

CENTRAL AIR CONDITIONING

This month's article is compiled from information provided by RVP, who supplies our central air conditioners. It is taken from their Frequently Asked Questions section regarding the performance and maintenance of their system.

Question:

My air conditioner does not cool like it did when it was new. What should we check?

Answer:

There are several possible answers to this question:

- The filters could be dirty. This is a very probable cause and can be easily corrected by replacing the filter.
- The evaporator coil could be covered with lint, dirt or other debris. Dirt will reduce the airflow and slow down the heat transfer from the air to the refrigerant. If this condition exists, you should contact an authorized service center to have the condenser cleaned.
- Condenser coil could be coated with dirt, leaves or lint. When the condenser airflow is obstructed, the internal pressures and temperatures of the air conditioner go up and the transfer of heat to the outside air is hampered. The condenser coil may be washed out with a garden hose or blown out with compressed air. Be sure to remove all electrical power and protect the fan motor and electrical controls from getting wet.
- The condenser airflow could be recirculating. Make sure the path of airflow into and out of the air conditioner is not obstructed.
- The heat gain (the transfer of outside heat to the interior living area of your vehicle) may be greater than the ability of the air conditioner to remove it. Several factors influence heat gain, including the outside temperature and humidity, length of the vehicle, type of vehicle, insulation value, slideouts, and the number of windows.

Question:

How can I tell if my air conditioner is cooling to the best of its ability?

Answer:

After proper airflow has been determined satisfactory and the coil surfaces have been checked and cleaned, the following cooling performance test may be run. Check the air temperature drop across the evaporator coil as follows:

1. Start the air conditioning unit and allow it to run for at least one-half hour – possibly longer if it is warm outside.
2. With a standard analog or digital thermometer, measure the temperature of the air immediately entering the return air grille of the air conditioner.
3. Subtract from this temperature the temperature of the air immediately leaving the supply air louvers. Use the closest discharge register and make sure the temperature-sensing device is measuring supply air temperature only.
4. An air conditioner that is performing to its design specifications should have a temperature difference of approximately 16° F to 22°F when both compressors are operating. Slightly lower temperature differences are possible under extremely humid conditions, as the unit will have to run longer to remove moisture from the air.
5. Temperature differences greater than 22° are possible in warm, dry weather.

Question:

What type of maintenance does my RV air conditioner require and how often should I perform it?

Answer:

We recommend that you adhere to the following maintenance program to make sure you get the best possible performance:

- Check the filters at least every two weeks when the air conditioner is in operation. Running the unit with dirty or clogged filters will decrease the flow of air across the cooling (evaporator) coil, potentially causing the coil to freeze up. If the air conditioner is running for long periods of time with dirty/clogged filters, a potentially expensive cleaning of the evaporator coil by qualified service personnel may be necessary.
- Clean the outside (condenser) coil at least once a year. The condenser is located behind the louvered body panel on the right side of the coach. The condenser is the large, black rectangular area that looks like a car radiator. The panel is hinged at the top edge to allow opening for periodic cleaning or service. Remove the screws under the lower edge of the panel and swing it upward for access to the condenser.
- Periodically sweep debris carefully from the fins of the condenser. Rinse dust off with clean water. The condenser coils must be clean and free of dust, debris and insect particles, etc., for the air conditioner to cool efficiently.