

Car Running HOT?

I think I failed to write my article last month. It must be the heat getting to me. And speaking of heat, have any of yall (southern for you all) had trouble with your LBC getting hot under the hood? We have had a few customers with this complaint recently. So, what do we suggest?

If there are coolant leaks, and that is the most common complaint, stop the leakage. Cooling systems need to operate under pressure. The boiling point of water is higher under pressure. Old radiator caps are one of the biggest culprits. Replace your cap first if it has not been replaced in the past several years.

Next, never overfill your cooling system. The water will get hot and expand and force its way out the system, usually thru the weakest location. If that happens to be an old corroded solder joint, you get a leak. If it is an old cap, you get very hot water pushing past the spring and seal in the cap. With a good system, I like to go a few pounds higher on the cap pressure than the book calls for. I would use a 10 lb. cap in place of a 7 lb. cap.

Let me put a word of caution here about using the correct cap style. On old British cars, there are two cap lengths, one is short and the other is a long reach cap. Make sure to use the correct one. Putting a short cap on an old Healey will not seal and cause overheating. If you have a system with a coolant expansion/recovery tank and a fill cap on the radiator, then make sure the cap on the radiator is correct for your application. These should not be a pressure cap as it will not allow the coolant to flow back from the recovery/expansion tank as the water cools.

Let me refer back to the third paragraph for a second. If you fill your system when it is cold, and you should, do not fill it to the very top unless you have a system with an expansion tank. Close the cap on the expansion tank, fill the system full and then open the expansion tank. The water should go down a little. Do not fill your tank full either. As water gets hot, it expands and is pushed out the cap, assuming you have no other leaks, and will push out until the pressure in the system equals the rated cap pressure.

Then the cap will close and your system has the correct amount of water it needs. If you check it the next day, you will see it is lower. **DO NOT** top it up, it will just do the same thing and history will be repeated every time you top it up.

NEVER open a hot system. After a drive, open the hood and look at the hoses. Are they expanded like a small balloon? If so replace them, after the car cools. Use good clamps and not the wire clamps like the originals. They will cut into the hose so much that they will not tighten enough to stop seeps around the connections. We have seen a lot of the reproduction clamps that cannot properly tighten a hose before the two ends of the clamp are touching and no more pressure can be applied.

It may not be original, but use good band clamps. There are several new style clamps, but why bother with them when band clamps are inexpensive and work fine. Make sure they

are all stainless; maybe go to a marine supplier for them. Most clamps sold at auto part stores have steel parts that will rust.

If you have no leaks and it still runs hot, what next. This article is assuming your engine is in good condition. I still would suggest a compression test to make sure you have a sound engine. If you pull the plugs and turn the engine over with the starter and you get a stream of water shooting out a plug hole, you have a problem. Fix it.

With a good engine and no leaks, we are narrowing down your potential problems. Some cars just have a tendency to run warm. MGAs are a good example. They will run hot in traffic most often. The reproduction grilles are a big cause as the slats seem to be at the wrong angle. We have had to make a small wooden tool to twist the slats just a little bit to improve air flow. But if you have tried to use a repro MGA grille, you have had lots of problems fitting it by now.

Should your car not be one that normally runs hot, then we need to find another problem. Look at your radiator. You should not see any greenish blue on it. If you do, that is a bad solder joint or a pin hole leak. Get that fixed. You could use a stop leak product as a temporary cure but not long term. Reproduction radiators have been found to allow a car run hotter than before swapping radiators. Our solution is to not use reproduction units anymore. We have the original radiators re-cored with the new high efficiency cores.

These have about 15% more tubes and water capacity than the original but still have the same dimensions. The fins that join it all together have small louvers in them. This reduces coolant temps quite a bit. An average re-core here in Marietta, Ga. runs about \$385 plus R&R the radiator. This is not much more than the repros but a much better solution. Other problems we have found with repro units are metric threads in the affixed nut or studs.

Some cars have electric fans from the factory, late MGB are a prime example. Make sure they run in the right direction and the fan blade is installed in the correct orientation. You can install the blade backwards but the fan will still push air thru the radiator. Installing a blade backwards does not reverse the direction of air flow. It decreases the amount of air moved but it will still move it in the same direction. MGB fans should come on when the gauge shows about 3/4 toward hot. They should stay on until it gets below that and then turn off.

Electric fans should not run when the car is in motion above 20 mph or so. There is enough air flow to cool. When MG came out with the electric fans, they choose poorly. They put them in front of the radiator, how stupid. Fans in front block air flow when not running. They work best behind the core. If you are putting an electric fan on your car, make it a puller and place it behind the core. If in front, it can block 20% or more of the core from the air flow.

Back to MGB again; watch out for the reproduction switches for your fans. The switches are ok but the grommets with them are totally incorrect. They should be inserted in the

radiator and the switch pushed into it. Some of the repros are way too short and will not stay put when the car gets hot. The part going into the radiator should be 1/4" long not 1/8". Watch it. The factory also screwed up by not using a relay for the fan. Wire the car so the switch turns on a relay and have the relay turn on the fan. It saves the switch and wires from burning out. See the diagram.

Should you remove an engine driven fan and replace it with an electric one? Good question and it depends on your particular car. Engine driven fans do take some power from the engine and they provide less air flow at idle than at speed when you really do not need them. Electric fans provide air flow at lower speeds and should be off at higher speeds. Yes, installing a good electric fan can be a benefit, just wire it correctly.

To combat the fact that engine driven fans reduce engine power, they came out with a viscous fan. These have a fluid type clutch that locks up the fan blade the hotter it gets. When cool, the fan has very little force turning it, you could stop it with your hand, but don't. As the engine temp rises, the hot air flowing thru the radiator heats the fluid and locks the internals and makes the fan spin at engine speed. As the temp drops, it reverses and releases the blade from turning.

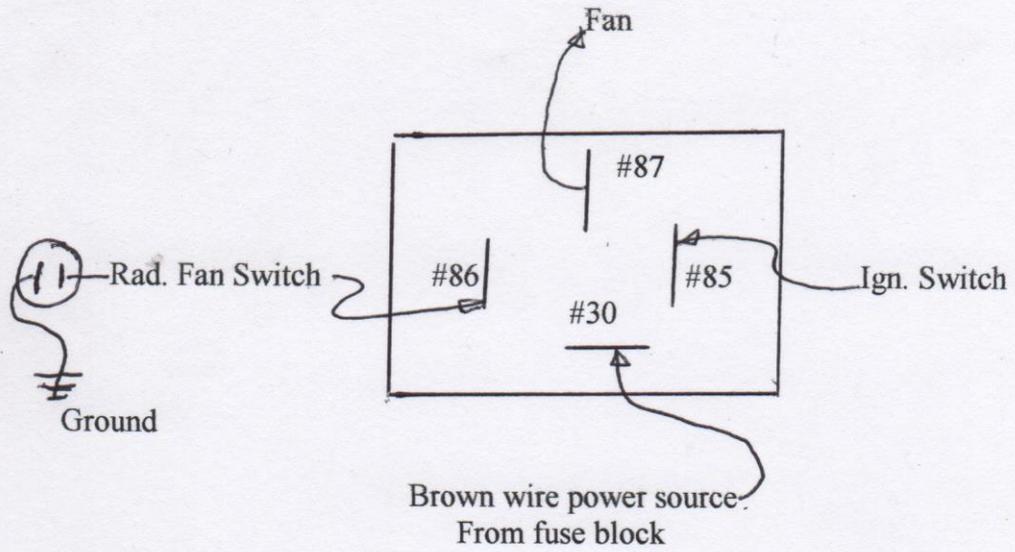
These work ok until they don't. If you have one, some Spitfires, Stags, and TR7s have them and you hear an odd "rattle" when you rev the engine, try rocking your fan blade back and forth, after you shut off the engine. If you get motion, you need a new fan clutch unit. Do not keep driving far as it can and does come off the pump and into your radiator. It can eat a radiator.

There are some additives that you could use to help cool the car. One is Water Wetter. It is used with water and not antifreeze. It is supposed to reduce the surface tension of the water so it flows more in contact with the internal water passages and absorb more heat. Racers use it because they are not allowed to run antifreeze. It may help some. But using water may help also. It absorbs and releases more heat than antifreeze mix.

I have used Water Wetter in a street car but you must use antifreeze mix in winter. How much antifreeze is the next question. This really depends on where you live. In the south, I recommend only about 25% antifreeze and the rest water. Water cools best and 1/4 antifreeze will protect the car except for the coldest winters we have. And don't most of yall keep your LBC in a garage?

A few other things that can make a car run hot are timing way off and mixture way off. But I did say you need to have a good engine first and a proper tune is part of that. Well, I hope to see yall somewhere soon.

Barry Rosenberg
British Car Service



Common Relay Wiring for Fans