Front Axle Replacement

by lee

- Unlock the steering (turn ignition key to ACC position) and jack-up both front tires (you will see why later). Use jack-stands for safety; do NOT rely on just the jack(s) to hold the car up. I put the jack stands under the frame rail that the inner side of the A-arm connects midway between the A-arm bushings. **DO NOT** jack it up or use jack stands on the A-arm itself. Make sure the car is high enough for you to crawl under to the transmission.
- 2) Remove the wheel/tire on the side that needs axle replacement.
- **3)** Remove the hubcap on the end of the axle. I used a thin, flat-bladed screwdriver to start, and then pried it off with a larger screwdriver. Un-stake the axle nut, assuming the previous installation punched in an edge of the nut at the slot on the axle shaft.
- **4)** Remove the axle nut using an impact wrench and appropriate socket. The socket size is 32mm (I used a 1-1/4" socket, it works too). There are several alternatives:
 - a) have someone step firmly on brake pedal while you use a breaker-bar/socket
 - **b)** you could put the tire back on, lower the car (to use the car to hold the rotor/axle assembly from turning) and break loose the nut
 - c) a screwdriver in rotor slot also works well for removing the axle nut.
- 5) Rotate axle to locate small hole in axle by transmission. Drive out the pin. A nail or similar may be substituted for a punch find the correct size using the new axle. Make sure it is not too large or tapers too much or it may get stuck in the axle. I used a nail punch to get it started and finished off with a flat-bladed screwdriver that just happened to be the same width as the hole.
- 6) Remove the three bolts that hold lower A-arm to hub assembly (suggested by Beav). They are a roughly triangle shaped pattern near the ball joint lower attachment point. A 17mm socket and wrench are needed here. Start with the two outer bolts as the nuts can get trapped by the ball-joint assembly if you do the inner one first. Once they are out, do the inner one.

Alternative A is to remove the bolt clamping the ball joint to the steering knuckle/hub with 14mm wrench and socket. Remove the ball joint from the clamp before removing the other 3 bolts. You actually don't have to remove the 3 bolts, but I didn't like the way the rubber seal on the ball joint was pressing against the hub. It was almost out anyway. It is your call on this, and whether to put the nuts on top during reassembly, which would make it easier.

Alternative B You can get the bolts out even if the bolts are on top - it is a little tricky but all you have to do is turn the steering wheel all the way left to get the rear one out and then turn it all the way to the right to get the front one out.

- 7) You may need to remove brake line bolt to strut (for extra brake line play I didn't but YMMV). DO NOT remove the ends of the brake line attached to the caliper and line going up into the body unless of course you like bleeding brake lines.
- 8) Pull the hub assembly out away from car to get the free space required, and remove axle from wheel hub. I needed to give the assembly a tap from a hammer on the end of the axle, then it pulled out with just hand effort. As you pull out on the hub assembly, you will be pulling the tie rod also, the other tire will swing in, so that's why the steering needs to be unlocked (and why both tires were jacked up).
- 9) Guide the axle out, taking care not to damage the bearing seal. The inner part of the axle will not clear the sway bar, but by lifting up and out on the hub assembly, the sway bar lifted enough for me to pull the axle out of the car (pulled out on the rear side of the hub) with no additional parts removal.
- **10)** Check that the rebuilt axle is the same as the old one: pin hole size, diameter of hub where the pin goes, pin length, axle length, number of splines, axle nut, etc.
- 11) Assembly is mostly the reverse of the above but here's the basics: Remember to use a new spring pin and a new axle nut. Make sure you line up the hole (for the pin) in the transmission shaft, and the corresponding hole in the axle assembly, before you push the axle back onto the transmission. Look through the hole and make SURE it's lined up before going further. Now pull out on the hub and guide the axle splines through the wheel hub, being careful to prevent damage to the seal, hub, axle, etc. You should be able to work the axle in enough by hand that some threads will stick through the outer hub. Put the new axle nut on and draw it down enough to make the assembly secure, but don't torque it yet. Drive the pin back in through the side that has a chamfer on the inner part of the axle. Re-attach the three bolts on A-arm (torque to 56-73 ft-lbs) starting with the inner one first, then the two outer bolts. Torque the axle nut (123-152 ft-lbs I wouldn't recommend this, but just so you know, I put a large screwdriver in the vent holes of the brake rotor, letting it rest against the caliper to keep the axle from turning while I torqued the axle nut). Put on the hubcap, wheel/tire, remove jack stands, re-torque your wheel lugnuts and you are done.