January 13, 1986

NATIONAL SERVICE NEWSLETTER - TECHNICAL 16/85

TO: ALL ROVER DEALERS

ATTENTION: SERVICE MANAGER

RE: DIFFICULT ENGINE STARTING WHEN HOT
ROVER 3500 SE & VDP EFI

Problem:

Fuel vapourisation can occur at the injectors when a vehicle with the engine at warm to hot operating temperature is parked in the sun for a short period and then restarted.

Should a customer complaint of this nature be experienced, the following action should be taken.

Solution:

Provision has been made for the fuel pressure to be increased temporarily during engine starting and for a short period of operation after engine start-up. As this effect would be undesirable if it occurred at every engine starting cycle, provision has also been made for it to only apply when the engine is at a high operating temperature.

The modification is accomplished by means of a solenoid valve installed after the fuel pressure regulator valve, to restrict the fuel return for up to 45 seconds after starting is initiated. This enables purging of the fuel system. At the same time, the fuel pump ballast resistor is by-passed, thus supplying direct battery voltage to the pump with consequent increased output. Over-riding temperature control is achieved by use of the switch which activates the electric engine cooling booster fans.

NOTE: First ensure that the engine fuel and electrical systems are to standard specification and the engine is in good tune.

Range of Vehicles:

All electronic fuel injected models.

Material Supply:

Material can be obtained from JRA Parts Department under kit part number AYF0039.

Rework Procedure:

Underbonnet

1. Depressurize the fuel system and disconnect the battery.
2. Fit solenoid valve (AUU1028) to the mounting bracket (HAM3971) with the two 5 mm bolts (SH105161) and nuts (NY105041). Position the solenoid valve as per FIG. 1, noting the direction of the arrow which is marked on the valve assembly.

SOLENOID VALVE MOUNTING ASSEMBLY

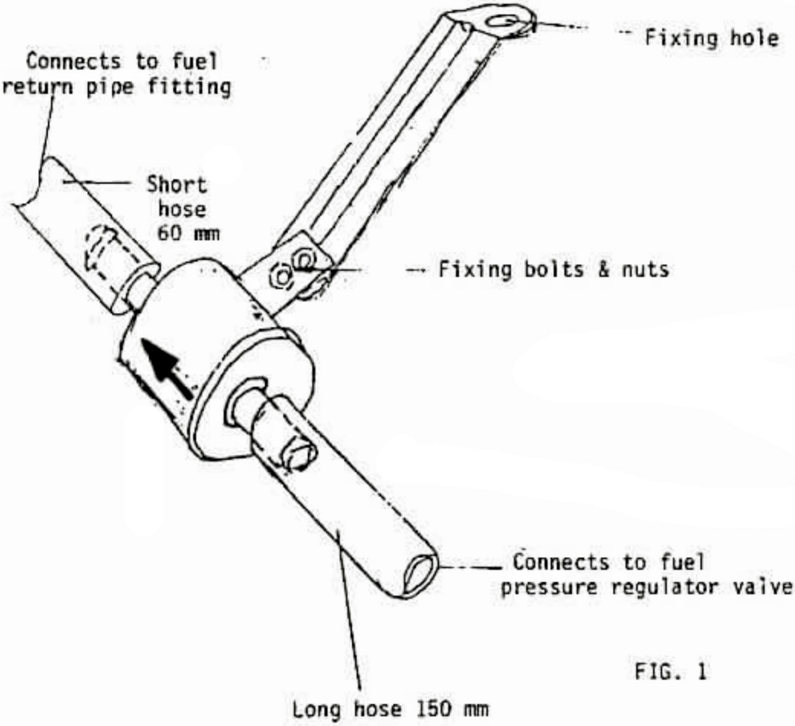

Fixing hole
Connects to fuel return pipe fitting
Short hose 60 mm
Fixing bolts & nuts
Connects to fuel pressure regulator valve
Long hose 150 mm

FIG. 1

3. Fit the short fuel hose (UAM8081) to the outlet side of the solenoid valve and the long fuel hose (UAM8082) to the inlet side, refer FIG. 1. Then secure both hoses with clips (CRC5969).

NOTE: Fuel flexible hoses are to be fitted as per the instruction detailed in the Austin Rover Service Bulletin. Technical Number

4. Remove the fuel pressure regulator valve mounting bolt (cruise control throttle actuator, if fitted) and the accelerator cable fixing to enable easier access to the fuel hose clips. Remove the fuel hose from between the fuel pressure regulator and the return line pipe and discard.

5. Fit the solenoid valve assembly in place with the long hose towards the fuel pressure regulator valve. Position the solenoid valve assembly mounting bracket forward of the fuel delivery pipe so that the solenoid valve sits below the delivery pipe and adjacent to the left hand cylinder head. The mounting bracket is positioned under the left hand rear engine plenum chamber bolt, refer FIG. 2.

ENGINE PLENUM CHAMBER

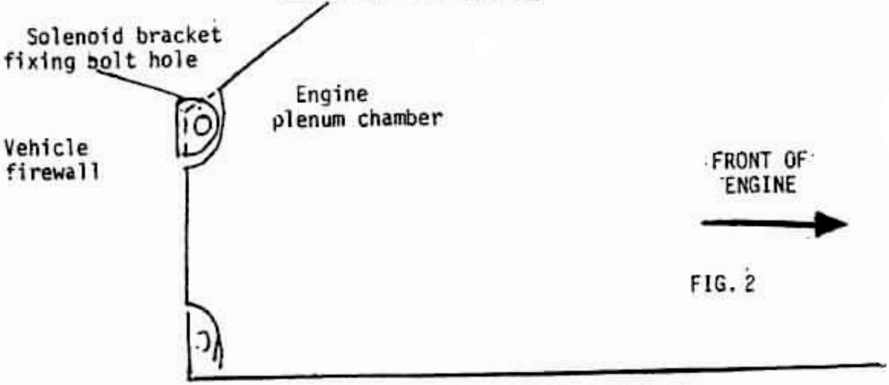


FIG. 2

6. Secure the mounting bracket to the plenum chamber and fit the fuel hoses to the fuel pressure regulator valve and fuel return line. Then secure both hose with clips (CRC5969) and torque to the above specification.

7. Refit the fuel pressure regulator valve mounting bolt and accelerator cable fixing.

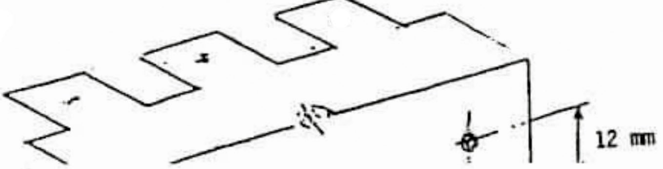
8. Reconnect the battery, start the engine and check for fuel leakage and correct as necessary.

9. Disconnect the battery.

Inside Vehicle:

1. Modify the relay mounting bracket (HAM3971), refer FIG. 3 by drilling a 5.2 mm hole as illustrated.

SOLENOID MOUNTING BRACKET MODIFICATION



2. Remove the left hand glovebox and the 'A' post toe board trim.
3. Fit the relay mounting bracket (HAM3971) to the right of the existing relays mounted to the underside of the dash fascia panel and use the existing 5 mm bolt fixing, refer FIG. 4.

SOLENOID MOUNTING BRACKET LOCATION

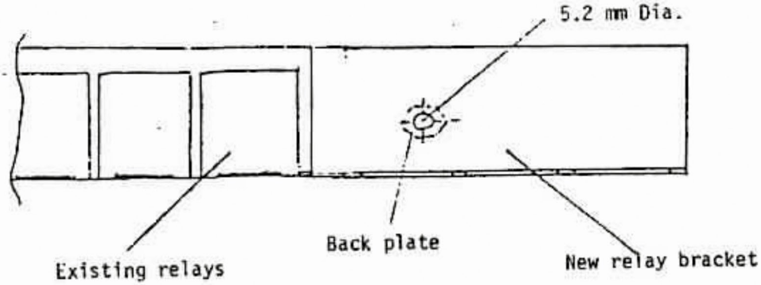
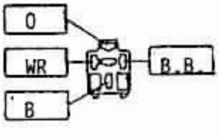


FIG. 4

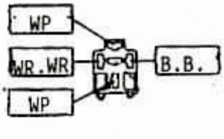
4. Install the wiring harness (AYF0040) with the relays attached to the mounting bracket, refer FIG. 5 for relay wiring connections. Fit the delay relay (DAC3796, black in colour) to the right hand fixing and the other two small relays (DRC1820) adjacent to it.

   Route the wiring harness below the relays and to the right of the mounting bracket and ensure that the 3 amp inline fuse for the solenoid supply circuit is made accessible.

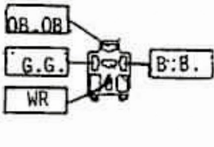
RELAY WIRING CONNECTIONS



Fuel Pressure
Solenoid Relay



Fuel Pump Resistor
By-pass Relay



Fuel Pressure
Solenoid Valve
Delay Unit

Colour Code: O - Orange B - Black G - Green
WR - White Red WP - White Purple

FIG. 5

Underbonnet:

and white wires through this hole and up into the engine bay, via the harness grommet at the rear of the left hand inner guard valance panel adjacent to the firewall.

NOTE: This can be effected with the aid of a length of welding wire placed into the guard aperture from the underbonnet area and then guide the harness back into the engine bay area.

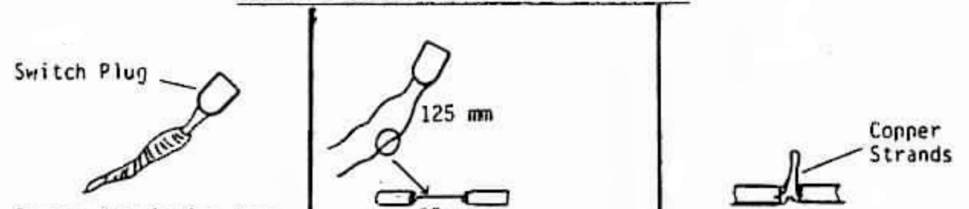
6. Route the orange/green harness wires along the firewall to the solenoid valve connection point using the existing body wiring clips. Connect the harness to the solenoid valve wiring.

NOTE: The connections can be made either way around. Then secure the wiring to the fuel injection harness with one cable tie (NYH1763).

7. Route the white wire along the left hand inner guard panel to the front of the air cleaner assembly using the existing body wiring clips.

8. Remove the wiring connector from the radiator cooling fan switch and bare the orange with green trace wire for a 25 mm section, 125 mm rearwards of the connector plug to enable a bullet terminal and insulator to be installed, refer FIG. 6.

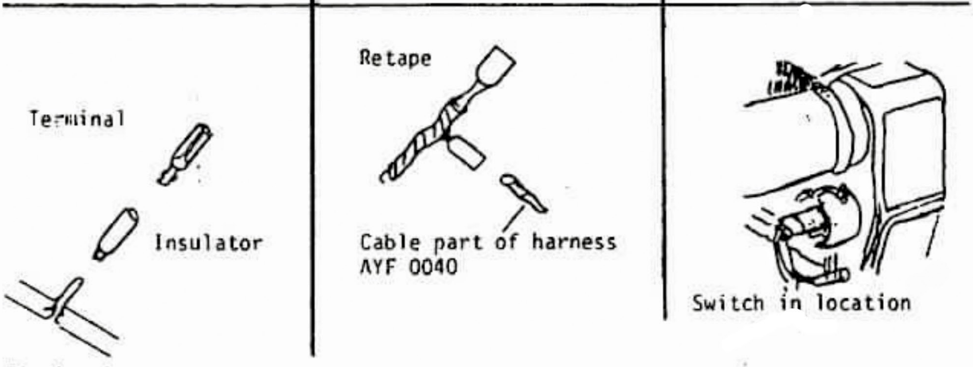
ELECTRIC COOLING SWITCH WIRING REWORK



Remove insulating tape

25mm
Remove insulation from green/orange cable

Insulation
Bend copper strands until insulation "butts".



Cable part of harness AYF 0040

Switch in location

Fit insulator and terminal.

FIG. 6