

Lamborghini Jalpa Front Wheel Bearing

Special Tool Needed:

54mm Socket – For Spindle Nut

Snap Ring tool

Hydraulic Press – to press out the spindle from the bearing.

Needed Parts-

Spindle Nut: 45mm Id – uses 54mm socket From Dealer

Bearing:: GRW234. 83mm OD x 45mm ID x 45mm Wide. It is used on 1993 Mazda 929 for the rear wheel bearing. It is the same size as the factory Lamborghini bearing – EXCEPT that it is 1mm wider. MOST of the time there is enough clearance to use the bearing as supplied. However, it MAY BE necessary to trim the outside bearing shell or modify the housing for that 1mm clearance. It WON'T BE KNOWN until the assembly is separated. It is about \$90 from an auto supply house.

This document is a result of my quest to replace the front wheel bearing for a Jalpa, and after dealing with some interesting paths and suggestions, this is placed out in the public domain for others to review and offer their feedback.

Considering that this is a part that does wear out over time that can possibly present a safety and usability issue, the difficulty in finding a solution to the service of this area of the car could lead to obvious unwelcome situations. That being said, I take no responsibility for anything said in this document at all. Caveat emperor. Use at your own risk, test before use, etc.

Beginning-

The usual stuff –

Have the car properly supported, do not attempt this procedure without the proper tools.

The spindle / suspension upright assembly is a press fit unit with part of the bearing retained with a tru-arc snap ring – the spindle also has a 54mm sized nut that will need to be removed.

If you have diagnosed a failed front wheel bearing, repair it and check the condition of the remaining side.

The General procedure is:

1. Securely jack up and support the front end of the vehicle
2. Remove the wheel.
3. Remove the nut at the top of the brake dust shield – for the caliper / brake hose attachment. Also the nut for the brake hose attachment to the strut.
4. Remove the caliper mounting bolts.
5. Remove the brake caliper – 2 through bolts are attached into the back of the suspension upright to attach the caliper. There should be enough slack with some maneuvering to free the brake hose from the shield and strut.
6. Secure the caliper. Place a mark on the spindle and rotor so that they can be reassembled the same way they came apart. I have a piece of wood handy at the proper height to place the caliper on so that I don't have to worry about stretching the brake lines.
7. Remove the rotor. At this point the only thing attached should be the strut and lower ball joint. These are next.
8. Remove the cotter pin from the lower ball joint – remove the nut.
9. Separate the ball joint from the bottom of the suspension upright. The usual method works – though I have seen a large flat blade screwdriver with flat sides used in a pinch as well - between the top of the ball joint pin and the bottom of the strut. Lower arm will drop just a bit – likely about an inch or so.
10. If working on the right side front wheel – You also have to work with the speedometer cable that goes into the center of the suspension upright - the cable has a tab that indexes with the wheel. 3 bolts secure

the speedometer cable housing (almost a triangular casting on the back) to the suspension upright – go ahead and remove those three – the assembly should then easily pull out through the back.

11. Remove the two bolts that secure the suspension upright assembly to the strut. Suggest leaving one bolt in (nut removed), to hold assembly in place while getting prepared to remove suspension upright from the car.
12. Pull the last bolt out and then lift and tilt while removing the suspension upright assembly out of the strut (with the dust shield, if so equipped)
13. Clean suspension upright as needed – now the real challenge begins – removing the large 54mm nut from the spindle.
14. Remove 54mm nut.
After using a 6 foot cheater bar (unsuccessfully, might add) recommend just getting a new nut from the dealer – was \$29.00. I'll leave you to your own devices. FYI - we ended up carefully drilling into the nut and then (again carefully) splitting it with a chisel.
15. Clean out the waxy sealant from the 3 holes drilled into the center of the spindle – these are the access areas to press out the spindle from the shaft.
16. Properly support the spindle under the flange, (the bearing in the suspension upright housing will be pushed down, so it needs to have clearance to move and have a safe place to land) then use 3, 6mm by 6 inch pins – (6 mm x 6 inch Allen bolts work well as they are heat treated and not likely to bend) inserted into the access holes and press on the three pins evenly. The pins will press on the edge face of the bearing. I made a plate with the three pins welded in, and the ends ground evenly. While the spindle stays stationary, the suspension upright housing, with the bearing still in it, will drop down.
17. Next remove the tru-arc snap ring next to the bearing in the suspension upright housing.
18. Note if there are spacers or shims under the tru-arc snap ring. Hopefully they will be about +1 mm thick – as the bearing as supplied is 1 mm wider.
19. Using an appropriate sized socket or pipe, press out the old bearing out of the suspension upright casting.
20. Clean as needed. Go ahead and clean the spindle, put in a bag and then in the freezer. Try to figure out how you'll be supporting the housing during the installation of the bearing.
21. Using a known accurate ruler, measure from the bottom where the bearing seats, to the bottom of the groove that the snap ring goes in to – we want it to be at, or just a little over 45mm for the bearing to fit correctly – If it does – we're golden! (see the end of this article if it doesn't)
22. You cleaned the casting, right? – well if everything measured all right then:
A: Place the suspension upright casting in the oven at 400 degrees F for 10 min.
B: Place the bearing in a freezer bag and place it in the freezer for a bit, until it's cold. Overnight seems to work best.
This will allow the casting to expand, and the bearing to shrink - just enough for us to slip the bearing in without needing a press.
Note and Caution – Smells flowing from oven will have a direct correlation to how comprehensive the cleaning process was. Casting will be hot – oven mitts strongly suggested!!
23. Place upright on a good surface – pull the bearing from the freezer and carefully drop the bearing into the housing. *Basically you get one chance at this* – suggest having the housing as straight as possible, so that the bearing drops in as straight as possible. If it stops on the way in, there is a possibility of pressing the bearing in, however that method, by placing forces in excess of what the bearing was designed for, creates the possibility of damaging the bearing.
24. Install /layer shims as needed – there should be close to zero clearance between the snap ring and the bearing.
25. Install the snap ring. Suspension upright should now have bearing, shims and snap ring installed.
26. Get the spindle out of the freezer – it may slide into the bearing, depending on how well the spindle was machined – if not, carefully press the spindle onto the bearing – it gets pressed in until it stops. Start the nut onto the threaded spindle.
27. Use the 54 mm socket – tighten until the nut goes up to the bearing – torque effort will increase as you get closer to the bearing. Torque value seems to vary depending on spindle taper in the thread area. Really, only 15 ft. lb at the nut and bearing should do it (in theory, anyway) but it'll take more than that to get the nut up to the bearing. Stake the nut by deforming with a punch on top of the depressed area of the spindle.

28. From here the rest is basically the reverse of disassembly. Attach dust shield (if you wanted to keep them on) then to strut, ball joint, brake disk, brake line to strut, caliper – check all fasteners for security – cotter pin in ball joint. Make sure everything spins moves freely / turn the steering wheel if needed to check. Attach wheel, lower car, tighten lug bolts.
29. Test drive. All works? It's Lamborghini Campoleone / Trescone wine time!

Ok- so things measured out to less than 45 mm, or just at 45mm and your wondering, well what do we do now? There are a couple options: take the bearing to a machinist. There is a little (very, very little) material that could be removed from the outside bearing shell, but we need probably less than .5 mm. They *may* attempt to machine up to .5 mm from a side on the outside of the bearing. Bearing face is hardened, however and not all machine shops will like doing this. Nothing should need to be removed from the center part of the bearing, as that compensated for by the nut on the spindle.

Note: The seal on the bearing rotates with the center. If they machine equally the sides of the bearing– like .5mm and .5 mm each side, clean the inside of the upright housing where the bearing sits as well, to avoid sharp edges from the casting that might cut or wear into the bearing's seal.

Other option may be to have a machinist modify the upright housing for 1mm extra depth. Either at the seat of the bearing or at the recess for the tru-arc clip. That option will depend on the characteristics of the suspension upright and where the 'extra' metal is without weakening the housing itself.

Best of luck!