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Range Rovers and other Big Boy Toys

The Thomas 327 is a popular compressor upgrade for P38's and is supposed to be stronger and faster than the stock LR unit. I figure that with the Arnott Gen III airbags, air locker and on-board air connector for tyre inflation I should go for something a bit more heavy duty than stock.

First of all, I used the modification instructions at Rover Renovations (now closed) and added a few steps of my own.

Important: in your eagerness to replace the old compressor with this one, don't throw the old one away just yet. You will need a few bits from it to make the new one work and fit.

8mm socket spanner.

2 or 3 sets of vice-grip pliers to bend the bracket. A bench vice would be handy too.

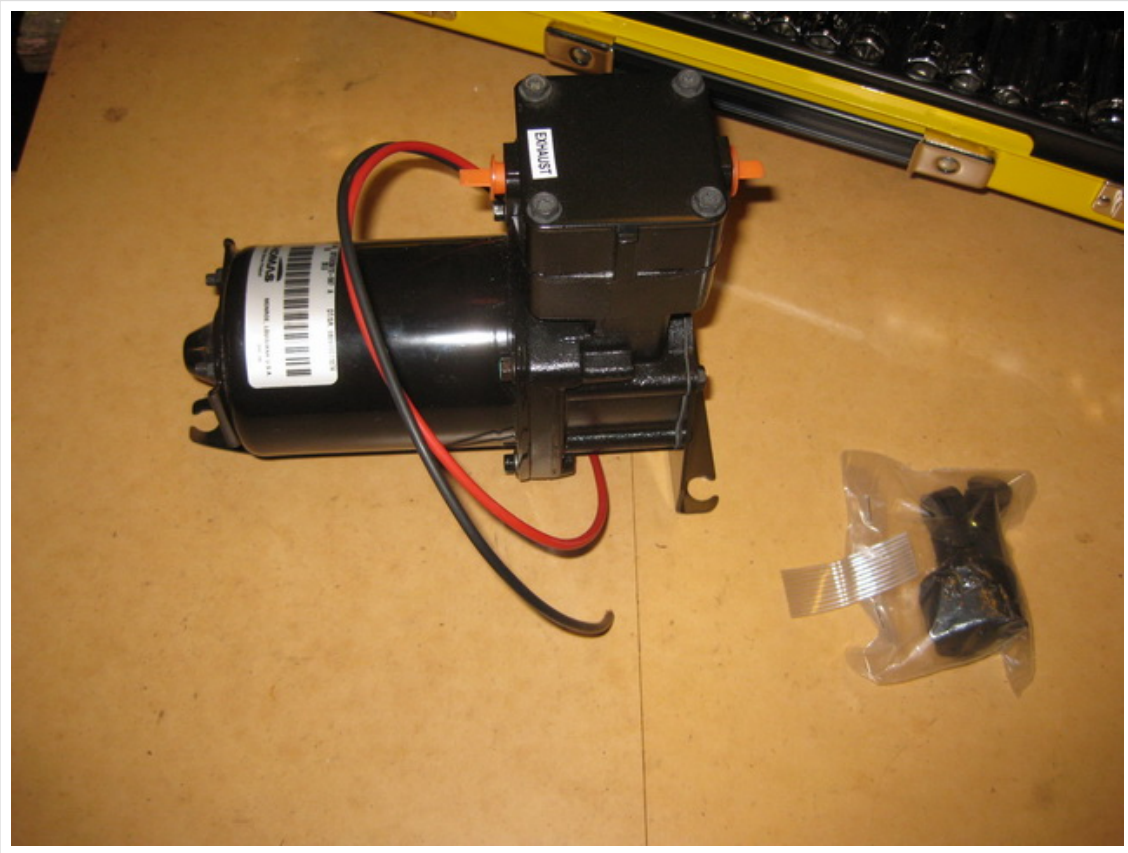
A 5.5mm drill bit and a drill.

Wire cutter/stripper, electrical joiners and electrical tape.

A handful of 5mm and 6mm washers.

Means to depressurise the EAS – software/hardware or mechanical.

This is kit that arrived from Rover Renovations. The only bits I used from the plastic bag was a rubber mount and sleeve.



Remove the bracket at the "small" end using an 8mm socket.



Gently bend the bracket so that the L is as flat as you can get it.



This is ok.



Put it back on the compressor, but upside-down from original.



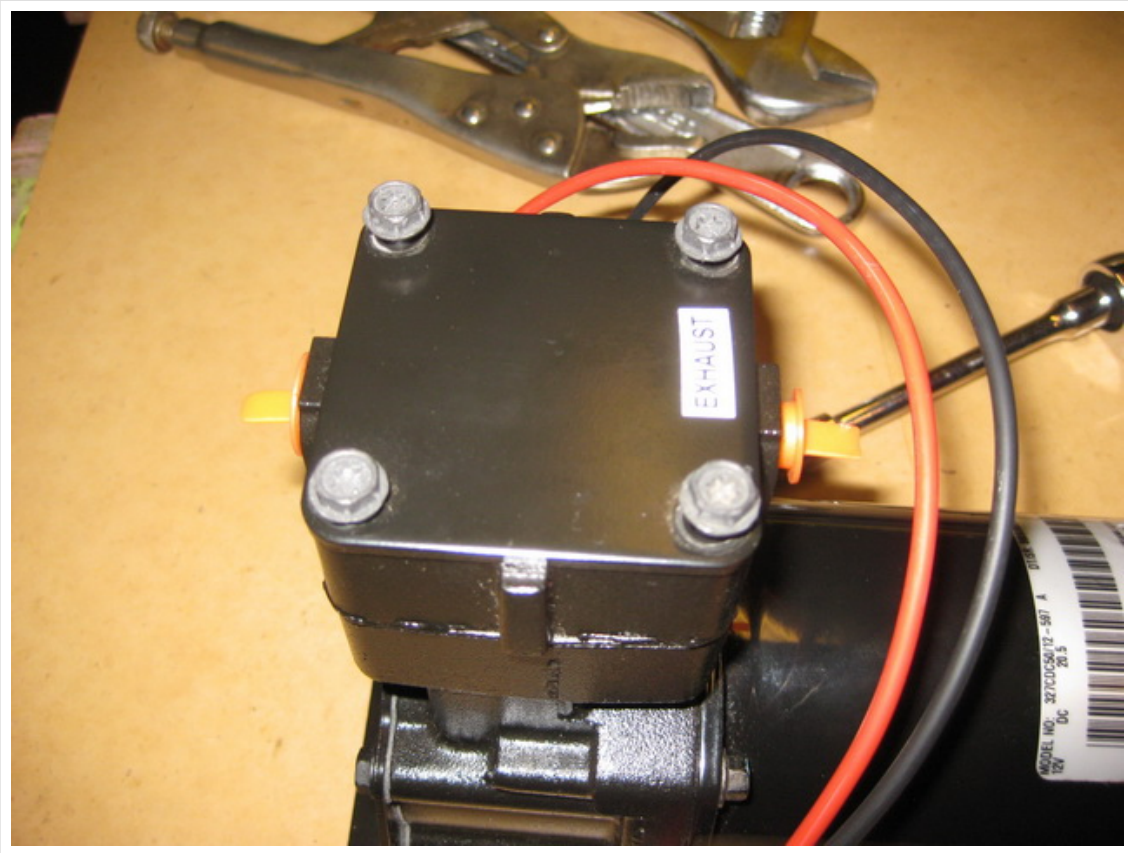
Now gently bend the bracket down, so the bend is close to the studs. Easy does it, you don't want to risk snapping those studs off.



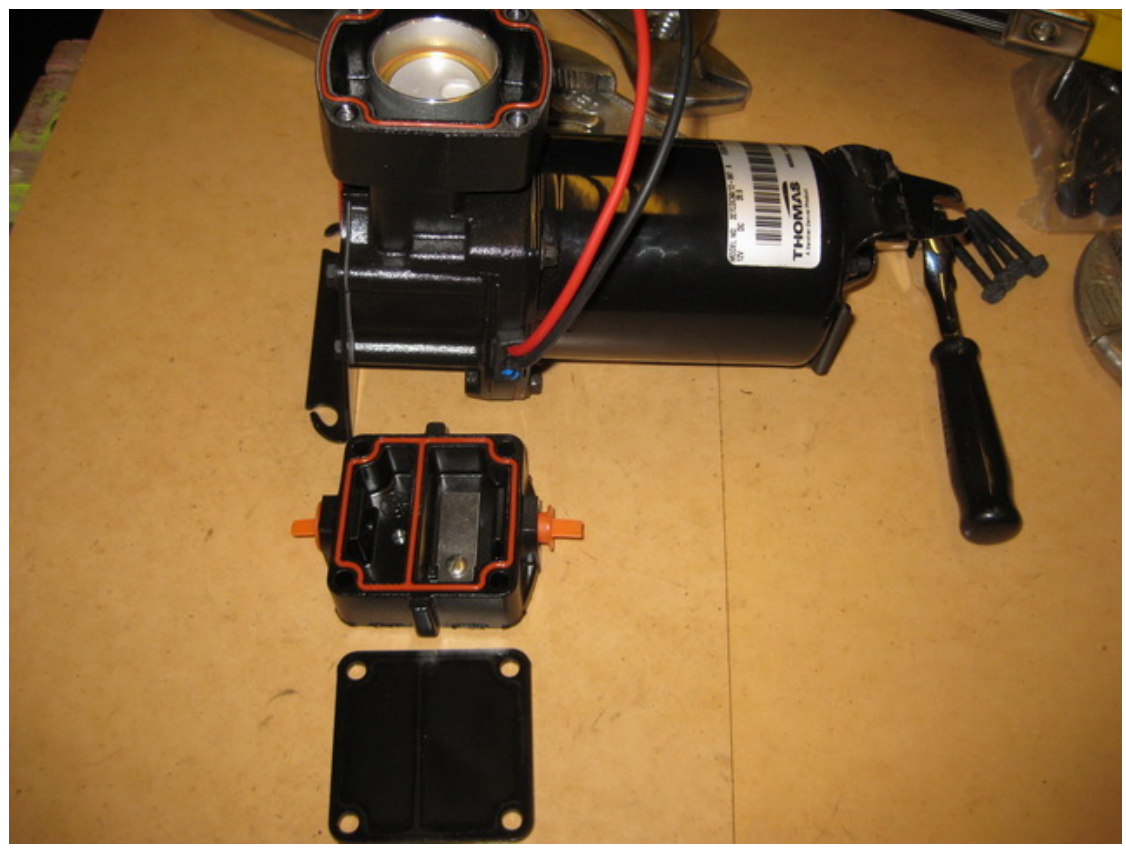
Something like this will do. It worked for me anyway.



Remove the head from the Thomas compressor. A Torx driver or 8mm socket will do it.



It comes off in two parts: the end plate and the top chambers.



With the EAS box cover off, this is my setup in the engine bay.



For safety, the EAS should be depressurised completely before doing any work on the system. Even though this operation should not affect the air already in the air-springs, you don't want to risk the car falling suddenly of high pressure air releasing when you don't expect it.

Using your tool of choice, remove all pressure from the air tank. You could use one of the software tools such as EASunlock or FaultMate.

I have a couple of inline devices on the way to the tank, so I used the remaining air to blow some dust off the engine until there was no pressure left.

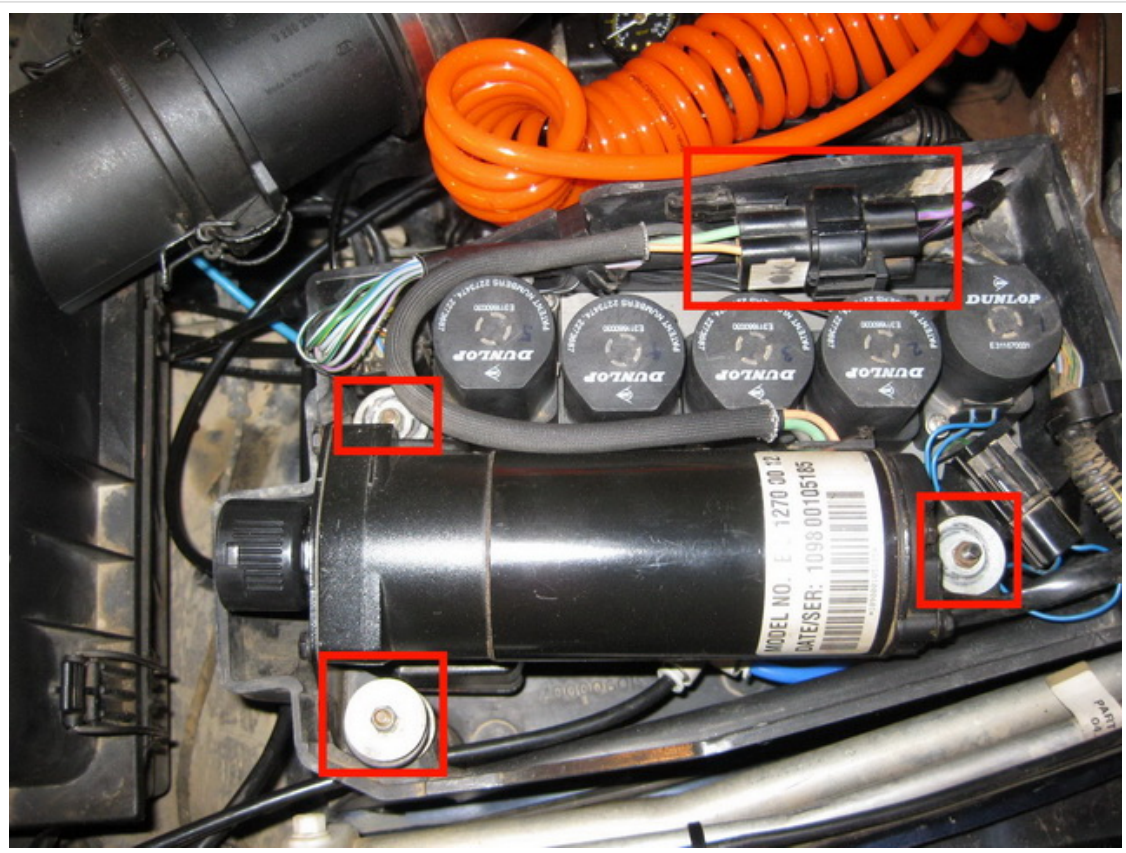


Almost there...



Disconnect the multi-plug shown below.

Remove the three nuts and washers.

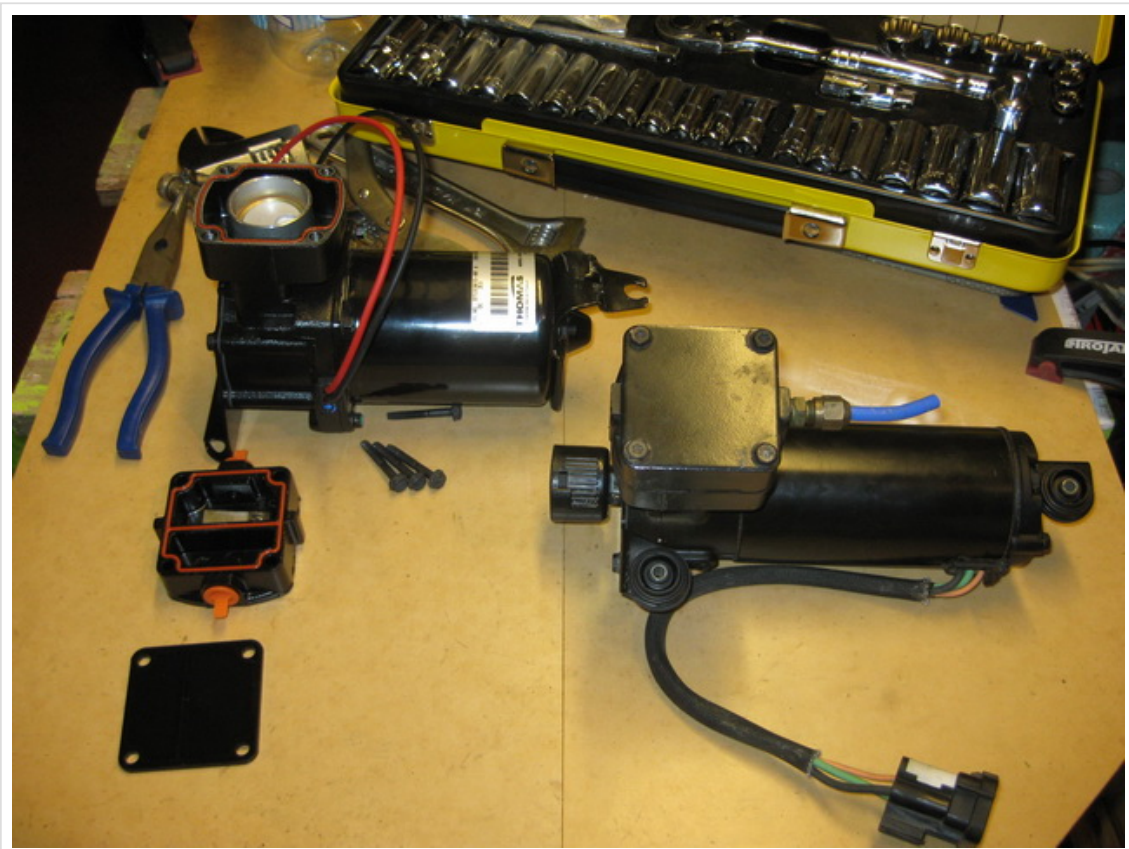


Lift the compressor a little to enable you to remove the outlet pipe shown below. As I already have a T-piece here, I just had to pop out the line on the side of the brass nut. Normally you will have to unscrew

the brass nut fitting to release the pipe.



With the old compressor removed from the engine bay, it will now become a donor to the new compressor, starting with the head.

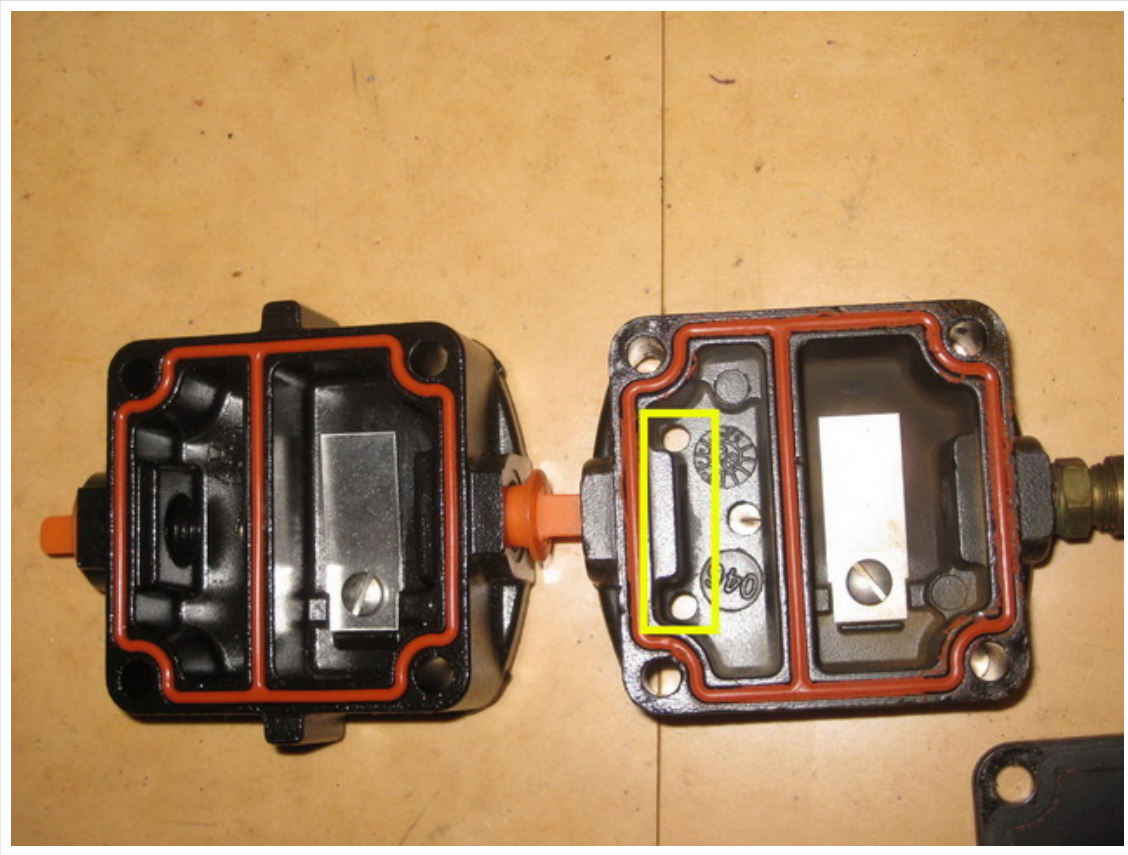


Remove the head from the old compressor.



New head (left) and old head (right). You can use the new head if you want to but you will need to do two things to it first:

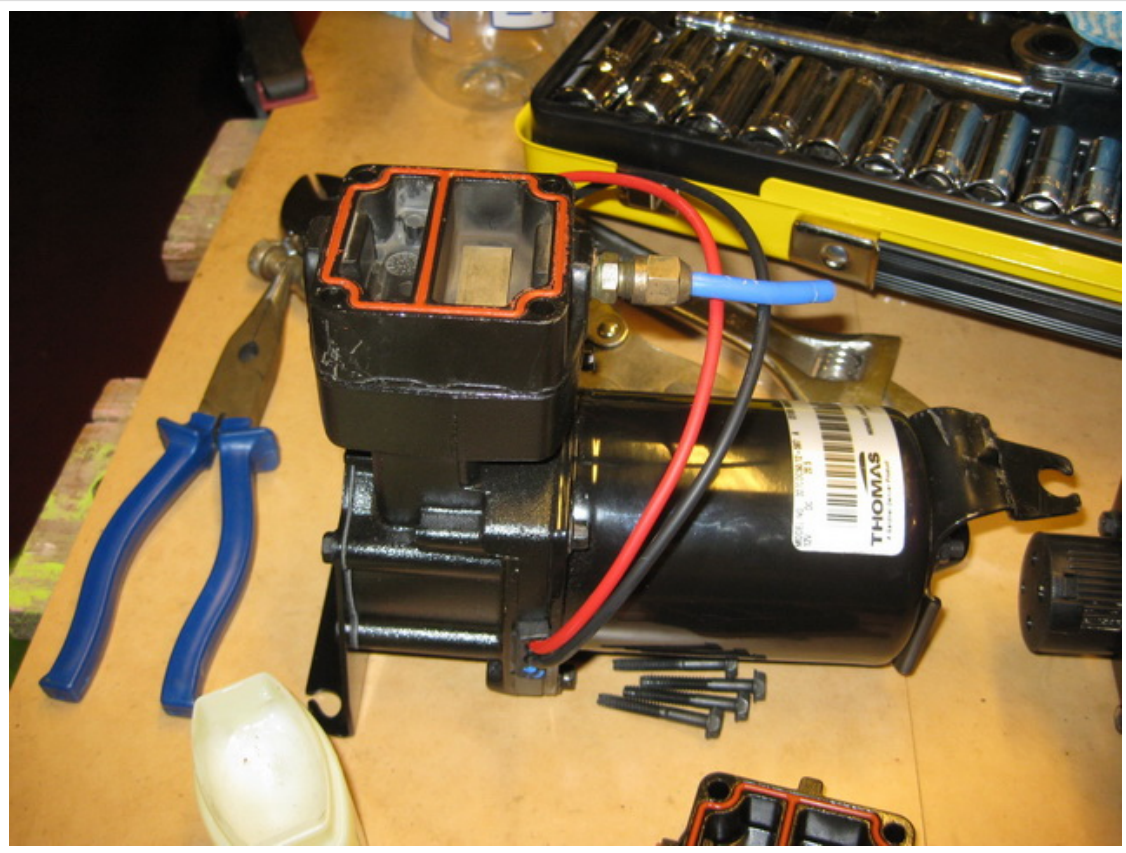
- drill two holes in the smaller (intake) chamber, like those shown inside the yellow box below;
- block the intake port with a plug.



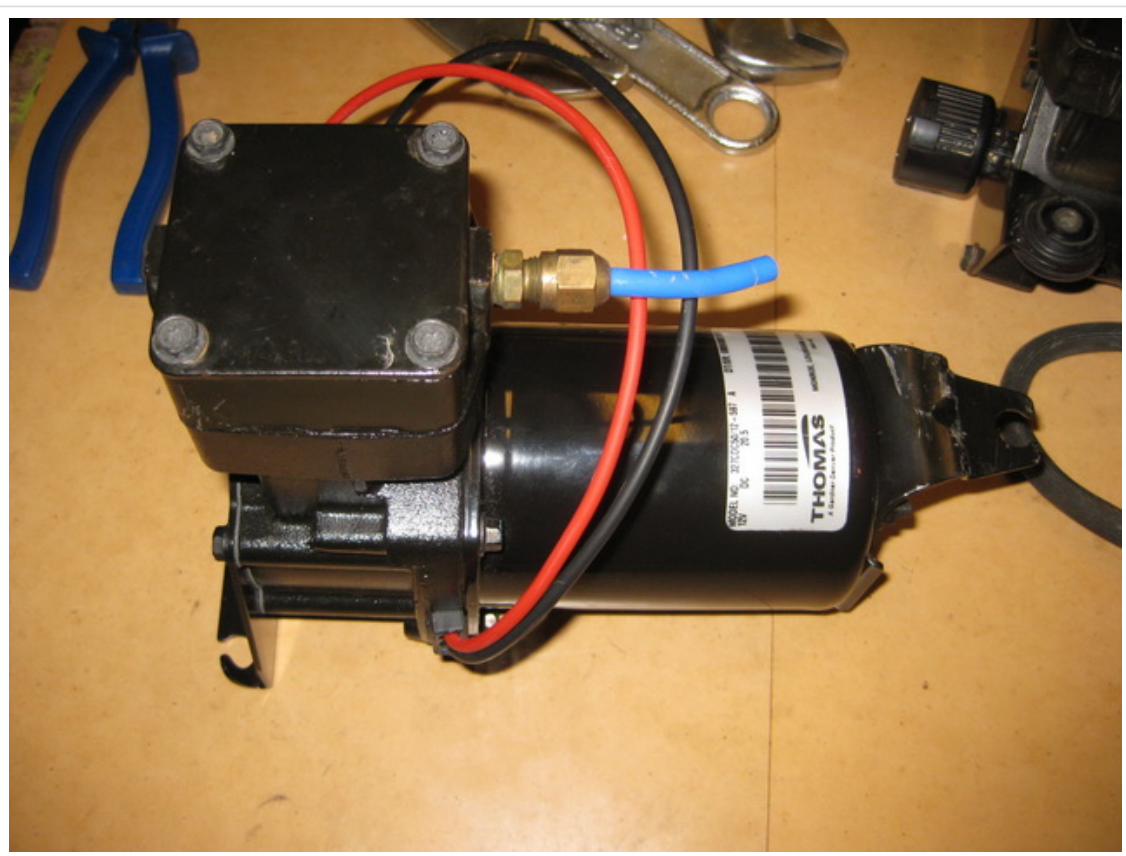
Apply a light smear of Vaseline to the gasket and o-ring before fitting the head.



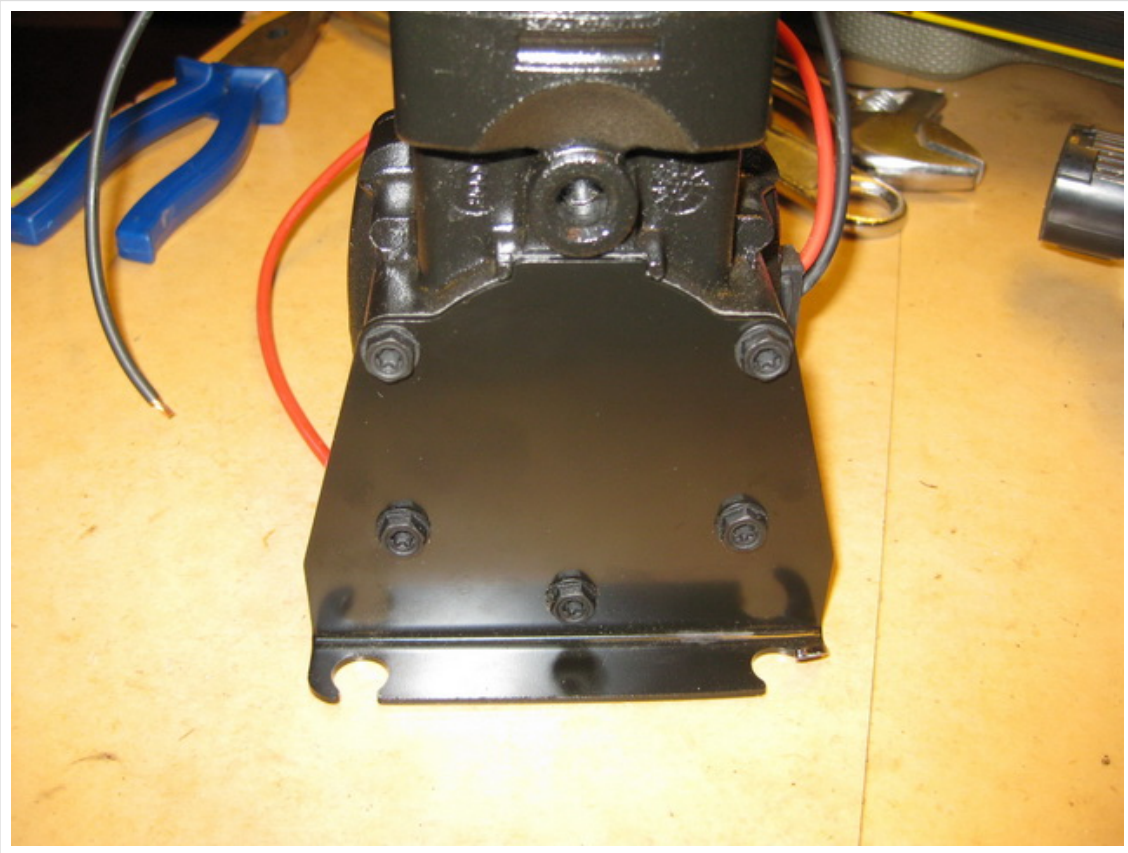
A bit more Vaseline to the orange gasket and put the head plate on.



Replace the four 8mm bolts and tighten.



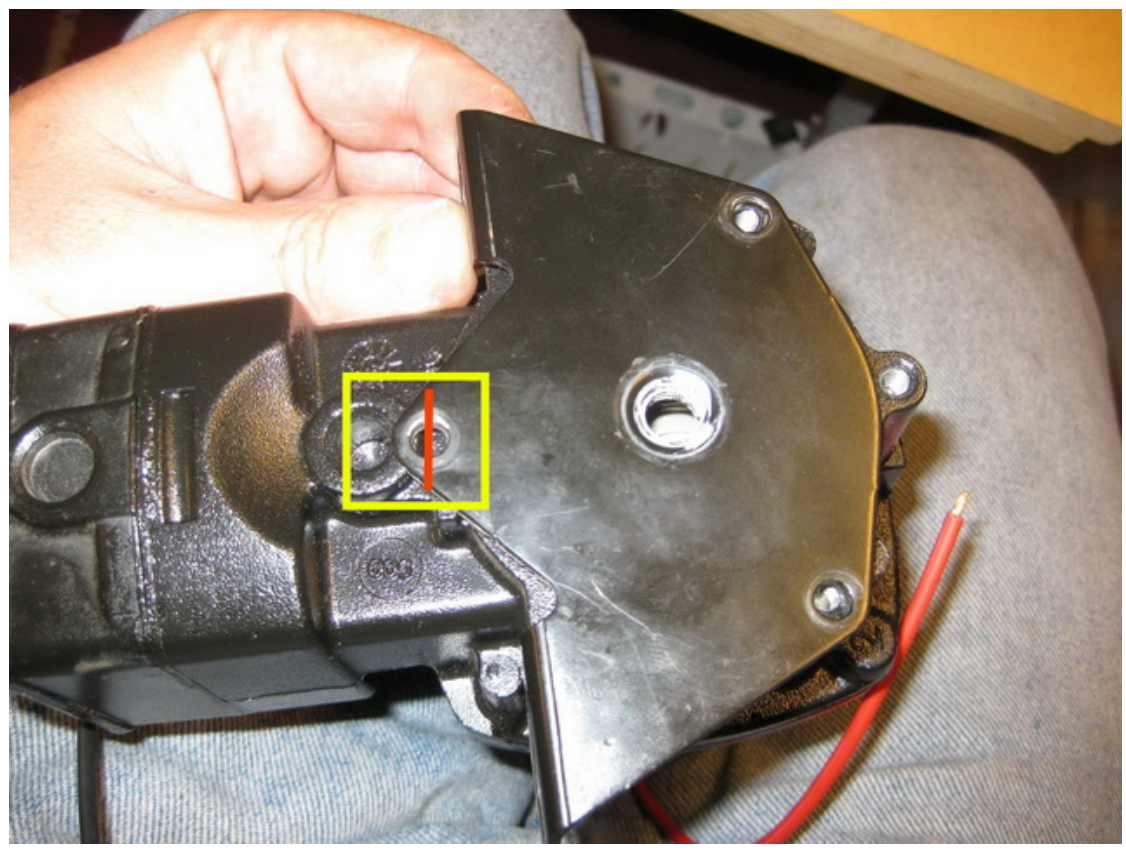
Remove the five 8mm bolts holding the bracket on the "big" end.



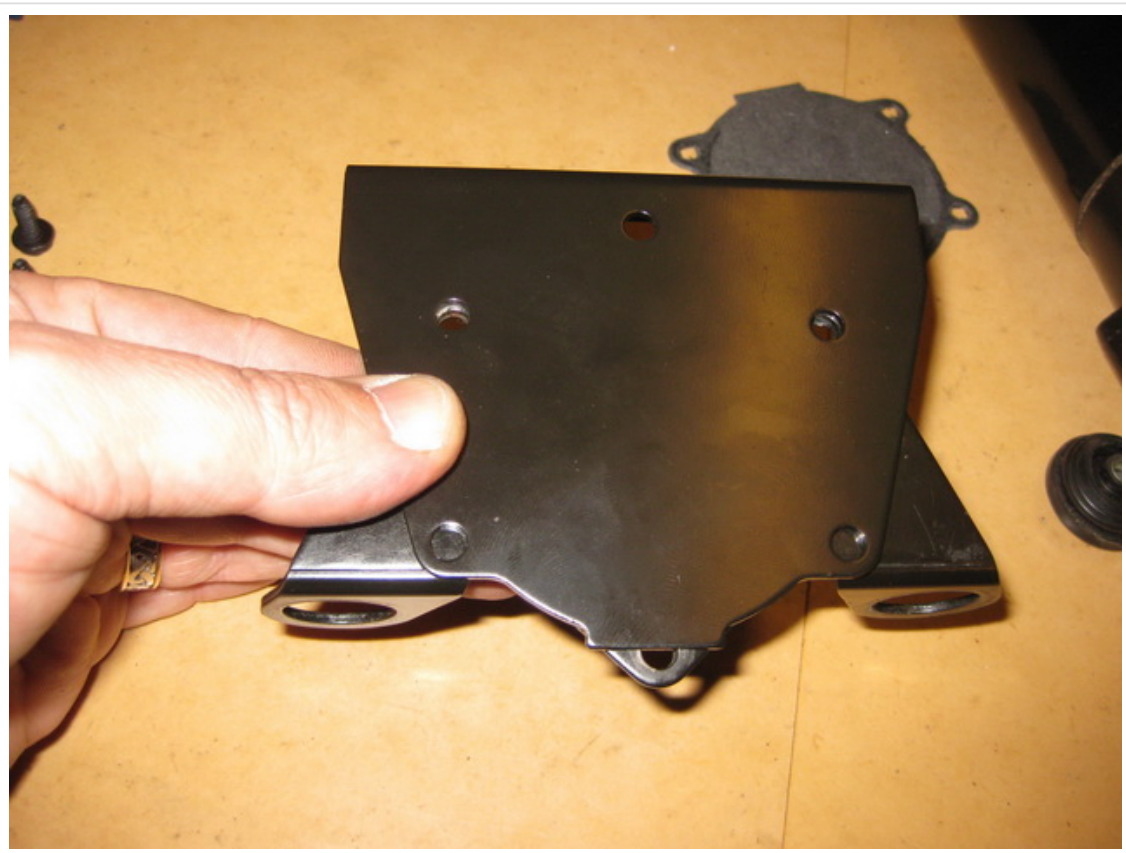
We are going to transplant the old bracket on to the new compressor, but the bolt holes don't line up, so we'll make a couple of new ones.



Trying the old bracket on for size. The mounting hole shown the yellow box below will foul on the body of the compressor, so we need to cut the bracket along the line shown in red.



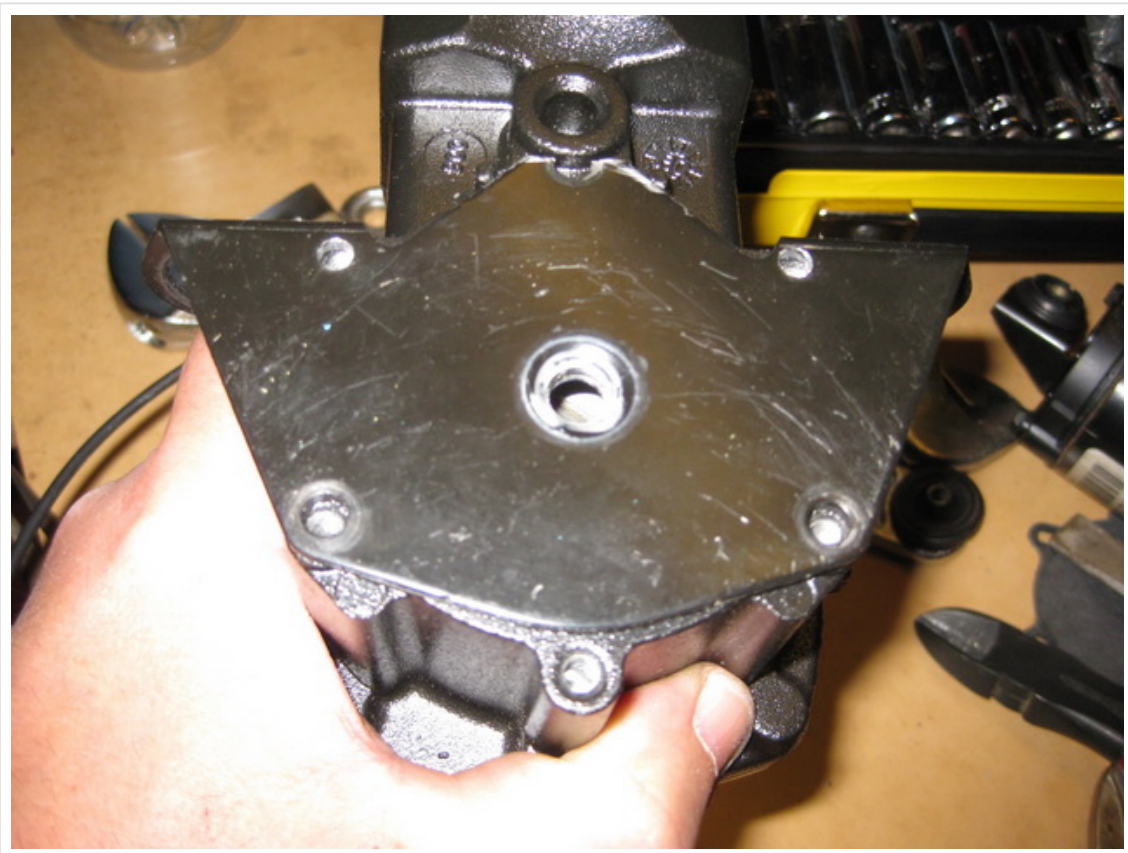
Using the new bracket as a template for where the two holes should be drilled in to the old bracket.



I put two of the bolts in to keep the brackets located, and then used two vice-grips to hold the plates together while I drilled the new holes.

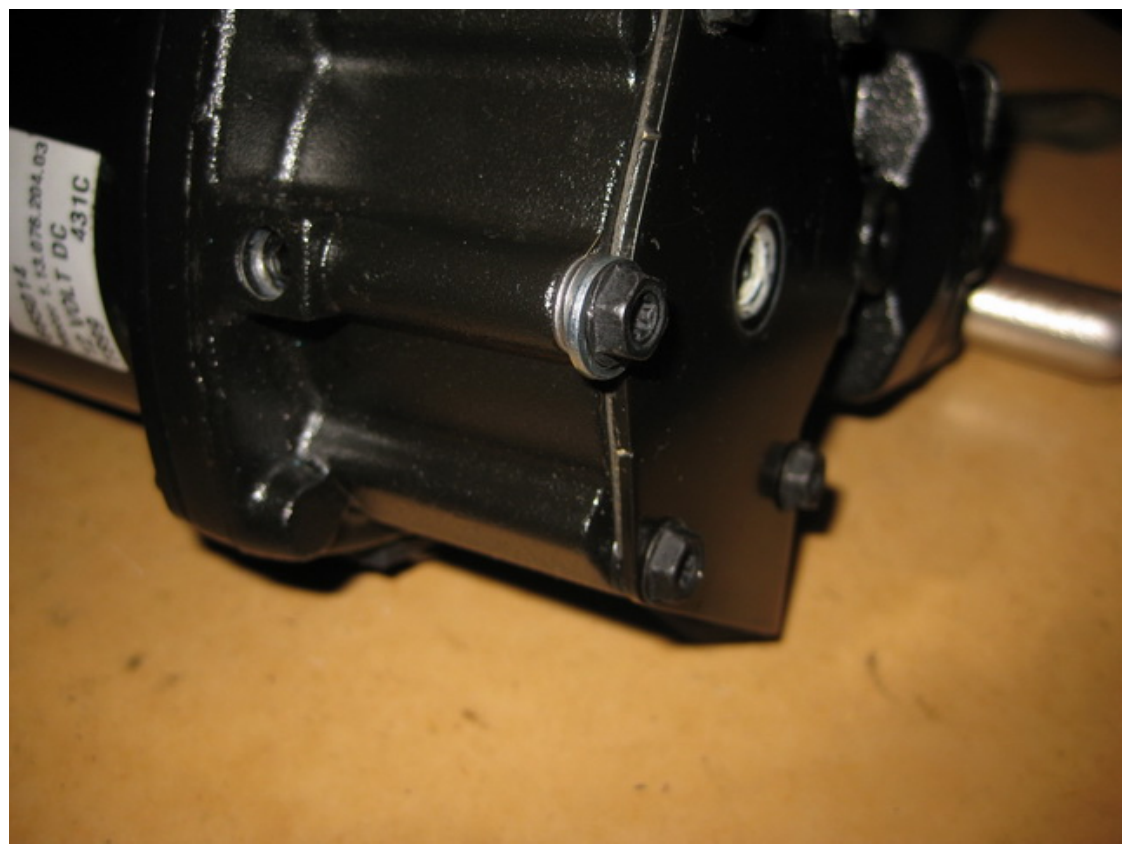


That fits nicely.

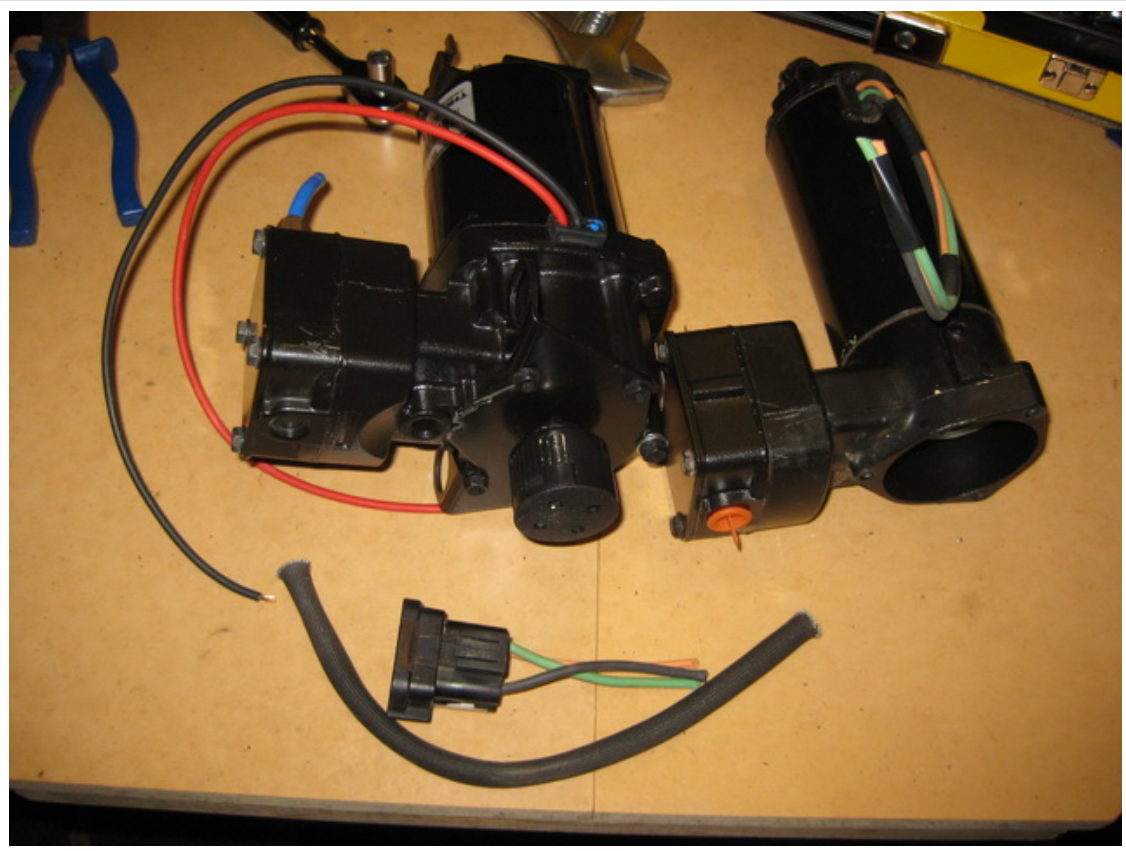


The fifth bolt hole shown at the bottom of the photo above no longer serves a purpose, or does it?

I used two 5mm washers to pack to the same height as the end bracket, and then a 6mm washer to clamp the end of the bracket.



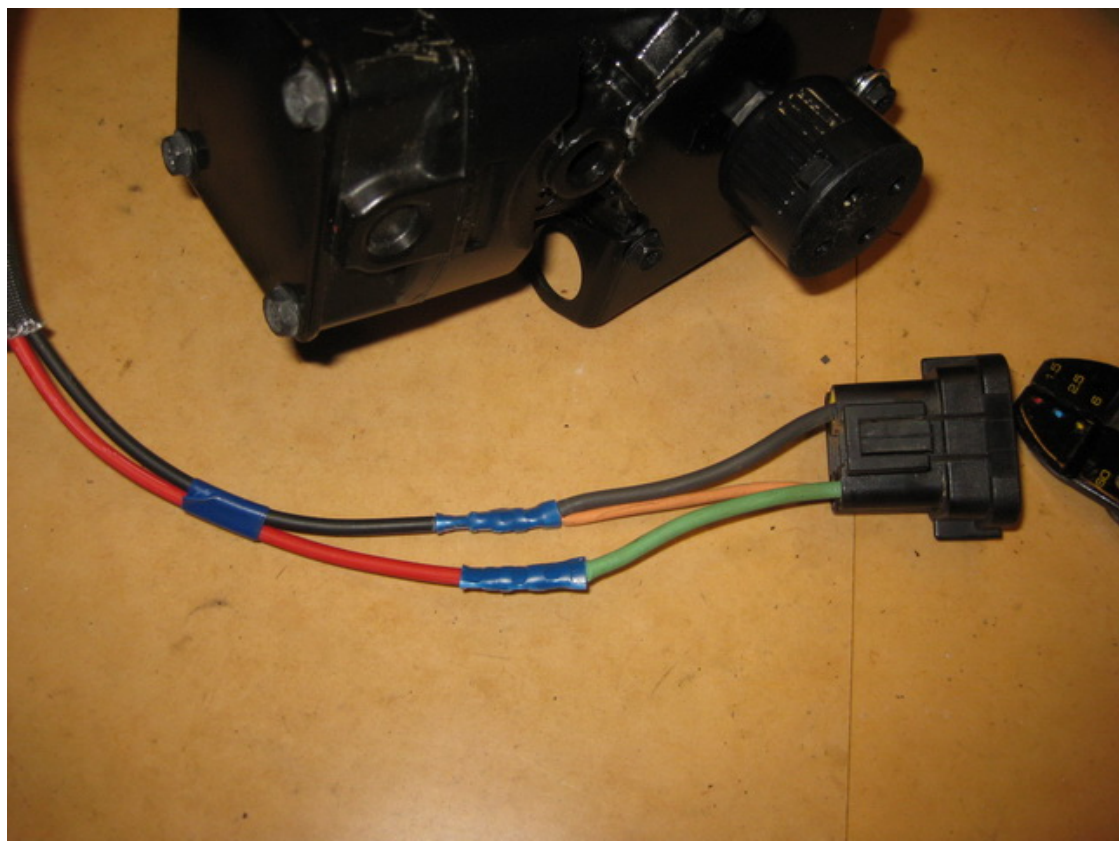
Cut the three wires off the old compressor and remove the protective material sheath.



Put the sheath on the new wires and then join:

- new black wire to old black and old orange wires

- new red wire to old green wire

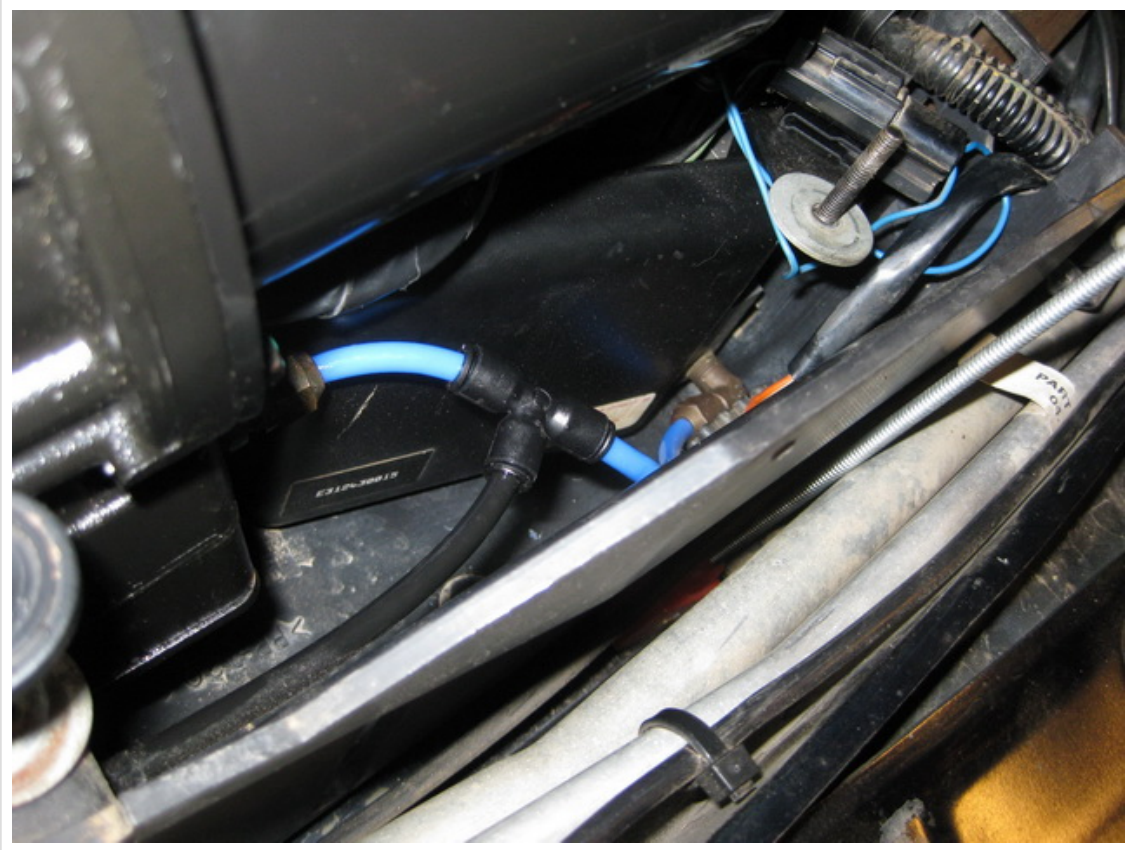


To give it a bit more protection, I wrapped the remaining wiring with black tape.

Note that I have used the rubber mount and collar for the bracket at the RHS below.

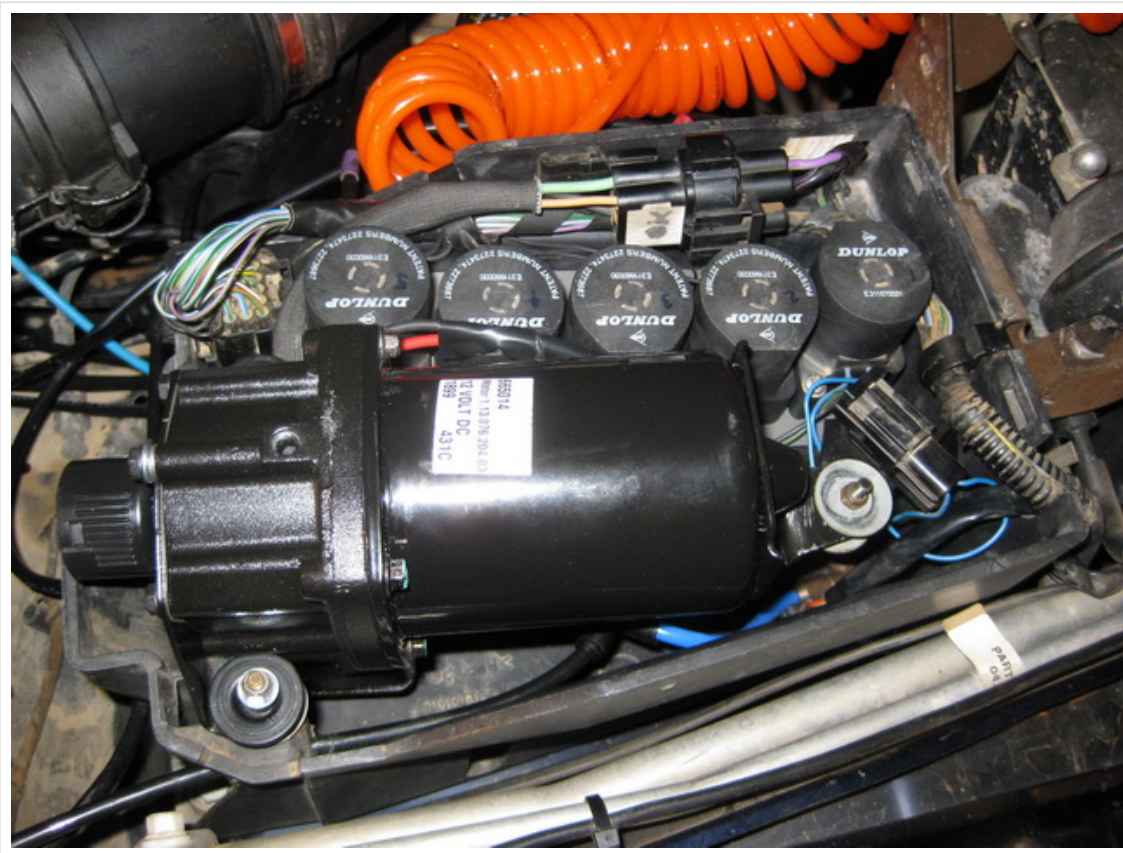


Pretty much a reversal of removal. I used the opportunity to swap over the T-piece for a new one.



Back in place. Since the new compressor is wider than the original, the large washers would not fit on the mounts at the head end of the unit. I replaced them with 6mm washers.

The other downside with the larger unit is that the EAS box plastic cover no longer sits flush. I'll devise something to fix this later... I'll just avoid splashing water up that way for a while.



A stock EAS compressor is supposed to inflate the air tank from empty in about nine minutes. The Thomas compressor inflated my air tank from empty in four and a half minutes, or about half the time of a standard compressor!

In theory, this means that it should recover quicker from low ride height and operate a lot less. Should make inflating tyres after an off-road trip a fair bit quicker too.

Apparently the Thomas compressor is a bit noisier than the original compressor, but my engine is pretty loud so I didn't really notice.

I removed the Thomas 327 and replaced it with the stock compressor. The Thomas needs a new cylinder/sleeve and piston ring, and until I can find a source for them I will have to make do with the standard unit.