Rover SD1 Wiring and Connector Maintenance

Prologue

- How does it go? “If it isn’t broken, don't mend it!" I can’t always subscribe to this mantra as stuff happens with modern classics such as the Rover SD1 which calls for a little rule bending.

- A most significant yet neglected area of preventive maintenance that any owner can carry out is wiring and connector checks.

- Areas exposed to wide temperature variation, damp or corrosion are especially vulnerable.

- Rather than wait for things to go wrong, perhaps whilst driving at night on a wet motorway, why not carry out a simple preventative maintenance program.

- A couple of hours over a few weekends should be enough.

Efi System Problems

- Take the pesky engine wiring loom on an SD1 Efi for example?

- The Efi system is built with inherently reliable components yet has gained a poor reputation for reliability. This is largely undeserved due to lack of appropriate maintenance on most cars but beyond this, the primary cause of problems is down to two main issues, air leaks and wiring and connector faults.

- To check the latter, with engine running from cold, gently flex all the wires, loom and connectors to try and induce any disruption and keep doing it as the engine rises to normal temperature.

- Wriggle "hard to reach" wires such as injector and sensor connectors with a plastic covered wire hook or a thin stick.

- If the engine idle speed changes or other symptoms occur during the test, close inspection of the wiring at that point will probably reveal the cause and solution.

- Also visually inspect all connectors and wires.

General Wiring Repairs

- Before carrying out any repairs it is prudent to disconnect the battery to be sure the circuit is dead.

- Chafed wires can be sleeved or wrapped with tape.

- Use a non-sticky loom tape rather than adhesive tape, which soon goes manky. It is usually self sealing but a touch of superglue on the tuck will fix it efficiently.

- Broken wires can be cut, stripped, soldered and insulated with heat shrink tubing.

- Alternatively fit crimped or soldered spades/bullets and shrink wrap over the lot.

- Squirt some WD40 or rub some Vaseline on the joint before closing it.

- Faulty earths are easy to rectify (if they can be located!). Clean away corrosion and check eyelets are soundly attached. Replace if necessary.

- Clean off any paint or corrosion from the metal and use a serrated washer to bite the metal and improve electrical connection.

- Smear earth joints with Vaseline for longer term protection.

- The earth connections at the rear light clusters are notorious corrosion points and if so affected, are prone to overheating due to the relatively high current drawn when all rear lights are in use. Trailer wiring can exacerbate this problem.

- Damaged single spade or bullet connectors are easy to solve by soldering or crimping new connectors providing there is enough slack wire.

- If not, consider grafting a longer piece of same color wire as if it were broken (see above).

- Insulation of flying leads often harden or crack with age and grafting is again a good solution

- It's often easy to get inside a loom, make a neat graft and re-tape loom as above.

- Alternatively, if a broken wire is buried in an inaccessible part of a loom, run in a new wire to the connector pins or even consider bypassing the existing multi-connector pin with a single male and female bullet or spade at the connector location. This way the component or loom can still be fully disconnected.

Connectors

- For injection, sensor and multi-connectors around the engine and engine bay, take more than a little care!

- Plastic shrouds harden with age or heat exposure and often break when removed.

- Guard against this by flooding with WD40, warming with a hair drier and gently wriggling them free.

- Clean around the contacts with solvent (cotton buds are good) and inspect for bent or broken contacts.

- Use a wooden kebab stick to ease together any opened female contacts or tweezers to straighten any thing that is bent.

- When the connector is all OK, flood it with WD40 or Switch cleaner, close and open the contacts a few times to brighten up the contact surfaces, blow out the residues and close the connector after adding some Vaseline.

- Broken contacts do present a replacement problem. Various tools (as well as new contacts) are available from Lucas or Unipart outlets or wiring specialists for removing individual contacts from their housings and replacing them with identical parts.

- (Special Tip) Stripping a complete loom from a scrap car yields an unending source of spare connectors, colored wire, housings etc for effecting economic repairs and you get lots of opportunity to practice contact removal before going to the problem in hand.

- It’s often possible to pick up whole wiring looms at Rover SD1 Club Spares Days or auto jumbles.

- Sometimes a whole connector or its housing gets damaged. In cases such as injector connectors, consider grafting in a new replacement.

- Alternatively, at a friendly scrap yard look for early common BMC or Leyland injection cars with the wiring intact. Buy the whole engine loom, or snip off a few similar connectors (complete with plenty of wire).

- Back in the workshop cut and graft in a replacement as described for broken wires.

- Alternatively, with the proper tool, carefully removing good contacts from a damaged housing and fitting them to a new or second hand housing or shroud is a very neat solution.

- Elsewhere in the SD1, wiring and connectors carrying heavy current loads such as lighting and door mechanism feeds and ignition switched feeds are all sources of potential problems.

- Quite often a sluggish mechanism (e.g. - window lift) or tired motor driven function (e.g. - sun roof drive) can be traced directly to voltage drop at corroded or damaged wiring or connectors.

- In both front foot-wells behind the removable carpet trim are oodles of connectors. Also at knee level around the steering column are loads more.

- One in particular is the main ignition connector which carries quite high current and can overheat if not kept in good condition.

- There are several others behind the C post lower trim panel.

- Disconnect one pair at a time, inspect for damage, squirt with WD40 then open and close a few times before finally closing with a smear of Vaseline and moving on to the next.

- Troublesome connectors can be secured with thin tie wraps.

- For big folks, removing the front seats and glove boxes makes access to the mentioned connectors a lot easier.

- Verify the function of each system straight away (i.e. lighting, window lift, courtesy lights etc) after checking the integrity of its various connectors to be sure new faults have not been induced.

- There are some problems that seem to defy the conventional solutions mentioned.

- One such, are the ubiquitous problems associated with the Central Locking mechanism.

- Here the cause seems to be that there is simply too much voltage drop in the multiple connectors between the control mechanism and the operating motors.

- In such a case it can be worthwhile running in a new voltage feed to the remote mechanism and changing the wiring to reduce the voltage drop.

- Another remote and vulnerable area is the tailgate where wiring and connectors are accessible when the tailgate finisher and ventilation flaps are removed.

- The amount of crud and corrosion affecting the tailgate connectors can be quite troublesome but they respond well to cleaning as described.

Switches

- Lots of problems occur with function switches on SD1 instrument panels and various door and courtesy switches.

- Just easing a switch out from its housing and flooding it with WD40 or switch cleaner, working it a few times to circulate the cleaner and blowing off the excess with compressed air will add years of life to them, particularly as most seem to have been assembled with insufficient lubrication in the first place.

- For future lubrication run a little melted Vaseline into the mechanism.

- Visit a local scrap yard, or at one of the Rover SD1 Club Spares days or at auto jumbles and buy a few spare dashboard function switches then take one apart to see how they work. Common types of second hand switches are cheap as chips.

- Most problems are caused by a broken or displaced little safety-pin type spring, but it's now dead easy to repair with this new source of low cost replacements. You can even make new springs from some very thin piano wire from a local model shop.

Epilogue

- Sadly, electrical things are a black art to many people but they need not be as there is lots of information in the circuit diagrams for each particular model in various workshop manuals. Also there is a really useful Late SD1 Series 2 3500cc Wiring Harness Book that has details of every connection on the car.

- When reading circuit diagrams, one tip to make things easier for the electrically challenged community is to concentrate only on the component being investigated and its associated wiring making special note of the wiring colors involved. Don’t be confused by all the surrounding lines on the diagram which are not associated with the problem in hand.

- Like everything else on the SD1, the wiring harness and its connectors are vulnerable to wear and corrosion but a few hours of diligent preventative maintenance can help ensure a more reliable electrical system and improved familiarity when it comes to tracking down future problems.

- Whenever the opportunity has arisen, mostly when restoring or when interior trim is removed, I have habitually inspected the local wiring and connectors following the general principles mentioned above. The end result has been a much improved electrical reliability and performance of the various car systems and functions.

Ramon

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