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HOME

"TD5 Engine Oil Pump Bolt" (Including Power Steering pipe Issue)

All makes and models of cars have their "known issues" that the general public and "hopefully" the Manufacturers are aware off. As you would expect the Discovery 2 is no different, and one of the worst issues is the famous oil pump bolt.

This is a simple 10mm headed bolt that holds the sprocket on for the oil pump down in the sump, its a well known fact that these bolts can and "do" come loose and eventually fall out, this obviously is not good as the oil pump sprocket falls off and the engine basically is destroyed as a result.

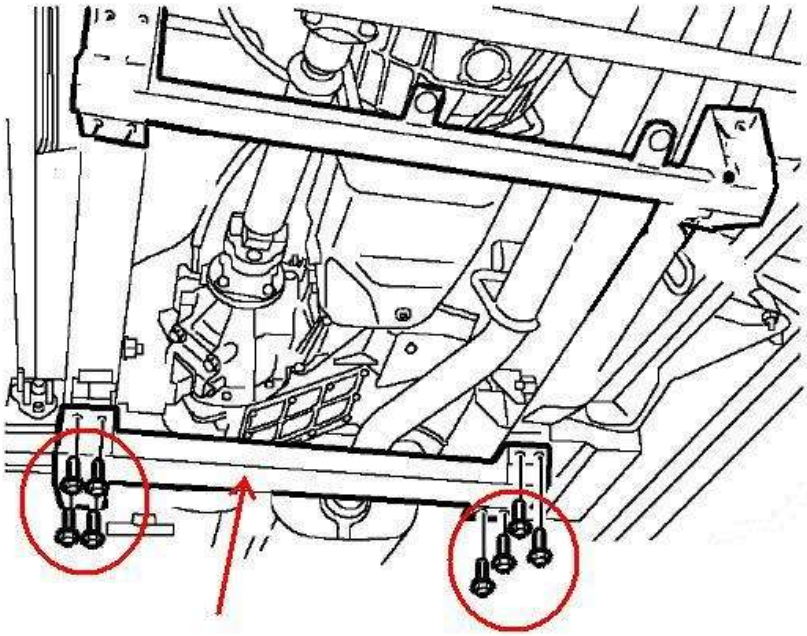
Some of you out there may read this and be all to familiar with the issue. Land Rover are also aware of it and I'm led to believe they replaced numerous engines under warranty because of it. The basic problem lies with the fact the bolt was originally installed in the factory with NO thread lock on it, hence it can work loose and cause an engine failure. I do believe it was brought to light in the earlier years / stages of the TD5 engine in the Disco 2 and was rectified at manufacture, so it's the earlier models of the vehicle that are believed to be "at risk".....How ever, I have read myself that even 2003 and 2004 models that had been inspected and the bolt was found to be loose.

Now because of this "potential" issue, and the fact that 1)..I was due for an oil change and 2)...the sump gasket on my car was beginning to weep,

I thought it definitely would not hurt to check / replace the bolt on my oil pump whilst combining it with these 2 other jobs.

So, to do this you need to get the car jacked up and supported as high as possible on the chassis to allow the front axle to drop so its possible to get the sump out. I at first jacked mine up and supported it on the front cross member, but quickly noticed that the cross member has to come off to get the sump out.....Now it does tell you this in the workshop manual, but as we all know that is written to make the job as "easy" as possible, but in this case its the only way to do it.

*So remove the **front** cross member by simply undoing the 8 bolts (4 each side). They may well be a little corroded, so a good soak in WD40 will help before hand.*



I eventually supported mine up on the front part of the chassis by radius arms and left 2 axle stands also under the rear cross member which I found to be high enough to allow the job to be done. Once the vehicle is up, then drain the engine oil as normal, as soon as it stops draining, refit the sump plug temporarily as you don't want oil dripping on you whilst under the car.

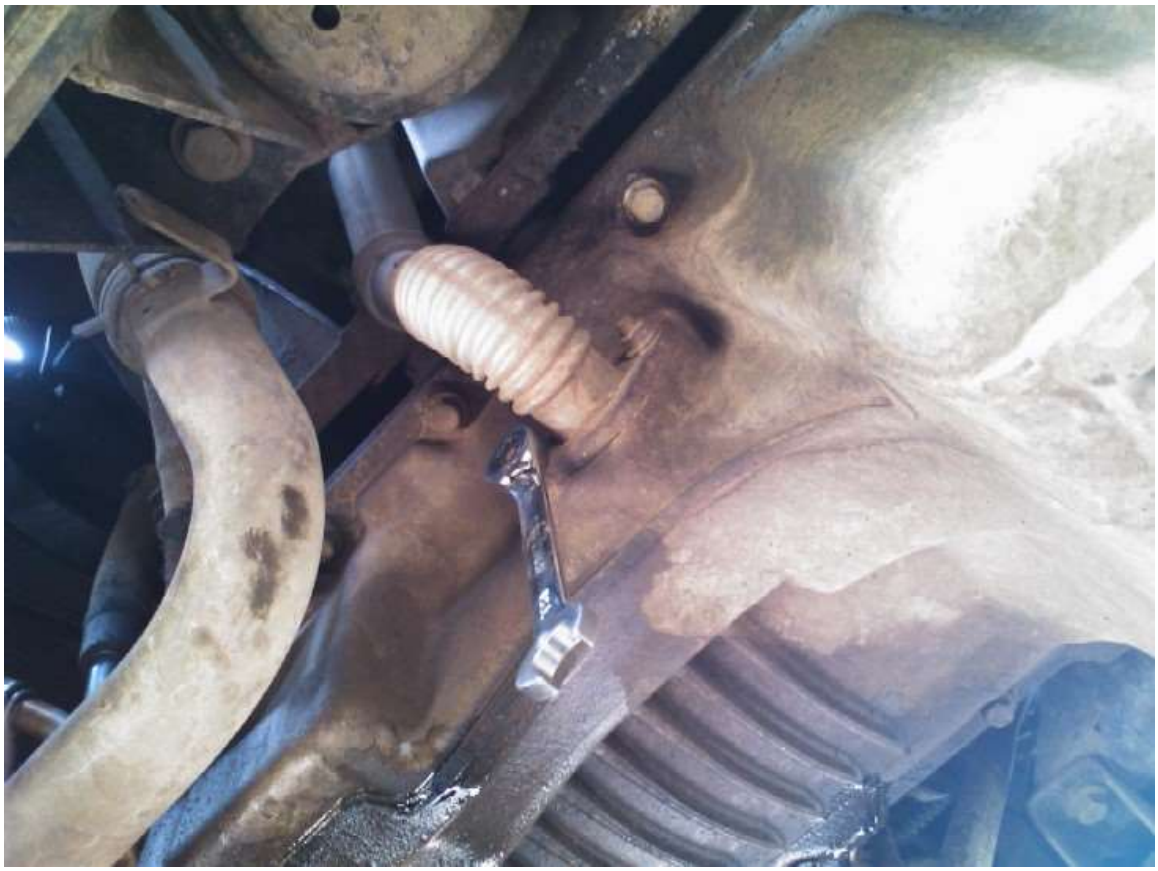
Next you will have to remove the plastic under shields (if you still have them). Once they are removed, then undo and remove the "P" clip that holds the left hand Gearbox Oil cooler pipe to the front of the engine sump.

Next, undo the clamp that also holds this pipe on the drivers side of the car, this will allow you to flex the pipe out the way when removing the sump.

Now at the back of the sump, there is 4 bolts running forwards that go through the bell housing and into the sump. Remove all 4 of these.

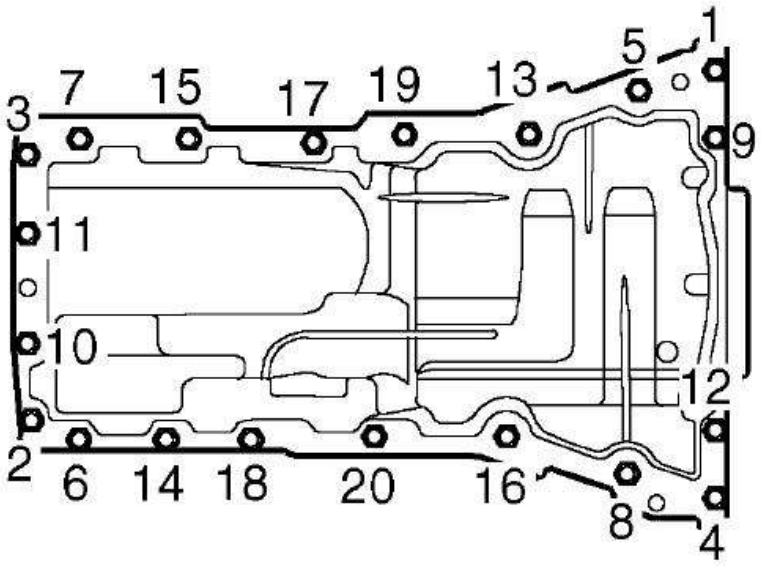
3 can be seen in this picture, the one you cannot see is directly on the opposite side. All 4 of these bolts are the same length / type, but it is good practice to note which one went where for re-assembly later on.

Now undo and remove "either" the 2 bolts, or nuts on the drain tube from the rotor oil filter. My manual stated they were bolts, but as you can clearly see below they are studs in the sump and nuts holding the pipe on. It maybe a case it was changed at "some" point during the production run.



"if" you have nuts, then remove them completely as the pipe will stay sat on the studs and "help" support the sump when you remove it. "If" you have bolts, then it may be a good idea to leave them in just 2 or 3 threads so you can easily remove them by hand when the sump is ready to come off, but they will help support it whilst temporarily left in.

Now its a case of undoing the remaining sump bolts. The is a required sequence to do this, so I have copied it here below directly from the workshop manual.



*Now, most of the bolts are the same length, except the ones nearest the bell housing. There is 3 different lengths here, so you **MUST** note their original fitted positions. To save any possible error or confusion when it comes to the refit, you could do what I did and simply get a piece of cardboard and draw the shape of the sump on it, and each time you remove a bolt, poke it through the cardboard in the relative position it came from and number either a few for reference or all of them.*

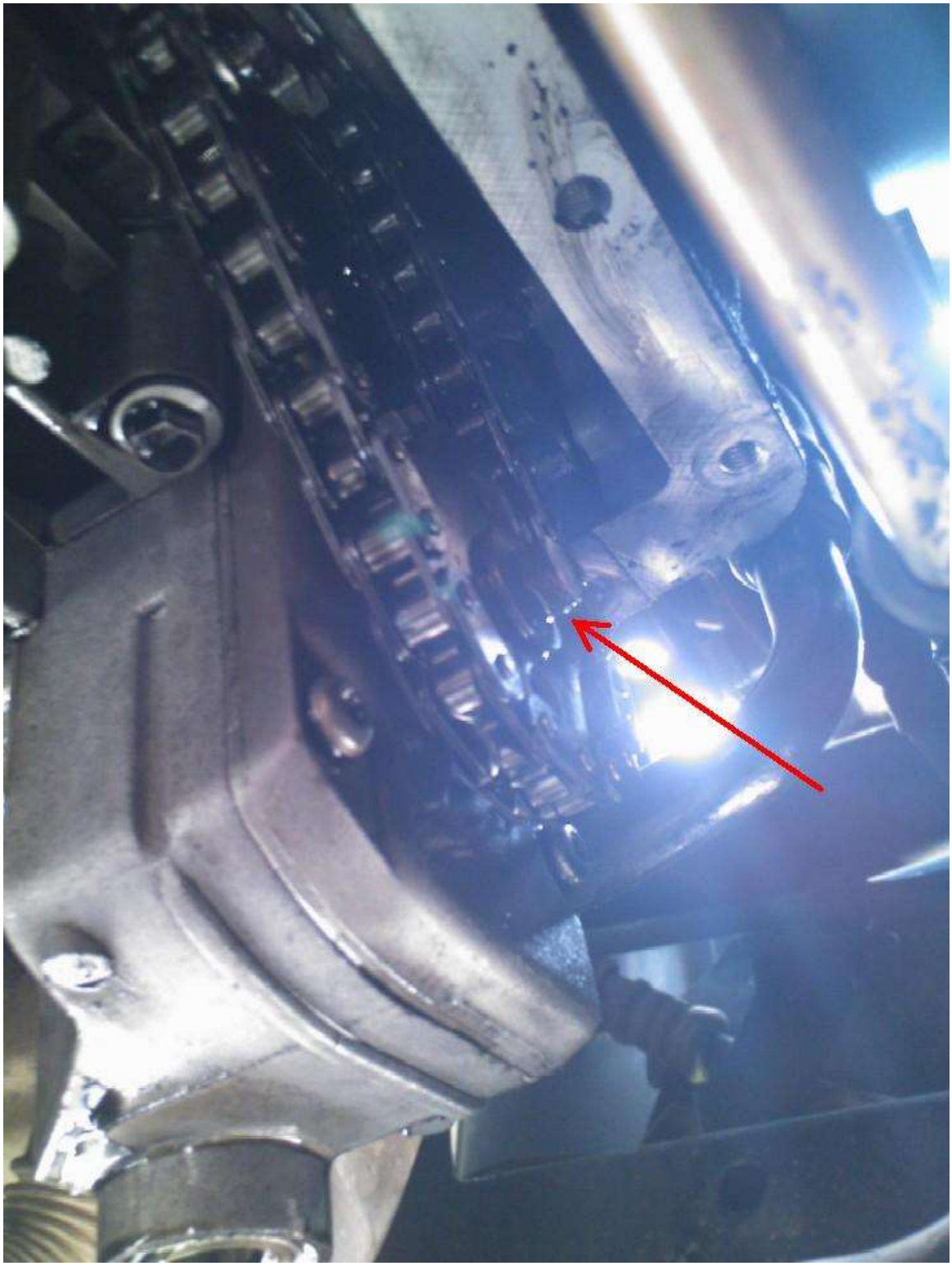
When it comes to the last bolt, remember the sump is cast aluminum so avoid dropping it at all costs, also remember either the 2 bolts or nuts holding the rotor filter drain tube, remove them and manouver the sump down and out to the rear of the car.

The workshop manual states to also remove the exhaust front pipe, I chose to try it without disturbing that and it does actually come out easily with the front pipe still installed.

Here's the sump below, as you can see there's ALWAYS some old oil you just cannot get out with a normal drain and refill !!

My Sump gasket was actually weeping from the top left corner (looking at picture above), later you will see why...

Right, now the sump is off, you will be able to see the famous bolt!!!. I'm not to sure what I wanted to find really, if it had been half out (as has happened) then it would have been a great sigh of relief, how ever, mine was definitely still in there, although it was a "little" loose for my liking, so I'm glad I checked it anyway.



The Pump bolt was superseded by a new part that has thread lock already on it, so its just a case of carefully removing the bolt and installing the new one. Keep hold of the sprocket to make sure it stays in position when you take the bolt out.

Here's the new bolt below, you can clearly see the thread lock all ready on it. The "old" bolt did not really show any signs of thread lock at all.

Simply fit the new bolt into the pump sprocket and tighten / torque it up to 25NM, 18Lbs FT or 216 Lbs IN depending on your torque wrench. A 3/8 drive torque wrench is about the right size and probably the biggest you can fit into the space to torque it up with.

Whilst the sump was off, I took the opportunity to give it a full clean / degrease both inside and out. Below is the clean sump with a new gasket installed.

The gasket has molded "dowels" on it to make sure it locates correctly both on the sump and on the bottom of the cylinder block. The gasket is installed DRY.

Now before the refit, You need to carefully clean the mating face of the cylinder block with some clean rag or tissue. While I was doing this I noticed what the next job would be :o(

At the front left corner of the sump, the power steering pipe coming down from the reservoir passes the sump VERY closely on its way up to the pump, in fact its too bloody close as it has been chaffing away and was only a matter of time before it made a hole in the pipe.

If you look at the picture below you will see the damage that has been done to the pipe!!

This pipe is a solid metal and rubber pipe. The damage here is at least 50% through the thickness of the metal part of the pipe. Now that have found it and moved it away it would most likely be ok, but I will replace this at the earliest opportunity. Land Rover in their wisdom fitted a pathetic piece of foam to stop this pipe chaffing, but as you can see it didn't really work. A simple bracket and "P" clip would have been the correct way to do it.

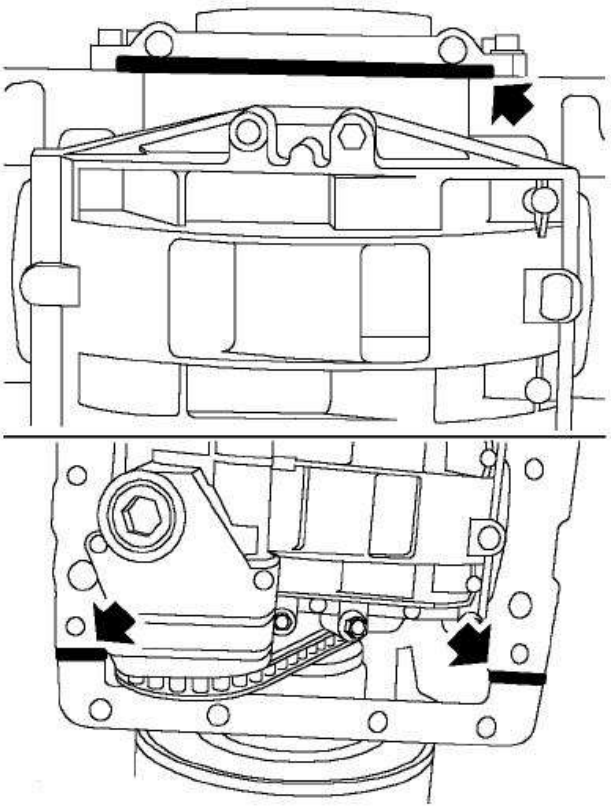
Below you can also see how much of the edge of the sump the pipe has worn away!!

The Pipe is now currently tie-wrapped securely out the way of the sump, once I get a replacement pipe, I will make a bracket and fit a "p" clip to hold it and stop it ever happening again. After writing this article, I did a little research and this is a VERY common issue, although its generally found once it has actually holed the pipe.

The new pipe is Part No **ANR6974** *and is around £20 inc VAT.*

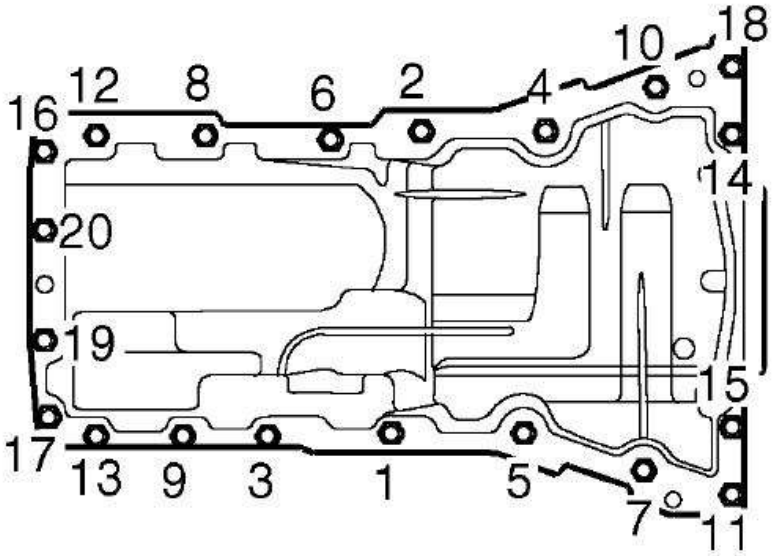
The rotor filter drain tube has a metal crushable type gasket on it, I never got a replacement in time to do this job, so I was careful when cleaning the sump and re-used the original gasket. If it leaks then I will have to replace it at a later date, but this could be done with everything installed on the car as normal. The gasket is supposed to be installed dry, but I applied a small smear of Hylomar when I refitted it to help hold it in place.

Before the final refit, you must put a small bead of sealant in the places marked below on the diagram. Once the sealant is applied you should aim to get the sump re-fitted and torqued up within 20 mins. The workshop manual calls for a sealant of PN ***RTC3254*** *if you wish to use the genuine product, but any good quality oil resistant silicone RTV sealant will suffice, Halfords do stock a suitable product.*



Now its a case of re-fitting the sump back to the engine. Carefully move it into position trying not to disturb the new gasket and not hitting the bottom of the car so dirt / dust etc falls into the sump. Its a little bit fiddly to do on your own, but take your time when doing it. Fit ALL the bolts in by hand first including the 4 bolts that go through the bell housing. This is where you MUST make sure you fit the correct length bolt in the correct position.

As with the loosening sequence, there is also a correct tightening / torque sequence of the sump bolts. (below)



Tighten / Torque all the sump bolts to 25NM , 18LbS ft or 216 Lbs IN

Tighten the 4 bolts that go through the bell housing to 13NM or 10LBS ft. Then refit the gasket and either the bolts or nuts on the rotor filter drain tube and torque to 10NM or 7LBS ft

Refit the "P" clip securing the Oil cooler pipe to the front of the sump, and refit (if removed) the bracket holding the oil cooler pipes on the right hand side of the engine (looking forward).

The rest of the refit is a reverse of the removal. Once everything is refitted, change the 2 oil filters as per the standard oil change page and then refill the oil to the correct level and run the engine up to operating temperature to check for leaks.