



CENTER DUCT KIT NO. 3103875

FOR USE WITH DOMETIC DUCTED ROOF TOP AIR CONDITIONERS & HEAT PUMPS

MODEL SERIES: 6003, 6203, 6300 & 6302

This Kit is intended for use with Dometic Ducted Air Conditioner Model 620315 and Heat Pump Model 630215. This Kit is for use on systems which use a Center Duct application.

These Instructions will replace the following Sections of the Installation Instructions:

Section 2, Air Distribution System Sizing & Design

Section 3, Air Distribution System Installation

Section 5, Placing the Air Conditioner on the Roof

Section 6, Installation of Air Conditioner

Note: Observe all warnings and cautions listed in the Installation Instructions supplied with the air conditioner.

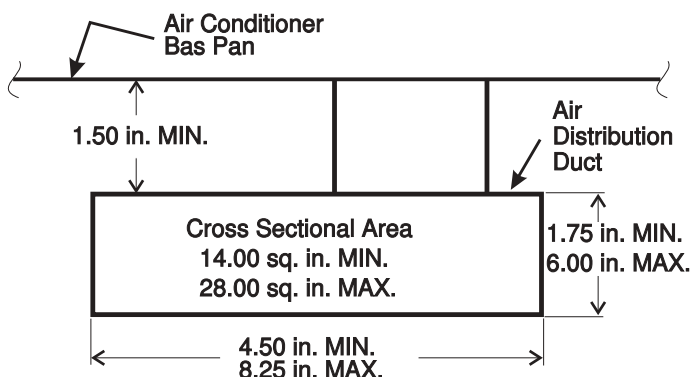
2. AIR DISTRIBUTION SYSTEM SIZING & DESIGN

The Installer of this air conditioner system must design the air distribution system for his particular application. Several requirements for this system **MUST** be met for the air conditioner to operate properly. These requirements are as follows:

- A. Roof cavity thickness must be 2.75" minimum. This distance is measured between roof and ceiling surfaces.
- B. The total cross-sectional discharge area of outlet duct from the air conditioner must be 14 sq. in. minimum.
- C. Duct sizing requirements as follows:

	min.	max.
Duct Depth	1.75 in.	6.00 in.
Duct Width	4.50 in.	8.25 in.
Total Duct Length	12 ft.	36 ft.
Duct Length (short run)	1/3 Total Length	

DISCHARGE AIR DUCT SYSTEM THAT RUNS FROM FRONT TO BACK OF VEHICLE THROUGH 14" X 14" OPENING



- D. Register requirements as follows:

	min.	max.
Distance from duct end	5 in.	8 in.
Distance between registers	24 in.	---
Total number required	4	8
Number required per run	2	---
Free area per register	14 sq. in.	

- E. The duct material must meet or exceed any agency or RVIA Standard that may be in existence at the time the RV is produced.

Note: It is the responsibility of the installer of this system to insure the ductwork will not collapse or bend during or after the installation.

- F. All discharge air ducts must be properly insulated to prevent condensation from forming on their surfaces or adjacent surfaces during operation of the air conditioner. This insulation must be R-7 minimum.

- G. Ducts and their joints must be sealed to prevent condensation from forming on adjacent surfaces during operation of the air conditioner.

Note: The Dometic Corporation will not be held liable for roof structural or ceiling damage due to improperly insulated or sealed ductwork.

- H. Return air opening must have 40 sq. in. minimum free area including the filter.

- I. Return air to the air conditioner must be filtered to prevent dirt accumulation on air conditioner cooling surface.

- J. Total system pressure must be between 0.12 to 0.65 in. W.C. This is to be determined with the air conditioner blower operating on High Speed and return air filter and grille in place.

Note: It is the responsibility of the installer of this air conditioner system to insure the structural integrity of the RV roof.

- K. The thermostat must be located on an inside wall of the RV, 54" above the floor. The thermostat must not be located near a heat source.

REVISION

Form No. 3103874.024 12/99

(Replaces 3103874.016) (French 3108304.001)

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3. AIR DISTRIBUTION SYSTEM INSTALLATION

It is the responsibility of the Installer of this System to review each RV floor plan and determine the following:

- A. Duct size
- B. Duct layout
- C. Register size
- D. Register locations
- E. Thermostat location.

A. Before preparing the ceiling opening, the type of system options must be decided upon. If a remote sensor is to be used, provision must be made for it. If the load shed option (Energy Management System feature) is to be used, wires must be run from the load shed control to the Dometic A/C. If a furnace is to be connected, wires must be run from the furnace to the Dometic A/C. **Read all of the following instructions before beginning the installation.**

B. ROOF AND CEILING OPENING PREPARATION

- 1) A 14-1/4" x 14-1/4" opening must be cut through the roof and ceiling of the RV. This opening must be located between the roof and reinforcing members.



WARNING

There may be electrical wiring between the roof and the ceiling. Disconnect all power supplies and the positive (+) terminal from the supply battery. Failure to follow this instruction may create a shock hazard.

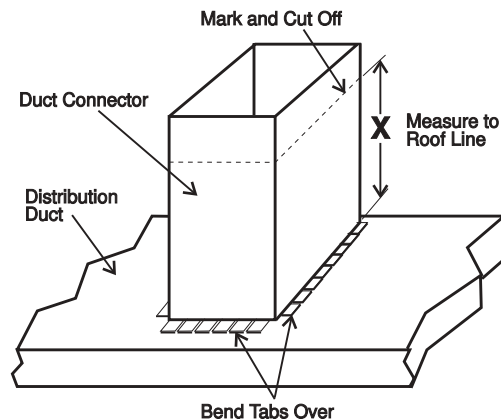
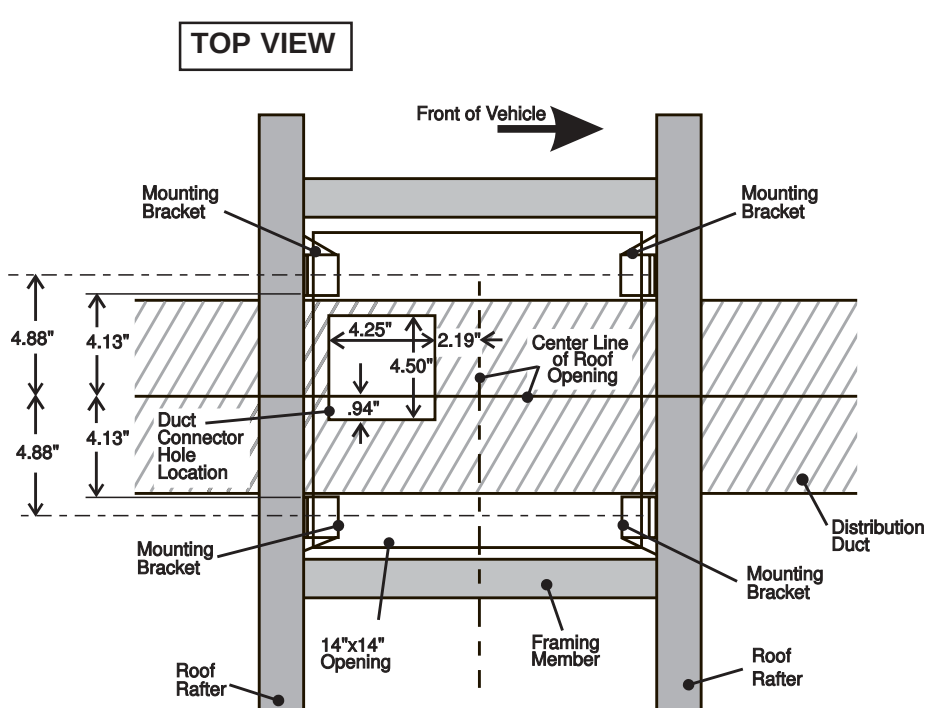
- 2) Mark a 14-1/4" x 14-1/4" square on the roof and carefully cut the opening.
- 3) Using the roof opening as a guide, cut the matching hole in the ceiling.
- 4) The opening created must be framed to provide adequate support and prevent air from being drawn from the roof cavity. Lumber 3/4" or more in thickness must be used. Remember to provide an entrance hole for power supplies, furnace wiring, 4-conductor telephone cable, remote sensing and load shed options as desired.
- 5) The 14-1/4" opening is part of the return air system of the Air Conditioner and must be finished in accordance with NFPA Standard 501C Section 2.7.
- 6) Route a copper 12 AWG, with ground, 115 VAC supply line from the fuse or circuit breaker box to the roof opening.
 - a. This supply line must be located in the front portion of the 14-1/4" opening.
 - b. The power supply **MUST** be on a separate 20 amp Time Delay Fuse or HACR Circuit Breaker.
 - c. Make sure at least 15" of supply wire extends into the roof opening. This ensures easy connection at the Junction Box.

- d. Wiring must comply with all National, State and Local Wiring Codes.
- e. Use a steel sleeve and a grommet or equivalent methods to protect the wire where it passes into the opening.

- 7) Route a dedicated 12 VDC supply line (18-22 AWG) from the RV's Converter or Battery to the roof opening.
 - a. This supply line must be located in the front portion of the 14-1/4" opening.
 - b. Make sure that at least 15" of supply wire extends into the roof opening.
 - c. **In a multiple zone installation, this wiring is required in only one of the 14-1/4" openings.**
- 8) If a **Remote Temperature Sensor** is to be used, the connector end must be routed to the roof opening of the system which it will control. Make sure that at least 15" of the sensor cable extends into the roof opening.
- 9) If a furnace is to be controlled by the system, the two furnace thermostat leads must be routed to the roof opening of the air conditioner that will control it. Make sure at least 15" of the furnace thermostat wires extend into the roof opening.
- 10) If an Energy Management System- EMS (load shed) is to be used with the control, two wires must be routed to the roof opening of the zone to be managed. The signal required for this function is a normally open relay contact. When the EMS calls for the compressor to shut off, the relay contacts should close. Make sure that at least 15" of the EMS wires extend into the roof opening.
- 11) Route a 4-conductor flat telephone cable from the **Comfort Control Center™** mounting position into the 14-1/4" roof opening. Make sure that at least 15" of the wire extends into the roof opening and 6" extend from the wall at the mounting position of the **Comfort Control Center™**.
- 12) In the event that other A/C's are to be installed (additional zones) an additional 4-conductor telephone cable must be routed to the **other A/C's**. Make sure that at least 15" of the wire extends into each of the roof openings. See Figure at the bottom of Page 3.

C. INSTALLATION OF DUCT CONNECTORS

- 1) **Location of Distribution Duct:** After the distribution duct length, width and height are determined, install in ceiling as required per your application. This duct should run through the 14" x 14" opening already prepared. This duct must be located, side-to-side, between unit tie-down brackets. (See Top View, Page 3).



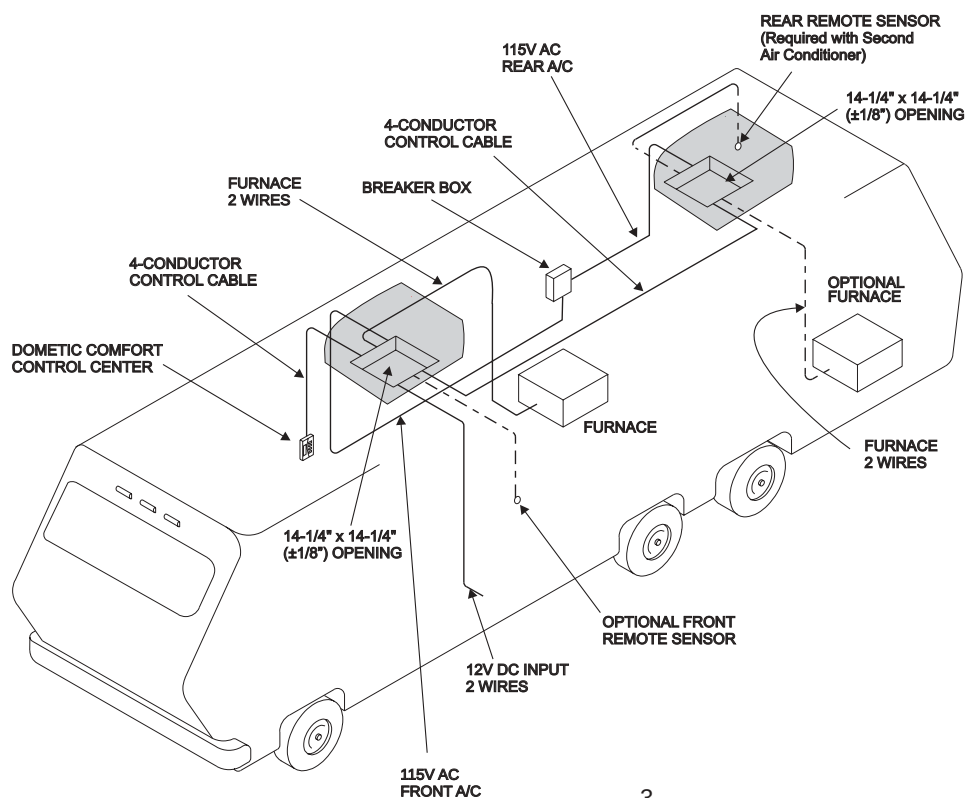
2) Installation of Lower Duct Connector:

- Cut a 4-1/4" x 4-1/2" hole in the top of distribution duct in location shown in Top View.
- Measure from the roof surface down to the top of distribution duct.
- Take the lower duct connector (sheet metal duct 4-1/2"W x 4-1/4"D x 8-1/2"H) provided with this Kit; measure and mark at distance just found.
- Cut duct connector at point marked.

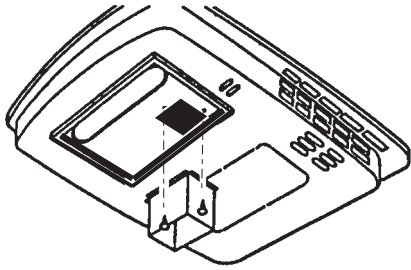
- Install duct connector into hole cut into distribution duct.
- Bend tabs at base of connector outward to lock firmly onto distribution duct.

3) Installation of Upper Duct Connector:

- Locate upper duct connector (sheet metal duct 4-3/8"W x 4-1/8"D x 2-1/2"H) and two Number 10 sheet metal screws.
- Tilt air conditioner on its side and place upper duct to base of air conditioner over the discharge air opening.

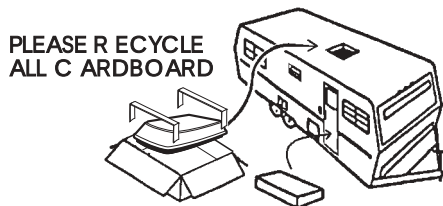


- c) With two No. 10 x 1/2" screws provided, attach the upper duct to the unit base pan. There are pre-punched holes located in the base pan for the screws to go into.

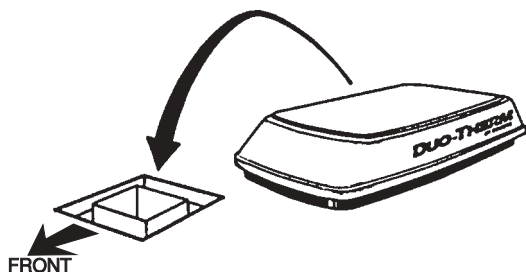


5. PLACING THE AIR CONDITIONER ON THE ROOF

- A. Remove the air conditioner from the carton and discard.



- B. Place the air conditioner on the roof.
C. Carefully lift and place air conditioner over 14" x 14" opening. Mate upper and lower duct connectors as you



set the air conditioner down.

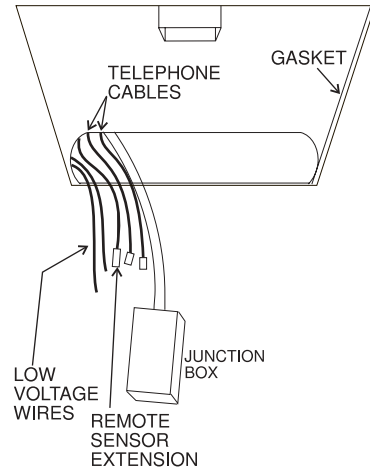
Note: Upper duct connector fits inside the lower duct connector.

This completes the work outside of the RV.

6. INSTALLATION OF AIR CONDITIONER

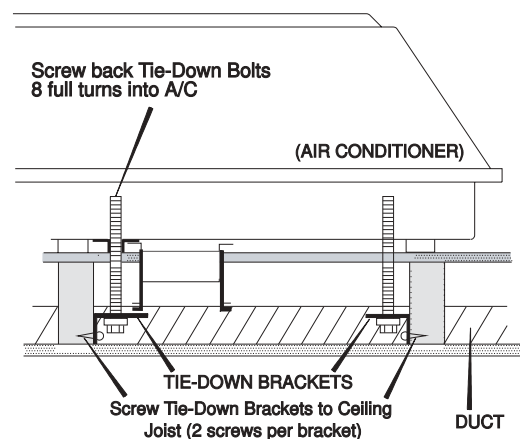
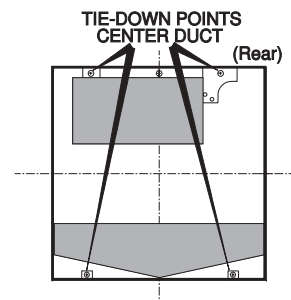
A. SECURING AIR CONDITIONER TO THE ROOF

- 1) Reach up into the return air opening of the air conditioner and pull the unit electrical cord down for later connection. Pull the low voltage wires, telephone cables and remote sensor extension cable down for later connection.



2) PREPARATION OF MOUNTING BRACKETS

- Place one each of 1/4-20 x 8" bolt through 1/4" flat washer and tie-down bracket.
- Start the bolts into air conditioner mounting points by hand approximately 8-10 turns.
- Secure tie-down brackets to ceiling joist with 1/4" x 1-1/4" screws provided (2 required per bracket).
- Evenly tighten mounting holes to a torque of 40 to 50 inch pounds. This will compress the roof gasket to approximately 1/2".



CAUTION

If the bolts are left loose, there may not be an adequate roof seal. If bolts are over-tightened, damage may occur to the air conditioner or base or ceiling template.

CAUTION

Care must be taken in the design and assembly of this device so that when the return filter component is installed, an interference is not possible.

B. RETURN AIR REQUIREMENTS

The return air system of the air conditioner is located within the 14 inch opening. When the Return Air Kit from Dometic is not used, the installer will be responsible for providing for the return air and choosing the method of finishing the 14 inch opening. This can be done in a manner which best fits the decor of the RV.

We do require that the return air openings to the air conditioner be a minimum of 40 sq. inches of free area and be filtered. This assembly must overlap the ceiling structure so that attachment to the ceiling is possible. On the supply side of the arrangement, insulation must be provided to prevent condensation of the return grille surface.

Return to the air conditioner installation Manual and complete Section 8, "Connection of Power Supply".
