

PaulP38A.com

Range Rovers and other Big Boy Toys

Take a deep breath or whatever it is you do to prepare yourself for the scary bit... Will I break something important? Will there be bits left over? Will it catch fire? Will it ever run again? Will my wife ever forgive me?

The mating faces should be nice and clean. Place the new head gasket in position to make sure it fits. It has markings so you should not make a mistake here.



As these were new heads, I decided to fit the spark plugs before putting the heads on.



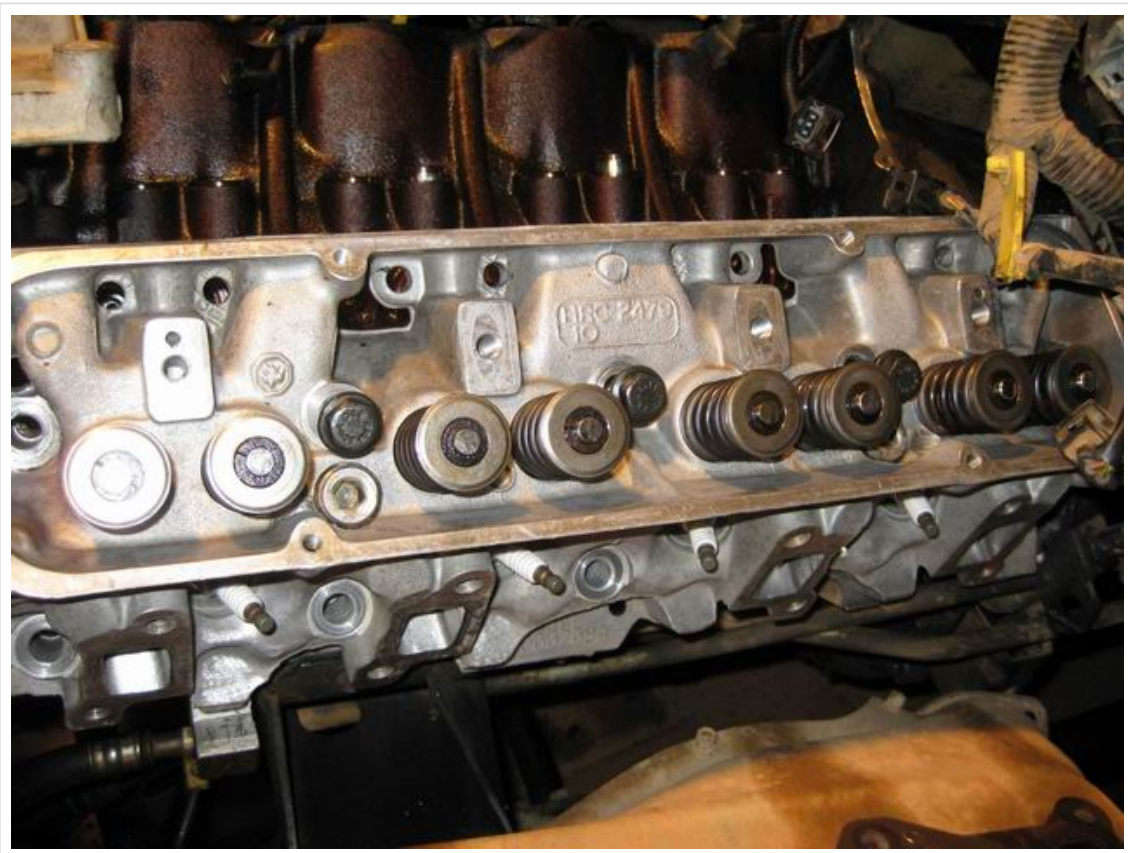
If you haven't removed the fan, remember to mount the bracket as shown below before bolting the head back down.



Give the new head bolt threads a light coat of clean engine oil.



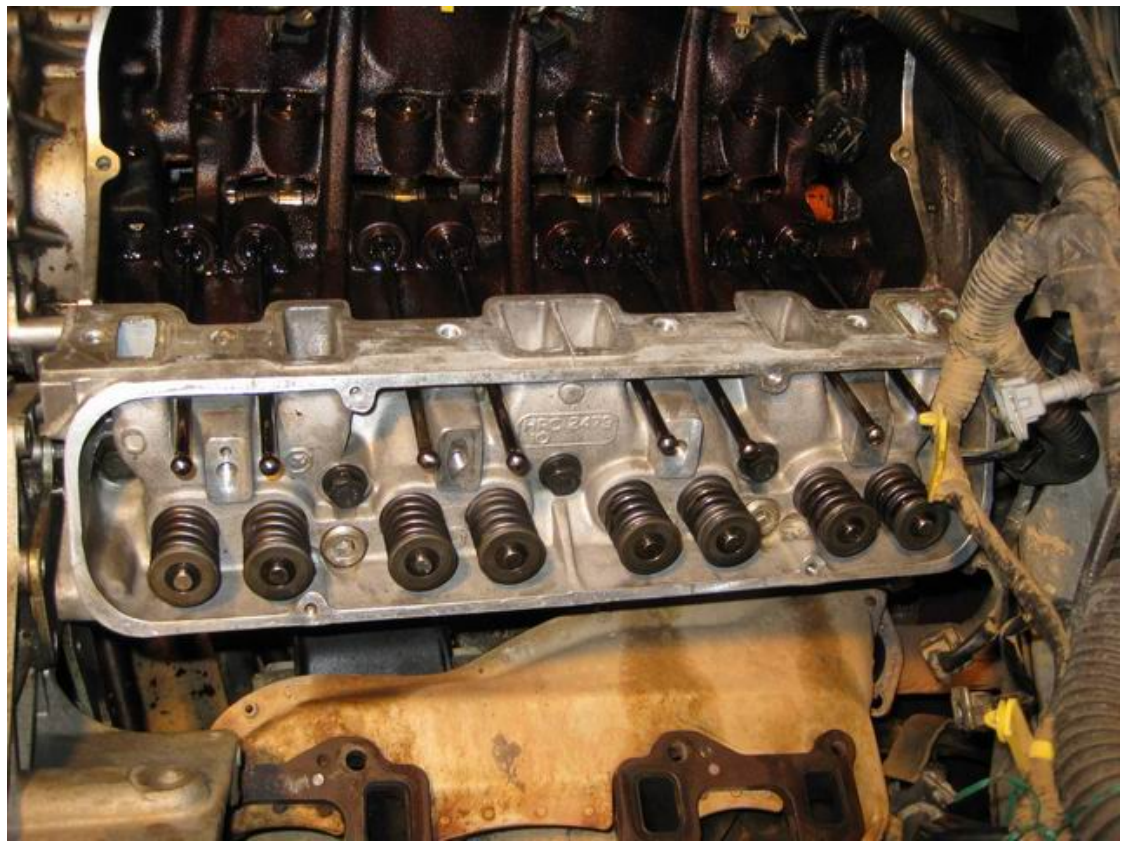
Place the head on and fit a couple of the new head bolts, making sure that the dowel rods locate correctly.

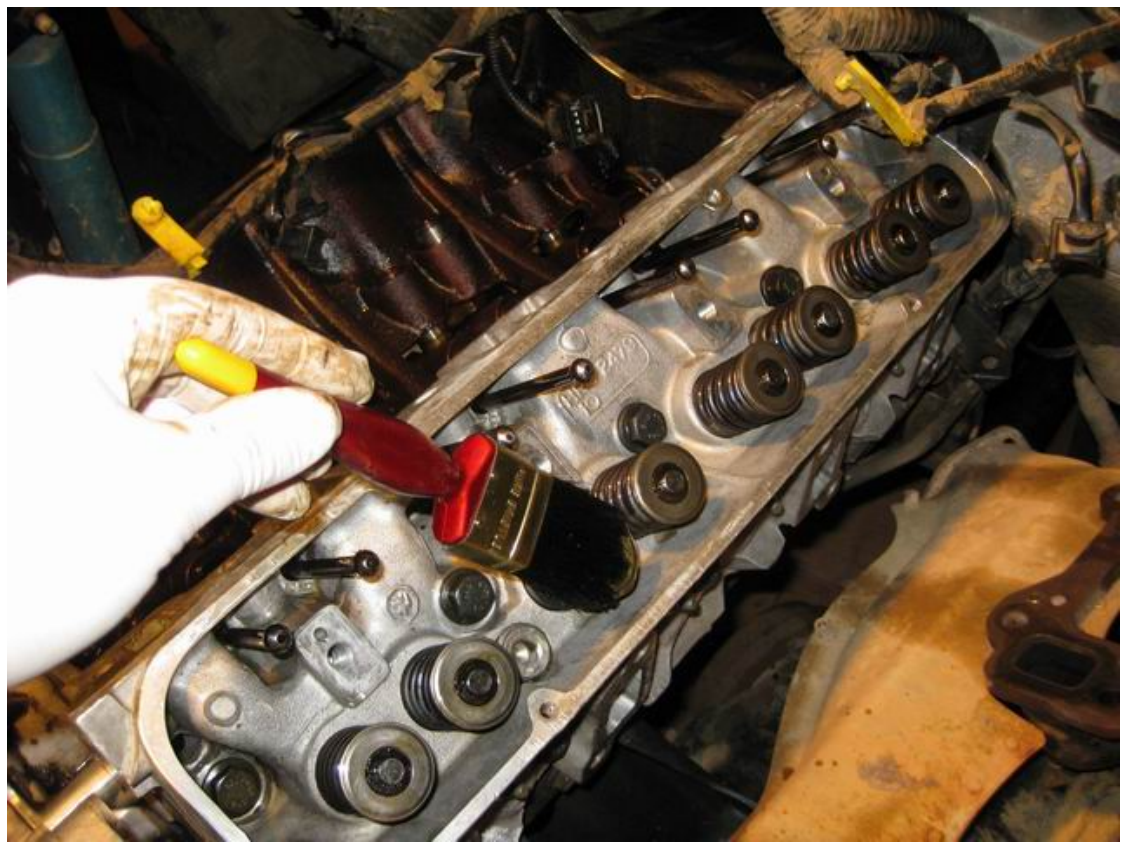


Fit all of the bolts and tighten in the sequence given in RAVE. 20 Nm (15 lb.ft) then 90° and another 90°. I found this part the scariest of all as I was sure something was going to break.



If you haven't already put the tappets back in, do it now before putting the push-rods back in. Lubricate everything with some clean engine oil.

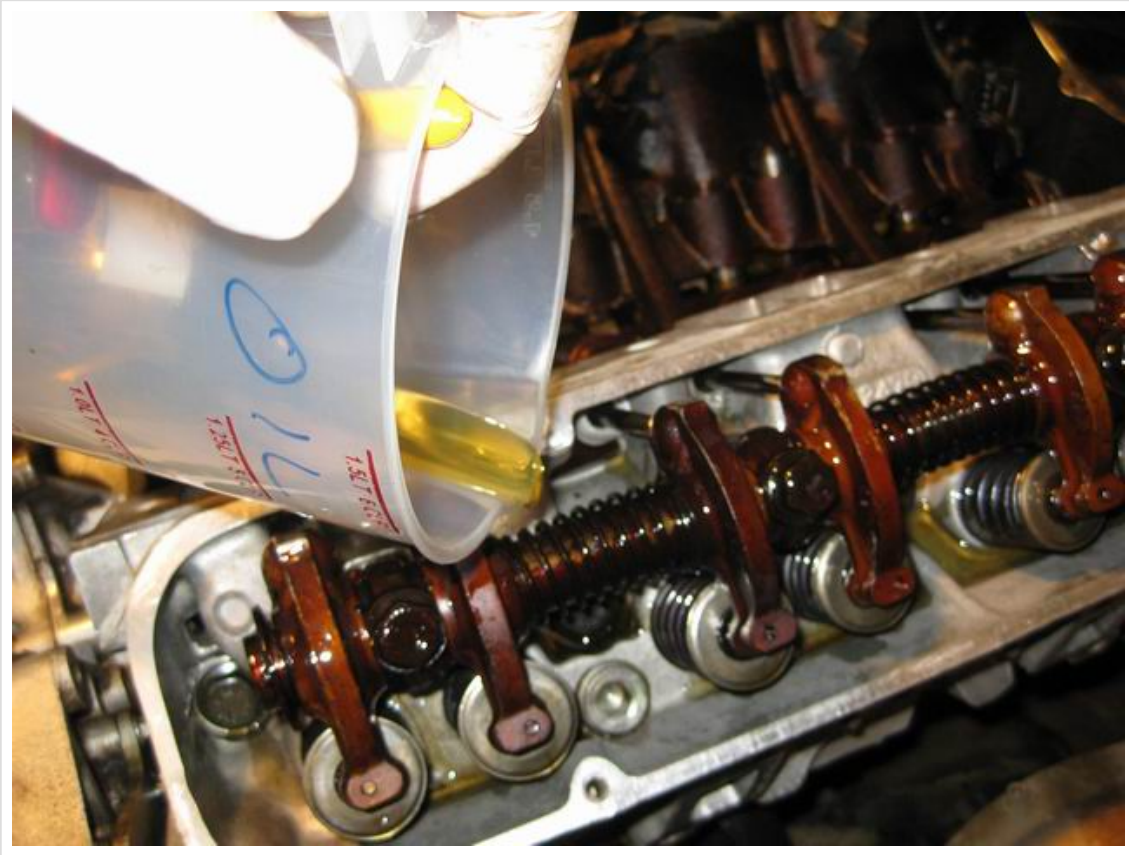




Place the rocker shaft assembly and tighten up the bolts progressively to 38Nm (28 lb.ft)



Give the moving bits a good soak of clean engine oil.



Fit the engine harness bolt and tighten to 20Nm (15 lb.ft).



Insert new gaskets to exhaust manifold, tighten bolts to 55Nm (40 lb.ft) in sequence shown in RAVE.

Insert new flange gasket and tighten up the three bolts/nuts to 50Nm (37 lb.ft).



Run the knock sensor lead back down under the engine and secure.



Fit the heat shield and secure with the seven 8mm bolts.

As with the LH Gasket, the mating faces should be nice and clean. Place the new head gasket in position to make sure it fits. It has markings so you should not make a mistake here.



Fit the new head, locating on dowels, and inserting a few bolts to make sure it all lines up ok.

Remember to lubricate the threads of the head bolts with clean engine oil.

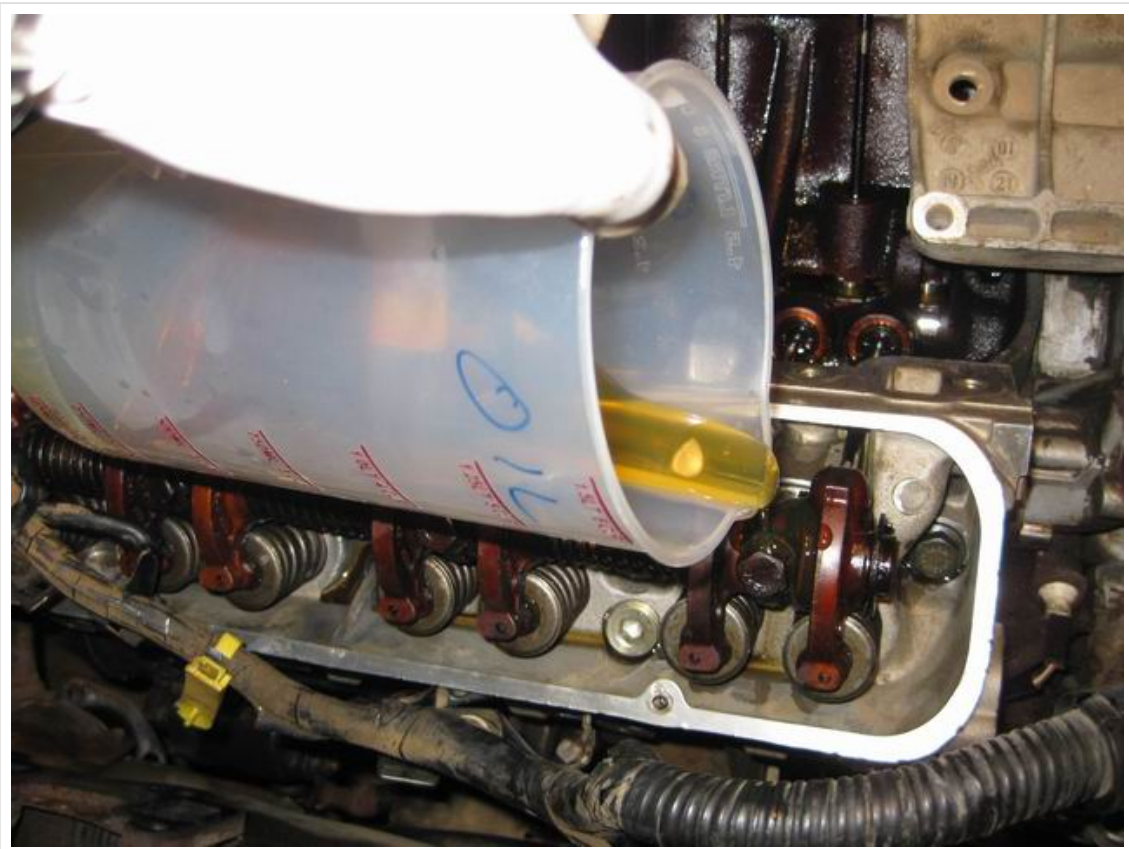


Fit the head bolts and tighten according to RAVE. Place tappets and rocker shafts, lubricating all parts with clean engine oil.

Fit the rocker shaft assembly, locating on push rods, and tighten bolts progressively.



Soak it all in clean engine oil.



Insert new gaskets to exhaust manifold, tighten bolts to 55Nm (40 lb.ft) in sequence shown in RAVE.

Insert new flange gasket and tighten up the three bolts/nuts to 50Nm (37 lb.ft)

Fit the heat shield and secure with the eight 8mm bolts.

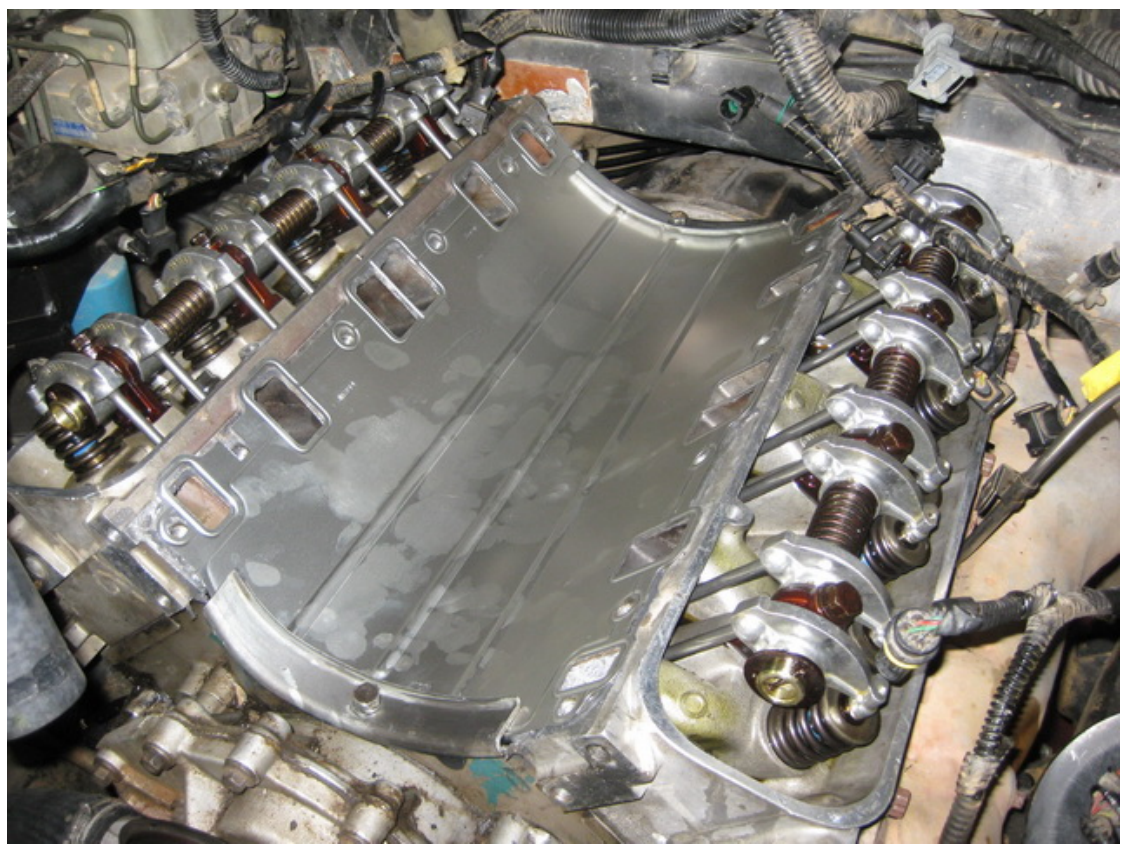
LOWER INLET MANIFOLD

After cleaning out the old RTV goo from the block notches, apply fresh high temp RTV goo to the notches and along the mating faces of the Valley Gasket.

Magic? no, these pics below show the new rocker assemblies and push rods.

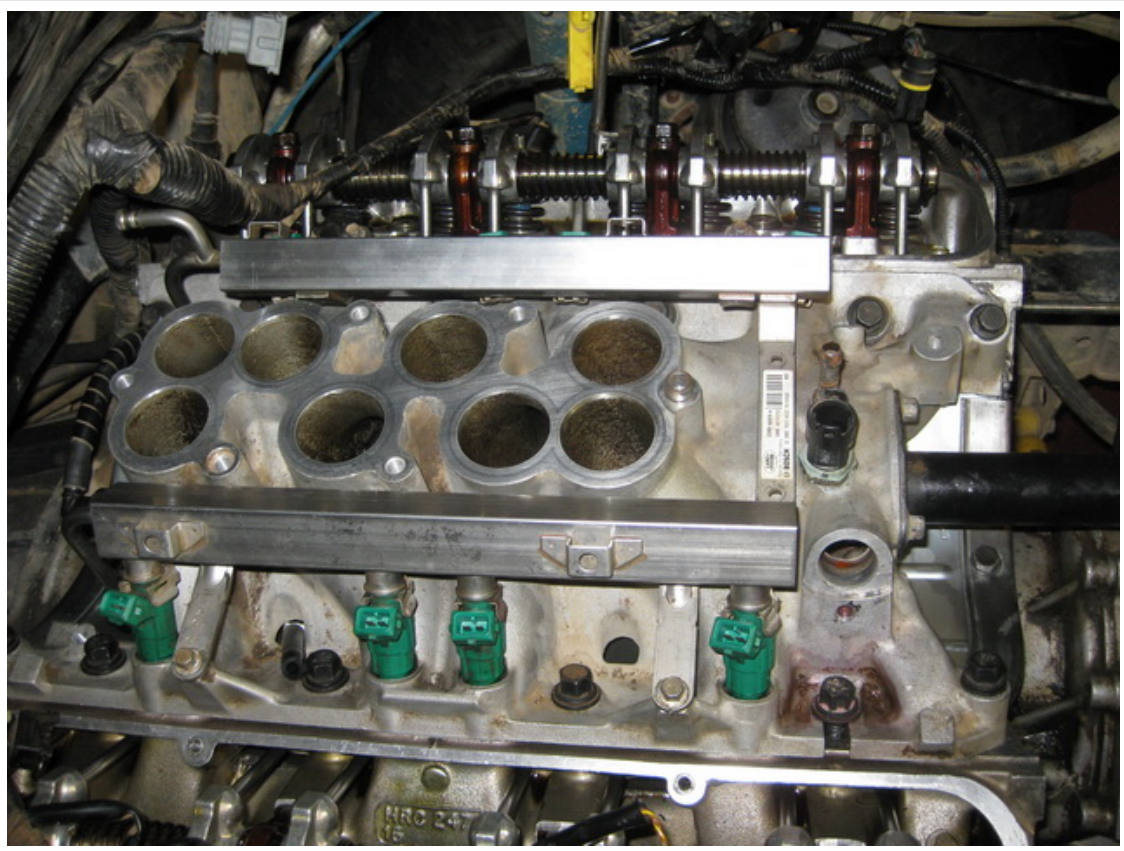


With end seals inserted and RTV gasket goo applied, Valley Gasket installed with end clamps.



Putting the Lower Inlet Manifold back in.

Refer to RAVE for the correct sequence of tightening the twelve manifold bolts.



Reattach the fuel rail and injectors, then connect the fuel pipe.

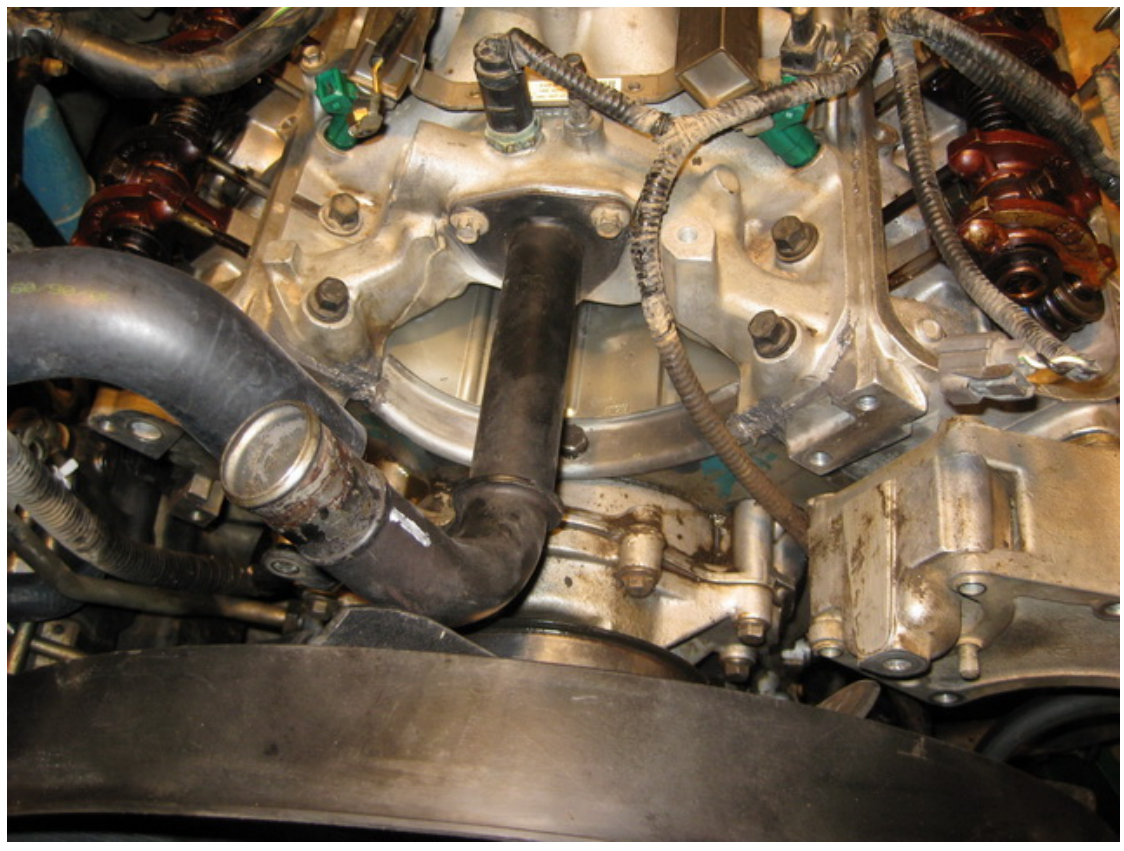


Connect the multi-plug to Temp Sensor

Connect top hose outlet pipe



Fit new o-ring to outlet pipe and tighten bolts to 22Nm (16 lb.ft)



Fit LH mounting bracket



Fit Jockey Pulley

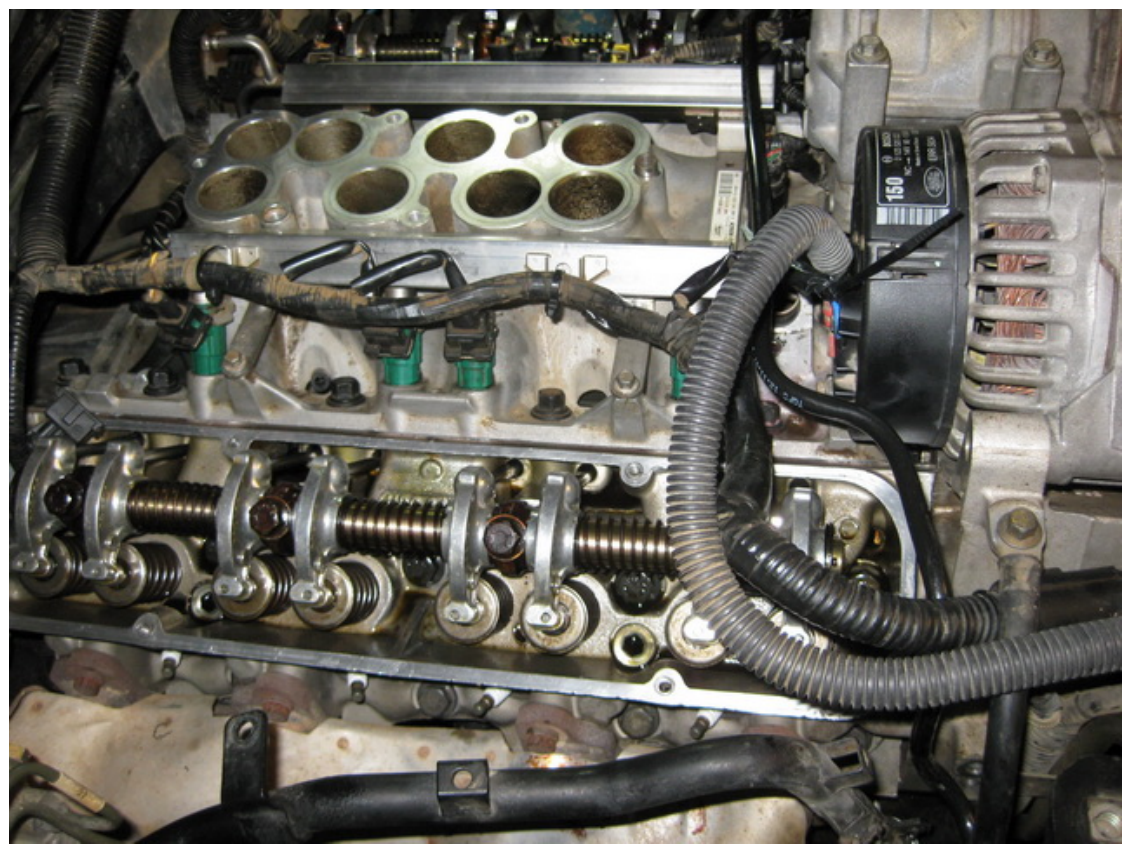


Fit Power Steering Pump and tighten bolts to 40Nm (30 lb.ft)

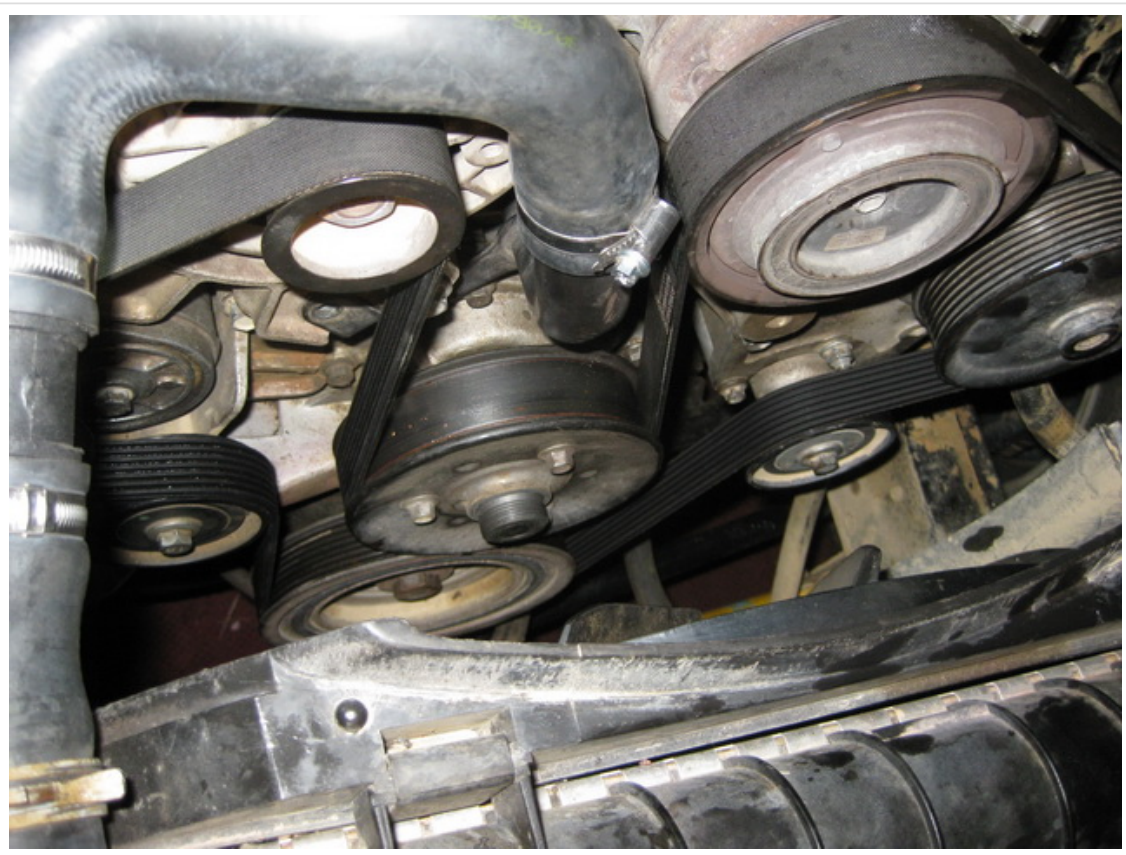
Fit AirCon Compressor and tighten bolts to 25Nm (18 lb.ft), connect multiplug to compressor.

Fit Alternator, tighten bolts to 45Nm (34 lb.ft).

Connect Alternator cables. Be careful with nuts as they may break.



Fit Auxiliary Drive Belt.

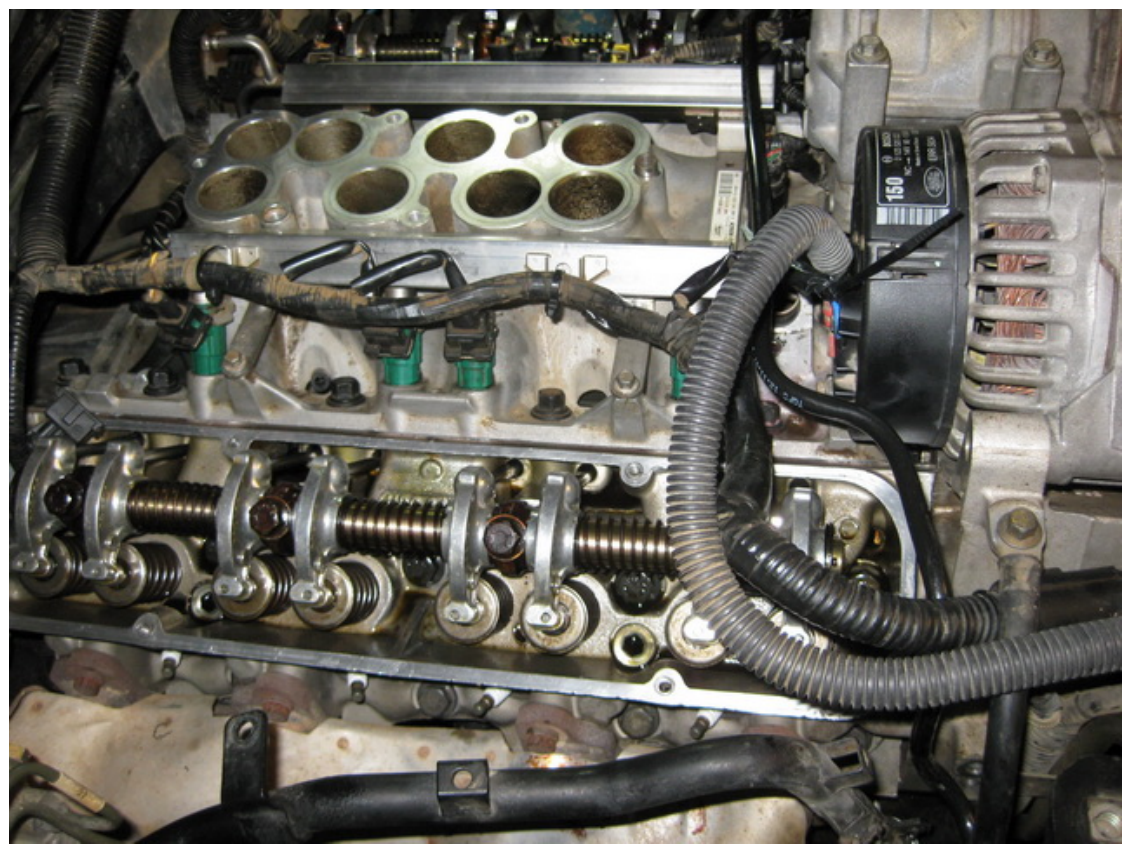




Fit Radiator Shroud.

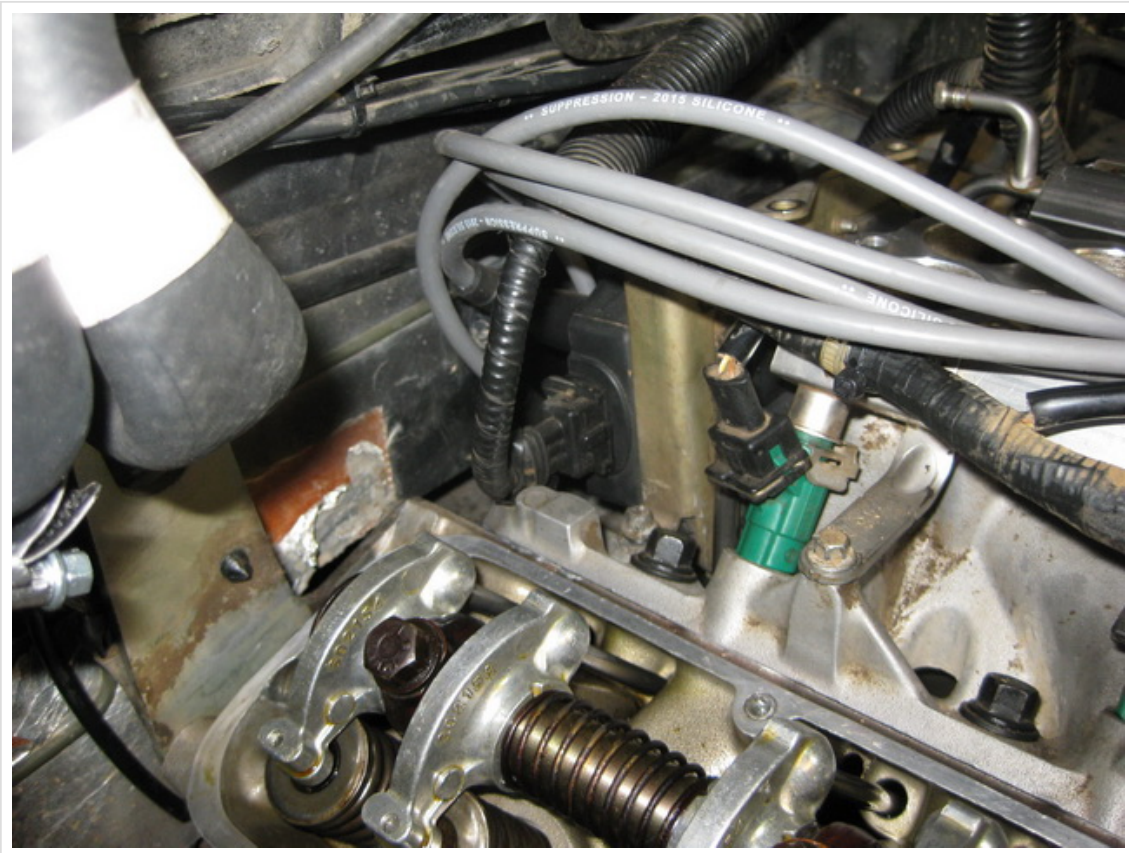


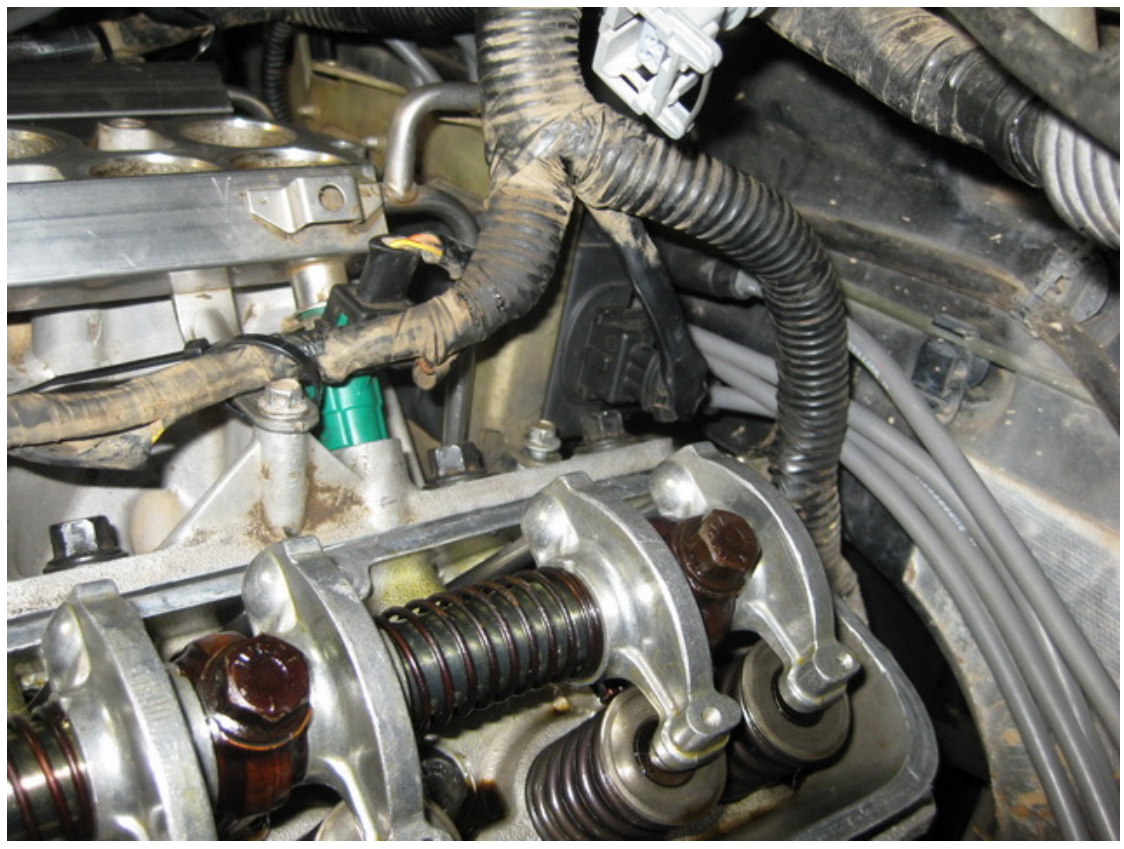
Connect Injector Multi-plugs.



Position Coils but do not tighten up lower bolts yet.

Connect Multi-plugs to coils.





LH ROCKER COVER

Fit the rocker cover gasket with a light coat of high temp gasket goo, and re-fit the rocker cover.

Fit new bolts and progressively tighten to 7Nm (5.2 lb.ft).

Insert dip stick tube and secure with screw.

Connect HT Leads and secure in clips.



RH ROCKER COVER

Fit the rocker cover gasket with a light coat of high temp gasket goo, and re-fit the rocker cover. Progressively tighten bolts to 7Nm (5.2 lb.ft).

Connect HT Leads and secure in clips.



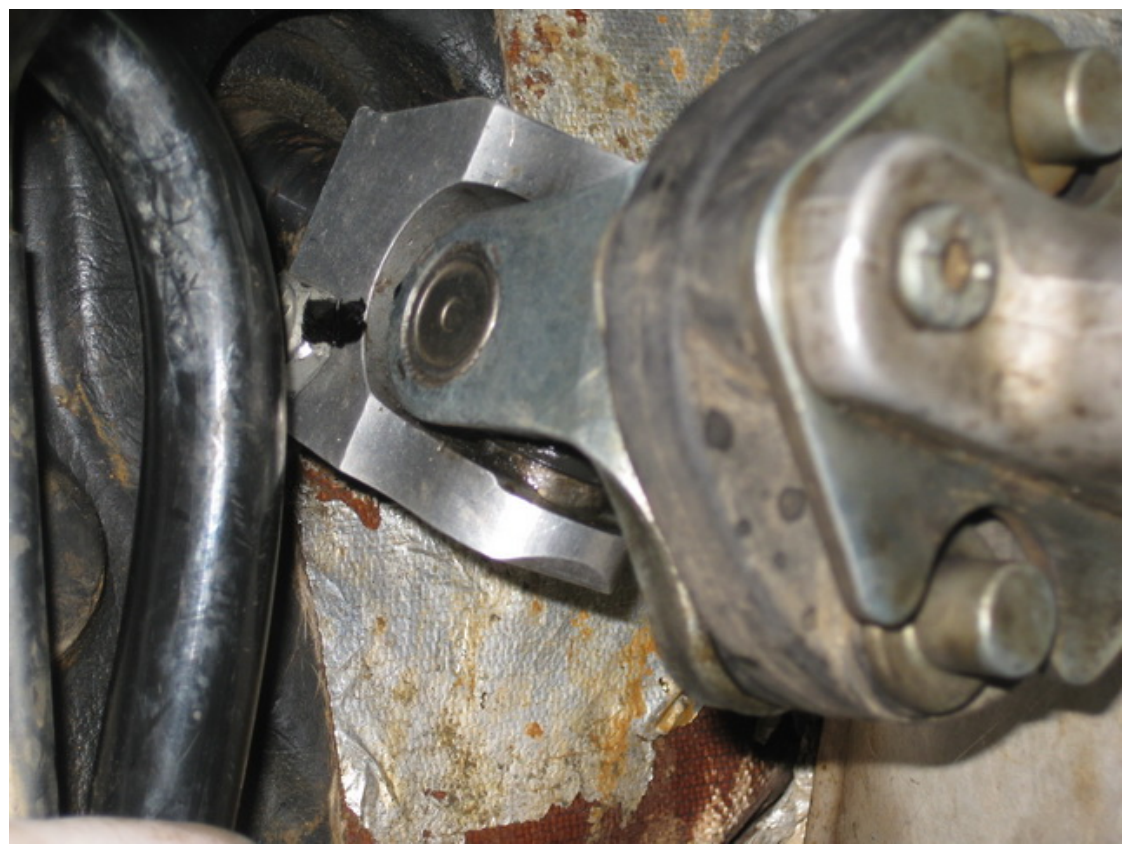
Re-fit Radiator drain plug.

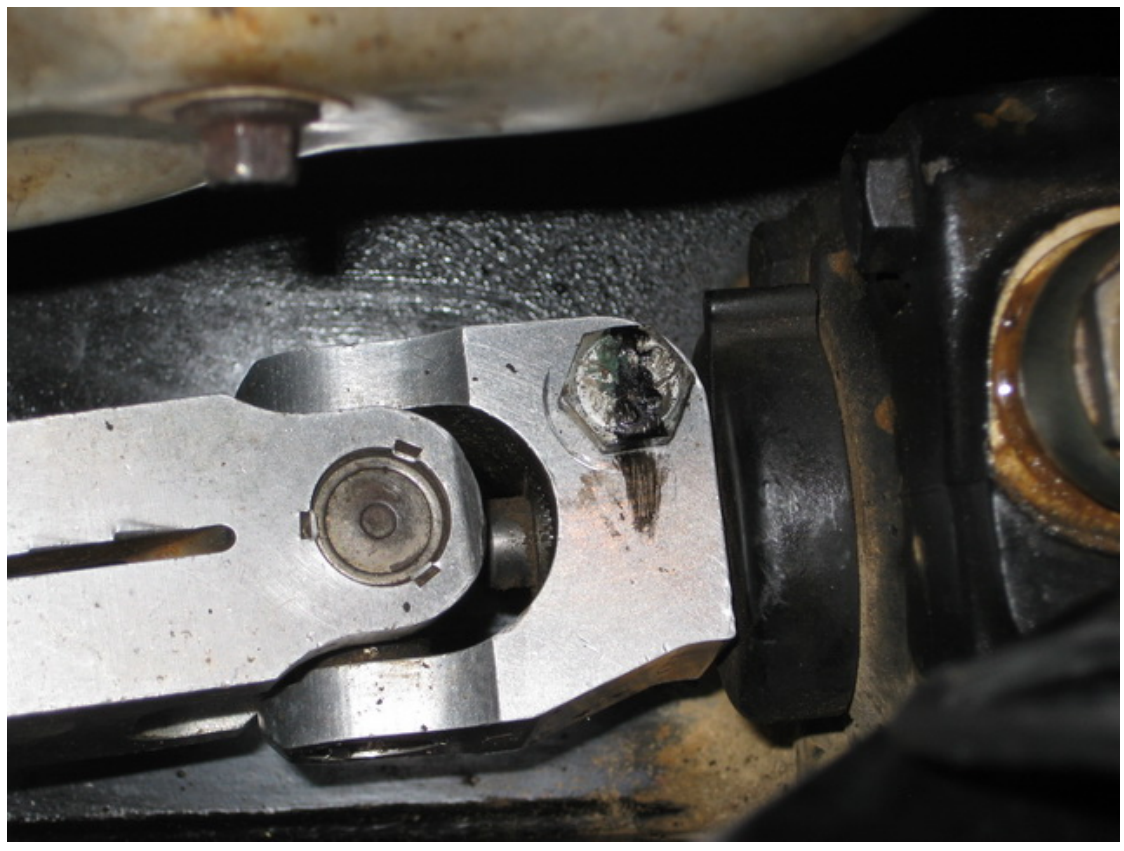


STEERING INTERMEDIATE SHAFT









UPPER INLET MANIFOLD

Fit heater hoses and secure bracket to manifold.



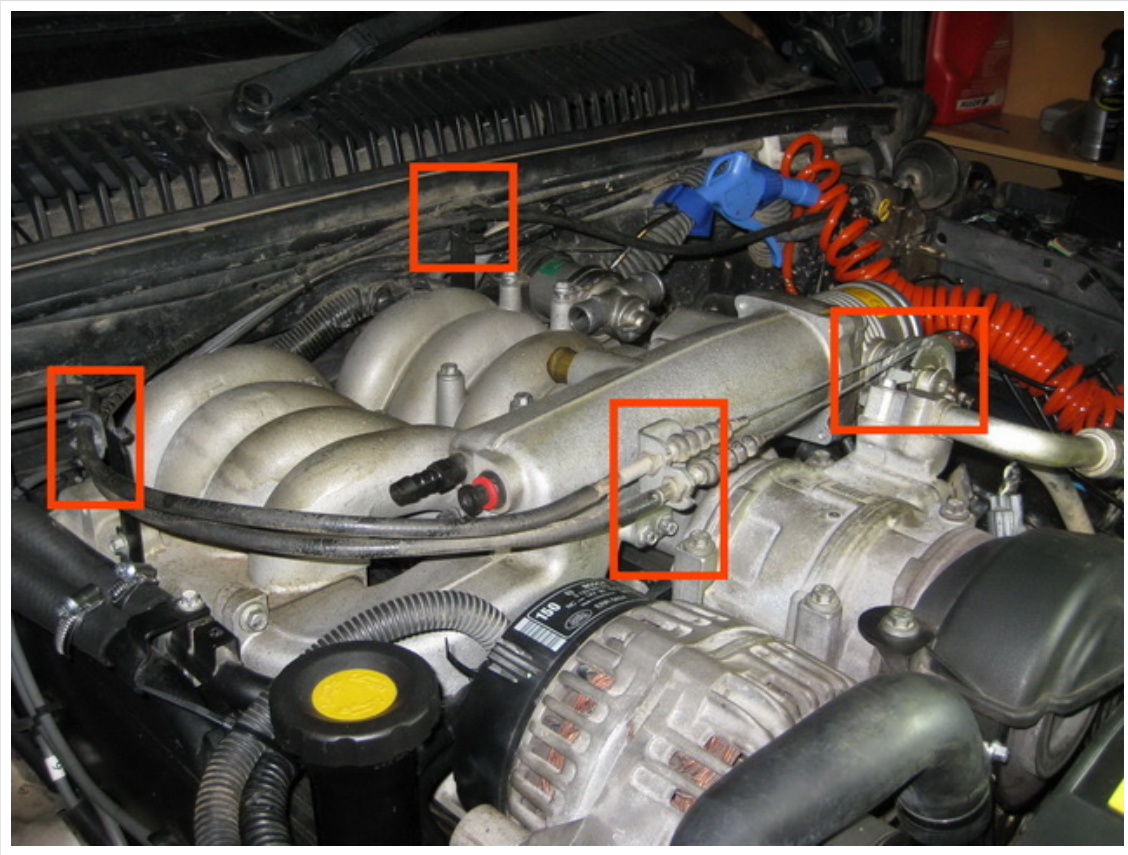
Secure alternator wiring to heater pipe bracket with a cable tie.



Position the Upper Inlet Manifold and place the bolts in position. Tighten according to RAVE.

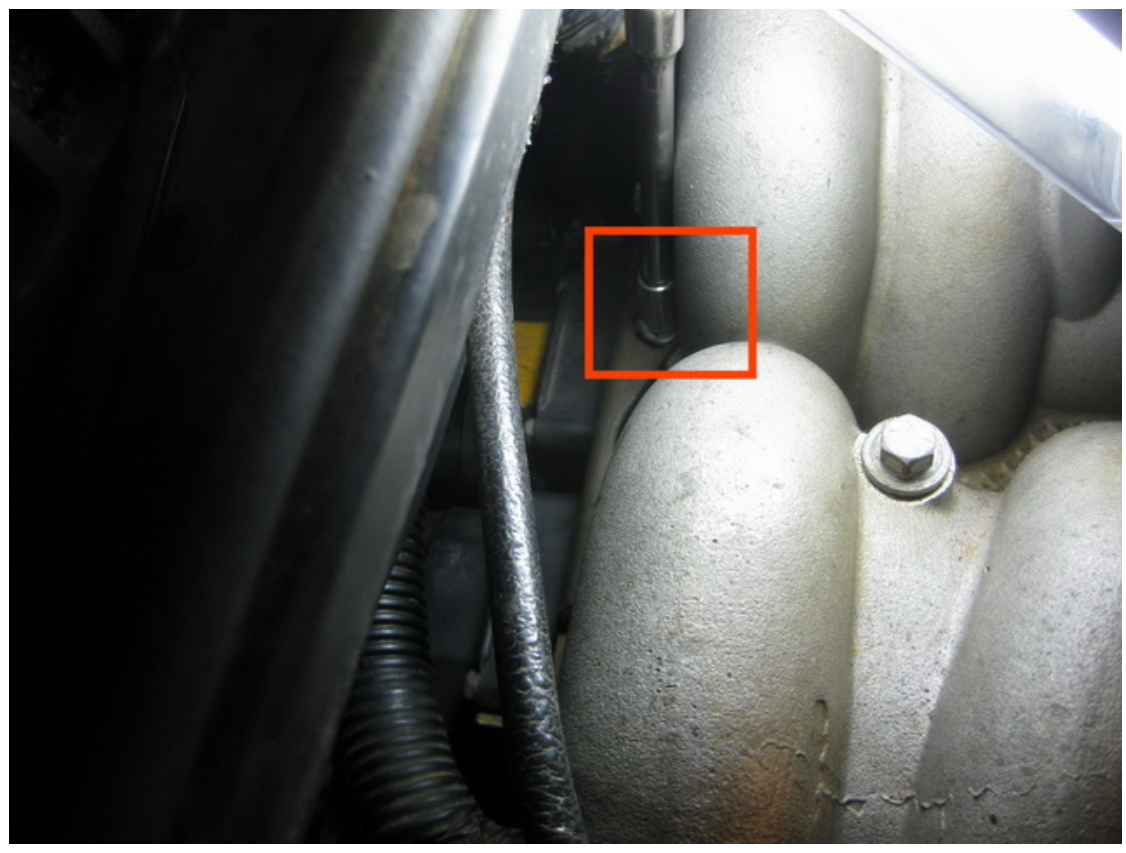


Position Throttle and Cruise Control Cables and secure.

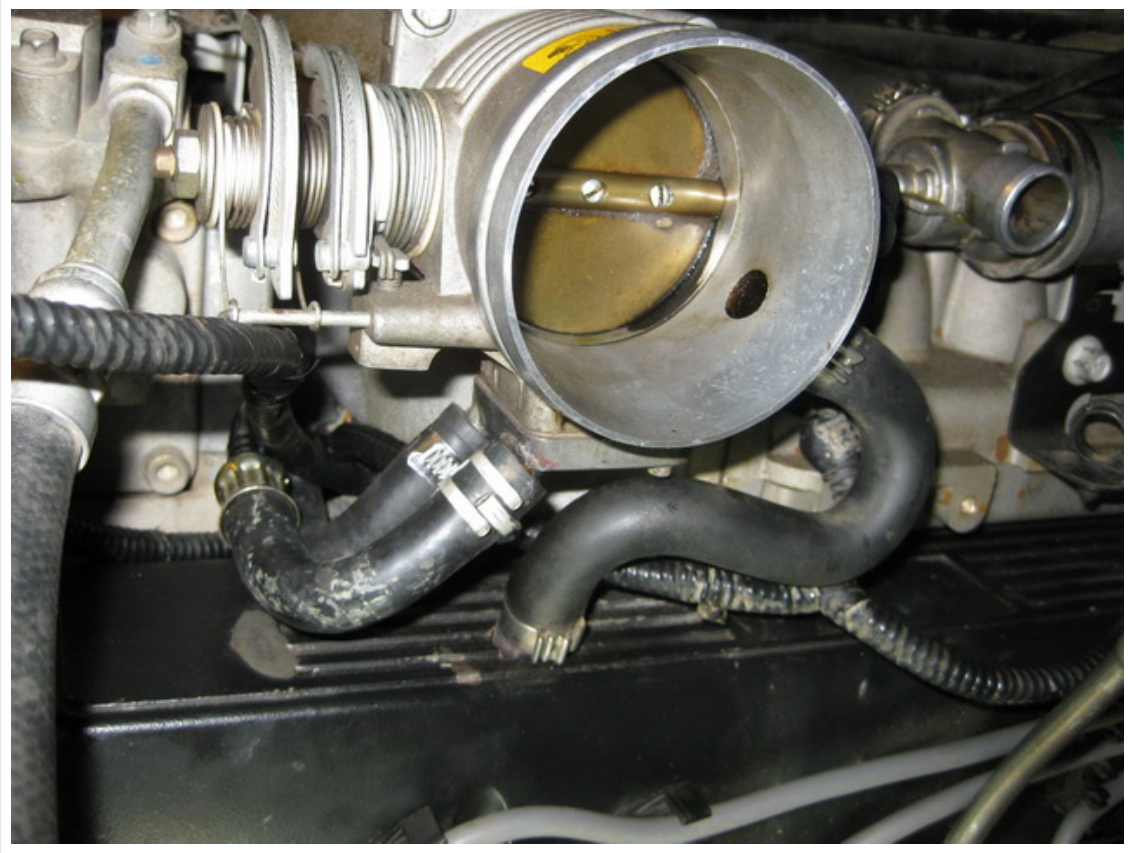


Secure breather and EVAP hoses.

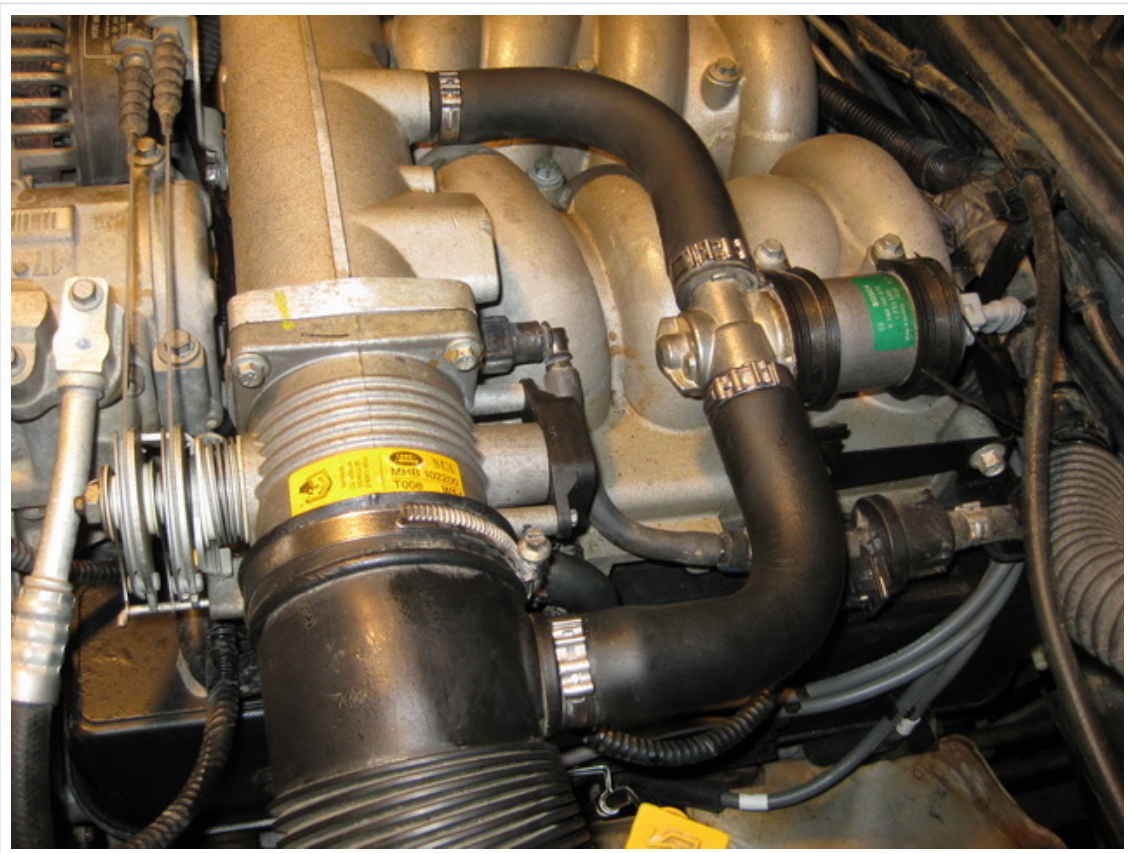




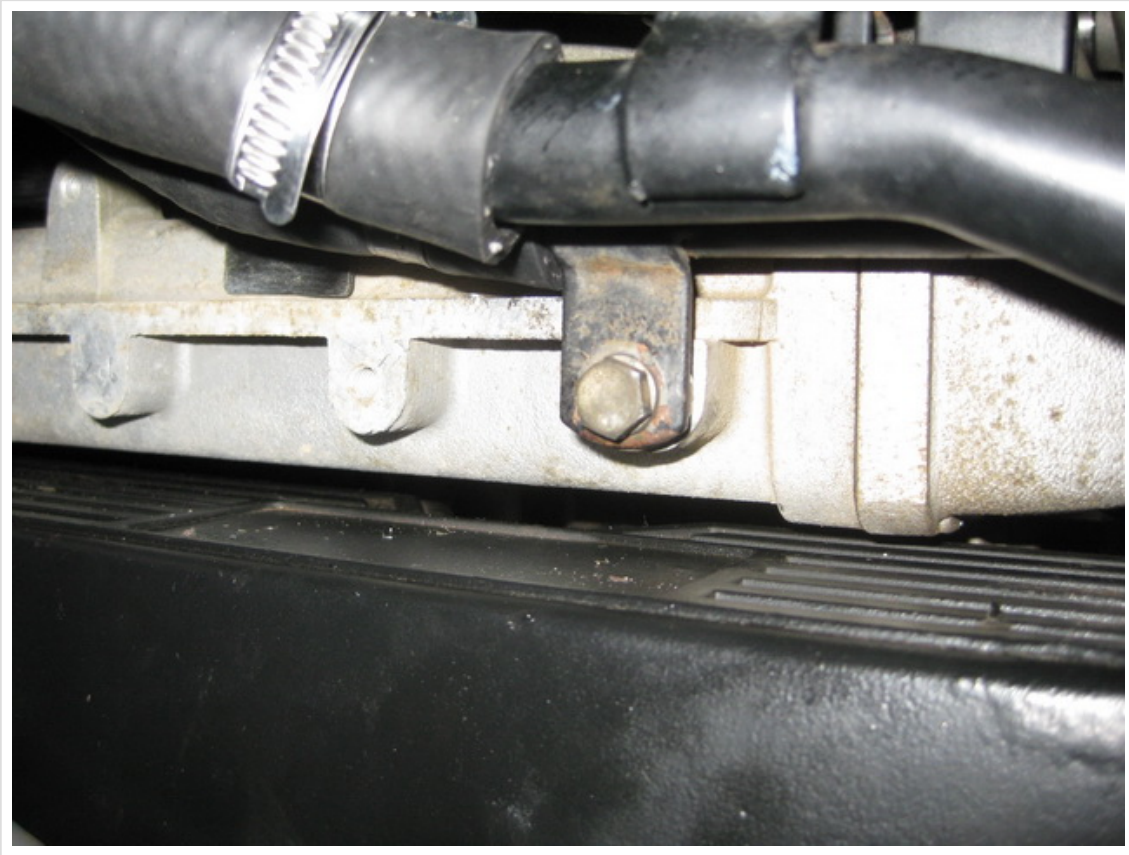
Connect Throttle Body Hoses.



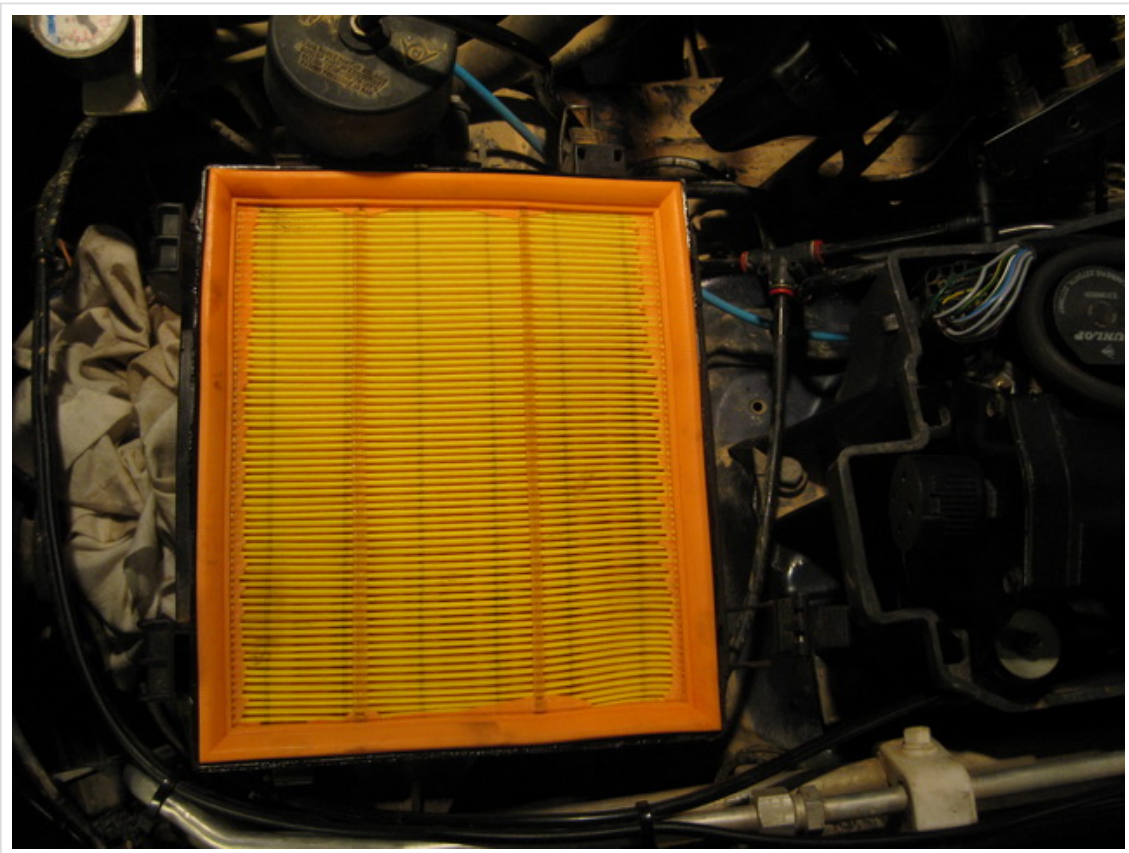
Reconnect IAC hoses.



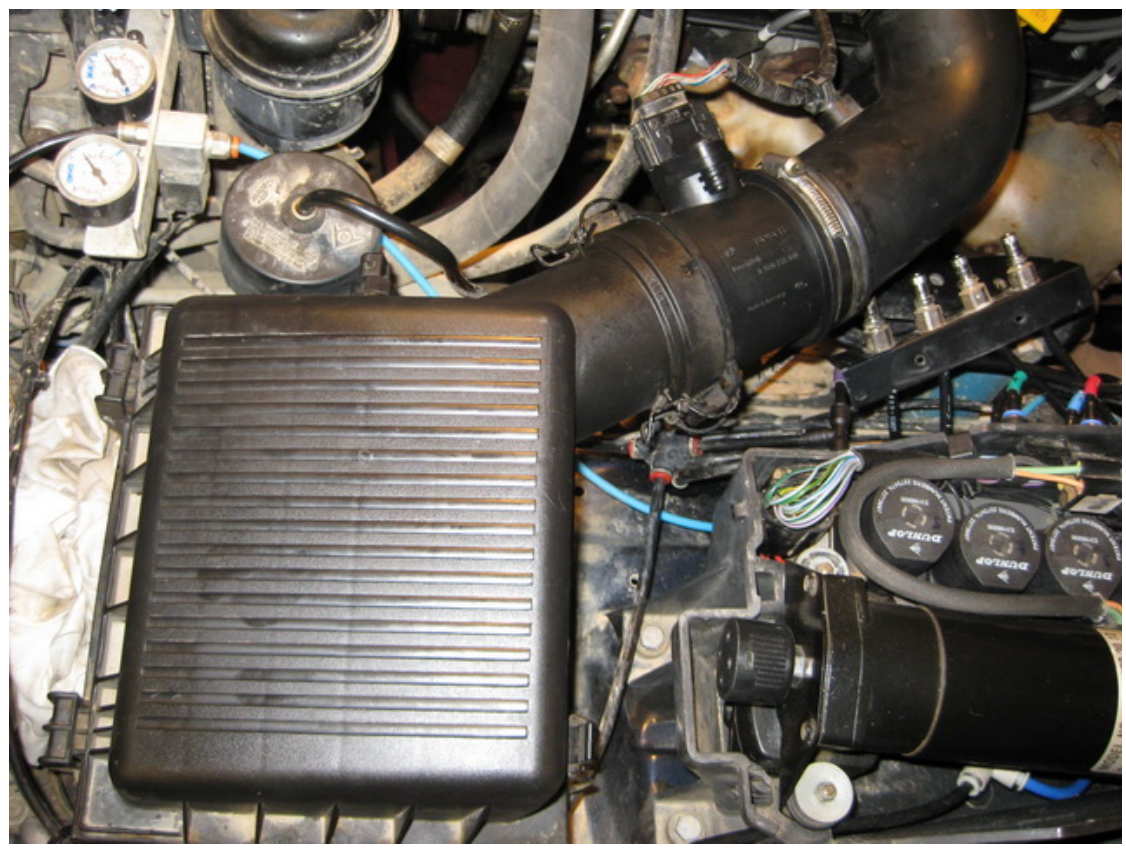
Secure Coolant Rail Bolt.



Replace Air Filter.



Replace Air Filter Box and reconnect MAF.



Should look something like this...

Hopefully there are no unexpected leftover bits.



Fill with xL of oil.

Fill Cooling System with xL of Coolant.

Replace battery leads.

Kick over engine. Expect tappet noise for approx 10secs then should quieten down.

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