



Alistair Mason, Schaeffler

LuK Clutch Academy

Mini One (R52)

REXPert Alistair Mason, is replacing the clutch assembly in a 2008 Mini One (R52), that has covered more than 72,000 miles. The customer had reported that the clutch was “slipping” under load, and a short road test confirmed the clutch was at the end of its service life. The scheduled time for the repair is 6.65 hours.

Workshop equipment

- Vehicle lift (two post is ideal)
- Engine support
- Transmission jack
- Universal clutch alignment tool

Gearbox removal

With the vehicle positioned on the lift, but at ground level, slacken the front locking wheel bolts and front hub nuts. Open the bonnet, raise the ramp to waist height and remove both front wheels and the N/S wheel arch liner. Raise the ramp again to access the underside, and remove the engine undertray. Lower the ramp and remove the front bumper, then the aluminium bumper bar, which allows the bumper support bars to be removed from the front sub frame (Fig. 1).



Lower the vehicle and remove the air box/filter assembly, battery cover, battery and battery carrier, as well as the engine control unit. This now gives good access to the top of the gearbox to disconnect the gearchange cables and support bracket, which can now be stowed safely in the bulkhead area. The top bell housing bolts can now be removed.

Raise the ramp to gain access to the underside and drain the gearbox oil. While the oil is draining, remove the pendulum gearbox mount and when the oil has drained, refit and torque the drain plug.

Remove the front driveshafts and lower the front subframe by disconnecting both bottom ball joints and removing the hub nuts. Then move the hub assemblies outwards, detach the driveshafts from the hub assemblies, and ease them out of the gearbox. Remove the steering column pinch bolt, disconnect the steering column from the steering rack, support the front subframe and remove the

subframe retaining bolts, lowering the subframe slightly, to aid gearbox removal. Remove the starter motor, take off the two clutch slave cylinder retaining nuts (Fig. 2), detach the slave cylinder from the gearbox, but do not disconnect the hydraulics, and stow away from the gearbox, and remove the multiplug from the reverse light switch.



Support the gearbox using a transmission jack and remove the gearbox mounting. Support the engine using either a large axle stand or second transmission jack, and remove the remaining bell housing bolts. Lower the gearbox transmission jack slightly and ease the gearbox away from the engine. Once clear, remove the gearbox from the vehicle and place in a safe area.

Clutch replacement

Remove the six clutch bolts and the clutch assembly. Inspect the flywheel for wear and for any small heat cracks, removing the glaze from the flywheel surface with Emory cloth. Also, inspect the back of the engine for any leaks and rectify if required. Clean the flywheel with brake and clutch dust cleaner.

Turning our attention to the gearboxes release system, remove the release bearing, release arm and guide tube, and inspect the pivot point for wear, replacing if required. Fit the new input shaft guide tube, lubricate the pivot point with a light smear of high melting point grease and locate the new release arm and release bearing. Apply a light smear of high melting point grease to the input shaft splines, mount the clutch plate onto the input shaft, which will ensure the clutch plate fits correctly and also evenly distribute the grease. Then remove the clutch plate and wipe off any excess grease.

After ensuring all the surfaces are free from grease, mount the new clutch assembly onto the flywheel, making sure the clutch plate is the correct way round. Using a clutch alignment tool, align the clutch and cover, tighten the bolts in an even and sequential manner and, finally torque to the manufactures specification (Fig. 3).



Gearbox installation

Prior to installing the gearbox, ensure all pipes and wires are clear of the bell housing area and that the alignment dowels are still installed correctly. With the aid of a transmission jack, position the gearbox close to the engine. Spend time to align the gearbox to the engine and then ease into position. When the gearbox is located on the dowels, insert and tighten some easily accessible bell housing bolts. Mount the gearbox onto the gearbox mounting and then remove the transmission jack and engine support. Insert the remaining bell housing bolts and torque all bell housing bolts to the manufacture's specification. Finish the installation in reverse order of removal.

Refill the gearbox with oil, torque all required bolts to the manufacture's specification, and reset all electrical consumers after battery reconnection.

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