



# TLC FOR YOUR A/C

DO-IT-YOURSELF AIR CONDITIONER  
MAINTENANCE ENSURES YEARS OF  
TROUBLE-FREE SERVICE

by BILL AND JENN GEHR

**M**otorhome air conditioners tolerate a high level of abuse throughout the years. Each season they are asked to provide uninterrupted cooling during extreme ambient temperatures and survive vicious road vibrations and occasional inadequate voltage. Proper maintenance and routine cleaning go a long way toward extending the life of any motorhome air conditioner.

The most common type of air conditioner found on motorhomes is the roof-mounted model, configured to distribute cold air through a series of ducted registers or via direct discharge. Generally these air conditioners are rated at 13,500 or 15,000 Btu. Several models offer heat pump options, which provide warm air as long as ambient temperatures are not too cold. Larger motorhomes may use basement air conditioners that require very little maintenance other than periodic filter replacement. Whichever model you have, each needs a little TLC for optimum performance.

Safety first. Make sure power is disconnected before starting any air-conditioning maintenance procedure.

Every unit has a cold air intake filter that must be kept clean to avoid a buildup of dirt and other contaminants on the cold air evaporator. With continued use, these filters should be cleaned every two to three weeks. The process is simple. Remove the filter and gently wash using warm, soapy water. Rinse thoroughly and gently towel or air dry. Generally, these foam filters last for years, but if you notice that the filter is beginning to deteriorate, replace it. Basement model filters cannot be washed and must be replaced with a new paper filter.

Prior to reinstallation of the clean filter(s), use a bright flashlight to illuminate the area around the cold air intake and inspect for any debris or contaminants that may be partially clogging the

aluminum-finned evaporator. If you need to remove any debris, use a soft bristled brush, taking extra care not to damage the delicate fins.

You may notice that the fins are coated with a thin, sticky film that attracts unwanted lint and dust particles. Remove the ceiling assembly for easy access to the fins and spray on a light coat of a non-caustic cleaning agent (such as Formula 409) and wipe clean with a damp paper towel. Be sure to soak up any runoff. Once the fins are cleaned, rinse thoroughly with water and allow to air dry before reinstalling the ceiling assembly. Now would be a good time to make sure the cold air intake is sealed from the air discharge, especially ducted models.

When moving to the roof, take your time, use extreme caution and wear closed-toed shoes. Avoid walking on a wet or damp roof. Remove the plastic shroud that protects the air-conditioner components from the elements. If the shroud is cracked or brittle it should be replaced. The model and serial numbers of your specific unit are located inside, above the filter. These numbers will be necessary for obtaining a new replacement shroud. With the shroud removed, visually inspect the wires and each component for any damages or corrosion.

The condenser is located in the rear of the unit. As the fan draws in air through the condenser, dust and dirt are pulled into the fins. This excess debris should be cleaned/blown out from the inside of the condenser using compressed air; repeat this process annually. Be careful that the air pressure is not too high as it may damage the aluminum fins. If the fins are bent, use a fin comb or small flat-blade screwdriver to restore them to their original position. Before reinstalling the shroud, inspect the foam or rubber gaskets on the inside of the shroud and replace if necessary.

If you notice your air conditioner is leaking water from



1) There are several types of ceiling assemblies. Start by removing the access panel to expose the filter. Remove the foam filter, which is held in place with hook-and-loop fasteners, and inspect it carefully for any signs of dry rot. Replace the filter if necessary. 2) If filter appears to be in good condition, gently hand wash using a mild soap and warm water.



3) After washing the filter, rinse thoroughly and air or towel dry. 4) With the access panel removed, now is a good time to inspect the evaporator to be sure it is clear of debris and oily buildup. 5) If it is necessary to remove the A/C from the roof in order to replace the gasket, you will need to begin by removing both parts of the ceiling assembly as shown.




6) The ceiling assembly is usually held in place by three to four bolts. 7 & 8) After the ceiling assemblies have been removed, don't forget to remove the freeze protection sensor and the control box that are tucked up into the evaporator cavity.



9) Annual A/C maintenance includes removing the shroud and inspecting condenser and wiring. 10) Check condenser for debris or bent fins. For optimum performance, straighten damaged fins using a thin tool. Use an evaporator comb if damage is extensive. 11) Clean condenser with low air pressure, taking care not to damage the delicate fins. A clean condenser makes the A/C more efficient.


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the ceiling assembly during a rainstorm or a routine wash, it's time to replace the gasket (or seal) between the upper unit and exterior surface of the roof. There are two gasket sizes, 14-by-14-inch and 14-by-16-inch. Replacement begins with removing the inside ceiling assembly, normally held on by three to four bolts. On some ducted models you will need to remove the freeze probe from the evaporator. You may have to remove the control box in order to lift the upper unit from the roof to expose the gasket.

Scrape off the gasket from the bottom of the upper unit using a putty knife. Clean the surface with mineral spirits, dry and attach the new, peel-and-stick gasket in the same location.

The next step may require another person. Set the air conditioner back over the exposed opening. With one person on the inside of the motorhome and another on the roof, move the upper unit until the bolts are centered in the opening. Install the bolts and tighten until they are fairly snug and then secure with one full turn. Because of the air conditioner's weight on the roof, the gasket will compress over a period of time so be sure to make a note to retighten the bolts a few months down the road.

Proper voltage is essential for the longevity of your air conditioner's compressor, which is the heart of the system. Incorrect voltage is the leading cause of compressor failure. It's best to carry a voltmeter and use it to monitor system voltage, especially when traveling in extreme heat. Using a digital meter that plugs into your outlet is also a good way to monitor voltage and it is much more accurate than its analog counterpart. The minimum voltage is 105 volts AC with the air condi-



12) Use a large putty knife to remove the old gasket from the underside of the A/C. 13) Clean the roof surface where the gasket will sit with a cleaner that is appropriate for your type of roof material and then allow the surface to dry. 14) Choose a high-quality neoprene gasket. Remove the paper to expose the glue and press into place on the A/C.

tioner compressor running.

Common causes of low voltage can often be attributed to inadequate extension cords. For example, if you have a 30-amp power cord on your motorhome, you will need a 30-amp extension cord to run the air conditioner. If you have a 50-amp power cord, the same size extension cord must be used. Heat generated by the electrical current flowing through power cords can actually melt the rubber end. Routine inspection of the ends of the cords — and replacement if the prongs become loose and fail — will prevent surprises when air conditioning is needed.

By parking your motorhome in direct sunlight, the heat absorbed by the coach may make it difficult for the air conditioner(s) to keep interior temperature at set levels. Here are a few tips that can improve cooling efficiency.

- Choose a campsite that offers shade

- Install aluminum, bubble-style insulation in your windows, skylights and vents. Keep in mind that large windshields transfer a great amount of heat to the interior of the coach.

- Keep baggage doors closed when possible to help reduce the amount of heat penetrating through the floor.

- Try to limit the number of times you open and close the entry door.

By following these simple maintenance procedures on your motorhome's air conditioner, you will help ensure years of continued use and optimum cooling. ♦



Bill and Jenn Gehr, along with their two Boston bulldogs, are full-time RV adventurers who enjoy sharing their technical knowledge with fellow RV enthusiasts wherever they travel.



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