Drips & Sparks

If you have any questions or problems with your LBC, send an e-mail to Randall Young at: HelpDesk@sctoa.org

I have a 56 TR3 that could probably use a steering box rebuild before I reinstall it. Did you do this yourself or have it done (guessing yourself). If so, can you enlighten me a bit as to parts you needed and the process involved.

Yeah, I did it myself. Conceptually it's pretty easy, just disassemble the box, replace the worn parts, then reassemble and adjust. As they say, the devil is in the details !

I know I've written this before but apparently didn't save a copy. It's been awhile, hopefully I can remember all of it. You should definitely have a shop manual on hand, tatty originals can be had on eBay for $10 or less, or I believe Moss and TRF still sell Bentley reprints. The Haynes manual is also available new, but if you're only going to buy one, I prefer the factory manual.

Clamp the box in a vise, preferably by the mounting bracket.

Remove both covers, plus the shims, bearing race and bearing from the front cover.

If you can, remove the worm and shaft assembly. It was a tight fit on mine, so it might not come out on some until the Pitman arm is removed. But if you can it's best to remove it now, so there's no question of putting pressure on it while removing the arm. Remove the other bearing, too.

Now flip the box over in the vise, flatten the locktab and remove the nut that holds the arm on. It may be very tight. I used an impact wrench last time I did it, but I've done it before with a socket and breaker bar (and possibly a 'cheater' length of pipe). If the worm is still in place, be very careful not to apply pressure to it, as it can damage the worm surface. New worms are available now, I think, but they are still expensive (and weren't available when I did mine).

You'll need a Pitman arm puller that fits the TR arm. I didn't have one, so I "made do" by adding side braces to my 2-arm gear puller (which forced the arms to stay in place over the tabs instead of slipping off). I had to tighten the forcing screw until I thought something was going to break, and then whack the end of it with a BFH (big f-ing hammer). It broke loose with a loud bang, but no injuries. With the arm off, the rocker shaft should just slip out the top of the box.

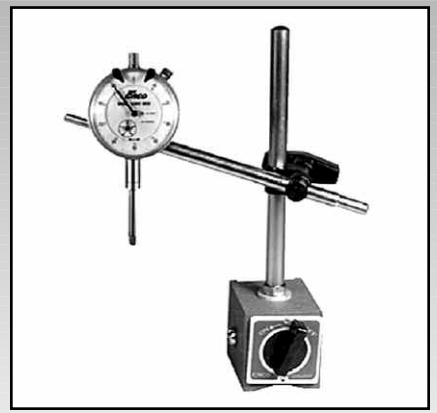
To remove the bushing and seal, I stacked up some flat washers, threaded rod, nuts and a suitable socket. Pulled them both out at once, came out real easy. I reversed the process to put the new bushing back in, then tapped the seal into place with a hammer & a piece of wood. ISTR the book says the bushing needs to be reamed after installation, but mine did not.

Examine the rocker shaft carefully, especially where it rides in the bushing and the seal rides on it. If wear is apparent where it rides in the bushing, or if the seal area is badly worn, then I'd suggest looking for another rocker shaft. Moss has them listed for $114. The seal area needs to be smooth and shiny, as the least groove from the old seal can cause the new one to leak. Mine seemed OK, after I polished up the seal area a bit with some crocus cloth, so I just replaced the peg. I drove the old one out with a punch & BFH, used the vice as a press to put the new one in. ISTR I used some high strength Loctite as well as a few new punch marks to hold the new peg.

I'm not sure if your early column has the rubber/plastic/metal bushing in it like the later ones do, but if it does, they should probably be replaced. I slid a length of pipe or something through the tube to knock mine out, then tapped the new ones into place with a hammer. The felt at the steering wheel should probably also be replaced. I used MoS2 powder to lubricate mine, but graphite powder (like sold in the hardware store for locks) should work fine. Don't use oil here, as it will trap dirt and get sticky over time.

Assembly is, as they say, the reverse.

It's important IMO to adjust the end float first (by adding/removing shims). ISTR the thin shims are .004", the thicker ones are .010" but I could be mistaken. After trying to do it "by feel" and measuring the result, I'm convinced that it's worthwhile to buy a cheap dial indicator and magnetic base so you can measure the end float properly. Enco sells the indicator and base for under



$20, less if you can find it on sale. http://www.use-enco.com/CGI/INPDFF?PMPAGE=189

The idea is to add/remove shims until you can measure just a little end-play, then remove shims to equal the measured play (thereby setting it to zero). As the book says, a little preload is permissible, but by mixing shims you should be able to get it to +/- .001" or better.

Then set the rocker shaft lift with the screw and locknut in the top cover. The idea is to set it so you can just barely detect the drag when all the clearance is gone between the peg and worm, which normally is at the center of travel. However, if your worm is worn as mine is, the tight spot may be off to one side, or there may even be two tight spots, so check through the entire range. BTW, the book warns not to force the worm against the limits.

Then it's all ready to go back in the car. Since you (should) have the one-piece column, I guess you could try filling it with oil beforehand (after inserting the stator tube and it's retaining ring and nut). But since mine is a two-piece, I waited until I had it installed in the car.

HTH Randall