

Fuel system problems in hot weather

Now that the warm weather is here I receive many calls from people all across the country that are having problems with their carburetor or “vapor lock”. Typically when the engine is hot and the weather is also.

Today's fuels are the main cause of this problem since it vaporizes so easily and at lower temperatures than in the older days. This gas is great for fuel injection but not carburetors. But things can be done to eliminate the problems caused by the fuels.

These heat related problems with today's fuels are also reducing the gas mileage significantly by making the engine run too rich. But things can be done to solve them without the high costs of converting to a fuel injection set up.

VAPOR LOCK.

Vapor lock is caused by the fuel vaporizing in the fuel lines. This usually happens at lower speeds with high under hood temperatures. Stuck in traffic on a hot day is a major cause.

The best way to eliminate this is to insulate your fuel lines and add a return line to the fuel tank. Try making new fuel lines from the fuel pump to carburetor and insulating them with asphalt coated wire loom that you can get from NAPA stores. This requires installing the loom over the tubing before making the flares for the fittings.

Another way is to just take a long piece of vacuum hose or rubber fuel line the length needed to cover the steel line. Using a sharp knife or razor blade slit it along the side and then just snap it over the fuel lines.

Making a fuel return line to the tank is a lot more difficult to do but can be done. It was used as part of the R1 and R2 Larks and Hawks. Also on most 1964 Avanti's. That is a glass bowl filter with a return line built into the top. It was also used on 1960's Cadillac cars or in the past purchased from auto parts store as an AC filter GF-97. It has been obsolete for many years now. A line must then be made back to the tank and a fitting put into the top of the gas tank. This return also must be restricted which is done in the glass bowl filter by a small hole of about .075 inch. If not restricted you may have fuel shortage at higher speeds as you are returning too much fuel to the tank.

There is a steel canister filter used on Chrysler products in the mid 1980's that looks like the Studebaker AC-2987 filter but it has a ¼ inch return line built into it.

CARBURTOR PROBLEMS:

The next problem is that the carburetor get too hot for todays fuels because of the exhaust crossover under the carburetor on the V8 cars and the heat riser on the 6 cylinders. The V8 seems to have most of the problems.

On the six cylinder engines just make sure that the heat riser is working correctly and that all the heat shields are in place. Many of the six cylinder cars have heat shields under the carburetor and there should be one on the older fuel pumps used on the flat head sixes.

If you stop your car on a hot day and open the hood many times you can hear the gas boiling in the carburetor fuel bowls. When driving and this happens the vaporized fuel just gets drawn into the carburetor as well as the fuel going thru it in the normal manner. Result is a very rich mixture. This is really bad on R2 engines as the air is preheated by the supercharger before getting to the carb.

There are a couple of things that can be done to eliminate this problem. First remove the heat riser valve on the right side exhaust manifold and cut out the center valve and replace it as a spacer so the exhaust system fits correctly. We make a steel block spacer to replace the heat riser valve as it is usually a powered metal part that cracks easily. See picture of spacer.

This will minimize the heat going thru the intake manifold, but not eliminate it. That is usually enough for the Carter WCFB and Stromberg WW carburetors. But usually not enough reduction for the Carter AFB.

If you still have a problem what I suggest is to remove the intake manifold and bring to local aluminum foundry and have the exhaust crossover plugged with aluminum. See pictures.

This completely blocks it off and no heat gets to the carburetor from the exhaust. It works just great but has the drawback of increasing the noise of the exhaust. As can be seen if they pour the aluminum from the choke heat tube side with the opposite side blocked off then the choke will still work just fine. See picture.

Some people have tried filling the manifold with crumpled balls of aluminum foil and using a wooden dowel hammer it into the manifold from the side opposite the choke heat tube. I have never tried this myself.

There may be a little stumbling of the engine when started on a really cold day for the first mile or so. I have a blocked off manifold and no heat riser on my Studebaker powered Jeep and have run it at 30 below zero up north with no problems. But most Studebakers are not driven in the winter anymore.

If you have any comments or question fell free to give me a call at 978-897-3158.