

Dual Mass Flywheel Passat

Volkswagens Passat is popular as a fleet car and the Diesel 1.9 TDI variant has sold well with over 58000 on the road since the 2000 MY. The vehicles popularity stems from the refined and smooth driveability which is dramatically improved by the use of a Dual Mass Flywheel (DMF)

DMF's are not some mysterious component fitted by the vehicle manufacturers to ensure franchised dealers retain the business in fact they are very easy to check and can be very profitable to independents, because with the clutch removed its only a couple of minutes to replace it. In addition independents don't have to pay the premium for the OE packaging and can purchase OE parts in the aftermarket supplied by LuK from local motor factors.

The job can be carried out on a two post lift with a transmission jack to support the gearbox and whilst there are some special splined sockets required these are freely available in the aftermarket.

Removing the gearbox

Firstly disconnect the battery. Raise the vehicle on a lift and remove the two engine undertrays. Unbolt the front engine snubber mounting which will allow the engine to tilt.



Fig.1



Fig.2



Fig.3

Remove the Driveshaft CV joints from the gearbox.

Support the gearbox using a transmission jack and remove the RH gearbox mounting bracket and the rubber mount (fig 1). Remove the LH gearbox mounting bracket and the rubber mount. Remove the RH driveshaft heat-shield. Remove the lower bell



Fig.4a



Fig.4b

housing bolts, noting their position as they are all different lengths. With the lower bolts removed the gearbox can be partially lowered to allow the gear mechanism tie bar bolt to be removed (fig 2). The selector arm rod can now be removed by slackening the bolt.

Once removed the gearbox can be lowered further, ensuring nothing fouls the radiator. Above the gearbox the slave cylinder is retained with a single bolt (fig 3) that once removed allows the slave cylinder to be withdrawn and stowed without disconnecting the hydraulic pipe. Detach the harness clip from its bracket and disconnect the two multiplugs to the gearbox.

Unbolt the starter motor bolts and leave it in situ. Remove the remaining bell housing bolts including the two right at the top. The gearbox can now be withdrawn and lowered safely to the floor. Unbolt and remove the clutch.



Fig.5



Fig.6

Flywheel testing

The DMF should be checked for wear every time the clutch is replaced, fitting a brand new clutch to a worn flywheel can lead to complete clutch failure.

Step 1: Any reports from the customer of rattles or clonks during start up or shut down or excessive gear rattle could be a sign that the DMF is starting to wear.

Step 2: If the friction face has any deep grooves, scoring, blueing or cracks then the flywheel needs replacing.

Step 3: The secondary mass (friction face) should be rotated with your fingers (figs 4a & 4b) to ensure the springs and damper are functioning correctly. As a general guide LuK suggests 15 to 30 mm total movement measured at the outer edge of the flywheel. It should feel damped at either end of its travel and not feel loose or dry.

Step 4: In between the primary and secondary mass is a bearing or bush and it should be checked for free play by rocking the secondary mass; it will have some play but this should not be excessive. Over 2 mm on this application, again measured at the outer edge, would be excessive and it should be replaced. If there is any doubt or the clutch has suffered a major failure then you can contact the Technical Hotline at LuK for further advice.

Release bearing

The release lever should be inspected for damage or wear, then clean the gearbox sleeve for the new bearing (fig 5). As it is a plastic housing with a metal sleeve it should be fitted dry; if it were metal to metal then high melting point grease only should be used.

Apply a small amount of grease to the first motion shaft splines. After the flywheel has been checked and replaced if necessary, the spigot bearing should be checked for damage. Refit the new clutch using a universal alignment tool and tighten the bolts evenly and sequentially.

Before attempting to refit the gearbox there are several items i.e. harnesses, hoses, and slave cylinder (fig 6) above the bell housing position that need to be stowed safely as it is not easy to see if anything is trapped between the engine and gearbox. Ensure the gearbox dowels are in place and in good condition and that the backplate is in position on the dowels before attempting to refit the gearbox. Lubricate the spigot bearing with high melting point grease and the gearbox can then be lifted into place, taking care to make sure the dowels are located before fitting any bell housing bolts. Rebuilding is the reverse of the removal ~ but remember to fix the gear mechanism tie bar before the gearbox is raised into its final resting position.

All information is supported by LuK's experienced and highly trained technical team, available on 08457 001100. Additionally check out the latest in online support at www.repxpert.com.



LuK have produced a handy wall poster that not only explains how to check Dual Mass Flywheels for wear but it can also be used to demonstrate to your customers why you are having to replace it. If you would like a free poster from LuK explaining how to check a DMF / DFC then log on to latest in online support www.repxpert.com. Registration and the poster are both free of charge.

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