Replacing Ducati Superbike eccentric rear hub bearings

I decided to replace my 748 rear hub bearings as they are 13 years and 59,000km old.
There are two bearings, a double axial thrust self aligning ball bearing on the sprocket side and a needle roller on the brake side.
The sprocket side bearing is sealed and the needle roller has a separate pair of seals, one at each end of the bearing.
Both bearings sit in counterbores in the hub and are retained by circlips.
Replacement is simple and straightforward:
Support the bike on stands at the rear (swap the footrests right to left so they don't fold) then undo the nuts on each side of the rear axle.
The sprocket side is 41mm A/F and the wheel side is 46mm A/F.
Next remove the brake caliper (two 12mm A/F bolts) and tie it up out of the way, then remove the rear bolt on the chain guard bracket to allow some movement.
Now with a soft mallet tap the axle towards the wheel side until the sprocket and chain can be gently pulled from the axle and gently lowered to the floor, use a rag between the chain and swingarm to prevent scratching, then continue tapping the axle with brake disc still attached completely out of the hub.
Next the brake caliper bracket needs to come off, do this by removing the big circlip with the appropriate circlip pliers.
Under the clip is a steel washer and an O ring. Remove the washer and then pull the bracket off the hub and remove the other steel washer behind it also.The O rings will probably be good to re-use as long as you don't stretch them when cleaning them up.
At this point if you are re-using the chain and sprocket it's a good plan to mark the hub position at the slot in the swingarm so it can be replaced in the same position and the chain adjustment and ride height will remain the same.
Now the eccentric clamping bolts in the swing arm (14mm A/F) can be removed.There is nothing holding the hub in now except the tightness of the bore it sits in, so gently drive a pair of small tapered wooden wedges in the slot at the back and the hub can easily be tapped out towards the sprocket side.
The ball bearing should be removed first, remove it's retaining circlip and find a drift (I used a socket and extension) that fits inside the needle roller and bears on the ball race.
Support the hub on a couple of pieces of hardwood then gently and evenly heat it to 100 degrees C (or boil it in a pan of water)
You will find the bearing will just about drop out of the hub at that temperature with the gentlest of taps on the drift.
Do the same for the needle bearing, lever the outer seal out with large screwdriver, remove the circlip and heat as before to remove the bearing.
The inner seal will come out with the bearing if the right size drift is used to push it out.
Now clean everything up and re-assemble with the new bearings and seals.
I found the bearings simply dropped right into place with no drift at 100 degrees especially if the bearings are cooled down in a freezer for half an hour or so first to shrink them.
You will have to install the inner seal under the needle bearing before heating the hub.
Carefully inspect the axle and make sure the needle bearing has not damaged it at all.
If it is damaged a new axle will be needed. Be very careful to get the circlips fully into place and it's a good idea to tap them gently with a drift and hammer to ensure they are fully engaged in their grooves.
Pack the needle bearing with good quality wheel bearing grease before re-installing the axle.
Replace the hub, line up the marks you made and tension the pinch bolts as per the manual.
Refit the axle, sprocket and carrier and tension the nut to spec.
Fit the caliper arm, O rings and washers, the caliper arm circlip needs a bit of persuation as the O rings need to compress a little before it will fit back in it's groove.

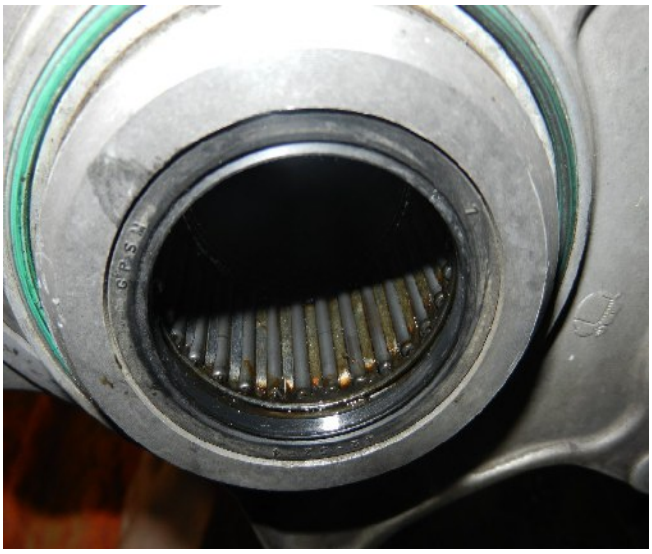
Refit the caliper and tension the bolts, refit the wheel and tension the nut and refit the retaining clips to both axle nuts.
Make sure the wheel and axle revolve freely and pump the brake pedal a few times to move the pads back on the disc rotor.

From the experience I learned that the bearings have a probable sevice life of 50,000km or 10 years whichever comes first.
My ball bearing was on it's way south and the needle was done but luckily the axle will live to fight another day.
It would be a good idea to pull the axle out and check the grease load on that needle roller every few years and I'll be checking mine at each belt change interval from now on.
One thing I did learn was you don't need a press or any fancy tools to change these bearings, only a gentle heat supply and a domestic freezer.

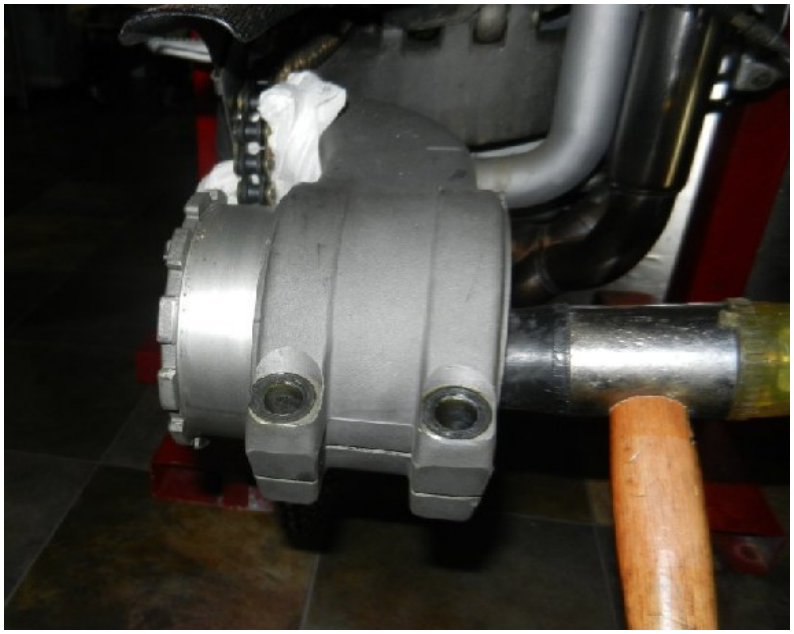
Removing the Caliper arm circlip. Notice alignment marks for re-assembly.

Removing the steel washer, there is one each side of the arm

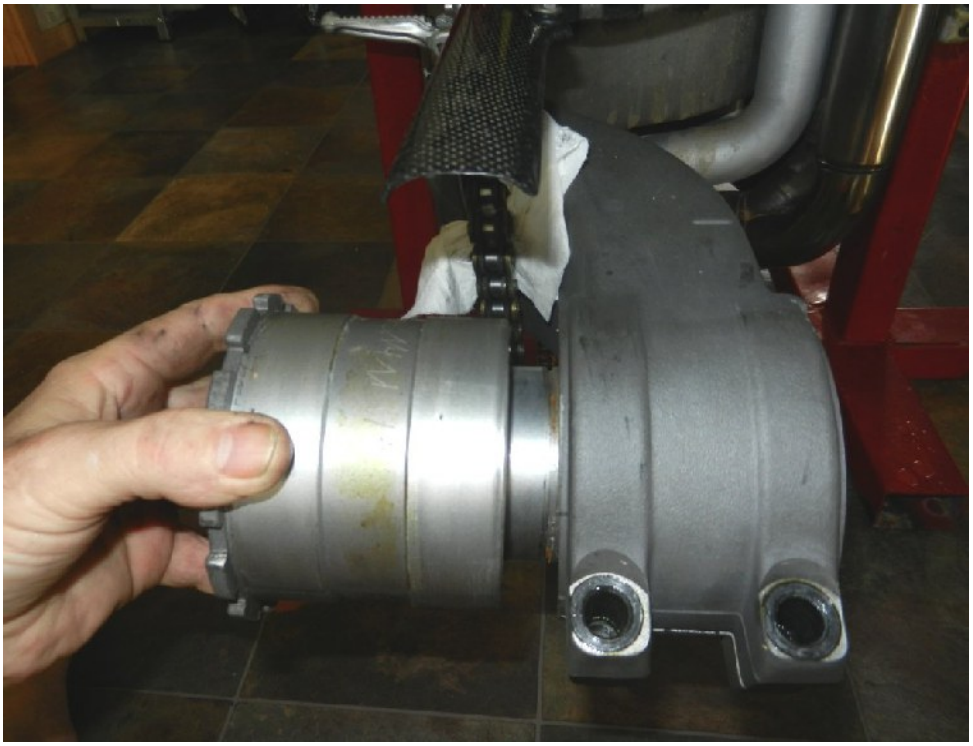
Removing the caliper arm



Needle roller bearing and outer seal



Gently tapping the hub out



Removing the hub from swingarm

Levering the seal out with a large screwdriver

Removing the circlip from the needle roller bearing side of the hub

Removing the circlip from the ball bearing side

Inserting a suitable dolly to push the ball bearing out

Heat the hub and push the bearing out

Bearing removed

Repeat on the needle bearing side then degrease and clean the hub

Make sure you thoroughly clean the circlip grooves out

Heat the hub and drop the new bearings in one side at a time not forgetting the inner seal on the needle bearing.
Do this in two operations heating twice. Freezing the bearings helps as well to make them drop in very easily.
I wore oven gloves for this job to protect my hands from the heat of the hub and also to keep the bearings cool.
Fit both the circlips and the needle bearing outer seal

The finished hub

Parts List

Ball bearing SKF BAH-0063

Needle Roller Bearing Torrington NK42/30A

Needle Bearing Seals 42 x 52 x 4

My total parts cost (2013) was:

Ball SKF 0062 Qty 1 price $88
Roller Torrington NK 42/30A Qty 1 price $70
Seals 42 x 52 x 4 Qty 2 price $16
I got the lot from my local bearing mob and the costs were a reasonable total $174