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## ABS Shuttle Valve Switch Mod Option B...simplified version

October 2nd, 2012, 11:26 pm

I had already had this mod done by a guy a couple of years ago but on further inspection on the return of the 3 amigos the last couple of weeks I dug further. My fault code is "23-05 shuttle valve switch electrical fail" (I was concerned I may have a hub on its way out...phew for now) so I looked over firstly the cleanliness of the modulator connector and earth points in front of the air box...all cleaned & fine but still the fault.

On inspection of the "mod" done previously it seemed that it's been only half attempted as only the YG (Yellow/Green) wire to the modulator loom has been spliced to the SVS and the other wire from the SVS not earthed to a new point and the old SVS was used, not a new one!...pretty poor attempt really!

So referring back to the brilliant write up on the LR Virgin Islands Club site, I read how to do it properly using the recommended "Option B". All info on the relating faults & in depth procedures can be found here as some of you know...

<http://www.landoverclubvi.com/abs-mod.html>

However, its an intense read & I was more blinded by the guys technical knowledge than really getting the jist of carrying it out even after half a dozen reads! So here I'll simplify the process for anyone like me easily distracted by techy speak!

You will need

Shuttle Valve Switch SW0500030

Cable...same gauge as the switch wiring  
One crimp ring terminal  
Heat Shrink  
Butt connectors...self solder & glue type  
Multimeter  
7mm Allen key  
7m hex socket  
10mm ratcheting spanner  
Wire Nippers/Strippers  
Conduit  
Electrical tape  
M6 x 20mm bolt  
M6 nylock nut  
M6 Penny washer

So first...buy yourself a new Shuttle Valve Switch... SWO500030...approx £40



Remove multi plug by gently pulling it upwards



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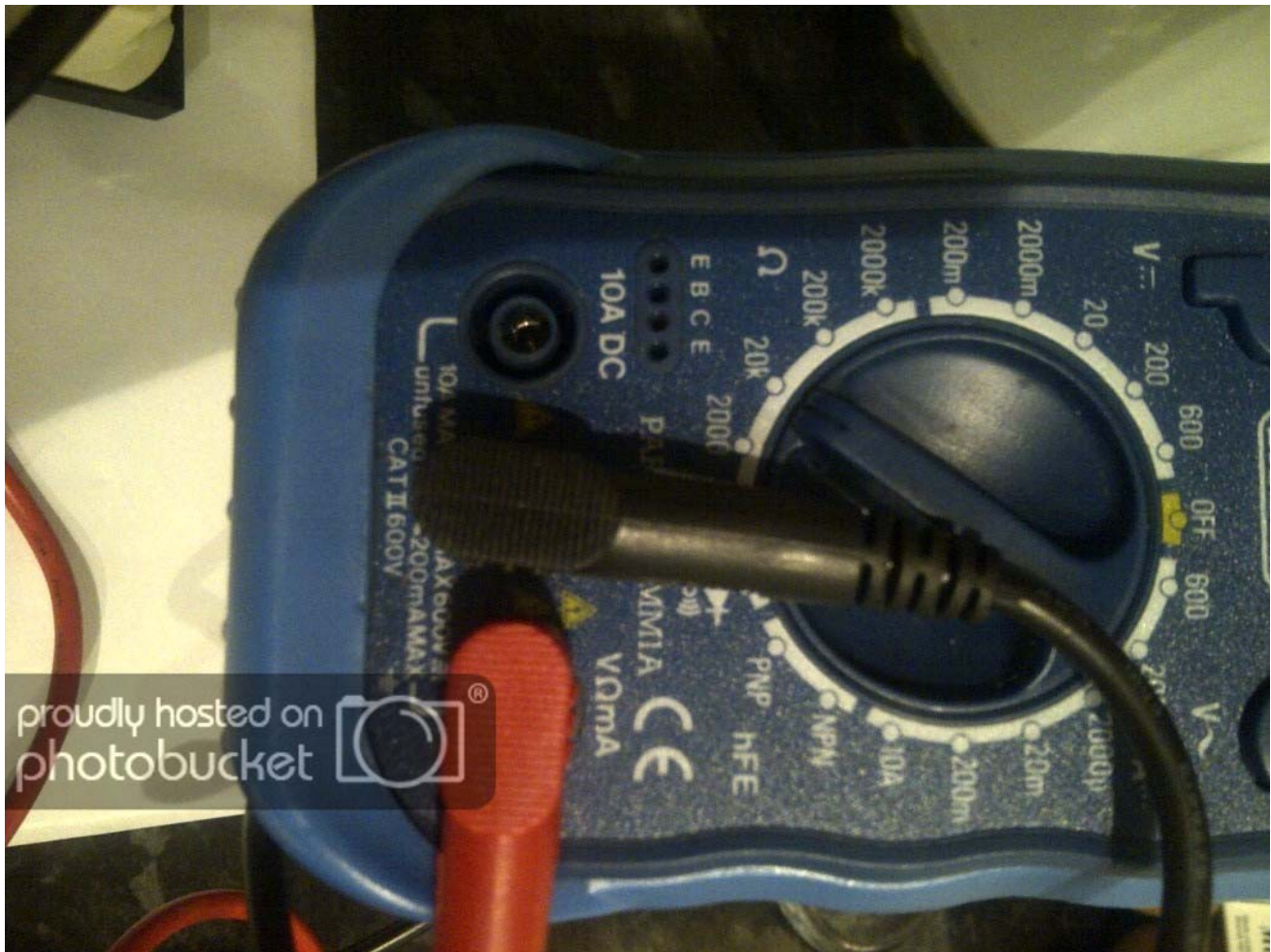




Cut the connector off 🤖 as close to the housing as possible so you have enough wire to play with 🤖

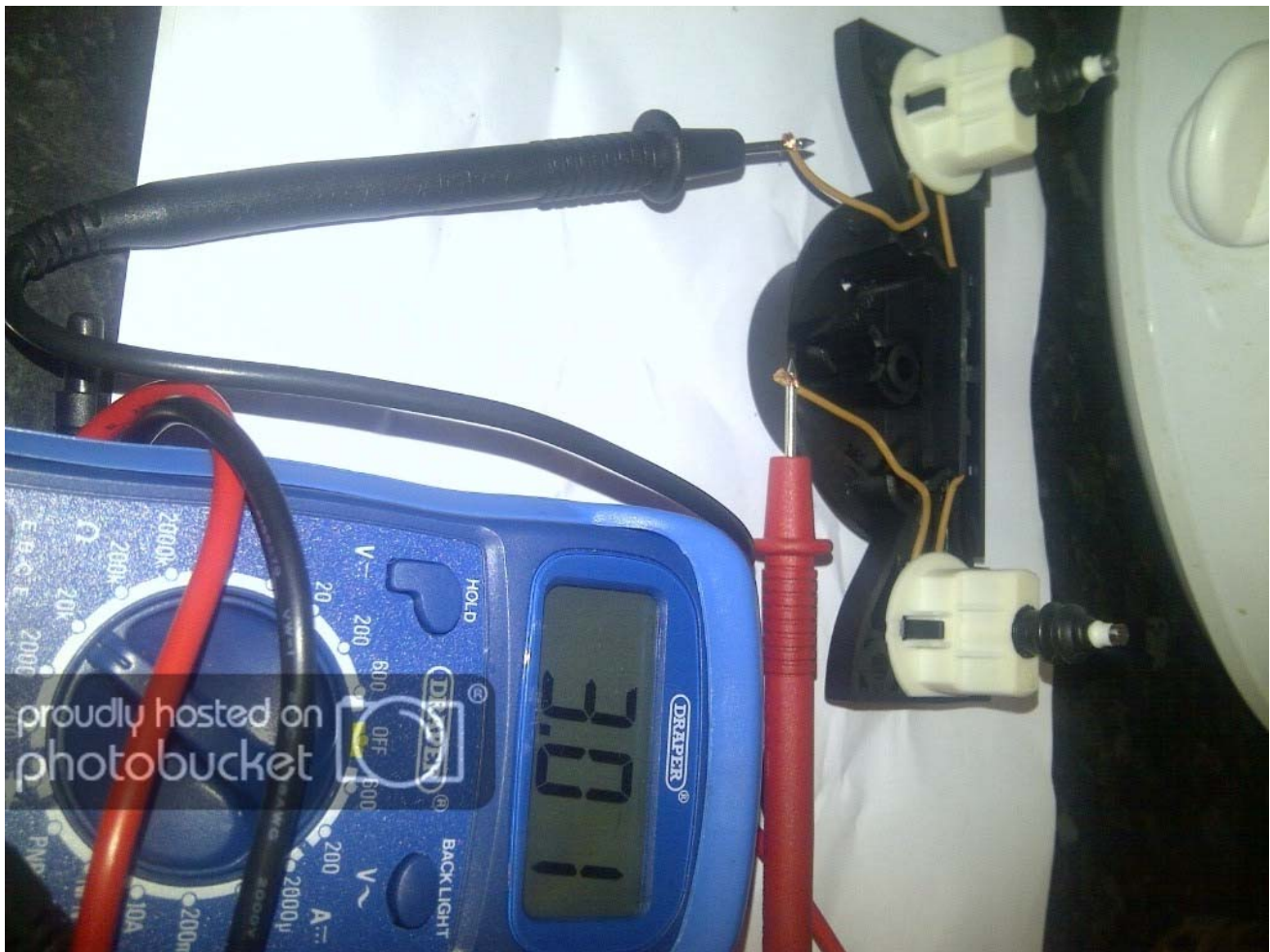


Now hook up your multimeter as shown below to test the resistance and that the switch is not faulty...



Strip about 5mm off the ends of the wires...temporarily curl the end so you can hook them up to the Multimeter probes...either probe to either wire...you're just completing a circuit so no worry about polarity.

Reading 1...both switches open-PASS



Reading 2...1 switch closed (push one switch down)-PASS





Reading 3...both closed (push both switches down)-PASS





It is a good idea to perform this test also with the plug still attached...parts do come faulty out of the box sometimes, so it's worth inserting the probes into each terminal in the connector to check before cutting it off.

Now you need to rewire the switch. I used twin core, same gauge as the existing wiring. At this stage I cut a 300mm (1ft) length.

Expose the 2 ends of the twin core by about 3", strip the sheaths to bare cable for inserting in the connectors. The cable needs to be passed through the back of the switch where the original multiplug was you cut off...there are 2 convenient holes here.



Once in the switch, employ 2 of your butt connectors and join the new cable to the switch cables you've cut...either way around...like so





Test the ends of the new cable as before to ensure the same resistance.



Now...this is the pain in the butt part...go get the truck...  
If you dont have small hands this next part must be nigh on impossible...

So, its modulator time...first thing, undo the 3 retaining nuts of the modulator (mod), 1 engine side, 2 inner wing side...keep them safe. Bulkhead side of the mod is a large cream connector held on to it by a metal spade..unclip it out of the way.

Unclip the PAS/ACE reservoir...im not going to say when to put it back as you need to move it back and forth so many times its too many to mention! No disconnection of PAS pipes is necessary...I unclipped the MAF multiplug too as it gets in the way.

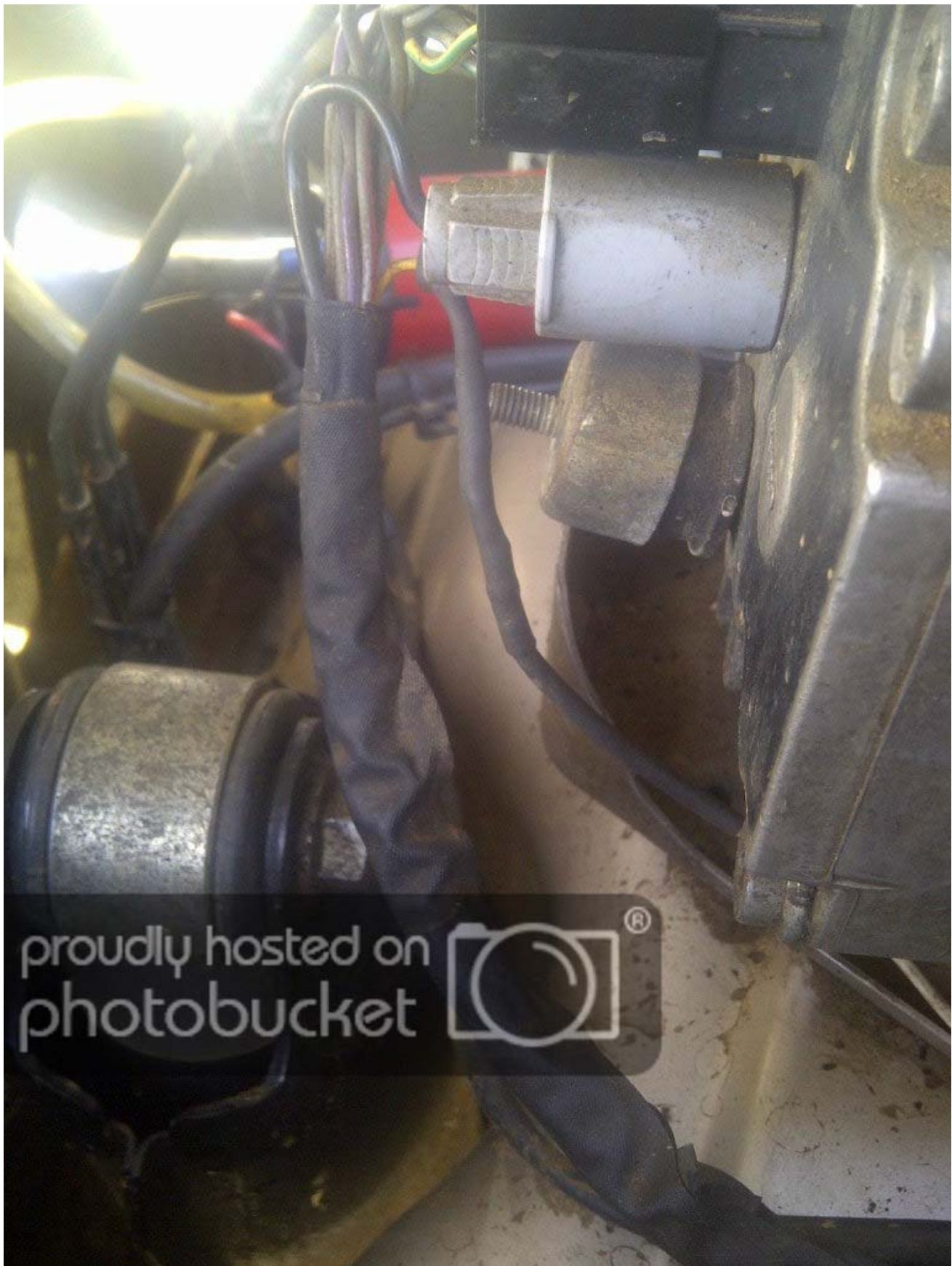
DO NOT CUT ANY WIRES YET...If you cant get the SVS out, for whatever reason, you will have disabled the ABS system...PLEASE cut the wires last when the new SVS is fitted. 🙏

There are 3 rubber mounting bushes where you undid the nuts...take off the 2 rears and put them to one side...leave the front one on...you need this to balance the mod.

Lift the front of the mod out of its mount, straight up and then pull the rear studs out of their holes..the mod will happily rest on the mounting bracket on the front rubber bush.

FROM NOW ONWARD YOU WILL BE LIFTING AND GENTLY ROCKING THE MOD..THIS WILL MEAN YOUR BRAKE LINES ARE FLEXING...YES I WASNT KEEN BUT BE CAREFUL AND YOU'LL BE FINE...JUST DONT PULL THEM ABOUT TOO MUCH!!

You should be looking at this..resting on that front bush...



Here, you can see how far you can get it to lift out of the bracket (ignore the white wire, ill come to that

later...you wont have one of those)



Now with a combination of the allen key and ratchet spanner (easier) and hex bit, feel your way about underneath around the SVS and find the bolts..it is fiddly and very hard to locate the heads, especially the centre one but it is doable...do the 2 outer ones first, then the centre one...keep or throw the bolts away, new ones come with the new SVS.

Once the bolts are out, the SVS will pull down out the bottom easily, then pull the multiplug out ( mine fell out!) & gently remove the old one...mine was full of dirt, one switch sounded like it didnt work at all, however I did the resistance test with the meter and it passed, so Im guessing the problem was the bodged wiring.

As you can see I was right, mine had been modded with just one cable ( the white wire in the previous pic ) striaght to the YG wire from the Modulator loom.





Now fit the new SVS, reverse of removal...much easier than taking the old one out.

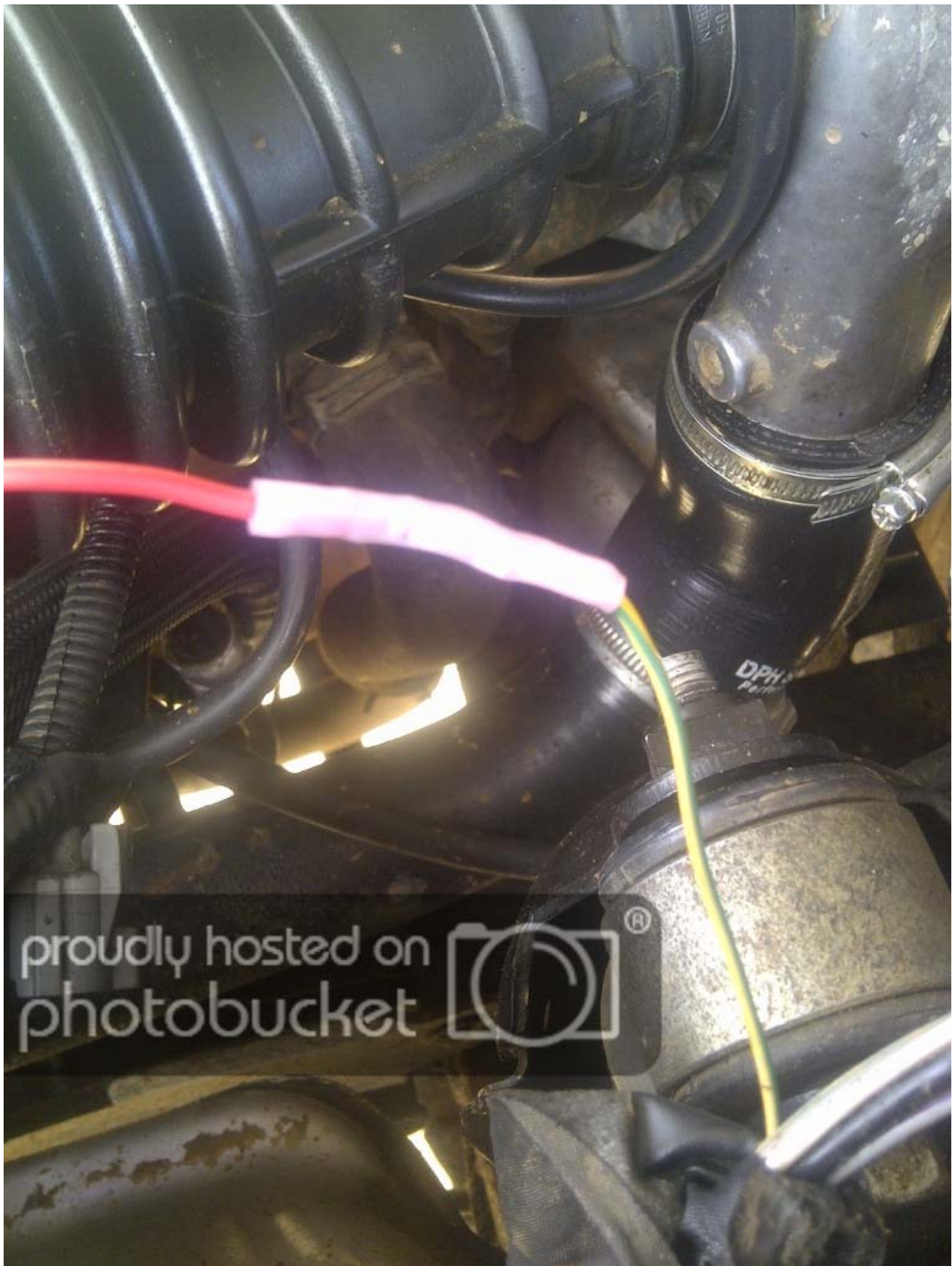
Once done, you can now relocate the mod and bolt it back in 🤔

Now to cut the loom...strip back the outer loom sheath of the mod multiplug...you need the YG (Yellow/Green) cable...cut it just short of the connector...



You can now cut down your twin core to length...I took the red trace of my twin core and used another connector to join the two





Tape it up and add conduit





Take the black trace of your twin core, crimp your ring terminal on the end...  
Between the mod bracket and the PAS reservoir bracket you will see a hole in the wing...



you MAY have something bolted through it already..if so, utilise the fixings, if not, scrape some paint away and clean the area, the hole is threaded to M6 size...take your bolt and screw it in from the wheel side



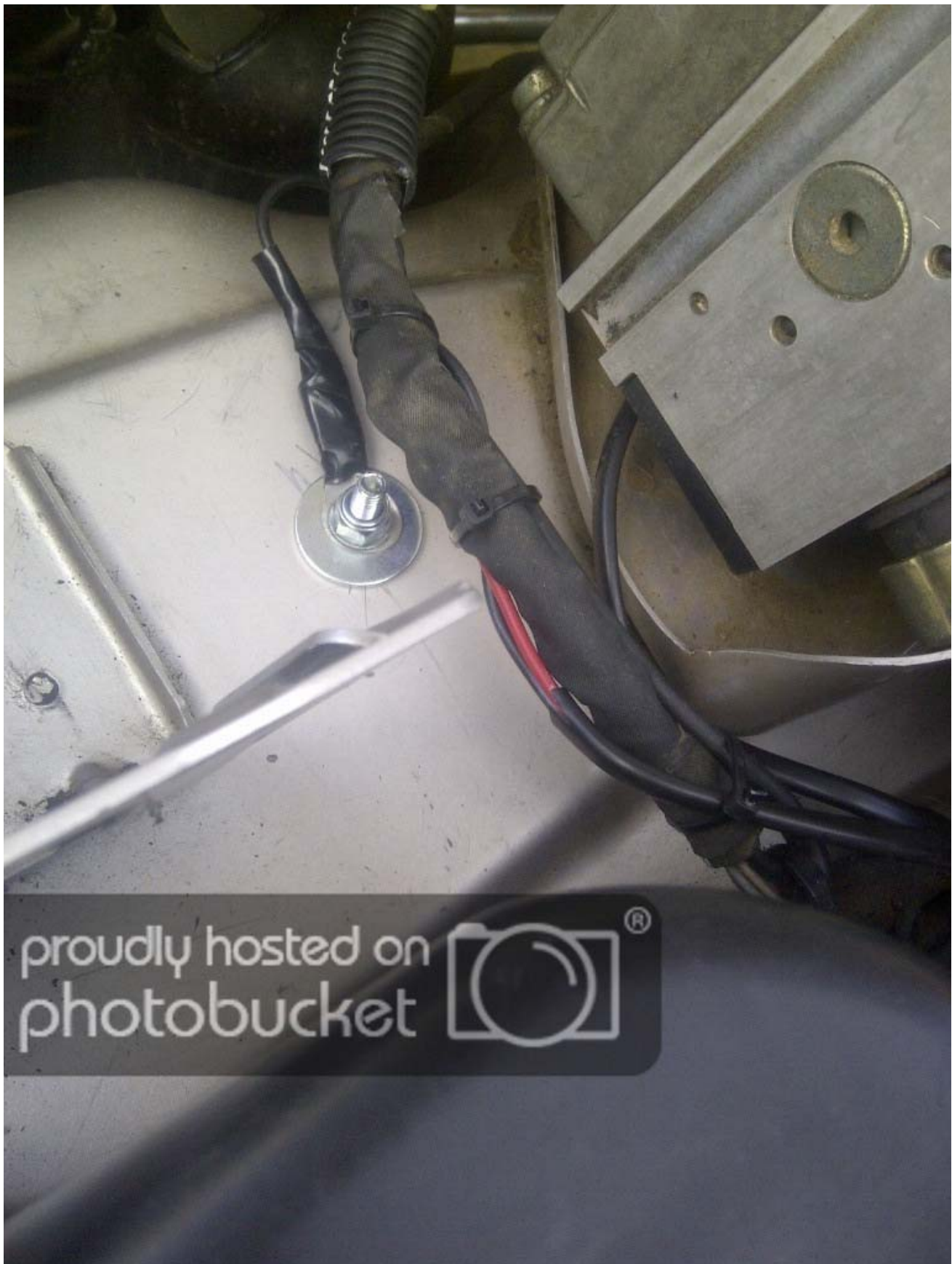


Once in , add your penny washer, then the terminal, then a smaller washer, then the M6 nylock nut...tighten



to a nice hand tight. I sprayed over the scraped away paint with a dash of waxoyl.

Cable tie any more loom together.



Replace the PAS reservoir.

You are now finished!!! 🙌

Turn the ignition key to Position 2...ensure the ABS lights illuminate and extinguish.

Clear any faults with diagnostic tool (Nanocom/Hawkeye)

Go for a drive..get the TC working on some loose ground, some hard braking on tarmac to get the ABS working and if you can a hill to test the HDC...

Turn off the truck, plug in diagnostics again to check faults...there should be none.

Happy no SVS related Amigos!!! 🙌  🙌

I'm happy to help or do this for anyone needing to do it...the whole thing can be done in under 3 hours at a steady pace with fags and tea 😄

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Last edited by [foss](#) on October 6th, 2012, 11:16 pm, edited 5 times in total.

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**'98 D2 TD5 Mods "The Mogul"**  
**'84 110 Very brown...now retired in Holland**  
**1 EX Wife...Sorted.**

Yuuup! Truck



**ALIVE**  
TUNING  **smudge**  
GS spec



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Re: ABS Shuttle Valve Switch Mod Option B...simplified versi