



## Installation Instructions for EAS Air Compressor Seal and Cylinder

### Introduction

If you drive a P38 Range Rover you may have been in the situation where the Electronic Air Suspension (EAS) system becomes slow to raise the vehicle, or in the worse case, stops pumping up altogether. This is also true for the late Range Rover Classics that were fitted with EAS.

Undoubtedly this probably occurred at a most inconvenient time, or has slowly been getting worse over time and you've decided to fix it.

We're glad you chose this relatively inexpensive kit rather than believing the dealers who say you need a new (and quite expensive) compressor. Chances are you don't need a new compressor. The piston seal is the most common problem with these compressors, followed by the thermal switch.



### What's in the box/bag?

- A Teflon seal for the piston
- A small o-ring for the top valve
- A large o-ring for the head

### Safety

**Please read & understand these fitting instructions before you commence installation.**

**Depressurising the system** – It is strongly recommended that the EAS is depressurised before any work is undertaken. It should not be necessary to do this if the valve block is working correctly, but in the interest of your personal safety we suggest you do this anyway. If diagnostics equipment (e.g. TestBook, Rovacom/FaultMate, EAS Unlock) is not available to depressurise the system, ensure the vehicle height is set at the lowest possible height (i.e. Access mode) and take extreme care when disconnecting air lines from the valve block.

**Safety glasses are recommended when disconnecting pressure filled air lines, and whenever working on the EAS.**

**If the car is not already sitting on the bump stops, be aware it may drop in height when air fittings are disconnected.**



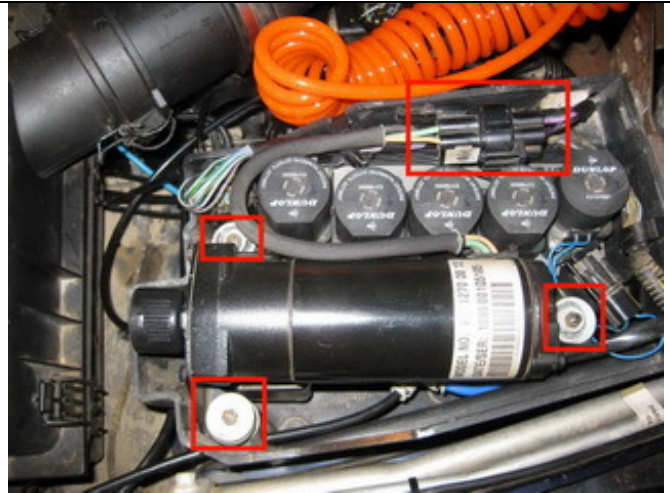
**Installation Instructions for  
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***Installation and Modification***

Remove the cover from the EAS box in the engine bay (rear right corner when looking from the front of the car).

Remove the nuts holding the compressor in place.

Disconnect the multi-plug (top RH in picture).



Lift the compressor so you can get to the brass air line connector.

Use a 12mm spanner to remove the brass air line connector.

Remove the compressor and put it on the bench for disassembly.





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Disassemble the head.

Remove the four bolts holding the plate in place.

Remove the plate and then the head unit, taking care to not damage the silicon gaskets in the process.



**(Seal Only)**

Remove the screw and two metal plates. Be careful of their orientation.

Fish out the old o-ring with a needle or pin, clean out ALL the white glue.

Glue the new o-ring into place with Loc-Tite Gasket Maker or similar.

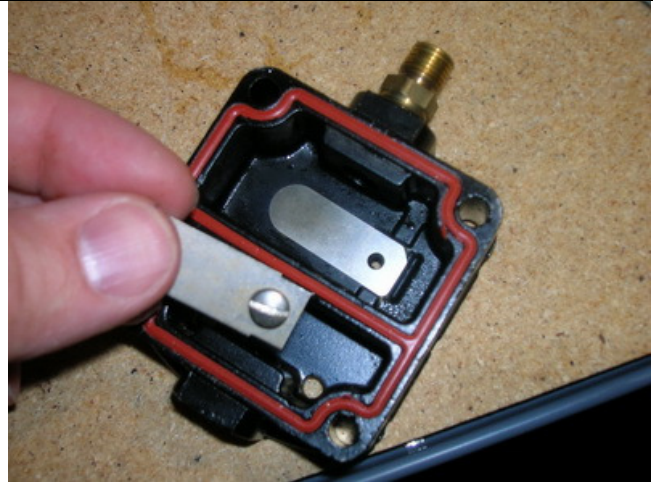


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**(Seal Only)**

Clean up the check valve by gently rubbing on fine grit wet/dry sand paper. Replace with the thin valve on the o-ring. The plate is a backing support plate.

Test the seal of the Reed Valve. Put the top on and squeeze to seal, blow into the discharge (brass fitting) and ensure NO air leaks through the reed valve. Any leakage will quickly destroy the seal, and often the cylinder.



**(Seal Only)**

Turn the head over, and remove the large o-ring from the groove.

Replace with the new large o-ring



**(Seal Only)**

Clean the inlet check valve, the short one goes on the bottom (next to the head), and the long one on top. Just clean the gunk off.



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Remove the 3 bolts from the pump end of the motor to open the housing, revealing the piston.

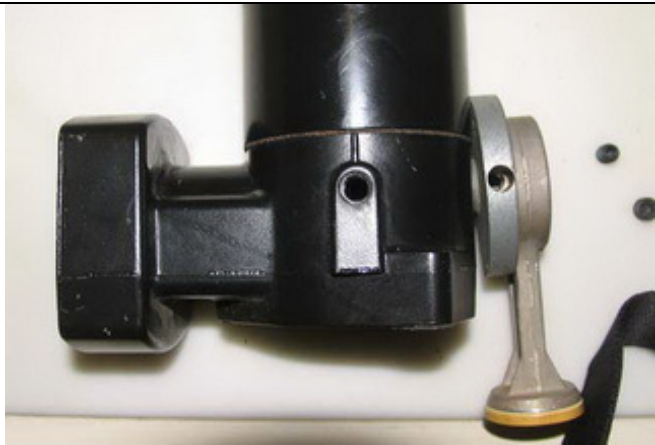
You might need to use a plastic scraper to lift the gasket off.



Remove the hex screw from the pump casing (4mm or 5/32 Allen Key) and turn the counterweight to reveal the hex screw in the counterweight. Loosen the counterweight (1/8" Allen Key), don't fully remove it yet.

It takes a bit of work, but lever the counterweight and piston off the motor shaft with a long screw driver down through the top.

If it does not come out easily, remove the brush-box end of the motor and turn the rotor by hand, twisting the shaft inside the counter-weight to break the gunk free.



Remove the piston/crank assembly through the front cover hole.





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**(Seal Only)**

Remove the clamp-ring from the piston with a tubing cutter, gently cut into the bottom edge of the seal with the cutter blade to slowly pry the clamp-ring up and off of the top of the piston. Tighten the cutter until it bottoms on the piston, then back off 1/8 turn.

Slowly and gently work the cutter around to loosen the clamp ring. Use a flat-blade screwdriver to gently pry it the rest of the way off.

Clean up any burrs or scratches with Emery Paper.

Some pistons have flashing from the factory which will score the cylinder as the seal wears. Clean these up with a file.



**(Seal Only)**

Place the new seal on the piston, and the ring on top.

Clamp the ring back down with a set of channel-lock (or multi-grip) pliers.

This will seat the clamp ring down tight and hold the seal in.



**Installation Instructions for  
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(Seal Only)

Tighten the setscrew on the counter-weight just a little bit. This will help ensure the counterweight **ONLY** goes on facing the correct way.

Replace the piston the way it came out. Ensure the set-screw is on the flat of the motor shaft.



**THIS IS THE MOST IMPORTANT STEP**

When putting the cylinder back over the piston ring, be **VERY CAREFUL** to install correctly or you will tear and destroy your new Teflon piston ring. Putting the cylinder over the side from an angle will gently compress the Teflon ring and allow the cylinder to slip on smoothly.

If you have to force it, you're doing it wrong.



Also pay attention to the orientation of the cylinder. The lip on top mates up with the groove in the bottom of the cylinder head (where the new large o-ring goes).

If the cylinder does not go on easily, slide it further at the angle before straightening it. It should go smoothly and easily when you have it right. If you have to force it something is wrong and you **WILL** tear the seal if you try to force it.





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Put it all back together in the reverse order that you took it apart.

The lip on the end of the cylinder fits into the groove in the cylinder head. The flat end of the cylinder seats against the compressor body.

Check the continuity of the thermal switch, from the black to the orange wire it should be a closed circuit with the compressor cold (not overheated).

Replace the compressor back in to the EAS box in the engine bay, run the engine and enjoy the new lease of life in your EAS Compressor.



***Questions and Suggestions***

If you are in or close to Australia, contact Paul or Andy at Hard Range Australia  
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