

How To: New aux belt on the ES9J4S V6 engine

Tools needed:

- Socket set with the usual selection of sockets and small torx pieces
- new Auxillary belt ~£18

- A 6-8 " ratchet with either a 3/8 head and a short (1" long) extension or a 1/2" head and short (1" long) 3/8 adapter.
- side cutters

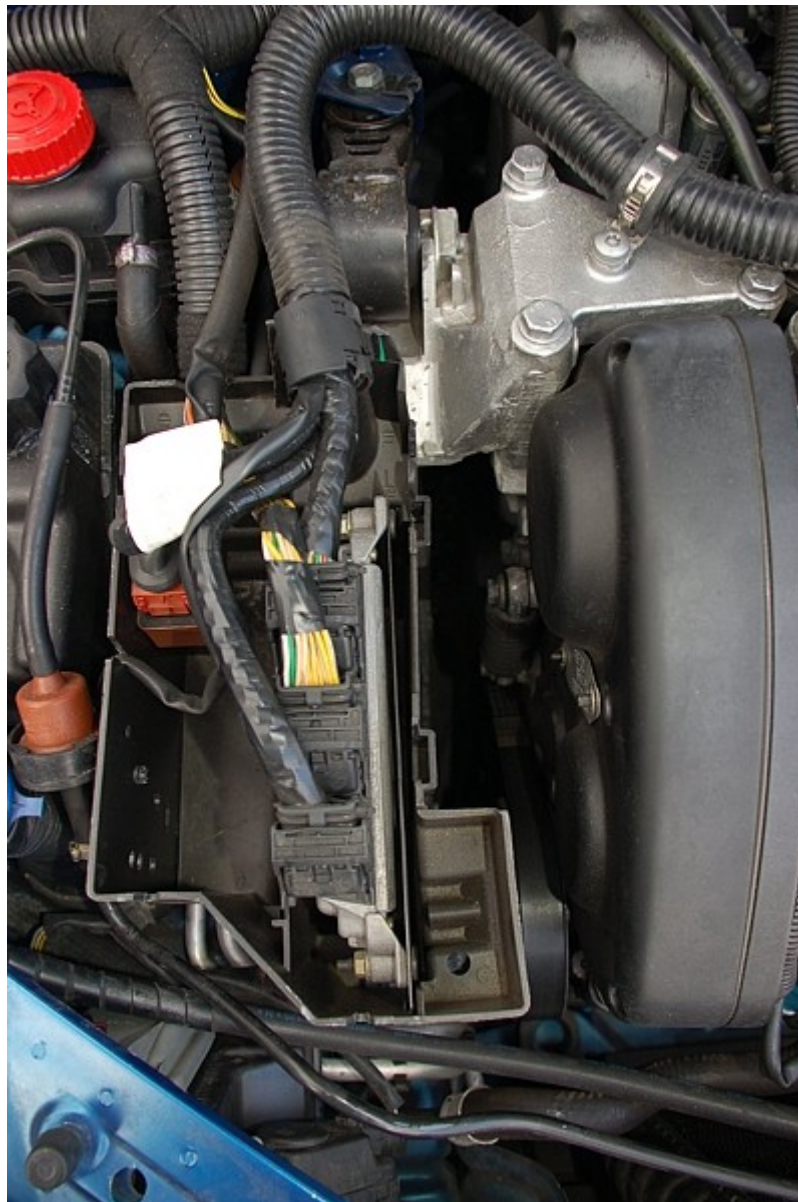
Firstly, disconnect the battery.

The Auxillary belt is on the left end of the engine as you face it (C). First thing to do is get rid of the ECU box (A) as it is right in the way. Unclip the narrow hose from above the radiator (B) right through to the air box to improve movement.

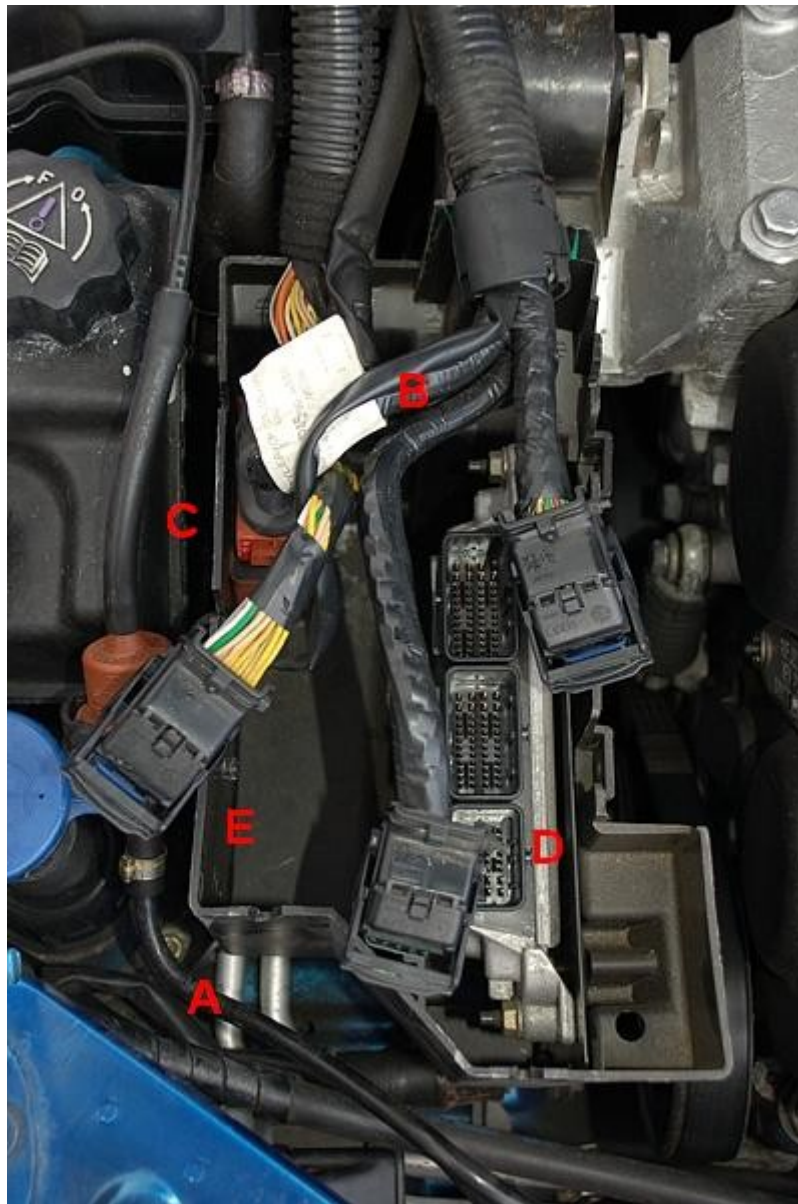
Lift the top off the box.



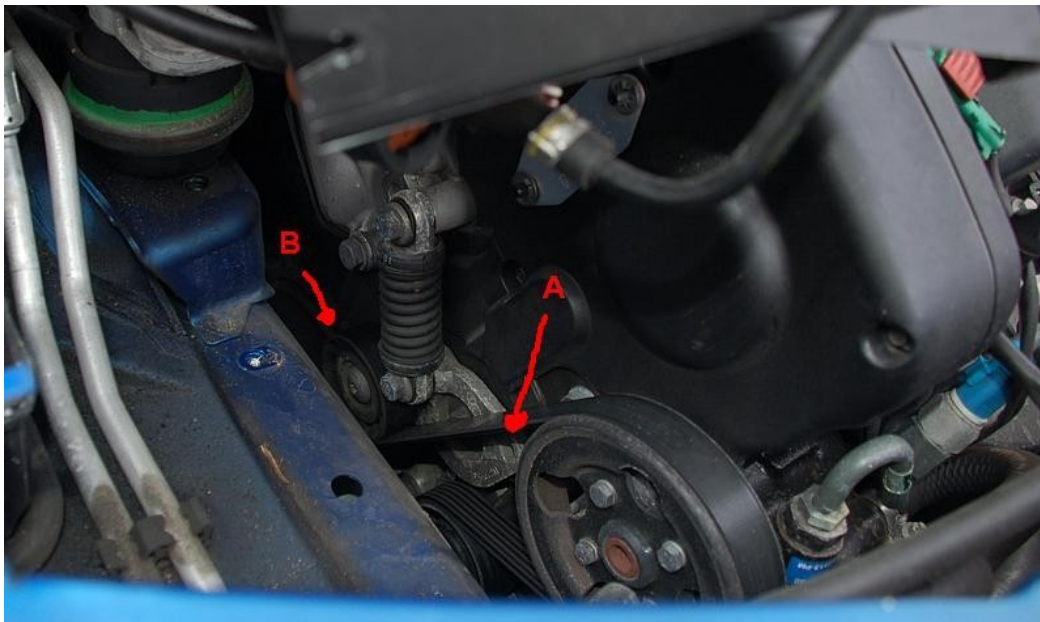
You should now be able to see the ECU and some relay (? the ruddy coloured thing). Both need to come out so you can remove the plastic box they are in.



- Unclip the electrical connectors from the ECU



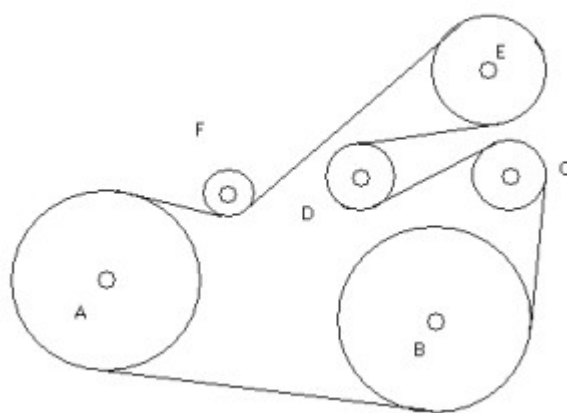
- the ECU (D) should just lift straight out
- using the side cutters, cut the cable tie thing holding the ECU cables to the box.
 - Undo nuts A and B (in the bottom of the box) with an 11mm socket
- push the centre of pin E through from right to left with a hex key or something thin and release that un-identified hose connector from the outside.
- lift out the box to gain access to the screw on the side which is holding in the relay C. This takes a larger torx fitting (not sure which)
- Push all the cables out of the way to give a nice clean view of the belt



B is the tensioning pulley. A is the hole you need to get your 3/8 tool in. Before you start this make sure that the handle of the tool is short enough that it doesn't foul on either the top engine mount (green thing) as you rotate it or on the front of the car. It also has to be long enough to give the necessary leverage and have an extension less than about 2" (the gap between the tensioner and the body work). 1" to fit past the belt and whatever space is left between the belt and the body work.

Place the ratchet in the hole and pull towards the front of the car. It is stiff at first but as the spring fully compresses, you gain the mechanical advantage and it's quite light to hold.

Take the old belt off and throw to one side. The new belt needs to go on in the following way



F - tensioning pulley
 E - air con compressor (I think)
 C - alternator
 A+B - big pulleys on the bottom of the engine

It can be tricky to feed the new belt onto the bottom pulleys, just make sure that the grooves on the belt line up with those on the wheels. If you're not sure, access should be possible through the wheel arch.

Get the belt correctly over all the pulleys leaving the aircon till last. Take the tension out again and pull the belt over the aircon pulley.



Put all the electrical bits back the way you found them. Start the engine and make sure there are no nasty noises etc. Smile smugly about the fact you just saved yourself £80 at the dealers.

IMPORTANT

If like me you sheer off the 3/8 hole in the auto tensioning mechanism...



... all is not necessarily lost. Get the belt in position, pop your hand under the belt tensioning pulley and imagine your child is trapped underneath.

Once you've felt a few disks go in your back, the tendons in your arm ping and a thumping headache come on, you're almost there. Pull a bit harder till the mechanism becomes (relatively) light to hold and get the belt over the aircon pulley. Go inside and brag to your loved ones about what an emergency you've just avoided and point out that they should now go down the shops to buy you some beer as a reward.

If this does happen to you, you could just call the AA instead