The Volt Vette Project

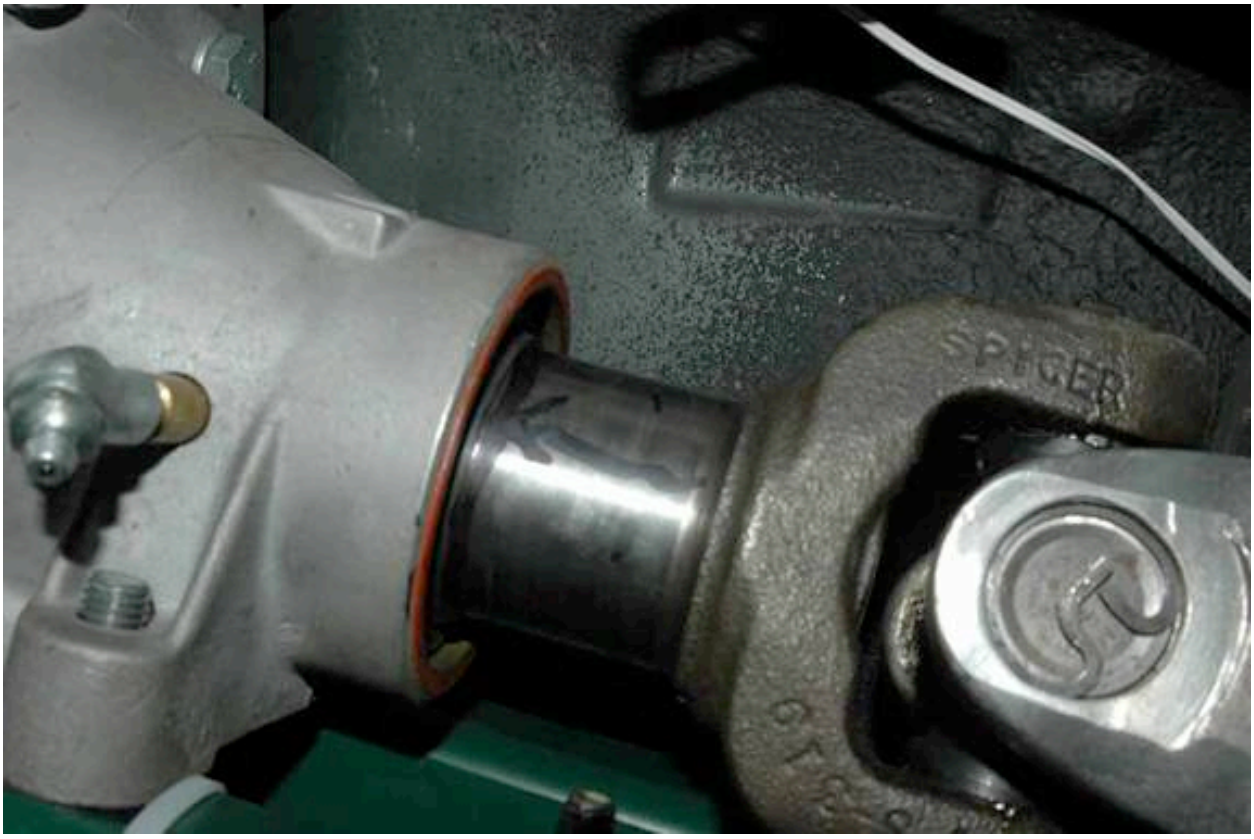
Chapter 32

The Incredible Shrinking Driveshaft!

Back in Chapter 15 I had a new driveshaft made for the car. When I had the new differential put in, I had to put in a shorter driveshaft.

During testing I checked to see how well the car could coast. With no transmission the vette should glide a long way. But I noticed that there was a lot of noise and vibration at any speed over 35 mph. This is NOT what an electric car should sound like.

Back in my garage, I crawled under the car and found a little too much free play in the slip yoke.



The slip yoke should slip into the motor bell housing where it discreetly, but firmly, mates with the armature shaft. Away from prying eyes, foolish hands, and flying stones. But as the driveshaft “shrank” the yoke slipped too far out of the bell housing as you can see in the photo above.

I had a new driveshaft made, this time with a longer slip yoke to get a better grip on the spinning armature. This reduced the noise; for a while. But after about 40 miles the driveshaft seemed to shrink again, and the noise and vibration was as bad as before!

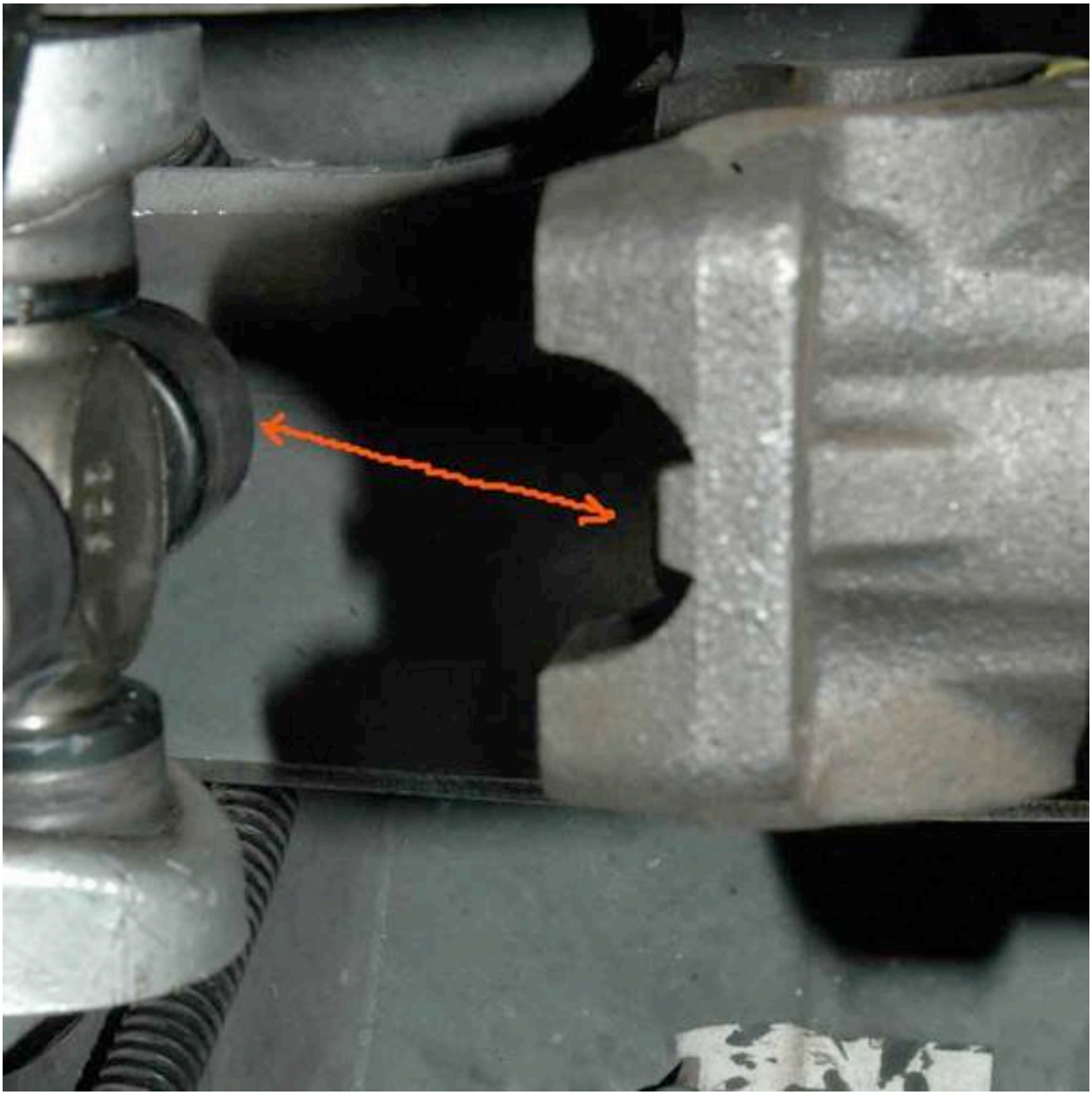
After tearing my hair out, I removed the suddenly short shaft. Putting the short and long yokes side by side, I could see that both were grabbing only about an inch of the armature.

How could that be?!

I spend quite some time lying on the garage floor, staring at the under side of the car. Conclusion? My method for measuring the driveshaft must be wrong. Garbage in garbage out.

New plan.

I measure the gap between the present shaft and the differential u-joint. I stop thinking about how long the new, new shaft should be and start thinking about how short the present driveshaft is.

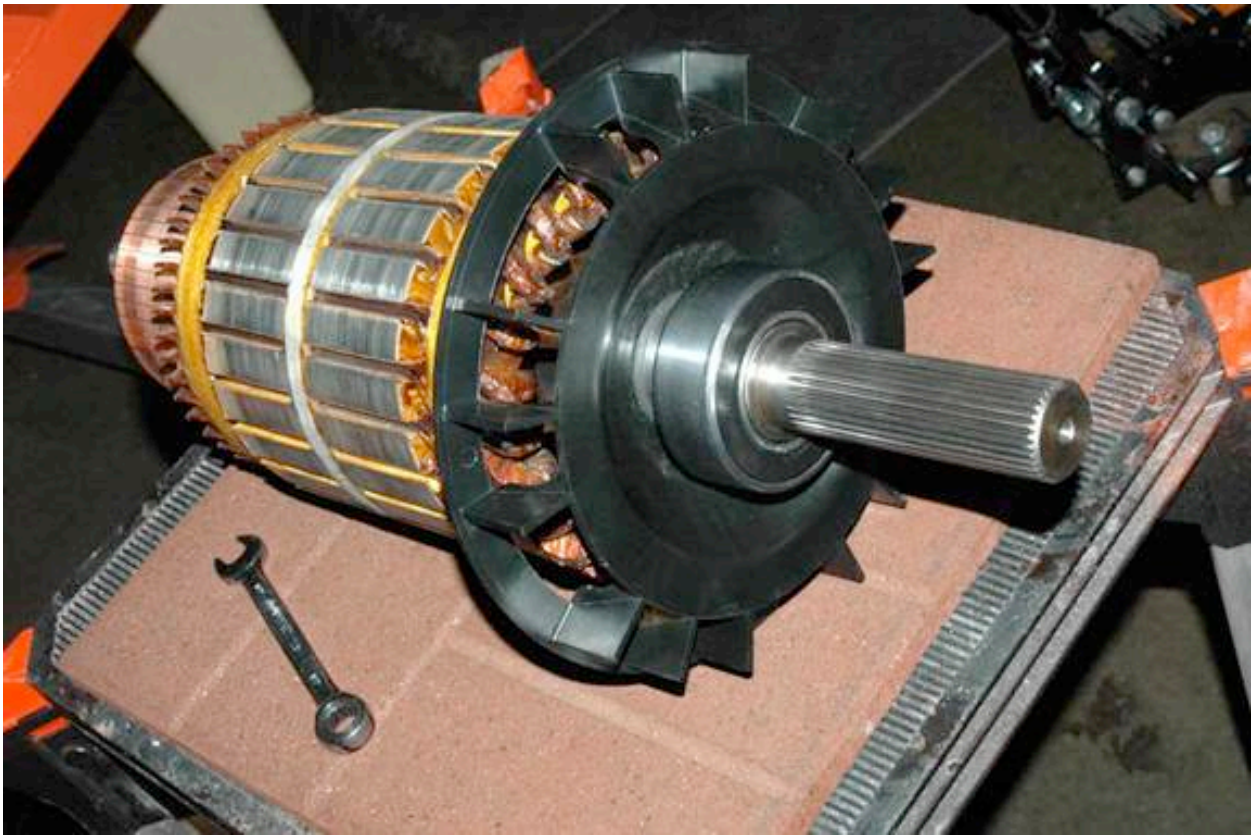


Instead of asking the shop to make a new shaft 43.25 inches long, I give them the present shaft, and order a new driveshaft that is 1.62 inches longer.

This, at too long last, gets the job done!

On the road again, I still have some differential noise. This slowly goes away over the next 500 miles, as the gears inside get friendly with each other.

With the drive train quiet, I could hear noise from the TransWarp motor. It sounded a little like one of those new jet engines at idle. I placed a phone call to the Net Gain people who had designed that motor. They said a set of turbine-style fan blades was mounted to the armature shaft to draw cooling air into the motor. They had a choice of blades, one type was very quiet, but didn't move much air; the other moved lots of air but produced a turbine whine.



Since most people put this motor in their race car rather than their street car… well… I got the picture.

The bottom line is still the same. The Volt Vette is getting more enjoyable to drive with each passing day. And now I don't have to whine about the project!