

Grant's way of, AAV removal, including balance pipe removal, V12 HE Engine.

This is my step by step procedure that I used on my car, and many since.

- 1) You will need to locate/steal a LH inlet manifold end plate from a Pre HE engine, as this is the exact part needed to replace the end housing already there, and it gives you the second brake booster hose required. Alternative a blanking plate with a vacuum take off for the booster hose can be made, your choice.
- 2) Remove the balance pipe and the associated hoses.
- 3) Remove the AAV, coolant will spill, no big deal, top it up and bleed it later.
- 4) Make or locate a suitable plate to block off the hole where the AAV was, I think I used a fuel pump blank off plate, Chev?? I think, too long ago, not rocket science anyhow.
- 5) Remove the 2 rear end plate/housings from each inlet manifold. Replace the LH one with the unit decided on in step(1), and find a suitable plug to block the hole in the RH one where the balance pipe once connected, after the metal sleeve is removed (simple). I used a core (Welch) plug from Repco (25mm I think), with a smear of JB Weld to seal it. Refit the RH plate. The RH could be done in situ, your choice.
- 6) Since I do not have cold start injectors (who does anymore), I used the holes where they once lived, and inserted by push fit 2 pipe spigots (8mm ??), JB Weld sealed, and then 2 X 8mm hoses of the EXACT same length to go from them to the rear of the fuel rail where a "T" piece is used to connect the vacuum line to the ECU with these 2 hoses, you now got vacuum to the ECU.
- 7) Purchase some suitable brake booster hose, and a "T" piece, and connect the RH and LH manifold spigots with this hose, which supplies vacuum to the brake booster, and draws it from each manifold, instead of from the RH only as before.
- 8) Go to the 2 throttle stop screws, and undo the locknuts, and "open" the screws 2 flats for now. This is now your idle adjustment, and must be done equally on each side to maintain the balance, simple again. **DON'T FORGET HOW MANY FLATS YOU MOVE ONE SCREW, COZ THE OTHER ONE MUST BE DONE THE SAME.** By turning these 2 flats each at the start keeps the balance, and will be close to what you need, so later on when idle speed needs to be set, each screw will be turned in or out the same number of flats (or part flat) to keep the balance, whilst setting your desired idle speed. The throttle rod setting you took so long to get right, is now Bugga up, bad luck, set them again, you will do this many, many times before the night is done, trust me, you will be an expert at the end.

8a) Clean all that black “gunk” from the throttle discs, you will need to keep these clean from time to time, coz the engine will idle like crap when it starts to build up.

9) Start it up, be a devil, have a go, it may run slow, you may have to feather the throttle to keep it running, I did not, you got no cold start air yet. Let it warm up. Check it for leaks etc. Reset the throttle disc screws (equally) as required to achieve the idle you want, HOT, lock up the screws, reset those rods again.

Now the tidy up, boring, yes, but it must be done.

The air hose from the distributor cap is now not connected, and you got a BIG hole in the backside of the LH air cleaner housing, mmmmm. find a piece of 8mm (5/16”) tubing, steel, copper, whatever, and shape it to go thru this big hole and end up just short of the inlet throat, secure it to the inside of the backing with RTV, or Araldite etc, coming out the big hole about 1” so that the loose hose can attach to it, and you now got draught air for the dizzy cap breather. Fill that big hole with RTV, done, finished, have a beer or 2.

COLD START AIR FIT-UP.

This thing needs extra air at cold start, nothing new there, so does every car.

I used 2 of the valves that are fitted in the back of the RH air cleaner housing, coz I got rid of that 15 minute timer thingy years ago, that gives you one, and found a second solenoid, no idea, just found it, or stole it mmm. Anyway, I fitted them up under the inlet manifolds, they do fit, you cant see them, and ran a hose from the inlet side of each, to the back of the air cleaner housings, there are hole there to use if you look (outside the square thinking helps), and if not, just drill some, easy. Intake air to the solenoids is not that critical, it could just as easy be air as it is under the bonnet, they are switched on for such a short time, I don’t believe the engine will suck in any dust at all, your car, your choice. The other end of the solenoid needs to go to a vacuum source. I had 2 of the hollow bolts used for the fuel regulator vacuum hoses, and replaced 2 of the bolts on the rear of each inlet manifold with them, simple again. The electrical connection was simply a relay (alongside the washer bottle), with a wire into the car that switched the earth circuit of the relay, no live wires in the car that way, and I simply switch it on to start the car, run for 1 minute, switch off, and the relay is “ignition” live, so it wont work without the ignition being on. This gives me about 800rpm stone cold in winter (1c or less), and the engine quickly settles, coz without an engine driven fan, warm up is quite quick.

One of these days I will change that to a thermo switch, and a timer relay set up, but I have thought about it for 10+ years, cant rush these things.

Go for a drive, see if the idle needs to be reset to suit your needs, most do not.

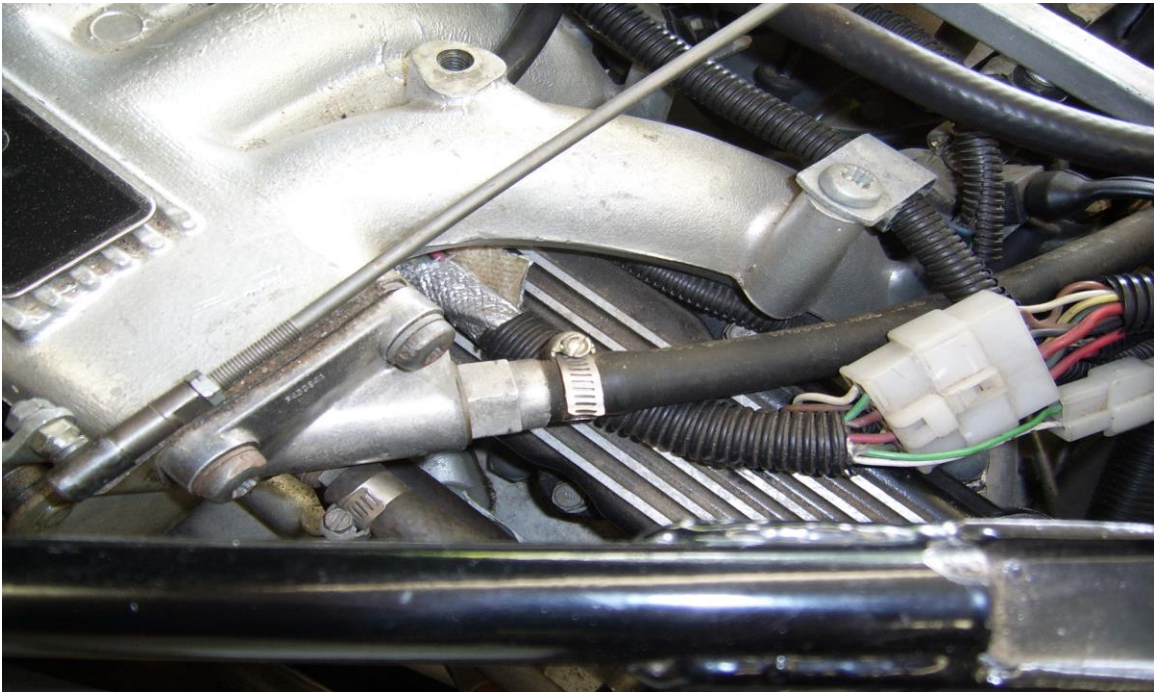
The “snaps” are attached below in some order related to the scribbles above. There are NO snaps of the cold start solenoids I fitted. The 2nd to last snap is as good as I could

find, and I placed a White square around the vac end of the LH solenoid, jut to give an idea of what the words may not clarify.

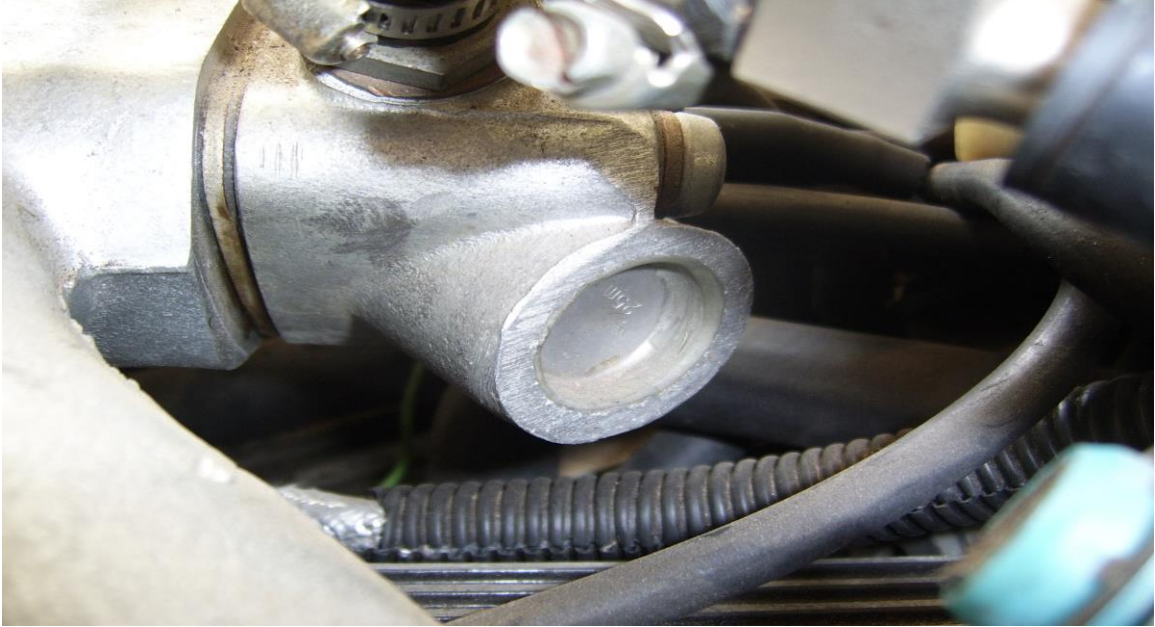
The last snap also with the White square, is the “air intake” TO the LH solenoid.

In the 10+ years this has been on my car I have NOT touched the throttle screws, once the time was taken to set the idle I wanted way back then. Nothing moves, how can it, the solenoids are ON or OFF, no in-between, no vacuum leaks. The only maintenance is to clean the “gunk” from time to time, and that is usually when I change the oil and filter, no big deal.

If any further clarification is required, you know where to find me.



PreHE end plate on the LH inlet manifold



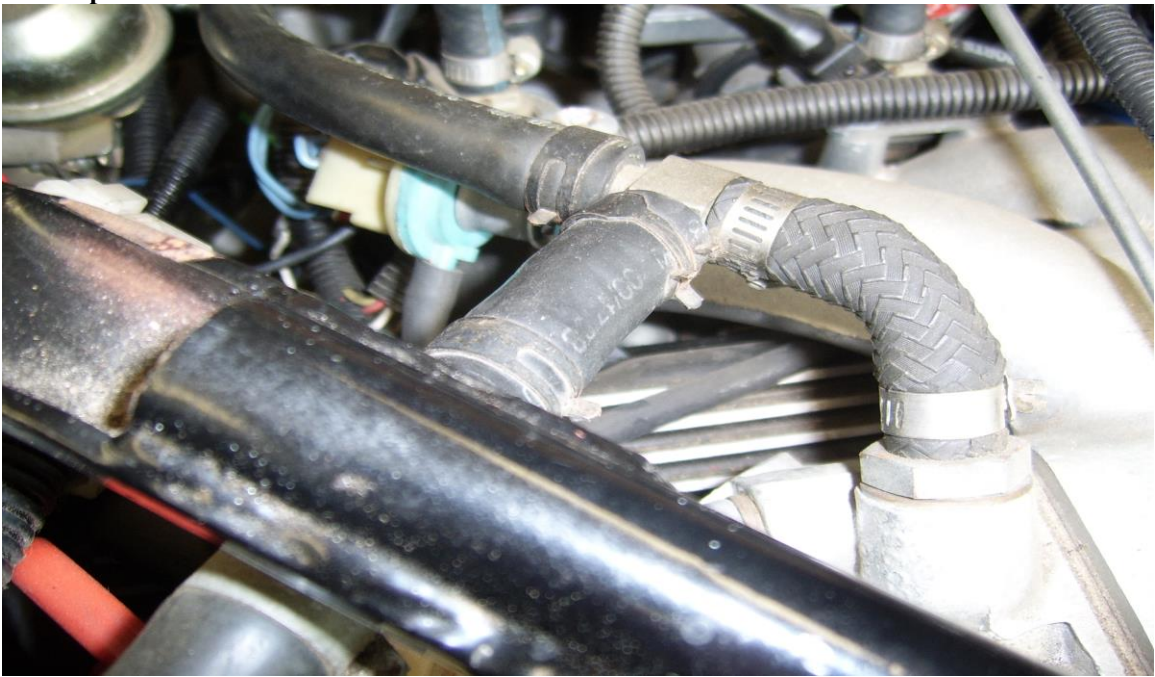
RH end plate with plug inserted



ECU take off point



ECU T piece



Booster plumbing T joiner



Inside the LH air filter showing the dist cap vent pipe



Figure 1 Just showing 1 cold start solenoid inside the White square



Figure 2 Solenoid air intake.