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Power to the People

In our last issue we covered the installation of the Pertronix Ignitor including how to run an additional 12 volt feed from under the dash. In this issue we will build on that by showing you how to install a 12-volt source, that is hot during both run and start, to power the Pertronix Ignitor, provide a full 12 volts to a coil, or even power an electric choke.

From an electrical standpoint, our classic Cougars were pretty basic cars. The factory electrical circuits got the job done, but they just don't give us much head room for the additional demands that go with adding more modern technology.

The points type ignition is a good example. The stock ignition system is severely limited by the points. Back when most cars ran a 6 volt power system points were fine. But when cars started running 12 volt systems, the voltage for the ignition system has to be dropped back to about 6 volts to reduce arcing and burning of the points.

Less voltage means less power is available. The advent of solid state ignition systems like the Pertronix Ignitor eliminated the need to drop the voltage and made it possible to run a much more powerful ignition system. But only if the rest of the electrical system was up to the task.



Designed to provide a 12-volt source that is hot in both the run and start positions, the Pertronix relay (above) is totally automatic while the Rocketman's Classic Cougar Innovations relay (right) has its own built-in switch.

The weakest link was no longer the points, it was the ignition switch. If you have ever reached down to turn the key and noticed that it was hot to the touch, you are experiencing what happens when the switch is handling a lot of current draw.

Switches are rated for both voltage, and current. The original ignition circuit would only require about 4 amps of current, and the ignition switch is rated for about 8 amps. Adding a high performance coil increases the amount of power the switch needs to handle. For example, a high performance coil rated at .6 ohms will pull 20 amps of current, far above the rating of the switch.

The solution to the problem is to use a relay. Basically that means we are going to use a little switch, in this case the ignition switch, to control a much higher rated switch, and we will do it electronically. It only takes a very small amount of power to switch the relay on, protecting the small switch from over heating and burning up.

Two great companies supply relay kits for exactly this purpose: Pertronix and Rocketman's Classic Cougar Innovations. Each company has a different take on exactly how to solve the problem. We will install both and let you decide what makes the most sense for your application.

Although this is an easy project, if you are not familiar with basic electrical and mechanical procedures you may wish to have this done by a professional. Always disconnect the negative battery terminal before starting any electrical project and wear proper protective gear, in particular eye wear.

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The Pertronix Power Relay Kit

The Pertronix kit includes a 30 amp relay, mounting socket, instructions and the hardware you will need for most installations. In this installation we are going to use the I terminal at the starter solenoid as the trigger for the relay. The factory wire located here merges with the wire running to the coil so it is hot during both start and run.

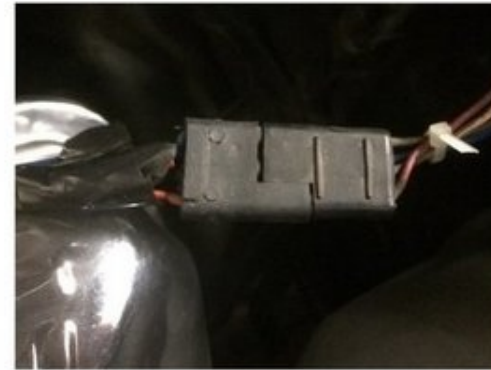


To mount the relay socket you will need to drill a small pilot hole for the supplied sheet metal screw. I chose to mount the relay under the starter solenoid as most of the connections you will need to make are in this area. I wanted the relay to be as hidden as possible so I tucked it up underneath the solenoid. The mounting screw will be hidden when the relay is plugged into the socket so I rotated the socket to plug the relay in. When the relay is plugged in, you can rotate the socket back into place.



I ran the black ground wire to the screw that holds the socket in place. The purple wire goes to the I terminal on the starter solenoid. I used a small nut to hold the wire. Be sure that the original slip on wire connector can still fit snugly. I had to remove a small amount of the plastic insulator to maintain a tight fit. The red wire is attached to the battery side of the solenoid.

Route the orange wire following the alternator harness and then up to the coil, Pertronix Ignitor or electric choke. NOTE: the stock tach in the XR-7 WILL NOT WORK if you switch the coil to 12 volts. Be sure to keep all wires away from the exhaust manifold.



The Pedapter will plug into the gauge feed and ignition harness located at the firewall right behind the driver side rocker arm cover. Look for the three wire plug. You will simply unplug this connection and then plug each end into the corresponding connector on the Pedapter.

Rocketman's Classic Cougar Innovations Pedapter P001

The RCCI Pedapter is a plug and play solution that requires just two wiring connections. It doesn't get much easier than that. This version of the Pedapter has a special additional feature. The coil feed output is selectable between factory ballast voltage (6 to 9 volts), 12 volts, or 0 volts. IF you have an XR-7 with the factory tach you will want to select the ballast voltage position. If you have a standard Cougar, or you have installed one of RCCI's great three wire tachs, AND you have a coil rated for use with a full 12 volts, you can use the 12 volt position. But here is the real bonus: when you set the switch to 0 volts, your car can't be started! You get a great anti theft device at no extra charge. A non switched version, the P002 is also available.



You can put the Pedapter any place that it won't be subject to extreme heat. I picked the center of the fire wall behind the air cleaner. The Pedapter can be attached with two screws and one can be used to provide the ground. I put a larger ring terminal on the wire and used the bolt for the export brace for ground. I used 3M VHB tape to attach the Pedapter instead of drilling holes in this GT-E.

All that remains is routing the red power lead to the battery side of the starter solenoid, and the orange lead to the Pertronix or electric choke.

The switch positions are labeled on the bottom of the Pedapter. The bat handle can be customized with one of the small multi colored covers included in the kit.



Where to Buy

Rocketman's Classic Cougar Innovations
325-451-0454
rccinnovations.com

Pertronix
909-599-5955
pertronix.com

Attention Cougar Vendors!

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