

Tech Article; October 2014

The Peachtree MG Registry show in Dillard is over now and was very successful. We raised money for Children's Health Care of Atlanta and some for the club's kitty. This is where we get the funds to operate throughout the year. It pays for the snacks and treats at our tech sessions, so please attend as many as you can and enjoy.

This year, we saw very few problems with the cars. One blew a tire and bent the wheel; one had a very mismatched set of carbs causing crappy running and later it had a dead coil! Yes, I said a dead coil. I know I have said they hardly ever give problems but even something so reliable goes bad occasionally. Since I opened my shop in 1975, I can count the number of bad coils experienced on one hand.

So, let's discuss coils for a minute. Two coils will fill the need of almost all of our LBCs. Later TR7/8s are a little different. Both coils look alike and most do not distinguish which style they are. So, how to tell them apart and how do you know which you need? The biggest difference is in the internal resistance they have. A cheap digital ohm meter (available at Harbor Freight of course) is the best tool to use. An analog gauge is not as accurate at the low readings we are looking at.

To test, disconnect the wires from the terminals and put one probe of the tester on each terminal and read the resistance. It does not matter which terminal goes where. Reverse them and you get the same reading. The early style coil will have 3 ohms of resistance; the later will have only 1.5 ohms of resistance. Why the difference?

Glad you asked. The early cars had straight battery voltage going to them thru the ignition switch. With less than the 3 ohms resistance in the coil, you will either burn your points or melt the rubbing block fairly quickly. Later cars have a 1.5 ohm external resistor in line between the ignition switch and coil. This reduces the voltage to less than battery, about 10 volts. So that there is the proper total of 3 ohms resistance in the coil, they use a coil with only 1.5 ohms.

Why would they need this change? As the cars had more and more restrictions put on the engines and emissions, they found they were harder to start. The starter pulled voltage; the compression was lower and the mixture was leaner etc.; it all led to hard starting problems. When the coil has only 1.5 ohms, it gives a hotter spark to fire the mixture. But the system could not tolerate the lower resistance full time. So, the genius engineers decided to run a wire from the starter solenoid, where it gets full battery voltage, directly to the coil when you try to start the car. This wire bypasses the ignition switch and only gets voltage as long as the starter solenoid is engaged.

Once the car starts and the solenoid disengages and the voltage goes thru the external resistor to the coil. Now, if you are having problems with your car starting, as a customer recently had with hot starting his MGC with high compression and Webers, test your coil. His had over 4 ohms of resistance. I tested using a 1.5 ohm coil and it started normally when hot so I knew it

may be a bad coil. I then tested with a 3 ohm resistance coil and it still started hot. So, his problem was solved with another coil.

If we still had a problem with hot starting, I was going to install the 1.5 ohm coil and install a 1.5 ohm resistor in line with the ignition wire, just like the later cars. I was going to run a wire from his solenoid directly to his coil for the un-resisted voltage. This would duplicate the later cars and allow a hotter spark, hotter than the good 3 ohm coil provided, to his plugs. If your early MGB or TR4 or Healey is having problems starting, try this on yours. Test with a 1.5 ohm coil and see if it starts easier.

The external resistor can take many looks. On MGs it is either a ceramic block with two wires attached to it or a finned aluminum piece with two wires. TR6s and Jensen Healeys use a resistor wire in line from the starter solenoid hidden in the harness. It can be seen as a heavy gauge wire with an insulated covering, usually beginning to fray. You cannot use the tiny inline resistors sold by Radio Shack as they will not last very long, minutes maybe. Get a resistor designed for automotive use. You may end up at a NAPA store as it is hard to find original ones anymore.

If you are using an aftermarket ignition unit, such as Petronix, read your instructions before attempting this and see which coil they require. It is possible that you could kill your ignition unit by using the incorrect coil. Don't say I didn't warn you.

Well, hope to see yall somewhere soon. The fall is upon us and the driving weather could not be better.

Barry Rosenberg