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PONTIAC CONFUSION
Looks Can Be Deceiving

BY GENE KAISER

This article was prompted by a phone call that I received nearly two years ago. It came from ERA member Lynn Gross, owner of Churubusco Auto Electric, someone I've known for a few years. He had an alternator off a 2008 Pontiac G8 with a 6.0L engine that was not charging.

The unit OE number was A3TG4181. Lester numbered this alternator 11418, but listed no information in parts. At the time, Lynn could find no regulator information for this alternator at all, anywhere. This happened two days before Thanksgiving and the owner needed to drive the car home for the four-day weekend to be with his family.

Lynn told me that there seemed to be some confusion and no clear information on this particular year, make and model's alternator. He asked me if I knew any more than what he had been able to find. The customer had already attempted to fix the vehicle himself. This is what I learned while helping Lynn and his customer.

The owner's original problem was a malfunctioning charging system – not charging and warning lamp on. He removed the alternator himself and took it to an auto parts store to have it tested. It checked bad, so he bought a new one and installed it. The new alternator did not charge either and the charge warning light was still on. He removed the new alternator and took the it back to the parts store. Luck was with him that day. The parts store still had his original unit. Then he took that alternator to Lynn.

This vehicle calls for an RVC test lead, which would not activate this alternator. Lynn also knew that GM's RVC regulators should self-excite, without any input. This is when Lynn called me to ask for my help.

From our research we could verify by vehicle wiring diagram that this alternator was RVC and needed an RVC regulator. Lynn bought and installed a Regitar VRH2009-172, which is for GM RVC controlled Mitsubishi alternators. The correct regulator was shipped Next Day UPS. It fixed the Pontiac and the customer made it home for Thanksgiving. That was a happy ending for the customer but what was wrong with the alternator he bought from the parts store? Was it defective out of the box or did it have the wrong regulator in it?

When I do research to help a customer, I use Google, Lester and a couple of other websites that match alternators to vehicles. I also use ALLDATA for wiring diagrams. What I found was that three Mitsubishi alternators for similar Pontiac applications look almost identical. In addition to that, there was conflicting or a lack of information in multiple locations on all of them. These three units all fit Pontiacs with the same 6.0L engines.

The first is Mitsubishi A3TG1581 or Lester number 11097 – application 2005-06 GTO with 6.0L engine. The second is Mitsubishi A3TG4181 or Lester 11418 – used on 2008 G8 with 6.0L engine. The third is Mitsubishi A3TG6491 or Lester 11421 (*see Figures 1, 2 and 3*). The application is 2009 G8 with 6.0L and 6.2L engines. At a glance the only difference is the pulley which is solid on the 11421 but clutch type on the first two. Down to the B+ post, regulator plug and the identification tag plug code "FR-L", they all look exactly alike except for the pulleys. One source even said that two of them were "identical except for the pulley".

However the biggest difference is that although both regulators share the same housings (*see Figures 4 and 5*), they use two different circuits to operate with totally different charging systems.

The 11097 has a clutch pulley and an early FR-L plug that uses PCM activation on the L terminal. That dates back to early 1997 on some GM vehicles. using a 5 Volt reference to activate the charging systems. The "FR" is a field monitor reading the charging system's mechanical load on the engine.

Figure 1 – Mitsubishi alternator used on the 2009 Pontiac G8 with RVC charging system.

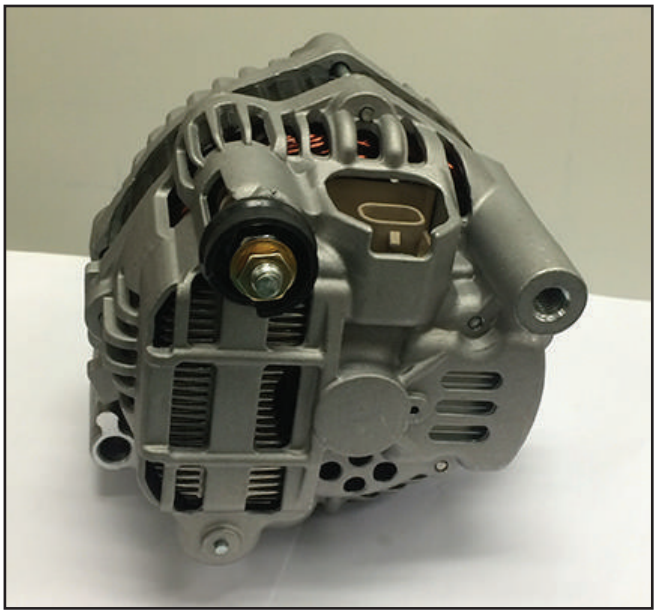

Figure 2 – From the rear, all three Mitsubishi Pontiac alternators look exactly alike.

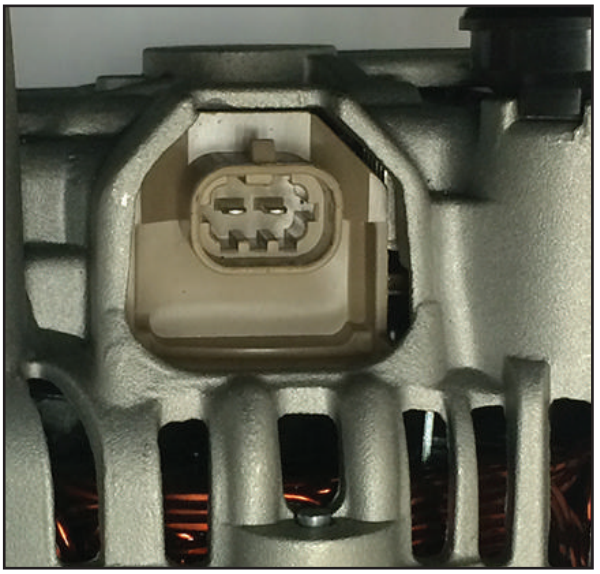

Figure 3 – All three alternators also share identical regulator plugs.

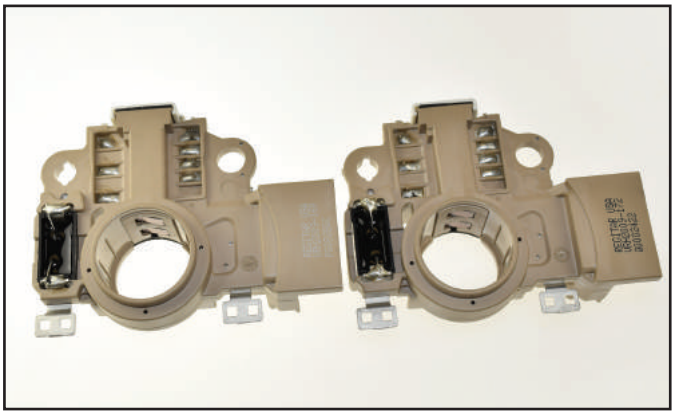

Figure 4 – Both regulators are identical in appearance.

The 11418 (*see Figure 5*) has the same clutch pulley and a plug tag that shares the same lettering "FR-L". But this "L" is not the same circuit. This "L" is a **regulated voltage control** (RVC) signal from the PCM. We covered RVC in last month's Exchange. You have probably tested the most popular GM vehicles that use RVC: the pickups, vans and SUV's with Delco, Bosch, Valeo, and Denso RVC regulators. Now you see it in a Mitsubishi alternator on a Pontiac.

The 11421 has a solid multi-groove pulley as you could see in the first photos. It has identical dimensions as the clutch pulley used on the other two. Beware of substituting the solid pulley on the earlier alternators. In all probability the belt tensions and tensioners are different. This alternator also has the RVC regulator.

The real proof can always be found in the wiring diagram of the vehicle (*see Figure 6*). You will notice that the system used by Lynn's customer's car has a battery monitor sensor around the negative battery cable. This sensor is always on the negative cable and is usually visible if you look for it near the battery. It is a dead giveaway that the charging system is RVC. It verifies that this unit and charging system is using RVC with the PCM controlling the Vset.

PONTIAC CONFUSION

Do your research, ask the important questions to your customer, and get to know him and his vehicle. Your customers depend upon on their vehicles and they depend upon you to fix them right. I would like to add that in all my years I have never trusted using one information resource for my work. When verifying information I find errors on a regular basis. Many times an error spreads from one database to another because information is often shared or copied. If you are not using Google in your business you are making a big mistake like Lynn's customer did. It cost him valuable time, labor, money and frustration. If not for Lynn, it would have cost him a holiday weekend with his family.

Today, technologies are changing more rapidly than ever before. Vehicles are constantly being pushed to last longer and save fuel. We, the aftermarket, have to keep up with those changes. The OE manufactures like to challenge us to protect what they see as their own personal market. We cannot depend on them for any help. We must help one another.

Oh…and to end this confusion, the Pontiac customer came back to Lynn after the holiday, and told him that the charging system and car worked perfectly the whole trip. Lynn reported back to me after the return visit to say that the customer thanked us both. Know what you are testing and don't always go by looks. Looks can be deceiving.

Gene Kaiser is Quality Control and Technical Manager for Regitar-USA in Montgomery, AL.

Special thanks to Lynn Gross, owner of Churubusco Auto Electric in Churubusco, IN for his meticulous documentation and help with this article.

Figure 5 – Mitsubishi alternator used on the 2008 Pontiac G8 with RVC uses a clutch pulley.

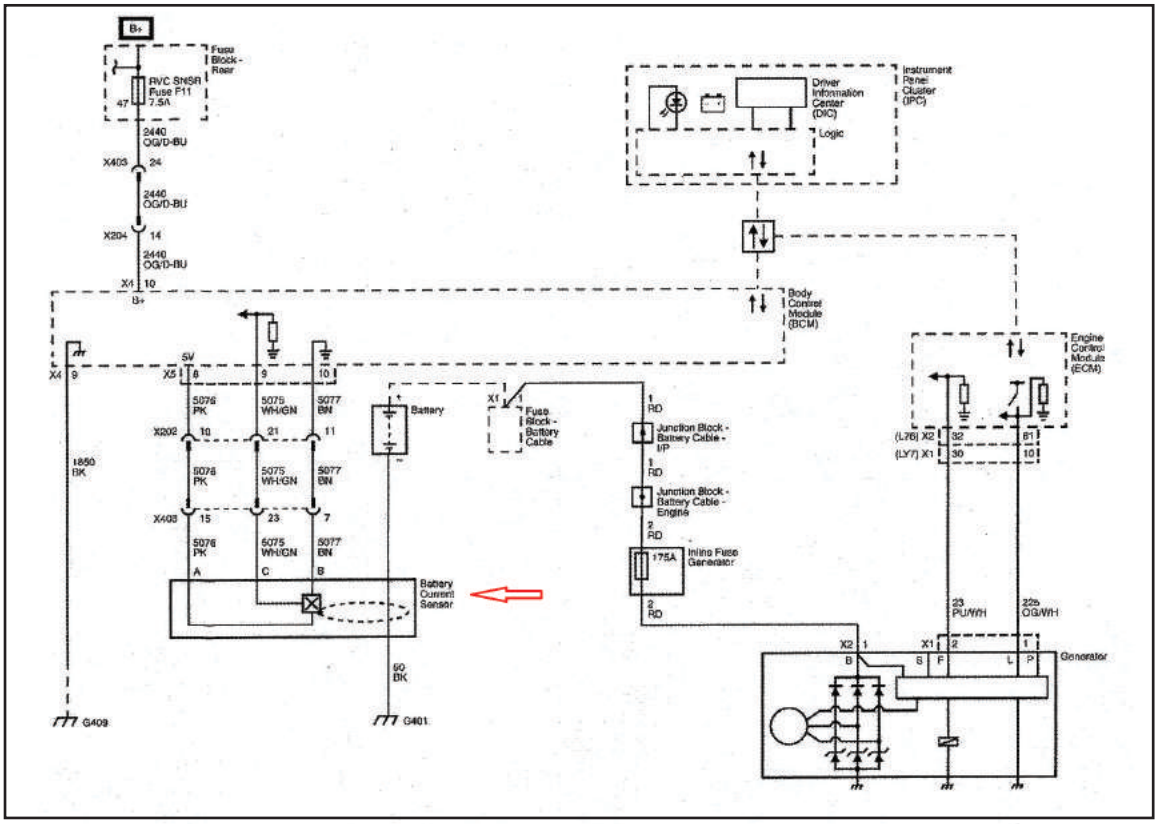

Figure 6 – Charging system diagram of the 2008 Pontiac G8 showing the battery current sensor by the red arrow.