

Axle half shaft U-joint replacement

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While tracking down a vibe I have between 45-50 I realized that the vibe got worse and stayed worse when the wheels are turned. Also, while investigating the vibe on with the wheels of the ground and moving I heard a clunking noise. Pulling the brake rotor off and inspecting the hub showed that it wasn't the hub. It meant it was most likely the u-joint.

I only needed to do one side of the axle at a time so I didn't drain the fluid. I jacked the side I was working on up enough that the fluid wouldn't come out of the axle tube.

First remove the wheel. Then the cotter pin, hub nut retainer and anti rattle washer. Now you will have clean access to the hub bolt. Leave the brake caliper on for now, as it will hold the rotor a bit and plus you may have to put the tire back on. The hub nut can now be removed. It was really easy on my 2000 XJ... a few seconds with the impact wrench and it was off. I was expecting a bit more effort than this. If it doesn't come off with an impact wrench you will need to use a large breaker bar. Either have someone step on the brake pedal while you operate the breaker bar or put the tire back on, put it on the ground and use the socket through the hub hole in the wheel. Also, PB blaster will help here, but I didn't want to use it with the brake hardware still on. At this point it should look like this:



Socket used:



Hub nut, nut retainer, cotter pin and anti rattle washer:



After the hub nut is off, you can remove the brake caliper secured by the two bolts. They are located on the back of the caliper. It is best to put the caliper on a raised surface to prevent the brake hose stretching.





The brake rotor than can be removed and placed aside. Try to keep it clean. Once the rotor is off you will see the hub and the end of the bolts that hold the hub on. Spray the three bolts down with some PB Blaster (or your favorite penetrating fluid). Let it soak a while than use a 12 point 13mm socket on the end of a breaker bar to start the bolts out. I started them with a three foot breaker bar. The bolts are located on the back of the steering knuckle. One approximately at the 12 o'clock position, one at the 5 and one at about 8.

The socket:



Bolts:



After I broke the bolts loose with the three foot breaker bar they were still too tight to remove with the ratchet. I then went down to a one foot breaker bar I have. I eventually got to the point to just use a ratchet to remove them. Once the bolts are out you have to remove the hub some way. I have heard of people using some sort of puller on them and separating the two halves of the bearing. This I didn't want to do, as I believe the hub is still good. I used a air chisel to free the hub from the steering knuckle. In the process I did a bit of damage to the brake rotor shield (not sure if I will reuse this part or not). Below is pics of the freed hub, rotor shield and the steering knuckle.





Now your view should look similar to this:



If you have ABS, remove the sensor. After that is done the axle half shaft should slide right out. Leaving this view of the knuckle:



And the passenger side half shaft with the offending u-joint.



Here you see the holes through the knuckle to the hub:





Upon inspection of the u-joint I found one axis fairly easy to move, but the other axis was pretty hard to move by hand. Yeah, this is what is causing part of the vibes, if not all.

Now comes the hard part: removing the u-joint. I managed to remove the c-clips, but getting the u-joint out was beyond me. My Bench clamp was too small and I bent a c-clamp in the process of trying to remove it. I will take this to a shop that has a bearing press to remove and install the new u-joint.

The "better" u-joint:



Mmm... lack of grease:



New u-joint installed:



Reassembly:

Its just the reverse of installation. Use anti-seize where ever possible. I put it on all bolts, the hub's mating surface, and the half-shaft splines. In case I have to tae it apart it will be easier. Use proper torque values too. Below, I have listed some torque values, all in foot-pounds.

Axle hub nut: 175

Hub assembly to steering knuckle bolts: 75

Brake caliper mounting bolts: 30

I though there were more, but that is all. Below are some pics of the install process:



Mmmm... anti-seize:





Hub being mounted:



Bolts being inserted into steering knuckle and hub:



Washer first:



Than nut:



Than anti-rattle spring/washer:



Then lock nut with cotter pin through axle half shaft:



Finished with shaft install:

