

Rebuilding the Brake Calipers

The Jimny pulls sharply to the right when braking which tends to imply that the left hand front brake is not coming on properly.

Therefore I decided to strip and rebuild the calipers as they have had a hard life over the last 3 years.

First I got hold of a Caliper Refurbish Kit from www.biggred.co.uk. - for my Japanese Aisin Calipered Jimny the kit was BRK205131



As you can see it contains the slider boots (therefore is a saving on the Suzuki price straight away!) along with the piston seal ring and piston boots with retaining rings. It also contains some nipple covers.

1. Before you start on the caliper you need to ensure that as little brake fluid as possible is lost (although they will have to be bled through anyway). I always trap some polythene across the top of the Brake Fluid Master Cylinder, the seal creates a vacuum to help stop it leaking.



Figure 1. Sealing the Master Cylinder

2. Then you have to remove the caliper and remove the brake pipe. This is the Banjo connection at the back of the Caliper, I put a bolt and washers through the banjo and tighten to prevent leaking and sealed in a polythene bag.



Figure 2. Sealing the Brake Pipe

3. That then leaves me with the caliper.



Figure 3. Removed Caliper

4. Push the caliper sliders out and remove the rubbers, my sliders moved ok in the end so it was not the sliders that were a problem.



Figure 4. Removing the slider

5. The piston would not move so (and look away now if you are a perfectionist engineer!!!) so I put a slim bolt in through the Brake Pipe connection hole and tapped the piston out.



Figure 5. Removing the Piston

6. As I tapped it out the problem became obvious, a torn piston boot.



Figure 6. Torn Boot

7. A rusty and dirty piston.



Figure 7. Rusty Piston

8. More dirt inside the whole thing.



Figure 8. Dirt inside Caliper

9. This shows how the rubber was rotten and the retaining ring was prised out of the edge.



Figure 9. Rotten boot

10. And the corrosion on the piston.



Figure 10. Corroded Piston

11. I cleaned up the piston with VERY fine wet and dry, you know when you have got it all clean when you can slide the piston in and out by hand freely (but only if its exactly straight, if its off centre it sticks)



Figure 11. Checking the fit

12. Now you need to insert the rubber seal into the ring inside the caliper. Its not completely clear from the picture below but I have smeared it inside and out with a small amount of Brake Fluid to act as a lubricant for the piston.



Figure 12. Rubber Piston seal

13. Using your fingers slide it into the caliper.



Figure 13. Fitting the seal

14. Now to fit the piston and the boot. The boot has a lip on it which goes to the OUTSIDE so that the metal retaining ring can be fitted. Here I have stretched back the edge of the seal to show the lip where the metal ring will sit.



Figure 14. Lip on Piston Boot

15. Again, using your fingers push the boot into place in the caliper and then feed the metal retaining ring carefully into the lip (You do not want to rip the boot!)



Figure 15. Fitting the Piston Boot

16. Again, wipe the piston with some Brake Fluid and using your fingers pull the boot over the piston. This is a lot easier to write than to do, you will need your best Gynecologist fingers to hook the boot over the piston but you must avoid using sharp tools as you do not want to damage the boot.



Figure 16. Stretching it over the Piston

17. Next clean out the grooves where the caliper slider boot will be fitted.



Figure 17. Cleaning the Caliper slider fittings

18. Clean the slider (again I used fine Wet n'Dry paper) and ensure a good smooth fit into the caliper.



Figure 18. Checking the slider fit

19. Fit the boots by feeding them into the grooves where they rest.



Figure 19. Fitting the boots

20. LIGHTLY grease the slider, I am using Red Rubber Grease which does not attack the slider boots.



Figure 20. Greased slider

21. Now push the sliders into position through the boots. Again this is a lot easier to write than to do. They are a tight fit and tend to push out the opposite boot as they are pushed in. I can only recommend checking everything is clean, seated properly and keep trying!
22. Below is the finished item, ready to go back onto the car and be bled through.



Figure 21. Finished!!