Changing the KingPin Bearings

A guide to changing the KingPin Bearings.

If you off-road a Jimny (or any of the Suzuki classic 4wd vehicles) then this is a job you will become familiar with. It is also one of the worst in my opinion, not because it is difficult, but because of the smell, you will find out what I mean later.

It is also closely tied in with changing/working on the wheel bearings so some of the steps are duplicated.

So what are the symptoms of worn KingPin bearings:

1. Steering Shimmy
2. Oil/Grease leaking from Swivel Joint
3. Vertical play in the front wheel (with the car jacked up grip the wheel top and bottom and rock it, there will be movement of they are worn)

So how do you change them.

First of all secure the car, release the wheel nuts and jack up the car and remove the road wheel. This then reveals the brake caliper, this is the passenger side (nearside) caliper (UK).

Using a 12mm spanner, release the front caliper bolt (the left is the front of the car in this picture) and loosen the same bolt on the rear of the caliper.

The caliper then opens up using the rear bolt as a hinge.

The pads are retained by small spring clips, a simple pull on the pads (horizontally away from the disk) should remove them (or gently prise out the pads with a small screwdriver - do not remove the spring clips)

The caliper is held on with two bolts at the rear (see below). Release the bolts and tie the caliper to the spring to keep it out of the way.

Now the front brake disc can be removed. If you are lucky it will simply pull off but if you have problems then there are two M8 holes in the disk hub. Simply run two bolts into these holes and the disk will push off the hub. The picture below shows a bolt being used to push the disk off the hub.

My disk appeared to be ok on the visible side but the rear showed some bad wear so I will change them as part of this job.

Now the Freewheeling Hub needs to be removed. Suzuki have used Torx bolts to secure these so you will require an E10 socket to remove the bolts.

With the hub removed the driveshaft is exposed. The driveshaft is retained with a circlip so use a pair of circlip pliers to remove it. Behind the circlip is a rectangular washer that should also be removed. Note that I have also marked with white paint the orientation of the freewheeling hub, this is not strictly needed.

Remove the bolts holding the disc backing plate (and the hub) to the knuckle joint.

Gently pull the two vacuum hoses for the hub from the knuckle.

Using a splitter, split the steering joints (two to do on the passenger side and one on the driver – UK)

At the rear of the hub release the small bolts holding the seal and retainer. You can see that the swivel hub is covered in oil, a bad sign for KingPin problems.

Finally, release the KingPin bolts themselves. There are two sets, top and bottom and they must not be mixed up so you can see in the picture that I have marked them up with a letter T. If you are doing both sides at once then do not mix them across either!.

The KingPins are also held in with sticky sealant so you will need to prise them out. The hub will now pull off. Beware, if they are badly worn the hub will be full of stinking grease, oil and water so make sure you can capture the mess in something.

That’s water pouring out of the axle! Below is a worn out bearing.

The bearings are Koyo 30302 JR. Most bearing dealers do them but make sure they supply a reputable brand as there are lots of cheap Chinese copies around. I got some SKF 30302 J2 bearings, the last digits describe how they are made and I could only get J2’s in the UK.

The next stage is to CLEAN, CLEAN and then CLEAN again. Clean the swivels inside and out, clean the knuckles and pull out the drive shaft and clean that as well.

Once clean you can start the rebuild process. The KingPin bearings come in two parts, the race and an outer ring. This ring is still in the swivel and needs driving out.

These can be really difficult to drive out but I found a simple way forward. I used my welder and welded a small blob of metal to the inside of the ring. This then created a rough part that a screwdriver or chisel can get a purchase on and then using a hammer it can be easily driven out.

The new rings can then be driven into place with a piece of wood to protect them from the hammer. I also hooked out the small axle shaft oil seal and put a new one in, again these can be obtained from most bearing dealers, they are 26 x 38 x 7 R23/TC specification. If you are rich you can get the Suzuki parts instead - 09283-26016,

Here is the completed swivel with new rings and oil seal (and plenty of copper grease to help them all into place.

Pack the CV with grease (but do not overpack) and re-fit the driveshaft.

Grease the new KingPin bearings and insert the top one in the carrier.

Carefully insert the new bottom bearing and, holding it in place, slide the whole knuckle onto the hub. Fill the Knuckle with 100ml of grease, Suzuki recommend only 100ml and not to overfill.

Now the KingPins need to be inserted, but first they need a bead of sealant around the KingPin.

Make sure that you have put the correct Kingpin in place, remember you should have marked them when you dismantled it!

Bolt the Kingpins in and tighten them to the correct torque (18ft/lbs)

Refit the steering arm (or arms if it is the side with two connections), tightening the nuts to 31ft/lbs.

Now fit the seals on the rear of the swivel. The confusing part is the order of the seals and rings on the swivel, the picture below is of the correct orientation, note also that the slits in the retainers go to the top.

Tighten the seal bolts to 7.5 ft/lbs.

Refit the hub thrust washer and circlip to the driveshaft.

Refit the vaccum hoses and the Freewheeling hub, the bolts should be torqued to 35ft/lbs

Fit the disk and fit the caliper (Caliper bolts 61ft/lbs), disk pads and bolt the caliper down in position (Caliper pin bolt 16/ft/lbs)

Re-fit the wheel and lower the vehicle.