

## **Rover SD1 Twin Plenum Vitesse D330 ENH - Tales of Caution Number 3 - 1Q'94**

The upgrade project on my Rover SD1 Twin Plenum Vitesse D330ENH follows a now familiar pattern of seeking out faults which are neither obvious nor critical and curing them with nominal success hindered mostly by BAe/Rover's plan to print money on the back of it's spare parts pricing policy.

My latest investigation has followed a circular route which defied explanation for quite a long time. Firstly (and wrongly) I had always wondered why Rover had not fitted an idle speed compensator to the Air Conditioning system when it loads the engine and drops the rpm by 250 or so. In fact, of course, they did. It's just not mentioned anywhere. Plus, my system was dysfunctional, leading me to believe it didn't exist anyway. Secondly, and separately, I had been querying for some time as to why my engine was running a tad hot as diagnosed by the spark plug colour being on the white side of straw and had seemingly been chasing wild geese in search of solution! Now both faults have been accidentally linked.

One day I was tidying up around the throttle area and noticed a totally inaccessible solenoid tucked under the twin plenum which is hooked up to a couple of air pipes and a feed wire. The solenoid function is not described anywhere in the Rover manual nor in Haynes but after examining the wire colour code, I traced it on Haynes' Air Conditioning wiring diagram labeled as a "Fast Idle Solenoid"! Wowie! Conversely on Rover's equivalent diagram it is labeled "Air Conditioning Solenoid Valve", which is a pretty useless description? Now, this part is buried deep and can't be removed without lifting the plenum chamber which I wanted to avoid at an early stage but I gained space by removing the adjacent breather pipe, vacuum pipe and wiring to the local Efi sensors and hooked in an ammeter to measure if the solenoid valve was drawing current when the Air Conditioning as switched on. It was.

With engine off and battery voltage patched to the solenoid, it was pulling 700 milliamps but was not heard to be "clicking"; neither was it allowing any air through. So the circuit is OK and the real question was: - "Is the valve broken or just stuck?" and what about a replacement? Now, I recently acquired a full set of fiche and a reader too, but I could not identify the part so I asked at my local Rover Parts store and he couldn't find it either. A temporary mystery! He asked Rover Technical and they came up with a part priced at £13. On my Fiche it was listed (with no drawing) so it couldn't be verified.

Reluctantly and trustingly (ho!) I ordered it! Upon arrival it was clearly the wrong part so I got my money back so I was still chasing a wild goose.

Now I digress. Whilst peering into the abyss below the plenum chamber I idly sucked on the loose distributor vacuum pipe! It's a habit I picked up as a child when ever I see black small-bore tubes! Memories of Sherbert dips, no doubt? I'm sure you've all done it? Surprise! Surprise! I get only cheeks full of air, no sucking vacuum and no clicking from the vacuum unit. Suddenly I'm looking at two more faults.

- 1 No vacuum advance! and
- 2 Un-metered air bleeding into the plenum!

Now, in vague memory I think I read somewhere that a retarded engine will run on the hot side, so I called the rover parts store again and established that a new vacuum unit would set me back around 70 quid proving once more that the recent Rover profitability surge is nothing to do with BAe management, but is directly linked to the price of SD1 spares.

Asking around I was kindly given a spare vacuum unit from an ancient P6 3.5 distributor which Keith Hoosen (Bedford Club rep) had in his shed. The identification number 3-10-8 matched exactly so I borrowed Keith's tachometer/strobe, cleaned up and polished the spare unit and fitted it to my car. At the same time I checked the existing settings before making any timing adjustments. Surprise! Surprise! The previous owner had the timing set at 2 degrees btdc instead of the regulation 6 degrees btdc at 600 rpm. A further probable cause of my engine running retarded. According to specification the vacuum advance gives 6.5 to 9.5 degrees of movement plus, this engine had been deliberately set up 4 degrees behind the recommended timing point. A total of 10.5 - 13.5 degrees mistimed at full chat! At last I'm getting somewhere! (Unless there was an, as yet, undiscovered reason?)

With the good vacuum unit fitted and the static timing reset at 6 degrees I checked the dynamic timing at 2K rpm and it was spot on 20 - 22 degrees as per the Rover manual for a post '85 UK Vitesse. I declined from testing it at 5K rpm but with the vacuum pipe refitted I also got the missing 6.5 - 9.5 degrees! Everything was spot-on, so with Keith's smart new tachometer hooked up I set the idle speed to an accurate 850 rpm and adjusted the idle mixture setting to get the smoothest and fastest running mixture it would give, re-setting the idle control each time as required.

On the road I anticipated a cooler running engine and improved fuel consumption, and yea verily, that is precisely what happened. The Spark Plugs now match the Haynes colour chart (according to Mrs A who's good with colour matching) and the open road cruising instant fuel consumption had shot-up from 35.0 to a steady 42.5 mpg at 55 mph in fifth!

But I still had strange instantaneous mpg readouts on over-run! Sometimes I got a high reading over 90 and sometimes (on the same test run) it was lower at around 66. The reason apparently, I was getting occasional idle speed hang-up of about 1500 rpm which I could detect by flicking the box into neutral and watching the instrument tachometer take ages to fall off, whereas at other times it would quickly return to correct idle speed and by making the pedal slip off my foot and bounce back into place the fault never occurred.

Back at the workshop the cable and linkages were free but I could detect that the throttle shaft and butterfly mechanism is a tad sticky and it won't clear with spray lubricant. Sometimes it just hangs up and sometimes it doesn't.

Carburetor cleaner only gave me marginal improvement so the next task is to remove the plenum chamber and clean the interior/throttle mechanisms and at the same time dig out the aforementioned "Fast Idle Solenoid" which you'll recall is where this circular story began, but I won't start the job until I can locate a working spare and at the current time I don't even have a part number.

Then, totally out of the blue, I was browsing my fiche for some clues to the prior mentioned idle speed hang-up problem and "eureka", I found the missing part hiding amidst all the plenum hose diagrams on fiche 1, drawing J06, P/n ERC 7536A.

Previously we'd been looking, among others, at the Air Conditioning lists! I called the Rover parts man again and gave him the part number. He came back instantaneously with a price - 43 quid. I asked him not to joke. He wasn't. Rover wanted a small fortune for a pissant solenoid valve no bigger than a cotton reel! I declined. The way I see it BMW/Rover don't need Honda in their future strategy, they just need to concentrate their business on spares and they'll make a vast fortune.

All of which leaves one intriguing question. Why would the prior owner (a mechanic and garage proprietor) choose to set up the timing on one of these beasts to 2 degrees bt dc when the book clearly says 6? There has to be a reason! Any ideas please?

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