

PREVENTIVE MAINTENANCE FOR A MOTORHOME'S FURNACE WILL ENSURE COMFORT CONTROL IN COLD WEATHER

by BILL AND JENN GEHR

It seems like Murphy's law applies just when we least expect it. For furnace operation, it's usually when the temperature plummets and heat is needed to keep warm. Nearly every motorhome is equipped with some type of a forced air unit. Whether the furnace runs on LP-gas or diesel fuel, every model requires an annual visual inspection and a bit of maintenance to keep heat flowing without interruption.

Many safety features are built into today's modern furnaces, and sometimes they are at fault when normal operation is interrupted. The majority of furnace problems are a result of, or combination of, low gas pressure, low voltage, inadequate ducting, insufficient return air and lack of annual maintenance. Be sure a certified RV technician completes any repair work that is beyond cleaning and inspections; improper repairs or adjustments can lead to a hazardous situation. Before inspecting the furnace and/or making repairs, make sure the LP-gas and the thermostat are turned off.

THE HEAT IS ON



Be sure this compartment area is not used for storage as to protect the many hoses and wiring.



The Aqua-Hot fuel filter is commonly overlooked and must be changed annually.



The antifreeze tank is mounted in a convenient location. Inspect the fluid level before every outing. If the fluid level is too low, it may indicate a leak in the system. Add fluid and check for leaks.



Remove the front cover of the Aqua-Hot once a year and inspect all the components, wires and hoses.



A refractometer is used to test the percentage of propylene glycol in the Aqua-Hot system's antifreeze.



Removing the nozzle from the Aqua-Hot burner assembly requires the use of two wrenches, one on the backing nut and one on the nozzle.



Accessing the Suburban furnace's blower wheel can be a challenge. However, it is important that area be cleaned on an annual basis using compressed air.



With the access door removed, inspection of all components can be quickly visualized. Clean out any excess dust, lint or, in this case, sawdust at the base of the door frame.

VISUAL INSPECTIONS

Using a bright flashlight, check for any debris or mud dauber nests residing in the intake or exhaust vents. Remove any obstructions with an appropriate tool. Soot is a product of poor combustion, possibly caused by a spider web, mud dauber nest or rust in the burner. The furnace will need to be repaired by a technician if you are uncomfortable with removing these obstructions. Do not use the furnace until it's been repaired.

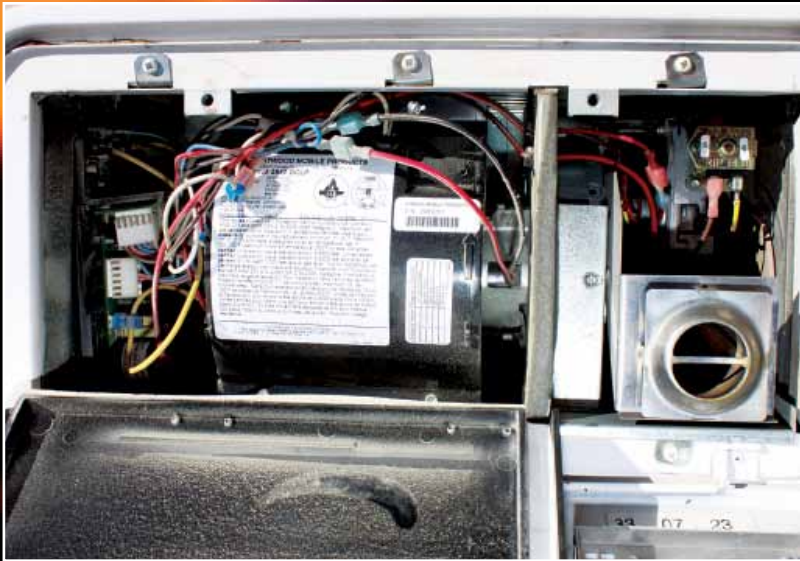
Most furnaces do not come with a lint or dust filter, which is commonly used in residential homes. This lack of filtra-

tion leaves furnaces unprotected and is the main reason annual inspections are recommended. On the flip side, never install a filter at the cold air intake, as it will restrict the return air.

For further inspection, remove or open up the access door or panel to allow for a full visual of the front of the furnace. Look for dust and lint buildup and be ready to remove it using moderate air pressure or a vacuum cleaner. Also, check all of the interior components and blower wheels. Heavy lint buildup can cause the blower wheels to rotate out of balance, thus causing premature failure of the blower motor.

Check the circuit board for lint, dust and corrosion. Don't use high air pressure on a PC board; too much air pressure can damage the components. Canned compressed air or a vacuum cleaner works well for this type of cleaning.

Heat ducting can fill with a large amount of dust and lint. Use a vacuum cleaner or a high volume of air to clean these ducts thoroughly. Inspect the ducting at the furnace, making sure each hose is attached and has not been crushed or damaged. Over a period of time, heat ducts can become brittle and split, routing highly heated air into the wrong area.



Although the overall view of the Atwood furnace differs slightly from the Suburban, the annual cleaning and inspection process is the same.



Using an air nozzle, blow air pressure through the intake and exhaust vents from the outside of the coach as part of the annual cleaning.



Remove the floor registers and vacuum out any lint, dust or debris to prevent buildup in the ducting system.

VOGT RV 1/3-1 4/C

Low LP-gas pressure can result in furnace ignition failure and/or poor operation. The LP-gas regulator may need to be adjusted or replaced by an RV service technician who can properly set the gas pressure on the regulator for optimum safety and function.

Low voltage can slow the fan speed below the threshold for furnace ignition. The fan may sound fast enough but will not trip the sail switch, which is a safety device. If you suspect the voltage is too low, start the motorhome engine or AC generator to boost the battery voltage and try the furnace again. If this solves

the problem, this could be a sign that the motorhome batteries have seen better days, or there are loose or corroded connections in the wiring. Voltage can be checked at the furnace using a multimeter. The furnace requires a minimum of 10.5 volts DC to allow the fan to run fast enough to trip the sail switch.

Bug screens are a popular aftermarket item designed to cover the intake and exhaust vents. However, manufacturers do not recommend the use of such screens as they can become plugged and restrict the flow of air, which can result in poor combustion. Keep in mind that bug



Inspect the flexible ducting for cracks or tears; use aluminum tape for any repairs. Also inspect any areas where the ducting may have become crushed or broken loose from the collars.



The interior return air vent must be clear of any debris for proper furnace function.

ROPADMASTER 1/2-2 4/C

screens will not stop a small spider, but if you need them to prevent those pesky mud daubers from moving in, an alternative is to block the vent with something that can be removed prior to your next outing. It's critical that any vent blockage be cleared before using the furnace.

Aqua-Hot comfort and water heating systems are found in a number of high-end coaches, most commonly in diesel-powered motorhomes. The Aqua-Hot system has a different service and inspection process than standard RV furnaces. Inspection is limited to checking the antifreeze (propylene glycol) level and the visible fuel and rubber hoses. It's a good idea to check each of these before every outing; a 10-second visual inspection just might save your weekend.

Annual service consists of replacing the fuel nozzle, a commonly overlooked item, and the inspection of the burner assembly while replacing the nozzle. Replace the fuel filter annually as well. It's best to carry a spare fuel filter at all times just in case you encounter a bad batch of fuel. Annually check the percentages of propylene glycol in the antifreeze and water solution. If you are unable to test this level, take a small sample to a qualified radiator shop for an accurate reading.

Chances are you've traveled in the spring, winter or fall and have needed the furnace to help combat the chill of the morning or for regular temperature control throughout a colder night. Annual inspections and regular furnace maintenance procedures can keep that chilly air outside where it belongs. ♦



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