

## V12 Alternator Upgrade.

This is to remove that “lovely” piece of rubbish Lucas alternator we got landed with when the car was new. I don’t like Lucas, I used to work for Lucas, I still don’t like Lucas.

My HE had the traditional 75amp thing down on the RH side of the engine, it barely kept up then, but as it has aged, and electrical loads have changed it has no hope. It stopped charging soon after purchase, so the dealer fixed it, replaced the internal regulator actually, which lasted about 3 years, and then strange lights on the dash appeared, NO, not UFO’s, bugga, The Prince of Darkness has taken up residence AGAIN.

Read “the book” great, but no bloody good down here, as no-one had heard of the alternatives offered, mmmmm.

Bosch is the go in the “downunder”, and rules supreme.

Something that is worth noting is that all the alternator manufacturers out there make a range of alternators, which vary considerably, BUT, ALL are attached to an engine by a bracket/s. Rocket science, NO.

For some strange reason I was arse up under the bonnet of a 4ltr XJ40, and noted the alternator, which is a Bosch 110amp, and multi rib belt drive, BUT the front plate/mounting configuration was the same as the V12.

To explain this “strange configuration” thing for you all.

- 1) Look at the alternator front on, that means look towards the fan.
- 2) The V12 unit is “suspended” by the pivot lugs, which are at what we call “12 o’clock”, and the adjuster lug is at about “5 o’clock”.
- 3) The XJ40 unit is mounted with pivots at “6 o’clock”, with adjuster lug at about “11 o’clock”. SAME CONFIGURATION, just upside down. Think about it, do what I do, DRINK some more, turn it over in your mind, turn it some more, you will soon realise that the V12 unit IS NOT SO SPECIAL, it is just an alternator with specific lug configuration just like any other car.

The ribbed belt pulley is no big deal, undo the nut, remove the pulley, replace it with a standard “V” pulley. Bosch here sell them separately, or steal one from the wreckers which is the same, or close to, the diameter of

what you have now. Strange thing I found was that the Bosch alternators all seem to have the same shaft size, how sensible, must be an Aussie thing. There is a catch, always is. The European Bosch are different shaft diameter, and vary elsewhere too I bet, so if you are nicking a pulley from a Benz, SAAB, Volvo you may get it wrong, MAYBE.

Made a phone call to my Jaguar parts guy, and he sells 110amp Bosch alternators for the V12, whoopee, ex XJ40 4ltr, how strange. He sent me the alternator and thru bolt, all for \$300.

Remove your old alternator. If you have done it before, go have a drink whilst I explain to the unknown, hahaha.

Disconnect the battery.

The alternator will NOT go out through the bottom, YES, it looks like it will fall out, but mine would not, so go from the top. Remove the air pump, or idler pulley, AND its metal bracket. Loosen the alternator belt from below, and remove the belt, then remove the adjuster thingy completely, it will need the threads cleaning, and generally tidying up. Now remove the nut from the front of the alternator through bolt, and slide the bolt out towards the rear of the car, and twist the alternator so as to get at the bolted on cables. **YOU DID DISCONNECT THE BATTERY, MMMM.** Lift the alternator out. It will still be a juggle with the RH radiator hose in place, and the trans cooler hoses/pipes sitting right there, but it should/will come out.

Remove the alternator bracket from the engine, wash all that oily crap out of there whilst all this is off, do it right, don't be lazy.

The new alternator will more than likely have a 10mm through bolt, where the original was an 8mm bolt. Get a nice SHARP 10mm drill bit, some silicone spray, and simply drill the hole to 10mm, drill it SLOWLY, with plenty of spray to prevent the drill bit binding in the aluminium bracket.

Refit the bracket to the engine.

Slide the alternator into place, slide in the through bolt, fit the nut, do not final tighten.

Refit the belt, a new one would be smart, and refit the adjuster thingy, and tension the belt, lock up the tensioner, then final tighten the top bolt. Attach the bolted on cables, plug in the “exciter wire”.

Refit the metal bracket and idler, or air pump, and refit the a/c belt.

Now you got a good supply of voltage, BUT, you still got crappy old, insufficient wiring taking it to the supply post on the RH side of the engine bay. There is always something, trust me, it's a motor car.

You currently got 2 heavyish cables going from the alternator to the starter solenoid “top nut”, and then via the battery sized cable to the battery post on the RH firewall. These 2 wires go through a metal tube that is attached to the exhaust manifold. I decided to leave them be, they were in good condition (could not be Lucas wire), but I added 2 additional 6mm (50amp each) wires (red in colour) from the alternator bolted terminal direct to the +ve post on the RH side of the firewall. These wires run up the RH chassis rail (wrapped in conduit), and attach directly to that +ve post.

I also fitted a 50amp wire (black in colour) from the alternator casing direct to a chassis earth that was nearby.

Connect the battery, start the beast, check the charge rate at the battery, load the system with whatever electrical stuff you care to switch on, and note the new readings. Mine sits on 14.2 unloaded, and 13.4 with 2 thermo fans on, a/c on, hi-beam on, cabin fans on high, and engine idling at 750 in “P”. The dash gauge is close but still of female extraction and inaccurate, so please use a digital volt meter at the battery.

This was all completed in one afternoon with a BBQ included, so it is not as daunting as you might think.

I did not photo the journey, as I never thought anyone else would be the slightest bit interested in all the Jaguar work I have done since 1968.

If my verbal scribe above is unclear, please ask me to clarify. It is that simple.