

Sparks - About Wiring

Scott Stubblefield on eMog (sent in by Bill Button)

Sparks are my subject. The following is for any car, although race cars have some other issues. Coming out of the computer business, I never understood the obsession with colored wire. A harness should almost fall into place. TVR used all black wires for years, but then the lady who made the harnesses was blind. True story. The junk sold in the stores as "auto primary" wire is unsuitable for use under the bonnet (or anywhere else).

I found you can get XL rated wire (cross-linked) in short lengths from KayJay. You can only get solid colors, but if you add short rings of heat-shrink at each end, you can sort of get two color wire (red ring on a white wire for the starter solenoid, etc.). The source: www.kayjayco.com/catPWireTXL.htm

Be careful, in that SAE gauge is smaller than AWG. ATO fuses are more reliable than 3AG. Most charts for current and wire size are listed as what is safe not to catch fire, not what is large enough to do the job well.

Two thoughts if you need to fuse lights: The load can not fail to a short, but the wires can. Relays are OK if you use good relays. They will SAY Bosch, not just look like Bosch. At \$2 each, not a bad deal. Not sure if the ignition switch can take the load of the headlights. Don't recommend it. If you want your lights to go off with the ignition, you are forced into a relay.

All motors should be fused, as a stalled motor will pull too much power and smoke as a result. Electric fuel pumps should ALWAYS have an impact switch and relay. An oil pressure switch is also considered good safety.

Pay attention to total circuit current and the ground path. I have seen too many loads, all with big enough wires, and sharing a 16 gauge ground. This lets the smoke out of the wire which is bad. I run 12 gauge to the headlights as I prefer white to yellow light.

Don't forget to ground the radiator and gas tank. Steel is a poor conductor. I recommend running a 6 gauge wire from the rear ground point to the front common point. I run an extra ground strap on the alternator, too. Mounting bolts are for mounting, not power. Same with the manifold. In a Plus 8, I would run a ground from the manifold to the common. Yes, I have actually seen ignition problems caused by this (on a Ford, not Rover).

If a connector is outside the body (all of them in a MOG), I use only weather-pac connectors. (WPs can be crimped with a cheap Radio Shack crimper, not the \$90 version). I crimp and solder everything. Use dielectric grease in all connectors or spray with T9. Star washers are bad except for low current, voltage accuracy use (like the temp sender). Do not use them for anything else. You need surface area for current.

I like screw terminal strips over blade or "fastons." Ten years in a failure analysis lab and I have a real attitude with wiring. Tie-wraps and the split loom do a very good job of protecting the wire and are easy to add/change/fix. I found Home Depot sells split loom for pennies where the auto-wire suppliers sells it for dollars. If I were doing my car from scratch, the fuse block and relays would be under the dash. Dryer.

Some people buy a generic wire kit. Unless you have a Chevy column and light switch, you will spend more time modifying it than doing it all from scratch. Do one circuit at a time and it is really pretty easy.

If you want the long version, or discuss your specific schematic, please email me. One of these days, I'll write the book.

More Scuttle Shake Remedies

Ron Akehurst

The article in the September NWMogazine about sliding pillar lubrication referred to front end shimmy problems potentially caused by inadequate lubrication. There are, however, a number of other causes of front end shimmy or "scuttleshake" that are worthy of mention.

Most Morgan owners, especially the owners of older models, have experienced the phenomenon (idiosyncrasy, annoyance, embarrassment) of scuttleshake. To some, it is as much a part of the car as louvres and sliding pillars, and is another unique and perversely endearing aspect of the Morgan driving experience. Scuttleshake is built into every Morgan, but can be minimized, if not entirely eliminated. It's something about a flexible chassis design with an old tractor engine bolted to it.

The scuttleshake problem with my 1963 Plus 4 kept getting worse. By the spring of 2005, almost every time I drove between 52 mph and 62 mph the shaking was continuous and severe enough that I had to tightly grip the steering and either accelerate or decelerate out of the sensitive speed range. This made for difficult and tricky driving in traffic on the highway.

My first step in dealing with this problem came as a result of noticing, by chance, a reference to the steering friction dampers in one of my old manuals. The manual said that longitudinal movement of these steel blades is expected and normal but side-to-side play can cause scuttleshake. The steering dampers consist of two-inch wide spring steel blades bracing the bottom of the suspension to the chassis. These blades are held in place on the upper flange of the frame rails by a couple of small angular steel spacers with oval-shaped holes that the mounting bolts pass through. After loosening the bolts, these spacers can be moved by hand or the tip of a screwdriver and the bolts retightened to eliminate any side-to-side play in this mount. To check for play before and after adjustment, just grab the blade firmly and wiggle it sideways. If there is slack, you will feel it and hear the tapping of the blade against the spacers. If there is noticeable wear on the sides of the blades adjacent to the spacers, it may be necessary to replace the blades and spacers. Original Morgan parts are recommended in this regard because of the considerable stress placed on these components.

My steering dampers both had an unacceptable amount of play, and this simple adjustment produced a dramatic improvement, eliminating probably 50% of my scuttleshake problem. I lived with this level of improvement for a while and it gradually occurred to me that there might be play in other parts of the front end that could be contributing to the problem. I checked all the steering linkage and tie rod ends, including lubrication, and everything was in good condition. I then started checking some of the bolts for tightness and was surprised to find a few were not fully tight, including the upper mount of each shock absorber. This could have been a result of all that shaking. After tightening all the bolts, I noticed more improvement, and estimated that 75% of my problem had now been fixed.

The final touch came when I replaced my old warped wire wheels with the 6 ounce balance weights, with new chrome and stainless Dayton wire wheels. I had ordered new wheels for a number of reasons, one of which was the warping problem which necessitated gentle cornering and frequent wheel rebalancing. After fitting the new wheels, I was delighted with the not-unexpected further incremental improvement of my scuttleshake problem. I estimate that at least 95% of the original problem no longer exists. The remaining scuttleshake is almost imperceptible, only a small vibration that occurs only around 62 mph.

Even if your wheels are in poor condition, a couple of hours with wrenches in hand will go a long way towards minimizing your scuttleshake problems.