LuK Clutch Academy

Alistair Mason, Schaeffler

This month, REPXPERT Alistair Mason, replaced the clutch assembly and dual mass flywheel (DMF) on a 2009 Audi TT 2.0 TDi Quattro, which had covered more than 85,000 miles. With a recommended book time of seven hours and all information available through Schaeffler's information portal, REPXPERT, this makes a great repair for any independent workshop.

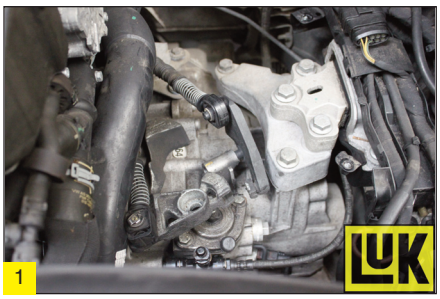
The job requires the following workshop equipment: a two-post vehicle lift, engine support, transmission jack, clutch alignment tool and brake/clutch pressure bleeder. You will also need a locking wheel bolt key and radio code, if required.

Gearbox removal

With the vehicle on the lift, open the bonnet and boot, disconnect the battery located in the boot, obtain the locking wheel bolt key and then slacken the locking wheel bolts on both front wheels.

Working in the engine bay, remove the engine cover, disconnect the air mass meter and vacuum pipe, then remove the air filter assembly and carrier, which provides good access to the top of the gearbox.

Remove the gear change cables, selector lever weight assembly and cable retaining bracket (Figs 1 and 2), clamp the flexible hydraulic clutch pipe and then disconnect the pipe from the concentric slave cylinder (CSC) connection.



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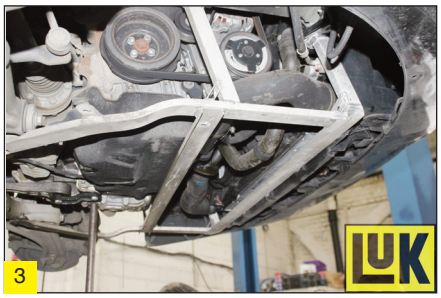
Disconnect the wiring from the starter motor and detach the earth lead from the starter motor's top retaining bolt, then undo the top starter motor retaining bolt. Disconnect the reverse light switch multiplug and remove the top bell housing bolts.

Raise the vehicle to gain access to the underside and remove the engine undertray, then lower the vehicle to waist height. Remove both front wheels, the inner wheel arch liners and then raise the lift and remove the alloy under guard framework (Fig 3).



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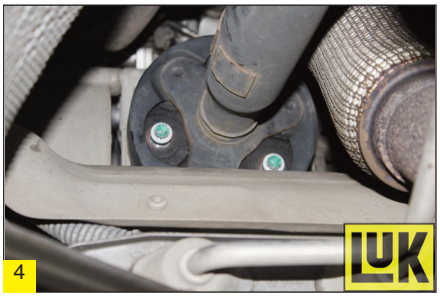
Remove the front driveshafts by unscrewing the hub nuts and the spline bolts retaining the inner CV joints, then release both bottom ball joints.

Take away the transfer box from the gearbox, mark the position of the propshaft onto the transfer box , unclip the oil level sensor wiring loom from the retaining clip, disconnect the exhaust front pipe sleeves and remove the rubber mounting assembly.

Undo the three 12-point bolts from the transfer box to cushion drive assembly (Fig 4), remove the lower gearbox pendulum mounting (Fig 5), ease the engine and gearbox forward and disconnect the propshaft from the transfer box and support, as required.



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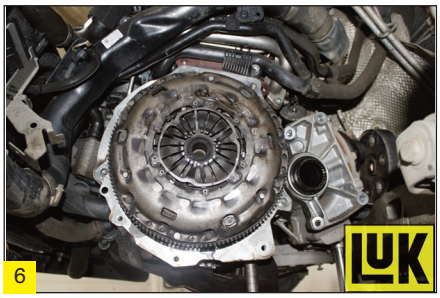
Drain the gearbox oil and then undo the O/S/F driveshaft flange using a long 6mm Allen key, disconnect the transfer box retaining bracket bolts and then the four main body securing bolts. At this point, the transfer box can be removed and secured.

Undo the lower bell housing bolts, leaving two easily-accessible bolts in position to retain the gearbox, then remove the starter motor. Support the engine using either a brace bar, sub-frame support or second transmission jack, then remove the gearbox mounting, lower the engine/transmission assembly to aid gearbox removal, support the gearbox using a transmission jack, undo the final bell housing bolts and now ease the gearbox away from the engine. Once clear, lower the transmission jack and place the gearbox in a safe area.

Clutch replacement

Undo the six clutch retaining bolts (Fig 6) and remove the clutch cover and plate assembly. Upon inspecting the clutch plate, it was confirmed that the clutch had reached the end of its service life, as the friction material had worn close to the rivets.



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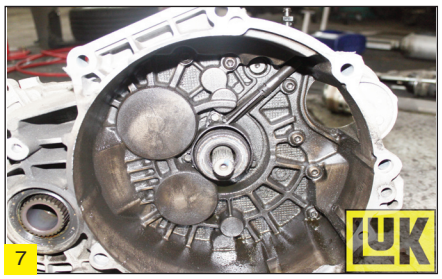
The DMF was replaced on the customer's request; with it removed, inspect the back of the engine for any oil leaks and rectify as required, clean the back of the engine with clutch and brake dust cleaner and mount the new DMF.

In doing so, insert the new bolts and tighten to the manufacturer's torque specifications – torque values are available via both the REPXPERT website and app – and finally de-grease the clutch surface on the flywheel.

2009 Audi 2.0 TDI Quattro

Focusing on the gearbox (Fig 7), remove the CSC, inspect the bell housing area for any oil leaks and rectify as required, clean the bell housing area, confirm the CSC mounting surface is clean, mount it and



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ensure the retaining bolts have tightened correctly; however, do not operate or squeeze the CSC as this could damage the new CSC.

Apply a light smear of high-melting point grease to the gearbox input shaft splines, mount the new clutch plate onto them, which will confirm the clutch plate is correct, and evenly distribute the grease. Remove the clutch plate and wipe off any excess grease.

De-grease the clutch pressure plate surface, then, using a clutch alignment tool, mount the new clutch onto the DMF. Fit the clutch bolts and torque to the manufacturer's specification.

Before re-fitting the gearbox, it is always good practice to flush out the old clutch fluid and replace it with new. Also, ensure the gearbox alignment dowels are located correctly.

Mount the gearbox onto the transmission jack, ease into position and align the gearbox to the engine. Once in position and located on the dowels, secure with two bell housing bolts.

Refit in reverse order of removal. When the battery has been reconnected, reset all affected electrical consumers, replenish the gearbox oil with the correct quantity and grade of oil. Schaeffler's advice when bleeding this clutch is to pressure bleed at 2.0 bar. Always carry out a full road test to ensure a quality repair.

Information on Schaeffler products, fitting instructions, labour times and much more can be found on the REPXPERT garage portal – www.repxpert.co.uk – the REPXPERT app, or by calling the Schaeffler REPXPERT hotline on (+44) 1432 264264.

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