



Ireland Engineering
2002 Steering Box Inspection & Refresh
By Andrew Adams

DISCLAIMER: We recommend that an experienced professional perform the steering box inspection and refresh. We are not responsible for any damage you might inflict upon yourself, the steering box, or anything else during this process. We are not responsible if you inspect your box and find it to be junk. A factory (or Bentley) manual is required, along with a well-equipped shop/garage.

PRE-DISASSEMBLY INSPECTION

- Nut on top: If the top adjuster screw is below the upper face of the adjuster nut, then consider your box beyond repair.
- Rotation of arm: Rotate the pivot arm, it should pivot smoothly. If it is grinding, grabby, or jerky, then there is a strong chance that either your Worm Gear or Roller Gear is bad (these are no longer available).

DISASSEMBLY

Unplug the red stopper on top and drain the oil.

Pry back the keeper tab holding the pivot-arm-retention- nut (mm size?) in place. Remove the nut so that you can next remove the pivot arm. Remove the Pivot-arm with a press (One method is to turn the box upside down and place the pitman arm in a bearing splitter. Press onto the bottom spline until they come apart [with a big bang], would be helpful to have a friend catch the box as it rockets towards the ground.)

Remove the four hex head bolts from the top and gently remove the top along with the shaft. This might require the use of a few taps with a rubber mallet. Remove the four bolts (two hex and two socket) from the side cover. With the plate off remove the shims along with one of the bearing races, cage bearings (x2), and worm gear. Use a seal puller to remove the seal. Remove the far-side bearing race. Use a softer metal (aluminum) rod for hammer leverage to work your way around the backside of the bearing until it comes out. Remove the bottom seal with the puller. The bearing races and cage bearings are meant to work together; make sure you keep them together.

CLEANING:

Thoroughly clean all parts. Put them in a degreaser bath [Purple Power] and soak the parts overnight. If the cage bearings are plastic, do not soak them in degreaser, instead clean them by hand. After drying the cleaned parts now inspect everything.

Prep and paint/coat the box, top plate, and side plate. (Por-15, Engine Enamel, etc.)

INSPECTION:

Bearings and Races --- If the ball bearings were falling out of the plastic (or steel) cage upon disassembly then that is a good sign you should replace them, these are not included in this kit but they are still available. If the bearings prove check out bad, then you'll need to replace the race as well. Check for any scoring on the races.

Worm gear --- Check for excessive grooving on the gear surfaces.
Roller gear --- Check for excessive grooving on the gear surfaces.

REASSEMBLY

Reassembly is backwards from your disassembly. Start by pressing in your new race. (A press is best, but you can also use a socket head and tap in with a hammer.) Press in the new upper seal A LITTLE to just help with centering the worm gear. Next line up everything on your worm gear and put it all back in the box. Torque the bolts (hopefully they are now all hex head) as per the factory manual (or Bentley manual). Now you can finish pressing in the seal.

*IMPORTANT, make sure that the casting mark on the gear lines up exactly with the mark on the box before proceeding.

When dropping in the roller-gear shaft and top-plate put the paper gasket on and make sure that the mark on the bottom of the shaft is lined up with the casting mark on the bottom of the box. Press in the bottom seal and torque the top bolts to spec.

Reattach the pivot-arm (see factory manual) and install new keeper. Torque down the bottom nut and install back into car (manual). Adjust your refreshed box as per the manual.

Recommended Oil – (75)80-90 HYPOID GL-4

Reason – The ideal gear oil for the 2002 unit is a heavier weight oil that runs a lower sulfur content than GL-5. Once the box is in place, fill it until it starts to come out the top.

