

RV

RECREATIONAL VEHICLE AIR CONDITIONERS

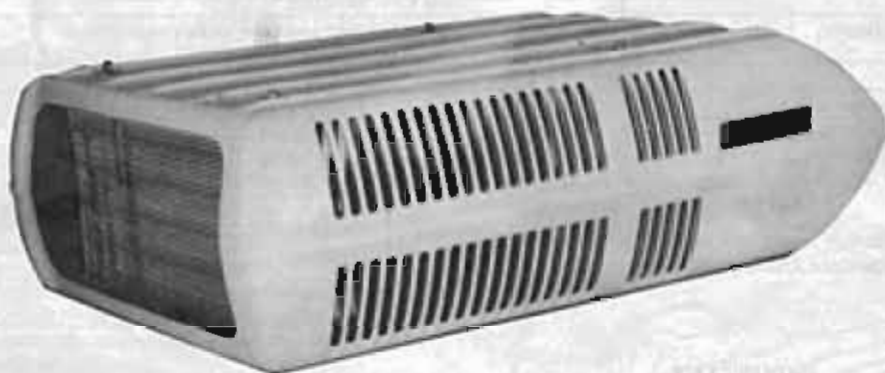
INSTALLATION INSTRUCTIONS

DELUXE MODELS 6747 MACH 1® ROTARY SERIES
6749 MACH® 3 ROTARY SERIES
MODELS 6744A MACH® I "EL" SERIES
6746A MACH® III "EL" SERIES

All With "ELECT-A-HEAT" Option

Used With 6723A713 "Heat/Cool" Ceiling Assemblies
6723A716
6723A714 "Cooling Only" Ceiling Assembly

MARCH -06-



(U.S. PATENT D213,559)

TABLE OF CONTENTS

| | | |
|--------------|--|----|
| Section I. | General Specifications and Notices | 2 |
| Section II. | Selecting a Location | 3 |
| Section III. | Installation | 4 |
| Section IV. | Installing the Ceiling Assembly | 7 |
| Section V. | Electrical Wiring, Completing the Installation and Wiring Schematics | 9 |
| Section VI. | Operation Check-Out | 11 |
| Section VII. | Additional Information | 12 |

SECTION I

| SPECIFICATIONS: Model Number | | MACH® I EL. 6744A SERIES | MACH® III EL. 6746A SERIES | MACH® I ROTARY 6747 SERIES | MACH® 3 ROTARY 6749 SERIES |
|---|------------------------|---|----------------------------------|----------------------------------|----------------------------------|
| BTU Capacity (nominal) | Cooling | 11,000 | 13,500 | 11,000 | 13,500 |
| | Heating ⁽¹⁾ | 5,600 | | | |
| Electrical Rating | | 115 Volts/60 Cycles/1 Phase | | | |
| Locked Rotor AMPs (cooling) | | 50.0 | 72.5 | 56.6 | 63.5 |
| Full Load AMPs | Cooling | 13.3 | 16.0 | 13.2 | 13.8 |
| | Heating ⁽¹⁾ | 16.0 | | | |
| RUNNING WATTS: (cooling) A.R.I. Standard Condition (80°F. DB/ 71°F. WB Indoor, 115° F. DB Outdoor at 115 VAC) | | 1460 | 1800 | 1420 | 1600 |
| RUNNING WATTS: (cooling) A.R.I. Maximum Condition (95° F. DB/ 71° F. WB Indoor, 115° F. DB Outdoor at 103.5 VAC) | | 1850 | 2350 | 1800 | 1950 |
| RUNNING WATTS: (heating) ⁽¹⁾ | | 1,800 | | | |
| Evaporator Air Delivery CFM | | Infinite adjustment between 330 CFM maximum and 150 CFM Minimum. | | | |
| Condenser Air Delivery | | Constant condenser air flow regardless of evaporator air flow. | | | |
| Generator Size | | See "Important" Notice Below | | | |
| Installed Weight (pounds) | | 127 | 133 | 115 | 118 |

⁽¹⁾ Optional ELECT-A-HEAT Heating Assembly.

NOTE!

All air conditioners tested and rated in accordance with A.R.I. Standard 250-74.

DIMENSIONS

| | | |
|--------------------|--------|---------|
| EXTERIOR SHROUD | HEIGHT | 12 1/2" |
| | WIDTH | 29" |
| | LENGTH | 43" |
| CEILING PLATE | DEPTH | 3" |

IMPORTANT

It is not the policy of the Coleman Company to size generators for application in Recreational Vehicles. However, when sizing generators, the total electrical power consumption in Watts must be determined and taken into consideration, such as:

A. Maximum running watts of the air conditioner at A.R.I. maximum operating conditions (See specifications).

B. Power consumption of electronic ovens, electric toasters, electric coffeemakers, television sets, refrigerators, lights, etc.

NOTE: *Generators do lose capacity under the following conditions: 1. Altitude increases above sea level. 2. Temperature increases above certain outdoor design temperatures. 3. Lack of maintenance.*

IMPORTANT NOTICE

These instructions are for the use of qualified individuals specially trained and experienced in installation of this type equipment and related system components.

Installation and service personnel are required by some states to be licensed. Persons not qualified shall not install this equipment nor interpret these instructions.

WARNING

IMPROPER INSTALLATION MAY DAMAGE EQUIPMENT, CAN CREATE A HAZARD AND WILL VOID THE WARRANTY.

IMPORTANT NOTICE

The size of recreational vehicle air conditioners is generally limited to about 13,500 BTUH (approximately one ton) of cooling.

This is due to the limited electrical power normally available in most trailer parks and/or economic limitations on the use of generators with enough capacity to handle large air conditioners.

If more than 1 ton of cooling is desired, then the use of two air conditioners is recommended.

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

The size of the vehicle, amount of window area, amount of insulation, direct exposure to the sun, outside temperature

and the number of people in the recreational vehicle may increase the heat gain to such an extent that the capacity of the air conditioner is exceeded.

As a general rule, air entering the air conditioner will be cooled about 15 to 20 degrees, depending on the outside temperature and humidity conditions.

For example, if the air entering the return air grilles in the air conditioner is 80° F., the air leaving the discharge grilles in the air conditioner will be 60° to 65° F.

As long as this temperature difference is being maintained between the return air and discharge air, the air conditioner is operating at its capacity. If desired inside temperature (normally 80° F.) cannot be maintained, then the heat gain of the R.V. is too great for the capacity of the air conditioner.

Parking the vehicle in a shaded area, keeping windows and doors shut and avoiding the use of heat producing appliances in the vehicle will help to reduce the heat gain. Where possible, the addition of insulation and tinted glass (especially in uninsulated vans) should be considered.

NOTE

The words "Shall" or "Must" indicate a requirement which is essential to satisfactory and safe product performance.

The words "Should" or "May" indicate a recommendation or advice which is not essential and not required but which may be useful or helpful.

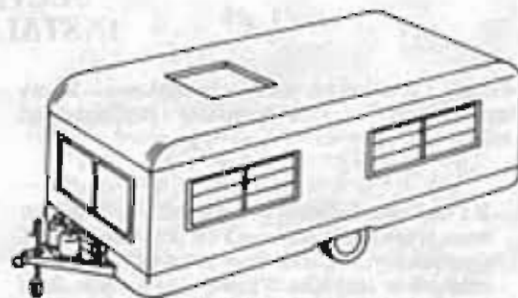
SECTION II SELECTING A LOCATION

Your Coleman RV air conditioning unit has been designed for use primarily in recreational vehicles. One or two units may be installed on the RV's roof, depending on the size and construction of the vehicle and the expected outdoor temperatures.

In general, roof mount air conditioners are installed at existing roof vent locations. When existing vents are used, they should be completely removed, with all other holes in the roof's skin thoroughly sealed before installation of the air conditioning unit is performed.

If there are no roof vents present and the installation is taking place on a TRAVEL TRAILER or MINI-HOME, a location should be selected that is near the door slightly forward of center. See Figure 1. For MOTOR HOME applications, a single unit or the forward of two units should be mounted within 9 feet of the driver's compartment. See Figure 2. When the air conditioner is installed on a VAN it should be located in the center of the roof, halfway between the front and rear of the vehicle, see Figure 3.

For application on Trucks with Campers, the unit should be located between 4 and 5 feet from the rear of the camper in order that the maximum cooling effect of the air conditioner is achieved.



TRAVEL TRAILER
Fig. 1



MOTOR HOME
Fig. 2



VAN
Fig. 3

IMPORTANT

Locate the position of the inner ceiling shroud and assembly to prevent interference with existing structural members such as; bunks, curtains, tracks, or room dividers. See Figure 4 for shroud dimensions. The Depth of the ceiling assembly shroud is 3", be sure to check clearance for door openings such as refrigerator, closets, or cabinets.

NOTE
For better weight distribution, the unit should be located between reinforcing frame members and centered from side to side on the top of the vehicle.

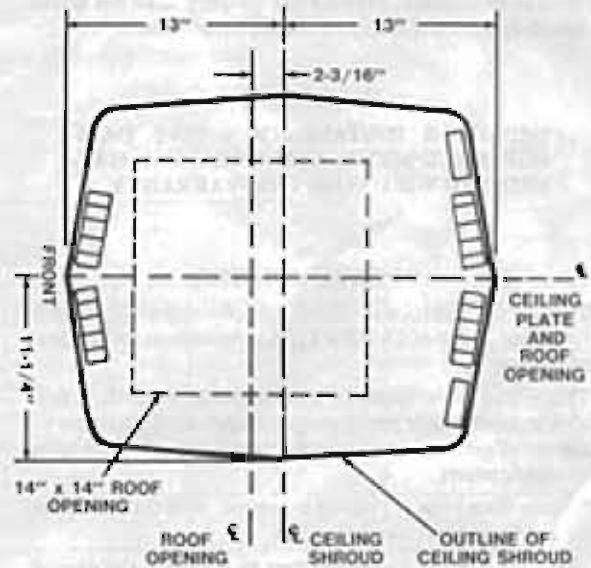


Fig. 4

IMPORTANT NOTICE

In all applications, the roof structure of the vehicle on which the air conditioner is to be installed, **MUST** be capable of supporting a minimum per unit weight of 140 lbs. in transit.

SECTION III
INSTALLATION

1. Selecting a location for your air conditioner is a very important step. Once it has been done a reinforced and framed 14" x 14" opening must be provided.
 - A. If a roof vent is already present and is to be used, it must, when removed, have a 14" x 14" opening. If the opening is smaller than 14" x 14" it must be enlarged to this size. When the opening exceeds 14 1/2" x 14 1/2" it will be necessary to field fabricate an additional plate to enclose around the air conditioning units roof flange.

1. Roof Vent Removal
 - a. Remove all screws that secure the vent to the roof
 - b. Remove the vent from the opening
 - c. Remove any and all trim that might have been left from the vent installation.
 - d. Carefully remove all caulking from around the roof vent opening.
 - e. Reinstall the screws in the holes used to secure the roof vent and seal (Screw holes on some vent installations may fall outside of RV air conditioner's mounting base).

B. If a roof vent opening is not used then a 14" x 14" hole will have to be cut in the roof of the vehicle using a sabre saw and/or sheetmetal cutter. See Figure 5.



Fig. 5

IMPORTANT NOTICE

Disconnect the battery cable from the positive battery terminal before performing any cutting to the vehicle, to prevent damage to the wiring and the battery. Locate the 14" x 14" opening before cutting to clear top structural members, crossbeams, any plumbing and/or electrical apparatus. When a hole is to be cut in the roof, an opening will also have to be cut to match in the interior paneling, upholstery and/or carpeting. Be extremely careful using a drill or saw to cut the opening in the roof if the interior is carpeted (snagging could occur). See Figure 6.

**DANGER
SHOCK HAZARD**

IF 115 VAC WIRING IS PRESENT, BE SURE WIRING IS CLEAR OF AREA WHERE THE OPENING IS TO BE CUT.



Fig. 6

2. When the opening in the roof and the interior ceiling are the correct size, a frame will have to be constructed around the opening between the roof and the interior ceiling panel with 4 wooden blocks 1" wide, a minimum of 1 3/4" (size to actual depth), and 15" long, see Figure 7 & 8. Provide a hole through one of the blocks in the direction the electrical power supply wiring is to be routed.
3. Route the 115 volt AC power supply wiring through the hole in the frame, into the 14" x 14" opening.



Fig. 7

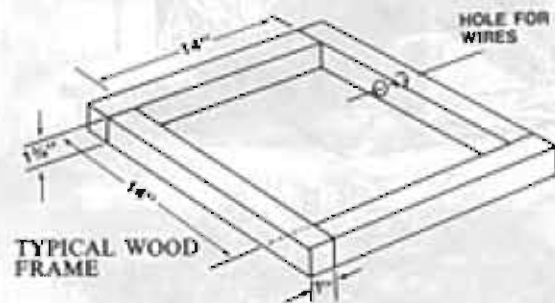


Fig. 8

NOTE

This frame MUST space the roof and interior ceiling apart a minimum distance of 1 3/4" and must seal off all openings between the 14" x 14" hole and the roof cavity.

If a center beam is present, a modified frame will have to be constructed. ALL OPENINGS MUST STILL BE SEALED OFF BETWEEN THE 14" x 14" hole and the roof cavity.



FRAME CONSTRUCTION WHEN CENTER BEAM IS PRESENT
Fig. 9

- The roof air conditioning unit must be mounted as near level from front to rear and side to side as is possible when the vehicle is parked on a level plane. If the vehicle roof is sloped in any direction, an exterior leveling shim will need to be added to make the air conditioning unit level. Figure 10 is a type of shim that can be used. Once the exterior surface has been leveled some additional shimming may have to be done to the interior ceiling so that the ceiling and the roof air conditioning unit will mate properly.

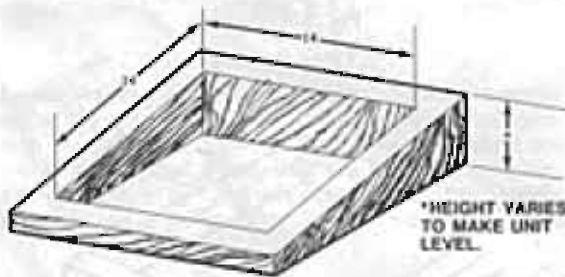


Fig. 10

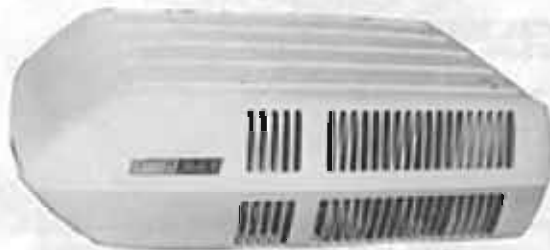
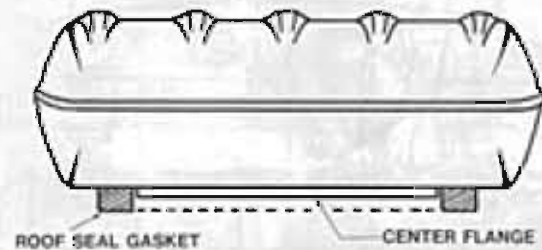


Fig. 11

- Remove the carton and packaging from the roof air conditioning unit.

- Lift the air conditioning unit off its wooden skid and set directly on the prepared 14" x 14" roof opening with the pointed end of the shroud facing the front of the vehicle and the condensing coil facing the rear. The air conditioning unit may be lifted by its plastic shroud. See Figure 11.
- A centering flange, on the underside of the air conditioning unit, must be centered over the 14" x 14" roof opening. See Figure 12 & 13.



RV UNIT FRONT VIEW
Fig. 12

IMPORTANT NOTICE

If the roof of the RV is smooth and flat the roof seal gasket will provide a sufficient seal between the air conditioner and the roof when secured properly. However, on roofs that are irregular, ribbed, curved and/or rough, a sealant may need to be added around the roof opening to prevent water from entering the interior of the RV. See Figure 13.

NOTE

An additional gasket package, Coleman P/N 6707-6481, is available for Air Conditioner installations on RIBBED roofs, such as those commonly found on Vans.

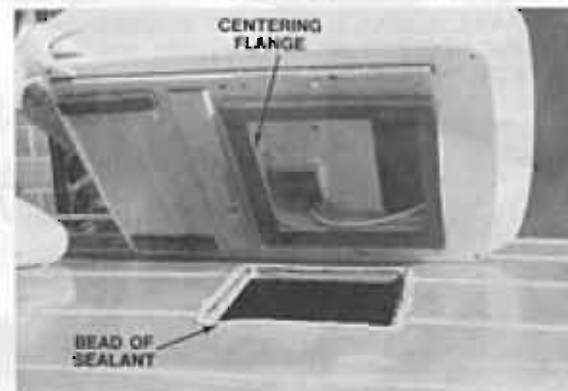


Fig. 13

SECTION IV INSTALLING THE CEILING ASSEMBLY

Note

The optional Elect-A-Heat is intended to take the chill out of the indoor air when the air is a few degrees too cool for comfort. When properly sized, the Elect-A-Heat is an effective "chill chaser". It is not a substitute for a furnace.

1. Remove the plastic tie that is securing the electrical conduit to the bottom of the roof air conditioning unit. See Figure 14. Pull the electrical conduit down from the roof air conditioner through the opening in the roof and let hang.
2. Uncarton the ceiling assembly.
3. Remove the two control panel knobs and the two screws that secure the ceiling assembly shroud to the ceiling assembly. See Figure 15.
4. Remove the shroud from the ceiling assembly.
5. If installing a 6723A713 or 6723A716 Heat/Cool Ceiling Assembly (Only) you will need to remove the Elect-A-Heat assembly from the ceiling assembly. This is done by removing the (6) screws around the edge of cover plate. See Figure 16, and disconnect the heater plug. See Figure 17.

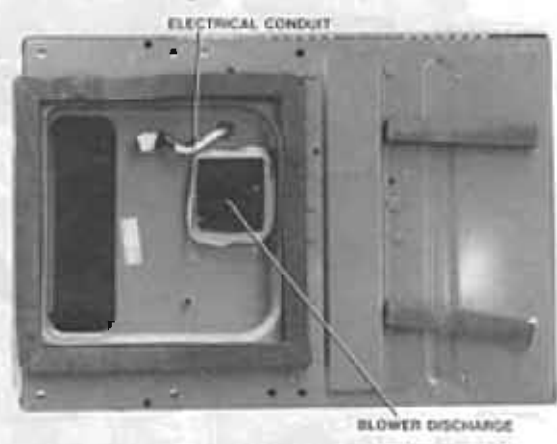


Fig. 14

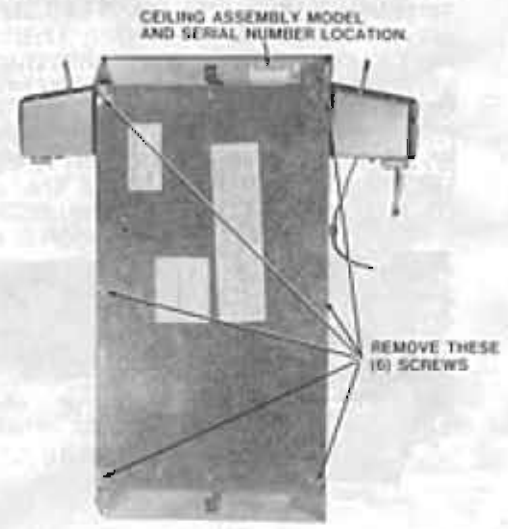


Fig. 16

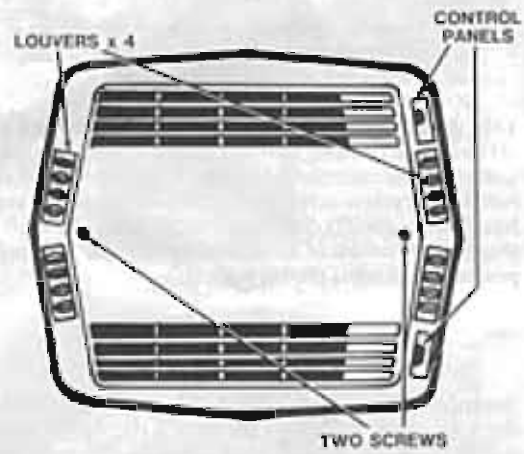


Fig. 15

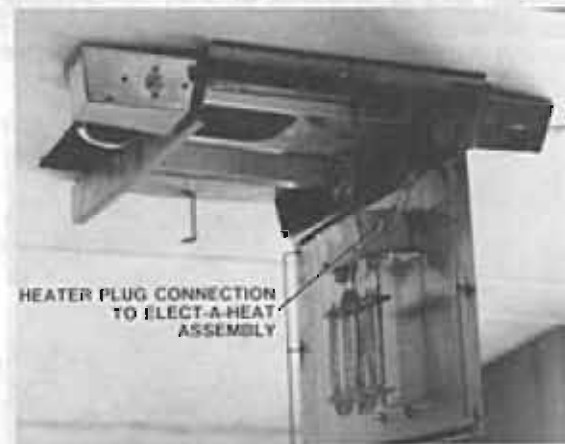
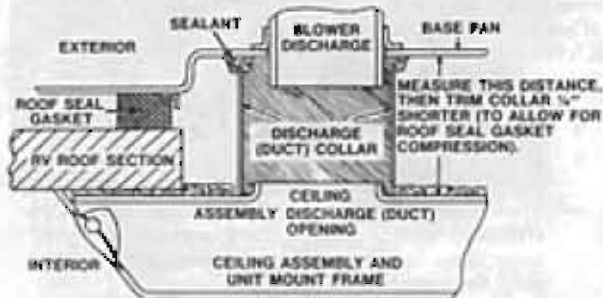


Fig. 17

6. Measure the distance from the blower discharge opening in the bottom of the roof unit to the interior ceiling line. See Figure 18. Take the aluminum duct collar and trim its height to this measurement less $\frac{1}{4}$ ". Tape around the seam of the duct collar from top to bottom, both inside and outside after it has been trimmed.



DISCHARGE (DUCT) COLLAR ASSEMBLY DETAIL

Fig. 18

7. Place the untrimmed (factory sheared) end of the duct collar over the ceiling assembly duct discharge opening flanges and position it around the opening. See Figure 19.

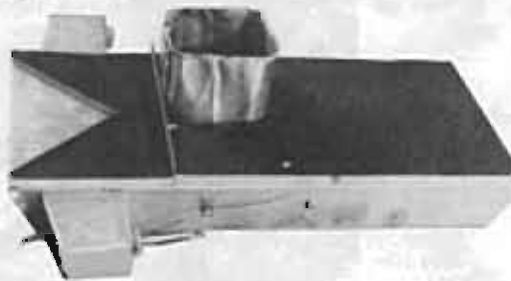


Fig. 19

8. Lift the ceiling assembly into space at the roof opening with the duct collar lined with the blower discharge opening and push the duct collar firmly into the sealant surrounding the blower discharge opening. See Figure 18. Also route the 115 volt power supply wire down through the ceiling assembly. See Figure 20.



Fig. 20

IMPORTANT NOTICE

Before making the plug connection, observe that the "ridged" section of the plug is aligned and matched with the "ridged" receptacle section. **DO NOT USE UNDUE FORCE** and make sure the lock-in tabs are snapped in place.

IMPORTANT NOTICE

To prevent a loss of discharge air, the duct collar must have an air tight seal at the roof unit's blower discharge opening and at the ceiling assembly's blower discharge opening.

9. Take the three long bolts and washers that are provided and secure the ceiling assembly to the roof unit. See Figure 21.

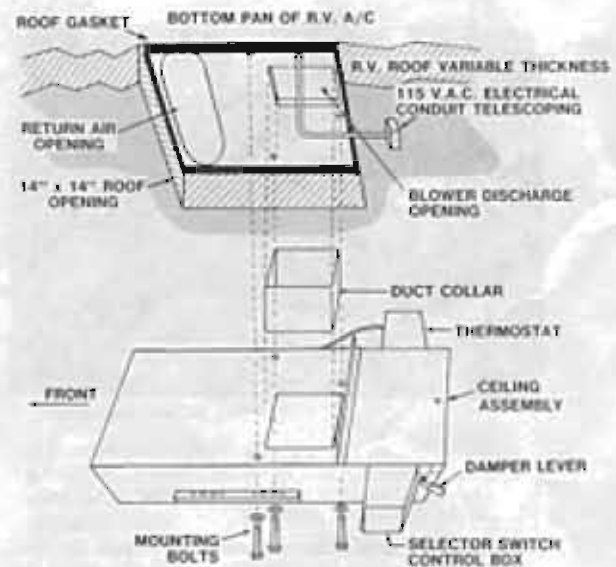


Fig. 21

NOTE

Use a rotating, tightening procedure (similar as is practiced for car tire rim mounting). This will assure even compression and seal of the gasket.

Take the electrical conduit hanging down from the bottom of the air conditioning unit and telescope it up into the bottom of the air conditioning unit until you can plug it easily into the receptacle at the back of the selector switch control box (See Figure 22). Seal around gap, where conduit telescopes into bottom of air conditioning unit, with prestite permagum or other pliable sealant.



Fig. 22

SECTION V ELECTRICAL WIRING AND COMPLETING THE INSTALLATION

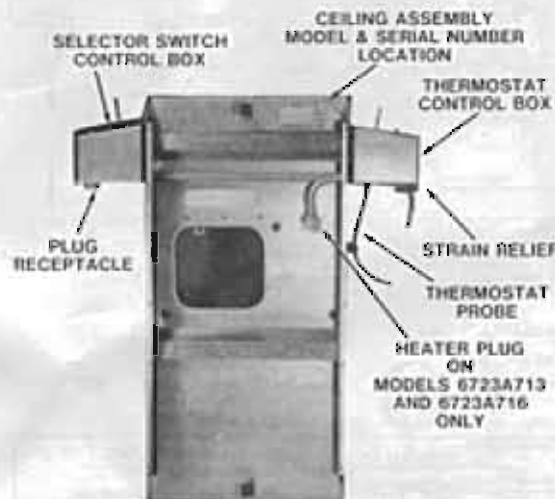
DANGER — SHOCK HAZARD

MAKE SURE THAT THE POWER SUPPLY TO THE UNIT IS DISCONNECTED BEFORE PERFORMING ANY WORK ON THE UNIT TO AVOID THE POSSIBILITY OF SHOCK INJURY OR DAMAGE TO THE EQUIPMENT.

1. Remove the screws that hold the thermostat electrical box cover and remove the cover, See Figure 23.

NOTE

The supply wire to the 14" x 14" roof opening must be the adequate type. Refer to the Supply wire chart on page 10. Follow applicable state and local wiring codes. Be sure that the wire extends into the roof opening far enough that it can be easily attached to the ceiling assembly.



CEILING PLATE
Fig. 23

2. Take the 115 volt AC supply wiring that was routed into the 14" x 14" opening earlier and place into ceiling assembly control through the strain relief that is provided, See Figure 20.

DANGER

WHEN USING NON-METALLIC SHEATH SUPPLY CABLES (ROMEX, ETC.) STRIP SHEATH BACK TO EXPOSE 4-6 INCHES OF THE SUPPLY LEADS; STRIP THE INDIVIDUAL WIRE LEAD ENDS FOR WIRE CONNECTION (ABOUT 3/8" BARE WIRE). INSERT THE SUPPLY WIRES INTO THE ELECTRICAL CONNECTOR CLAMP. SHEATH MUST PROTRUDE PAST THE CLAMP BUSHING INSIDE OF BOX AS ILLUSTRATED. MAKE SURE SHEATH CABLE IS CENTERED IN CLAMP BEFORE TIGHTENING UP ON IT. DO NOT OVERTIGHTEN!! THIS COULD RESULT IN PINCHING THROUGH THE PLASTIC WIRE INSULATION AND CAUSE SHORTING OF "HOT" WIRES TO GROUND (SHOCK HAZARD). THE CLAMP IS INTENDED FOR STRAIN RELIEF OF THE WIRES, SLIGHT PRESSURE IS USUALLY SUFFICIENT TO ACCOMPLISH THIS.

IF OTHER THAN NON-METALLIC CABLES ARE USED FOR SUPPLY CONDUCTORS, APPROPRIATE STRAIN RELIEF CONNECTORS OR CLAMPS SHOULD BE USED.

IN NO CASE SHOULD CLAMPING OR PINCHING ACTION BE APPLIED TO THE INDIVIDUAL SUPPLY LEADS (NEUTRAL AND "HOT" WIRE).

3. Connect the 115 volt power line to the black and white pigtail wire found in the control box using two wire nuts. Important: Connect black wire to black wire and white wire to white wire. Install the 115 volt ground wire (green or bare copper) to the green headed screw in the inside of the control box, See Figure 24.

DANGER SHOCK HAZARD

TO PREVENT THE POSSIBILITY OF SHOCK INJURY, THE WHITE WIRE MUST BE CONNECTED TO NEUTRAL IN THE SERVICE BOX ENTRANCE AND THE MECHANICAL GROUND MUST BE CONNECTED TO A GROUNDING LUG EITHER IN THE SERVICE BOX OR THE MOTOR GENERATOR COMPARTMENT.

4. Using electricians tape, tape the wire nuts securely to the wires. See Figure 24.

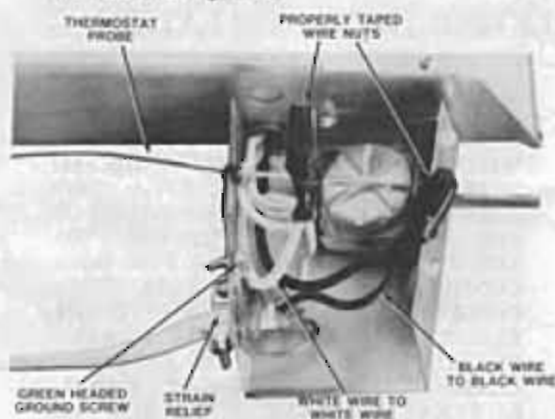


Fig. 24

5. Tighten the strain relief clamp to secure the 115 volt supply wire in place. See Figure 25. Coil the two connected wire ends and place inside the control box. Re-install the control box cover. Be sure the thermostat probe is in position, routed through the rubber grommet and not touching any metal. See Figure 20.

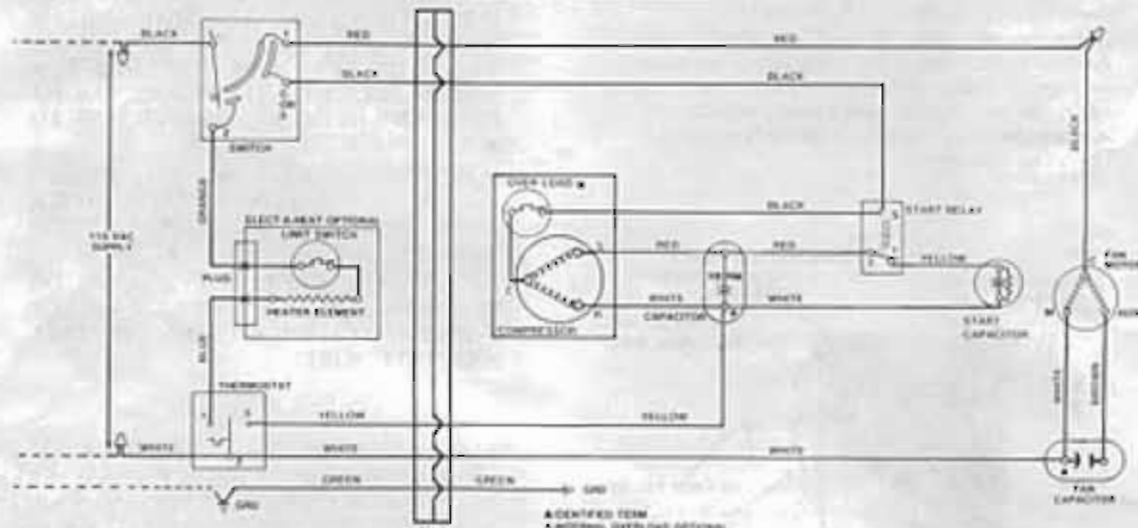


STRAIN RELIEF
Fig. 25

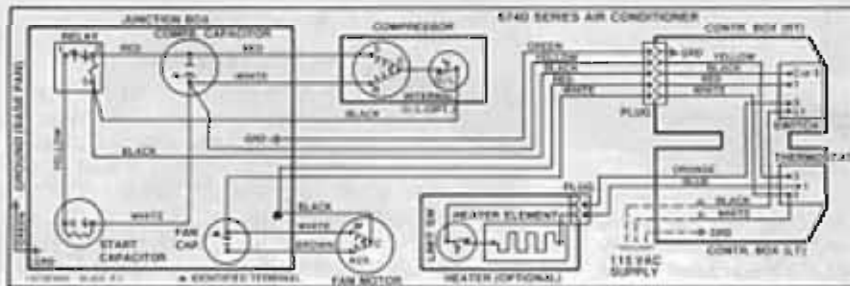
NOTE

If a "cooling only" ceiling assembly is being installed disregard step 6 and proceed to step 7.

LADDER TYPE WIRING DIAGRAM



| SUPPLY WIRE SIZES | |
|------------------------------|--------------------|
| Black, Red, White Size (in.) | Circuit Protection |
| #12 | 15 AMP |
| #10 | 20 AMP, Time Delay |



THE COLEMAN CO., INC.
Wichita, Kansas 67201

SUPPLY WIRES — 12 AWG min.
USE TIME DELAY FUSES OR H.A.C.S. CIRCUIT BREAKERS
Max. 30 AMP

Check all wiring for correct connections and terminal spacing before operation.

DANGER-SHOCK HAZARD: Disconnect power supply before servicing any electrical compartment or components.

AVIS: Débranchez les fils électriques avant l'entretien et le service de tout compartiment ou organe électrique.

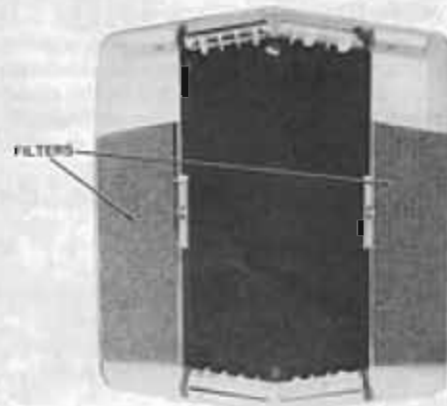
LT700-12-83

6. Reinstall the Elect-A-Heat assembly by first; connecting the heater plug of the ceiling assembly to the heater receptacle in the Elect-A-Heat assembly, See Figures 17, and second; securing it to the ceiling assembly with the (6) screws removed earlier. See Figure 26.



Fig. 26

8. Reinstall the ceiling assembly shroud and secure with the two screws taken out earlier. Put the control knobs back on the ceiling assembly and turn the selector switch to "OFF".



CEILING ASSEMBLY SHROUD

Fig. 27

7. Make sure the non-allergenic natural fiber filters are in position in the ceiling assembly shroud. See Figure 27.

SECTION VI OPERATIONS CHECK-OUT

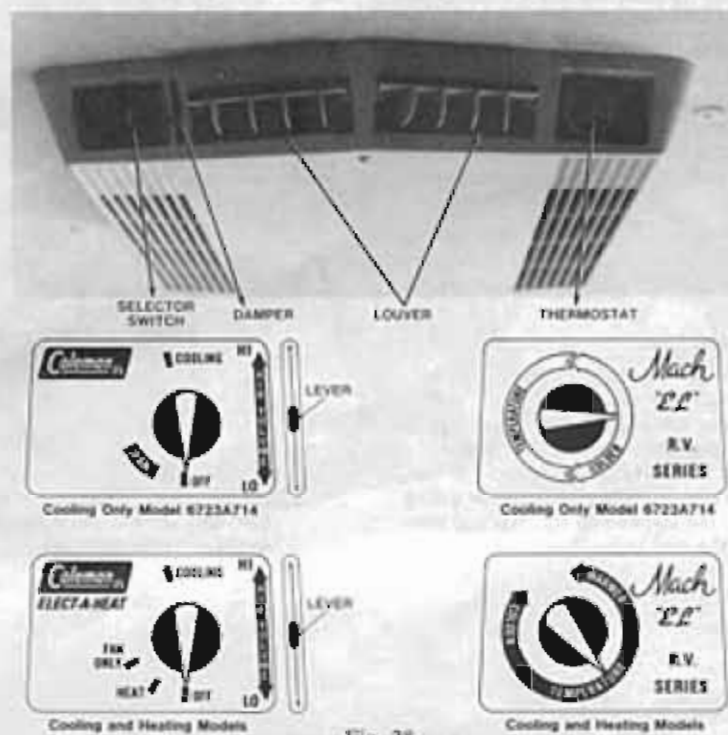


Fig. 28

NOTE

Make sure the selector switch is in the "OFF" position. Refer to Fig. 28 for this section.

1. Turn "on" the 115 volt power supply to the RV.
2. To check the FAN operation turn the selector switch to FAN ONLY on the Elect-A-Heat models or to either of the two Fan positions on the 6723A714 model. When this is done the fan should run continuously. The thermostat does not operate when the air conditioner is in Fan operation.
3. To check the cooling operation turn the selector switch to "Cooling" position and the thermostat to "Colder". The fan and compressor should both run.

NOTE

For Compressor operation the room temperature must be above the lowest thermostat setting (Approximately 58°F.) if the temperature is below this

setting the compressor will not start. Also, in the cooling mode the thermostat controls only the compressor operation.

4. To check a model with Elect-A-Heat, turn the selector switch to "Heat" and the thermostat to "Warmer". Check the Heat output. (To shorten the check out time, push the damper handle to "Air Volume Lo").

NOTE

For heating, the thermostat is factory adjusted to cycle "off" when the return air temperature is between 80° and 85°F. If the electric heat does not come on, it is likely that the coach temperature is over 80°F.

To actuate the heater for operation check out under this condition, run the air conditioner for five to ten minutes (to "cold-soak" the air distribution chamber), then follow through with the heater check-out.

SECTION VII ADDITIONAL INFORMATION

A. Important NOTICE TO THE INSTALLER

OEM. — Please see that the Customer Envelope accompanies the air conditioning unit when it leaves the factory.

INSTALLER AND/OR DEALER — Please see that the Customer Envelope is presented to the owner and that the owner is informed of the OPTIONAL four (4) year compressor contract available at a very nominal cost from The Coleman Company, Inc. An application is available on the back of the Operation and Maintenance Instructions.

B. Inquires about the unit — Inquiries to your Coleman Representative or The Coleman Company on this air conditioner should contain both the model number and the serial number.

C. Locating the Serial and Model Numbers

1. The roof air conditioning unit — These numbers may be found on the bottom of the unit, see Figure 29, (the ceiling assembly shroud and distribution plate will probably need to be lowered in order to see The I.D. Label). The Model and Serial number can also be obtained from the rating plate located at the left end of the exposed condensing coil on the roof unit.

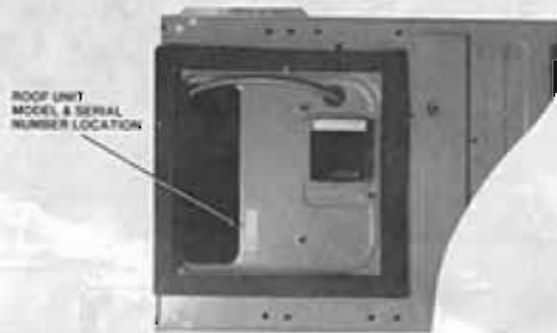


Fig. 29

2. The ceiling assembly unit — The model and serial number can be found on I.D. Label located on the ceiling assembly plate. See Figure 23. The ceiling assembly shroud will need to be removed in order to obtain these numbers.

The Coleman Company, Inc.

HEATING AND AIR CONDITIONING GROUP
WICHITA, KANSAS 67201

Roof A/C



REPAIR PARTS LIST

FOR

9330X713

9330X714 ✓

9330X715

9330X716

CEILING ASSEMBLIES

**RV Products
A Division of Airxcel, Inc.
P.O. Box 4020
Wichita, KS 67204**

9330X713, 9330X714 ✓
9330X715, 9330X716

