

'Bias' Spring Adjustment

The LT77 Rover Transmission on the Morgan Plus 8 is a 5 Speed Manual gearbox. This is a very robust transmission but like anything mechanical, things can and do go awry. No need to worry though, they are usually an easy fix.

One of the known issues with this transmission is with the remote shifting mechanism. This remote shifter is provided with a wire spring that is used to adjust the shifter's side to side alignment. This spring is known as the 'bias' spring. (Note – Just the end of the wire spring can be seen in the picture.)

When the 'bias' spring is out of adjustment, one side of the 'H' shift pattern becomes difficult to engage (e.g. either the left side of the 'H' pattern, with 1st and 2nd gear, or the right side of the 'H' pattern with 3rd and 4th gear.)

Such was the case of a 1990 Morgan Plus 8 with around 40K miles. The shifter would not easily go into 3rd or 4th gear (e.g. the right side of the 'H' shift pattern.)

After a few other corrective actions failed, I chose to try to adjust the 'bias' spring.

The 'bias' spring adjustment is an iterative affair. I adjusted it some and took it on a road test, adjusted some more and tested again. **5 iterations later, it worked.** I could now easily engage 3rd and 4th gears.

What the bias spring does is set the gears shift's predilection for the right side (1st and 2nd) or left side (3rd and 4th) gears. (It also provides that strong resistance you push against it going to the left for reverse gear or over to the right to engage 5th gear.)

It is adjusted by raising and lowering bolts that govern the spring's relative position. Raise the adjustment screw / bolt on the right side (backing the bolt out or loosening it some) higher than the adjustment screw / bolt on the left and the gear shift handle tilts a bit to the left (with a predilection for 1st and 2nd). Raise the left side bolt (above the bolt on the right side) and the gear shift handle tilts a bit to the right (with a predilection for 3rd and 4th). (This configuration is shown in the picture.)

The shift mechanism on this car was set with way too much 'bias' towards 1st and 2nd (e.g. the left side bolt was screwed in way too far or too low) hence the inability to get into 3rd and/or 4th easily. I raised the left side a good ¼" and lowered the right side about the same, to get the shifter to 'bias' to the right side gears (3rd and 4th). It is now pretty well balanced. 3rd and 4th gear are easily obtained and not the struggle they were before.

Each of the adjusting bolts has a locking or retaining nut that precludes the adjusting nuts from moving. On this car, both of these locking nuts were loose and I suspect that is why the spring bias adjusting nuts were too low. They must have vibrated and screwed themselves in/down over time.

