

How to change gearbox oil on a Fiat Ducato 2.8 idTD (engine 8140.43)

I was supposed to change the gearbox oil on my Fiat Ducato 2.8 idTD based Frankia A700 motorhome. I noticed there were a few tips on the net but I couldn't find any guide with pictures showing the reverse switch on top of the gearbox. So while doing the job I've taken some pictures and hope anyone can have some help from this.

This guide applies to the Fiat Ducato type X230, mine is model year 2000, second generation, pre-facelift. The 2.8 litre diesel engine is called "idtd" (Injection Direct Turbo Diesel), non-common-rail, mechanically driven fuel injection system. Engine type code 8140.43 (Sofim).

Tools you'll need:

10 mm socket with extension, for loosening air filter
6 mm socket, for loosening air hose clamps
8 mm square nut, for loosening drain plug
22 mm long socket, for loosening reverse switch
Some screwdrivers

You'll be able to do this without lifting the car, if you can manage to get your body under it... otherwise, prepare to lift the front which will make it easier to get to the air hose connection to the turbo, even though it might be possible to do the job without loosening it, you'll get more space if you remove it.

1) Remove air filter intake hose

Loosen the hose clamp from the air intake at the front of the car, and also at the air filter housing, as shown. Use the 6 mm socket, easiest for applying force, or a regular screwdriver.



2) Remove the pcv hose from the air filter housing

Loosen the clamp from the smaller hose underneath, and pull it off the air filter housing. Put the hose aside somewhere near the front of the car.



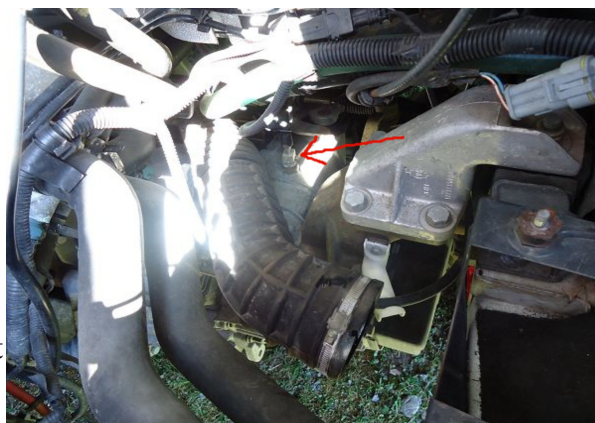
3) Remove the air filter housing

Loosen the large hose clamp at the bottom of the air filter housing, and detach the hose from the housing. Take out the air filter, and loosen the 10 mm nuts at the bottom of the housing, using the socket with extension. When these are off, you can just pull the housing upwards and take it out, as shown to the right.



4) Remove air intake hose at turbo inlet

As shown in the picture, the reverse switch is the one we want to get at, to take it out and use it as oil filler hole. I found it easiest to remove the air hose creating space to work around the switch. For this you crawl underneath the car and loosen the hose clamp at the turbo intake. The hose might sit pretty tight around the inlet, just loosen it gently using a flat screwdriver to push it off the turbo inlet, without scratching it of course.



5) Loosen the reverse switch

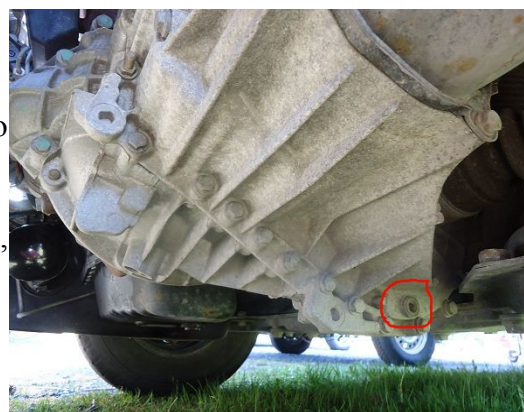
Take off the electrical connector, by first loosening the little metal clamp a bit which secures it around the switch. Use a small flat screwdriver to fiddle it loose, and you should be able to pull the connector off straight upward. Make sure the securing clamp is put back as it's supposed to be sitting in the connector, because later you'll be able to just slide it on again then.



Loosen the switch using your 22 mm long socket. Make sure to use the long socket to avoid damaging the connector. Maybe you can use a regular flat wrench but I found it easier to use the 22 mm long socket and apply equal force around the switch. This should brake loose pretty easily. Just loosen it a bit with your socket and then screw it out by hand.

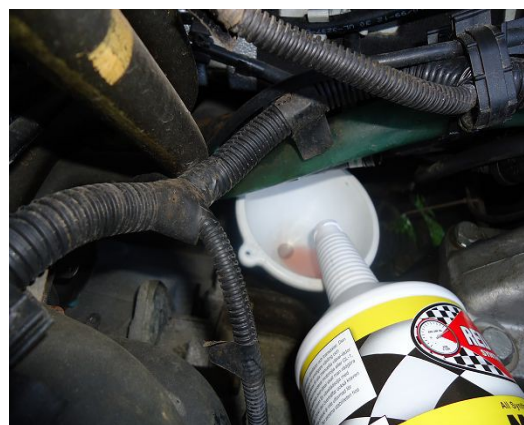
6) Drain gearbox oil

Use your 8 mm square nut to loosen the drain plug as shown to the right. Brake it loose and then you'll be able to remove it by hand. On the picture I haven't placed the pan underneath yet but of course, don't forget to put some oil pan under to catch the old oil. It's good to use an empty pan, so you can check how much oil you got out, meaning how much was in there? Let it drain completely, be patient. Once it's drained, put back your plug, use a new washer if you haven't forgot to buy one like I did :-). I reused the old one and pulled it pretty tight, doesn't leak so far.



7) Fill with fresh gearbox oil

Thanks to removing the air hoses around the reverse switch, there's enough space to fill from above using a small-medium funnel like the plastic one in the picture, which fitted nicely in the hole so it sat tight and I could just fill it straight from the bottle.



I used Red Line MT-90 which is a fully synthetic GL-4 75W90 oil for manual transmissions. I know there's lots of different advice on which oil is best for this box but that's not the purpose of this guide. I trust Red Line in this situation and think it's a good product.

As for the amount of oil, I put in exactly 3 bottles which will be 3 liters, according to the general advice on giving it a little extra to splash around the fifth gear.



8) Put it all back together

Once the oil is in, screw in the reverse switch back again and pull it tight with the 22 mm long socket. Tight is good, don't overdo it. Push back the connector onto the switch.

Next, slide back your air hose onto the turbo intake. I found it difficult at first to get it back on, but after applying a tiny bit of oil to the inside of the hose, and pushing from above, it just slid straight on. Wait a bit retightening your hose clamp, it's better to do this while both ends of the hose are back in place.

Now put the air filter housing back on, tighten you 10 mm nuts gently, and slide on the other end of the air hose to the bottom of the housing. While this one's in place, tighten the hose clamps on both sides, don't forget the turbo intake!

Next, slide on the small pcv hose to the bottom and tighten the clamp. After that, you can put the intake hose back in place and tighten the clamps at both ends.

Put back your air filter again.

Now you should be good to go, re-check so everything is tight and where it's supposed to be.

Take the car for a run and enjoy smooth gear changes. Make sure to check the drain plug afterwards, so it doesn't leak!



Hope this will help. Enjoy!

Regards,

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