

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

The PreHE version is included at the bottom.

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), 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 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 from the distributor 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.

UPDATE 1/5/2020. A Supplementary Air Valve from Jaguar EAC7340, is a made to use for this application. Thanks to Greg in France for that info, as that is what he has used.

I had on the shelf, so 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. 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. I used the spigots that the Overrun Valve hoses attached to, since the Overrun Valves were deleted long ago. 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.

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

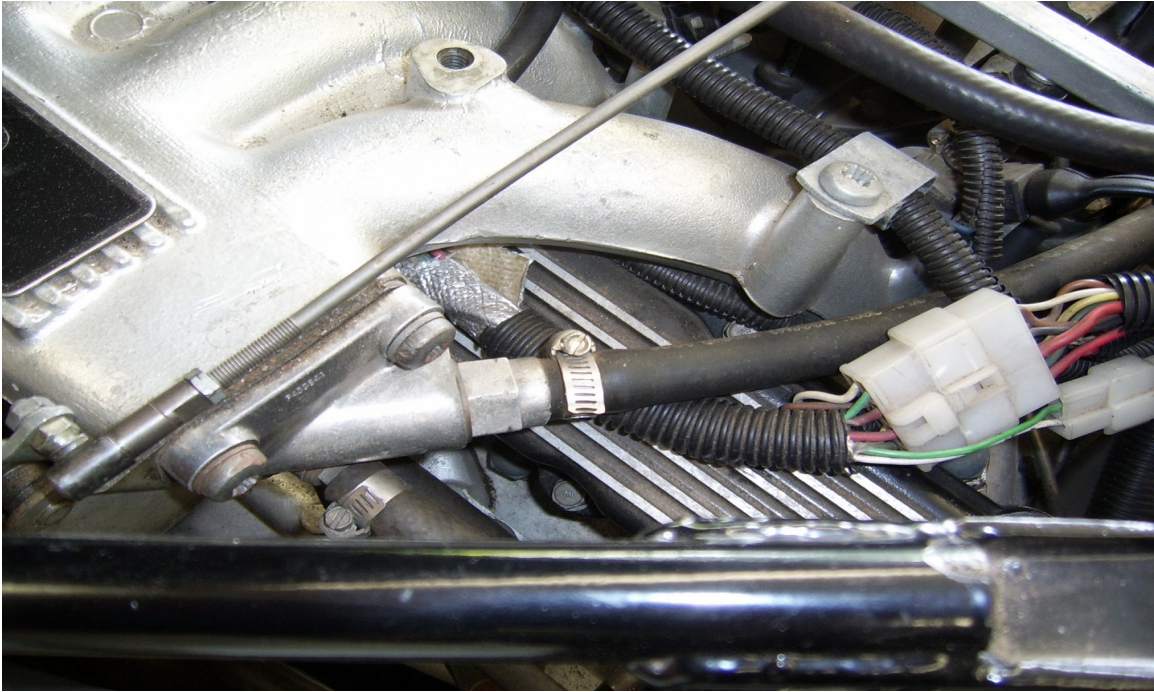
The “snaps” are attached below in some order related to the scribbles above. There are NO snaps of the cold start solenoids I fitted. The 2nd to last snap is as good as I could

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.

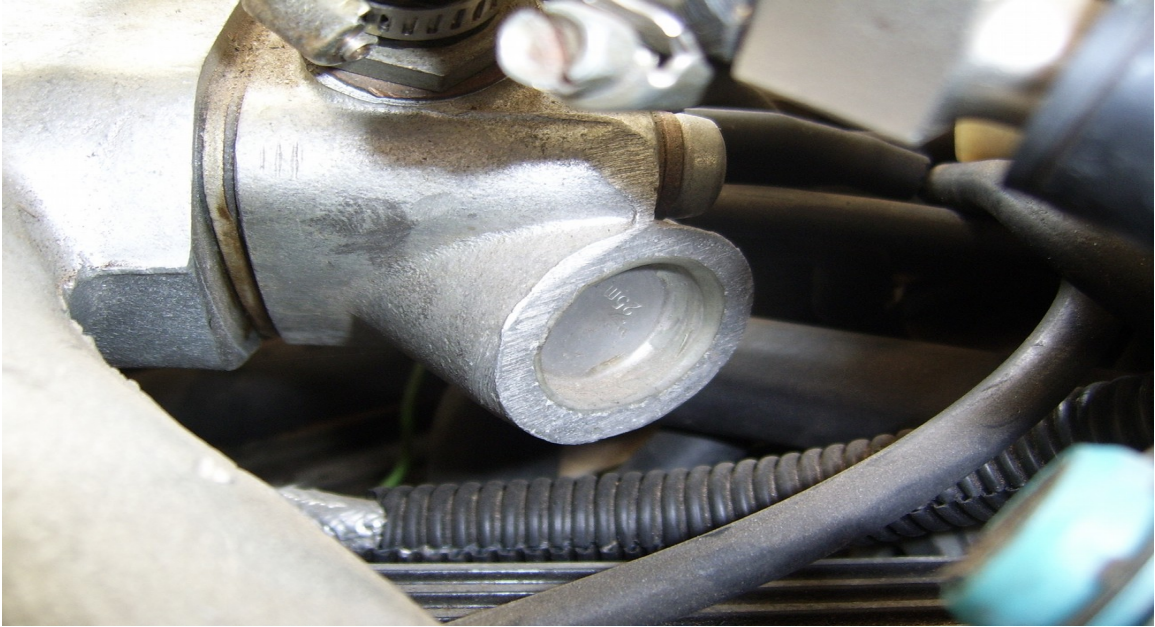
The last snap also with the White square, is the “air intake” TO the LH solenoid.

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 with brake booster attached.



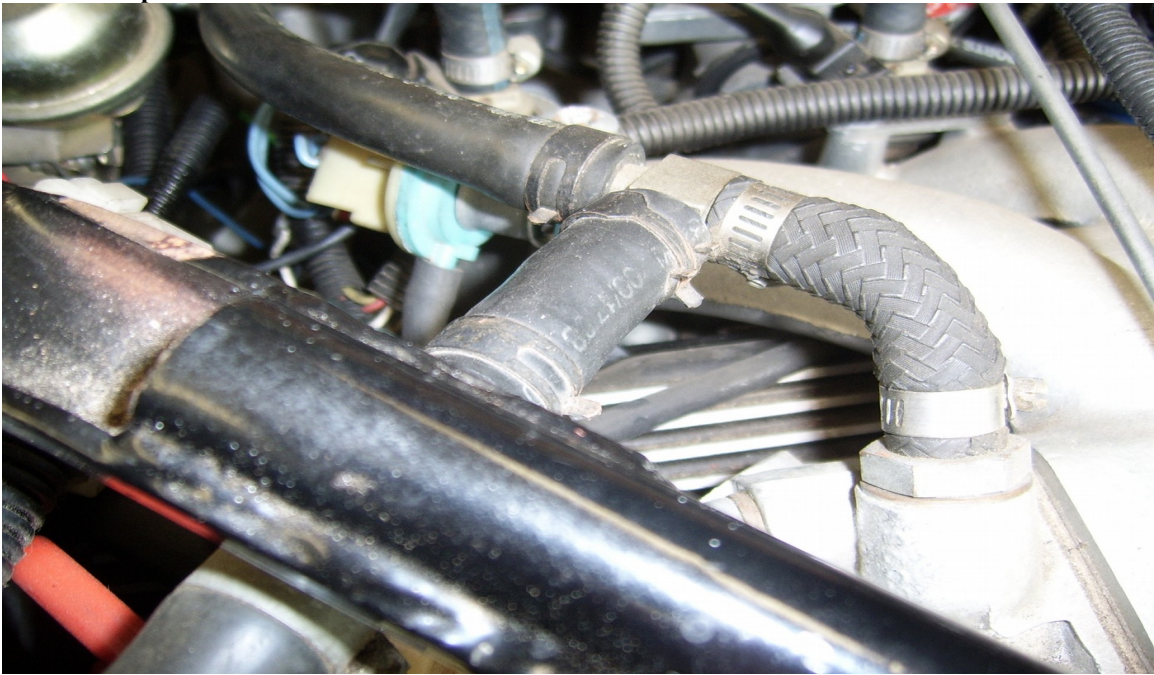
RH end plate with plug inserted



ECU take off point RH manifold.



ECU Vac T piece at the rear of the fuel rail



Booster plumbing T jointer at the rear of the RH Inlet manifold.



Inside the LH air filter showing the distributor cap vent pipe. A little “rough” looking, but was tidied up later, but forgot to re-snap it.



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



Figure 2 Solenoid air intake.



RH general view of my engine, The alterations are clearly visible.

Jaguar PreHE Balance pipe/AAV delete.

Like the HE write up, the Balance pipe and AAV can also be removed from the PreHE.

The differences primarily are:

- 1) The PreHE has 2 Brake Booster take offs, one at the rear of each Inlet manifold, so there is a “balance factor” already present.
- 2) There is a vac hose linking both Inlet manifolds, with a “T” in place for the MAP Sensor take off.
- 3) The AAV is connected to the Balance pipe arrangement by a double exit “T” piece.

You will need an electric solenoid, just like the unit mentioned in the HE Doco, that can be used for extra air for cold start idle stability.

There are many various solenoid operated air valves in the Auto Industry, most EFI engines have them, so your “outside the box” thinking will help greatly here. I used the Air Valve that sat in the RH air cleaner backing plate. Others have used the XJ40 style Extra Air Valve, and I have heard of BMW air valves, so a decent wander around any wrecking yard will find more than one option.

- 1) Remove the balance pipe, and the hoses that travel to the vac spigots under each throttle body.
- 2) Cap those 2 spigots.
- 3) Remove the AAV, and make a suitable plate to blank the coolant hole.

Now the fun begins. You will need a vac port, of about 8MM ID (or 2 X 5MM) for the Cold Start valve to attach to.

This can be found many ways. I used the 2 holes that once housed the Cold Start Injectors. Fitted a spigot, JB Weld is your friend, and ran 2 equal length hoses to the rear of the engine, where a T was used to join them, and the 3rd spigot of the “T” went to the cold start solenoid, simple. This also provides another “balance” effect for the engine. Wiring that solenoid is simple, using a switch conveniently placed inside the cabin (mine was on the under dash knee bolster cover, alongside the dash light dimmer), and I used that switch for EARTH switching, thus keeping power wires away from entry holes that may chafe them over time.

Setting the Idle Speed.

There are 2 idle stop screws and locknuts, one on each throttle body. Slacken the locknuts, turn the screws so the discs are closed. Now, turning those same screws EQUALLY, open the throttle discs idle position. I used ONE full turn (6 flats of the screw head) to get a base setting. This 6 flat count starts when the head of the stop screw just makes contact with the idle arm, so the 2 throttle discs are opened the EXACT same amount, keeping the balance of air equal. Further adjustments may be required once all has warmed up and settled, BUT, the 2 screws MUST BE turned equally. Meaning one flat of the B Bank, is also one flat of the A Bank.

Start the beast.

Flick your switch, start the engine.

NOW

It may stall, it may not, but for the initial setting up, worry not. Use the Accelerator Pedal to warm it up and let it settle down. If you need to manually keep it running after about a minute, I suggest opening those stop screws EQUALLY by 3 more flats.

Once its warmed up, switch OFF the solenoid, and observe the idle speed. It may be too low or too high, so adjust as needed. **Remember to adjust those stop screws the same number of flats for each side.**

Once the HOT idle is sorted, lock the 2 adjusting screws (just firm, not Rock Ape tight) shut it down, DRINK BEER. Let it cool down, and I mean really cool down. Start it again, using your installed switch, and observed the Cold Idle Speed.

If that idle is too slow, and the engine is trying to stall, you need either 2 of the same solenoids, or a single larger bore solenoid.

Mine all idled at about 750ish RPM when cold, and 650ish when hot.

This is the fiddly part, but once sorted, it requires NO maintaining. The idle screws cannot move, the solenoid/s are a fixed value.

In the backing plate of the B Bank Air Cleaner is a large open port, where that AAV Inlet hose once lived. This needs to be filled in. I used a standard Core (Welch to some) Plug, and sealed it with RTV, job done.

I suggest a periodic look at the blanking caps, particularly if you have used rubber style caps, as they will perish and leak vac, probably good for 5 years or so.