

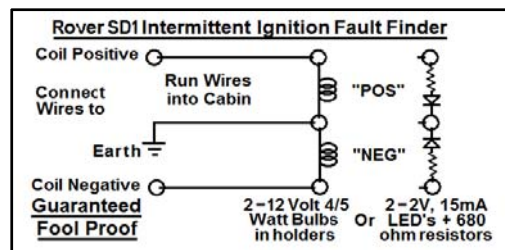
Rover SD1 V8 Electronic Ignition System - Locating Intermittent Faults

Even after full static testing of all ignition components and finding nothing wrong, one can be left with an intermittent fault that defies resolution. Mostly they are in the primary side, due to low tension connection issues but not always to the exclusion of croaky components or high voltage tracking in (say) damp conditions. Indeed it's not always clear that a sporadic fault is actually in the ignition system at all, especially with similarly vulnerable Efi engines.

This dynamic test process will find an intermittent primary side ignition fault by observing failure signs as they occur. For safety reasons, it requires the help of a second person and needless to say, one has to await the onset of the fault in order to diagnose the results.

In summary then, intermittent ignition faults are hard to find, rarely seen in static tests, patience and sharp powers of observation are required, but the process is totally logical and will pinpoint a specific fault location. Study what follows to get one's head around the logic and how to apply it before going on the road to view the primary side in action.

- Connect two 12V 4/5W bulbs (or 2V 15mA LED's + 680ohm resistors) linked between coil + ve and coil - ve to earth.
- Mark the lamps "POS" and "NEG" and route the wires safely to the cabin.
- Keep them clear of hot/moving parts.
- Start the engine and observe that "POS", sensing the ignition input voltage is permanently on.
- Observe "NEG", sensing the pulsed voltage across the ignition amplifier flickers in sympathy with engine rpm, or is dimly lit (LED's flicker better).
- Drive the car and have a helper note what happens when the engine misbehaves.
- If "POS" and "NEG" go out together there is an open circuit interruption of the 12 v feed such as a faulty wire/ignition switch.
- Or, a short on the same circuit due to burned insulation.
- If "NEG" comes on full, the amplifier or its associated wiring/earth contact has failed in open circuit mode.
- Or, the pulsed input from the pick-up coil to the amplifier from the dizzy has failed.
- Or, the associated wiring is faulty/shorting to earth.
- Or (unlikely) the coil has failed in a short circuit mode.
- If "NEG" goes out, the amplifier has temporarily failed in short circuit mode due to excess internal heat or the local wiring is shorting to earth.
- Or, the coil failed in open circuit mode due to insulation breakdown or internal heat.
- If "POS" stays lit and "NEG" show signs of flickering instability, not sympathetic with engine rpm, then the amplifier or its connections are on the blink.
- If neither "POS" nor "NEG" change behaviour the fault is not in the primary side.
- Attention now reverts to secondary side HT components or the fuel supply system.



Thus, the dynamic process pinpoints a probable erratic component/wiring as prime suspect for substitution/investigation. It would be nice to more definitive but with a front runner plus a collection of good used parts, confirmation is now much easier before buying new parts.

Ramon Alban

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