

In detail, then, the circuit diagram shows a diode inserted in the circuit adjacent to the start relay to prevent an unwanted +12 volt signal from the coil reaching the Efi pick-up point "B2" via the start relay.

With engine running and transmission in Park/ Neutral, the supplementary relay is energised and the air solenoid is not activated. As transmission goes to Drive/Reverse the relay is de-energised and switches on the solenoid, which delivers the additional air.

The changes do not upset the Efi system as the ECU simply responds by providing more fuel in the correct ratio to boost idle speed. It is as if the throttle is marginally opened as the car goes into gear!

Neither do the modifications affect the system when driving as the small amount of extra air introduced by the valve is insignificant during normal operation.

Below are details extracted from the latterly found technical material that will enable owners of these SD1 variants to retro-fit the system to a car that exhibits the stalling symptoms described, or, perhaps more crucially, access sufficient information to diagnose faults or shortcomings on an existing system.

Engine Stalling Under Additional Load – Parts Required

<u>Description</u>	<u>Original P/No</u>	<u>Description</u>	<u>Original P/No</u>
Supplementary Air Valve* (* Also Tecalemit P/No)	EAC 6534D TDA47-102	1m of 8.77 mm hose	CAC 5868D
Relay	AHU 1061	Diode	DRC 8121
Tee piece	EAC 6804D	Tee piece	EAC 6433D
Clips, 4 off	EAC 3215/2D	Clips, 4 off	EAC 3215/6D

The above parts were also available as a kit-under part number BHM 1570

Fitting Procedure for Valve and Hose.

1. Mount the supplementary air valve on the bottom bolt of the over-run valve fixing, 'A' in fig. 1, at rear of plenum. The flow arrow should point away from throttle body side of engine. It may be necessary to adjust the valve-fixing strap to allow the outer hole to be used.
2. Cut the hose running from near the idle screw gallery to the air rail input at position 'P' in fig. 1 and insert the unrestricted Tee piece. It is necessary to shorten the cut hose to avoid fouling the throttle mechanism (Important: Make a further check upon completion).
3. Using a suitable length cut from the new hose; connect the Tee piece to the new air valve.
4. Cut the hose running from the Efi Extra Air valve ('X') to plenum chamber at position 'S:' in fig. 1 and insert the restricted Tee piece (hole dia. 6mm). Shorten the cut hose as required.
5. Using a suitable length of new hose, connect the Tee piece to the air valve and secure hose in position with clips located in fixings used for injector wiring harness.

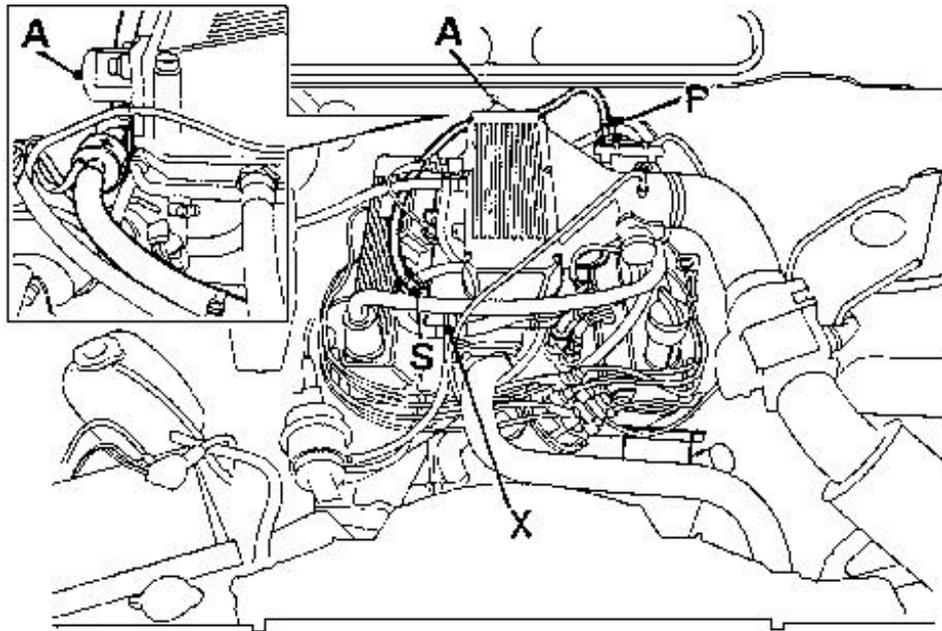


Fig.1

Electrical connections (Use appropriate coloured cable, connectors and accessories).

6. Locate gearbox/main harness multiplug (A in fig. 2) situated at N/S bulkhead. Remove white/red leads from the main harness connector (X & Y in fig. 2). Join together and insulate joint.
7. At start relay situated in O/S front wing valance, (B in fig. 2) disconnect and tie back to harness the black wire connected to terminal 85 (86 on some models) of the start relay.
8. Mount the additional relay for supplementary air valve beside existing relays above N/S glove box. Or alternatively, for convenience, on a bracket mounted adjacent to the ignition coil.
9. Connect additional and modified wiring, using 14/030 colour cable and connectors, as follows:

White/red (W/R in fig. 2):

- a. Vacated terminal (85) of start relay (B in fig.2) to negative (-) terminal of diode (C in fig. 2).
- b. One vacated terminal of multi-plug (A in fig. 2) to positive (+) terminal of diode (C in fig. 2).
- c. The same terminal as in b. to terminal 86 of additional relay (D in fig 2).

Black (B in fig. 2):

- d. Either terminal of air valve (E in fig. 2) to adjacent earth.
- e. Remaining vacated terminal of multi-plug (A in fig. 2) to any adjacent earth.

White (W in fig. 2):

- f. Ignition switch positive (+) feed at coil (Z in fig. 2) to terminals 30 & 85 of additional relay (D in fig. 2).

Brown (N in fig. 2):

g. Terminal 87A of additional relay (D in fig. 2) to remaining terminal of air valve (E in fig. 2).

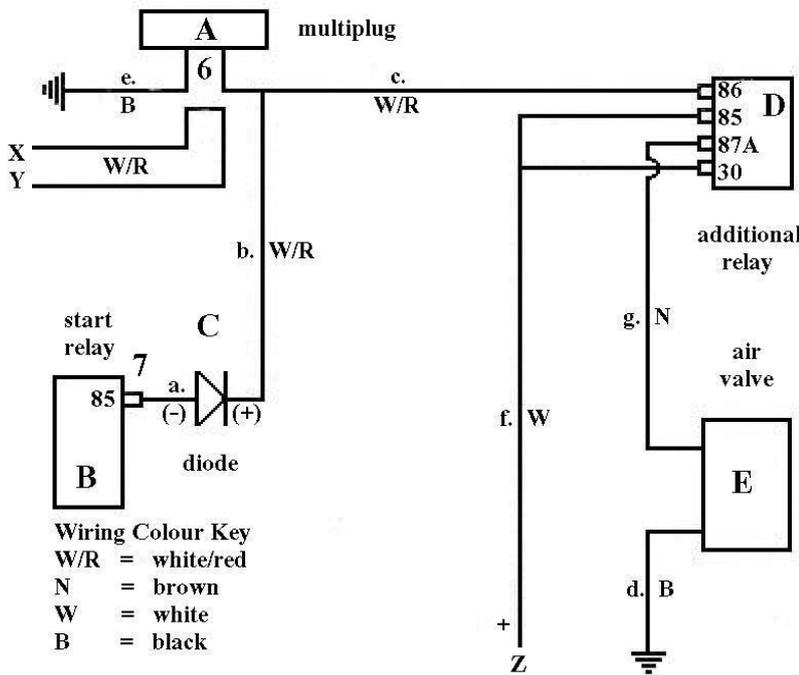


Fig.2

Notes:

- Tape all new wiring to existing adjacent cable harness.
- If additional relay is mounted above N/S glove box, route the cable via bulkhead grommet carrying Efi harness to the ECU.
- If the relay is positioned near the coil, mount a relay bracket on rearward coil-retaining bolt.
- Confirm functionality by noting slight surge in idle speed as Drive/Reverse is engaged.

As mentioned, very few current cars will carry a functioning system, but there may well be some cars which suffer from the problem of stalling under additional load because either no modification was ever fitted or that the existing modification has been partially dismantled or otherwise non functional.

Either way there is sufficient information here to either install or repair such a system. If anyone wants more information or help, please feel free to contact me.

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