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Tachometer Technology: Three Wires are Better Than Two

In this tech article, Bill Basore shows you how to replace the original tachs in our classic Cougars. The replacement tachs use a modern three wire connection that takes the tach out of the ignition circuit completely. If you have been thinking about using a high voltage ignition coil, this is the way to go.

One of the most appreciated features of the Cougar XR-7 is the full set of gauges including a tachometer. Many Cougar enthusiasts have gone through painstaking efforts to swap out the standard dash for the XR-7 version just to add those cool gauges. However, there is no gain with out pain, and now that those gauges are approaching 50, chances are you may be feeling a few of those pains.

Ford was always looking for ways to get the job done with the lowest cost and the greatest simplicity. In the case of the in-dash tach, that meant using the existing wire from the ignition switch that feeds the ignition circuit to also provide the signal that drives the tach. That means the tach is part of the ignition circuit. If the tach fails, so does the ignition.

In many cases the solder connections in the tach have deteriorated with age. The addition of high voltage coils, and electric chokes, can also result in greater current being pulled through the tach accelerating the process.

If you are driving an XR-7, it is just a matter of time before you discover that your engine will try to start as long as the starter is cranking. But the instant you let the key return to the run position the engine dies. While there are other possible causes, the most likely source of failure is your factory tach. During cranking, power to the ignition bypasses the resistor wire in the harness and the tach. Once the key returns to the run position if the tach is dead, so is the car.

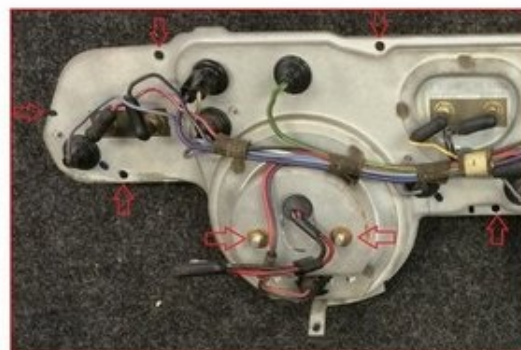
Fortunately, there is an easy and permanent fix. Rocketman's Classic Cougar Innovations offers replacement tachs in both 6000 and 8000 RPM versions to fit all of our classic Cougars. The tachs all use a modern three wire connection that takes the tach out of the ignition circuit completely. If you have been thinking about using a high voltage ignition coil, these tachs are the way to go to avoid trouble in the future. And, they are also guaranteed for life.

In this example we are going to upgrade the tach in a 1968 XR-7. The 1967 is very similar but for other years we recommend consulting the factory service manual for details. Although this is an easy project, if you are not familiar with basic 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. LCM

1. Remove the drivers side instrument cluster. Don't forget the single screw in the bottom left corner of the dash. Carefully unplug the electrical connections and unscrew the speedometer cable.



2. The plastic parts of the dash can become fairly brittle with age, so easy does it. The trip odometer reset button unscrews, and the wiper switch knob has a set screw on the bottom. (The 1967 wiper knob is thinner and it doesn't need to be removed.) These must be removed before the instruments can be removed from the bezel.



3. On the back side of the instrument panel there are small Philips screws arranged around the outside perimeter. Remove these, taking care to only apply as much force as needed to break the screws loose while not breaking the plastic posts they screw into. Separate the instruments from the bezel. The tach is held in place by two studs.

4. The new tach mounts in exactly the same way as the old one. We chose to upgrade to the 8K RPM version.



5. Plug the male and female connectors from the dash tach harness into each other. The tach is now bypassed. The new tach has three wires, black for ground, red for power, and green for ignition impulse. Ground the black wire by connecting it to one of the mounting posts for the tach. The instrument voltage regulator is fed by a black wire with a green stripe. I used a ScotchLock connector to tap the wire. The green wire will go to the negative post on the coil. (The small red and white wires are for an Electronic Low Fuel Indicator ELFI.)

6. You will need to run a new wire through the firewall grommet adjacent to the ignition feed wire. You can use a short piece of brass tube to punch the hole for the wire. (In Issue 2 we demonstrate the technique.) Run the wire to the coil negative post.

Reassemble the dash and enjoy having a modern reliable tach that won't leave you at the side of the road.

