

THE WEDGE EPISTLES

compiled by

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THE WEDGE EPISTLES

'The Wedge Epistles' are a collection of postings over a period of about eighteen months 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, Piston Heads nor I 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*

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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-laws 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](#)

2.8 Can I put the engine back in the car with the manifolds fitted?

Manifolds off when installing the engine. If you are trying to attach the engine to the gearbox that's already in the car - it's a tough job anyway - you need as much movement as you can get. Time to drop in the engine & connect everything is about 6 hrs .. there will be blood, sweat & beers after. [rev-erend](#)

I actually found it relatively easy to fit the engine and gearbox in one with the manifolds on, but mine's an early one with cast iron Landrover type manifolds, so go with the Rev's advice if you have tubular manifolds. You can jack the engine up a bit before you bolt up the engine mounts in order to find a way through to tighten the rear manifold bolts. [tallbloke](#)

If you are going to put the box & engine in in one go : You will need a hydraulic wince with lots of lift (it can help to drop the car down too) if you have lift height problems.. I'm 99% sure that you cannot leave the tubular manifolds on during this process. Sorry. You can always tap & die the exhaust bolts and holes before attempting to put the engine & box in & lube (copper ease) the bolts.. (new bolts !). It will make the job easier [rev-erend](#)

Been involved with two S2 350's in the last 12 months. Mine went back in with gearbox, both manifolds etc installed... Only left starter off! Slid in nice and easy... BUT... it needs a good strong, long hoist. Mates went in in similar but, we had to remove one of the manifolds so it would go back in. I managed it on my own, but it's much safer and easier if you have assistance. [briantvr350i](#)

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, its 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, thermotime 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 sensitive 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.

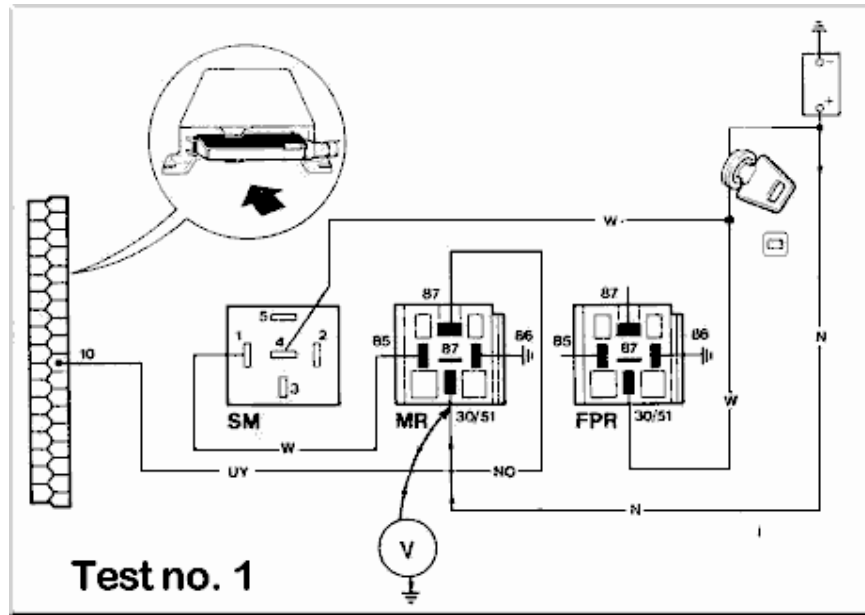
An indication for a vacuum leak can be noticed because the engine is running rough on idling and low rpm. The rough running then slowly disappears with increasing rpm. This can be explained because at idle and low rpm the throttle valve is almost closed. This gives a high vacuum in the plenum chamber 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

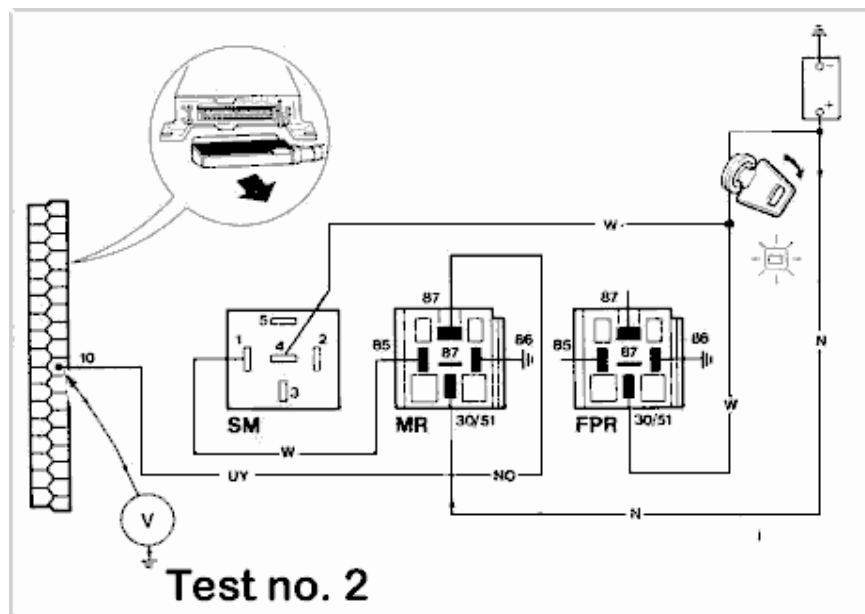


ECU connected. Ignition off. Voltmeter connected between pin 30/51 of the main relay and earth.

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

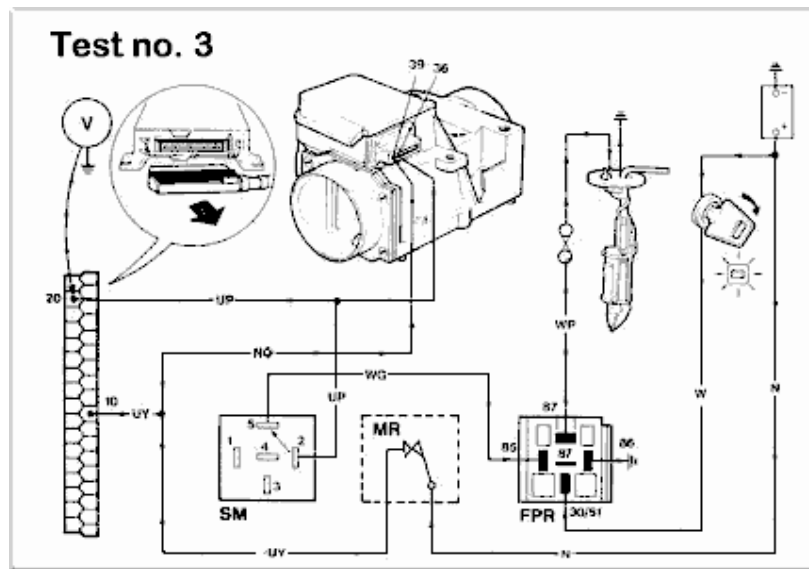
Turn ignition ON. Main relay can be heard by a click and voltmeter should read 11 to 12.5 Volts If below 11 Volts or 0 Volts check:

- 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.

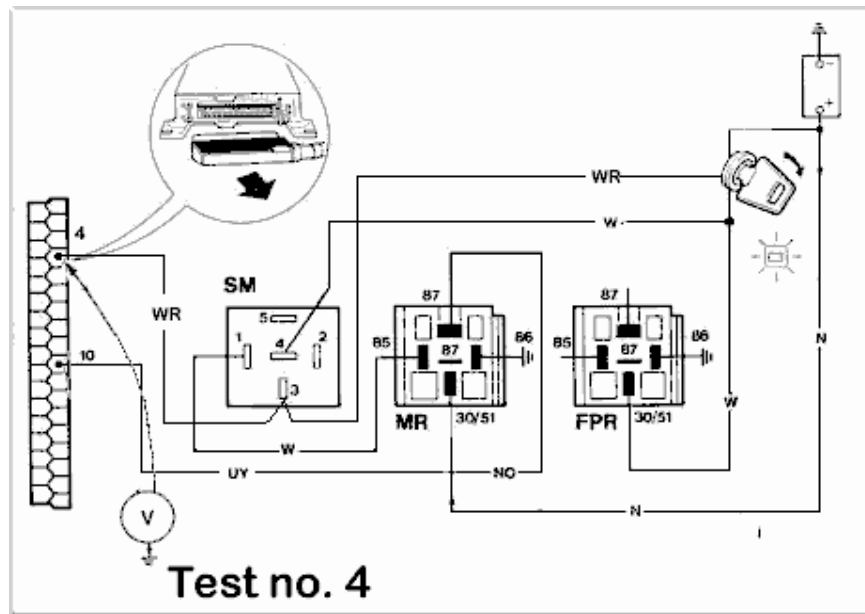
If still below 11 Volts, substitute the steering module

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



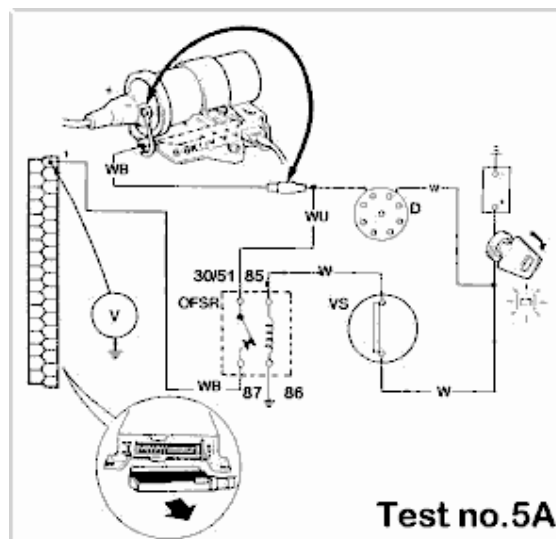
ECU DISconnected. Voltmeter connected between ECU terminal 4 and earth. Ignition ON and cranking. The reading should be 8 to 12 Volts. If no reading but the starter motor operates check: White & red (WR) wiring connections to ECU pin 4 via the steering module and the wiring loom multiplug.

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



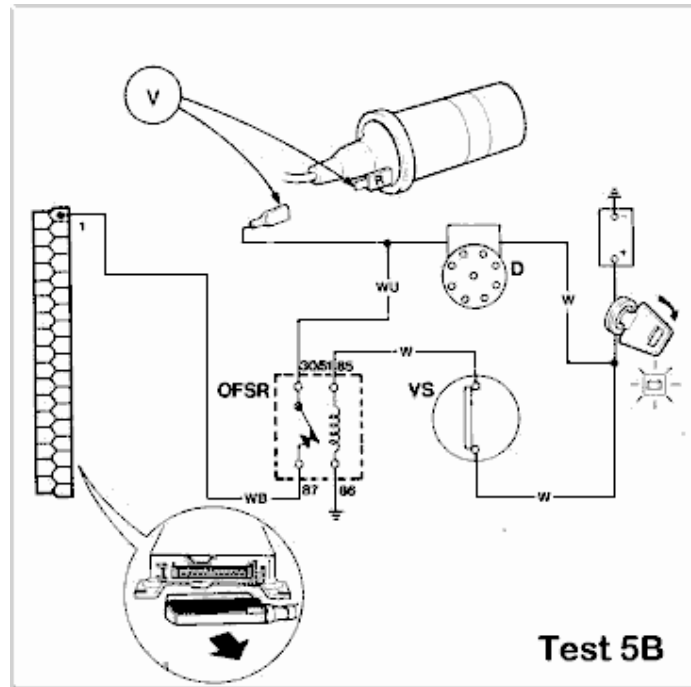
ECU DISconnected. Connect a jump lead between the negative coil terminal and the white/blue (WB) connector adjacent to the coil. Voltmeter connected between ECU multiplug terminal 1 and earth. Ignition ON Listen for operation of fuel shut-off relay. If relay does not operate check: White wiring (W) and

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

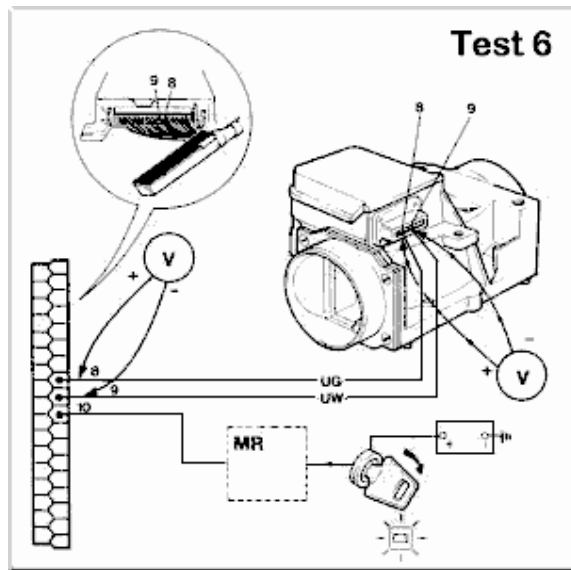
CRANK the engine. Voltage should fluctuate between 6 and 9 Volts. If higher than 9 Volts or lower than 6 than check: Electronic ignition system

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

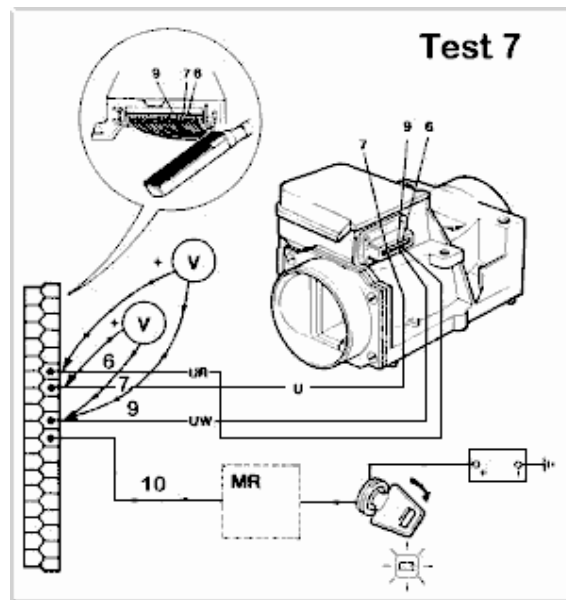
Test 6 Voltage of airflow resistor

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

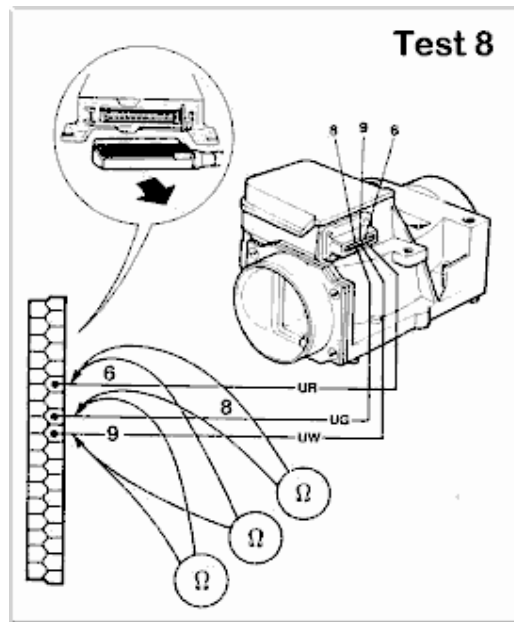


ECU connected. Disconnect the multiplug, remove the multiplug cover and reconnect the multiplug. Ignition ON. Voltmeter connected between pins 6 and 9 with the multiplug connected to the ECU. Voltmeter should read 4.3 +/- 0.2 Volt. If Voltmeter reads 0 check: All wiring and connections seen in the diagram 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

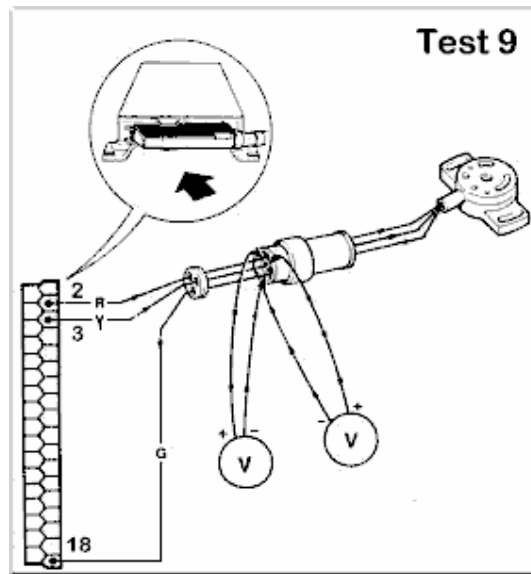


ECU multiplug DISconnected. Ignition OFF. Air flow meter flap closed. Ohmmeter connected between pins 6/8, 6/9 and 8/9

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

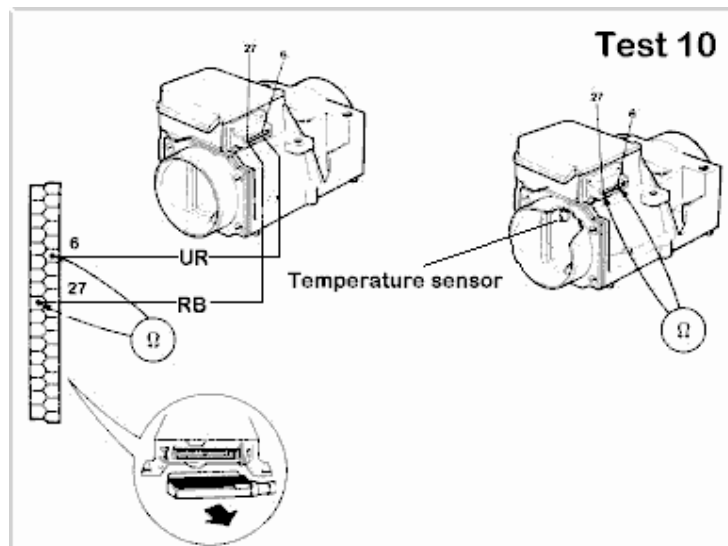


ECU multiplug connected. Ignition ON. Voltmeter connected between yellow and green wire at the multiplug. Voltmeter should read 4.3 +/- 0.2 Volts (ECU control voltage). If zero or lower reading check: Wiring and connections

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 irregular idling with revs going up and down.

If OK continue with [Test 10](#)

Test 10 Resistance of temperature sensor



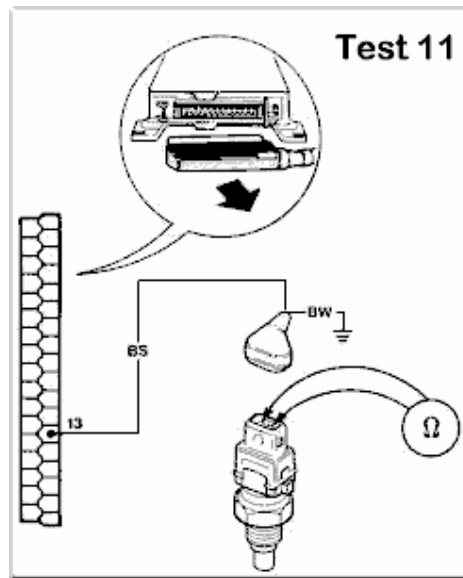
WARNING! only connect the ohmmeter for a short period. the ohmmeter will heat up the winding and give an incorrect reading as time goes

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.

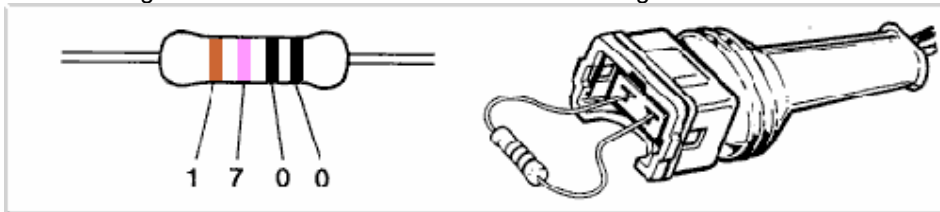
WARNING! only connect the ohmmeter for a short period. the ohmmeter will heat up the winding and give an incorrect reading as time goes

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

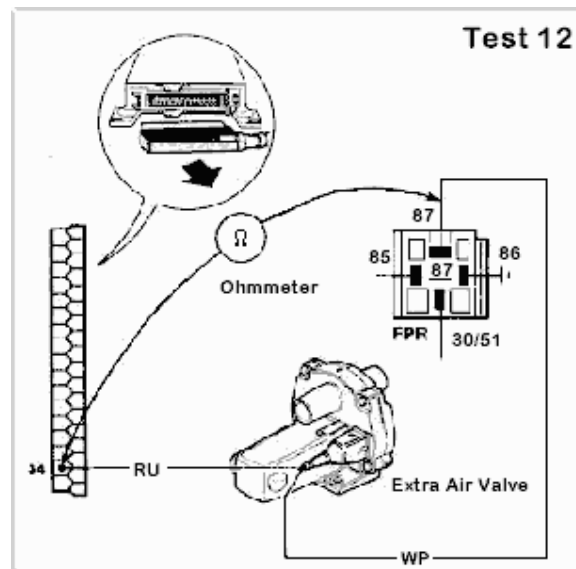
If Ohmmeter readings are incorrect: Remove the sensor and check it again in melting ice and water (0 C) and boiling water (100 C). If the readings are still incorrect. Replace the temperature sensor and recheck. A temporary solution for the problem is to connect a resistor of 175 Ohms across the sensors 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](#)

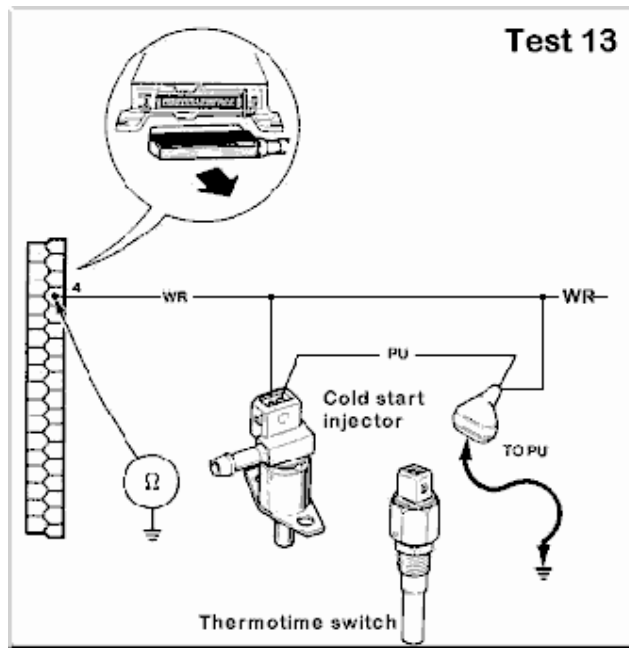
Test 12 Resistance of the Extra Air Valve



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

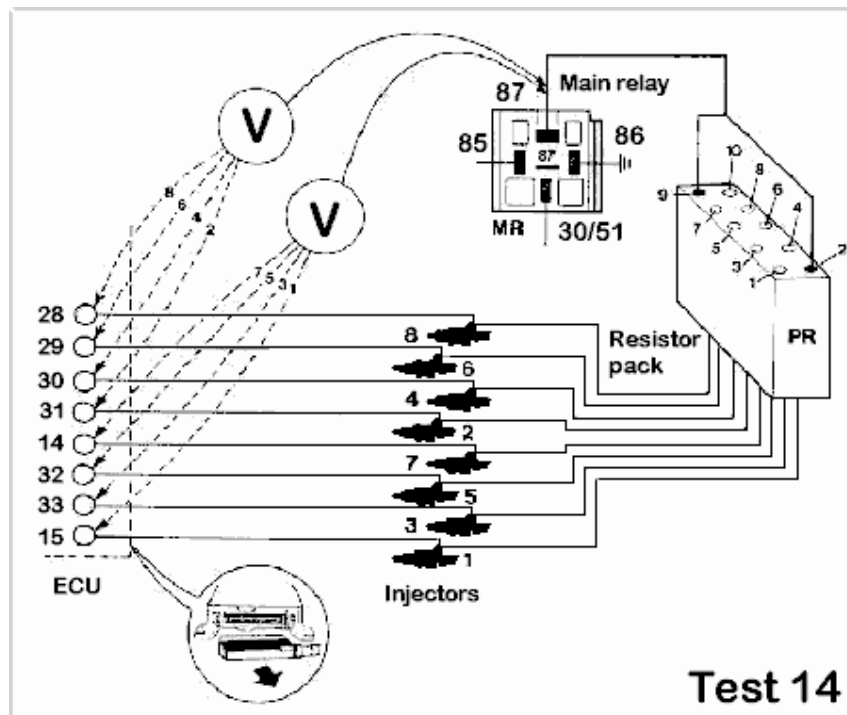
If OK continue with [Test 13](#)

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!

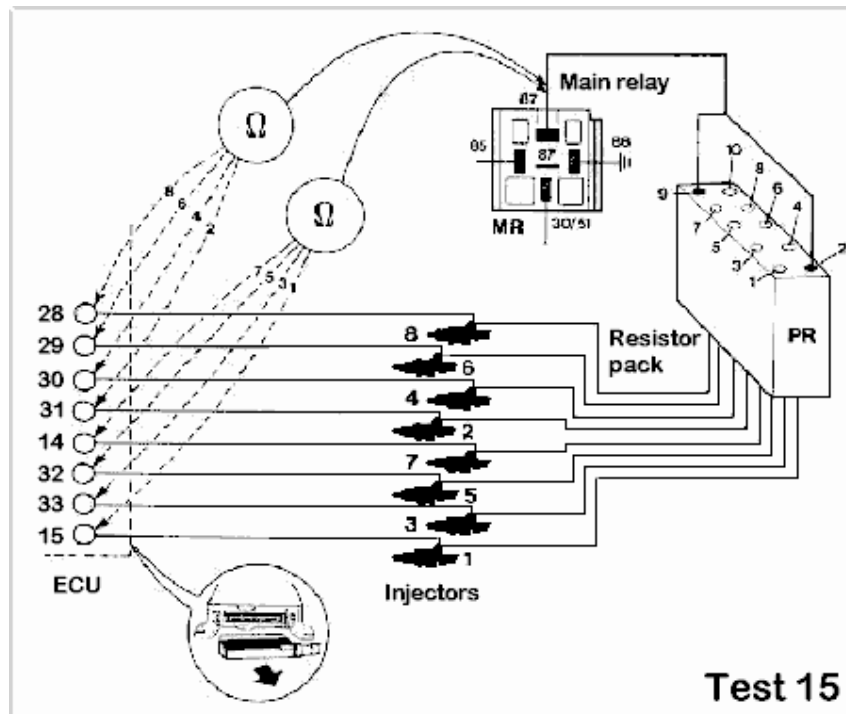
Connect the voltmeter between a good earth and each injector ECU multiplug terminal in turn. Check the voltage reading for each injector. Compare the injector voltages. These should not vary by more than 0,5 Volt. If the variation is more than 0,5 volt continue with Test 15

Test 15 Resistance of injector circuit

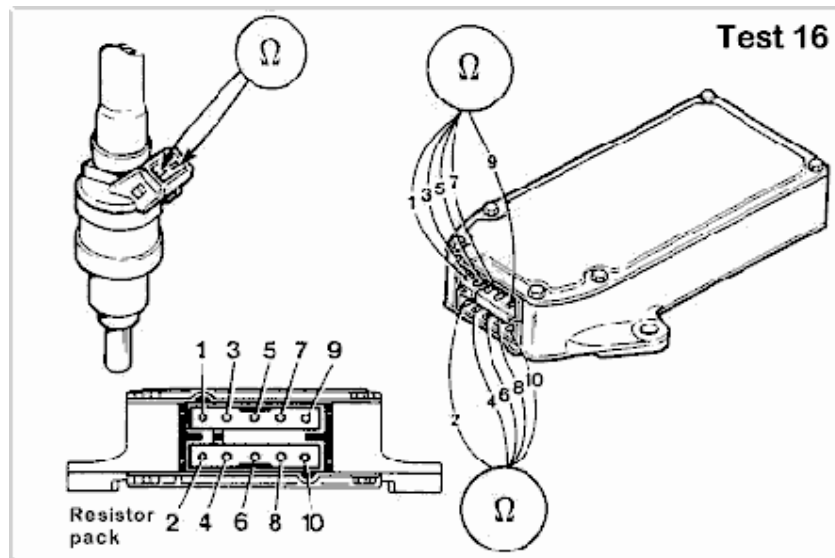
ECU multiplug disconnected. Ignition OFF. Connect the ohmmeter between terminal 87 or 87A of the main relay and each injector ECU multiplug terminal in turn

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 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 dicky mint

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 moded 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) dicky mint

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? dicky mint

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 SD1 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 **Tick over 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 tick over 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, [tpec](#)

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 set-up though!). [wedg1e](#)

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 set-up. 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](#)

4.21 My 350i has started surging after a short run

After a short run, the motor begins to surge (rpm going up and down)and starts to loose tick/over altogether. It seems ok until I switch fan on and if I switch headlights on, it get even worse. Seems the more power that is being used, the worse the surging gets. I wondered if it could be bad connection some where, perhaps to ECU.I have checked the earth wires that fit onto the motor and they seem okays I thought about disconnecting Cubit not sure how plug unhinges. Has anybody had this problem before, or have you any idea's.

I had the exact same thing on my 350i not so long back. The rpm kept getting lower and lower over a period of time causing it to surge as the ecu tried to compensate. When the lights and fan are on, extra load is placed upon the alternator causing even more "strain" on the already dying engine, resulting in it cutting our altogether. For me the remedy was simple - the big slotted idle screw on top of the plenum had become loose and was able to turn/undo itself over a period of time. I could set the rpm to about 800 in the morning, and by the afternoon the screw had turned slightly causing it to drop to around 300, and thus cut out. To fix, I simply removed it and wrapped some PTFE tape around the thread so that it couldn't move anymore. Has been fine ever since and all idle problems have vanished. May be something as simple as this on your car!
[digga951](#)

4.22 Does anyone have any comments about swapping FIE for carbs?

Stick with injection, with a few mods it'll outperform the holley, unless you're going to a set of webers.
[350matt](#)

At 535 pounds plus vat you're most of the way to getting a proper 3D fuel / ignition controller on your car .. go to : <http://www.emeraldm3d.com/> you can keep your std distributor and modify it (not ideal but it works) , or go for coil packs .. it *will* be more expensive, but you'll get the full management control you need to get the best from your engine .. why spend 535 plus vat and set-up time for only a carb fuelled mechanical advance system? makes no sense to me. [joospeed](#)

I did this conversion on my 350i in the summer. Although it has done less than 50 k it is 21 years old, and the injection system used at that time was not the best. Reliability was a major concern and after the second tow home the decision was made. I bought the 500CFM through RPI in Norwich, and their service was excellent. Conversion was very easy. The car is now lighter by a major amount, and I have no worries about electrical problems. Performance is unchanged from that I had with the injection system when it was at its best. Only noticeable change is that hot starting is not as good, but with a battery in boot conversion it cranks over ok until it catches. And the best bit, got close to £300 on Ebay for the old injection system, so the cost was less than £300 in total. Definitely recommend it!! [RonL](#)

I run the emerald set-up, in fact I had the first v8 dizzyless with sequential injection set-up from them. I can supply you with a map to get started but you'll need a couple of hours on the rollers to get it all spot on.
[350matt](#)

The edlebrock/weber/carter combo or holley items are very easy to use and you can tinker with them on your driveway. They will give pleasing results. The basic injection stuff is slightly better but very frustrating if you can't tinker with it yourself. I guess it's all down to how you plan to modify your car in the future and if you have support nearby should you need it. I went from a holley to motec efi and it was a difficult learning curve. The efi had bells & whistles I didn't need back then so I should have stayed with the holley. [BoostedLS1](#)

No contest. Injection every time. I ran a Holley on the SD1 Rally Car. PIA - Better off with a bucket with some holes in it. Went well but drank gas to get decent driveability. Ran Webbers on the TR8 - Needed constant

tweaking to get it in balance. Emerald is a good starter set-up but is a little primitive. Better option is MBE as they have more experience in the market. IMHO. However, better to use the standard flapper or hot-wire set up and get Mark Adams to do his magic and the car should be great. I've used pretty much most systems and have much experience of Flapper, Hot-wire, GEMS, Bosch, Siemens, and loadsa after market stuff
[Tasmania](#)

That may be true for you but my TR8 loved the holley and I was able to set it up with all the trick parts. The engine was a 4.5 and then I fitted turbos which meant a change to a holley 600 double pumper. Again it was a doddle. From tests I've read, the carter carbs are as good as efi and again tweakable with a screwdriver etc. I wouldn't touch the multiple carb set ups, they are a pain in the butt! When I got ambitious with my plans I got the Motec. It was a very good and expensive system but at the end of the day I didn't need all the sophistication. The carb with boost wasn't lacking anywhere. So, I concluded that for most applications the 4 barrel was a very realistic diy proposition but for those with more confidence the injection would be better so long as they can map it. I don't rate the mbe system but the DTAfast has it all in my book. Very like the Motec in functions but much cheaper and with really user friendly software For my blown lsx I shall be using a DTA. boosted [LS1](#)

If you are starting from scratch a Carb set up is the most cost effective, but unless the injection system is shagged I would leave it. Carbs are ok in fact probably as good as some "throttle angle" injection systems, I've had plenty of V8 carb'd engines and had no serious problems but I wouldn't bin the EFi for a carb.
[2sheds](#)

not showing any bias at all here, the only way to go is carbs Then again, as 2Sheds says, part of it is down to cost effectiveness. When I had the engine upgrade done, my ECU was failing so, rather than get a new ECU and chip plus rolling road time, it was cheaper for me to move to carbs. John Eales also recommended them for the spec of engine (and the use it gets). Anyway, injection sounds cr*p compared with the induction noise on mine during acceleration!! [cirks](#)

4.23 Engine flooding

When I bought the SEAC I was warned to turn off the ignition immediately if the engine stalled. Due to fact that the fuel pump keeps pumping until the ignition is off. stupid set up really but I have always been careful to observe the warning because Steve told me a wait of up to half an hour is required for the chambers to dry out sufficiently to restart Any way it happened to me the other day and sure enough it wouldn't restart. Simple solution - pull out the fuel pump fuse, crank her for a bit, pop the fuse back in and Roberts your Fathers Brother Just thought I'd share that with you all! [dickymint](#)

Very helpful hint, thanks and so simple! Last time I flooded the engine on starting I had to wait an hour and so expected I would always have to do this. [redwedge5](#)

If it doesn't start after you have done that... the spark plugs are usually wet with fuel and need replacing! Drying out doesn't usually recover them in my experience. [shpub](#)

These comments apply to the standard 350 engine and my 390 engine, SEACs may have something special done to them. During starting cranking the fuel injected into the engine is enriched (i.e. extra fuel) for approx the first 12 seconds so a technique I have used in the past is to floor the throttle and keep cranking, this seems to dry it out quite quickly and it usually stumbles into life one cylinder at a time. Once started and warm any damp plugs will dry out quite quickly. I have unplugged the cold-start injector (I have been told that it is only needed at -20C and below). Disconnecting the fuel-pump relay will still allow fuel to be injected until the pressure falls to near zero. A better solution would be to disconnect all 8 (9) injectors or the coil to ECU cable. [rus wood](#)

Gotta say - if everything is set-up correctly then this should not happen ! The injectors should only pulse when the engine is cranked over or running ! Possible problems : Leaking injector or fuel pump still running with ignition on or fuel rail pressure too high causing leaking injectors. With the flapper airflow meter - I believe it should be set that the pump does not run until the engine is cranked. [rev-erend](#)

Happened to me. Flooding caused by a few other tiny faults but took ages to restart after fixing and flooding. Started only by drying and baking the plugs but then it didn't run right, even after a good blast, until new plugs were put in. [jmorgan](#)

On a flapper injection system the fuel pump is energised in two ways. When cranking power is sent to the fuel pump. During normal running when the flap is just a tad open power will also be sent to the fuel pump. So to test the second part you just need to hold the flap open a bit (take the air filter off and with the ignition on but not running). You should be able to hear the fuel pump running. [rus wood](#)

Exactly but when it's not running i.e. You turn it off and turn the ignition light 'on' then no power should be sent to the pump. If the pump is still running under this condition - then the flapper is not set right.. and injectors / too much fuel pressure could cause flooding .. [rev-erend](#)

Yes, that has always been the issue - the fuel pump still runs when the engine has stalled. The pump is triggered by cranking on start-up, but only stopped by the ignition key. I thought quite a few other flapper cars were also like this, or is just some SEAC's? Either way I thought a thread a few months ago suggested this was not an uncommon TVRism. I found it easy to pull the easy 6 of the 8 injector leads off, crank the engine a couple of turns, put them back and away you went. The other 2 cylinders quickly get going again. [SLB](#)

4.24 Which Petrol?

My nearest Shell garage is 40miles away which is a real bummer. It gets a fill up whenever I go past it whether it's empty or not (normally is!!!). Question is - is there something that comes a close second. I find that it seems to run the same whatever I use until I fill up with Optimax when it appears to get a rocket up it's arse. But am I missing one. Please someone tell me there is something out there that I can kid the engine with - pleeeeeease!!!

BP do a slightly lower octane petrol or try normal unleaded and octane booster [cuneus](#)

I've had good results with Millers. www.millersoils.net/ Octane booster is what you are after. The occasional bottle of VSP helps lube the valve seats and guides too. [tallbloke](#)

What about Esso Energy? My V8S seems to run well with that stuff. [GI](#)

Many years ago I used to buy a product called PROBOOST. This was an octane booster. [tvr280i](#)

Proboost is made by Silkoleen found in bike shops a lot another good one is NF at www.scoobyscene.co.uk/octane.htm [cuneus](#)

<http://www.tetraboost.com/> - gives a 2 to 8 point octane boost dependant on dose and is fully approved by the FBHVC.. [seamus](#)

4.25 Any comments on fitting an adjustable fuel regulator?

£98.00 dead easy to fit worth every penny, put one my 350i Not to be confused with the std. adjustable one as fitted on larger Wedges. Do a search for power boost valve or FSE.....here's one....www.proven-products.co.uk/products/fse_power_boost_valves.htm Funny thing though, 2 years ago they were only £60.00 [dickymint](#)

Just been having an internet rummage, and it appears that the price hike applies if you buy the kit with fuel rail adapters etc. If you buy just the reg. it's still £69, but then I guess you need bits of garden hose, tie wraps to stop the fuel leaking, chewing gum to hold the valve to the hottest part of the engine etc etc. I'd be interested to hear the opinions of the real experts regarding the 390SE's FPR: is it adjustable and has the vacuum tap for the plenum; is the FSE unit still a worthwhile upgrade (ie is the rising-rate delivery curve still worth having or did the adjustable Rover unit do that anyway)? [wedg1e](#)

The rising rate regulator is a bodge, albeit a bodge which will mostly work and the engine will likely be overfuelled. Far better off raising the pressure to a reasonable level in the first place and mapping the thing properly [350matt](#)

All very well if your ECU is mappable [dickymint](#)

When I had my 350 tuned back in November, they took the rising rate regulator off and put a standard one back on. The car was then tuned with 97 ron fuel in it, timing, new plugs etc and it felt a little faster and more responsive I haven't ruled out trying the adjustable one back on at some time. [pwd95](#)

5 Chapter 5 – Exhaust Systems

5.1 400SE manifold removal.

Thought this may come in handy after discussions with Andy (AM400) I have decided to wrap the manifolds in exhaust insulation wrap as it reduces under bonnet heat (Circa 70%) and helps to increase power, also I remember a post about heat shields/starter motors so may also be an option for this issue. Anyway after a bit of trial and error I managed to remove both manifolds from my 400SE and put together this procedure but as with these things there maybe other ways so please feel free to comment. I had the car on axle stands as I had already removed the front suspension but I would recommend the removal of both front wheels to gain access through the frame.

1. Disconnect Battery
2. Separate the exhaust manifold to exhaust pipe connection under the car (13mm spanner x 2)
3. Tag & number spark plug leads, remove and lay to one side
4. Remove nearside manifold bolts top/bottom row using a combination of 9/16" spanners, 2nd & 3rd exhaust port bolts are accessible from inside wheel arch of car and through the frame.
5. Lower exhaust manifold down and out underneath the car.
6. Remove offside manifold bolts and rest the manifold against the engine mount to access starter motor
7. Remove starter motor and lay to one side (1/2" AF spanners req)
8. Refit manifold to block with 2 bolts to keep the manifold clear while working on the engine mount.
9. Place trolley jack under the engine sump with a piece of timber to distribute the weight and protect the sump.
10. Take weight of engine on jack and remove engine mount to frame bolts
11. Jack engine approx 6 inches, slowly complete this task ensuring no strain on hoses or wires.
12. Undo remove engine mount bracket from offside of engine 1/2" AF Spanner for top bolt, 5/8" for the lower two (One maybe a socket head allen key set screw), one 5/8" lower bolt is directly behind the bracket so a small socket was used.
13. Remove engine mounting bracket and lower manifold out from underneath the car.

As it will be sometime before I replace the system I have reinstalled the engine mounts and after checking the manifold for leaks I will paint and tape them [h2dca](#)

Beware, I was told that if I wrapped up normal steel manifolds then they would only last a couple of years as the moisture would also be trapped and actually make them go rusty quicker. Probably not so bad for SS manifolds, but then you'd want to see the shine on them anyway ? [gsx600](#)

I wrapped one manifold on my 350i and left the other alone, as I thought it would have to come off soon. The wrapped manifold was brand new, and I also painted it with high-temperature paint which incidentally helped stop the wrap slipping about. As it turned out the older non-wrapped manifold is still on the car unharmed, and the wrapped one has had to be repaired twice, but is still basically sound. So there does seem to be some corrosion effect but it isn't very fast - the new one's been on there about 3 or maybe 4 years. Incidentally don't forget that when removing/replacing manifolds you need 18" clearance under the car to get the bugger out, so be prepared for some teetering jacks and axle stands. [adamquantrill](#)

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](#)

6.7 What is the normal coolant temperature in a 350i?

How high does the water temperature normally go to, as I went for a drive this morning and it started to approach 95c degrees, is this a bit high or is this about right?. It didn't stay there all the time, just seem to go between 80c/95c, when it felt like it.

Any chance the heater hose has got kinked or squashed? [greenV8S](#)

I have just fitted a tap on top heater hose, my idea is to try and bleed the system to try and get air/lock out. is that what yours does?. I thought I could run motor and have pipe coming from tap up to the filler cap and hopefully it would blow air out. [dukeenfield](#)

Yep. Bleeds the lock out a treat. Undid the cap and a satisfying hiss for a while until the water came out. Under the cap is a small hole, around a mm and a bit. Not sure on why the airlock does what it does but the pipe from the swan neck to the top of the expansion tank is a small bore so thinking of changing that. Also it used to run under the airflow meter but raising it has stopped water collecting there and improved it somewhat to getting the air back to staying in the tank. [jmorgan](#)

Had a similar temperature gauge issue and after much angst and effort discovered it was the simplest and cheapest of things related... the almost 20 year old sender was failing. Replaced same, and the "problem" was solved. Worth a try. [grady](#)

Whilst the bleed off is an elegant solution I have found that re-siting the expansion tank on the windscreen bulkhead, centrally next to the plenum, allows it to be fitted much higher up so that the level of coolant is higher than the heater hoses and the swan neck. Since doing this I have never had an airlock problem. It also frees up some space to relocate the afm and air filter in a straight line from the throttle body. This can then be boxed off from the engine bay and fed via a large hose from the front of the car thereby reducing intake temp. [chunder](#)

6.8 Low heater output

Ever since I got the 350 a month or so ago it's been running very cool (65 - 75 degrees on the motorway). The previous owner had just fitted a new radiator and water pump. The heater is also luke warm at best. So yesterday I flushed out the cooling system, fitted a new 82c 'stat and flushed out the heater both ways (which flowed fine). After all of that it still runs cool and the heater is luke warm. So I topped up (and kept an eye on) the coolant, ran the engine and disconnected the driver's side heater pipe from the back of the engine which I believe to be the return. No water was coming out at all even with 2000 - 3000 revs. Re connected that, disconnected the other heater pipe and water came out of the metal pipe on the engine. So it appears that water is being pumped into the heater but not getting through it which would possibly explain why it is luke warm and gets colder if the fan is on (i.e acting like a small radiator) Has anybody got any ideas why this is happening and if so how to fix it ? The pressure of the water coming out of the passenger side pipe was alright, it wasn't just a trickle, unless they need a lot of pressure ?

Not taking the Pi22, but you have checked the cable is doing its job of turning the heater on and off? the tap may have stuck in the nearly closed position. [degz](#)

You also need to check that the levers on the dash are labelled correctly, I know that on my 1989 400se they are labelled the wrong way round. The dashboard lever labelled "Cold/Hot" actually adjusts the direction (Screen/Feet) and vice versa for the other dashboard lever. Only took me eight years to work this out [KJR](#)

If the heater was flushed cleanly both ways, does this not indicate that the tap is open or am I missing something? Not trying to be clever, just curious as I have exactly the same symptoms, except mine does run at a normal temp according to the gauge. [arcturus](#)

The tap referred to is a valve that opens and closes on a sliding lever operated by a wire that runs to the hot/cold slider control on the dash. The valve is (normally) under the bonnet on one of the two heater hoses. If this is open and no flow then it sounds like the heaters getting air locked (search previous threads for cures to this). Try and find where air is getting in (do you have a small coolant leak anywhere ?) or try topping up the coolant system from the top heater hose. [chunder](#)

As far as I can tell there isn't a heater tap fitted. At least I can't find one, it's not in the engine bay and not under the dash near the ECU & wiper motor. Plus water runs through fine with a hose in either direction. From what I can tell the coolant runs through the heater matrix constantly (or rather it's supposed to) and the rotating temperature control opens a flap to let air from the fan through the matrix or not depending on the position Moving the temp control from hot to cold does change the air temp from luke warm to cold. I've tried both controls in all positions but they seem to be labelled correctly, unfortunately I think / hope that it is an airlock and I'll try what jmorgan has suggested in previous threads about fitting a bleed valve to the heater pipe. Does anybody know which pipe would be the best to fit it to, inlet or outlet ? [hargo](#)

I put my valve in the highest pipe. Not sure if it was go or return but seemed the most likely to clear air locks. [jmorgan](#)

Mine has a pipe coming through the bulkhead on the passenger side and a pipe coming up from the gearbox area on the driver's side (which I think is the return). Come to think of it, if that pipe goes down then up into the cabin / heater matrix, then there's a good chance that there is an airlock in it ! I'll put it in the passenger side pipe as that's the highest one. Hopefully that'll solve the problem [Hargo](#)

My 1987 350i has a similar set-up; no heater valve, just a flap in the box. I too have the choice of luke warm or cold. I presume there must be an orifice in the matrix circuit to regulate the coolant flow through it ? The Previous Owner had fitted an extra temperature sender in the matrix delivery pipe - odd place to put it, but I noticed my main gauge runs at 90c spot on while cruising, and the matrix gauge starts off at 80c, and then drops to about 50c after an hours driving. I tried a matrix back flush, and an air bleed - all to no avail - the choices remain luke warm or cold. I guess a clever thing to do would be to fit an electric pump in to feed the matrix - the more heat you want the faster the pump goes - then you wouldn't need the flap at all. There must be a car with this set-up somewhere in a scrappy that we could find... [jchase](#)

7 Chapter 7 – The Battery

7.1 *What battery will fit in the narrow Wedge compartment?*

I bought a Bosch last year 81080. It is 40 amp hours strong enough and fits perfectly [MJG280](#)

IIRC it was the same battery as specified for the TR7. [wedg1e](#)

I bought one last year from Lucas auto centre, they had the listing for a 350 one which I went for. "Better output" only £22 too. [tvr280i](#)

I went to my local factors with max dimensions and the largest capacity they could find in their catalogues, that would also fit my 1981 280, was a Motaquip VBZ66 (430CCA). Was a special order but cost about £40. Much bigger capacity than I could get off the shelf. Seems to be up to the job but I do keep a conditioner connected to it. [geddy](#)

7.2 *The battery light stays on.*

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 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. [wedg1e](#)

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). [wedg1e](#)

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 [dj1001](#)

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 *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](#)

8.9 *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 [DJ1001](#)

8.10 *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](#)

8.11 *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](#)

8.12 *Where can I get new 400SE front indicator lenses?*

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

8.13 *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](#)

8.14 *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](#)

8.15 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](#)

The problem is that the same part number is used to cover a variety of starters some of which fit and some don't. I do know that some owner have resorted to opening all the units that a factor has to get the right one! Common problem for MGBV8 as well. Usually a high torque small bodied Range Rover unit will fit but again worth checking before parting with cash. [shpub](#)

Try asking RT racing. They fitted a new solenoid on my starter last year. The solenoid has always been on top of the starter and the starter still fits under the manifold. [redwedge5](#)

I mis-diagnosed a faulty starter on my old SEAC and bought a replacement from Cafco Automotive. I took the old one with me to make sure it was right. This was a couple of years and I think it was around the £120 mark. I think the new one was the same as off a 3.9 Range Rover of late 80's vintage. [SLB](#)

8.16 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 furltling needed. [jmorgan](#)

8.17 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](#)

8.18 Headlight motor diodes.

Anything from a 1N4001 to 1N4007, or a 1N5401 should do the trick... [wedg1e](#)

8.19 What's the source of the windscreen wiper arm?

IIRC from a conversation a few years ago with someone it may be off of a transit van. Anyone confirm? [kevsmev](#)

Don't have a clue what the wiper arm is off so I bought one from a TVR dealer, then bought an off the shelf blade. [Sevans](#)

Eureka! I got one from a Fiesta bidet! [firefox1712](#)

9 Chapter 9 – The Chassis

9.1 *Can I put high temperature paint on the chassis?*

I'm about to repaint the chassis. The worst bit seems to be where the chassis is next to the exhaust manifold and coating has melted due to the excess heat. Which got me thinking - can I apply red oxide primer in these bits before using high heat paint (hammerite - up to 600 degrees C) or am I best just applying the high heat paint alone i.e. will the high temp paint prevent melting off red oxide underneath..?

Since paint layers tend to be very thin I would not put anything underneath POR-15 do a number of high temp paints [cuneus](#)

Thanks. I've heard a lot about POR-15, but is it safe to apply in a garage with a basic paint mask..? It sounds like pretty hardcore stuff - don't fancy gassing myself! [planman 350i](#)

Yep it's fine just wear latex gloves and don't get it in your hair [cuneus](#)

Some of the high temp paints need to be cured at high temp before they are any good. Bit difficult to heat the chassis up to 200+ deg C so worth reading the labels to make sure you get a cold curing type. [shpub](#)

9.2 *Can I fit a small towing hitch to a 280i?*

Only trailer I've seen on a Wedge is on Steve Heath's monster 520. He uses it to tow a set of slicks to a track day He's on PH as 'shpub', fingers crossed he'll see this thread. [Nacnud](#)

I would try to make the hitch removable - mounting the receiver to the frame and maybe a hole through the valance so you can remove and plug the hole when not in use. And once you have the receiver in place, you could also attach a light luggage rack in place of the trailer hitch for no-boat trips. [Grady](#)

It can be done fairly easily for light loads. I'm towing about 250 kg total on a small trailer as Nacnud says. The advantage I have is that I have removed all the rear under tray stuff (to make the car go faster) and can get access to the rear of the chassis and in particular the U shaped channel that is part of the rear diff stuff mounts. My bar bolts onto this and there are two further vertical bolts that go up. One through the flat plate next to the channel and the second through the boot floor with a big ally spacer to spread the load. Works fine but unless you can see that channel direct, the only other alternative is to go under and bolt on to the chassis. The 7 pin plug was mounted in the body work and I piggy backed onto the rear lights cabling. Pretty sure there are some piccies in Tower View's gallery. <http://www.t-v-r-services.co.uk/> [shpub](#)

10 Chapter 10 – The Braking System

10.1 *What pads should I use on my 350i?*

How much do you want to spend? Bog-standard Jag XJ6 pads fit the rear (the handbrake uses separate pads to the footbrake on these callipers). Granada pads for the front, but if you want a fancy compound to suit your driving style you'll have to do a bit more research (ie ask for recommendations on here. If the handbrake is weak (as in really weak, it was never much cop) it may just need a service/ adjustment. These things are a bit of a black art to get right, most young mechanics haven't a clue Idgit: Pulling to one side could be air in a pipe; sticking piston; corroded pads causing them to stick to the calliper body... [wedg1e](#)

10.2 Brakes – recondition or replace?

If you can get the pistons out and the bores are OK, you can still buy new pistons, seals etc. Not cheap but probably cheaper than new callipers. [wedg1e](#)

I have been quoted £90 a corner to get the callipers completely rebuilt and refurbished. [mikeb](#)

Bargain! If they're doing the job properly that is: I think I was quoted £15 a piston... [wedg1e](#)

I fitted Hi-Spec billet 4's to the Tasmin and have them fitted on the SEAC. They cost me about £480 all in for 2 callipers, 300mm discs, pads, braided brake lines, and new calliper mounts. They work extremely well having survived a track day on the Tasmin with next to no wear and 2 full days at Bruntingthorpe braking from 150mph at least 25 times each day. Only problem with them is they are hideously slow to get anything out to you. I resorted to calling them every other day for the last 2 weeks before they arrived. The guy who fitted them to the SEAC said pretty much the same thing. [gavir](#)

Gavin For the record, what size wheels do they fit in? [leorest](#)

Gavin has the std 15inch (400SE split rim) type wheels.. [rev-erend](#)

According to Hispec 2005 catalogue the cost is £675 excluding VAT, pads, hoses etc. I won't comment on their ability to deliver product in my experience..... Tower View should have their 300mm upgrade kit out soon. The prototype was on their workbench last work when I was down there working on the Cerbera. Wilwoods are certainly pretty good. Used them on the 520 and on the Griff. Brembo and AP are the same company BTW and AP are supposed to be the budget side compared to Brembo. You pays your money etc.... [shpub](#)

I'm happy with the performance of these callipers, and they are pre-spacered to fit Granada vented discs. They bolt straight onto the uprights too.



Email keri@keri.co.uk for more info. [tallbloke](#)

I did chase Keri before Christmas regards availability and gave him some idea on my thoughts on prices etc. Not heard a thing since!!! Although he did say he was still waiting to find out that the fitting went OK on Tallblokes car, it looks like they fit from the picture. [islander](#)

Mike, saw a company called Classicar quoting £50 each to fully re-condition Princess callipers if that's any use. tel 01625 860910 Rally Design are also now listing a 4 pot calliper and vented disc kit for Granada - could fit a Wedge?? **280bod**

Isn't that kit for a 1990s Granada Scorpio? I suppose you probably could engineer it to fit somehow (well outside of my mechanical skills!!!) **CerbyT**

10.3 Suggestions for a brake upgrade?

Tower View Race Services who have a new 300mm Wedge brake kit coming out soon. Unfortunately it looks like its going to be around £650 which I cant afford just at the mo! So I've been looking for an interim solution. Managed to find some Granada disc on Rally Designs web site that are grooved and x drilled. However they seem to suggest that the size (72-85 reg Granny) is smaller(I think it said 263mm) than the 269mm quoted in the "bible" - help!.

Car parts direct has Rossini break disc's : www.carparts-direct.co.uk/

Model	Engine	Year	F/R	Solid / Vented	Size			Price / pair
280	2.8 V6	2792 79 84	front	solid	262.0	ROS	045	£119
350	3.5 V8	3528 79 84	front	solid	262.0	ROS	045	£119
350	3.5 V8	3528 85 6/43	front	vented	262.5	ROS	025	£133
390	3.9 V8	3905 85 6/43	front	vented	262.5	ROS	025	£133
390	3.9 V8	3905 86 88	front	vented	260.0	ROS	026	£122
390	3.9 V8	3905 86 88	rear	solid	264.0	ROS	098	£126
420	4.2 V8	4228 85 6/43	front	vented	262.5	ROS	025	£133
420	4.2 V8	4228 86 88	front	vented	260.0	ROS	026	£122
420	4.2 V8	4228 86 88	rear	solid	264.0	ROS	098	£126

Oh - it also says that price is per pair and it also includes vat and delivery. Bargain. **rev-erend**

No point going massive on the brakes unless you have a 300bhp fire breathing monster. we raced last season in the TVR Challenge on std vented discs and good pads and never had a moment's trouble. In fact we're racing in the big HP class this season and don't expect at this point to have to put bigger anchors on at all! We run Brembo discs at 50 pounds a pair and they lasted a whole season racing and about ten track days. The pads also lasted the whole race season. If you're just driving on the road and occasional track day spend your money elsewhere .. the std vented front set-up is perfectly ok. 650 pounds for an upgrade is frankly a waste of money unless you have a *seriously* rapid car with really sticky tyres. **joospeed**

Joospeed, A few questions... What callipers did you use? What size (dia) wheels do they fit? What size (dia) disks, Where can I get the disks (part number/description)? **leorest**

Just a thought....were the MkII Granada callipers the M16 calliper? Because if they were that's the same calliper that was used on the Capri which opens up a much wider pad selection (used to sprint race Capris but the doctor says my recovery is going well!). Does anyone know? Any where sell braided brake hose kits for the 350i? **CerbyT**

RT Racing stock the brake hoses. **AM400**

callipers are the std ford Granada vented calliper, 35 pounds exchange. we run 15 inch wheels. 262mm on my tape measure **joospeed**

My 350 has single pot callipers on solid disks. So I'd need new callipers to fit the thicker vented disks? Where did you get your Brembo disks? Would they do suitable callipers? **leorest**

I've also got a 350i with solid disks and would like to upgrade to vented disks, without having to limit the beer consumption for the next few months. What's the best option? If I do a couple of laps at Zolder and enter the paddock, the brake pressure drops and I can press the onto floor..... **bhardy**

The up rated granny disk is not an M16 and you will need the bigger calliper because of the increased disc thickness. You can get them sometimes on ebay or from a scrappy but very good idea to strip and reseal them as the condition could be iffy. Alternatively get an exchange set. Armed with new discs and pads and callipers and there will be a performance increase but still pretty inadequate IMHO even when I only had a mildly tweaked 3.9 in the car. Bear in mind that the Tazzie cars are considerably lighter than the road cars and this could explain why they can last out. Now doubt Joolz will claim that I brake aggressively [shpub](#)

just fitted 2.8 inj grany vented disc and new callipers on pistolar wedge cost about £200 great upgrade also did same job on my taz coupe before I sold it [barrington](#)

Have watched the thread with interest as, even though I haven't had my car for long, I have come to realise the brakes are only just adequate. (Tasmin 2.8). OK, so the Granada Mk2 vented discs are a straight fit, the callipers will be also but do I gather there is an issue as to whether the assembly will fit inside the standard 14" wheel without fouling? If it does foul, what's the fix? Thanks, [averhamdave](#)

Didn't mk2 Grannys have 14" wheels ? [grahamw48](#)

If it fouls... change the wheels to 15 inch. The alternative is a custom brake upgrade that can use different callipers and space them out. Not aware of any one doing them for the 14 inch wheel though. [shpub](#)

I don't think there is an issue with clearance fitting Granada vented set-up in the 14 inch wheels. I think the diameters are the same. I am not sure it's going to help the feel though, as the calliper is the same, just spaced to allow for the thicker disk. Will obviously help with the cooling though, so if your getting brake fade it may help. [Sevans](#)

The standard calliper for the Granada vented disc set-up has the same diameter piston but the pads are a lot bigger. [kevsmev](#)

I have 14" wheels on my 200. the standard grany vented disc is fine, but because the AP calliper has been spaced it was binding on the lower bleed nipple, so I cut the head of the nipple and its fine now, still a very close fit. Also had to cut away a bit of tin on the shield to fit the calliper. [degz](#)

10.4 Brake fitment kits.

After getting my callipers rebuilt I have been looking for the extra long split pins and the brake pad sprung steel clips that hold the pads in to the AP Princess widened callipers as fitted to the 450SE After a day of trawling around the motor factor shops, it turns out the calliper accessory 'kit' for the AP widened callipers has to be made up of two separate brake fitment kits:-

The extra long split pins	Apec Braking kit Number 427
The metal sprung steel clips	Apec Braking kit Number 515

Both are almost an exact fit from the TVR old ones.

The pins from kit 515 and the clips from kit 427 will have to be binned however. I could not find one kit that did both unfortunately. Apec braking is the make that our local motor factors use and should be readily available. If your local guys don't do 'em the address for the manufacturer is:-

Apec Limited
Quercus Cours
Armstrong Way
Great Western Business Park
Yate
Bristol BS37 5NG. [mikeb](#)

10.5 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

10.6 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

10.7 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

10.8 What discs fit Princess 4 pot callipers on a 350i?

Granada 2.8 '72-'84. You might also need a calliper widening kit. See here : www.bress.freeserve.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

10.9 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. dicky mint

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](#)

10.10 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/remanufactures the callipers are AMK Automotive components, part numbers TCA005 and TCA006. [york33](#)

10.11 Do I need to remove the drive shafts to clean up the handbrake mechanism?

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](#)

10.12 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](#)

10.13 Should I remove the diff?

I am rebuilding the rear end - drive shafts, hubs, A frames and spring units are off the car. Question - Is it now easier to drop the whole diff / brake assy and rebuild the brake units on the bench or follow the bible and remove callipers and discs from underneath leaving diff in car.

Swings and roundabouts.... Dropping the whole unit does make brake access easier but some of the diff mounting bolts are difficult to get to. Takes less time to remove the callipers in situ but with the diff removed everything is so more accessible! Done both. Diff etc is very heavy to manipulate so I think the balance goes to removing callipers in situ. maybe. [shpub](#)

I did it once. Mind you, the bugger had to come of for a refurb. Took a bit of sideways thinking for some of the awkward nuts and bolts etc. Nearly cut the parcel shelf but knew that re sealing that could be a problem. Did it on me lonesome so a bit of safety, and application of, for lowering once all was undone. Ropes, ratchet strop and jacks and wood and dreaming of a proper garage facility. Once it was off though, a dream to get at the brake bits. But after much struggling to get it all back up I realised a slight mistake meant I had to take one of the callipers back off. Put up with the awkward access etc and left the diff in situ and skinned me knuckles a bit more. [jmorgan](#)

The diff is fecking heavy... on my car id still drop the diff and do it all on the bench , but then again I do have holes cut in the boot floor to get at all the bolts. so in summary I'd say if its just a brake fettle I'd leave it in. If its a keeper and you want to do the job properly id drop the diff, but you might want to cut a few holes to make it doable [Graham](#)

Having removed diffs from 2 different Wedges, I'd say the most difficult part is lining everything up properly on the re-install whilst jacking the diff into place. The nearside calliper can be tricky to remove with it in situ because of the proximity of chassis rails, and undoing the calliper bolts can be a laborious job (not forgetting removing and replacing the lock wire. And if you take the diff out, you should really get the wheel alignment checked afterwards. Also check for cracks in the chassis tubes in the area around the front of the diff - mine had a few which needed attention, although this was done with the diff in. Either way , if you're taking the callipers off, I'd replace the discs as they're fairly cheap. [paul gotts](#)

Carrier bolts and then sealed with rubber bungs. Makes the job very easy. I found it easier to get a sheet of wood about 3-4ft x 2ft put it under the diff stacked up with bricks either side. Lower the diff onto the wood then using a trolley jack remove the bricks one each side until it's on the floor you can then just pull the whole lot from under the car. Fitting is the reverse and you can slide the diff ass on the wood to get it lined up. Last time I put it back only took a couple of hours on my own. PS make sure the wood is more then 1/2" thick otherwise it will bend under the weight. [SEvans](#)

Having done it both ways I would definitely opt for dropping the whole rear assembly. Lower it onto a trolley jack or pallet truck and it's so easy to get at everything. [FrenchTVR](#)

10.14 What pads should I use in AP4 pot callipers on a 450SE?

Mintex 1144,no squeal, recommended to me by Tim [stainless steve](#)

I had the Mintex on the 350. Superb. [jmorgan](#)

I run EBC greenstuff and have not found they need warming up and they have not eaten my disc's the best bit is no dust. [rev-erend](#)

Have run 1144's, but found them no good for circuit work - not high enough heat rating. Not tried Green Stuff, but friends who use them do say they're good on road & track, with very little dust. I've used DS3000 (outright race pad), fantastic coefficient of grip, heat range, so good for circuit days, downside is noise, they do chew rotors, and they have so much metallic content that if you don't clean the wheels regularly, the dust turns to rust! Currently using DS2000's, good road and circuit pad, no noise, not too hard on rotors. I think that Ferodo are just producing the DS2500 (updated DS2000)for the Princess calliper, so that will be my next choice. [paul gotts](#)

Mintex 1144s are fast road pads, for continuous circuit laps try 1155s but not ideal for road use as they don't do much until warm, which can be alarming [2sheds](#)

I've run 1144s on modified cerberas with no problems .. you might need bigger discs / more cooling / go round corners faster. the 1155 should work ok on cold days .. we use 1177 in our race Tasmin and even that stops with wheel lock before they're fully warmed up .. hot braking is stunning. Golden rule is never run your pads that low though .. the pad material changes and isn't as good close to the backing metal, that's because the pad material that's good for braking doesn't bond well to the metal, so they use a bonding material first, then the pad proper is put on top of that *at least that's the case with the mintex pads) .. so once you're down to 2mm or so you lose the heat barrier effect of the pad and also you're running onto inferior pad material from a braking point of view. As Peter H always says, the bed-in procedure is critical .. the more esoteric the pad the more attention you should pay to this to get the full benefit from your investment [joospeed](#)

The 520 is currently Ferodo shod - DS2000 or DS2500. Wouldn't go near EBCs... Mintex 1144 are pretty good. The ability of brakes to last etc is also very dependent on brake technique BTW. [shpub](#)

I've found the following companies helpful in sorting brake parts, pads etc. : Techcraft (new stainless pistons for the Princess calliper - suggested by AP), BG Developments, Performance Braking and Rally design. Hi-Spec may also be worth a try. The pad retaining pins are just large split pins, which should be easy enough

to find, but I seem to remember not being able to source the anti-rattle clips - I think they may be two smaller sizes joined together to accommodate the calliper spacers for the larger vented discs. I just cleaned mine up and re-used them. Last Ferodo pads are c. £80 a set for the front. [paul gotts](#)

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. [NHye](#)

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

11.9 Where can I buy 350i front suspension spring seats?

RT Racing, £12.95 each (ouch!) on 0114 2817507 york33

I called RT today to buy some rubber spring seats but they are now obsolete! Anyone sourced them from another supplier? AM400

The FORD part number is : 6039864. I found a few spares in Germany but they are very difficult to get hold off. Good luck in your search hansdaal

11.10 What are the best front suspension springs?

There's no standard with TVR. Front springs vary from about 140 to 280 lbs/in road to very fast road use. (The Tasmin racers use 800 to 1000 at the front!) Remember that the rear need to be about 75% the stiffness of the front. What rate do you have on the rear? Also remember to measure the compressed and the free length. IMHO it's best to bite the bullet and fit four new springs. £100 for four? [19560](#)

Thanks for help, I don't know what springs are on front and back. The d/s front looks new (Blue paint mark on) and the p/s looks old and a bit bent looking. The back springs just look old and rusty looking. You are probably right would be best to fit new front and rear springs. Where would be the best place to get them from ?. [dukeenfield](#)

OK so the spring looks bent but are you sure that it's the spring at fault. Have a look at the seat. The end of the spring should fit into a slot thing and should not be able to rotate...but sometimes they do... and so bend. Richard Thorp, Ian Bannister, Adrian Venn, Julian Lane maybe? [19560](#)

11.11 What will it cost to replace a rear wheel bearing?

Just had mine (Granada type) changed at a garage and they charged £65 + vat (£76) and another tenner for a new end shaft nut (huge around 33MM socket size). [rev-erend](#)

Mine was around £50 about a year or so ago, inc seals + that huge nut. [york33](#)

It's Granada MKII but you do need an additional inner seal. The socket is 1.1/2inch or 38mm. (same thing) RT 2004 cat. lists a rear bearing kit at £49:99 plus drat. [djc1001](#)

Tried your local motor factors? [wedg1e](#)

On my previous wedge, I paid about £50 too, and a further £60 to build the 30 ton press I needed to get it out. Damn that galvanic corrosion beast [jchase](#)

Yes - it's a real shame there is not a grease nipple there. That would stop the bearings from drying up and causing problems.. [rev-erend](#)

It's not the bearings drying up that causes the problems but more the stress and strain of being a drive shaft and a top wishbone combined. [shpub](#)

£100 plus from TVR £15 new old stock from ebay Same SKF bearing - different packaging [redwedge5](#)

It was as dry as a bone in there ... not a bit of grease left.. the bearing wear a tract.. then bunch at the bottom leaving free play at the top but you are also correct - it's not an ideal design with 300 bhp but was much better than their previous designs. Griff/Chim/Cerbera set-up was spot on and the way to go .. [rev-erend](#)

Seeing as the bearing itself only really has to carry the weight of the vehicle plus whatever loading it gets from forward / backwards and bumps in the road it probably gets an easier time than the chim / griff / cerbe etc etc as they have to cope with all that plus taking the side loading during cornering as well. All the wedge bearing carriers are free to move laterally if you disconnect the drive shafts, so the drive shafts and diff side bearings must surely be taking all the cornering forces...? [joospeed](#)

11.12 What is the ride height for a 400SE?

My 350 series 2 measures IRO 2" from top of tyre to arch, front and back with mostly new/up rated bushes, but don't know how old the springs are. Don't think the 400SE was lowered compared to the 350 as standard but could be wrong. [leorest](#)

Anything from 40mm to 100mm depending on who you ask or which car you measured when they were new. 50mm is towards the lower end for no fuel but depends upon spring rate fitted and free length. The 400s were taller if anything, it's the 390s that were lowered. [19560](#)

Just measured my 400 - from arch to wheel rim is 145mm o/s and 135 n/s at the rear - although measuring to a point on the body can be a bit misleading due to bodies not being mounted evenly, differing degrees of packing which may have perished etc. [paul gotts](#)

I got a couple of comments about my offside sitting 10mm higher than the n/s too at BBWF, so I sat in the drivers seat and said "How does it look now". They had to admit it evened it up nicely. [tallbloke](#)

Just measured mine and its about 70mm (both ends) [The Colonel](#)

According to an old Autocar magazine I have, the ground clearance should be six inches measured from the ground to the chassis. The fibreglass bodies are too variable to use any point on them for reference. I fitted new springs, shock absorbers and Superflex bushes and used a piece of wood six inches long. Just checked the fit between chassis and ground at various points and the car looks about right. [lesliehedley](#)

11.13 Can I fit Redline SS shocks myself?

Quite straight forward. Fronts are the easiest, wheel off, where the shock meets the frame remove the protective cap, 2 x 17mm spanners required (Lock nut). Under the Lower wishbone there are 2 x nylok nuts, undo these and drop the shock out. Replacement is the reverse. Rears you will require a spring compressor, raise the car, compress the spring and remove the 6.5" bolt that passes through the A frame, Shock mounting and hub (19mm/3/4" spanners). Upper part is similar to the front but to gain access you will need to drill holes in your boot to gain sufficient access. I cut a 2.5" hole and using a socket removed the lock nut and then the retaining nut. If you are lucky you can hold the lower nut with a spanner from the side of the car while you work through the boot (2 x Man Job). Only thing to watch is when you replace the shocks ensure that the upper bush profiles match the holes. I don't have torque specs (Maybe someone else does on PH) and none in the bible but once you have assembled everything nip up all the bolts then do your final tightening with the car on it's wheels. [h2dca](#)

you don't need to drill holes in your boot, I bent a 17mm spanner to get in and hold the top nut. [350matt](#)

Yep, IMHO drilling a hole in the boot is madness, worrying about water leaks and bare fibreglass attracting water thus going soft... much better to be careful. This is a straight forward job that I have done too many times with two spanners gaining access from the wheel arch; maybe others have forgotten to remove the wheel first? [19560](#)

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 lose. Rang TVR factory up and they said 3 types were fitted. Of course mine was the type they had on back order. Sent them of 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 Peninsular. 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 Steering noises.

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

Mine's 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](#)

12.8 Can I fit PAS to my '86 350i?

Rack is from a Mk4/5 Cortina, but PS was a little rare on these. Try and find a high spec one that's breaking. Rack should fit with only a little encouragement, but you may need to modify the column slightly. Use a PS pump from any Rover V8, and change pulleys if needed. You will probably have to fabricate pipes from the pump to rack. Alternatively, why not consider an electric PS pump, I'm considering doing this on mine(Mercedes a class looks favourite at the moment) [Ron L](#)

It is only possible if your chassis is designed for it as on a no-pas chassis the bigger rack fouls the strut that comes down from the front turret. The Pas cars have a curved strut to provide clearance. As the strut is very important in preventing the turret from moving and cracking, not totally convinced that it is a good idea to cut and shut it. The intermediate shafts are different and there have been about 5 different racks fitted over the years so... the mounts may vary. The pump is a Rover Sd1. [shpub](#)

I've done this to mine, I used a Mk5 Cortina power rack, in conjunction with a mkII Granada pump and hoses and getting the extra pulley for the crank nose off a SD1. I did have to severely modify the SD1 pump bracket and make a pulley for the ford pump, in hindsight it probably would have been easier to make new hoses and use the SD1 pump. Also finding the correct lower half of the steering column was a pain, for as Steve says several types were used. I got mine from David Gerald in the end and exchange it a couple of times and I still had to modify it slightly. As to the chassis fit, mine already had the curved strut plus I had to 'massage' the big square rail a bit to get clearance for the for the rack. But mine has had some welding in this area which is probably the reason for this. However the end result was well worth it, as the level of assistance is just right. One other thing to check if you have heavy steering is the condition of the bottom ball joints - tricky to check as you have to support the car on the wishbone to remove the spring force taking out any slack [350 matt](#)

12.9 I'm having problems fitting PAS to my 350i.

Hi, I am trying to fit power steering on my 1986 350i and have come across this problem. I have fitting mk5 Cortina power steering rack and fitted Rover SD1 Vitesse power steering pump. The problem is the pulley on the rover pump comes to close to top of steering rack, the pump has about a 5 1/2 inch dia pulley on and I

would need to fit a very small pulley to make it clear. I just wondered if any body else have had this problem and how had got round it. Also if I managed to fit very small pulley on pump, would it make pump spin to fast.

how small is 'very small' ? As the pump could probably handle being spun a little faster say 15% and can you grind any material from the rack housing? A few mm is all that's required. also look at slotting holes on the bracket to raise the pump up a bit and or a shorter/longer belt to allow the pump to be swung away from the rack? [350matt](#)

My guess is that you're not using the modified TVR bracket to mount the pump? On my 390SE the pump sits very high up on the left side of the engine. That pulley diameter sounds about right. [wedg1e](#)

I have a 400se with the same set up. Basically the pump is mounted low down on the engine using a standard rover mounting bracket BUT what TVR have done is drill another set of holes in the bracket below the existing holes (the holes actually brake into each other). With this set up you get approx 10mm clearance. My other 400se which is an earlier car has the pump mounted high up on a specially made bracket, with the pump driven off the water pump. [pistolar](#)

Hi, Thanks for your help, I think you right about mounting bracket, so what I have done is to lower the fixing holes by an inch (moving bracket up) and then going to weld extra bits on for the other holes, hopefully this should do it

12.10 I'm having more problems fitting PAS to my 350i.

just fitted Cortina power steering rack and as soon as you turn steering either way it now hits the top anti/roll bar (the car is jacked up with no weight on suspension).Can you tell me do you have to fit longer drop/links when fitting power steering, as the steering rack sits higher (with it being bigger)or does the top anti/roll bar have a bend in it to clear steering rack.

The ARB is not bent, it may just be that with no load on the suspension, your ARB is at the lowest point and is contacting. The PAS rack on my car doesn't sit any higher than a manual rack would, the chassis has a cutaway to accommodate the spool valve housing though. [wedg1e](#)

My 350 is on axle stands and when you turn onto full lock the steering rack hits the anti roll bar [Barrington](#)

12.11 Where can I source the power steering pipe fittings?

Had some pipes made at Iddon Hydraulics in Stockport . [NHyde](#)

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. [350zweelje](#)

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 I've got a high speed vibration

Just been out for the first decent blast since replacing the drive shafts. I was secretly hoping that this would have cured a vibration I have had since getting the car in 2000. The symptoms... At "normal" motorway speeds if you dip the clutch you can feel a vibration which comes and goes instantly with the clutch. It also happens when the drive train is slack i.e. neither accelerating nor decelerating. The slightest acceleration/deceleration damps the vibration. Drive shafts, suspension, bushes, and wheel bearings are all ok by my inspection and it's just got through a MOT where I asked the bloke to give the back end a really good going over. I've also inspected the prop to make sure it hasn't lost a balancing weight. I think this can only leave the prop and its UJs, the diff (hope not!), and the output end of the gearbox. I plan to have the prop reconditioned by Proptech who did an excellent job with the drive shafts but this has to wait till I replace the exhaust manifolds which are crumbling into nothingness, which in turn has to wait till I build the garage. Frustrating! Does anyone have experience of props out of balance or prop UJs failing and do they exhibit the same symptoms as above?

Here's an easy one for you to try ... Eliminate the wheel / tyres from the problem area.. swap wheels from front to rear .. Does the problem disappear ! Many alloys get buckled or are eg shaped - causing a sensation at high 'motorway' speed. My Focus - has a rear wheel with a slight run out (buckle) .. it's awful if it's on the front axle but tolerable on the rear axle - some road surfaces make it feel real bad at 70~80 mph.. If I jack the rear and spin wheel - I can see it's buckled ! [rev-erend](#)

Thanks for that one Rev. It's a good test but unfortunately I omitted to say, I've swapped fronts with rears and also had them balanced and since then I'm on my second set of tyres and the problem has stayed the same throughout. I'm as sure as a sure thing having passed sure exams with merits that it ain't de wheels. I think the biggest clue is that the vibration switches on and off with the drive train being slack or not. We really are talking about extremely light acceleration or engine breaking damping it right down. It's not huge vibration but it is there and it's annoying and it can't be good. Something's gonna be stressed by it and that's not just me!

I'm probably a million miles off the mark here! I recently had a vibration that could be felt through the gear knob and was worried about some mechanical breakdown. At the same time I was trying to cure a tuning fault (misfire). After fettling out the tune problem all signs of vibration now gone! [dickymint](#)

I had a vibration problem on the 400 earlier this year - lifting of at c. 90mph in top would cause a distinct buzz from the back end, as would re-applying the throttle afterwards - like slack being taken up. Another symptom was that a relatively large amount of movement of one of the road wheels (both off the ground if you've a LSD) would be needed before I saw the prop rotate. Dropped the diff out and had it rebuilt - one broken part inside which meant the LSD was not working properly, and the bearings were worn. Also, worth checking that the pinion bearing nut (behind the flange on the diff to prop joint) has not slackened. If it has, it really is a diff out job, because the preload on this bearing is set through a crush washer, which means that even if you re-tighten the nut later, it will not necessarily give the proper load on the bearing. [paul gotts](#)

Another idea - visual inspection.. of the moving parts.. you will need a friend to help.. Car nose to wall - rear on axle stands 2 * trolley jacks to re-compress rear suspension (to remove slack) .. 1,2,3,4th gear.. Visually check drive shafts & prop for run out with inspection lamp .. & listen to diff (screw driver to ear to diff) for noise ! **Needless to say - if you do this you gotta be bloody careful.. no loose clothing near anything that moves..** [rev-erend](#)

It sounds like a problem I had with an Alfa years ago, It turned out to be the pinion bearings in the diff. A common problem with this car according to the garage that serviced the car. The cause is when the pinion gear has no load (no power on no engine braking)It has tendency to ride up and down on the ring gear. This causes a vibration and a "pinion rumble" Many vehicles have this condition however in this type of vehicle you are sitting on top of the diff and the condition is amplified. At the time I had the bearings replaced It helped but didn't cure the problem completely. The noise was only detectable with the Hood up. [noahstvr](#)

To check whether the pinion bearing nut has slackened, you need to remove the 4 bolts securing the prop shaft flange to the diff flange. Move the prop flange out of the way (you don't need to disconnect any other part of the prop)so that you can see the large nut inside the diff. If you've got oil running out, chances are the nut is loose. Try getting a socket on it and see how much torque is needed before you get movement of the nut. From memory, when re-building these things, the right figure is something around 100lbs ft. Check in the Jag XJ manual. If you get movement at much less than this, its likely the nut has slackened. You need to do this with the handbrake on to prevent the wheels turning. Apparently they are prone to loosening. As far as how much slack is ok in the diff itself, I seem to remember that I had to move the wheel something like an inch at the outer edge to get the prop to move. Your symptoms do sound very like my own, although my diff had done c. 130K miles at this point, so it was to be expected. Had been getting worse over a couple of years, but what prompted the rebuild was the fact that the pinion nut had loosened (twice). [paulgotts](#)

No sign of any thread lock when I removed mine. Its quite a large nut but I guess if you hunt around you could find a locking version. No space to lockwire anything. And you don't need to remove the exhaust at all, just drop the diff end of the prop and wedge it out of the way. Its pretty straightforward. [paul gotts](#)

13.3 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 - IMH experience!! Any tricky stuff go to Proptech. Proptech : 01299-251247 [tasmania](#)

13.4 Where can I get replacement UJs for my 350i?

just got 4 new ujs for my 350 hardy spicer part number hs166 with grease nipple from Canvey island autos 01268 685905 bit out of your area there in Essex but part number should help [barrington](#)

R.T.RACING list them in there catalogue [dukeenfield](#)

You need to make sure that they are the same size as the originals as TVR used at least 2 if not more types. Measure the cap size. Also get the ones with a grease nipple and grease regularly. I've got them from RT Racing and Tower View in the past. The 520 hasn't eaten any for 3 years now... [shpub](#)

HS166 is the standard size for the 350, but some have had 400 size driveshafts with the larger uj's installed. These are HS179. I've ordered mine from GKN Driveline direct in the past - 0121 313 1661. [paul gotts](#)

Hmmm - interesting, so does that mean that if I put in a more powerful motor I can also fit driveshafts from a bigger wedge ? Silly me assumed the driveshafts (but not UJs) were the same across the range. You tend to assume that because the back end was Jag sourced, it would be pretty tough even on a 280i. I expect the racer boys will have more experience in such matters. [grahamw48](#)

I found the standard size ujs only lasted about 12K miles in a fairly standard 350, even when regularly greased. I think the suspension design puts additional stresses through them compared to other installations. These ujs have always been viewed as one of the weak points in the drive train. The yokes on my 400 are certainly bigger, as the external dimensions of the HS179 ujs are larger than the HS166. I'm not sure if the driveshaft itself is larger diameter. I wouldn't recommend putting 400 type power/torque through the smaller ujs unless you want to treat them as consumables and replace on a very regular basis. [paul gotts](#)

The back end is not Jag sourced... more Jag derived. The suspension and drive shafts are TVR specials. They have very little in common apart from the design principle of using the drive shaft as the top wishbone. The diff and brakes are Jag though. Although the bigger shafts are the ones to get, they are extremely rare... new ones are around the £500 mark and then there is the trouble that your car has the trailing arm suspension which is another restriction to major and reliable power increases. [shpub](#)

Dave Mac propshafts in Foleshill Coventry stock an upgraded UJ with a larger yoke / bearing area and grease nipples. seems to work OK on mine [350matt](#)

13.5 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](#)

13.6 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](#)

13.7 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](#)

13.8 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](#)

13.9 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](#)

13.10 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](#)

13.11 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](#)

13.12 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. [wedg1e](#)

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](#)

13.13 Where can I get a clutch slave cylinder/

Prett sure its the std SD1 part so any Lucas / Girling dealer should be able to sort you out [350matt](#)

Just changed mine about 6 weeks ago...its standard SD1 fare...good luck with it [troogly](#)

Be careful, depends on what model, My 390Se has the standard mastercyl and slave, BUT TVR bored out and re-threaded the pipe connections to use larger bore pipe.(I guess to allow faster clutch operation) You can see the marks in the bodies where they were held in some kind of Jig. Found out the griff is exactly the same. Watch out cos some wedge specialists will try to sell you a standard girling part! [andy390](#)

Girling often did this as well for other manufacturers so not totally convinced it is a TVR thing. Often been supplied with different pipework fittings. Most common is a change from imperial to metric but changes in size not unknown either. [shpub](#)

13.14 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](#)

13.15 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](#)

13.16 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/late 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](#)

13.17 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](#)

13.18 I've got a grating noise from the back end with the power on

When power is on I have an intermittent 'grating' noise coming from the back end. At first I thought it was the exhaust vibrating on something but now I'm not sure. Seems to come in at around 50 mph. Being intermittent its hard to track although perhaps is a little worse as the car gets warmed up. Take the power off and it goes away. Next thoughts were to a worn diff (but this was replaced only last year) or possibly worn UJ's or worn wheel bearings.

If it's definitely rear end - it could be suspension seizing up... plenty of wd40 .. and see if it disappears.. [reverend](#)

Could also be broken springs, worn suspension bearings, chassis cracks.... [shpub](#)

Jack the back-end so both wheels are off the floor, then wiggle the wheels from top to bottom, a small amount of play is acceptable about 1-2mm at the rim. If its more than this then its likely a UJ needs changing. Also wiggle the wheel left to right there should be no play at all in this direction, if so then either duff wheel bearing or suspension bush. If the bearing has gone this will give play in the top to bottom test as well [350matt](#)

13.19 Sloppy V6 gear change.

I think the gear change on my 2.8 +2 is too slack and imprecise. I was expecting a tight clean change from a ford gearbox, but there is about 6 inches lateral movement between 2nd and 3rd. Reverse is even more guesswork. Assuming that the TVR isn't much different to the original I removed the transmission tunnel trim and attempted to undo the gearlever. I undid the 3 bolts holding it to the box and tried to pull it up, but it hardly moved. Am I right in assuming the gear change is wrong and if so, what am I should I be doing to allow me to remove the gearlever. I'm hoping to remove the lever and find a convenient nut that needs tightening to restore the change quality.

Well, I've def been there before (with my +2).....and improved it a bit, but not as good as you might hope for. I swapped the gear stick for a new one as the nylon bushing on it had disintegrated. This removed a good deal of the slop, but I think that something is prob worn inside. Not investigated that further, but may well swap the box soon (ish) anyway. Is it the 4speed I assume? If so, you'll find a half sphere shaped object round the bottom of the gear stick on top of the box. This bit unscrews, you may need to belt it with a hammer and screwdriver to start it turning. [york 33](#)

I did try and find a 5th on mine too for a while, never did I struck lucky with someone on here who happened to have a spare Capri one (thank you, you know who you are The original one is a modified version of any old 4speed Capri/Granada/Sierra(?) one of that era. You'll see a 2inch horizontal bit of steel welded on to your original. Though I just used it as a straight swap over for mine and it works just fine. [york 33](#)

I obtained a 4 speed gear stick from 'Tickover in Bexley Heath. 020 8298 1994. Assuming they are still trading of course. I have a nagging feeling that as well as a ball joint (which was missing on mine) there is a bush where the gear stick joins the gear select lever. I obtained one of those from the Factory back in the days when you could order stuff direct from Mike Williams. [geddy](#)

That nylon half sphere bush near the base of the gearlever is as rare as rocking horse s**t. Tickover can't get them any more, I also tried every Capri spares dealer in Classic Ford magazine with no joy. I eventually bought a complete gearlever on eBay with a good bush on it. [Avalon](#)

The nylon hemisphere was used on several (older?) Ford gearboxes, so it might be worth investigating other boxes too, which should be more plentiful, and may yield the same part. I remember how careful you had to be not to cross-thread the sphere, or you'd a hell of a job to get the thing to stay on, and may have the gear stick come off in your hand at some critical moment ! [grahamw48](#)

13.20 How can I identify the diff type on my 350i?

If it's a powerlock there should be a small metal tab with 'PL' stamped on it that's under one of the rear cover housing bolts. There should be another tab with the diff ratio. If that's no good then jack the rear end up and turn one of the wheels. If the other wheel rotates the same way then it's a power lock. [sevans](#)

I would do both checks as I have found those pesky little tags to be wrong. When I took the old diff out of my car, it had no powerloc tag and was a 2.88! It was most definitely a powerloc and had a 3.54 ratio, measured by turning the input shaft. Who knows when/why/how they were changed as it was the original diff. [shpub](#)

13.21 What oil should I use in a PowerLok diff?

You MUST use a limited slip diff oil otherwise it'll be b'ggered in no time, I use a Valvoline slippy diff oil which seems to work fine, available from Central auto supplies , you'll probably have a local branch [350matt](#)

Yep I use the Valvoline too [AM400](#)

also Castrol Hypoy LS [cuneus](#)

Thanks for information, my diff has tab on saying power/lock, but on vin plate mine also says standard 90 oil. I am going to try and find power/lock oil as suggested, thanks Ken. [dukeenfield](#)

Tried to get to get Duckhams hypoid 90DL and Castrol hypoy LS and Valvoline slippy diff oil, but can't get any, no body does it near LEICESTER. Also tried TVR dealers at Melton Mowbruy, they say they have no parts or oil for 350i's,so phoned up R.T. racing and he said use Halfords 90SD oil. I just wondered if any body else has used this oil on power/lock diff's. [dukeenfield](#)

Silkolene do a 90 LSD oil, if you can find a stockist, and check out Demon Tweeks - they list Motul LSD. I've also used Mobil 1 SHC 75-90 gear oil which although it doesn't specifically say so, Demon Tweeks absolutely insisted that it was suitable when I questioned them. I have used it in the past, although I don't have it in at the moment since I had the diff rebuilt (don't think this was down to the Mobil). [paul gotts](#)

Got 5 litres of Hypoy LS for 18.90 + Vat + del (got some SMX-S for the gearbox at the same time) From Merlin Tel 01249 782101 [cuneus](#)

13.22 What oil should I use in an '86 350i gearbox?

ATF-G should be fine. If it's red and oily, it'll do... [wedg1e](#)

I use a the 75-90W semi synthetic Castrol stuff gives much better protection than ATF without being too thick to slow the shift down. [350matt](#)

Don't use ATF - its too thin and was apparently only recommended by Rover because the thicker gear oil initially specified was causing crunching problems when cold. RPI strongly recommend Castrol SMX. Some people also used engine oil. I'm using up my Mobil 1 5-50 in the box at the moment, still need to be careful when cold, shifting 1 straight to 3 does the trick. [paul gotts](#)

You can't use anything too thick otherwise the LT77's internal oil pump won't be able to pump it fast enough - especially when cold. I find that the box drags anyway even with ATF in. [wedg1e](#)

DON'T USE ENGINE OIL!!! Sorry for shouting but I had the following experience putting 20W50 in a rover 4-speed box: initially everything seemed fine, the gear change was slick, etc. However after about 500 miles the gearbox broke. Completely. Engine oil doesn't have an EP rating which means that while its OK on relatively smooth surfaces such as bearing shells, it doesn't stop gears grinding together. I currently use ATF (current box has done maybe 30k miles on it and getting a little tired) but was thinking of switching to the Castrol or even doing a blend of the two. [adam quantrill](#)

TVR 350i owners handbook (1984) gives manual and auto gearbox oil as ATF. [grahamw48](#)

Thanks for the tip Adam. The reason that I've used engine oil in the gearbox for the past couple of years is that was what the company that re-built it suggested. Now a cynic like me might think that this would just generate them more business when the box goes again, but having known and used this company for more than 10 years, I rely on their judgment. I also seem to remember that Richard Thorpe has suggested engine oil for the Rover box in the past. I can only re-iterate what RPI say on their website about ATF - its use will eventually lead to gearbox failure. Its too thin and I don't think it can take the heat generated. It is after all, hydraulic fluid, not gear oil. On the subject of EP additives, I'm more confused after a quick trawl on the web - some of these additives are actually corrosive to synchros, and should not be used. I think a chat with someone at CTS might be in order just to clarify things. [paul gotts](#)

so it looks like Castrol SMX is the best oil to put in gearbox, did all the 350i have LT77 gearbox's [dukeenfield](#)

Yes but there are about 10 or so LT77 variants with the later ones being a lot better than the earlier one. I use ATF. Not had a problem. [shpub](#)

Spoke to Bernie at CTS yesterday about oil for the LT77 box. His recommendation is to use ATF, although when I said I was using Mobil 1 engine oil, he said that as long as it wasn't giving any problems, stick with it. The main thing is not to use anything too thick, as the pump is fairly puny. So, contradictory opinions from two experts, I guess you pay your money and take your choice. [paul gotts](#)

13.23 How do I change the oil in an LT77 or R380 gearbox?

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.

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. 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. : 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.



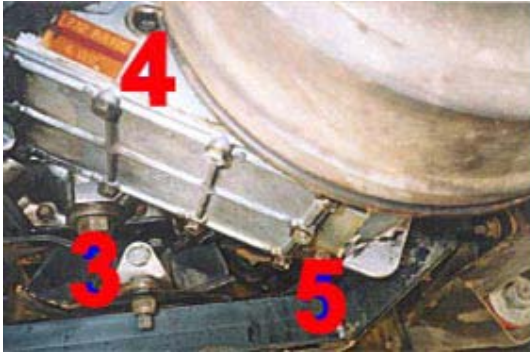
Here the old ATF fluid can be seen draining from the extension case on an LT77 gearbox. Note its characteristic red colour and very thin viscosity

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).

14 Chapter 14 – The Exterior

14.1 *I 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](#)

14.2 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](#)

14.3 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](#)

14.4 Where can I go to get a new rear screen for my hood?

I need a new window panel as well. I have tried several places and most of them reckon around £150. Except one camping tent repair place that quoted around £8 for the entire job as long as I get the roof assembly off myself!. The others take the roof off to get it under their sewing machines for you - hence the price. The one guy did say that a common issue with doing the job was if the bolts holding on the rear roof hoop had rusted. He reckons that they then have to be drilled out - you can imagine the mess. They normally simply cut the old window out and then sew in a new one. Most places that do hoods offer this service. if you are on a budget try out the camping shops! [mikeb](#)

You could try : www.autohoods.co.uk/intro.htm Based in Chessington.. [rev-erend](#)

Just found this on e-bay anyone know or used them? Although no TIVs listed there is clearly a pic of a Chim I assume outside their premises? But they do say they can do replacement rear screens so might be worth a look?

<http://cgi.ebay.co.uk/ws/eBayISAPI.dll?ViewItem&category=43117&item=7955466435&rd=1> [Gandalf](#)

Also found an excellent guide to how to remove the rear roof section....not for the feint hearted!!! www.tvrseries.com/ The .PDF article is around half way down, have a look. Well worth a look. [mikeb](#)

The tent awning company deal sounds good, but beware the gauge of material they use. Tent awning windows are thinner. I thought maybe a good cheap source of a heavier gauge of clear material could be from one of the drape screens you often see separating sections of warehouses and factories. Strong stuff, as it has to withstand forklifts driving through it etc. Maybe you could get a 1 metre by 400mm 'sample' from somewhere. The bible recommends keeping a rolled up towel in the fold of the screen. Good tip I reckon, especially if you leave it with the hood down in the garage for a while, then put the hood up in cold weather when the material will be at it's most brittle. [tallbloke](#)

14.5 *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](#)

14.6 *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 [dickymint](#)

14.7 *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](#)

14.8 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](#)

14.9 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 Tasmis 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](#)

14.10 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 re-graft 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](#)

14.11 Any suggestions for replacement mirrors for an early 350i?

had same trouble myself searched high and low for replacements biggest problem was trying to get a mirror where the base plate would cover the original holes could only find one from demon tweeks, look real good and in keeping with the car, photo of my car on TVR wedgpages gallery under Jim Weaver, can e-mail close ups if you need jimson

Try Europa spares. They have lots of different styles of mirrors in their catalogue. I managed to find some elsewhere that even used the same hole centres. [kevsmev](#)

Have you thought about replacing them with the later pod style as fitted to the later wedges? You would have to fill the holes in the doors though. [sevans](#)

14.12 I need to replace the bonnet soundproofing and take the bonnet off

The sound proofing is falling off. The expanded ali mesh is knackered. Does it help radio reception much, is it worth replacing (£39)? Would all be easier to stick back with the bonnet off and upside down. Main panic is that the offside pivot bolt is nowhere near screwed home. It will not respond to gentle unscrewing attempts despite gallons of WD40, could be wrong thread, cross thread or just rusted solid. If I shear it how do I get at the nut to weld another in or heaven forbid is it just set in fibre glass. Guess I could just try a re-tap from inside the bonnet, but if it goes wrong and I cannot get at the nut! Does anybody know what the captive nut is set in or if it can be got at?

Good tip for sticking stuff to underside of bonnet without taking it off:

1. Apply chosen adhesive
2. Find block of wood to sit on top of engine below sticking area
3. Close bonnet so that it rests on the wood.
4. Attach something to steering wheel to remind you about block of wood the next day.

[adam quantrill](#)

The nut is purely captive in the glassfibre, well it is on mine anyway! Both the bonnet and the body shell have threaded inserts, which is how the fit is adjusted side to side... [ian jones](#)

Penetrating oil and patience. [tallbloke](#)

I've got the same prob with mesh/soundproofing. Anyone recommend a good adhesive for the job? I like the tip about the wooden plank. Not sure about the mesh though. I thought that the aerial used the heated rear-screen but I haven't looked to check yet. (Then again, perhaps yours is a convertible - silly me!) [nads](#)

The captive nut is glassed-in to the shell. I had a seized bolt on my Tasmin; although on the headlamp pod but I reckon the same extraction method would work. My solution was to saw through the bolt stem to remove the bolt and get the pod (or bonnet, in your case) out of the way. I masked the area around the gap whilst I was sawing. Then I carefully centre-punched the end of the seized bolt stem and drilled it through, using successively larger drills until I was almost at full diameter. By then it was possible to use a small punch and collapse the remainder of the bolt inwards, so it left the captive thread undamaged. A quick run through with a tap to get the crap out of the threads and a new bolt went straight in. [wedg1e](#)

What would happen if the sound proofing was removed completely? [Hey Andy](#)

My proofing is off. Like it when I bought the car. Though someone did say the heat can damage the paint work but I have seen no worsening in 4 years but don't know how long it has been off. [jmorgan](#)

14.13 Can I convert my Tasmin door mirrors to the later pod type?

I changed my ugly mirrors for some classic chrome cone shaped mirrors and mounted them on the door next to the glass. IMO it looks good. It also reduced the width of the car by about 8 inches which handy as I have a narrow garage door. [degz](#)

I did this swap on a Tasmin DHC that I had many many years ago, the only snag I had was I was supplied a LHD mirror for the near side, so I could never adjust the mirror so that it was usable. But a very easy mod that gives a much nicer finish (IMHO). [taz turbo](#)

think it's possible to buy the parts new from Rimmer's but the price is going to be around the £300 mark. Don't really want to pay that much so it's a question of finding an SD1 that's being scrapped. [sevans](#)

The PO fitted the later pod style ones to my 280 FH. They're just stuck on with silicone or something. The pods are hollow, but don't have an opening in the for the mirror. The mirrors are just stuck on and aren't adjustable. Fortunately they're positioned well enough for me to use. [Uriel](#)

I have fitted the mirrors off a Renault 25. The angle of the bracket is close to the angle of the door/screen junction. They are electric, tho I have not wired them up. They are rectangular, so look like the pods fitted to later cars, but have the advantage that they fold. [taz200i](#)

15 Chapter 15 – The Interior

15.1 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.

15.2 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](#)

15.3 Where can I get door glass for a 1985 280i?

I think you'll find the glass is from a Mk2 Ford Granada. Could be wrong but I'm sure that's where they were sourced. [heyAndy](#)

Nope... TVR specials... [shpub](#)

Hi, broke my O/S door glass 4 months ago, had a right job trying to find one, was told by several traders that it is TVR's own, I managed to get second hand one eventually (£90.00) ouch from Douglass valley breakers [60maxx](#)

A while back some d!ckhead broke a passenger window with an airgun and I made up a Perspex sheet so I could still drive the car. As it's straight it will fit in either side, and it wedges (sic) into place when you shut the door. If you also need a new bar from the bottom, don't forget that Rimmer Bros do them for £9. [adamquantrill](#)

15.4 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](#)

15.5 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](#)

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

You won't 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](#)

15.7 *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](#)

15.8 *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](#)

15.9 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](#)

15.10 How do I remove the veneer on the glove box?

it consists of a veneered metal plate with two studs welded to the back. You need to remove the trim panel glued to the inside of the panel to expose two counter bores with the panel fixings. [pistolar](#)

That's right Neil !!! 2 bolts on the rear !! I did the same job last week on my SEAC. [cantus](#)

15.11 How do I get the handbrake and gear leaver 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](#)

15.12 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](#)

15.13 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](#)

15.14 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](#)

15.15 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](#)

15.16 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 [wedg1e](#)

15.17 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?). [wedg1e](#)

15.18 Can I fit a 4 point harness?

I would be a bit worried about fixing to the GRP even with large plates. If the car was involved in an accident, there is potential to pull the steel plates straight through. There is some mention in the "bible" that even if you fix harnesses, you still require conventional seat belts. (something to do with the MOT) If I was to fix a harness I would look for a fixing on the chassis. If you have a copy of the bible there is a mention of something similar in fitting a roll bar. [tvr280i](#)

If you have a rollover bar, attach the harness to the rear stays. If you don't have a rollover bar, don't fit a harness. The harness will keep you upright in the seat, which will be briefly rather painful if you roll the car since it will basically land on your head. [Green V8S](#)

Totally agree, having taken the hoop apart to recover it and finding that it is only fibreglass with a plate either side I realised it wasn't going to offer much protection if I rolled the car. As I wanted to fit harness's this was the primary reason for fitting the roll bar. [sevans](#)

Structurally that hoop construction is strong and weight efficient on the same theory as honeycomb F1 construction. The problem for most people with roll over bars is that because they need to be at least 150mm

above the top of your head/helmet to be of any use you cannot then fit the roof on. Speaking to Richard at Moore racing he told me that he overcomes this problem by having approx the top third of the RO Bar detachable so that you can store it in the boot when the top is up - only bad news is if you want to do a track day with your roof up. lol Of course for shorter wedge drivers this isn't a problem at all. **19560**

Yes it's strong and weight efficient and might even support the weight of the car if very carefully placed on it, but it's still nowhere near strong enough to count as roll-over protection. The only thing I would count on from the hoop/roof/windscreen is that they act as a skid plate. You might get squashed but hopefully not get bits of flesh ripped off by the road surface. Ideally the rollover protection would be far enough above your head to stop you coming anywhere near the road, and the MSA specifies 150mm clearance. But this simply isn't practical for an everyday car. My theory is that in the heat of the moment you can bend quite a long way and if it means you end up with your chin on your chest you will probably still be alive. Yes more protection would be better, but it just isn't practical for an everyday car. I used to think the deal with the MOT was that the seat belt had to be kite marked (which most harnesses aren't), but I think these days it is enough to be E marked. In any case I think at most MOT places it would probably come down to the tester's attitude most of the time. If he reckons it's OK because it looks safe and is in good condition, you OK. If he reckons it's non-standard and he isn't having any of it, he probably isn't going to pass it no matter how right you are. **GreenV8S**

Try this –

Fitted 4 point Willans harness.



Internal cabin mounting points



Steel plates in boot panel 'firewall'



I've considered mounting a harness in this way and if you do the sums a plate of area 0.4m square is sufficient to withstand a 500Kg load (big bloke with a 5G stop) with a fair bit of safety factor. so it should be fine, however as Pete says a roll-over bar should be considered before the harness. **350 matt**

There is a way of making a frame for bolt onto the chassis which will allow you to attach the harnesses onto the back shelf, I cant remember the link to this site, ill have a look, its a good alternative to the roll over bar Putting steel plates behind the back fibre glass wall will spread the pressure about but could make the fibre glass crack and fail- not the best idea. By lay you must retain the ratchet seat belts to pass an MOT, the lay says 4 point harnesses aren't safe enough, may be this is why F1 cars aren't road legal You should use a steel plate under the floor to mount the seats on, this gives it added strength and support, specially if you put bucket seats in and think about the roll over bar to stop this happening to you [url]www.t-v-r-services.co.uk/towerviewraceser.html[/url] **Campbell**

Tower View fitted a harness mount in my 400 a few years back, as described in the Bible I think. An eye bolt screws through the rear shelf into a mount connected to the chassis. The other two points use the existing left and right seat belt mounts, although I have retained the standard belt as well for those who don't wish to use the harness (the missus). Haven't got a roll bar, will take my chances in the event of a flip, especially as they don't exactly enhance the appearance of the Wedge. **paul gotts**

The rear boot panel will pull away in the event of an accident and are simply just not up to the job. They need to be fixed to the chassis or roll bar or roll cage. Period. No exceptions. The height measurement is 5 cm not 150 mm. Just checked it in my 2005 Blue Book. None of the Tassie coupe racers have a problem nor the convertibles with a hard top. The problem comes with complying with drawing Q60 for open top cars where an extension is needed to create a clear safety zone. Most of this add a bit on so the bar is still there. The 520 has a similar roll cage and the roll bar is underneath the roof. I have only been queried once about this and that was with the roof off . Put the roof back on to show why it didn't protrude and the Scrutineer was happy. The cage has been also been checked and approved for the car's competition car log book that it needs as it competes on slicks. The other trick is that the bar is actually behind me so that I can't hit it. As for the window strength. It flexes quite nicely and has let the roof panel fly off at speed (140 mph). I now have internal latches to retain it. Yes I have seen cars roll and get away with it but I wouldn't trust it at all. **shpub**

I believe the MOT problem with 4 pint belts is that if they have the aircraft style release buckle, joe public will be confused and not be able to release you in an accident and your out for the count. The bayonet style is universal and all idiots and undo it, answer would be find a 4 point which uses a bayonet/push button release system or retain the old belts as well just for the MOT **degz**

I've had Willans 4-point harnesses fitted in my SEAC since it's rebuild. The original seat belts were removed. I've never had MoT problems, but I've always been to 'TVR friendly' MoT testers (handbrake - what handbrake The harness is attached to the roll bar and the roll bar is really strongly mounted. I wouldn't feel happy with mountings just in fibreglass. As for the roll bar being unattractive.... When my car was being displayed in the 'Ultimate Muscle Car' display at Goodwood FoS two years ago I was told that Lord March was discussing the 'originality' of my car and was heard to comment that the roll-bar couldn't be original... it looked far to good to be factory fitted **Nacnud**

Reading all these posts - this one sounds the best for the road .. but roll bars sound good but have their down sides .. i.e If you don't have a helmet on and hit the bar with your head in an accident - you will probably do more damage to yourself than the accident will cause They are noisy (fuel pump noise ! **reverend**

Very true, although a properly positioned bar will be out of reach of your head. They certainly do transmit more noise into the cabin though. **Green V8S**

All seat belts must carry the BS "kite-Mark" to be road legal. Most 4 point ones have not been BS tested and are not so marked, however I believe there are a few that have and as such are legal. Ready to be shot down on this, if I have read the law wrong.. **pebbledash**

Across the back of the Drop head rear parcel shelf's front edge there is a steel bar which attaches to the seat belt anchorage bars at the boor B posts. If you cut the carpet around this bar in line with where the shoulder belts should mount then loop them round as per competition cars then that may work. Best is the roll bar route but definitely not the GRP&plate route. **Tasmania**

I have also seen a few Griffith 500's that have used this method to fix some harnesses as well! **mikeb**

If the Griffith is anything like my V8S, the shoulder mounts for the seat belt are just glassed into the body and not connected to the chassis at all. I guess a harness mounted between the two of them would be at least as strong as the original seat belt, but even so I'd really hate to count on them in an accident. It would only take a glancing blow to shatter the fibreglass round there and then you're unprotected. But of course the lack of rollover protection is the real clincher. [GreenV8S](#)

The later Griffith's and Chimaera's have a chassis mounting point for a harness at the back of the rear shelf as I understand it. Are you sure it wasn't using this? [gf350](#)

15.19 How can I replace the indicator stalk on my early 350i?

The Tr7 column is different from the SD1 column in that there is no instrument light rheostat, and it is not a tilt wheel. Now the Tr7 one comes in left key and right key entry, and you need to get the correct one for your column. You will need to remove the cowling and the steering column to replace it. I would suggest ebay as a good source of tr7 bits, but these indicators are getting quite rear especially the right key entry versions. I converted my left key entry to a right key entry, and it was not cheap - total column replacement. Might be cheaper to put in a complete sd1 column - the bulkhead bearing is much better designed. [jchase](#)

15.20 Will a Chim. steering wheel fit a Wedge?

They are the same fitting on my '86 350i. [gf350](#)

I think the Chim/Griff may be 350mm Dia and the Wedge 320/330mm. Well mine had a 330mm one fitted and I didn't want to fit anything bigger as it would have caused problems with clearance between the top of the wheel/windscreen and bottom of wheel and my legs!! [sevans](#)

15.21 Where can I get new seats?

TVR specials, might be worth trying some of the tazzie race boys for a spare and then get it covered to match. [wedge girl](#)

I believe some of them are Montego seats [stainless steve](#)

I think the basic frames are Metro/Montego but I think the covers are TVR specials. [sevans](#)

I had that problem last year. As there is a hole for the spring in the tube, they tend to crack from there. Before re-welding, I would suggest you fit a stepped rod inside the tube to beef it up. I did that to mine and didn't need to weld it as the mounting frame bolts keep it in place. An external hook is bent around the tube and the spring attached to that. Or you could buy a new one... [montegogt](#)

15.22 How can I get at the instruments and heater panel?

Dash is quite simple but bloody fiddly. There are two studs glassed-in to the top of the dash, each one a few inches in from the ends of the dash. Below the screen, a shelf is formed as part of the scuttle/ firewall/ bulkhead. Two slots are cut into this and the dash studs slide into them. Large washers and captive nuts clamp the dash to the shelf. To get at them, lie upside-down in the footwells. One is easy to spot but hard to get at (driver's side) - it's behind the instruments. The passenger side one is above the glove box, but not accessible through the glove box - you need hands like a paedophile (tm) to get an M8 (or M10, I forget) spanner in there. You probably need the radio console out first; the heater box is the first bit of the interior to be fitted thus the last bit you can get at. It's formed by two halves in GRP with standard (ie poor) Lucas motors. Really it's a pile of poo, the Esprit one is much better although half of it's in the boot - and is vacuum operated so you need the engine running for it to work properly! If your fan has failed it

may actually be the switch: it was never designed to handle the sort of current that the fan motors draw.
wedg1e

M10 I think! I find the drivers side one can be done with a long socket extension, but it's definitely spanner only for passenger side richa

16 Chapter 16 – Tyres and Their Maintenance

17 Chapter 17 - Servicing

18 Chapter 18 – Track Days

18.1 *Can anyone recommend a helmet for track days?*

you can get an idea of what's available from someone like Demon Tweaks, but do not buy a lid by mail order. Heads can be strange shapes and not all makes with the same size will fit comfortably, as shell shapes do vary, particularly Japanese vs. European lids. I'm not up on the latest BS / ACU / FIA stickers, although maybe some of our regular sprinters / racers can enlighten you. I would stick to glass fibre construction, too many potential probs. with cheaper polycarbonate (if they are still made) and in my view Kevlar/carbon fibre is an unnecessary expense, unless you value lightness at all costs. I've seen all sorts on track days, including RAF flight helmets. Full face will give you more protection, although I tend to leave the visor fully or part open anyway. Try visiting your local bike shop, as they will tend to have the best range on the shelf. I've used an Arai for a few years, and been pleased with it. I would think something in the region of £150 would get the job done. As the old saying goes, if you've got a ten bob head, get a ten bob helmet. Showing me age again..... paul gotts

I use a full face helmet, good place to buy in our area is the Formula One shop just past Brands Hatch on right hand side. Consider some shoes as well. redcar

If you wear specs for driving then full-face will be a right PITA. If you drive with your car open then an open face visor might let bees in (or something equally annoying). A full face will give you more protection, consider a shoulder/neck pad as well. You don't need lightness for ordinary track days unless you are pulling incredible G's for a long period. Get a helmet with the relevant BS stickers - sorry I don't know what the numbers are. Don't consider buying 2nd hand unless you know the seller well - one drop from hand to floor can irredeemably damage a helmet - invisibly. Replace a helmet after a few years - they do get tired, replace after any serious impact or drop. If you are a fat lardy bloater like me ventilation is important, a helmet wringing wet with sweat is a great deterrent to borrowers. Get a nice colour to match your car. If you can afford a shiny metallic one get it - they look the dogs! rus wood A lot of places are starting to ask for helmets approved to BS6658:1985 Type A (type B is different and isn't allowed) The cheapest one I've found is the OMP Integrale Plus its about £90 and vat free, its also FIA approved... chassis33

I'd consider getting a balaclava, too. A Nomex one is only a few quid. It makes getting the helmet on and off a lot easier, it stops the helmet interior getting all sweaty and horrid and unlike a helmet interior, you can launder it. zumbrook

Open face helmets in convertibles are a bit of no no from a competition perspective. It may well be that this filters to track days in the near future.....

19 Chapter 19 – Buying a Wedge

19.1 *Where can I find the chassis number on a 450SE?*

The vin plate on the inner wing is the only chassis plate that there is. I've never seen any others stamped anywhere else. [rev-erend](#)

The chassis number is stamped on the drivers side cross member upright near the remote oil filter. You can access it from under the bonnet no problem, there should be an area that the powder coating has been ground away to stamp the number on, the brake pipes run along it to the calliper so you cant miss it really. [AM400](#)

20 Chapter 20 – Electrical Schematics

21 Appendix A – The TVR Car Club

22 Appendix B – TVRCC Internet Support

23 Appendix C – UK TVR Dealers and Other Contacts