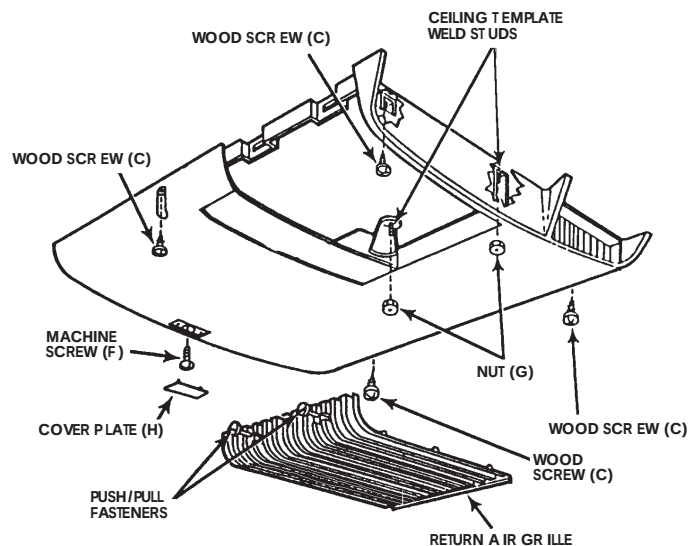
1. Remove return air grille from air box by pulling out on push/pull fasteners.
2. Install air box over two (2) weld studs on ceiling template and secure with nuts (G).

3. Install machine screw (F) in round air box hole.
4. Install four (4) wood screws (C) that hold air box tight to ceiling.
5. Reinstall return air grille and snap cover plate (H) into air box.
6. The air conditioner installation is now complete. Turn on power to the unit for operational check. Please read Unit Operating Instructions before proceeding.



M. INSTALLATION ON TENT CAMPER ROOF

1. The permanent wiring leading to unit junction box may originate in a flanged surface inlet located in roof section near the side wall.
2. A unique outlet receptacle for air conditioner should be located in the side wall of vehicle beneath the flanged surface inlet.
3. A cord set fabricated from an oil, water, and ozone resistant material, such as Type SJOW-A, shall be used to connect the flanged surface inlet and the air conditioning receptacle. This cord set shall be visible during use and shall not be installed in raceways or placed behind walls or cabinet panels.



MOUNTING PARTS

- A. (2) #10 x 1/2" long sharp point sheet metal screws.



- B. (4) 1/4" — #20 x 7" bolts



- C. (6) #8 x 5/8" long sharp point wood screws



- D. (1) #10 x 3/8" blunt point tapping screw



- F. (1) Machine screw, 3/8" long



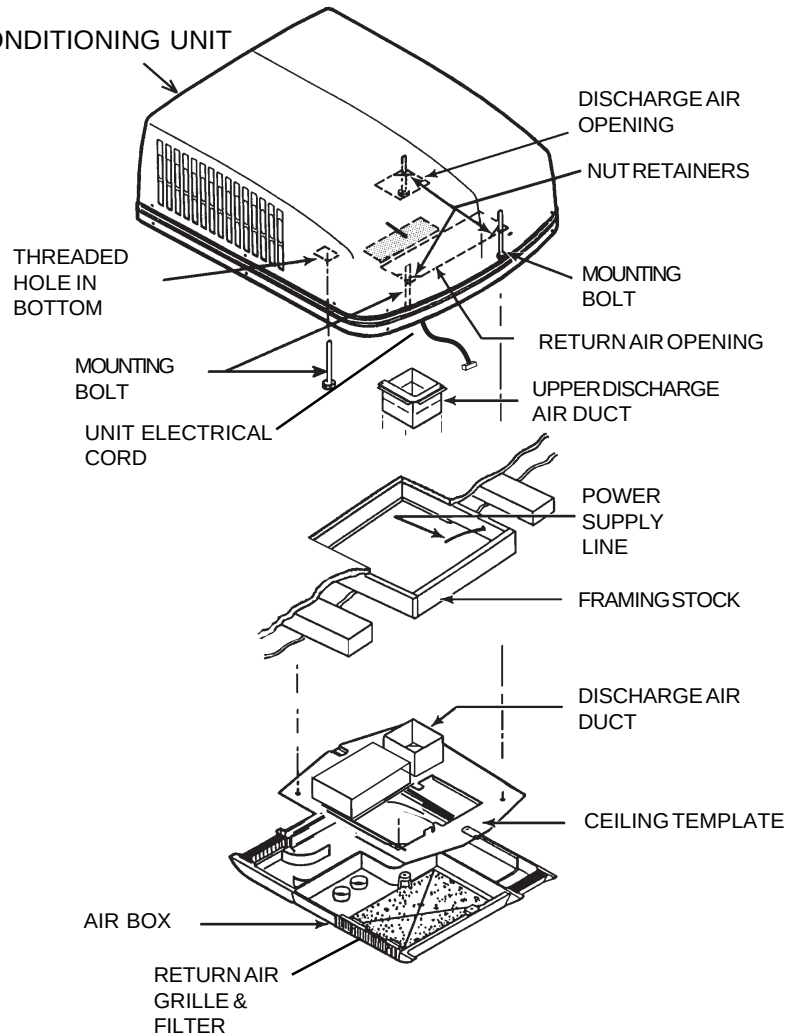
- G. (2) #10 — 24 Hex nuts



- H. Cover plate



AIR CONDITIONING UNIT



WIRING DIAGRAM

