ROOF AIR CONDITIONING

ROOF-MOUNTED AIR CONDITIONER –

Your Coleman 13,500 BTU capacity air conditioner operates on 115 volts and is controlled from the panel located in the ceiling assembly. There are four controls on the ceiling assembly that help you control the air conditioner. They are as follows:

1. **Selector Switch** (system switch) – The selector switch determines which mode of operation the air conditioner will be in; "OFF," "LOW FAN," or "HIGH FAN," or "LOW COOL," or "HIGH COOL," or "LOW HEAT." (See figure 179.)

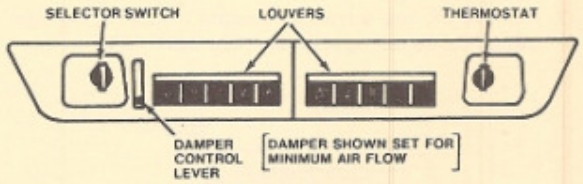


Figure 179 – Control Panel

NOTE: The rear air conditioner operates only when the motor generator set is operating. It will not work on city electrical power.

2. **Thermostat** (temperature control) – In the cooling mode the thermostat regulates the "ON" and "OFF" temperature setting at which the compressor will operate. The thermostat also controls the "ON" and "OFF" temperature settings of the heater assembly.
3. **Air Volume Regulator** (damper) – The damper regulates the volume of air that your air conditioner will be handling when it is in operation. When the lever is in the "up position" maximum air volume is achieved; in the "down position" minimum air volume is the result.
4. **Louvers** – The louvers are located at both ends of the ceiling assembly shrouds and are used in directing the discharge air from the unit.

NOTE: 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. The Elect-A-Heat is an effective "chill chaser." **It is not a substitute for a furnace.**

In addition to these controls your Coleman RV air conditioner also has other features that are designed for your personal comfort. The long life non-allergic natural fiber filters can be cleaned and reused, and completely filter the circulated air when the air conditioner is in operation.

NOTE: 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 the discharge air, the air conditioner is operating at its capacity. If the desired inside temperature (normally 80°F.) cannot be maintained, then the heat gain is too great for the capacity of the air conditioner.

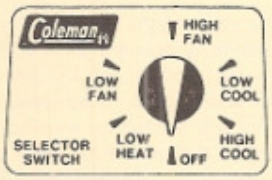
Parking the vehicle in a shaded area, keeping windows and doors shut and avoiding the use of heat producing appliances in the vehicle will help to reduce the heat gain.

ROOF AIR-CONDITIONER OPERATION:

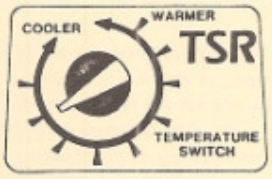
For Air Recirculation Only (see figure 180).

1. Turn the selector switch to the "LOW FAN" or "HIGH FAN" position for desired maximum air flow.
2. Adjust the damper lever to the desired volume of air flow.
3. Position the louvers to the desired direction the discharge air is to flow.

NOTE: The thermostat does not operate when the selector switch is set on "LOW FAN" or "HIGH FAN."



COOLING AND HEATING MODELS



ALL MODELS

Figure 180 – Selector Switches

For Cooling (see figure 180).

1. Turn the selector switch to the "LOW COOL" or "HIGH COOL" position.
2. Rotate the thermostat (temperature control) switch to the position that is the most comfortable to you. The compressor will automatically turn on when the temperature of the air entering the air conditioner rises a few degrees above the setting you have selected. When the temperature of the air entering the air conditioner drops below the selected setting, the compressor will automatically turn itself off. The air conditioner, while in the cooling mode, will continue to cycle the compressor on and off in the above mentioned fashion until the selector switch is turned to another mode of operation.
3. Adjust the damper lever to the desired volume of air flow.
4. Position the louvers to the desired direction the discharge air is to flow.

For Heating (See figure 180).

NOTE: The 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. The Elect-A-Heat is an effective "chill chaser." **It is not a substitute for a furnace.**

ROOF AIR CONDITIONING (Continued)

1. Turn the selector switch to the "LOW HEAT" position.

NOTE: At "LOW HEAT" fan operates at low speed with heat output at maximum.

2. Rotate the thermostat (temperature control) switch to the position that is the most comfortable to you. The heater will automatically turn on when the temperature of the air entering the air conditioning unit drops below this setting a few degrees and automatically turns off when the temperature of the air entering the air conditioner rises a few degrees above this setting. The heater will continue to cycle on and off in this fashion until the selector switch is turned to another mode of operation
3. Adjust the damper lever to the desired volume of air flow.
4. Position the louvers to the desired direction the discharge air is to flow.

NOTE: The temperature of the discharged air can be controlled to some extent by opening and closing the damper and louvers. When the damper and louvers are closed the warmest, localized discharge air is achieved. Fully opened damper and louvers will throw the warm discharge air to the back and front of the vehicle for more efficient circulation and faster warm-up. Although the air temperature is lower with the damper and the louvers fully opened, the heating capacity is still the same.

Damper Operation — When relative humidity conditions are high, set the air damper at either a medium or high setting. In high humidity conditions we do not recommend operation of the air conditioner with the damper in the down position (minimum air) as this may cause the cooling coil to become iced-up and the air conditioner to stop cooling.

Operation During Cooler Nights (cooling operation) — It is important, when the outdoor temperature drops in the evening or during the night to below 75°F., that the thermostat (temperature control) be set at a midpoint between "Warmer" and "Colder." If the setting is at "colder," the cooling (evaporator) coil may become iced-up and stop cooling. During the day when the temperatures have risen above 75°F., reset the thermostat switch to the desired setting.

NOTE: Should icing-up occur, it is necessary to let the cooling (evaporator) coil defrost before normal cooling operation is resumed. During this time operate the unit in the "HIGH FAN" position with the dampers at maximum air flow. When increased or full air flow is observed, the cooling coil should be clear of ice.

Roof Air Conditioner Maintenance — Maintenance needed to keep the unit in good care is minimal. In fact about the only thing you, the owner, must take care of is the cleaning and replacement of the filter. The filter is a vital part of every air conditioning system. If the filters are not cleaned at regular intervals they may become partially clogged with lint, dirt, grease, etc. A clogged filter will produce a loss of air volume and may eventually cause an icing-up of the cooling (evaporator) coil.

IMPORTANT NOTE: DO NOT OPERATE YOUR AIR CONDITIONER FOR EXTENDED PERIODS OF TIME WITHOUT THE FILTER INSTALLED. An even more serious condition occurs when the air conditioner is operated without a filter. When this happens, the lint, dirt, grease, etc. that are normally stopped by the filter are now accumulating in the cooling coil. This not only leads to a loss of air volume and a possible icing-up of the cooling coil, but could also result in serious damage to the operating components of the air conditioner. We recommend that the filters be cleaned or changed at least every two weeks when the air conditioner is in operation.

Cleaning and/or Changing Roof Air Conditioner Filters:

1. Remove the selector switch and thermostat knobs from ceiling assembly.
2. Remove the two screws that secure the ceiling assembly shroud to the ceiling assembly (see figure 181).

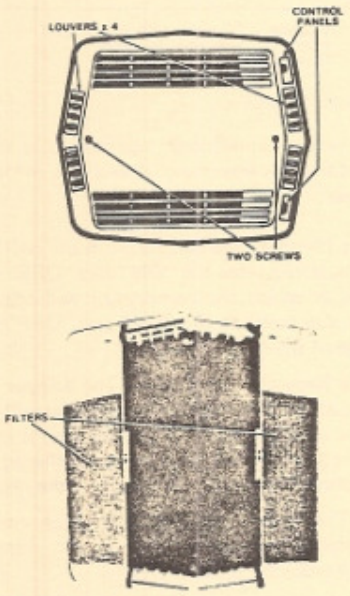


Figure 181 — Filter Removal

3. Lower the shroud and gently slide it off the control knob shafts and damper lever.
4. Take filters out and either clean or exchange with other filters.

NOTE: If replacement filters are necessary, the filters can be purchased from REVCON Authorized Service Centers or from The Coleman Company directly. It is recommended that spare filters be carried with the RV at all times to replace worn, torn, or deteriorated filters.

5. Replace the filters and reinstall the ceiling shroud in reverse order starting with step 4.

Roof-Mounted Air-Conditioner Service — All electrical work and/or inspection should be performed only by qualified service personnel. Contact REVCON or your nearest Coleman Service Center if electrical problems should arise. If the air conditioner continues to trip off the circuit breaker, have an electrician check the starting amperage and running amperage on the unit.

ROOF AIR CONDITIONING (Continued)

If all electrical power to the air conditioner is normal, but neither the fan nor the compressor will operate, the connector plug located behind the ceiling assembly control box should be checked to determine whether it is faulty.

On the heating-cooling air conditioner models, if all electrical power to the unit is normal and fan runs but you never get any heated air, then the electrical plug to the heating unit should be checked for a secure connection. If this does not correct the malfunction, the heating thermostat or limit switch may be faulty.

The air conditioner should be inspected periodically to be sure that the bolts which secure the unit to the roof are tight and in good shape. Also, an examination of the plastic shroud covering the air conditioner on the top of the roof should be made periodically. Be sure the four acorn nuts are snug and holding the shroud to the air conditioner. While examining the tightness of these acorn nuts, also examine the shroud to be sure it has not developed cracks or suffered damage from impact.

DANGER: DISCONNECT THE POWER SUPPLY TO THE UNIT BEFORE SERVICING TO PREVENT A SHOCK HAZARD OR POSSIBLE INJURY FROM MOVING PARTS.

The blower drive motor on some units, may include oiling cups at the top of the motor. There is no requirement to oil the journals under normal operating conditions. However, if lubrication to the unit is desired, use only SAE 20 non-detergent type oil. DO NOT OVER OIL, three to four drops in each oil hole once a year is sufficient.