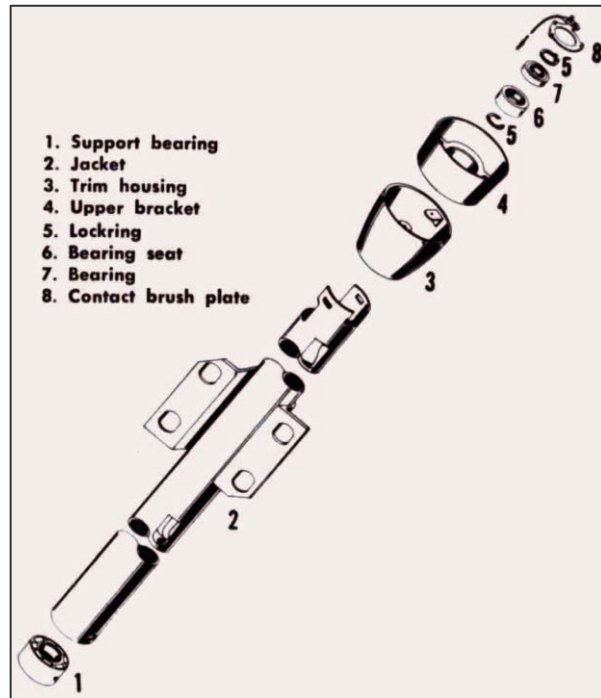


Replacing Avanti's Steering Shaft Support Bearing

By: Bill Henderson

Even though my Avanti didn't come equipped with tilt steering, wear in the steering column had caused a troubling sloppy looseness that allowed me to move the wheel up and down nearly a half inch while sitting in the driver seat. Examination showed that the large plastic bushing at the bottom of the steering column had become worn so the hole that the steering shaft passed through had become oval instead of round, allowing free play that if not unsafe was certainly not confidence inspiring.

The job turned out to be relatively easy, and the result was worth the work. Follow along as we tackle this job.



1. The steering shaft attaches to a rag joint at the steering box, in the engine compartment just in front of the firewall. The easiest way to get to this is by taking off the four bolts that connect the power brake booster to its firewall bracket; disconnecting the booster from the brake pedal by pulling the clevis pin; removing the brake hydraulic line from the master cylinder, and pulling the entire works – master cylinder and brake booster— out as an assembly. Total time for this pre-exercise was fifteen minutes, don't even think of trying to work around it unless you have hands the size of a three-year-old's.
2. I suggest removing the steering wheel using the proper puller tool before you take the column out of the car. It is much easier to do it there.
3. Two half-inch bolts attach the steering shaft to the steering box. Remove these bolts using two box wrenches side by side.
4. The steering column tube is attached under the dash with four nuts. Remove them, and also remove the hex-headed screws that secure the steel cover gasket plate to the firewall. The entire steering column will now pull free from the car to be removed to the workbench.
5. To extract the steering shaft from the column tube, you must disassemble the top of the steering column. Take pictures or make drawings so you will remember in exactly what order things go back together. (See the diagram cribbed from the shop manual to help with the names of the various parts.)

6. To make work easier, I covered the steering column tube with a soft cloth and gently chucked it in my table vice between two pieces of wood to hold it upright.
7. Start by removing the long screw that goes through the pivot point of the turn signal cam. The turn signal lever will come right out. Next, remove the three screws that hold the turn signal cam ring to the upper bracket. Two Phillips head screws hold the upper bracket to the cone shaped trim housing below. When you remove them, the trim housing will drop free.
8. Remove the two 3/8" nuts inside the upper bracket, and it will separate from the column tube jacket.
9. Carefully pull the wires to give yourself a little slack, so the turn signal harness can be slipped over the end of the steering shaft and moved out of the way.
10. Use a pair of snap ring pliers (a great chance to buy a tool!) to remove the snap ring on top of the tiny bearing at the top of the steering column. This small bearing must come off as well. Do not beat on it; if it will not come off with simple pressure use a bearing puller. Mine came off with just a few taps to the center of the shaft.
11. Once the small bearing has been removed, you will see that there is another tiny lock ring below it. Carefully remove this ring as well, covering it with a cloth so that it does not fly fifty feet away when released. From experience, losing hard to replace parts such as this turns a quick job into a frustrating curse-fest.
12. Bearing lock rings removed, the shaft will slide down and out of the hub, and the entire shaft will slide out of the column jacket.
13. Here is the culprit—the old worn out bottom bushing next to its new replacement available from Studebaker International. The new part is nylon, and quite a bit more stout than the old one.
14. Having everything apart was a great opportunity to clean and paint the column.
15. Reassembly is exactly the reverse of disassembly. Slip on the new lower bushing, first coating the inside with white grease, and screw it into place. Slide the hub onto the shaft (don't forget to put the cone shaped trim piece on first!) and replace the lower snap ring. Gently tap the tiny bearing into place (after temporarily removing its rubber slipcover and repacking the bearing with fresh white grease), then replace the upper snap ring. Replace the turn signal lever stalk and screw the turn signal cam assembly into place.
16. Before putting the column back in the car, use this opportunity to check the level of the gear oil in the steering box. The box has a side plug that should be removed, then remove the top fill plug (an 11mm socket works well). Add 80-90 weight gear oil until oil drips out of the open side plug.

17. Slide the column into place, replacing the firewall rubber gasket if yours is torn or worn out (mine certainly was.) Bolt the column to the steering box rag joint, and bolt the column to the under dash support inside the car. Replace the steering wheel (ensuring that the wheels are straight ahead) and torque the nut to spec.
18. The brake booster and master cylinder goes back in as a unit, and since the system has been opened to the atmosphere, the brake lines will need to be bled to ensure there is no trapped air in the system.

Results- no more steering wheel wobble! The steering wheel feels secure, solid and tight just like it did when new.

Photos

Photo 1 – Photo taken from above, after the removal of the Master Cylinder and Brake Booster





Photo 2- the worn bushing still inside the tube
 Photo 3- the entire steering column removed from the car,



Photo 4- (accompanies step 7) Removing the turn signal lever and cam,
 Photo 5- (accompanies step 9) after putting a little slack in the wires, pushing the contact brush plate aside

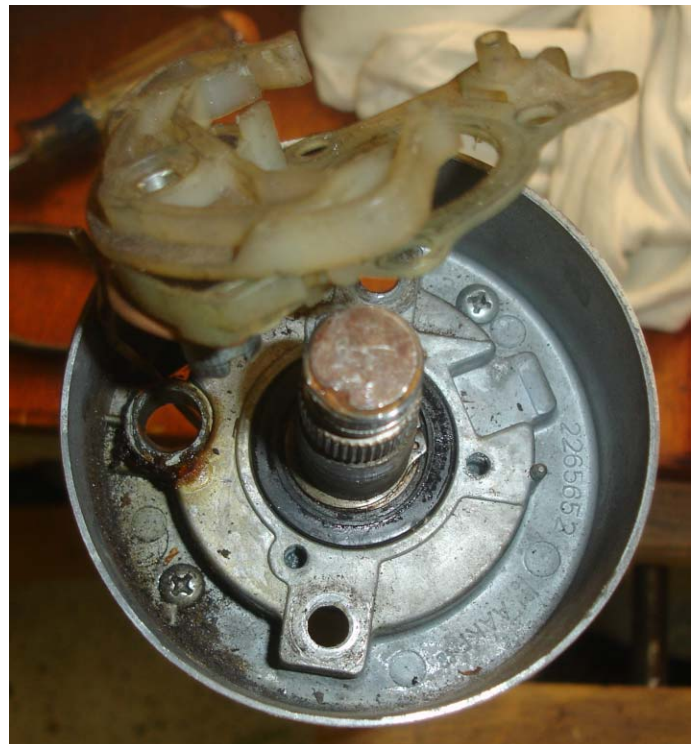




Photo 6,
(accompanies step
10) using snap
ring pliers to
remove the upper
lock ring

Photo 7 (below) –
(accompanies step
13) the worn
bearing next to the
new one from
Studebaker
International





Photo 8- (accompanies step 14)
Painting the column while out of the car. I have a clothesline string across my garage and a supply of wire coat hangers that makes parts painting easy and fast.

Photo 9- The new bushing installed inside the column

Photo 10- (accompanies step 16) Use this opportunity to check the lubricant level inside the steering box and add as needed.





Photo 11- Using two box wrenches to reinstall the steering shaft to the steering box.