LOCKDOWN PROJECT: MAINTAINING THE QUICKSHIFT GEARLEVER

These excellent gearlever assemblies are fitted to Sevens supplied with the 6-speed box and also fit the Ford Type 9 5-speed. One shortcoming (compared to the standard Ford Sierra gear lever) is a lack of protective bellows, which can lead to contamination by road dirt and water. In this article, **John Vine** explains how to dismantle one, and suggests a way to keep the internals clean and dry.

My 2008 R400 Duratec came as standard with Caterham's excellent 6-speed box and a super-smooth gearchange. But now that the car's mileage was approaching 50K, I thought it was time to check that the Quickshift assembly was up to scratch.

This was already on my list of "when-I-get-around-to-it" jobs. However, now that the Covid-19 lockdown was keeping my Seven off the road, the opportunity had arrived to get on and do the work.

TOOLS REQUIRED

- Socket wrench, 13mm socket, extension piece
- Two Circlip pliers: one internal, one external (I used a Draper set with interchangeable heads)
- Torque wrench with range 10+ lb/ft (optional, really)

THE QUICKSHIFT

The Quickshift is a beautifully-crafted piece of engineering, manufactured for Caterham by Quaife Engineering, with a lever machined from solid steel billet and a silky-smooth spherical rose bearing. Judging by the price (well over £100), I believe it was fitted only to the upper echelons of the Seven range.

REMOVING THE GEARLEVER ASSEMBLY

Start by removing the tunnel top:

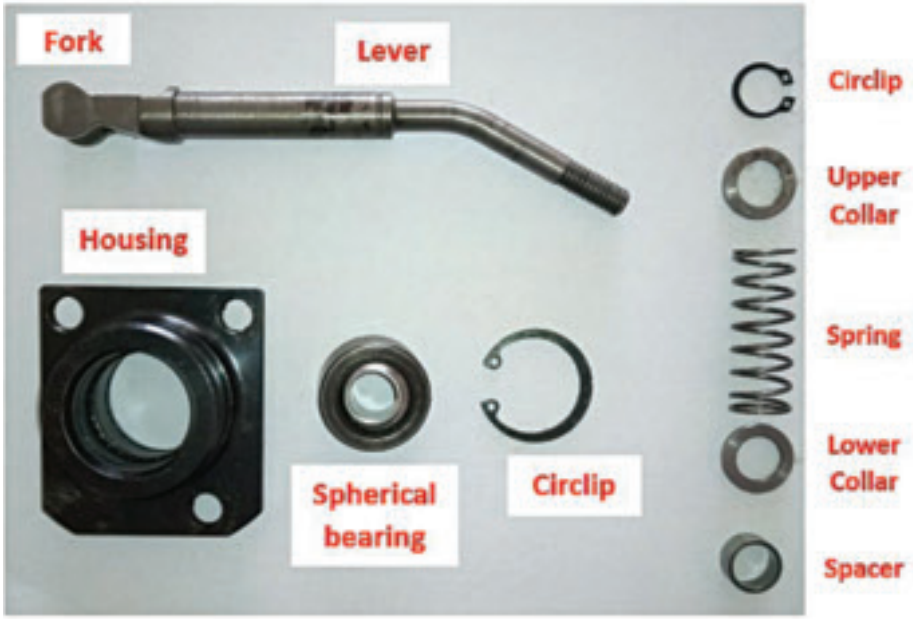
1. Move both seats as far forward as possible.
2. Unscrew the gearlever knob.
3. Slacken off the handbrake cable adjuster — a white plastic knurled nut plus locknut adjacent to the differential. Count the clicks (100 in my case), so you can easily reinstate the setting later.
4. Raise the handbrake to its highest point, and lift out the tunnel top.

The gearlever assembly is attached to the gearbox tail by three M8 setscrews, each (in my Seven at least) with a plain and spring washer. Remove the screws with a 13mm socket plus extension, and lift out the assembly.

At this point, you'll be able to see the nylon saddle attached to the selector rod, where the end of the gear lever engages. This can wear over time, causing the gearchange action to become less precise, so I planned to renew this as well.

TAKING THE QUICKSHIFT APART

Although my lever moved freely in the spherical bearing, there was quite a bit of accumulated road dirt around, so I opted to dismantle and clean the whole assembly.



1. Clamp the forked end of the lever firmly in a vice, with the lever vertical.
2. Press down on the upper collar (an open-ended spanner works well).
3. Remove the small circlip using the external circlip pliers.
4. Lift off the upper collar, spring, lower collar, and spacer.
5. Release the lever, turn the assembly over, and clamp the mounting in the vice.
6. Remove the large circlip using the internal circlip pliers.
7. Push out the spherical bearing from the mounting, and slide it off the lever.

At this point, I cleaned all the components, and lubricated everything except the spherical bearing with a light smear of Castrol LM. Note that the bearing itself does not need to be lubricated as it runs in a special low-friction housing.

QUICKSHIFT MODES

The Quickshift has two operating modes:

- Standard (with the spherical bearing in the lower position in the housing)
- Quick (with the spherical bearing in the upper position in the housing)

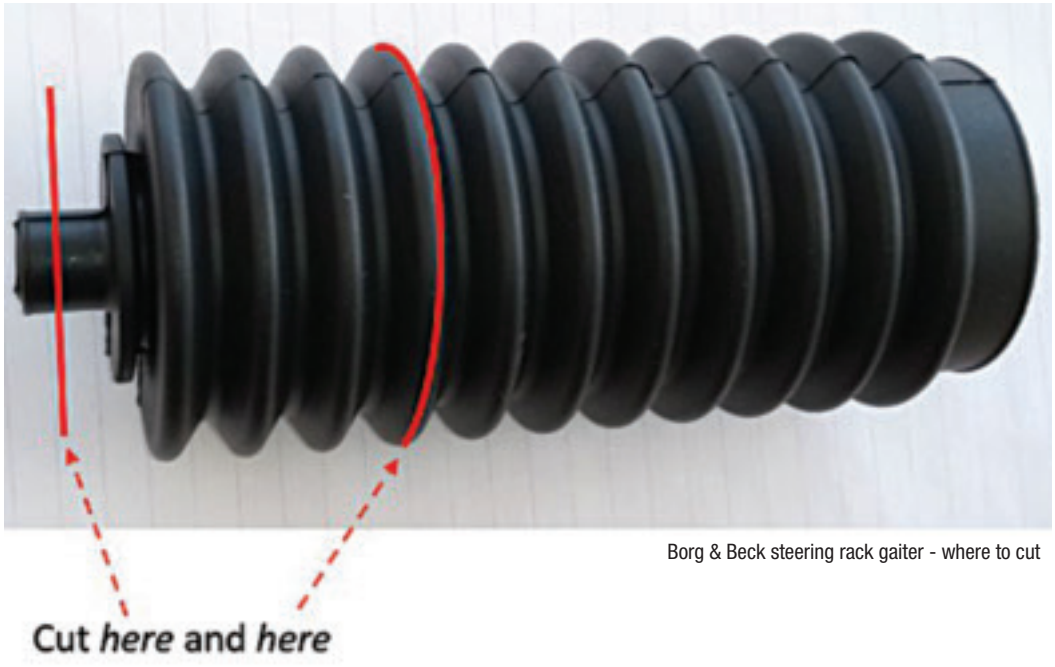
The position of the bearing governs the "throw" of the lever (that is, how far the gearlever fork moves in relation to the gear knob), with the Quick setting giving a faster action. The Caterham application uses Standard mode because (so I'm reliably informed):

- The change action is fast anyway because the lever itself is much shorter than the standard Ford part
- Having too fast an action is likely to be detrimental to the synchromesh, especially with the very quick changes typical in racing

However, should you want to make use of the Quick mode, insert the spherical bearing in the upper position in the housing, with the spacer below.

PUTTING IT BACK TOGETHER AGAIN

Re-assembly is simply the reverse of dismantling (as frequently noted in Haynes manuals)



Borg & Beck steering rack gaiter - where to cut

Gear lever with bellows fitted

KEEPING ROAD DIRT AND WATER OUT

Because the Quickshift has no protective cover, it's exposed to road dirt and water, and this can lead to corrosion of the spherical bearing.

One well-tried solution is to make up and fit suitable bellows. I can't claim that my particular design is in any way original as previous BlatChat posts (notably from DJ and Mechanical Moz) suggested the same years ago.

Two possible candidates are the Constant-Velocity joint (CV) gaiters from a classic Mini, and the steering rack gaiters from the Rover SD1. Something with a neck of about 10mm I/D and a body of about 50mm I/D is likely to fit best. The Borg and Beck BSG3156 steering rack gaiter (a pair) comes closest and is available for around £10 (eBay). Note that both gaiters have an I/D of 10mm at one end and a body of I/D 50mm, so you'll have a spare in case you make a mess of cutting the first one (as I did).

The important thing is to leave a trough wide enough to accommodate a cable tie around the base.

Slide the bellows over the gear stick, and then fix tightly with cable ties around the top and base. Note that I also trimmed off part of the rubber collar (arrowed) as it does nothing useful here, but this isn't essential.

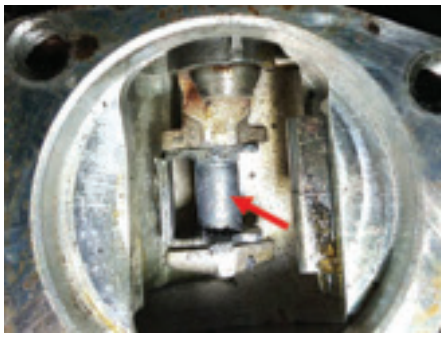
RENEWING THE NYLON SADDLE

Now is a good time to renew the nylon saddle, if it's worn. This is Ford part 1522783 and is widely available for around £10 - £18.

Pull out the old one using long-nosed pliers. This can be a little tricky as it's important to keep the saddle aligned vertically. Then ease the new saddle over the selector rod and press gently into place (there should be an audible click as it snaps into position).

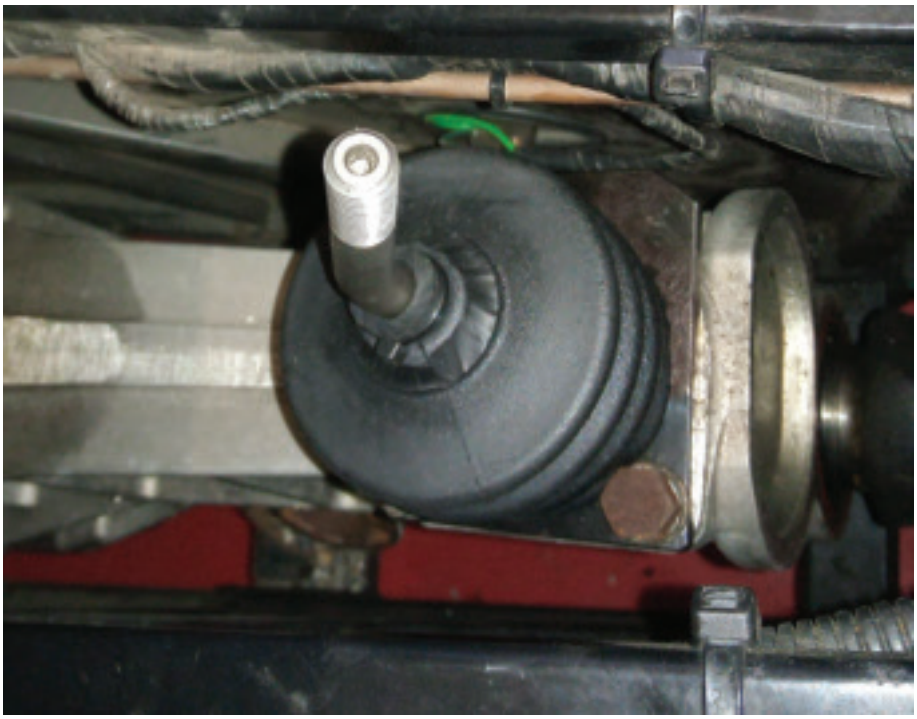
REFITTING THE QUICKSHIFT

First, apply Castrol LM to the bottom of the gear stick where it engages with the saddle. Then apply a little copper grease around the base of the housing to discourage electrolytic corrosion between the housing and the gearbox tail. Insert the assembly and tighten the three setscrews to 15lbft (20 Nm). Job done! **LF**



Nylon saddle arrowed

New nylon saddle



Gear lever plus bellows installed