

MY CAR WON'T RUN—WHAT'S WRONG

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(Editor's note: This is an update of an article Bill wrote some years ago.) Recently I had a new Corvette friend approach me at a Corvette club meeting and ask "You work on the old Corvettes don't you? Could you help me? My '66 won't run?" Ted added that he had spark, gas in the carb and the engine would turn over. Sometimes it would fire but not continue to run.

I told "Ted" that I could not do it then (just before the NCRS Road Tour) but that I would get with him (and the car) after I returned from St. Charles.

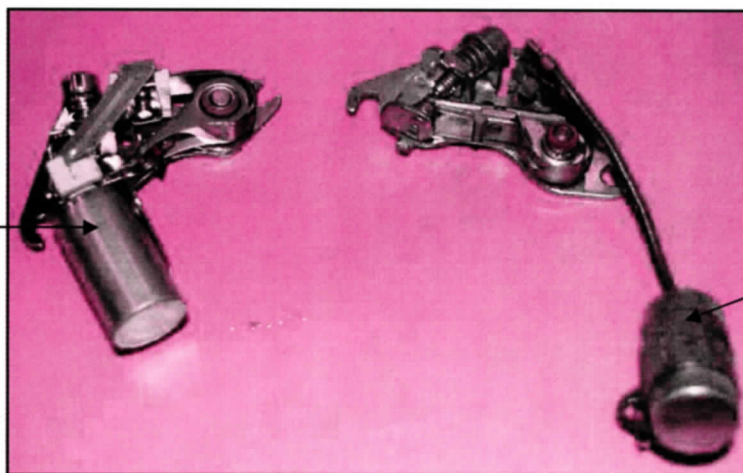
Fast forward to August 6th. My basic approach was to expect a timing problem so basic tune-up tools and parts were what I took. But one thing I took is a key point to this article – a new Accel distributor rotor. I always have these on hand and never use any other distributor rotor in my cars.

To keep this story somewhat short (you all know I'm never at a loss for words) I'll net it out:

- As I said my approach was to look at the timing.
- I trusted that the motor turned as Ted said it did.
- Removed the distributor cap to inspect the points. No movement that I could see. The car had a "Uni set" with the condenser and point in one assembly. I just could not see any point gap.
- Pulled the Uni-set and made sure the pints were good and that they did move.
- Reinstalled them making sure there was a gap of some sort – I eyeballed 15 thousandths.
- I made sure the car was in reasonable timing by making sure the rotor was somewhere near the #1 plug wire post when at TDC.
- Yep we had gas – after I filled the Holley's float bowls using my trusty squeeze bottle. Gas squirted. Good.
- Inserted the point gap adjusting wrench. Loosened the distributor hold down.
- Attached the dwell meter and timing light. (All "old tech" stuff. Fun to do that.)

(Side bar here: The only "tool" I have for the Z06 is my cell phone.)

"Uni set" ignition points configuration—note condenser connected directly to points bracket



Traditional ignition points configuration—note condenser connected to points bracket by black wire.

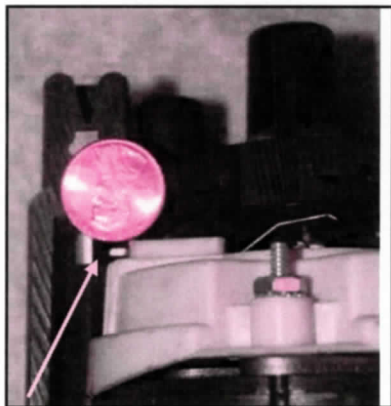
- Told Ted to hit the switch. It ran.
- Ted had others look at the car with no success. He may think I'm the world's best mechanic. Far from it. Just basic stuff.
- I set the dwell and timing – both were off but close enough for the engine to run.

What is the lesson (or lessons) here? Well...

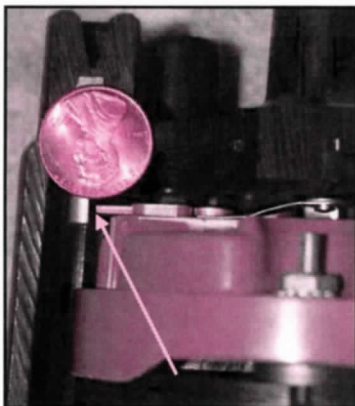
- On these old car running is basic stuff. If you've got gas, spark, and an engine that turns it should run.
- If not look for other "major" stuff: compression, engine turns but rotor does not. If you have one of those problems all the tuning in the world won't solve it. For Ted and I that was not the case. No bad news on this relatively fresh engine.
- But you need good quality parts. The latest GM production rotors just are not that.

Make sure the basic adjustments are somewhere near right. Get it running and then tune it.

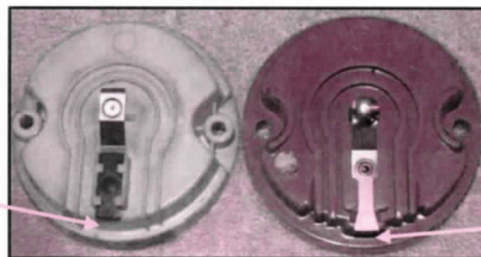
But more on that rotor issue I raise. Over the years as GM worked on emissions, introducing HEI and other features the design of the rotor changed. The result was a light weight rotor that carbon tracked very easily designed with a much wider gap between the rotor tip and the distributor cap post. That gap can be as wide as 90 thousandths – nearly 3 times the spark plug gap. For the spark to "jump" that wide a gap in a normal point ignition is asking a lot.



Grey GM Rotor Cap



Brown Accel Rotor Cap



Grey GM Spark Contact - Brown Accel Contact

Making matters worse is the fact that GM cut costs by making the spark contact points aluminum in place of the much better conducting copper. And the aluminum corrodes more easily than copper does. The end result: if there is ANYTHING out of spec that spark will not make it. In other words if the points are not opening as they should your chances of the engine running well are small. Or the car will not run at all as in the case of Ted's '66 (which is a very nice 350 HP Moss Green convertible). The tip to post gap with the Accel rotor I use is more in the 30 thousandths range with a good old copper tip. Much better!

So net: Ted's '66 is running again.

But the next step for Ted and another story to be told is to convert the ignition to electronic by installing a Pertronix kit.