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TD5 Fuel Pump Replacement

The TD5 has an in tank electric fuel pump / sender unit fitted. As with any part on a vehicle it can wear out over time. The fuel pumps on TD5's are generally a very reliable unit, but as mileage and age increases they can off course begin to fail. This can manifest itself in becoming noisy in operation, the sender unit can be intermittent or even fail completely (fuel light stuck on and needle dropped to bottom of gauge) and off course electrical failure of the pump itself and that means the engine will idle only and a road side recovery is next.

*This pump replacement was carried out on my 5 seat Disco II with rear storage bins. It is **HIGHLY** recommended that you do this job when there is the minimum amount of fuel in the tank, I would suggest at least the fuel low level light being illuminated on the dash.*

My fuel pump became noisy in operation, there are "other" factors which can contribute to this as well, this includes a blocked filter, a failing valve in the filter head and leaking injector seals (see [here](#)) but because I knew 2 out of the 3 were ok and the fact my vehicle has now covered over 140,000 miles I decided it was time for a new pump anyway. The sender unit had also been intermittent over the last year or so.

The fuel pump is obviously in the tank, but it is accessed from inside the vehicle via an access panel under the rear carpet in the boot. To lift the carpet would seem and easy enough task, but because the carpet in the Discovery is very thick and stiff, to get access the carpet needs to be pulled up and forward and to do this correctly you need to remove the trim panels to do so.

So start off by emptying your boot and folding the rear seats up and forward. Then we start at the back of the vehicle and remove the rear carpet trim retainer. This has a small thin cover strip in the middle which needs to be carefully levered out to reveal the screws..



The cover piece is flimsy so take care to not "crease" it, it will flex with no issues..



This reveals the 6 self tapping screws...



Now the trim retainer itself can be removed. This trim piece goes under the side trim each side, but there should be enough movement to slide it one way or the other to enable you to flex it out of position....take care to not break it...

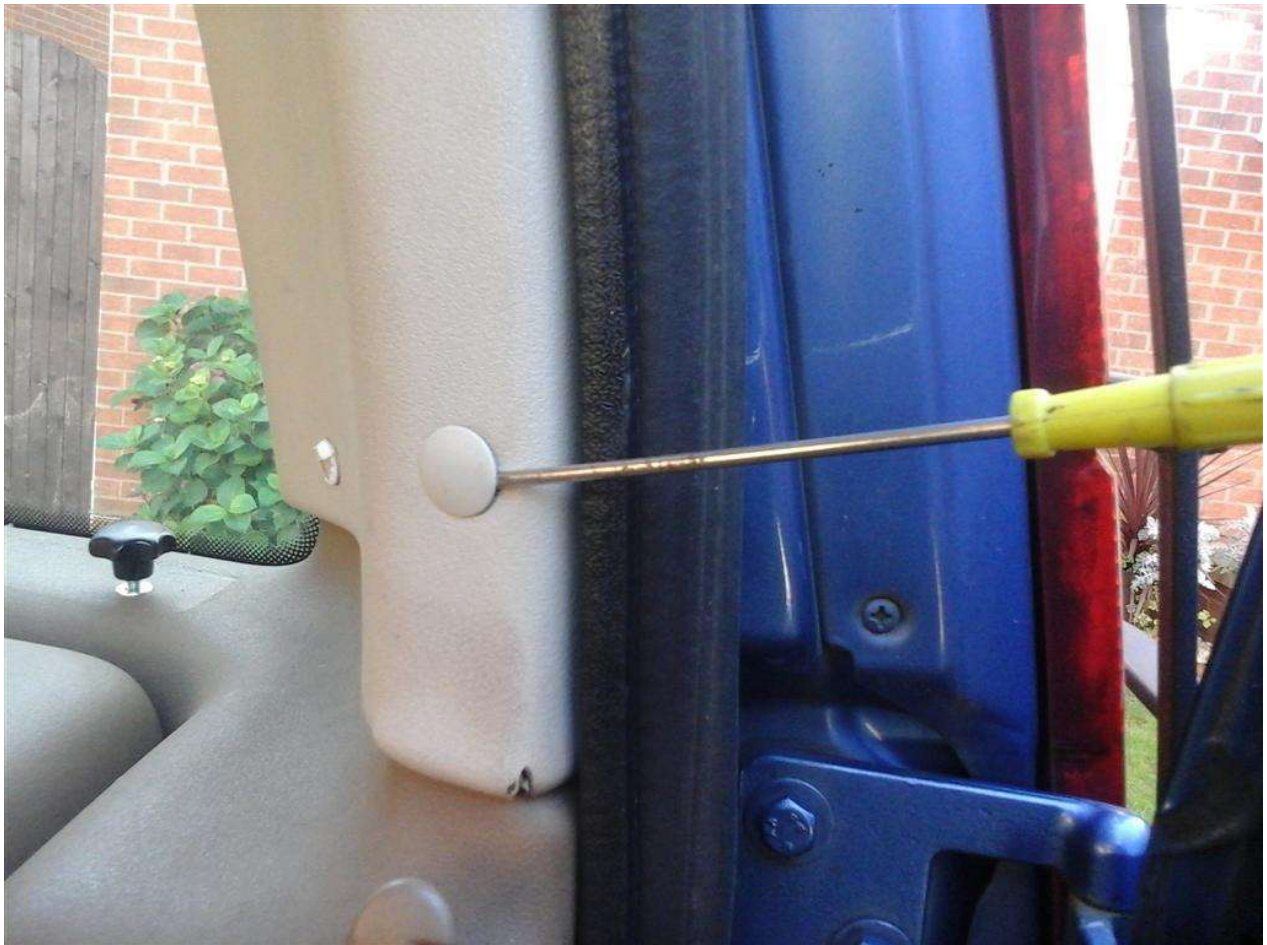


Now I am showing in this guide how to access the pump without any shortcuts.... one shortcut many take (and this is a clear indication of previous pump replacement) and that is to cut the carpet neatly down the edges of the side trim to enable it to be pulled back to access the pump access panel. To remove the carpet without cutting the lower side trim panels need removing and this is how the article is detailed.

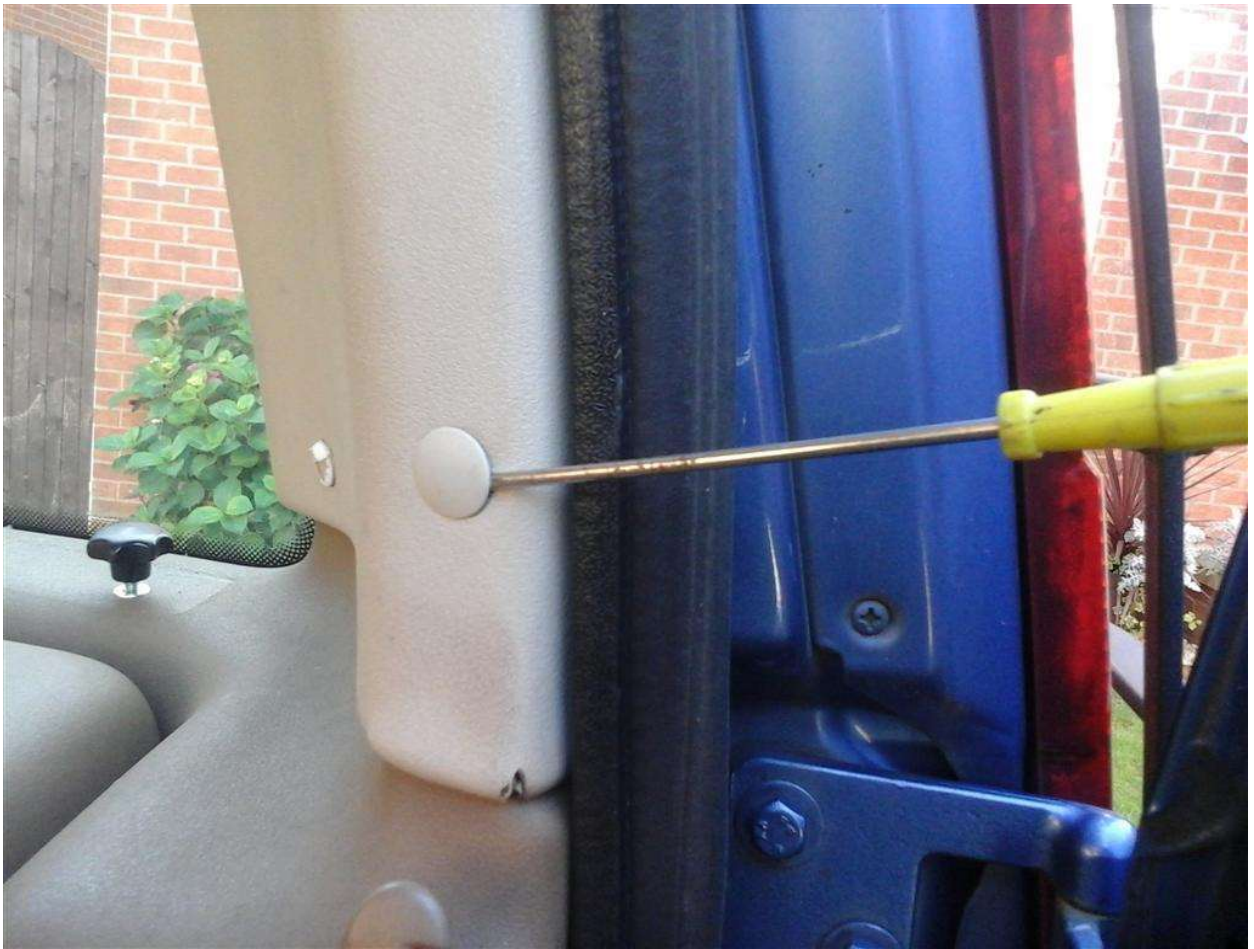
To remove the lower trims the upper trims need loosening, so locate and remove the screws under the covers shown below....



*These are probably the WORST trim fasteners on the whole car, the covers which are supposed to clip over the screws often break off or simply don't stay shut....a small blob of silicone sorts this on refit (seen above).
Remove one from each side of the vehicle here at the back corners..*



Next is the fur tree fasteners on the edge of the upper trim by the door. To remove this I would highly recommend a proper trim tool as they are easily damaged as is the trim panel itself.



Using a small screwdriver I carefully edge it under the trim fastener just enough to get the trim tool under as trim tools can often be too thick to start with...



Once you u have the trim tool under pull / lever squarely out of the hole to remove the fastener. There is 2 of these at the door edge on each side of the vehicle, remove all 4 and note the lengths and position of the trim fasteners as there are differences.

Then at the forward end of the trim panel there is another of the cap covered screw trim plugs... remove one from each side. After that there is a screw located in the hole shown below on the seat belt trim panel...remove the screw again 1 each side of the vehicle..

Then to remove the seat belt panel, it is secured by a peg on the inner face, so move the trim towards the middle of the vehicle and then it should lift up

Here you can see the hole in the trim below that the locating peg fits into. You can then slip the seat belt through the slot in the panel so you can put that trim part to one side

NOTE :- *if you have a seven seat vehicle or any vehicle with rear audio controls, you need to gently lever the audio controls from the panel first and disconnect the wiring plug.*

After the seat belt trim is removed, you will most likely see a wiring loom tie wrapped to the lower trim panel, this is the rear audio control loom....cut and remove the cable tie...

Next there is a couple more trim fur tree fasteners.... one at the forward end by the back door (shown below)

And another on the lower trim here...remove these in the same way as those you did earlier..

Now at the back of the vehicle on the lower trims, remove the small stowage grilles and in there you will see another large trim plug....remove x 1 from each side of the vehicle..

Trim plug in the centre of the image..

Next there is also some fur tree trim plugs inside the rear storage bins...

2 shown above....

and 1 more down the bottom...

Next, remove the rear door (boot) rubber door trim, you can gently tug it away, you need to ease it out of the way from boot floor level to approx the top corners on both sides of the vehicle....

Finally, on the passenger side of the vehicle (UK car) there is the auxiliary 12v socket in the rear trim. This needs to be unplugged to allow the trim to be manoeuvred out of the way..

Plugs shown below looking through seat belt trim panel hole...

Now for whatever reason, my plugs were being a pain, so because access is limited and I did not want to break the connectors, I chose to remove the self tapping screw in the aux socket surround and gently lever it out of the trim panel, this way I could see the connectors better and at the same time replace the light bulb in that socket (yes it is supposed to be lit!!!)

Take care to not damage the trim or socket surround, but you can see the tab that secures it at the top...

Finally we are ready to remove the trim panels themselves. NOTE:- some force is required to flex the trim panel out from behind the upper trim panel....take care DO NOT be heavy handed and rush it or you WILL damage the trim !!! In a nutshell, the lower trim comes forward and "into" the centre of the boot to remove it....you may well have to relieve the seat belt at the same time, but once the panel is out you will be able to push it forward and rest it on the top of the folded up backseats.

***NOTE :-** The additional 12 volt socket on my panel which also had to be disconnected for trim removal. Both side lower trim panels come out the same way, once they are both positioned forward on top of the seat, you will be able to pull the rear carpet up and forward.... You need to "pop" the small bits of carpet up from the boot tie down points...*

Lifting the carpet reveals the fuel tank access panel...

*The panel is held with 6 self tapping screws, ensure the cross heads of the screws are free from rust and dirt
BEFORE trying to remove them...*

Once the screws are removed, the panel "may" need a small helping hand to lift as it will most likely be stuck to the boot panel.....use a blunt tool / scraper to aid lifting it up....This reveals the top of the fuel pump....

Now it is most likely very dusty and dirty around the top of the pump, if you use your vehicle offroad then there is most likely some mud as well!!. Now we do not want any of that getting into the fuel lines or the tank, so grab a paintbrush or similar and loosen the dirt and Hoover it all up.

Dirty....

Clean....

Next, because your disconnecting old plastic pipes we need to help them as much as possible, so using some WD40 or similar spray the connectors with some WD.

Then depressing the same levers on each side of each pipe, gently wiggle them free, there is 4 pipes in total.

Also carefully disconnect the electrical plug, be gentle with the plug catches as they can break, again use WD40 or similar to lubricate / clean the plug retainers.

Next move the pipes carefully out of the way to each side of the pump and use some tissue or clean rag to soak up any split diesel.

Now we have to remove the pump itself. The large black ring is the pump retaining ring, this is threaded on to the tank. There is a specific spanner for this job, but a hammer and a large flat bladed screw driver will do the job just fine. Using the screw driver on the small raised bumps on the retaining ring, tap with a hammer to loosen...it is a standard right hand thread.

You should not need much force to start the retainer moving, once it's loose, simply use you hand and undo it completely.

Retaining ring removed....

*Once the ring is off, the pump top section will "pop up" as it is held on a spring into the tank, this will almost definitely disturb more dirt / dust and mud...**DO NOT** be tempted to wipe around the pump etc as you will almost certainly knock dirt into the tank, instead get you hoover again and hoover up all what's come loose only.*

Now the pump can actually be removed, so ensuring the carpet is out the way, all the tools removed and the plastic fuel pipes and electrical connector are clear.....have a bucket ready....and..

Simply lift the pump from the tank whilst doing it try not to disturb any dirt etc around the rim of the tank..

***NOTE** :- The fuel pump seal in the image below....*

When you get the pump approx 3/4's of the way out, you need to help / feed the sender unit float from the tank...

Pump removed and hopefully in a bucket!!!!

NOTE :- The fuel pump tank seal and which way around it is fitted!..

*Now I decided to fit a new retaining ring as well as a seal as I had one, the retaining ring is definitely reusable, but the seal **SHOULD BE REPLACED!!***

*Retaining ring Part No is **ESR 3808**, Seal Part No is **ESR 3806***

Here is a few images of my pump, you can see it is dirty and the small grille section on the bottom of the tank is quite gummed up, this would explain the intermittent noisy pump as it struggled to draw fuel in from the tank, although the noise may also attributed to wear and old age, but seeing dirt on something spending all of it's life in diesel is not surprising!!

Here you can see the sender section for the fuel level transmitter.

My sender at times decided it did not want to work, not a problem if you do know how much fuel you have in the tank, again this was an intermittent issue and often occurred with less than half a tank of fuel and whilst offroad and the vehicle attitude would be steep in any direction causing the sender float to move to it's extremities and fail to read. It sometimes occurred even after a re-fuel, but a switch off of the ignition and back on again mostly fixed it.

The sender unit is swappable if you desire to do so, personally I think it's a false economy to do all this work and not change the pump, especially if the vehicle has covered 100,000 miles +, but that's a choice you need to make.

When it comes to the fuel pump itself, as with all other parts there is the genuine items and the aftermarket ones, some of which are better than others. What you fit is your choice but consider that there is lots of stories of aftermarket pumps being just as noisy as the originals that they have replaced. For me it's not a difficult decision when it comes to the most important parts of the car.

The original pump is made by VDO in Germany, and as you can see the replacement pump is the same. Order your pump using your chassis number as there is variations.

The pump has some new clips which hold in the blanking plugs where the pipes will go, these need to be removed and you can use the clips if any of your original ones broke during removal.

The new seal must be fitted to the pump before installing it in the tank. Make sure you fit the seal the correct way around.....

Move the seal all the way to the top of the pump, then carefully insert it into the tank feeding the sender float switch as you go...

Once in the tank, move the seal down and feed into the top of the tank recess ensuring it is flat and level all the way around...

The pump has a "tang" on the upper body, shown above, this lines up with the tank recess. Now push down on the pump against the spring pressure, whilst holding it down fit the retaining ring over the top feeding it between your hands.

The retaining ring will not begin to engage the thread unless the pump is fully pushed into the tank. Start the retaining ring by hand, do it up as much as possible by hand, the firmer you hold the pump down the easier this will be. Once you can tighten no more, then using the hammer and screw driver again, tap the retaining ring around at least a 1/4 of a turn more to secure the pump,

Re-position the fuel lines, clean the ends with clean rag or tissue as required then reconnect the fuel lines ensuring they "click" home, then also do the electrical connector ensuring that clicks home to.

Now go to the ignition and switch on the ignition, whilst doing that pump the accelerator pedal quickly 5- 10 times, this will cause the engine management light on the dash to flash and the fuel priming procedure will automatically commence. Do not be too worried if the pump initially sounds noisy as it will need to remove the air in the system.

Whilst that is happening, ensure you have a good look around the fuel connectors on the pump to ensure there are no leaks. The auto prime will last 5mins approx, once it finishes, start the vehicle and again inspect for any leaks.

Once your happy, refit the access cover plate, clean any split dirt / mud / fuel away, re-lay the carpet down and then continue to refit the removed interior trim in the reverse order.

That's it...job done!