

4th Generation (2004-2009) Subaru Legacy Rear Wheel Hub Bearing Assembly Replacement Walk-through

This walk-through shows how to remove and replace a rear wheel hub bearing assembly (HBA) on a 4th Generation (2004-2009) Subaru Legacy. Cautions and Notes are highlighted in **Bolded Red Letters**

1. General Disclaimer

This walk-through presumes that you 1) Are comfortable working on your car, and that you have the appropriate tools and time to complete this installation; 2) That you will take adequate safety precautions while engaged in replacing the assembly, and 3) If you have any questions or any concerns about your ability to correctly remove and replace the assembly, that you will seek qualified assistance before proceeding with the install.

2. Tools Required

- 1/2" Drive items
 - Breaker Bar
 - Drive Ratchet
 - 10" long extension
 - 13mm socket
 - 14mm socket
 - 19mm socket (for wheel lugs) Tuner lugs and/or a locking lug may be different
 - 32mm socket (for axle nut)
 - Torque wrench (40-200 ft-lb range)
- 3/8 Drive items
 - Drive Ratchet
 - 6" long extension
 - 12mm socket
 - 10mm socket
- Hydraulic frame lift
- Two (2) 1.5" 8 x .125 thread bolts to extract the rear rotors
- 3-ton floor jack and two (2) 3-ton jack stands (alternative to the frame lift)
- Other tools and items
 - 1/4" wide 6" flat-bladed screwdriver
 - 1/4" wide cold chisel
 - Large ball-peen hammer
 - 1/2" Air impact gun (alternative to breaker bar)
 - 36" breaker bar extension (alternative to air impact gun)
 - 6" three-jaw puller
 - Trouble light
 - Brake cleaner
 - Shop towels

3. Preparation Steps

I used a hydraulic frame lift, using the jacking points and lifted the car. If you don't have access to a frame lift, make sure your car is on solid, level ground, block the front wheels and then use a floor jack to jack it up high enough to put on jack stands then proceed. Remove the negative terminal to the battery.

4. Tear-down

- a) Remove the wheel/tire at the location where you're going to replace the wheel bearing

CAUTION: Remove the wheel before loosening the axle nut. Failure to follow this rule can damage the wheel bearings, which may make it difficult to get the HBA off the axle shaft.



- b) Set your emergency brake.
- c) Use the 1/4" cold chisel and the large ball-peen hammer, to drive-out the locking dent in the axle nut. Use a 32mm impact socket and your 1/2" breaker bar, to loosen the axle nut. You may need to use your breaker bar extension to break this nut loose – it's on very tight. If you are using an impact gun there is no need to follow this step as the gun will spin the nut past the locking dent. In the photo above, I've loosened the axle nut so it is only screwed-on loosely at this point.
- d) Release your emergency brake – so that the rotor will be free.
- e) Remove the ABS sensor from the top of the hub assembly, immediately behind the backing plate. You'll need a 10mm socket, extension and ratchet and likely a 1/4" flat-blade screwdriver to help pry it out of its mounting point. Swing the ABS sensor on its wire so that it's clear of the hub bearing area. I draped it over the rear brake line.



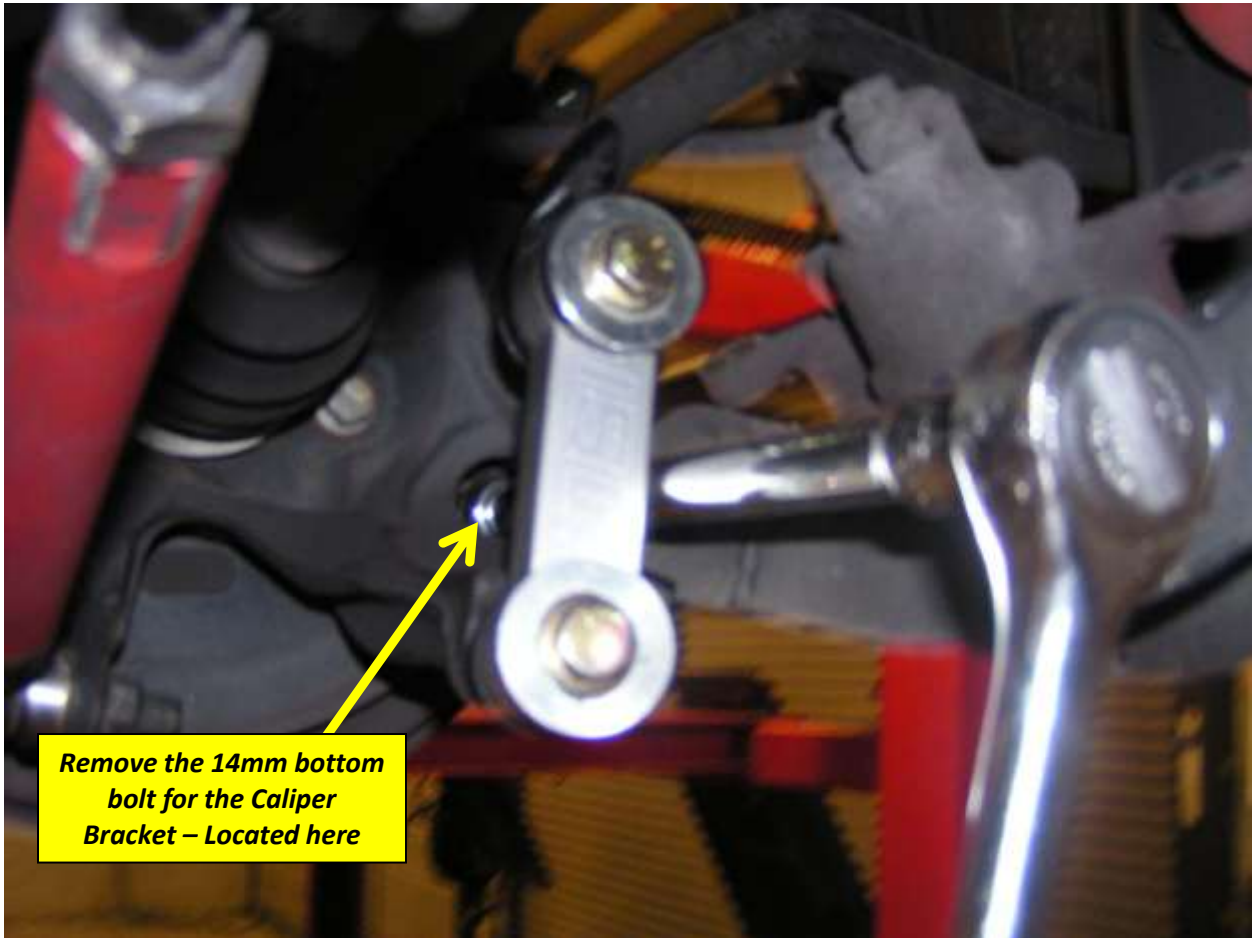
Note: If you do not remove the ABS Sensor, you will not be able to extract your HBA as the sensor fits into a groove in the rear of the HBA.

CAUTION: The ABS sensor is magnetically encoded so be careful not to damage it nor allow it to come in contact with, or in close proximity to, a magnetic source, i.e., a magnetic extension/recovery tool

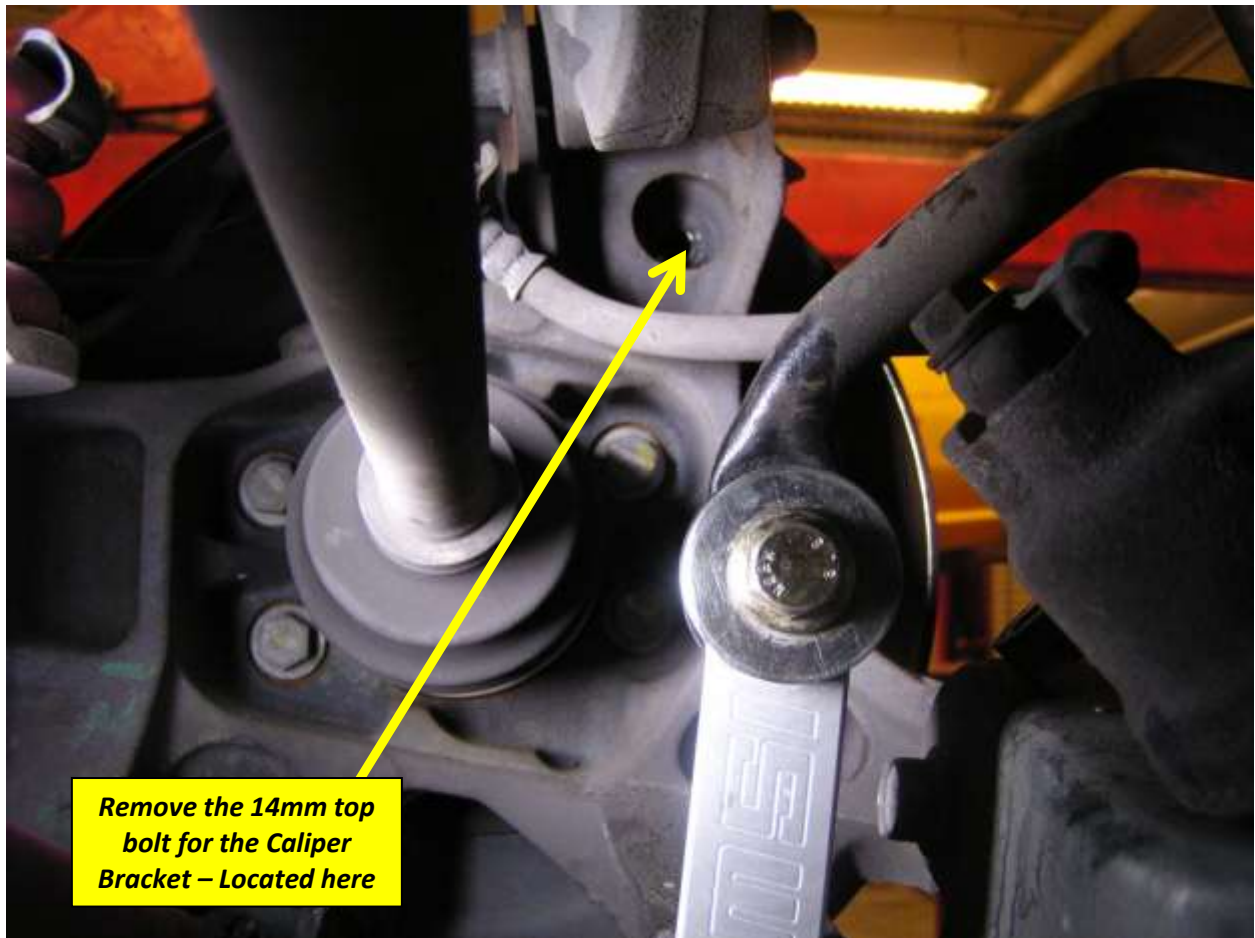
- f) Lightly spray PB Blaster into the two 8mm holes located on the face of the rotor, inside the periphery of the wheel lug holes. Start your two 8 x.125 bolts into the holes, but don't tighten them yet.



- g) There's no need to remove the caliper, then the mounting bracket. Just remove the entire brake caliper assembly from the trailing-arm/backing plate assembly. There are two (2) 14mm bolts located inside two holes in the trailing arm assembly – you can access these from the rear of the hub, top and bottom, to remove the brake assembly from the backing plate. Use your 14mm socket, 10" extension and your 1/2" ratchet, to undo these bolts, and then suspend the caliper from the sway bar using a wire hanger. Don't let the caliper dangle unsuspended by its brake hose.

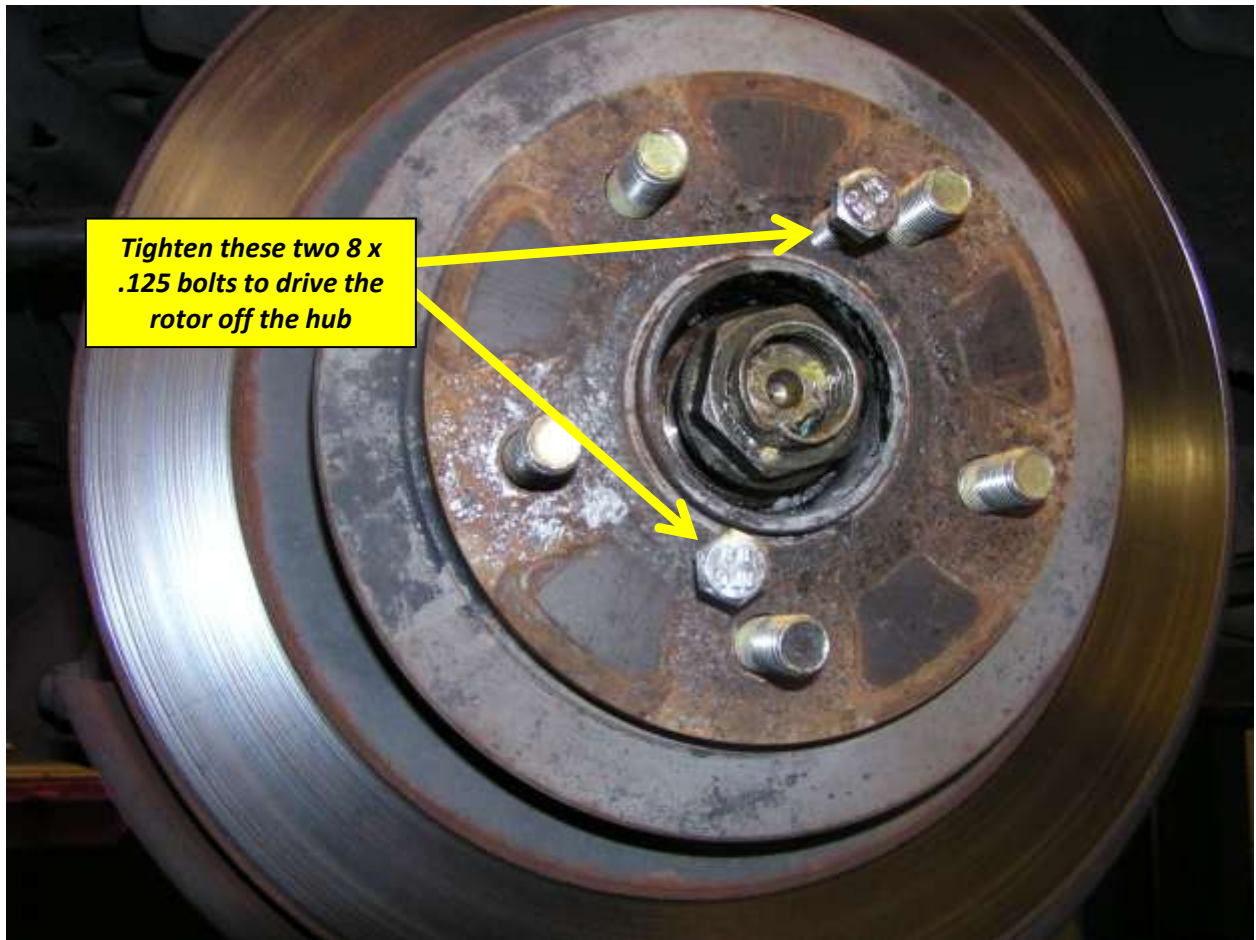


**Remove the 14mm bottom
bolt for the Caliper
Bracket – Located here**



- h) Now, that the brake caliper assembly is clear, use your 12mm socket to drive-in the two 8 x .125 bolts that you started previously in your rotor face. This will drive the rotor off the face of the hub assembly.

NOTE: MAKE SURE YOU RELEASE YOUR PARKING BRAKE AS THE ROTOR WILL NOT RELEASE IF THE PARKING BRAKE IS SET.



- i) Once the rotor breaks free, pull it off the wheel lugs and set it aside. Your wheel hub / parking brake assembly should look like this.



- j) Locate the four (4) 14mm bolts on the back side of the hub assembly. They're located in the top left, top right, bottom right and bottom left corners of the trailing arm, and they surround the axle CV joint boot where it goes into the hub assembly. Use the same 14mm socket, 10" extension and 1/2" ratchet you used to undo the caliper mounting bracket bolts. Don't completely undo the bolts until after you start the next step.



- k) The hub fits over a slightly tapered, splined rear axle, which over time, also gets corroded and crudded-up. To get it off, you'll need to pull off the hub using a puller. I used a 3-arm puller; you may be able to use a 2-arm puller, but YMMV.
- l) Attach the 6", 3-arm puller to the face of the hub with the centering screw in the indent in the end of the axle. I found it easiest to drape the top arm on the hub, and while holding it in place, back the centering screw up until it went into the indent on a level plane, then back it 1-2 more turns in order to get the other arms to engage the hub. Once all three arms were engaged, I held them in place and started to turn the centering screw clockwise, which in-turn pulls the hub assembly off the splined axle. A 1/2" ratchet and appropriately sized socket (18mm in my case) helps here to turn the 3-arm puller centering screw.

NOTE: DO NOT ATTEMPT TO PULL THE HUB ASSEMBLY OFF THE SPLINED SHAFT BY HAND. THIS SHAFT IS SLIGHTLY TAPERED AND THE HUB SPLINES FIT THE SHAFT SPLINES VERY TIGHTLY. YOU MUST USE A

PULLER. ALSO, IF YOU'RE NOT CAREFUL, YOU COULD PULL THE AXLE SHAFT OUT OF THE OUTER CV JOINT, AND THAT'S A WHOLE OTHER DISCUSSION, NOT COVERED IN THIS WALKTHROUGH.

- m) Once the hub is free from the splines, finish undoing the four attaching bolts and pull them back from the HBA, but don't fully remove them from the trailing arm. Since the backing plate and the HBA detach simultaneously from the trailing arm, and since the parking brake assembly is still attached to the backing plate, you will need to wiggle and twist the HBA slightly in order for the mounting points to clear the inner components of the parking brake assembly. Once the HBA is completely clear of the axle shaft, push the hub bearing bolts back through the backing plate in order to stabilize it and keep it from falling and straining the parking brake cable assembly.
- n) Here's the old and the new bearings together (front and back).





5. Installation

Installation is the reverse of the tear-down.

- a) Lightly grease the spline axle shaft, then slide the replacement HBA onto the shaft. It's best to center-up the CV joint in the trailing arm and then slide the HBA onto the axle shaft. Make sure the HBA is on the shaft sufficiently far enough to start your axle nut.
- b) Hold the HBA with one hand, and since your HBA mounting bolts are protruding through and holding the backing plate in place, reach-around and use your 10" extension bar, with the 14mm socket on it to line-up and start the bolts into the HBA. Once the bolts are fully started, tighten them down in a criss-cross pattern to 47.9 ft-lbs (I set my torque wrench to 48 ft-lbs)

CAUTION: MAKE SURE THAT THE ABS SENSOR DOES NOT COME BETWEEN THE TRAILING ARM AND THE BACKING PLATE DURING INSTALLATION OF THE HBA.

- c) Reinstall the ABS sensor and its bracket with the 10mm socket and extension. I could not find the torque specifications for this bolt, so I tightened it until it stopped, then gave it a quarter turn.
- d) Reinstall the rotor, making sure that it is fully seated against the HBA face.
- e) Reattach the brake caliper assembly to the backing plate and tighten the 14mm bolts to 39.1 ft-lbs. (I set my torque wrench to 40 ft-lbs.)
- f) Set the parking brake and have someone apply pressure to the brake foot pedal. The objective is to lock the axle in place so that you can torque down the axle nut. Use the 32mm socket and an air gun or the 1/2" breaker bar and extension to torque the axle nut to 177 ft-lbs.
- g) Lock the axle nut into the lock detent using a 1/4" chisel.

CAUTION: DO NOT PUT VEHICLE WEIGHT ON THE HBA UNTIL THE AXLE NUT IS PROPERLY TORQUED OR DAMAGE TO THE BEARINGS WILL OCCUR.

- h) Cycle your parking brake and your brake pedal a few times to ensure that everything is working correctly.
- i) Reinstall the wheel and torque the lug nuts to 81.1 ft-lbs. (I set my torque wrench to 85 ft-lbs).
- j) Inspect your work. Move the rear tire up and down by hand, check that there's no backlash in the bearing and that the wheel rotates smoothly.
- k) Remove the vehicle from the lift, or the jack stands. Reattach your negative battery terminal and you are done. Enjoy your new hub bearings.