

## **GET SHAFTED.... (and like it!)**

With many Jeep upgrades, once you change something, there's often a related item that you should (or need to) change.

Case in point, you install a suspension lift on your TJ that includes a spacer kit to lower your transmission skid plate to reduce your rear driveshaft angle and prevent vibration (see photos 1 & 2). While this works, a significant amount of ground clearance is lost, which partially defeats one of the main purposes for the lift (*clearance*).

There are several manufacturers offering what is known as a "Slip Yoke Eliminator" or "SYE" kit to address this issue on the Jeeps model 231 transfer case.

The factory rear driveshaft uses a slip yoke at the transfer case. This tubular yoke rides on the splined output shaft and is able to lengthen and shorten as the suspension travels. This setup works well, but will not operate when severe angle is created by adding a suspension lift.

The SYE kit uses a shorter replacement main shaft and new tail housing along with a "CV" style driveshaft that can operate at much higher angles. The CV shaft mates to a fixed yoke at the transfer case and utilizes a slip type yoke at the axle to allow for suspension travel.

We installed our kit on a 2002 model TJ in about 3 hours with a minimal amount of cussing.



Photo 1



Photo 2

1) Remove 4 nuts attaching transmission mount to skid plate. Support transmission forward of skid plate and raise slightly to release tension.

2) Remove 6 attaching bolts and remove skid plate (photo 3). Now is the time to inspect the condition of the transmission mount. Ours was completely broken and needed to be replaced (photo 4).



Photo 3



Photo 4

3) Disconnect front drive shaft from transfer case & rear shaft @ axle (photos 5 & 6).



Photo 5

5) Disconnect 2 electrical connectors and vent hose from transfer case (photos 8 & 9).



Photo 8

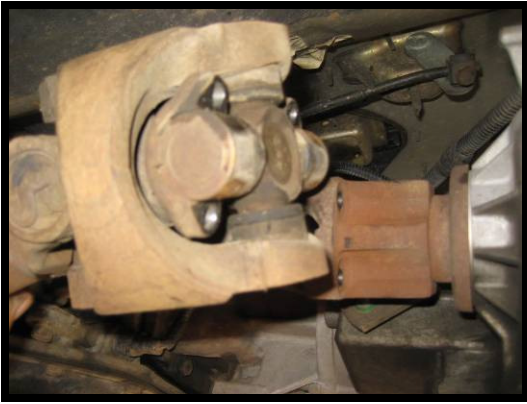


Photo 6



Photo 9

4) Drain transfer case fluid (photo 7).

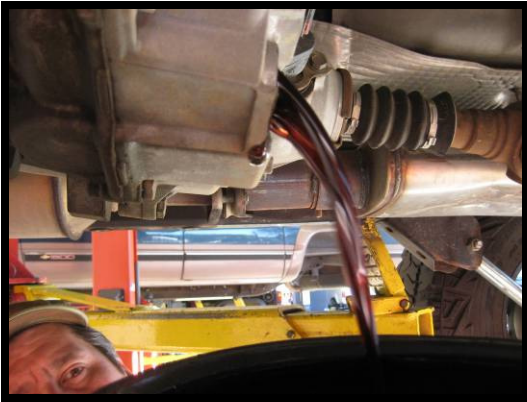


Photo 7

6) Pop transfer case shift rod free from linkage (photo 10).

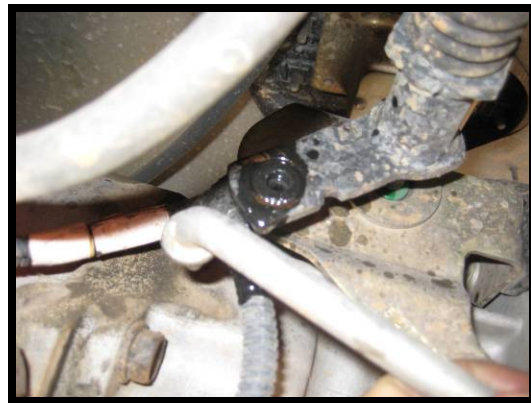


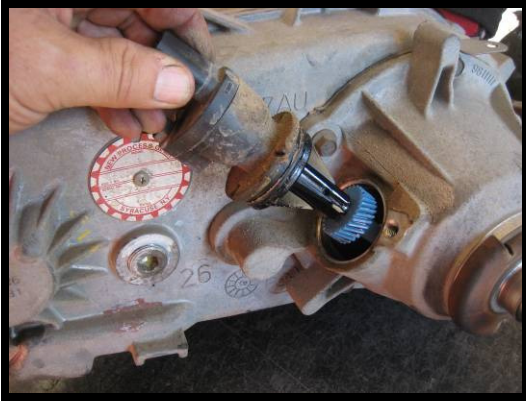
Photo 10

7) Remove 6 nuts attaching transfer case and remove (photo 11).



*Photo 11*

8) Remove speedometer drive gear (photo 12).



*Photo 12*

9) Remove slip yoke boot and rear driveshaft.

10) Remove harmonic balancer (if equipped). Our unit did not have the balancer, it had a steel ring that we hammered off (photo 13).



*Photo 13*

11) Remove rear output shaft seal (photo 14).



*Photo 14*

12) Remove front output yoke (photo 15).



*Photo 15*

13) Stand the case on the mounting studs and remove rear output shaft snap ring (photo 16).



*Photo 16*

14) Remove rear output housing (photo 17).



Photo 17

15) Remove the attaching bolts and separate the case using the 2 screwdriver slots to pry apart (photo 18).



Photo 18

16) Remove the front & rear output shafts together with the drive chain. Inspect the gears and chain for excessive wear and replace if needed (photo 19).

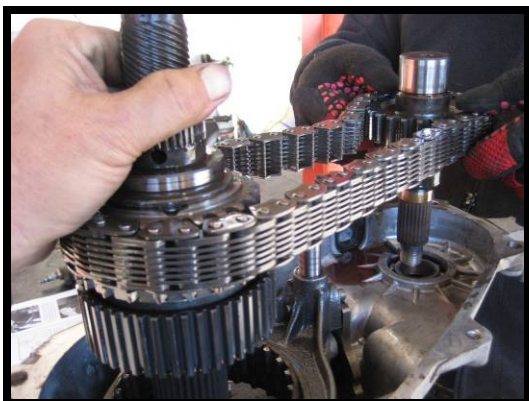


Photo 19

17) Remove the drive sprocket snap ring and slide the gear off the main shaft (photo 20).



Photo 20

18) Inspect the mode forks for damage or excessive wear. Replace if needed.

19) On some models, the mode shift fork rod is 10.2" long and must be shortened to 9.380" for the kit to work. This wasn't the case on our rig.

20) Install the drive gear on the new shaft and secure with snap ring (photo 21).



Photo 21

21) Install the new short shaft, drive chain and front shaft (photo 22).



Photo 22

22) Clean mating surfaces and apply silicone sealer. Attach the case halves. Be sure the oil pickup line is installed in the pump and the magnet is in place (photos 23 & 24).

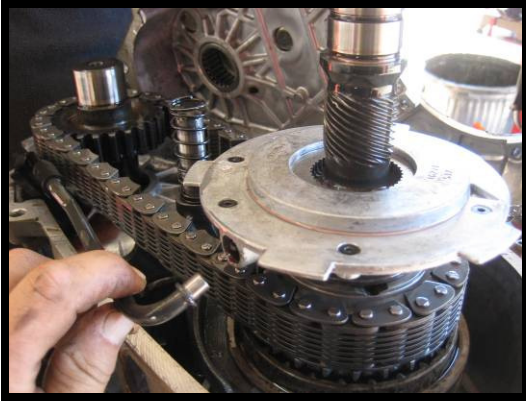


Photo 23

24) Apply silicone sealer and attach new rear housing (photo 26).



Photo 26

25) Install new rear yoke with sealer on splines and thread locker on nut (photos 27 & 28).



Photo 24



Photo 27

23) Install the new speed sensor with a snap ring on each side (photo 25).



Photo 25



Photo 28

26) Re-install speed sensor (photo 29).



Photo 29

29) Re-install skid plate (photo 32).



Photo 32

27) Re-install front output yoke (photo 30).



Photo 30

30) Fill transfer case with recommended fluid.

31) Now you're ready for the new CV style rear drive shaft (photos 33 & 34).



Photo 33

28) Re-install transfer case in vehicle. Re-connect electrical, vent hose, and shift rod (photo 31).



Photo 31

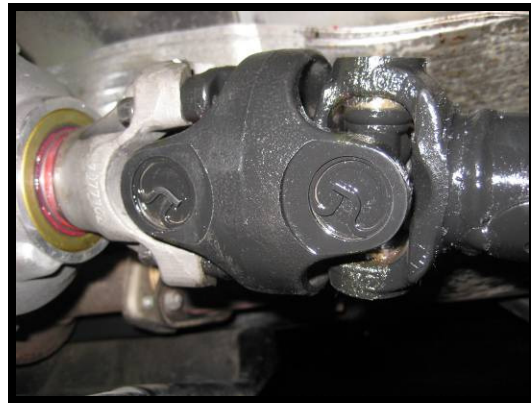


Photo 34

31) Test drive vehicle and ensure proper transfer case operation.