

THE WEDGE EPISTLES

compiled by

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November 2004

THE WEDGE EPISTLES

'The Wedge Epistles' are a collection of postings over a period of about one year from the Wedge section of the PistonHeads site (www.pistonheads.com). They are presented essentially in the form they were written and include thoughts, information and suggestions from a wide range of Wedge enthusiasts on a varied selection of topics. To make reading easier the Epistles are arranged in the same format as TVR Wedges, volume 1: Maintenance (often referred to as the Bible) by Steve Heath (ISBN 0 9530335 3 8). Some of the corresponding chapters in the Bible do not have entries in the Epistles but the chapter headings are shown for completeness.

As the comments expressed in this book were offered in good faith by the authors, neither they, I nor Piston Heads can be held responsible for their accuracy or any errors which lead to consequential problems. 'You have the spanner, you have the responsibility'.

The Wedge Epistles are published with the sole intention of helping to preserve and maintain these fine cars, and are free of charge. However, if you feel they have been of use to you, why not drop by your local Oxfam or Cancer Research shop and make a small donation.

*Happy Wedging
Gerry Attrick*

1 Chapter 1 – The Wedge History

2 Chapter 2 – The Ford and TVR / Rover Engines

2.1 It won't start

Apparently the ignition module can fail. [dmsims](#)

If it lost the sparks after you changed the distributor cap, it could be that you have the wrong cap. The V8 had several varieties of distributor, not all use the same cap. You need to make sure it matches the original in every dimension. [wedg1e](#)

The ignition amp is the white & black box and is bolted onto the side of the dizzy in these cars, most motor factors should be able to sort you out with a pattern part or try Rimmer Bros for original Lucas. [350matt](#)

Check the plug on the ignition module they can work loose & the bullet connector on the dizzy before you shell out for a new module. [The Doc](#)

Could there be some sort of immobiliser or cut out switch that you don't know about? [sevans](#)

My 86 C reg 350i has a very strange "secret" cut out switch – it could be that as sevans says, email me and I'll tell you about it (don't want to post it here). Could also be the ECU – is it plugged in properly? I don't think it will start without the ECU connected and working (someone else will know more about this than me) [skyrocketship](#)

2.2 I need an oil filter for my 400

Fram PH2821A . [cuneus](#)

2.3 Is the Coopers Z1159 oil filter the same as the Fram

It'll be better than the Fram! [bobble350](#)

That part is a bit worrying – sounds like they may not have the non-return valve. The reference number on the Coopers filter that I have is Z7. [19560](#)

I used one on mine last year. After 2,500 miles the engine hadn't died, so I assume they're OK to use [boltontvr](#)

2.4 How do I prime the oil pump on a V8

With an electric drill through the distributor drive. You can either make a tool or buy one from RPI for about £15 [danny hoffman](#)

Either undo the sandwich plate and then the pump front plate and pack the gears with Vaseline (don't worry it dissolves in oil) alternatively if you've got a remote filter housing (as on all wedges) undo both pipes at the filter end and pump the thing full of engine oil with an oil can. The pump outlet should be the one at the front of the car the other side goes to the gallery so don't worry about filling this one up just give it a few squirts. [350matt](#)

2.5 I've got low oil pressure!

Could also be a broken oil pick up pump. Could be the oil pump drive dying. They don't like high revs but 6500 should be OK. ish but again something else to look at. The relief spring can get stuck as well and cause zero oil pressure so it may not be broken. Worth investigating, changing the oil and flushing out the oil cooler and see what happens. [shpub](#)

Bad luck .. sounds like the oil pressure relief valve. mine went in a similar fashion on a track. the replacement itself is about £10, but expect about £300 labour from a garage to replace [jvaughan](#)

SH as ever was right. Oil pump drive broke – the bit that locates into the dissy. New one fitted and it's running as well as it ever did (sweet when rev'd – lumpy lower down – need to get Mark to have a look). Initial looks at bottom end and bores look good (borescope and removal of one main cap). Need to check a few more on the bottom end and drop the heads off to check fully but fingers crossed it wasn't as bad as first thought. [Tasmania](#)

2.6 I've got zero oil pressure!

Got the car out of the garage yesterday to find I had ZERO oil pressure on the gauge and the warning light was on. It was fine when I last ran it ten days or so ago. Does this sound like the oil pressure relief valve failing?

No. Relief valve failing means high pressure. Relief valve sticking open means low pressure, not zero. Is there any oil on the garage floor? May also be a blockage in the pickup or pump related. I'd be concerned. [19560](#)

umm not entirely correct. My oil pressure relief valve stick open and I lost all oil pressure on my 400SE back 2 years ago. There is a modified pressure relief valve that can be used on the V8 .. mine was original.(not replaced and working fine). [jvaughan](#)

Oil drained out of pump? Isn't there (supposed to be) a NR valve in the filter? If so, perhaps it's stuck open. I am probably wrong on this though [streaky](#)

Sometimes mine is zero for a couple of seconds when first starting after a week or 2 of no use. Check the level with the dipstick then if OK restart and blip the throttle – it should come back. If it doesn't you can reprime the pump through the remote oil filter mounting – see the wedge bible "Adam Quantrill" method. [adam quantrill](#)

Try giving the pump body a tap with a suitable mallet and drift, to try and 'shock' any sticking valve loose. If this works take the relief valve out and check for marks in the bore and on the piston both of which can be very carefully polished out, alternatively replace the piston and spring. Unfortunately if the bore is distorted then it is probably new front cover time. [350matt](#)

This is exactly as happened to my brother-in-law's V8-M, which made me think the same has happened here. There is plenty of oil in the sump and nothing on the garage floor. If I understood correctly the relief valve can be replaced as single unit and that there is a modified version available (presumably to prevent this happening). [bluwedge350](#)

If it is just the relief valve then you can just clean it and replace it but renew the spring (which fails through fatigue.) I've known just as many problems with the modified one... [19560](#)

2.7 I've got an occasional misfire?

Usual things – check everywhere, from visual of wires. Did you go over any bumps before Missy reared her head? the ubiquitous "earth connections" Check connections behind wallet under glove box. It could also be fuel filter or sender unit. If still not smooth this morning, get tested by rescue / mobile Crypton if poss so they can see what it is showing up (mechanics always tell me that anyway; when it's an intermittent fault "We'll have to keep it for a few days 'cos there's no point testing it when it's running ok..." [jim meehan](#)

Check out the obvious – fuel (empty ?) .. sparks – low-tension wire / high tension leads OK. Earth straps etc.. [reverend](#)

Have a look over by the airflow meter for a single bullet connector in a wire that comes from the distributor. It's the ONLY thing that tells the ECU to start pumping fuel. If it's loose or goes resistive (i.e. corroded or damp) then the fuel can kick in and out. [wedg1e](#)

3 Chapter 3 – The Ignition System

3.1 What's the valve between the distributor and the plenum for?

It isn't actually a non-return valve, it's a slow return valve i.e. it leaks (at least it does when it is working properly). The vac advance line is connected to a throttle edge tapping in the throttle assembly. What this means is that for most of the time it is connected downstream of the throttle plate and sees manifold depression, but at idle the throttle plate moves past the tapping so it sees normal atmospheric pressure. The aim is to give plenty of vacuum advance under cruise conditions but none at idle. But there's a slight problem with this. When you slam the throttle open from idle, this system produces a brief spike of vacuum, it takes the distributor a finite time to respond and recover from this, which interferes with the throttle response. The purpose of the valve is to prevent the vacuum advance from operating unless the depression is sustained for longer than a couple of seconds to prevent this glitch. Of course, it

is all too easy to fit the valve the wrong way round, some people have even done this deliberately based on a misunderstanding of how the valve works, and anyway the valves often get clogged up completely in which case all bets are off. If in doubt I would advise you to get rid of the valve completely, since the problem it aims to cure is trivial compared to some of the problems it can cause. [greenv8s](#)

3.2 Where can I have my ECU looked at and / or repaired

www.carelect.demon.co.uk/index.html [dmsims](#)

I have also got a series 2 350i and had a problem with the ECU. Send it to Carelect and got it back with the announcement that it could not be fixed (an ECU which cannot be fixed?????). So I bought a second-hand one from a Range Rover dismantler. I went there with the Lucas part number that is on the ECU and searched for an identical one (if you take a good look you can even see the date of manufacturing carved in it at one of the corners, mine said 1188 November 1988). Plugged it in and the wedge drives fine again. Good luck hunting or having it fixed! [bhardy](#)

350 and RR are not the same ECU. There are a few modifications, which if you don't do you won't get the same performance, especially at the top end. 19560. I had a recon – from Lucas. No problems with it on my old 400SE. [reverend](#)

3.3 My 350i sometimes stumbles and I think it may be the ignition amplifier. Is it easy to replace?

Yes you can unscrew the amp and replace it (with correct type of course!). [wedg1e](#)

The ignition module (Lucas part DAB135) comes in two versions – the original with 2 spade connectors or the current one which has a "special plug" which needs a converter kit (Lucas part XXB445). Easy to fit and quite cheap. My 350 had similar problems to yours and this fixed it. [dickymint](#)

Don't be too hasty in assuming it is the ignition amplifier. I have had similar symptoms (intermittent cutting out) and I too, at first, assumed it was the amplifier. However it turned out not to be the amplifier but the 12 volt feed to the ignition coil that was the problem. Occasionally and for no reason it would momentarily drop to about 2V, which would cause a stall. At the moment I have a temporary fix which is a feed straight from the battery to the coil. This has cured the problem completely and I can still drive it whilst I try to find where the problem is. Just remember to disconnect the coil from the battery when you park up at night or else you will wake up to a flat battery next morning!! [arcturus](#).

3.4 No spark!

Could be the ignition amplifier on the side of the distributor has failed. The coil appears to read 'positive' both sides because the test meter presents no load. Until the ignition amplifier fires,

the coil is not earthed. So in effect the voltage passing through the coil looks the same at both 'ends', to the meter. An auto-electrician should know this. Other possibilities include: the carbon brush in the distributor cap is missing, or not touching the rotor arm; the coil is open-circuit; the air gap on the trigger rotor in the distributor is incorrect or the pickup is duff...
wedg1e

4 Chapter 4 – The Fuel System

4.1 How do I test my FIE System

The following section is reproduced from the Dutch Rover SD1 Owners Club web site (www.roversd1.nl).

To diagnose a problem is to find a possible cause. A good place to start is with the plugs. Remove the plugs and keep them in cylinder order. Now use the [chart as shown on the maintenance page.](#)

Plug colours		Condition
Left bank	Right bank	
Grey	Grey	Indicates a possible fault in ignition system, plug leads condition or routing, timing, centrifugal or vacuum advance.
White	White	Could be air leaking into inlet system. suspect Air Valve or one of the many vacuum connections. Less likely but possible, the electrics or the Air flow meter.
Black	Black	If air filter and hose connections are good it could be the fuel regulator, thermostat switch or coolant temp. sensor. Signalling engine is cold when it is already hot. Faulty air flow meter is also a possibility
Black Grey	Grey Black	Over fuelling on one bank. Most certainly an electrical fault. Poor connection or chafing of the wires. Or...problems with your ECU

The Rover V-8 EFI system is very sensible for leaking vacuum connections which can result in a bad idling and/or a rough running engine. Therefore carefully inspect all the vacuum pipes for leakage and check the conditions of the clamps!. On the SD1 most piping is at least 13 years old by now so the rubber can be hardened or become porous.

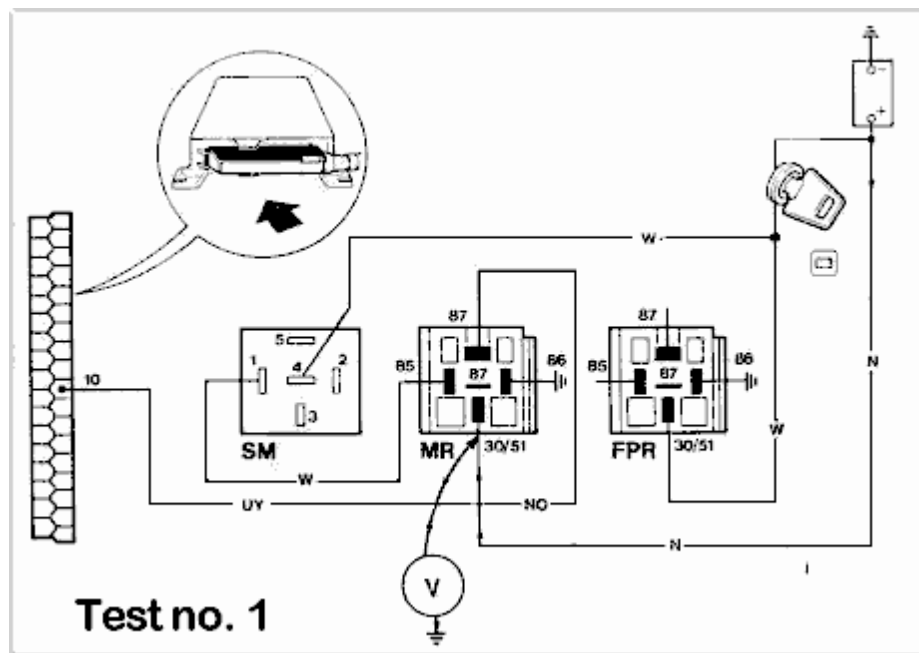
An indication for a vacuum leak can be noticed because the engine is running rough on idling and low rpm. The rough running then slowly disappears with increasing rpm. This can be explained because at idle and low rpm the throttle valve is almost closed. This gives a high vacuum in the plenum chamber and thus a high vacuum in the vacuum piping. So a lot of outside air is sucked in directly instead of going through the air flow meter, as a result the air/fuel mixture is too lean resulting in a poor running engine, and yes..those white noses on your plugs. With wider throttle openings the vacuum becomes less and thus less air is leaking in.

A simple test if you have a rough running engine at low rpm is to disconnect the filter and manually (with a screwdriver for instance) open the flap of the airflow meter a bit with the engine idling. This way you make the EFI system injecting more fuel. If the engine starts to run smooth there is almost certainly a leakage in your vacuum piping.

Excessive fuel consumption and black smoke can be caused by a perforated diaphragm from the fuel pressure regulator. To check this remove the vacuum pipe. If there is fuel coming out of the regulator's vacuum connection, the diaphragm is at fault and the regulator should be replaced.

If the problem wasn't in the hose connections or in the ignition then the following tests can help you locating the fault in your EFI system.

Test 1 Voltage supply



ECU connected

Ignition off

Voltmeter connected between pin 30/51 of the main relay and earth.

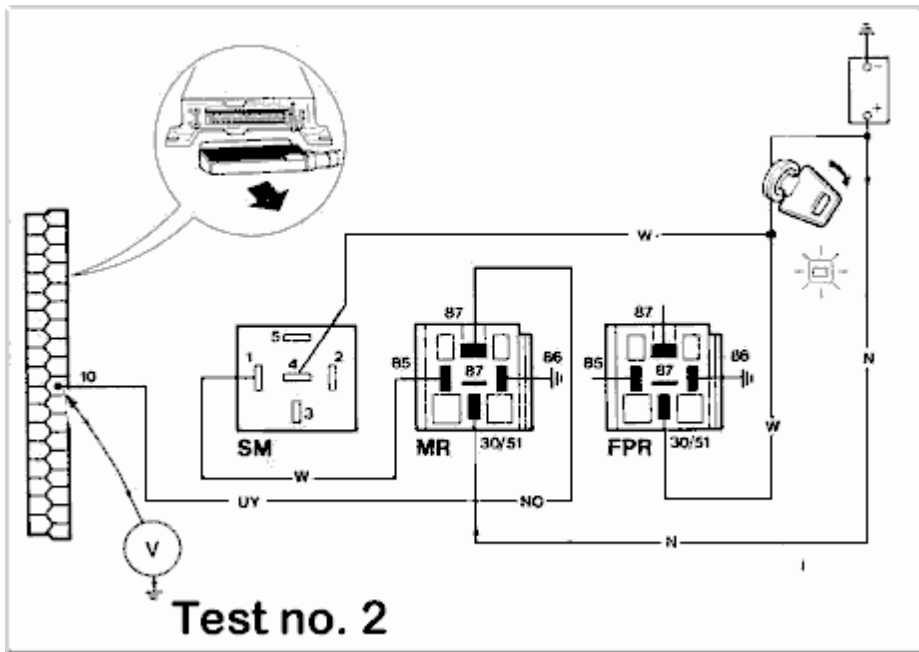
The reading should be 11 to 12.5 Volts

If below 11 Volts or 0 Volts check:

- State of the battery
- Earth connections
- Positive connections to main relay (Brown wire (N))

If OK continue with [Test 2](#)

Test 2 Voltage supply to ECU



ECU DISconnected

Ignition OFF

Voltmeter connected between terminal 10 of the multiplug (Not the ECU itself!) and earth.

The reading should be 0 Volts

If above 0 Volts renew the main relay

Turn ignition ON

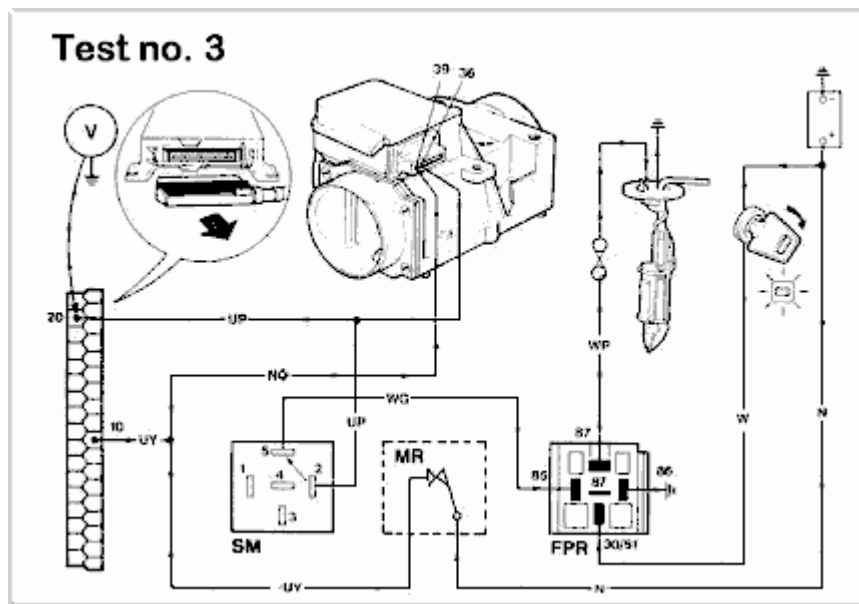
Main relay can be heard by a click and voltmeter should read 11 to 12.5 Volts If below 11 Volts or 0 Volts check:

- All the white wire connections (W) to the relays and steering module
- Earth connections at terminal 86 and both relays
- Good connection of brown&orange wire (NO) at main relay terminal 87
- Good connection of blue&yellow wire (UY) at main relay terminal 87 and ECU pin 10.

If still below 11 Volts substitute the steering module and the main relay.

If OK continue with Test 3

Test 3 Voltage supply to Fuel pump



ECU DISconnected

Ignition ON

Voltmeter connected between terminal 20 of the multiplug (Not the ECU itself) and earth.

Air flow meter flap closed the meter should read zero Volts

Manually open the flap of the meter.

Listen for the fuel pump and relay operation.

Voltmeter should read 11 to 12,5 Volts

If below 11 Volts check:

- All wiring connections as shown in this diagram.

If still below 11 Volts

Substitute the steering module

If the voltmeter reads correctly but the relay or pump don't operate

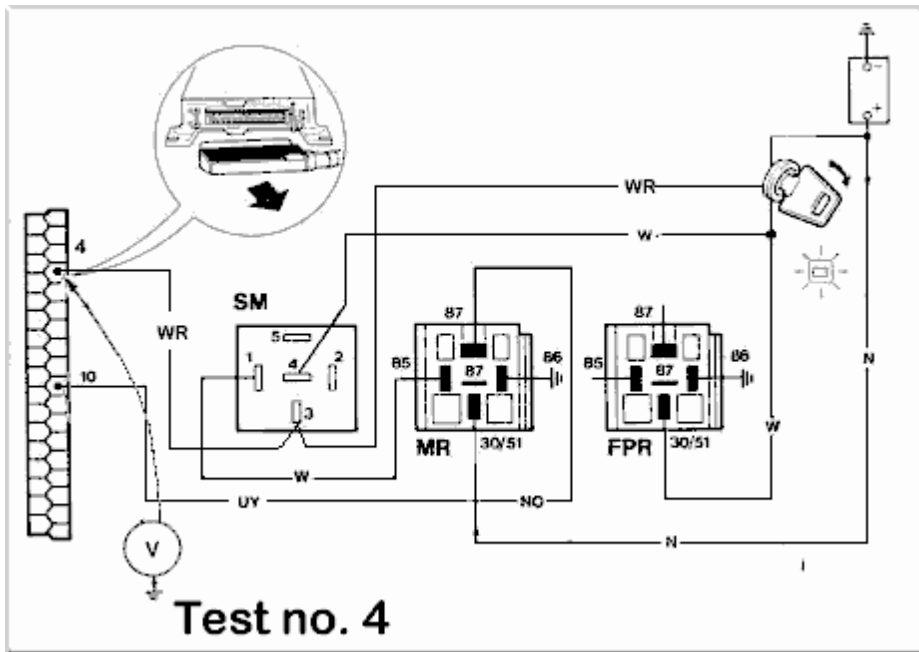
Substitute steering module and then pump relay.

If pump still isn't operating

Suspect a faulty fuel pump.

If OK continue with Test 4

Test 4 cranking Voltage



ECU DISconnected

Voltmeter connected between ECU terminal 4 and earth.

Ignition ON and cranking

The reading should be 8 to 12 Volts

If no reading but the starter motor operates check:

- White&red (WR) wiring
- connections to ECU pin 4 via the steering module and the wiring loom multiplug.

If below 8 Volts check:

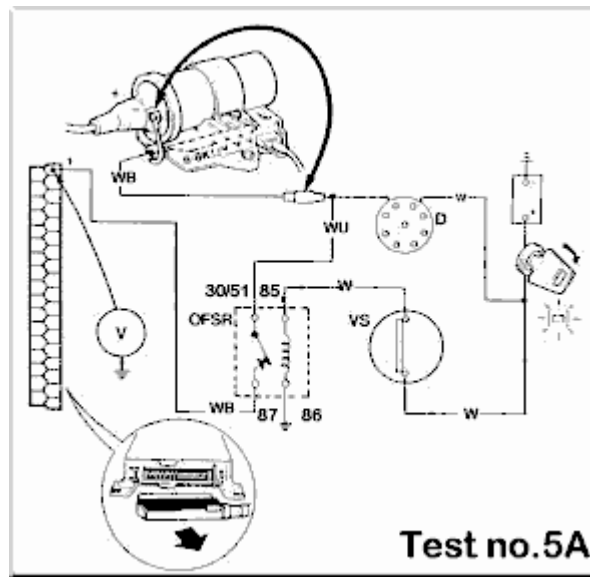
- Battery and starter motor

If no readings and the starter motor does not operate,check:

- Black & orange (BO) wiring, connections and starter circuit

If OK continue with [Test 5A \(with separate ignition amplifier\)](#)
or continue with [Test 5B \(with integral ignition amplifier\)](#)

Test 5A Voltage speed signal circuit fuel shut off relay and vacuum switch



ECU DISconnected

Connect a jump lead between the negative coil terminal and the white/blue (WB) connector adjacent to the coil.

Voltmeter connected between ECU multiplug terminal 1 and earth.

Ignition ON

Listen for operation of fuel shut-off relay

If relay does not operate check:

- White wiring (W) and connections
- earth connection 86 from relay
- the vacuum switch and the connection hose, substitute if necessary

CRANK the engine

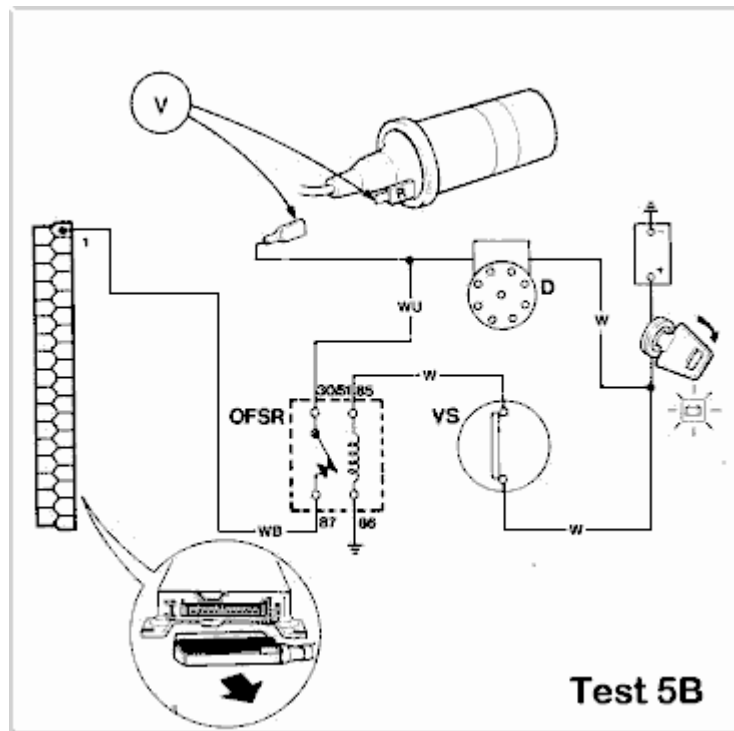
Voltage should fluctuate between 6 and 9 Volts

If higher than 9 Volts or lower than 6 than check:

- electronic ignition system

If OK continue with [Test 6](#)

Test 5B Voltage speed signal circuit fuel shut off relay and vacuum switch



ECU DISconnected

Disconnect the connector from the resistor at the negative coil terminal and connect a Voltmeter between the resistor and the connector. (see diagram)

Ignition ON

Listen for operation of fuel shut-off relay

If relay does not operate check:

- White wiring (W) and connections
- earth connection 86 from relay
- the vacuum switch and the connection hose, substitute if necessary

CRANK the engine

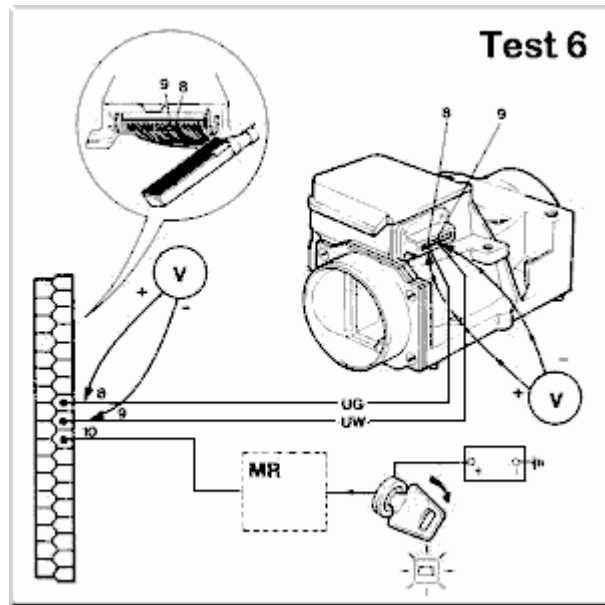
Voltage should fluctuate between 6 and 9 Volts

If higher than 9 Volts or lower than 6 than check:

- electronic ignition system

If OK remove voltmeter and reconnect the connector, continue with [Test 6](#)

Test 6 Voltage of airflow resistor



ECU connected

Disconnect the multiplug, remove the multiplug cover and reconnect the multiplug.

Ignition ON

Voltmeter connected between pins 8 and 9 with the multiplug connected to the ECU

Air flow meter flap closed. The voltmeter should read 1.55 +/- 0.1 Volts

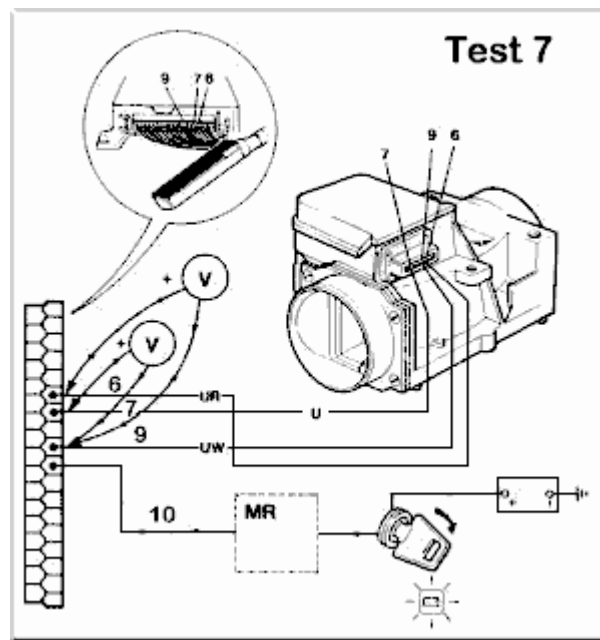
If reading is incorrect

- peel back the rubber covering at the flow meter and connect voltmeter to terminals 8 and 9
- Measure readings again

If reading is still incorrect the air flow meter is faulty. Open the top of the flow meter and check the potentiometer. It could be that corrosion damaged the tracks of the potentiometer or the pick-up points are corroded.

If OK leave the ECU connections exposed and continue with Test 7

Test 7 Voltage of airflow potentiometer



ECU connected

Disconnect the multiplug, remove the multiplug cover and reconnect the multiplug.

Ignition ON

Voltmeter connected between pins 6 and 9 with the multiplug connected to the ECU

Voltmeter should read 4.3 +/- 0.2 Volt.

If Voltmeter reads 0 check:

- All wiring and connections seen in the diagram above

Voltmeter connected between pins 6 and 7

Voltmeter should read 3.7 +/- 0.1 Volt

If voltmeter reads lower check:

- The wiring for high resistance (corrosion)

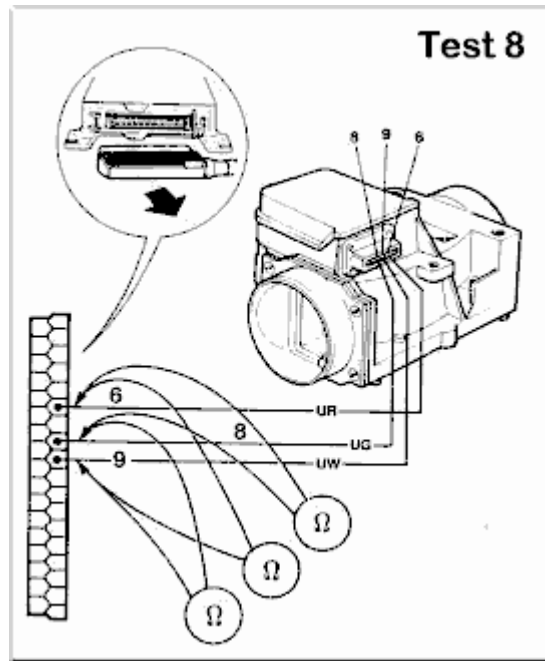
With the voltmeter connected between pins 6 and 7 slowly open the air flap.

The Voltage should gradually decrease to 1.6 +/- 0.1 Volts

If the results are not within the specifications the potentiometer is at fault. Take the cover of the air flow meter and check the potentiometer for corrosion, etc.

If OK refit the ECU multiplug cover and continue with [Test 8](#)

Test 8 Resistance of airflow potentiometer



ECU multiplug DISconnected

Ignition OFF

Air flow meter flap closed.

Ohmmeter connected between pins 6/8, 6/9 and 8/9

Pins	Ohms
6 and 8	360 +/- 10 Ohms
6 and 9	560 +/- 10 Ohms
6 and 9	200 +/- 10 Ohms

If Ohmmeter readings are incorrect:

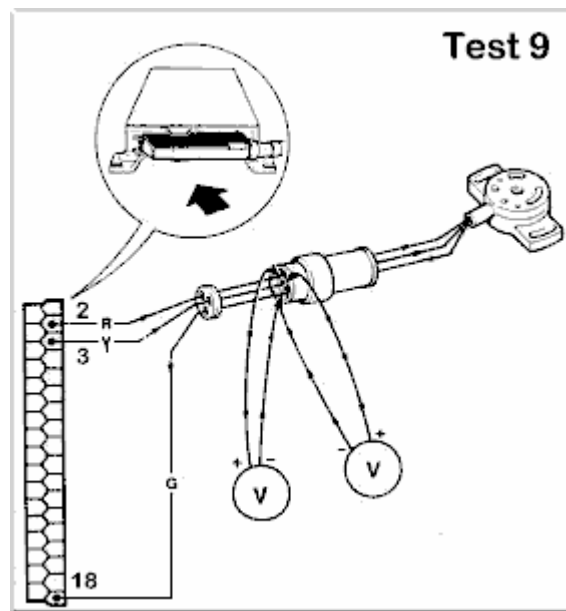
- Peel back rubber boot covering at airflow meter and repeat the test at the air flow plug and then at the air flow meter socket

If the readings are still incorrect:

- the potentiometer is at fault. Take the cover of the air flow meter and check the potentiometer for corrosion, etc.

If OK refit the ECU multiplug cover and continue with [Test 9](#)

Test 9 Voltage of throttle potentiometer



ECU multiplug connected

Ignition ON

Voltmeter connected between yellow and green wire at the multiplug

Voltmeter should read 4.3 +/- 0.2 Volts (ECU control voltage)

If zero or lower reading check:

- Wiring and connections

Measure between the yellow and red wire.

Voltmeter should read between 0.325 +/- 0.025 Volts

If incorrect, reset the potentiometer:

- Slacken the potentiometer body screws and rotate the body until the meter reads 0.325 +/- 0.025 Volts, tighten the screws

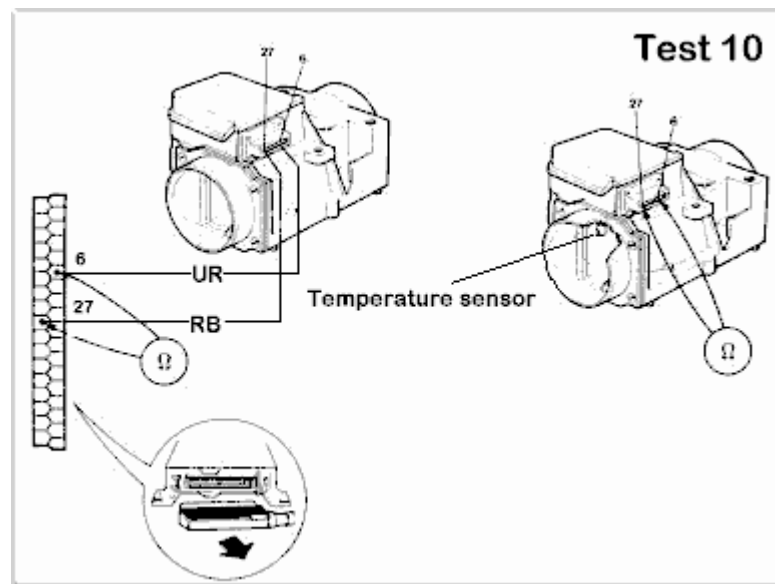
Slowly open the throttle the injectors should be heard to operate and the Voltmeter should register a smooth increase up to 4.5 Volts maximum.

If the voltages can't be obtained or if the voltage is erratic when the voltage is opened.

- Renew the throttle potentiometer. Often the potentiometer is worn at the lowest (idling) part of its path. This causes unregular idling with revs going up and down.

If OK continue with [Test 10](#)

Test 10 Resistance of temperature sensor



WARNING! only connect the ohmmeter for a short period. the ohmmeter will heat up the winding and give an incorrect reading as time goes

ECU multiplug DISconnected

Ignition OFF

Ohmmeter connected between pins 6 and 27

Temperature	Ohms
-10 C +/- 0.5 C	8.26 to 10.56 Ohms
+20 C +/- 0.5 C	2.28 to 2.72 Ohms
+50 C +/- 0.5 C	0.76 to 0.91 Ohms

If Ohmmeter readings are incorrect:

- Try to find another temperature sensor with the right spec's and place it into the air filter housing with the wires reconnected or replace the air flow meter

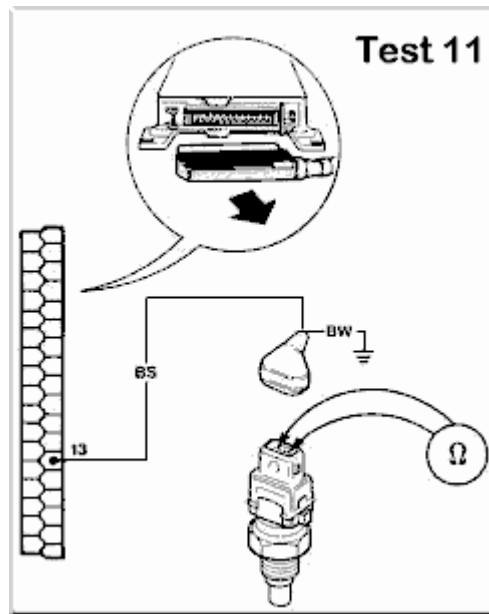
If the readings are correct. Repeat the resistance check at the ECU harness pins 6 and 27 to check continuity

If the readings are incorrect, check:

- Red & Brown wiring (RB) and connections
- Blue & Red wiring (UR) and connections

If OK refit the ECU multiplug cover and continue with [Test 11](#)

Test 11 Resistance of coolant temperature sensor



A faulty coolant temperature sensor can cause black plugs and excessive fuel consumption. The ECU thinks the engine is cold if the connection is faulty.

WARNING! only connect the ohmmeter for a short period. the ohmmeter will heat up the winding and give an incorrect reading as time goes

ECU multiplug DISconnected

Ignition OFF

Measure coolant temperature with a thermometer

Disconnect the sensors socket

connect ohmmeter between the terminals

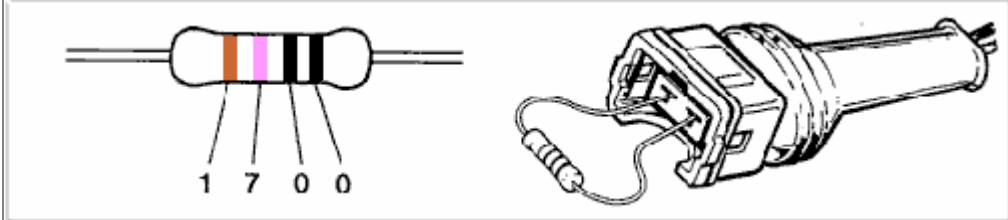
The readings should be:

Temperature	Ohms
-10 C	9100 to 9300 Ohms
0 C	5700 to 5900 Ohms
20 C	2400 to 2600 Ohms
40 C	1100 to 1300 Ohms
60 C	500 to 700 Ohms
80 C	300 to 400 Ohms
100 C	150 to 200 Ohms

If Ohmmeter readings are incorrect:

- Remove the sensor and check it again in melting ice and water (0 C) and boiling water (100 C)

If the readings are still incorrect. Replace the temperature sensor and recheck. A temporary solution for the problem is to connect a resistor of 175 Ohms across the sensors connection when the engine is hot. Remove the resistor when the engine is cold.



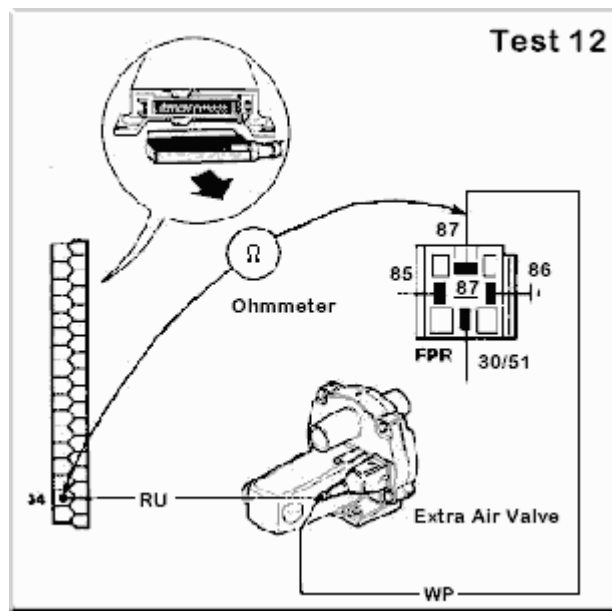
If the readings are correct reconnect the temperature sensor and check the resistance at the ECU pin 13 and the earth.

If the readings are incorrect check:

- Black & Slate (BS) wiring and connections
- Black & white (BW) wiring and connections
- Earthing

If OK continue with [Test 12](#)

Test 12 Resistance of the Extra Air Valve



ECU disconnected

Ignition off

Ohmmeter connected between pin 87 of the fuel pump relay and pin 34 on the ECU multiplug connection.

The Ohmmeter should read between 30 and 40 Ohms.

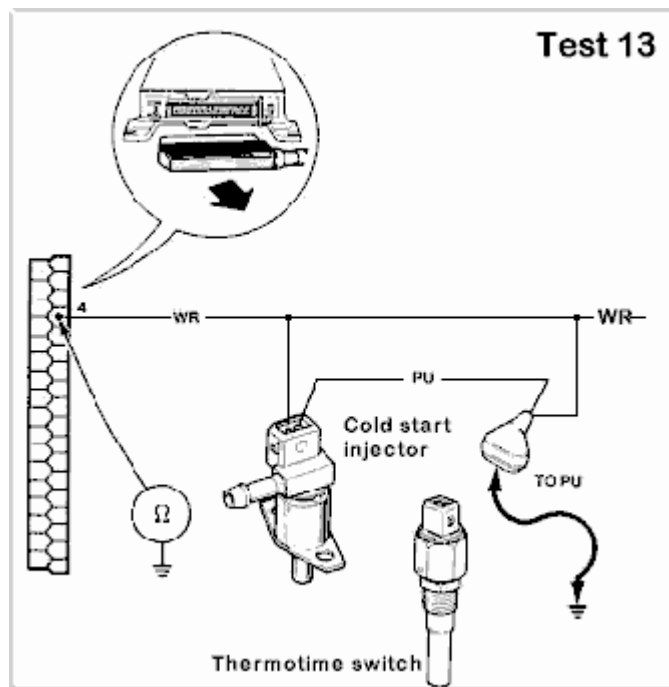
If readings are outside these limits. Renew the extra air valve.

If Ohmmeter shows infinity check:

- White & purple (WP) wiring and connections
- Red & Blue wiring (RU) and connections

If OK continue with [Test 13](#)

Test 13 Resistance of the Cold start injector



ECU multiplug disconnected

Ignition OFF

Disconnect the thermotime switch and temporarily connect the purple and blue wire (PU) to the earth.

Measure the resistance between the ECU multiplug pin 4 and the earth.

The resistance should be 0 to 5 Ohms.

If the reading is incorrect check:

- The temporary earth for good connections
- White & Red (WR) wire and connections
- Purple & Blue (PU) wire and connections

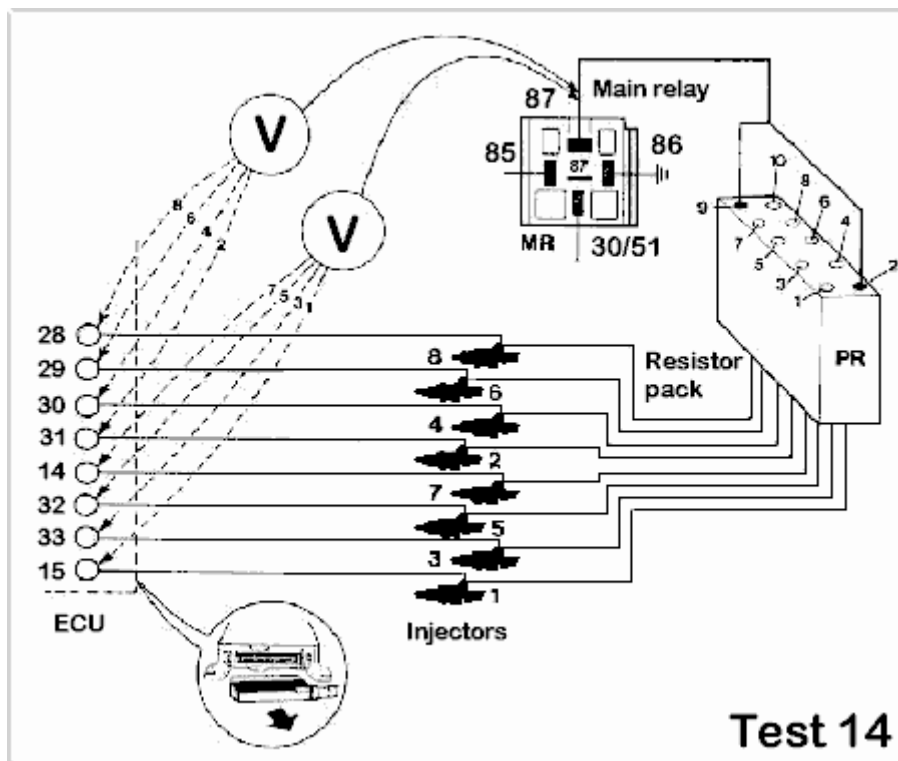
If the reading is still incorrect, disconnect the cold start injector and check its resistance.

The resistance of the injector should be 0 to 5 Ohms.

If incorrect renew the cold start injector

If OK continue with Test 14

Test 14 Voltage drop injector circuit



ECU multiplug disconnected
Ignition ON

Warning! The Voltmeter must be connected for a short time only because fuel will be injected during the test!

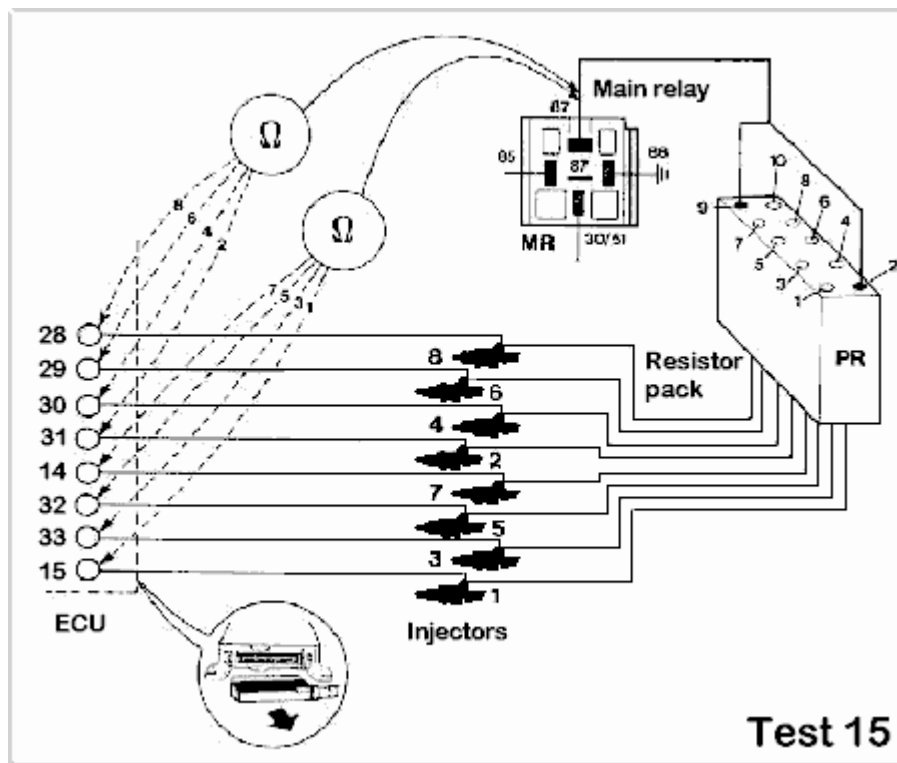
Connect the voltmeter between a good earth and each injector ECU multiplug terminal in turn.

Check the voltage reading for each injector

Compare the injector voltages. These should not vary by more than 0,5 Volt

If the variation is more than 0,5 volt continue with [Test 15](#)

Test 15 Resistance of injector circuit



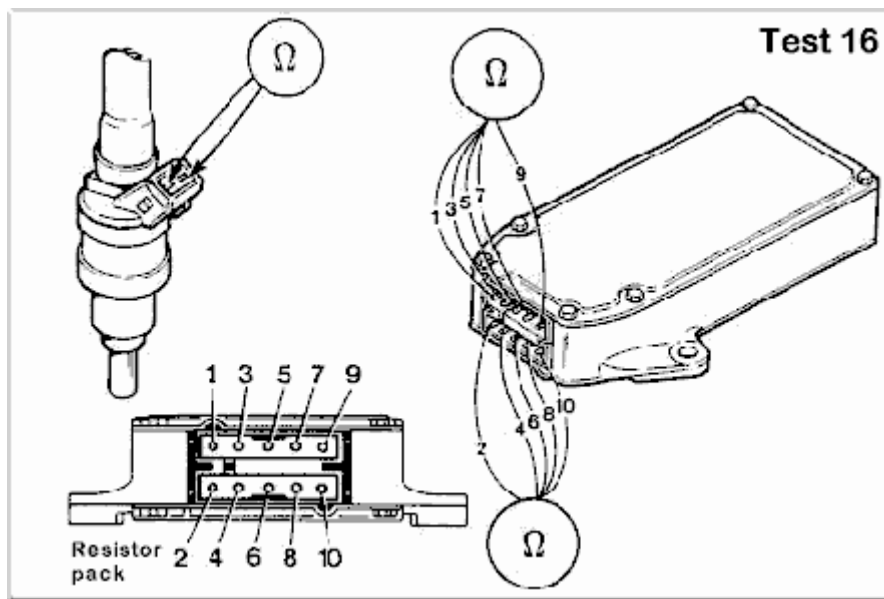
ECU multiplug disconnected
Ignition OFF

Connect the ohmmeter between terminal 87 or 87A of the main relay and each injector ECU multiplug terminal in turn

A reading of 7-10 Ohms indicates	No fault
Infinity indicates	A broken connection or component
A high resistance reading indicates	A poor connection, faulty wiring or faulty injector or resistor

If a faulty injector or resistor is suspected continue with test 16

Test 16 Resistance of injector circuit (2)



Disconnect the harness multiplug from the resistor pack
Connect an ohmmeter between terminal 9 and terminals 1,3,5 & 7 on the harness multiplug to check the values for injectors 1,3,5 & 7.

Do the same between terminal 2 and the terminals 4,6,8 & 10 for those injectors.

The values should read 6 Ohms +/- 1 Ohm.

If any value is incorrect replace the resistor pack

If all is OK

Disconnect the wiring from each resistor and check its resistance value by connecting the ohmmeter between its both terminals

The resistance value for each resistor must be 2.4 Ohms at 20°C +/- 0.5 Ohm

Renew any injector outside this resistor range

END OF THE TESTS !!

With these last tests you should have located the problem in your injection system. If the engine still isn't running or running uneven the problem probably won't be the fuel injection but the ignition or something mechanical.

4.2 I need a new fuel pump for my 350i

Well, I blatantly pinched this info off someone else's website but it says: Bosch : 0580464014
[York33](#)

4.3 I need a new air filter for my 350i

I'm using a K&N RU-1500 directly on the AFM.

Link: www.knfilterchargers.com/search/product.aspx?Prod=RU-1500

It's "clamped" directly to the round 70mm round AFM unit. Takes 2 sec to install/remove. First time undo all the original stuff/pins/plate holding the factory solution/filter. V easy indeed..
The RU-1500 is good for 270hp. [tvr350i](#)

4.4 I need a new throttle cable for my 350

Mine went a while back on my 400 – I was told you can't source another one as there are no more left – Was given advice that you can use a Griff/Chim one and bodge it to fit by bending the accelerator pedal !!! (or something like that) – anyhow I was lucky as my local specialist (Offords) happen to have found an old one. You can also try Speedcables <http://www.speedycables.com/> – I think they will make you one up if you give them your old one. [Wedgie400](#)

Vehicle Wiring Products sell the inner cable, outer sheath and end nipples as separate items, so you can make a Bowden cable (as they're known) to fit almost anything. [wedg1e](#)

The one on mine is a Quinton Hazell QTC4176, possibly off a Rover. I gave the broken one to my local factors and they matched it easily, fitted with no mods to pedal or throttle linkage. [my350i](#)

The first time my cable went on the 390 I replaced it with a motorbike clutch cable (nylon coated inner). This has never failed in > 10 years. [rus wood](#)

Just replaced mine with a bicycle brake cable inner. A couple of tips –

a--> put the pedal end retaining clip over the inner first

a) if you fit from the pedal end (as I did) then take the sleeve nipple out of the bulkhead, this makes it very easy to thread in the new inner while standing up instead of upside down in the dark footwell.

b) don't try pulling the end off the sleeve – you'll damage it!

c) whack some moly grease on the inner before pulling it through.

d) the free end can be clamped with a standard bike brake cable bolt with a hole + nut + a few washers, once adjusted for length at the engine/cam end. [adamquantrill](#)

Have you tried Tim at ACT [stainless steve](#)

another place to try is Venhill in Dorking. They made me up some clutch cables using my broken one as a pattern. Reasonable price too. <http://www.venhill.co.uk/> [geddy](#)

4.5 Where can I get a new air flow meter for my 350i?

I would try Tim Lamont at ACT products. He can sometimes get re-con ones. [dickymint](#)

I'll try and dig out a receipt for a company that will send you one as a hire one, then if faulty you pay the balance. They did this with my 350's ECU and it only cost @ £160 to buy, but they sent both AFM and ECU just in case. Ok found the receipt - 2 years old so hope the company is still there. Allcar Electronics 01773836485 Alfreton, Derbyshire Still a listing in Yell so maybe able to help Quick turnaround from what I remember with me thinking it was the AFM, got another one and still had the same problem, then ordered the ECU which cured it all. Although it's probably a RR one as was the old one according to the cover and part number, but the car still goes well and I did not want to pay £1000 one of the previous paid for an ECU [gsx600](#)

I think the answer is in the question. If it's a 2AM it's probably the Jaguar AFM, a larger bore unit that wasn't original on the 350. It will tend to make the mixture weaker unless you can up the fuel pressure. Check the air hose coupling: if it's around 80mm bore it's the larger bore unit. The 350's was 70mm. [wedg1e](#)

4.6 Tell me about the air meter air temperature sensor.

I'm pretty sure that that there isn't a temp sensor in your flapper AFM (stand corrected if I'm wrong). Unless you have a hot wire AFM - Post up your symptoms. As confirmed here (about 1/3rd down the page)...www.rpiv8.com/carbs-3.htm

Hi, there's a sensor just before the flap that is for incoming air temp (Needed so ECU can approximate for density on hot summer days Vs cold winter mornings). It's just a thermistor and I get a lower resistance than I believe I should, ECU thinks it is hotter than it is -> leaner. I've been tracking down a poor idle (revs up and down) rough running fault for a while. I've done loads so far and am convinced it's running lean. Manually pushing the flap forward -> fool ECU into thinking it's got more air than it has -> inject more fuel -> better. Also both CO2 screw and idle screw were screwed closed when I bought the car to make it run richer perhaps to disguise the problem.

- (1) renewed throttle pot (new) and connections re-done
- (2) Loads of electrical checks as per Rover fault guide, all fine apart from the airflow temp sensor
- (3) New valley gasket -> in case of leaks
- (4) all hoses checked for leaks
- (5) Fuel pressure at around 30 is ok
- (6) timing / spark all good

So currently thinking on new sensor to check this theory out without stumping up for a whole new air flow meter (which is a re-con Lucas unit fitted around two years ago). Sorry for the long story!! [Nigel 350i](#)

You are correct no air temp done on flapper system "and unlike the later Air Mass Meter as used on Hot wire injection, it is only able to give information relating to air speed. It has no ability to give the ECU, air density or temperature information." Could still be worn though this company might be able to help with hire of one to check where your fault may be Allcar Electronics 01773836485 Alfreton, Derbyshire [gsx600](#)

Think RPI are wrong here, This site has good diagrams etc. for the flapper type meter, Check out bottom of airflow meter section, www.roversd1.nl/sd1web/airflow.html Mine is not "hotwire" but definitely has this thermistor which does react to temp changes. My ex-Wife's hairdryer shot at it changes the resistance... [nigel350i](#)

Looking at the Rover website it does mention this air temp, but having had an AFM apart I don't think that is a serviceable item. [gsx600](#)

Have seen this temp sensor on a few drawings.(The SD1 site mentions it as well). I'm thinking that, if it is there, its not connected to ECU [dickymint](#)

SD1 and Range Rover manuals do refer to the flapper meter also having air temp sensing the two together measuring air mass. The Bible gives test figures (resistance) for air temp. Whether TVR modded this or connected it to the ECU may be a different story. [djc1001](#)

Interesting stuff. So is it pin 27 on the ECU that you're measuring a resistance change? edited to say I found these figures for it.....

air temperature	sensor.
-10deg c	9.2k ohms
0deg c	5.9k ohms
20deg c	2.5k ohms
40deg c	1.18k ohms
60deg c	600 ohms

But I'm still not convinced its applicable to a Wedge)only because I cant find reference to it on this forum) [dickymint](#)

Yes, there is an air temp sensor in the flap AFM, connected between the Red/Black and the Blue/Red wires (or terminals 6 and 27 if you prefer). Looks like it was epoxied in place, so should be possible to extract, but sourcing one with similar response characteristics may be problematic. [wedg1e](#)

RR manual suggests testing by ohmmeter direct across sensor terminals. (battery disconnected & connectors unplugged) Same resistance figures as coolant sensor but only ambient temps will be reached

-10c	9200ohms
0c	5900ohms
+20c	2500
+40c	1180ohms

Manual also says test each sensor term to sensor body – should be open circuit. Can't see which ECU terminal No. – must be in book somewhere [djc1001](#)

Same figures as I found then. Somebody tell me to shut up and accept I was wrong (again). But what's the point in having the coolant temp sensor (same readings)? Is it that the density of air is dependent on temp and volume or vice versa? and why cant the ECU just use the water temp and mass? [dickymint](#)

For most UK based TVRs the injection system is probably too complex – don't forget the system is Rover / R.Rover and with minor spec changes designed to run in Artic thro' to Sahara conditions – a possible 60c temp differential. However the flap & air temp together must give a better measure of air mass and the coolant sensor is linked to engine condition / cold start etc. The coolant sensor has the same resistance for checking purposes but is not taking the same reading. The Hot wire system does what you suggest – air mass & coolant temp. Having said that – I am having problems getting a reliable 'idle' with my Hot wire system – but will start another thread shortly. [djc1001](#)

I'm testing it at the meter itself (easy to do by pulling the connector off and getting at the pins). Thanks for the figures they've given me a Eureka moment I've been measuring expecting a few ohms (as per the Rover SD1 site) that gives

-10 C +/- 0.5 C	8.26 to 10.56 Ohms
+20 C +/- 0.5 C	2.28 to 2.72 Ohms
+50 C +/- 0.5 C	0.76 to 0.91 Ohms

Looks like these are the same figures but he may have made an error with the magnitude! Should be looking for KOhms? [nigel350i](#)

For testing purposes and until you get a proper replacement, you can always solder a resistor of suitable value in series (to increase the resistance) or parallel (to reduce resistance) with the thermistor . Thermistors are cheap, have a look at the link. For diagnostics you could always add a pot in series!
www.maplin.co.uk/Module.aspx?ModuleNo=2218&TabID=1&WorldID=&doy=27m10 [leorest](#)

4.7 Notes on the over-run valve and stepper motor

I think it's know as a stepper motor .. cost about £85 and stops it stalling when you brake hard ! [reverend](#)

It's either an over-run valve (no electric feed) or an idle stabilisation valve (electric feed) – aka stepper motor. The over-run valve does more or less as you say and draws the fumes from the crankcase under certain manifold depressions. The ISV allows a controlled amount of air through, under ECU control, to fine-tune the idle speed. If it gets gunked up of course it sticks, causing some bizarre running symptoms depending on where it sticks. In theory the car will run

OK-ish without it, but you may run into starting or poor idling troubles. Usual solution (no pun intended) is to clean in paraffin or similar. [wedg1e](#)

Stepper motors can sometimes just stick. Easy to disassemble and then spray with carb. cleaner, allow to dry thoroughly and reassemble. Your problem might go away. [Streaky](#)

Ok – now I am not sure what it is. I have a hotwire Disco V8 and the electrically operated stepper motor on that is on the side of the plenum nearest the bulkhead. Sounds like where the over-run valve is on the flapper system – a sort of dome-shaped alloy block, with a black pipe leading into it. On the TVR there is what I am assuming is the cold start valve in that position – no electrical connections to it I assume it operates on a bi-metallic strip. Cold start valve should be on right-hand side of plenum chamber (viewed from driver's seat) – it will have an electrical feed. At the front there is this electrically operated Bosch valve – looking through the pipe stubs you can see a disc that rotates that has a hole of varying profile cut into it so it would seem that it is designed to control idle speed rather than assist on overrun. This is the Auxiliary Air Valve – it is open when the engine is cold but gradually closes as it warms up, either by the electrical feed or by the warmth from the engine. It admits extra air to raise the idle speed during warm-up. [wedg1e](#)

On a flapper fuel system there is a valve attached to the back of the plenum chamber with no electrical contacts and a single 3/4" thick pipe attached to it. This is the overrun valve. Its job is to operate when the vacuum in the plenum chamber is lower than it would normally be at idle. It takes its air from in front of the throttle butterfly near where the crankshaft breather feeds into the throttle body. If you blank this off you will get high vacuums on the overrun and you will suck lots of oil down the valve guides. On both my cars (1985 390 and Rover VDP EFi) this valve can be adjusted if removed, there is a spring and a small nylock nut (M4?). I suffered from the valve weakening with age and opening under normal idle (idle speed shoots up and stays up, diagnosed by squashing the pipe to close it) so I tightened the nut a bit until it didn't do it and then sealed it with a blob of paint. [rus wood](#)

4.8 What is the fuel pump from on a V8

Bosch 0580464014? Or is there a better one to compliment an FSE regulator? [dickymint](#)

The fuel pump comes from a Rover SD1, its the under floor one not the in the tank one for EFi. When I took mine apart recently it was a Lucas part and it had 4FP written on it. Not sure if that helps to find it or not, but my local Motor Factor found the bit quite easily with the above description. Approximately £130 for a new one, if I remember correctly. [islander](#)

Mines a Bosch pump and it's fitted to loads of cars Injection fords, bimmers etc go down the local scrappy and pay a tenner . [350matt](#)

4.9 Where can I get a throttle pot

I'll have a rummage of my receipts as I fitted a wedge type one recently, as it already has the elongated holes unlike the later ones, seem to recall about £60 from a landie dealer or Rimmers. [HarryW](#)


3 screw fitting one on 1984 350i. Try Landranger Services in Middlewich, Newton le Willows and Stockport (not 100% sure about the Stockport one) [thegamekeeper](#)

In case you can't find a cheap option, I think V8 developments (01775 750000) do an adapter kit to use the later 2 screw type on the older 3 screw fitments. [2sheds](#)

I have been looking for a 3 hole one for a while. All I could find was a 2 hole with an adapter – for £200+ part number: ETC4483 [dannyhoffman](#)

I've spoken to a nice man at Rimmers who assures me that the SDI pot they supply is the Range Rover pot (2 hole)with an adaptor plate (Should be gold plated for £150), So I'm going to look at a std RR pot with a view to making my own adaptor plate / modifying the existing spacer plate. [The Doc](#)

4.10 How does the idle system work

if you have a electrical feed to the speedo then it also feeds the ECU on Hotwire cars, this lets the ECU know that you are still moving. As an example; when you take your foot off the gas the ECU sees the change in throttle pot voltage to apparent idle position, but because it 'sees' road speed it then 'knows' you are changing gear or slowing down so keeps the revs up to around 1500. If however it doesn't see road speed it could possibly confuse the ECU. This time when it sees no throttle pot voltage as before it can't work out why the revs are still high, you know you are slowing down engine braking / changing gear etc but the ECU doesn't, so what it (ECU) does is try to adjust the fuel and or the stepper to get the revs down to idle but it can't. What normally happens next is as you pull up to a junction the engine cuts out (this is a classic symptom for both road speed sensor and or the stepper being ed/dirty btw, although it odes just sometimes happen on good set up but not every time. If this speed signal is missing from the ECU when you first start the car and you are stationary it has NO affect on the idle, it only affects it on the move. A rough check that the speed sensor voltage is reaching the ECU is to knock it into neutral on the move take your foot off the gas, it (ECU) should keep the revs up to around 1500rpm(ish), if it (speed signal) is missing then it will go straight(ish) to normal idle (1K) or even cut out. [HarryW](#)

4.11 Tickover problems

Ok here's the scenario..SEAC ticks over at 1500rpm from cold, around 2000rpm after a good run (blip the throttle at rest and comes down to about 1700rpm. Also Steve (the previous owner) tells me the cold start injector has always been unplugged. Also Steve advised me that if I stall the car that I should turn off ignition straight away because the fuel pump will keep running and flood the engine. I haven't looked yet but I thought all Wedges are fitted with modified relay to cut out the fuel pump. Should I re-connect the cold start injector in the belief that I can then re-set the tickover to about 1000rpm and not be a problem cold starting?

my 390 was ticking over to fast. cleaned air valve type thing side of plenum chamber and fitted second throttle return spring. now ticks over great once warm although struggles when cold
[blaineuk](#)

For what its worth my cold start injector has been removed and a blanking plate in its place. Starts fine. [jmorgan](#)

yup mines unplugged starts no prob [stainless steve](#)

Mine used to be really bad. If I stalled while parallel parking (easily done, simply needed to bounce the powered steering pump off the end stop), then there was nothing for it except to get out and walk away. This was cured when a pinhole was diagnosed between the airflow meter and the plenum. And I can confirm that the cold start plug has always been disconnected on mine and Peninsular recommended leaving it off when I asked.... [macnud](#)

Cold start not used on mine. Do you have hotwire or flap airflow meter? The flap type has a kill switch in it to turn off the fuel when there's no airflow. Dunno what the hotwire does. Maybe the ECU controls the fuel pump? [wedg1e](#)

My SEAC (flapper)runs with the cold start unplugged and I've had no problems starting even on the coldest days of this winter. Idle is about 1400rpm – seems quite happy like this, doesn't stall even when the revs slightly drop with the power steering or headlamps. So I've not tinkered. Also I would agree with Steve's advice. I've only done it once – let the car stall within 10 secs of it starting – and tried to restart it but ended up having to wait a good hour before a successful restart was possible! [redwedge5](#)

around 1400 rpm idle is not unusual for a SEAC as below this they over fuel due to cam profile. The cold start injector shouldn't be connected, or should I say doesn't need to be connected. I agree that high Idle rpm is probably just down to adjustment or sticking cold start valve.
[2sheds](#)

You have obviously used the car a lot. The idle was usually higher when it was given a decent amount of use and Tim has often said these cars are best being used. I used to find that the less I used it the lower and more unreliable the idle, particularly when cold. She probably needs a slight adjustment. If it does stall and flood, I have found unplugging the 6 easy to get to injectors, turning her over a few times, then putting them back on will get you out of trouble. Takes about 2 minutes. As she is idling high enough from cold, I would suggest adjusting the idle stop screw at the end of the throttle cable. [SLB](#)

Blainuk has probably hit the nail on the head. Butterfly valve is probably not returning to the same spot every time. Off out in a mo to get her really warm, then wait till it ticks over too high, check out the cable, linkages etc for free movement. Best not to tinker too much just yet. Wedg1e – its a flapper (Jag type I think, read somewhere all SEACs have this. Am I wrong about all Wedges should have the "painted relay that is not a relay" to cut off the fuel pump? SLB – Makes good sense Steve, burns off excess fuel to enable quicker restart. PS the Renovo soft top cleaning kit arrived yesterday so this will keep me too busy to tinker for a while! [dickymint](#)

A quicker way would be to pull the 2-pin connector off the ignition amp on the side of the distributor. This not only prevents the plugs from firing, but also kills the signal to the ECU that tells it to fire the injectors. Of course your car may have a different ignition set-up... [wedg1e](#)

I use to have a problem when I stalled and over fuelled so I found the live to the fuel pump and in my case it was under the carpet driver seat and put a switch in so when I flooded I could turn the pump off for a few seconds while I turn the engine over to dry the plugs out, then switch the pump back on and it fires up very time with out fail, [tcpc](#)

The fuel pump running does nothing on its own to cause flooding. The only time that fuel will enter the cylinders to flood the engine is when the injectors open and that is under control of the ECU. The injectors will be closed when the engine stalls and all the fuel the pump provides should simply return to the tank via the fuel pressure regulator. If leaving the pump running does cause the car to flood. then there is a problem with one or more of the injectors leaking and thus flowing neat fuel when they shouldn't. Could also be a bad spray pattern as well. Worth getting them checked. Normally they can be cleaned as tested and any duffers replaced. [shpub](#)

4.12 The hose from fuel pump to engine is high pressure injection hose I know, but from the swirl pot to pump is larger bore and looks like standard petrol hose.

yes it is normal fuel pipe only comes under pressure after the pump [blaineuk](#)

I have a vague memory that there was a posting here noting that it's 5/8" ID (?) and that isn't standard size for automotive fuel hose but that it is a standard size in marine applications. [grady](#)

I have had this pipe manufactured for a couple of dealers, what I supplied was 1/2" (13mm) pipe in large quantity, if you get stuck I could probably get an off cut, or try Think Automotive 020 8568 1172

I replaced all the fuel hoses on my car when I rebuilt it, the hose you describe is 5/8" on my car. I purchased the hose from a hose supplier, he indicated (as grady has) that it was more standard as a marine application. [Taz Turbo](#)

4.13 What is the fuel pressure and flow on a 2.8 V6

System pressure 5.1 Bar +/- 0.4, that's around 73 PSI Flow rate - Fuel pump delivery test, min is 750cc in 30 seconds. Flow rate can be checked at the fuel return pipe (pressure reg) Cold engine! we wouldn't like this to be your last post! You have to bypass the safety module to get pump to run (put in a headlamp relay temp) [jeffm](#)

4.14 How do I test the auxiliary air regulator

It's at the top front of the motor and has two air hoses on it. Pull them both off and look thru' it, with the engine cold you should be able to see thro' ,a torch will help. If you see a plate across the hole it's probably gummed up. Take it off and give it a shot of carb cleaner. It should start to open. Then wave it over the gas to heat it up, it should now start to close. Once you are happy that it responds to heat put it back [jeffm](#)

4.15 How do I set the idle on a 350i

There should be an idle adjustment screw facing down on top of and to one side of the throttle body, clockwise to decrease, if you tamper with the throttle lever you will need to reset the position sensor (potentiometer) this would be worth checking first anyway. 850 rpm is OK [2sheds](#)

All true but first check the butterfly gap is 0.002" when closed? correct me if I'm wrong please Tim. [dickymint](#)

The idle adjustment is a hex grub screw (so an Allen key is required). If you stand at the left wing and look into the engine bay, it is on the top of the plenum, just to the right of where the air hose connects. The factory setting is two and a half turns up from bottom, and this gives me an idle of about 850. Much lower, and I get some hunting. [plewis66](#)

4.16 How does the idle system work

The throttle plate (or butterfly if you know it as that) is normally set (on the non-hotwire at any rate) by putting a 2 thou" feeler gauge under the edge of the plate and setting the stop so that the blade can only just move. The stepper motor (aka idle stabilisation valve) responds to a control voltage from the ECU that is in turn responding to RPM info. The stepper motor opens a valve that admits more or less air, bypassing the throttle plate, to compensate for varying factors such as the PAS pump loading up at full lock and trying to stall the engine. The throttle pot needs to be set so that at idle, a specific voltage (within a narrow range) is being sent to the ECU so it knows what idle 'looks like'. On the non-hotwire, it's about 300mV. On the hotwire, the ECU relies more on the pot info than does the non-HW, which can actually run quite happily with the pot disconnected (dunno about the HW setup though!). [wedgle](#)

4.17 I have an intermittent idle problem

When faulty it idles at 900, is very rough below 2000 with a lot of drive train shunt and performance is slightly subdued. More mechanical type noise from the exhaust with a real thumping howl on the overrun. When correct it idles at 1100, is smooth throughout and performance is crisp. Pops and crackles on the overrun. Only managed to identify these conditions as this morning at part throttle at 1500 in traffic it was faulty and then suddenly it started to accelerate with no change in throttle position and started behaving in the correct mode. Can anyone point me in a direction to look ? Things I know are ok – major mechanical, main ECU earth, alternator cabling, battery, immobiliser wiring, TPS, throttle assembly not

sticking, CSV disconnected, AAV removed and plugged, overrun valve set to 15psi and seating ok, no other air leaks to plenum, battery, fuel pump and pressure. Could water temp sender to ECU be the cause ? It seems to change from faulty to correct once really warmed up – ECU board bad connection making once warm ? **chunder**

It might be a dry solder joint in the ECU... that often causes intermittent probs (remember my car at BBWF!). **wedg1e**

I had an intermittent problem, which persisted for about a year. Attempting to fault find it taught me a lot about efi. Though I am by no means an expert. Just a talented fiddler. One test I am quite proud of, was to eliminate the water temp sender as the culprit by taping a replacement one to a nearby coolant hose and wrapping with insulation. You can then continue to drive normally with the original sender and when the fault rears its ugly head you can jump out and switch over to the replacement item and see if the problem goes away! Unfortunately for me it didn't but it did give me confidence in the sender unit (unless they both have exactly the same fault!) The day that I solved the problem I decided to remove the ECU and retouch every single solder joint. This was quite a desperate measure but I had exhausted every other possibility by this time. So with fear and trepidation I set too with my soldering iron.....When finished and I had gone nearly blind looking through a magnifying glass to spot any solder bridges I replaced the ECU and observed that it clicked home into the connector with a very positive action which seemed to be different to when I disconnected it. I played with plugging in and out and convinced myself that there was a possibility that the connector was not originally located fully home!!! So to conclude, two things changed to solve the problem, which over a year later has still not reoccurred!! 1. Make sure the ECU multi-way plug is fully home 2. Re-solder entire ECU. Once you have satisfied yourself that everything else is in order, I strongly recommend you try these, **one at a time**, but be prepared to spend out on a replacement ECU as the re-soldering is a risky approach even for someone accomplished at waving a soldering iron about. Though it took me a long time to solve, I have learnt a lot, acquired some useful tools (Fuel pressure gauge, compression tester, spare coolant temp sender, vacuum tester) and saved myself some money, as I am sure that a specialist would have changed all sensors, leads, plugs, caps....., cost hours of labour, and resorted to replacing the ECU. **leorest**

Check the injector resistor pack. On my 390 this is mounted on the inner wing near the airflow meter. It is a metallic box about 4 inches by 2.5 by 1, there are 8+ thick wires going into it. I sometimes get rough running and it changes when I wiggle the connector going into this pack. Recently I resorted to a good spray of contact cleaner on both plug and socket followed by a bit of Vaseline to slow down corrosion. These contacts flow a fair bit of current and the slightest resistance makes a difference. **ruswood**

4.18 Idle problems

As the topic said my '90 350i runs bad! at low rev (2000rpm) it's holding back and idle is erratic. When cold start it's ok and when the cold start injector did his job the problem comes. sometimes after 30 or 50 miles runs perfect at low rev/idle. new plugs NGK B7ECS, leads magneto and air filter. checked air leaks, coolant temp. sensor, throttle pot. and all seems o.k. question: how to set base idle versus co2??? what should it read for co2??

Might be the soldering on the ECU... especially since you say it is intermittent - I'm assuming here that you don't have the 'hotwire' fuel injection setup. CO can be anything you want it to be: mine is about 1.5% but I've had it as high as 3.7% and as low as 0.5%. Affects the power delivery! Idle speed should be about 800rpm when warm. Ignition advance at about 8 degrees BTDC as a starting point. You should just be able to slide a 0.002" feeler gauge under the throttle plate when fully closed. Throttle pot should give you about 300mV (green to yellow wire) with the throttle closed. If you have all these correct the car should be basically right. I had a 350i a few weeks ago that ran very badly and the first thing we did was check all of the above. A quick way to check is to plug your ECU into a known good car and see if that causes the same problems (that's what we did in the end). Also see if unplugging the coolant temperature sensor with the engine running, causes it to stop (it should). [wedg1e](#)

Try unplugging the throttle pot and see if it runs smoother at low revs/light throttle. Check the multiplug is firmly home on the ECU. [dannyhoffman](#)

Maybe just try resetting the base idle? Turn the screw on the throttle body until it is all the way down (don't tighten it, just till it stops - it's in aluminium), then open it by two and a half turns. That, I believe, is the factory setting. [plewis66](#)

Sound to me suspiciously like the ignition module on distributor. [dickymint](#)

Maybe you have a dribbling fuel injector [dannyhoffmann](#)

4.19 Is the 350i ECU the same as the Range Rover

Should be the same as long as you get a 4CU and not a 14CU (hotwire version!). Even if there were any differences, it would probably be down to a few resistor changes and it would be easy enough to compare your old one with the new one. The ICs used are not reprogrammable so there can't be any major difference that I know of. [wedg1e](#)

It starts off as a Range Rover one and is modified. I don't know whether the resistors is the only mod. One of the changes is to remove the (114mph?) top speed imposed because RR tyres are not rated above that. Mark Adams or Tim Lamont know more. [19560](#)

Not sure that the 4CU has any capability of knowing max speed. It only senses rpm from the coil LT trigger (unless there's an input not used, but as far as I can see, all the circuitry that's missing from my unit is that for the closed-loop Lambda control.) [wedg1e](#)

There was an article in Sprint about five years ago. There are a number of differences. [19560](#)

a 1988 350i uses the stock Rover Vitesse SD1 ECU, I'm not sure about the Range Rover one, Mark Adams would give every detail. [2sheds](#)

Thanks for the replies so far! I spoke to a lot of people who are either rover or range rover specialists and only one of them had an ECU with the part number 83986A. My ECU has the same number only a B instead of an A. A friend of mine has the 83986A in his 350i so this is

probably the same one. But.....this is an ECU from a Range Rover. According to a rover specialist my ECU cannot be from a SD1 and should be from an range rover, cause the SD1 was only build until 1986 and this doesn't match with the 3988, which is engraved in the ECU and stands for week 39, 1988. Any ideas anyone?

4.20 Where does the fuel filter come from on my 2.8 V6 and why is it so big

For what it's worth, my (US) 280i uses a very generic filter (about the size of a large oil filter). The Wedge Pages <http://www.tvrwedgepages.co.uk/> lists a Fram G7344, which I crossed to a Bosch, maybe 35 USD. Maybe someone super-sized yours, but if everything else is stock, you should be able to go back. **Grady**

One of the reasons that the filters are expensive is because the filter is pressurised to injector pressure. This is in the range 20–50 PSI. I think the cheaper filters are for carburettor installations where the pressure peaks a lot lower. **RusWood**

I got the pre pump filter from: www.fuelsystem.co.uk/Default.htm Had to give them a call to get it ordered though. **AM400**

I went to Halfords at lunch time and was told £15 for fuel filter, this it the one that goes under the bonnet.. What is the thing next to the fuel pump under the car by the rear wheel is this the "swirl pot" and should this be changed instead of filter as my car hesitates in high gears at high revs **wedget**

The swirl pot is fitted between the tanks. The blue thing next to the pump is the high pressure filter, the red one before the pump is the pre pump filter. I wouldn't worry about the swirl pot unless it is corroded badly, this was the reason I replaced mine. The filters I used were expensive but can be cleaned so should work out cheaper long term. **AM400**

5 Chapter 5 – Exhaust Systems

6 Chapter 6 – The Cooling System

6.1 I have problems with the electric fans

Sounds like you will have to strip the fans, make sure the shaft is well lubricated, then slip it in the bearing making sure you can rotate it. **stainless steve**

I recently replaced the single 12inch original fan on my 350. It was a Davies, Craig fan. So I looked at there web site to try and get some information on a direct replacement, no direct replacement but looking at the technical info I find that a 14 inch fan will fit the mountings. Who said size doesn't matter. I also looked at the Kenlowe version, but the big problem with a single fan if the depth of the fan and the bonnet clashing with the fan when opened. May not be

a problem with a double set up. The Kenlowe is 75mm thick and the Davies Craig is only 50mm. The comparison of the two was almost the same in terms of draw of air. Found a web site supplying them in UK (<http://www.thinkauto.com/>) £85 down and 2 days later the new fan is in place and 14 inches are blowing a hooley through the engine bay and under the sides of the car!! They did have listed a type of 'Kenlowe switch' by Davies Craig as well but unfortunately they did not have it in stock, it was cheaper than the Kenlowe version. So a Kenlowe switch was used to override the otter switch. I wanted to be in control of when the fan kicks in, plus it is easier to override the Kenlowe switch than the otter switch if required when out and about. [islander](#)

The original single fan was a Davies Craig 12inch. I have just replaced this with a Davies Craig 14 inch fan, which fits straight onto the radiator cowl when the old one is removed They are available by Mail order from <http://www.thinkauto.co.uk/> and there reference is DCSL 14. £68 plus vat. I went for this rather than a Kenlowe due too the depth being only 40mm on it rather than the 75mm of a Kenlowe. I did hope that the thinner one would completely miss the bonnet, but I did have to trim a bit off the top of the shroud to get it in. The air flow through the two types are very similar and much better than the original. [islander](#)

6.2 Where can I get an expansion tank for my 400

Probably Capri. There should be a Ford part number stamped on it that you can use at a dealer. [shpub](#)

Richard Thorp at Wedge or RT racing sells fabricated ones. He used to fit a lot and used to keep the originals; he may still have a lot left. [19560](#)

The expansion tank is from a 2.8i Capri. [tazturbo](#)

According to the parts listing in the maintenance section of this site its Ford part no. 6061947. [redwedge5](#)

Pretty sure it's from Ford Capri 2.8 RT Racing should be able to help [dickymint](#)

Yep it's definitely MK3 Capri. [AM400](#)

6.3 Where can I get an catch tank for my 400SE

Coolant over flow on my 350 & 400 is a ford washer reservoir as per most mid 80's Fords, try a breaker or Fords if you have the lottery win still available gsx600

I think the coolant overflow is TR7. [am400](#)

6.4 How do I get my radiator recored

Get down to Macclesfield radiator services recored and refurbished for £100 ish. [19560](#)

Recore plus ford fan switch £140 approx this included labour as well RT Racing rates £25/hour.
[mtb](#)

Your local radiator re-con place will recore it with a 3 core range rover element for around 100 quid [350matt](#)

Had mine done a few months back recore cost £130 , did a great job [stainless steve](#)

RT racing quoted 175 for Rad, or 200 for larger bore, plus fitting twin fans for a further 120, when my local TVR garage quoted 545+vat for standard replacement and fitting, using my existing rad to recon. some difference eh!! [ticker](#)

6.5 How do I drain the coolant from my V6?

There should be a drain plug screwed into either side of the cylinder block to let coolant out without removing thermostat – but must admit I've only found the one on the drivers side of mine! [280bod](#)

Some rv8's have a factory drain plug as said on both sides of the block. Some builders get rid of them and fit a blanking plug instead which you can unscrew with a spanner. Look between the middle cylinders at core plug level or thereabouts. The blanking plug is quite small but it stands proud of the block. [boosted LS1](#)

280 you've given me hope. Where exactly was the plug you found? Presume I'm looking for something resembling a sump plug? Another reason for staying away from the thermostat is that the original housing was rotten and a replacement was manufactured from steel last year. When fitted they used blue gunk of some sort instead of a gasket. Therefore I won't get a gasket to fit and will have to cut one etc etc... [toby noble](#)

you couldn't just pull off the hose from round the back of the housing could you? IIRC this should let all the remaining water out. Just trying to picture mine, which is in bits atm. [york33](#)

Why change the coolant now? I would have thought it would have all (or most anyway) drained out when they changed-out your thermostat. But otherwise, I think the thermostat would have to come out [grady](#)

Coolant was looking rusty and It's summer in Aust so I decided to do the deed. I have improvised and taken the advice of one of the above posts. Took off the hose into the thermostat housing from the engine. Blocked all other holes incl radiator and pushed water hose into the housing. Flushed it out nicely. Actually blew into the hose to ensure no water left in system (nice oily smile now...)then sealed all up and added the coolant. It took about 6.5 litres which sounds right as I have bypassed the heater. Until proven wrong I am firmly of the opinion my engine does not have any drain plugs. [toby noble](#)

When I changed my coolant about 2 weeks ago, I split the heater matrix delivery tube (comes out of t.stat housing, and goes to cabin heater valve) . I then put the end connected to the t.stat in a bucket, and reverse flushed the engine with a hose into the matrix end (with the cabin controls on HOT !). Took ages to get all the brown rust out, but appears to be okay now. (I removed the radiator and backed flushed it too). I also seem to remember putting the garden hose into the top tube where the radiator would have been. No removal of t.stat, or core plugs required, and now have a happy 2.8 V6, with anti-freeze anti-corrosion in it. [jchase](#)

6.6 The inside of the car mists up – I think I have a leak from the heater matrix

Perhaps it is just an airlock in the matrix, with the same "results". Don't know about accessing the heater matrix [wedlgje](#)

Sorry to hear you need to remove the heater matrix (you will see why I'm sorry when you carry out the job) #1 Remove the centre binnacle cover that houses the radio, this is held on by two M6 nuts one on each vertical face of the cover. #2 Remove the two bolts that hold the steering column in place, M12 from memory, and drop the steering column so that it rests in the footwell. #3 Behind the dash board, about 3 inches from each end there is a M6 nut, to give you a better idea on the passenger side it's above the glove box, loosen these nuts by a couple of turns, then the dash board 'should' be able to be removed from its location, as for the wiring if your 'only' changing the matrix you should be able to leave the wiring in place, as its all fed from one end of the dash and there is enough free length to pivot the dash out in an arc. This will then leave the heater box exposed for any work you wish/need to carry out, I would recommend you give the wiper wheel box a thorough check over as its only accessible with the heater box removed, use the opportunity!!! [taz turbo](#)

7 Chapter 7 – The Battery

8 Chapter 8 – The Electrical Systems

8.1 I need a new alternator for my 350i

Same thing happened on mine, got it repaired at Lucas Service. Or a replacement from there for a lot less than a dealer! [AM400](#)

Probably an Rover SD1 unit, should be available from most motorists centres I would think, Partco etc. Take you old one in and they can normally match them as they can be left handed or right handed as well on the mounting points. [gsx400](#)

I fitted a Lucas LRA407 to mine last year when my original one failed. £85 from the local Lucas shop. [arcturus](#)

8.2 I need a new alternator for my 400SE

On both my wedges the original alternator has been/is a Magneti Marelli (made in UK!) Type A127-65. [redwedge5](#)

8.3 Does anyone know the sources for Wedge switchgear

Electric window	thought to be Rover SD1, no Rover or Lucas part number though.
Hazard	Lucas 33829A, TR7 TKC5088.
Rear fogs	Lucas 33931A, possibly TR7 UKC499.
Driving lights	possibly TR7 TKC5089.
Fan	Lucas 33939A.
Electric aerial	unknown.
Cigar lighter	unknown (but has smaller diameter than today's 'standard').

Now it appears that the SD1 used the same switches as the TR7 and that these are the source for the 390SE (and other Wedges?). [streaky](#)

Vehicle Wiring Products (www.vehicle-wiring-products.co.uk/VWPweb2000/switch-2/switch-2.html) advertise switchgear [Streaky](#)

You could try Rimmer Bros. in Lincoln: they buy in TR7s for spares. Same switches are used in Lotus Excel, but the later versions; so the ends of the levers are plain, not ribbed. Or so I'm told. [wedgle](#)

The existing switches are 12.7mm X 38.1mm (1/2" X 1.5"). The switches from VWP are 26mm X 50mm - fitting into an aperture 22mm X 44mm. [streaky](#)

8.4 Does anyone know the sources for the headlamp diodes

Any silicon rectifier from 1N4001 upwards should do it! If in doubt, go for a higher current rating (1N4007, 1N5401). [wedgle](#)

1N5401 diodes have sturdy legs Spec'n: PIV=100V, IF=3A, Max IF drop = 1.1v 3A, Max IR = 100uA 100V [streaky](#)

8.5 Where are the window lifter motors from

believed to be Rover SD1 ... but there might have been as many as three different types. Take it to a scrappy and check. [streaky](#)

Why do you need to replace it? It is relatively rare to find a window lift motor that has burnt out. Much more likely is that the switch in the centre console needs cleaning or the regulator mechanism has jammed in which case it can usually be freed off. [ralph dodds](#)

I replaced driver door unit on my 1982 280i conv from a 1986ish SD1 (same door) my quadrant was shot, the assy went straight on after putting a nut & bolt in to replace a "tab" which acts as a limit stop, and drilling a hole in the quadrant for the bike brake cable "limit switch" Breaker price ~£20. Some motors rivet on, other earlier ones bolt to the quadrant. It doesn't take long & you don't lose too much skin!! [david.h](#)

8.6 My headlamp motors pop up and down erratically

Yeah, mine do this sometimes. There are two diodes that power the pod relay circuits, so either high or low beam will keep the pods up. But if you momentarily interrupt the power, the pods start to go down, and so have to run the motors a full circuit. You could put in another relay, to switch from high to low quicker that way the pod relays will not get enough time to suffer a magnetic field collapse, and you won't have to remove the steering column and switches – did this modification on a mates S**B, works great. [jchase](#)

Pop-up trouble usually comes from switching of on sort or another. i.e. lamps retract when power interrupted, however briefly. If you never drive on side lights alone one fix is to wire the motor circuit onto side instead of head. Depends on your requirements. I bought some additional large diodes to re-arrange some electrics on my car. [gaston](#)

8.7 Where do I get the headlight reflectors?

They are Cibie – try the site below –

www.cars.u-net.com/cibie.htm [djc1001](#)

I think they are from early land rovers & mgs [danny hoffman](#)

just ask for quad optic 7" headlamps at your local motor factors (about £50 a pair inc vat) you may need a backing for them (about £12 each inc vat) these will fit straight on and will be the same ones you get from TVR more than likely mad by WIPAC [mrcrappy](#)

8.8 The battery light stays on even after the ignition is turned off and the key removed

It's happened to me twice! both times it was the alternator. Get it tested first though to be sure!
[AM400](#)

I have had this happen in the past, both times the cause was a failed rectifier diode in the alternator. Unless you fancy stripping the alternator and replacing the diode pack (will need soldering iron) best route is probably a service exchange. [terence](#)

....exactly same happened to 3.5 V8 range rover I had....diode rectifier pack blown....if it happens the battery drains back through the alternator....battery light will illuminate, keys in or out and ,hey presto, flat battery! Not expensive if you 'service exchange' somewhere. [father ted](#)

8.9 Where do the door mirrors come from

You might want to have a look at some early Sierras [danny hoffman](#)

Mine is an 86 350 mk2. they are not sd1. mine have 4 wire not 3, and all the writing on them is in Italian. Have been looking for replacements for a while. Peninsular told me they are no longer available. [njhucker](#)

8.10 Where can I get new fog lamps

Spoke to Rich at RT today he said they are off a Marina [Paul Hussey](#)

Try this site. You can buy replacement lights without backing unit. I think they are Cibie 'Airport' units www.cars.u-net.com/cibie.htm [DJC1001](#)

8.11 How can I identify which relay is which?

From my memory of when I had a similar issue on my 350 many years ago the relay that controls the ECU is different to all the rest of the other relays. I think mine was a red relay with 5 prongs, where as the rest were black with 4 prongs. [gsx600](#)

This is where the bible isn't much help as it deals with us spec and series II relay panels. Us early 350i owners have to do a bit of sleuthing. Suggest you suss out what one of them is; eg: put hazards on and pop relays till they go out. Then use that relay as a tester for the rest. Substitute it one at a time and follow the procedure Wedg1e recommended the other night. Make a map of the board and suss as many as you can while you are at it. [tallbloke](#)

8.12 Where can I get new number plate lights?

If they have 'Brycrest' written in the lenses then they are also used on caravans! Sourced some from ABI about 5 years ago. Invoice has 12036 84ELE0001 as a part number. Their tel number is 01482 862976. [sevans](#)

The Brycrest ones have changed and were not the 2"x1" plastic plate with two contacts, the updated one are now about 3" long with a domed back affair and two wires poking out, so were no good for my 450SE, [redcar](#)

8.13 Where can I get new 400SE front indicator lenses

Its from a Pug 505. [AM400](#)

8.14 Where can I get new window lift motors

They are Rover SD1 fronts, you may need to change from screw to rivet and drill a stop in the quadrant, but they do the business. Mine cost £10 from the local scrappie [David.H](#)

Just be aware that there are apparently 3 different versions of the SD1 window lifts. Not all fit the wedge. [ralph.dodds](#)

8.15 Where is the sensor for the temperature gauge on a V6?

Assuming its your 280i (2.8 v6). At the front of the engine there is the aluminium housing (looks like a thermostat housing, but it's not!) the top hose from the radiator connects to this housing, in addition to the top hose there should be three tapings in this housing. The largest tapping nearest the top has a temp. sensor for the fuel injection cold start injector and is connected by a two pin brown AMP connector, the lowest tapping should have a blanking plug screwed into it, rendering it unused (on my car anyway) and between these two there is the third tapping which is the smallest of the three, this is the temperature sender for the temp. gauge. As to the colour, I can't help you there as I re-wired my car and the colours may not be as was, but on my car it's dark green. You said you have TWO single wire output sensors? Does your car have any other emission equipment with it being a US car? And you also said that removing one of these wires had no effect on the temp gauge reading, what manufacture gauges do you have? I ask as the Stewart Warner minor gauges read all sorts of strange readings when the ignition was turned off. [tazturbo](#)

It's a red wire on my series 1.5 USA model. I just went out to pull mine off, It's a tricky little sucker isn't it. It should pull off at right angles to the sensor, I didn't want to mess with mine too much today. (not convenient to break it right now) The other two are "thermotime switch and ECU time switch. [jeffm](#)

8.16 What should I use for a starter on a V8: the Rover unit fouls the chassis

My book of words says Lucas 9M90. [wedg1e](#)

I had my original faulty starter rebuilt – do you still have your old one? It cost about £85 and looked like new when I got it back. [danny hoffman](#)

8.17 What's the source of the switchgear on a Mk1 Tasmin?

Talk to the Tazzie racers... They usually strip this stuff out and are willing to sell to feed their motor racing habit... [shpub](#)

TR7 – Rimmer Brothers [pistolar](#)

Got my switches from a scrap TR7, They are not all the same, but they are a modular construction so you can mix'n match most bits. Be careful with the outer bit with the lettering, try and keep the original so the lettering style is correct. watch out for the number of pins on the back and try not to crack parts as you disassemble...They were intended to be clipped together one way, never "serviced", and to be exchange units only....and to last about a week after the warranty ran out !! [david.h](#)

Rimmers only sell a 3 posn switch with head lamp logo on front and that's £25 , try to repair the other, mines just melted the contact and pushed it through slightly so I built it up with solder, seems ok now. [mrcrappy](#)

The rocker 5 pin window switches on the tunnel by the brake lever on earlier Wedges I sourced from an after market electric window installer for around £3 each. They were a direct swap, no furtling needed. [jmorgan](#)

8.18 How do I remove the side repeaters from the body?

On mine, you twist the indicator to the left to line up the lugs with cut-outs in the GRP, the pull out. [wedg1e](#)

9 Chapter 9 – The Chassis

10 Chapter 10 – The Braking System

10.1 I need a replacement handbrake cable for my 350i

I believe the H/B cable is a TVR special. It may be worth trying to order the part from a dealer some of these parts are not that expensive from TVR. Alternatively Speedy cables may be able to help. Are you sure it's the cable???? There is a lot of adjustment on the cables and I would be surprised if it's stretched that much. The H/B mechanism is auto adjusting and it does work if

it's in A1 condition. Have you tried taking up the play with the screw at the top of the callipers??

SEVANS

Try Gatwick TVR, spares man very good. 01293 822611 (he got my speedo cable 2 weeks ago) or speedy Cables Hertford 01992 581600. redcar

You can manually adjust the handbrake callipers to get some effectiveness back, they are s'posed to self adjust but rarely work. Jack the car up so you can see the calliper over the top of the wheel through the wheel arch. reach in over the wheel and remove the split pin that stops the adjuster screw from rotating. Pull the actuator lever back towards the wheel arch (ensure the handbrake is off). Screw the adjuster in tight then back off 1/2 a turn and replace the split pin. Repeat the other side. 350matt

Tried adjusting mine for years with varied results. Sometimes it would be OK for a whole couple of weeks! It wasn't until I rebuilt the adjusters that things stayed OK. SEVANS

Peninsular welded a length of tube to the outer casing on mine, to bring the adjustment back in range. njhucker

10.2 Where does the handbrake come from?

XJ6 from around 1975–1979. All calliper bits are standard. Handbrake cable I believe is a special. Couple of good sources are : Classic Automotive, Chelford, 01625 860910 / John Gordon, Jag Specialist, Accrington, 01254 398476. SEVANS

10.3 Overheating brakes due to brake binding

I had this happen. The only option I found was to rebuild the rear callipers with new seals and pistons. I found the rear pads almost disintegrated by the heat. About 350 pounds of Jaguar bits (1985 390). rus wood

Can anyone confirm the Jag part number: AAU3378 ? Are they the same as the 2.8? If they are then got mine for £61.65+drat each, seemed not bad, from local motor factors. Don't know the jag numbers, but the company who made/remanufactured my callipers are AMK Automotive components, part numbers TCA005 and TCA006. york33

Try here for the parts: www.imtfa.co.uk/index2.html cuneus

10.4 Having acquired a set of Princess 4 pot callipers for my 350, I am unsure which discs I need

Granada 2.8 '72-'84. You might also need a calliper widening kit. See here : www.bress.freereserve.co.uk/wedge/maint_brakes_upgrade.html streaky

I wrote the article in the wedge pages but it was a while ago. The solid disc or vented disc is the first question to answer. If going for the vented then you need the widening kit. Your parts supplier will be able to tell you whether you are getting the vented or non vented disc. Good luck, I still think its one of the better enhancements I did to my 350. [mike350](#)

10.5 Where do the solid discs on my 350i come from

I believe came from a 2.8 Mk2 Granada that are fitted to my 350i? [taffo](#)

Go to the top of the wedge pages home page, click on maintenance then parts you'll find a lot of spares numbers there. Front discs are Unipart FDB167. [dickymint](#)

Also reported as Unipart GBD109 (but might be for earlier models). [streaky](#)

Alternatively go to Ford / parts factor and ask for a 2.3 1984 Mk2 Granada disc? Alternatively take to opportunity to fit 2.8 Granny parts – vented discs and bigger pads with bigger callipers, a vast improvement on mine. 350matt I haven't got any part numbers but you'll need the wider callipers and vented discs from the 2.8, estate or injection model again 1984 MkII Granada. They do just bolt straight on to your existing hubs and uprights but will have to modify the back plate to clear the calliper (5 minutes work with tin-snips, files etc) The piston in the calliper is the same size as the 2.3 calliper but the pad is larger so the increased area provides more friction (same principle as tyres where the pad 'bonds' to the disc) but the as the piston is the same size you won't upset the hydraulic balance. basically an easy and effective upgrade and what was fitted to some 400's [350matt](#)

10.6 Where can I get some rear brake callipers?

I've just got a replacement pair from the local Motor Factors (York: They are part of this group: <http://www.imtfa.co.uk/>) for £61.65+drat each. Remanufactured, new pistons, seals, powder coat, etc. Best I got from any Wedge/TVR places was £120+drat each! The company who make/remanufacturer the callipers are AMK Automotive components, part numbers TCA005 and TCA006. [york33](#)

10.7 How do I clean up the handbrake mechanism? Do I need to remove the drive shafts?

You can strip it all off without removing the driveshaft. [danny hoffman](#)

The handbrake is actually a separate calliper sat on top of the hydraulic calliper. From memory there are only two bolts holding the thing on; maybe 4 but hardly an insurmountable task. [wedg1e](#)

10.8 Where can I get the 10mm spacers for the Princess brake upgrade?

ebay MAL3752, bought the kit, but bolts are too large, made for Landrover conversion, get just the spacers and buy your own bolts. also local motor factor can provide a pad fitting kit for a landi, fits perfect about £2.50 [degz](#)

11 Chapter 11 – The Suspension

11.1 Can I lubricate the upper and lower front ball joints?

Ball joints are sealed assemblies, no grease nipples. You may be able to remove the rubber boots and inject some oil or grease, but if they're squeaking, they're probably kaput anyway due to water ingress. The ball joints were originally riveted to the wishbones: if yours are bolted, they've been replaced before. Last time I did a lower it was about £12. The uppers rarely fail although wear and tear must be an issue by now on original parts. Track rod ends are generally Cortina Mk.4. [wedg1e](#)

11.2 I want to replace the anti-roll bar brushes on my 350i.

The bracket that holds the ARB to the chassis is a Ford Granada part. [wedg1e](#)

I think some cars used the 2 bolt type (tina) whereas the thicker antiroll bar on later cars is the 1 bolt Granada type that has a tendency to pop out [350matt](#)

I've never seen a 350 that left the factory with anything other than the one bolt – Cortina – type. The difference in ARB dias was accommodated by making the bushes thinner. The 400s are different but I don't know about the 390s. [19560](#)

Have a spare single bolt , not for sale sorry , but the Ford part number on the label is 1515778. [NHyde](#)

just got the new parts from the local ford dealer, maybe handy for yours these are the part numbers: mounting clip single bolted : 1515773. Rubber: 6102278. [mhardy](#)

RT Racing has them in stock. I just ordered a pair today. Bracket £6 each Bush £15 each + vat. Ring Richard Thorpe 0114 281 7507. Very helpful guy. [weeman](#)

11.3 Where can I get upgraded bushes for the front suspension

Replace suspension bushes with Polyurethane type from Tower view:0208-452-6922 [350matt](#)

Rally Design (www.raldes.co.uk/) list a large stock. You'll need to know sizes/donor vehicle when studying their catalogue, but they might know what's what if you 'phone them [streaky](#)

11.4 How can I get the rear shock absorber off without cutting a hole in the boot.

Don't touch the body. With the car jacked up, wheel off and spring compressed you just need two spanners: one for the nut 12mm? and one to hold the flat on the top of the damper's shaft. It's a bit fiddly but not too bad a job. [19560](#)

11.5 How do I change the diff bushes on an A frame Wedge

Getting to them is a swine. Dropping the diff complete with rear suspension and rear diff chassis is probably the best and easiest option. Disconnect rear brakes, handbrake cable, prop shaft, shocks, undo the six bolts and drop it down. Very very very heavy mind you. Took four of us to manhandle it when I did this down at Tower View a couple of weeks ago to change the diff. The six mounting bolts are difficult to get to and undo! [shpub](#)

11.6 How do I adjust the front tie bars after repair

Measure the distance between front and rear wheel centres on the other side and match it on your repaired side. Then get it 4-wheel aligned – either set to the official wedge wheelbase number (which I don't have to hand) Or just adjust until it looks right and is the same both sides, then get it 4 wheel aligned. The tie bar adds a bit of wheel location and also sets the castor angle so worth getting it right. [350 matt](#)

The tie bars adjust the toe angle and to some degree the camber. I gave up in the end and set them at roughly halfway making sure that there were equal threads on both sides of the car. Then I went to Austec and they did a full geometry check and set it up properly. Made a big difference for the better as well. [400se dave](#)

11.7 Anyone know the suspension settings for a 350

Settings per the factory for my 89 400SE, if that's any good to you, are: caster: 3.5 to 4.0 degrees positive; camber (front) 1 degree negative; camber (rear) 1.0 to 1.5 degrees negative; toe-in (front) 30 minutes; toe-in (rear) 2mm [paul gotts](#)

11.8 Which are the most suitable Superflex bushes for my 400SE – I understand there are four different colours?

Got me – I thought there was only the one type! Got mine from Wedge Automotive about 6 years ago. Try Tower View as they may help. [Tasmania](#)

I don't know whether they are colour coded but Tower View sent red ones, there are no markings [dmsims](#)

Leslie, as far as I recall, not all types of the bushes are available in all the hardness grades anyway, so you may only have a limited choice. On my 390 they are a dark blue colour, but not having driven it with any other type, I can't comment on what difference there might be! I'm fairly sure that all polyurethane bushes are firmer than standard rubber ones anyway, so even going for the softest would be firmer, if you see what I mean...Worth remembering that if you use a very hard bush, you transfer more shock and vibration into the chassis welds... and your backside [wedg1e](#)

I have been looking at Superflex for my 350SE and was confused by the 4 grades. In reality there is no choice – the grade is selected by Superflex to suit the application. See parts list on <http://www.superflex.co.uk/> – you can buy direct. [JC1001](#)

12 Chapter 12 – The Steering

12.1 Any problems changing the steering UJs

just done it on my 400, easy no worries. [pistolar](#)

Had mine refurbished by RT Racing. If you have any play in yours, it is well worth doing. [njhucker](#)

The UJs are TVR specials. Caused by having the column from one manufacturer and the rack from another... [shpub](#)

You can either take your car to Richard Thorpe or remove it yourself and send it in the post. When rebuilt it will be posted back and you can fit it again. Fitting is straight forward and is covered in detail in the Bible... I think mine came to about £50 including vat and postage, but mine was more because it was an unusual/bigger UJ. I think the regular rebuilds are around the £35 mark. I think he has replacements for the most if not all of the standard types used on the cars in stock so a rebuild shouldn't be necessary. Your best bet would be to call him and ask on 0114 281 7507. [uriel](#)

Thought my top one had gone, but took both off and the bottom was just about seized, top one very loose. Rang TVR factory up and they said 3 types were fitted. Of course mine was the type they had on back order. Sent them off to RT racing and they arrived back 3 days later. Made a

large difference to the 350. Both were for about £100 new but of course I then ordered more shiny bits for the 400 as you do. [gsx600](#)

12.2 Where can I get the top steering joint on a 400SE from?

Top joint on my 400 is a ford item as using Ford Granada steering. (triangle shaft one end in to a spline the other ?) Try RT racing as they seem to hold the worlds known stock for these !! [gsx600](#)

David Gerald's also hold the top joint in stock, it is a Ford item. [am400](#)

12.3 What are the tracking settings on a 350i?

Front toe-in is 3.2MM +/- 1.5MM. [paul gotts](#)

12.4 Stiff steering on 350i

I was told my rack was knackered by a certain dealership (not a TVR one but the maker of said rack). Had it checked out with another garage chain for a second opinion and it was deemed fine. They spent 15 mins checking it and no charge. Heavy on slow manoeuvring but fine on the road. Just my experience in that department. It went on to pass 3 or 4 MOT's after. [jmorgan](#)

I would put the front frame (carefully) on jack stands and see if it turns better with the weight off. [grady](#)

I recently had a reconditioned rack from Penninsular. It cost less than £40, so they are not expensive. If you have been used to driving a more modern car, or a car with thinner wheels, you will find it very heavy. [njhucker](#)

Check the steering column UJ's. Maybe give them a spray with WD40 and see if this improves things. [sevans](#)

rack maybe be off a MkV Cortina (my 280 definitely was). But I agree – most likely cause is the UJs. If WD40 frees them up, you may want to think about changing them as they have probably rusted too much to be saved. Richard Thorpe repaired mine for a very reasonable price. [danny hoffman](#)

I recently had my manual rack overhauled as I fitted a "Quick Rack" kit. The rack kit was off a Mk 4 Cortina but the pinion spline was different from the one on the car. So took the rack off a knackered 280i and it was different again so the moral is that Ford probably did a few design changes during the Cortina's life or TVR fitted Mk3, 4 & 5 items!! Anyway, MCR in Leamington found a new rack body for me and completely rebuilt it with the quick rack kit as well as overhauling my original all for £35 – a bargain. (they are on 01926-457277) [TaSmania](#)

Also it'd be worth checking the condition of the ball joints as the lower ones can seize and make the steering heavy right up to the point when they fall apart [350matt](#)

12.5 How can I get my steering column repaired or replaced. It rubs on the antiroll bar when the weight is off

Got my steering shaft reconditioned by RT Racing, cant remember cost, but not expensive. Got a recon rack from Peninsula, which was about £29 + vat. [njhucker](#)

I believe that the rack is IV / V Cortina. And my 400SE steering arms touch the ARB on full extension. I guess it's not a problem unless you like getting the front end airborne over crests. [paul gotts](#)

The rack is definitely a Cortina one. Mk4 and 5 are the same, I fitted a new one to mine last year, exchange from the local motor factor was only £30. Mine also fouled the anti-roll bar when jacked up, no problem when sat on the ground. [my350i](#)

12.6 Where do the steering wheels come from?

280 = TR7; 350 = (possibly) SD1 [wedg1e](#)

12.7 My 400 has started to make a very unpleasant noise when turning the steering wheel accompanied by a lack of "assistance".

mines doing the same and it was just the return hose jubilee clips were loose, try nipping up any connections top the fluid up and give it a try, I was panicking last week (v. embarrassing in traffic) certainly cheaper than a pump at £130 minimum other wise go to a scrappy and get a Montego or sdi pump. [mrcrappy](#)

Have you checked the fluid level in the reservoir and the drive belt tension ? [RAW-SEWedge](#)

My pump also used to squeal a bit when the fluid was low. Quite a handy reminder to fill it up [Boosted LS1](#)

13 Chapter 13 – The Transmission

13.1 There is a clunking noise from the rear

UJ? Jack up, usual with an axle stand and check for play. Probably a good idea to then jack the hub up to normalish height as the UJ can knock when the arm is fully down and wheel turned due to the angle. Ps, could be the trailing arm bush? [jmorgan](#)

Bear in mind that on these cars the drive shaft is part of the suspension, so has to work quite hard, jack the car up until the offending wheel is off the ground. Wiggle the wheel from top to bottom there may be a small amount of play about 2–3mm at the wheel rim is normal. there should be no play when wiggling side to side. If you've got more play than the few mm top to bottom then its likely you'll need to replace a UJ, which can be done at home with the aid of a vice, correctly sized sockets / press tools and a hammer. If its side to side then either a wheel bearing (a proper press needed for this one) or the wishbone bushes are shot or the long bolt holding everything together is loose. [350matt](#)

The first thing I'd check is the front anti-roll bar mounting bracket. I've broken/replaced a couple of these and haven't had time to up-rate them yet. I know it's the other end of the car but it's only two-seconds to check. The driveshaft is highly stressed. Not only does it transmit power (V8) it has to provide braking (inboard disks) and provide suspension (top link). So the UJs don't last long. I have re-bushed my suspension and replaced UJs. The UJs (with regular greasing) have normally lasted 7000 miles (without any track days!). The last set lasted less than 2000 miles when the yoke cracked, probably due to worn bearing journals. As others have suggested, when the chassis is on axle stands, move the road wheel up and down and look for movement between yokes either side of the UJ spider. Rotate the wheel so that one of the UJ bearings is at the top, check for play and then rotate the wheel through 90degrees and compare. If it is a UJ replace both on that side. If you get fed up with replacing UJs on a regular basis then send both driveshaft to Martin Adams of Proptech Hartlebury and he will re-manufacture them into up-rated items for a very reasonable price. NOTE Proptech probably made the original items for TVR and have all the drawings to make the up-rated items, as fitted to the more exotic later wedges, so these should be reliable for the application. [leorest](#)
Broken rear spring/shock absorber gone perhaps? Worth a check anyway. But agree that it is most likely to be one or more UJs. Nuts fixing the drive shaft to the differential, if loose, could also be a possible source. [350zwelgje](#)

Dave Mac Props in Foleshill Coventry do a Hardy Spicer with a larger diameter yoke, a grease nipple and steel guards over the seals. I've found them to last considerably longer than the 'sealed for life' type. [350matt](#)

13.2 Where can I get a replacement UJ?

TVR special. About £450 for a new set. Find a crapped car or talk to RT Racing in Sheffield who might be able to refurb. [shpub](#)

Posh car breakers : www.douglasvalley.co.uk/ I'd try an refurb what you have unless there is a big problem with them. [rev-erend](#)

Proptech at Hartlebury trading estate nr Kidderminster. are the place that made them originally and providing the spline on the hub end are ok they should be able to rebuild them for you for

a shed load less than 450 quid !!!! they've rebuild mine on the taz racer and about 1/3 dozen more... [graham](#)

Output flange is Granada. Use Proptech as Graham says – they did them originally – standard refurb will be £50–£100, making the shaft into the 400 size will be around £200 each. Use those 'specialists' in our cars, only for refurb and changes to standard bushes – IMHexperience!! Any tricky stuff go to Proptech. Proptech : 01299–251247 [tasmania](#)

13.3 Gear Selection Problems

At times I can't engage either 1st or reverse with engine running, this happens intermittently. If I turn engine off, no probs. A lot of history with car but no clutch bills. Mileage shows 85,000. I guess I am probably looking at a new clutch. [Mike Brewer](#).

I too have a very intermittent gear selection problem on my 400SE which I use every day. It can go for five or six days with absolutely no problem at all and then gear selection suddenly disappears for 3 or 4 mins, it may persist on and off for 1/2 hour but might clear up straight away. [Gandalf](#)

Common ailment with the LT77 box. Usual fix is to go into 2nd first (if you see what I mean!), this stops all the bits spinning and helps correct selection. Not sure why it happens though... [wedg1e](#)

It sounds like a similar problem to mine. Generally the gear change is fine, but sometimes I can't get it into first while the car is standing still with the engine running, although it will go in if I select first just as it comes to a halt. I've had this problem all the time I've owned the car (five years), It doesn't get any worse with time. I think I've worked out what it is. It is generally worse the day after the clutch gets hot. e.g. if I'm stuck in traffic for a long time. I think it's due to heat soak from the engine causing dirt or possibly clutch dust on the clutch splines to become sticky and not allow the clutch to disengage fully. Probably made worse by the clutch being old and the release springs possibly a bit weak. Since it isn't getting any worse and it's not worth pulling the gearbox out just to find out, I intend to leave it until the clutch finally goes, and just select first before I come to a halt in the mean time. [lesliehedley](#)

I find I get some trouble when the engine is cold – Overhauled both cylinders and all seems well last year [HeyAndy](#)

13.4 What are the options when replacing a 350i gearbox

Get the box rebuilt at N+T transmissions. He can mix and match ratios for you and it's MUCH cheaper than buying a new box. N+T Transmissions; The old workshop, Over Whitacre, Warwickshire. Ken Tomlinson is the man [andymadmak](#)

Borg Warner T5 as fitted to later RV8 engined cars? [sevans](#)

Competition Transmission Services seem to have a good reputation, although I had mine rebuilt at Progress Engineering in Maidstone as it was close to where I live, and I didn't want to remove the box myself. They managed to do it without removing the engine or butchering the chassis. Amongst other things, the oil pump was shot, which you cannot tell until major damage occurs. Plus they machined the box for a proper oil seal for the gearshift shaft, so no more leaks past the cheapo o ring fitted as standard. [paul gotts](#)

13.5 How do I replace the diff. front pinion oil seal

I think that it's a full strip down to replace the oil seal, as there is a crush washer behind the pinion nut which gives the correct pre-load to the pinion bearing. The nuts are known to slacken off on their own (mine did) which causes vibration, particularly when lifting off the throttle. Unfortunately, if you just tighten the nut up again, you will not be putting the correct pre-load on the bearing because the crush washer has already been.....well, crushed. I did try that myself for a while, and even cleaning the threads and applying thread sealant before tightening to about 80 lbs, it undid itself again. As the diff. had done 130K anyway, I decided to have it rebuilt. As long as the nut hasn't loosened off, and you're not losing lots of oil, I would leave it alone, and just keep an eye on the oil level. [paulgotts](#)

13.6 I've got leak from the diff

The pinion seal will leak eventually. If the car is used in anger a combination of hard work on the diff gears & LSD and the brakes can warm the diff which'll accelerate the wear. It can be changed in situ (so I'm told but it's a P1theA). Best thing is to drop the diff and get it to Bernie to rebuild. Competition Transmission Services 01582-840008 (Jag 4HU is the general name for the Diff) [TaSmania](#)

13.7 What do I need to overhaul a clutch cylinder on my 390?

I would contact RT racing for a replacement slave / master cyl (less than £50 each if I remember) as I tried new seals from a Rover which did not fit at all. [gsx600](#)

If the master cylinder you may also find a puddle of fluid on the drivers mat, I was convinced it was the slave or the pipe, replaced both and still leaking, was looking at something else in the cockpit and noticed some liquid on the floor which tasted like brake fluid ! Changed master and since all been leak free. [gsx600](#)

Any auto factor should be able to sort you out with a set of seals, they're only std Rover SD1. [350matt](#)

If you look on the side of the master (or slave) cylinder you should see a number cast-in. This is known (surprisingly enough) as the casting number and will be something like 64676310. You should also find another number elsewhere, eg 70. This tells you that the bore is 0.700". Armed with these numbers, get onto a Lucas-Girling stockist and ask for a seal kit. Usually about a

fiver for the slave and a bit more for the master. You could try Powertrack on the web, they are Girling specialists. [wedg1e](#)

13.8 How do I replace the speedo cable?

I had the same cable go about 3 weeks ago, I think I had the last one available, sorry. Try Gatwick TVR, spares 01293 822611 (he got my speedo cable 3 weeks ago) or Speedy Cables Hertford 01992 581600. The gearbox end is fitted with a male square fitting that goes into the gearbox drive, don't throw that away as the new cable will not have it on and you cannot get them, (You have to cut the cable close to the fitting and then carefully drill out the old cable from the fitting, Araldite the new cable onto the fitting. [redcar](#)

13.9 I've been quoted £400 to replace the speedo drive

The garage says the gearbox has to be dropped out to replace the nylon part that is broken (this part costs £3). This seems like someone is taking the P***. How difficult/easy is it to repair the speedo when broken inside the gearbox and have any of you gone through this process. owl2

Dunno about the wedge but a mate of mine had a similar problem with his Westfield. It was cheaper to fix a bike speedo to the axel than drop the gearbox out and sort it! [robp](#)

Got the same problem – been quoted the same story. Where was the garage? be interesting to see how fix your speedo. I've heard you can fit electronic types for half the money. Don't know about a bike speedo going to diff though. [HeyAndy](#)

There are two parts to the g.box speedo drive, one is the worm gear on the output shaft, which would need the box dropping out, the other is the output to the cable, which can be easily replaced and is only held in with a clip and one 8mm bolt., also check the cable [350matt](#)

13.10 Where can I get a clutch master cylinder

RT RACING PRICE IN 2003 CATALOGUE £49 95 + POSTAGE PART NO WAO 157 [mtb](#)

HAD NEW CLUTCH MASTER CYLINDER FITTED BY LOCAL GARAGE 3 MONTHS AGO LUCAS GIRLING PART NO pmc133 (64066117) they had to use original rod as new one to long. COST FITTED £56.00 [mtb](#)

Rebuilt mine in '96' just found the receipt. Cost me £5.76 for a Girling repair kit pt no. sp2102. It all depends on the condition of the piston and the bore. I seem to remember it was the same as on a TR6 [carl350i](#)

Recently replaced both clutch cylinders on mine – cost about £90 for parts from Tower View – fitted by a mate in about 30 mins! [skyrocketship](#)

If I remember correctly there is pin through the pedal to hold the push rod thingy to the pedal. Held in place with a split pin. This can be removed through the hole that the cylinder fits in. Then a circlip to remove the rod from the master cylinder, at least it was on my 350. [jmorgan](#)

The operating rod is held captive at the cylinder end by a steel disc and a circlip. At the other end it's threaded into a length of tube on the pedal, with a locknut. Undo the locknut, remove the two nuts and bolts that hold the cylinder to the scuttle and pull the cylinder away. This depresses the clutch pedal: you can now grip the rod (from within the engine bay) and unscrew it from the pedal. [wedgie](#)

My 350 has a clip which needs prising away from the pedal a touch and it then slides off the clevis pin. Difficult to explain, but a 10 second job once you know. [danny hoffman](#)

13.11 I can't bleed the system after replacing the clutch master cylinder

Try disconnecting the pipe from the slave cylinder and sucking like hell on it. It primes the pipes and can be the solution. I used to do this with m/cycle brakes that were being obstinate. Of course you may get a mouthful of hydraulic fluid but you can't have everything [wedgie](#)

yeah I just replaced mine with a unit from Demon Tweaks £38 +vat had to change the rod over as well, mine wouldn't pump either so I used my pressure bleeder (clutch and brake cylinders have the same thread lid on mine) it now works a treat, not crunching into fourth at high revs any more. [mrcrappy](#)

13.12 I need a new diff for my 2.8 V6

The SEAC uses an IRS with a '3.06' ratio – giving 30.86 mph / Thousand revs – which at 6k revs gives a theoretical top speed of 180mph.. So – don't get this one for you 2.8 – it will be seriously gutless !! Best try to get the diff from a 2.8 litre Jag – it will probably have about the right ratio. [rev-erend](#)

Yes. You want a 3.54 which are like rocking horse doo dah because all the kit car boys and hot rods have used them up. I was quoted up to £1200 for one! Other ratios are available and many do not have the PowerLoc LSD either. Absolute swine to get out of a Jag BTW as the whole of the rear subframe/suspension has to be dismantled. The 3.08 was an option on the SEAC. Standard fit was 3.54 which gives a lot better acceleration. [shpub](#)

13.13 How do I repair the bent driveshaft on my 350i

Sorry to hear of your bad news. I think that there may be double bad news I think the wedge rear half shafts, both early and late are TVR specials. I may be wrong here, but if the half shaft is not repairable it might be worth contacting the factory. [redwedge5](#)

As long as the drive flange is ok, it can probably be fixed. [Graham](#)

Richard at Wedge Automotive may be able to fix it [danny hoffman](#)

just for your info, as what's already been said is correct: the rear wheel bearings are Mk.2 Granada. However the seals that you get with the Granada bearing kit differ between inner and outer; the TVR uses the same type inner and outer. You may need to hunt around for a second seal if both yours are shot. [wedg1e](#)

Amongst their positive attributes driveshafts is not the Wedge company mentioned best virtue IMH experience. I went to the chaps Graham mentioned – they did the original ones for TVR and still make them for the current cars – they are fantastic. They can do the originals if you've got the hub/stub axle. They used my 350 shafts stub axle/spline and made the complete heavy duty/later shaft. Not cheap but awesome workmanship. Proptech in Stourbridge. [Tasmania](#)

Hartlebury actually they re tubed and uj'd my drive shafts and prop and have done about another 6 for the Tasmin guys... [Graham](#)

Premier Propshaft in Nuneaton are very good. [andy](#)

13.14 *How do I adjust the rear wheel bearings?*

I don't think there is much in the way of adjustment, you could try and tighten the centre bolt a little but it should be torqued to FT anyway. I think that play in the bearings generally means time for replacement. If you do try and tighten the centre bolt be aware that one of them is probably left hand threaded, so to tighten you have to turn anti-clockwise. Not sure which side though! maybe one of the wedge boys can advise further. [Quinny](#)

You sure it's the bearing and not play in a bush? Rear wheel bearings are as Ford Granada Mk. 2; they are dual-row ball with split inner race so there should be no play as you describe (a taper roller would be OK). Hub nut should be torqued to 250 lbs. ft. Ideally it should be secured with a split pin (drill through the nut and the stub axle). [wedg1e](#)

They're notorious for coming undone because they *don't* use a left-hand thread on the near side! If you tackle this be prepared for suspension-bending levels of torque to undo and re-tighten the nut, and also that the nut needs to be pinned, glued, welded plus gaffer tape round the outside and it will still somehow manage to come undone! [GreenV8](#)

UJ's? They would give play. Well mine did. [jmorgan](#)

It can also be caused by play in the hub carrier bushes as well. Tower View had to get mine rebushed. I was getting about 3–5 degrees of variable camber! shpub If the nut is already loose, and causing the play, you will be able to torque it up relatively easily. I recommend split-pinning these things for safety. If the shaft has already been drilled through once, don't drill it again. What I do is mark the end of the shaft lined up with the existing drill hole. (Paint line or hacksaw a groove). Then I put on the nut, torque it, and drill it lined up with my mark. I usually

find the existing hole no probs. The other advantage of split-pinning is you can re-use the same nut (they are a fiver a pop). When retorquing a used bearing I don't go to the full 250lbf, probably only about 150-200, and you'll get no play. [adam quantrill](#)

13.15 *How do I change the oil in an LT77 or R380 gearbox*

14 Replacing Oil in 5-Speed LT77& R380 Manual Gearbox



DIFFLOCK TIP: To determine whether you have an LT77 or R380 box fitted to your vehicle use this rule. LT77 gearboxes have reverse gear selected to the left of 1st Gear whereas R380 Boxes have reverse gear selected on the right below 5th Gear

First make sure you are wearing your [Finite Synthetic Nitrile Gloves](#). These are essential to stop your skin coming into contact with diesel fuel, old oil and other contaminants that can cause a variety of skin complaints or chemical burns.



DIFFLOCK TIP: Synthetic Nitrile gloves are far superior to plain latex gloves, being tougher, more chemical resistant and do not contain latex proteins which can give rise to serious skin complaints

Locate the main manual gearbox filler plug and loosen it using a 1/2" AF spanner (LT77 Gearbox) or [T55 torx bit](#) (R380 Gearbox) and position a [Drip Tray](#) and [Oil Drain Pan](#) beneath it. In the picture below, showing an LT77 box, the square filler plug is numbered 1.

Remove the filler plug but watch out for a dribble of oil.



DIFFLOCK TIP: Note that the filler plug is in a very awkward location and it will be impossible to get any oil into the box without a flexible tube. We recommend you purchase either an [OilSafe Pump Kit](#) or a [Fluid Transfer Pump](#) to make life easy



In this picture of the LT77 gearbox the square filler plug (1) can be seen above the large Hexagonal drain plug (2). The R380 box is similar except the filler plug requires a T55 Torx bit to undo it

Locate the main gearbox drain plug in the side of the gearbox roughly below the filler plug. In the picture above it is the large hexagonal plug numbered 2.



DIFFLOCK TIP: Never, ever undo a drain plug until you have undone the corresponding filler plug FIRST. That way you are absolutely sure to be able to refill with fresh lubricant after you have drained all the old oil out!

Using a [32mm Wrench](#) (there isn't room for a socket to be fitted) Loosen the main gearbox drain plug but do not remove it yet. Reposition the drip tray and drain pan under the drain plug but bear in mind that when you remove the drain plug the gear oil will first shoot out horizontally before gradually falling back to drain out directly beneath the drain hole. Usually it runs down onto the chassis cross member and then spreads out to drip off quite a wide area so you really do need a wide drip tray and drain pan.

When you have your drain pan in place unscrew the loosened drain plug by hand BUT keep the plug pressed firmly against the gear case at all times as you unscrew it. When you are satisfied that there is no more thread, just your hand pressure holding it in place, then double check your drain pan is in position and whip away the drain plug as fast as you can so that your arm is not covered with oil as it gushes out.



Here the old ATF fluid can be seen draining from the extension case on an LT77 gearbox. Note its characteristic red colour and very thin viscosity

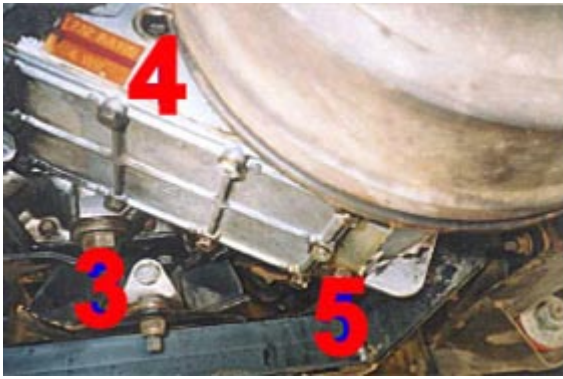
While the oil is draining wipe any debris off the drain plug. It is magnetic and usually it acquires a little 'hedgehog' of iron filings. This is quite normal and nothing to worry about, however if any large chips of metal or gear teeth are present on the plug or in the drained oil this indicates some internal damage has occurred in the box.



A 'hedgehog' of iron filings such as can be seen on the left hand drain plug is normal and not cause for concern. Larger lumps or chips in the drained oil might require further investigation. On the right can be seen the same drain plug after the filings have been wiped off.

Once all the oil has drained out replace the drain plug (preferably using a new copper washer) and tighten. The correct torque is 50NM but since a socket and torque wrench can't be used you should tighten carefully by hand. It may be useful to apply a torque of 50NM to a spare nut and bolt so you can gauge what this torque feels like before applying a 32mm spanner to tighten the drain plug.

If you have an earlier LT77 box you now need to reposition the drain pan underneath the extension case drain plug, its hole drains out vertically so the bowl can be positioned directly underneath it. Note: Later R380 boxes do not have this second drain plug.



In this picture above the LT77 extension case drain plug (3) can be seen and this must be removed since it releases a plastic filter, which must be cleaned. Note R380 boxes do not have the second drain plug or filter

The extension case drain plug also incorporates a plastic filter that is about 100mm long and this must be withdrawn with the plug. Using a [24mm Socket](#) or [Spanner](#) loosen the drain plug and remove by hand. While the oil is draining turn your attention to the filter. Flush it out with white spirit or paraffin and examine the mesh carefully. The filter should be cylindrical in shape with no twist and the mesh should be uniform with no rips.



This plastic filter sits above the extension case drain plug in the LT77 box and must be cleaned whenever the oil is renewed. An old toothbrush and a little white spirit are ideal for cleaning the filter prior to refitting it.

Wipe off any debris from the drain plug and once all the oil has drained out replace the filter and plug (preferably) using a new copper washer. The plug should be tightened to a torque of 50NM.

The gearbox can now be refilled with [Difflock MT75 Fully Synthetic 5-Speed Gear Oil](#) or [Difflock ATF Type DII](#) through the filler plug.

Fill the gearbox until oil starts to run back out of the filler hole, it should take around 2.7 litres before this happens. Wipe any debris off the filler plug and refit it, tightening to a torque of 25NM. (DO NOT OVERTIGHTEN since the plug thread is a taper variety and will damage the gear case if too much torque is applied).

15 Chapter 14 – The Exterior

15.11 need a new nearside front indicator lens for my 400SE

If yours is the same as mine, (see profile picture) it's off a Pug 505, I've got one on order with local Pug garage. [Redcar](#)

They are indeed from a Peugeot 505. If you have problems getting one. I can get them in Holland with no problem. I even have a set in stock for my 430 SE. [hansdaal](#)

Yes they are Pug 505 units circa '85-90'(roughly!). As of last year they were readily available from many motor factors. I got a pair from my local Lucas dealer. [andy390](#)

15.2 How easy is it to replace the hood?

I recently got a hood from Autohoods, came with fabric etc to match for the targa panel, Velcro strips for the sides etc. Delivered in a week from order and good quality too. Guys that fitted it for me said they had to re-stitch the false seams on the targa panel to get them to line up correctly, they are all different of course. Very happy all round with Autohoods [my350i](#)

I had a hood fitted to my old 400SE by Martrim in Cheshire who did an excellent job, however my 280i is only intended as a good weather toy and is not going to be stored outside and used in all weathers as the 400 was. [bobfrance](#)

I have this web site saved.. www.autohoods.co.uk/intro.htm I think a hood is around 500 GBP.. not sure of their price though. [rev-erend](#)

Got mine done at <http://www.martrim.co.uk/> They're in Cheshire. Think it came to about £400ish fitted. [bobfrance](#)

15.3 How do I waterproof my hood?

Try the following web site it has been highly recommended by several people and seems to be the market leader in such products. www.renovointernational.com/ [Gandalf](#)

I use Renovo and it works fantastic, the water beads up and rolls off. [Stainless Steve](#)

Absolutely – and if you use the full kit it makes the hood look like new as well – saved me a few hundred quid! [JONRES](#)

15.4 Is it easy to remove the body

Taking the body off does involve lots and lots of work (the above method is very tempting). Having removed mine on a 1981 wedge and assuming they are all similar this roughly the/a way: Disconnect fuel lines from tanks. Disconnect fuel gauge. Disconnect handbrake cable. Disconnect reversing light switch. Disconnect brake lines at G-valve and master cylinder. Disconnect all lines from fuel distributor to engine. Disconnect engine wiring. Disconnect coolant hoses. Disconnect steering upper UJ. You may need to remove rear silencers if hung from body.and probably lots more! The bolts holding the body to chassis: 2 at front low

down at ends of tubes. 2 above suspension mounts in engine bay. Roughly eight behind each sill – sill removed by drilling through rivets. Will also require the removal of some interior trim. 2 in boot above rear spring mounts. 2 low down in boot. If the body doesn't move you've missed some! The body is unbelievably heavy for a piece of fibreglass, totally stripped bare can just about be lifted with 2 people, would recommend 4 people min – one at each wheel arch. In my experience once separated the body and chassis are best left sitting in the garage for the next few years – you don't want to rush these things. [hodge](#)

Would be worth leaving the doorframes in place, together with the A and B pillar reinforcements. Otherwise the body will flex about the door openings and may end up with some unpleasant cracks... I have a pic of the factory lowering the shell onto the chassis and that's what they did too. [wedg1e](#)

I've taken the body off mine recently, not an easy job, jacked the car up as high as possible on four axle stands, then supported the body in as many places as I could, with more axle stands (spread the weight with wood) and very slowly dropped the chassis. The most difficult thing was that the clearance at the front of the transmission tunnel between the Body and the chassis is not good and the body needs to come back as the chassis pushed forward, you do have to make sure that all the cable ties are cut because at this stage, when you have the body hanging off the chassis, you cannot afford any problems. It is definitely a four person job otherwise as mentioned before you may cause damage. [redmatt](#)

15.5 Where can I get new wheel centres for my 450

give Steve Morgan a ring at Morgan Associates 01268 288587. Cost approx £5.00 +Vat [redcar](#)

here: www.redlineaccessoriesltd.co.uk/Wheelcentres.htm [dicky mint](#)

15.6 Where can I get new door and roof seals from

Mine were all replaced when the hood was done @ Peninsula – £66 + vat, there was also a strip of thin foam put around the windscreen frame at some stage which is effective. [seamus](#)

I bought some from a company called Woolies at a kit or classic car show a couple of years back – same profile and £12. [Tasmania](#)

try Woolies, got a good web site, shows all rubber sections end on, actual size, so you can match them up. got all my door/window and roof seals there. they do whole range of refurb stuff. not sure of address similar to <http://www.woolies.co.uk/> they are in Suffolk. [degz](#)

It's <http://www.woolies-trim.co.uk/> Here's a link that lists a number of suppliers of 'bits-n-bobs' : www.kitcarmart.co.uk/man.html [streaky](#)

I heard that the MGF door/roof seals were a spot-on match for the wedges. [Jason](#)

As mentioned earlier, <http://www.woolies-trim.co.uk/> bought loadsa bits of trim and things from them over the years. Inc door+boot seals for her outdoors which seem to do as they say on the tin, ie seal my door [york33](#)

You might try Paul Beck Vintage Supplies in North Walsham, Norfolk: sorry, I don't have the number handy. [wedg1e](#)

Try these: www.rubbertrim.com/ If you have a piece they will match it up. [am400](#)

15.7 Which way do the top window seals face?

They face forwards on mine – at least the bits that are left do. I need to replace mine. Where did you get them from?? [Gerry Attrick](#)

RT Racing WA0263 Back Window Seal ... but worth checking with Richard when you call – [Streaky](#)

Mine seem to face forwards too [jamo](#)

15.8 Where do the boot hinges come from?

Boot hinges are from a Hillman Imp.....honest. Took this from the Alternative Parts list. Not sure if it's still current but worth a go. www.soi.city.ac.uk/~nick/tvr/tas_alt_pts_lst.html Brian Wright Imp Spares, 10 Viscount Road, Stanwell, Staines, Middlesex. TEL: 01784 253818 [sevans](#)

no way an imp !!! [redmatt](#)

Er.....ahem.....400 headlights off an Allegro? [jmorgan](#)

The boot hinges were from an imp, and also lots of low volume cars used them. Ginetta, lotus etc. The imp ones were chrome, but they can still be purchased from various after market suppliers. Try Europa spares, Stafford Vehicle Components and other such classic/ kit car part suppliers [njhucker](#)

Nope, the imp ones are chrome. These were used for early Tasmans and 280s but not for the later 350s of this thread. The 350 boot hinges are the bonnet hinges from a Reliant Kitten. [19560](#)

What material were those of the Reliant? [streaky](#)

They are all steel hinges but the finish on the 350i/Kitten is matt black, powder coated I think – or could just be a good paint. [19560](#)

15.9 How do I repair a broken roof tab?

I don't know if you can obtain these separately to the whole top. I would suggest getting a dealer to contact the factory and ask. I did enquire about getting a new top for mine and the general opinion was forget it. If you can get hold of one of the tabs then it should be possible to cut away the fibreglass and regraft one in. [sevans](#)

I too am under the impression that the top is fibreglass only and so you can peel back the head lining grind back the fibreglass for say a 4" radius and graft a new tab in. Mark the position carefully as every car is different, this is TVR. [19560](#)

I would use a block of aluminium of the correct dimensions but say 4" long, drill loads of holes at one end to key into the fibre glass , grind out a hole and bond it in with GRP. It's important that the tab is part of the roof and not just stuck on. [2sheds](#)

My early 350i has aluminium tabs which locate into plastic pockets set into the windscreen surround. [tallbloke](#)

I think that these pegs are obviously quite important and doing a repair with super glue or whatever could be a little dodgy. I can see the panel potentially 'blowing out' at any sort of speed if the fix isn't done properly. Another thought, it might be a good idea to post some sort of request for a panel on the Tasmin Challenge website. Somebody who is doing a conversion might have one spare. [mikeb](#)

I think the part you need is TVR part No 026U 249A Targa Location Lug. TVR dealer, David Gerald TVR or TVR Factory parts best place to try. Last year when I bought some wedge parts from Mole Valley TVR (they were clearing their wedge part stock) they had some for sale. How you fit one is another matter, but as they are sold separately this should be possible? [redwedge5](#)

16 Chapter 15 – The Interior

16.1 My electric windows aren't working

Don't know where it earths but this should be easy to check, just run one straight to the battery. I would be surprised if this is the problem. Can only comment on how to remove mine 83 Tasmin, don't know if other Wedges are different....

Remove inner top and bottom trim panels.

Remove the cable that stops the travel

Remove connector from motor

Remove the 4 screws in the middle of the door that hold the mechanism.

It should be possible to get the mechanism out of the window runners and it will come out the top of the door if you prise it apart slightly. [SEvans](#)

There is a label on the motor that reads – Rockwell international. 2/15612 RH 12v Also the letters CIM are embossed on the motor.

16.2 How do I adjust the windows, as they foul the roof when I close the doors?

To adjust window (start with window down !): Remove interior door trim – there are screws around the trim panel (mainly at the bottom). The rubber rain channel and door lock (push button) always are difficult on reassembly. You might have to remove bits of tape to get at interior of door – look at the bottom towards the rear for something that resembles a steel cable and a bicycle style brass stop thingy with a screw. Just shorten this a small amount (after winding window down) and try winding up window and shutting door. Re-assemble door panel. Never easy ! [reverend](#)

I have same problem with my passenger window but only if I put the lid on one way round ??? are the locating pegs slightly out and, is there a proper back and front to the lid . [mtb](#)

I have the same problem. The adjustment is as Rev proposed. Two things to note. There is a front and back to the roof. The front edge is slightly rounded whereas the back is straight. Why TVR didn't put the locating pegs at different spacing front and back, so the roof couldn't be fitted the wrong way round is a mystery. Secondly, be sure you put all of the plastic and tape back between the door panel and the door. If you don't you'll get drafts blowing in – mainly around the door pull [Gerry Attrick](#)

my roof panel has got a small pop rivet in it that goes to the front [blaineuk](#)

16.3 How can I change the wiper motor?

I think the wheelbox can only be reached from inside but you have to remove most of the heater plastic ducting etc so its a big job, taking most of the interior apart. [350matt](#)

Agree with Matt. I think you need to take the dash out, some heater pipes and maybe the heater box. Unless someone has made a hole in the bulkhead to change it in the past, if that's possible. [SEVANS](#)

Wheelbox is not a major problem if you are dextrous (1985 390SE) remove passenger seat and lie on your back – head forwards the wiper motor is above the ECU. There is a nut on the nose of the wheelbox, you need to take the top of the wheelbox to take the rack bits off. Leave them in situ if they work OK. I was too hasty to cut into the bulkhead, it didn't need it. If the rack is locked then turn the rack from the loose end like a screw. I think the rack bits are off an allegro (with one it chucked away) but may be off any 80s BL car. [rus wood](#)

16.4 The heater blower doesn't work.

Took my heater switch apart and the 2nd speed contacts had melted. So removed the contacts. Better qualify the heater switch comment. There are two metal rocker's. One does the speed

one, the other speed 2. The 2nd one had over heated and melted the casing and the contact was lost as the contact had moved in the melted plastic. Mine needs a new switch and connector for the rear of the switch. The rear connector had also been affected by the heat.
[jmorgan](#)

For those whose heater fan switch still works, it might be worth using my mod. to prolong its life: disconnect the fan from the 2nd switch position and connect to a relay. Supply the relay from the switch. [wedg1e](#)

If it's a slide switch, it's likely to be TR7. [Streaky](#)

Switch is off a TR ... Rimmer Bros stock them. [jvaughan](#)

Not had to change any switches on ours , but they are very like the Scimitar ones which regularly melted . They came from a Princess "Wedge". [NHyde](#)

16.5 Where can I get a replacement VDO oil gauge for a 280i?

You wont see a gauge from the factory as they do not plan to sell Taz or S stuff again and the container stuff is sold. [Tasmania](#)

I know you said you're not keen on getting it repaired. But I would recommend this bloke for it, <http://www.jdo1.worldonline.co.uk/> No connection with him, I had my speedo repaired+recalibrated by him and was happy with it. My speedo was back two days after I posted it Shouldn't leave you without it too long if my experience is typical. Depends what's up with it I guess and what needs fixing. I think it does say on the website somewhere that a 48hour service is available [york33](#)

16.6 I need some fresh air vents.

Are they the ones either side of the clock? If they are then I think you will find they are from a Jaguar XJS, the ones on the dash near the doors. [sevans](#)

The type and style of the air vents are more variable than a very variable thing that has just had variability lessons at Oxford University! I have had cars with the screen vents as: * A GRP moulding as part of the lower screen panel * Cheap tack plastic – 2 bits * Cheap tack plastic one long piece and * as two tin pieces A good bodger could do a better job with a Tupperware box, glue and some imagination. [tasmania](#)

16.7 I need new seat belts

I think the seat belts are from a MK5 Cortina. Bought some after market ones for my car last year. On the list of cars they fitted on the box, MK5 Cortina was included. [SEVANS](#)

Just had a look at the ones I bought for my 83 Tasmin 200. They are Securon 500/30. They were a straight replacement. Bought them from a trade place called Maccess. [SEVANS](#)

Just been to Maccess this morning and had a look at the seatbelts. In the book it says 'TVR Tasmin 3500' and the one listed is 500/30. The list of cars this seatbelt will fit includes TR7, Cortina, Capri, MK2 Granada. There is also a 500/15 which lists the same cars. The only difference I could see from the outside of the box was that the 500/30 is black and the 500/15 is beige.... oh and the 500/30 was £25 plus VAT and the 500/15 £43 plus VAT. This is per seatbelt, not per pair. It seems that any colour, other than black, was nearly twice the price. [SEVANS](#)

I found that Mini ones were the same as my '80 Tasmin. Have a root around a breakers and see what has the same fittings. [wedg1e](#)

bought a pair earlier this year for the 400. Made by Securon in Amersham, part no. 500 / 15. I think they have a website, and the cost was c. £30 each. You will need the optional flexible floor mounted catch. [paul gotts](#)

Ah Seatbelts... I tried the Securon ones, was not impressed. I tried Mini Cooper, TR7, Ford Capri, and the list goes on. On the Securons the webbing is way too long, and does not retract fully, they also make the interior look like a bit kit-car. I had some custom made from Quickfit SeatBelt Services (No affiliation) (020) 8206 0101 They let you specify how much webbing you want, the type of clasps, and the length of catch. Brilliant, they fit perfect, and look like proper car seatbelts (K12 buckles to you). And the best bit – they were cheaper than the Securons !! £103 including VAT and delivery for both. They can also make them with TVR purple webbing, for a bit extra – but I decided not to. The Product description on the invoice: "FR.AUTO 4 PT, 90/90-2.6 METRES, SHORT SWV. A/P XY034 LAYFLAT TONGUE FOR TVR TASMIN. K12 250mm STR STALK" Oh, they also carry the weird long anchor bolts with a metric head, and UNF thread, long enough to go through the Body to the anchor plate. [jchase](#)

If you go to Securon's website they mention some place that the amount of belt webbing left on the spool must not be greater than a certain amount, I think it is like 0.3 of a meter. In which case the 15/300 and 30/300 products are not suitable for a TVR Tasmin due to the height location of the top bracket. This maximum on the spool is also mentioned by other sites, they do not allude to a reason. (I can right away think of at least three reasons why too much belt is bad – 1 –in an accident it stretches and you hit your face on the windscreen, 2–it looks crud as it doesn't retract properly, 3– if it doesn't retract it will get chomped by the door, and may just rip apart in an accident) [jchase](#)

16.8 How do I remove the veneer dash on a 450SE

On mine (400 so I think the same) there is a bolt on the rear of the veneer. You need to remove the nut, very fiddly. It's at the bottom in the middle. That removes the front bit. Then there is a metal plate that holds the clocks. That has 4 nuts and bolts holding it in. One in each corner.

On mine they now have large penny washers that grip the edges of the fibreglass surround.
[jmorgan](#)

16.9 How do I get the handbrake and gear lever gators off my 400SE

My knob (gear) has a collar that unscrews under the knob which exposes three Allen head screws which when loosened allows the removal of the knob. Handbrake gaiter on mine is connected to the gear stick gator as a single piece of stitched leather, mounted on a hardboard base that sits under the centre console. So you have to loosen (or remove although I managed to get away without removing) the console, remove the handbrake grip, mine split when I did this and then feed the whole gaiter assembly over the stick, handbrake and out from under the centre console.... [Paul Cole](#)

16.10 How can I get into the boot when the switch is broken

try removing speaker housing behind seat think you can get to it from there. [blaineuk](#)

16.11 Where do the metal clips that hold the door cards come from

Try somewhere like Vintage Supplies in Norfolk. They do a free catalogue with all sorts of this stuff in. [wedg1e](#)

I replaced all mine from: Coach Trimming supplies Unit 6 Saxon Way Birmingham B37 5AY Part Number 133 in their catalogue, 0.17p ea. So get part 123 @ 0.12ea. these are plastic sleeves, which fit in the holes in the door and hold it really tight. Their phone No is 01216945664 Fax 01216945665 [njhucker](#)

16.12 Where can I get new door locks for my 350i

They were used on most ford cars in the 70's including: Mk2 escort, Mk 3 Cortina, Mk 2 Capri, Granada, Consul [njhucker](#)

Cant speak for the locks on the Wedge never having had a problem with mine but if there is a number stamped on the back of the lock a specialist key maker should be able to cut a key to match. I did this once on a Fiesta, took the lock in , key cut no problem. [AM400](#)

Capri is the source – try your local Ford dealer – Circa £40 for the full set (Both doors) or try Peninsula/Tower View. [Tasmania](#)

16.13 *I've lost the boot switch inside the bodywork*

try removing speaker housing behind seat think you can get to it from there. [blaineuk](#)

In the hope that there's some ferrous metal in the switch, one of the pen-type extendable magnetic retrievers ([example](#)) might do the trick. Or a "rare earth" magnet (very strong for its size) "super-glued" to a bit of string [streaky](#)

16.14 *Where do I get the rear window seal?*

I got mine from RT Racing. However, mine is a 350i. Give them a try. [Pettsie](#)

I have a full seal kit on order from Peninsula. Apparently the seals are quite hard to source. I'm waiting for mine to be delivered. [jvaughan](#)

Two other possible sources: Vintage Supplies in Norfolk; Edgware Motors (IIRC) in London [wedgle](#)

16.15 *Where do I get the seat belts?*

Shouldn't be too hard to change. As I recall the most awkward bit will be undoing the big bolt that secures the inertia reel. It's hidden beneath the trim behind the seat. Usually water ingress gathers there and causes rust. It's worth checking this since you want to be sure your seatbelt is firmly secured. (makes mental note to check this on the new wedge) 'Fraid I don't know where the belts are from though. I wonder, has anyone fitted harnesses? [bobfrance](#)

I bought an after market jobby but it wasn't going to fit. £25. Went down the scrappy (I know, should have done that first) and 2 quid for the anchor that I was after. Allegro I think? But that was mine and I had the part in hand. Someone in the S Wales club had a harness fitted without a roll over and used a very large anchor metal plate bar type thing in the boot for the rear. Not sure about the other anchor points. [jmorgan](#)

IIRC either the old Mini or Metro belts, but I forget which, had the correct fittings to bolt straight in. I'm sure that plenty of other Brit stuff used the same fittings (Maestro, perhaps?). [wedgle](#)

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