

Many thanks to the fellow who originally posted these on Corvette Forum, and I've merely put them here since they were such a good reference. Feel free to mail me updates, and I'll incorporate them into this original document.

Cheers - Jake

C5 Corvette Rear Wheel Bearing Replacement

Helpful Hints:

- Only use an impact wrench to initially break the clamping torque of a bolt during removal. Use a breaker bar, ratchet, or wrench to remove it the rest of the way. This way, you can tell if the nut or bolt starts to cross thread. This will give you a chance to do something about it.
- Use common sense.
- Take your time.
- If you don't understand something, ask somebody for help.
- Torque Specs are as follows:
 - o 125 ft/lb - caliper mounting bolts
 - o 96 lb/ft - wheel bearing/hub torx bolts
 - o 52 lb/ft - lower ball-joint
 - o 33 lb/ft - tie-rod end(Page 3-25 of the service manual (Thanks Steve Thomton))
- This procedure is not official and is intended as an aid to the Do-It-Yourselfers out there.
- I take no responsibility for anything that happens to your car during or after this installation. It is up to YOU to ENSURE that all of your bolts are tightened, etc. (*Sorry to mention this, but there are too many intellectually challenged people out there who like to half-ass things like this!*)

- It took me about 2hrs and 15min per side for this replacement. I called the dealer to see how long they charged for this job and they said 2 hrs (@\$95/hr), so I'm slightly slower than an official corvette mechanic. ☺

TOOLS:



- Torque Wrench (up to 150 ft-lbs)
- Breaker bars (3/8" and/or 1/2")
- Ratchets (3/8" and/or 1/2")
- 1/2" to 3/8" socket adapter (if needed)
- Electric Drill
- Wire brush wheel (1/4" dia shaft) for drill
- 21mm wrench
- 15mm wrench
- 34mm CV socket
- 15mm socket
- 18mm socket
- T55 Star Tool
- Hammer
- Rubber mallet
- Grease
- WD-40
- Screw driver

- Ball Joint puller (wedge/fork)
- Common Sense
- Jack
- Jack Stands
- 2x4x12" wood choc blocks

PARTS:

Complete Hub assembly with ABS sensor -
Autozone Part Number: 512153 (This is also the same as
the TIMKEN part no.)

Cost: \$126.99 each



PROCEDURE:

- 1.) Remove wheel cap and clean corrosion off of axle threads with wire brush (see diagram). Using WD-40 helps remove the corrosion, and ease the nut removal.



- 2.) Loosen and remove the axle nut w/ a 34mm Socket and breaker bar. DO NOT USE an impact wrench. If you do and it cross threads, don't come complaining to me. The torque required to break this nut will probably be minimal for bearing which have failed.
- 3.) Loosen the wheel nuts (19mm Socket). Loosen them just enough so that you can remove them when the car has been jacked up and the wheel is in the air *(This note just in case some genius decides to take them all the way off, while the car is still on the ground :)*
- 4.) On level ground, chock the front wheels, put the car in gear (1st gear works fine), release the emergency brake, and jack the rear of the car up. Once jacked up, lower the car onto two jack stands to provide a stable working platform. I put my jack stands underneath the lower rear suspension sub-frame right next to the rear lower control-arm bushing *(But not ON the control-arm bushing)*. This is a very beefy area that can support the whole weight of the car.
- 5.) Remove the lug nuts and rear wheel.
- 6.) Remove the brake caliper bolts (2) with a 21mm wrench. (see diagram)



- 7.) To prevent the caliper from hanging on the brake line and damaging it, place the caliper between the transverse leaf spring, and the lower control arm. (see diagram)



- 8.) Remove the brake rotor. It may be a little tight, depending on how your emergency brake is adjusted. If it absolutely won't come off, GO RELEASE YOUR EMERGENCY BRAKE FOOL! 😊
- 9.) Disconnect the ABS sensor plug (see diagram)



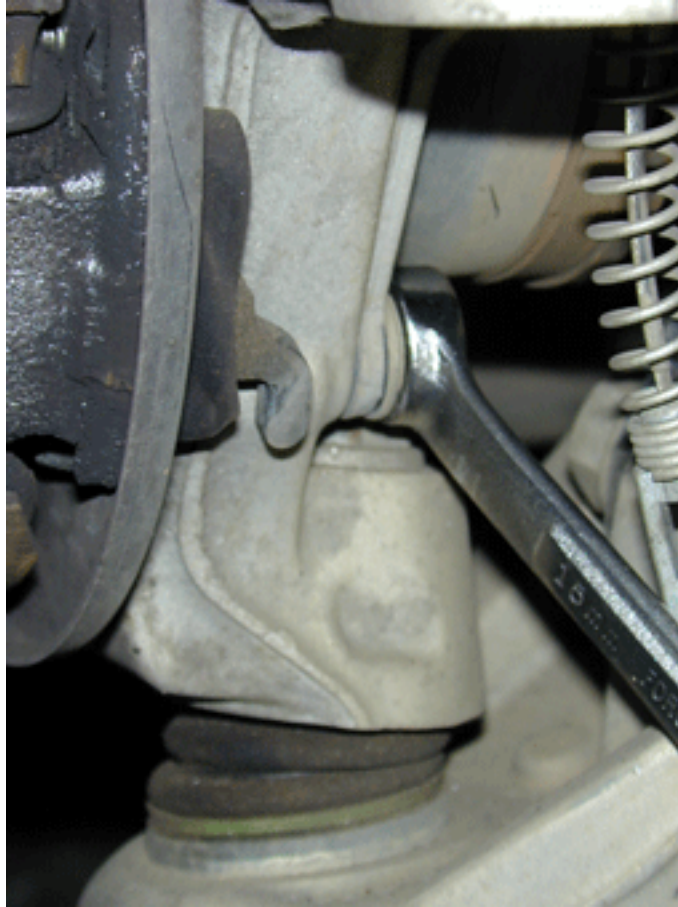
- 10.) Remove the rear toe link ball-joint at the upright (18mm) by first loosening the nut until it is flush with the end of the threads, and then tapping (NOT WHACKING!!!) the ball joint w/ a hammer until it falls down (see diagram). If you're hitting it hard enough to show physical damage, you may want to use a piece of wood (small 2x4) and placing it between the hammer and ball joint.



11.) Remove the nut and move the toe link out of the way
(see diagram).

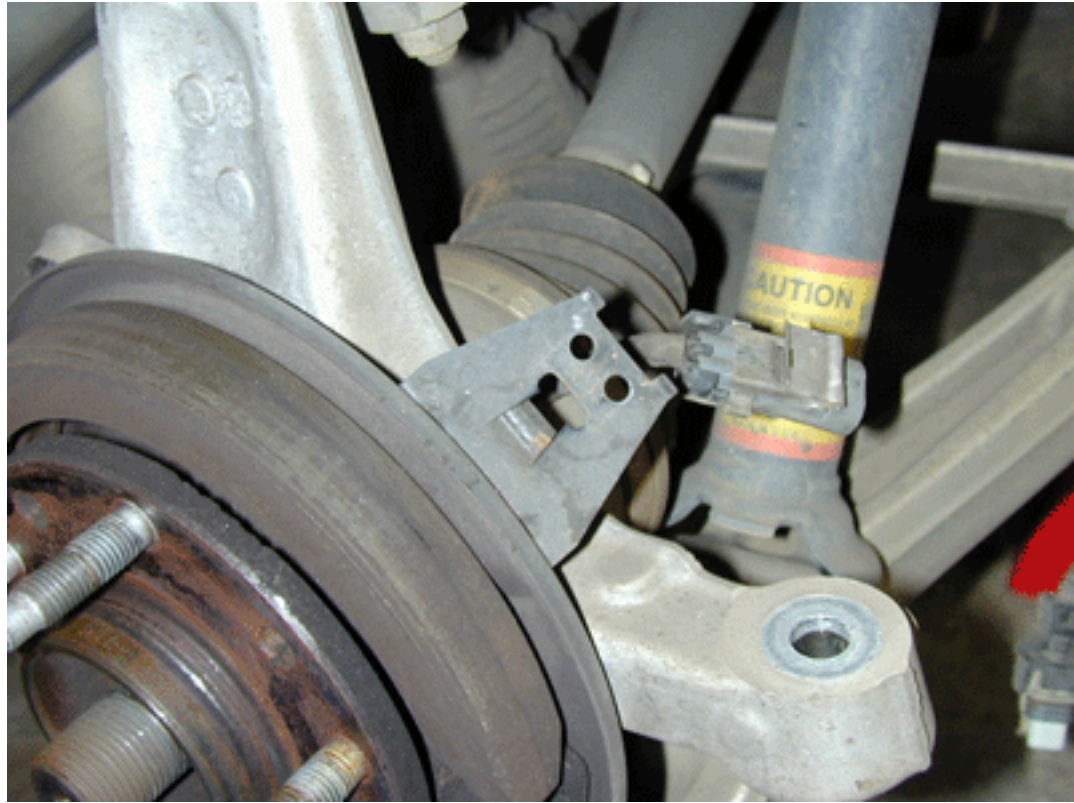


12.) Remove the emergency brake cable (screwdriver), then the emergency brake mount from the upright (15mm - **I think**). At this point, you can rotate the upright so that you can remove the emergency brake cable mount bolts.

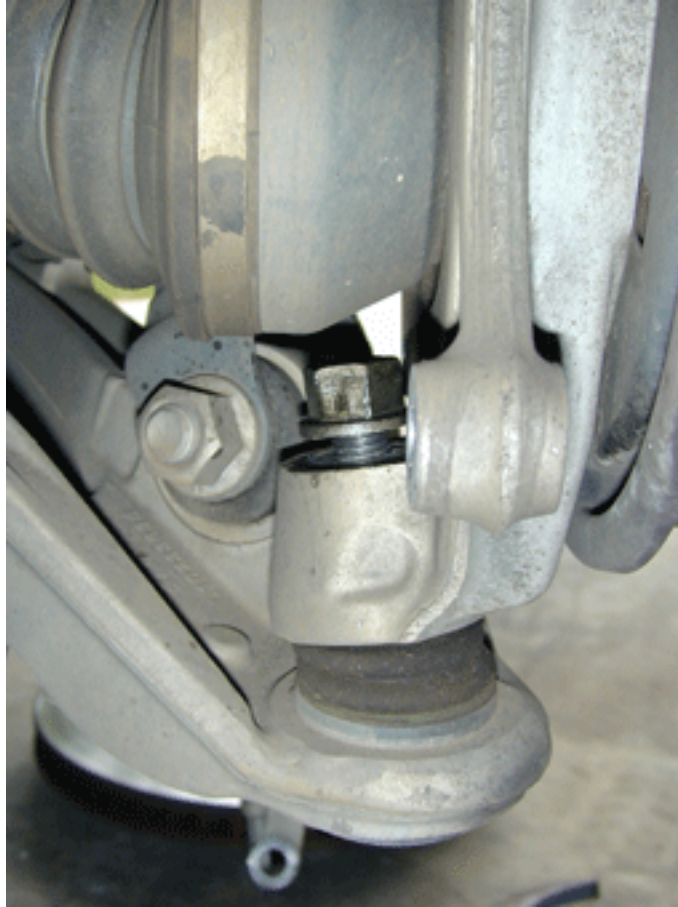


13.) Remove ABS sensor plug from upright mount (see diagram).

NOTICE where the ABS sensor wire is coming out from behind the upright above the CV joint). We'll want to replace it back this way w/ the new bearing housing.



14.) Loosen the lower ball-joint nut (21mm) (bottom inside of upright) until top of nut is flush w/ threads.



You may want to WD-40 the threads before you start loosening the nut. Using a ball-joint wedge/fork (see tools diagram), pry lower ball joint out by wedging it in between the ball joint nut and the CV (see diagram). Use a rubber mallet to pound the wedge in between to loosen the ball joint shaft from the upright.



- 15.) Remove the lower ball joint nut. You'll have to slightly pick up the upright to get clearance for removal.
- 16.) Pull upright off of lower ball joint, pick the whole upright straight up and out towards yourself (the upper control arm will move upward with it), and remove the CV axle shaft. You may have to use a rubber mallet to loosen the CV axle from the upright (the axle is splined). You have to put some muscle behind this step! ☺



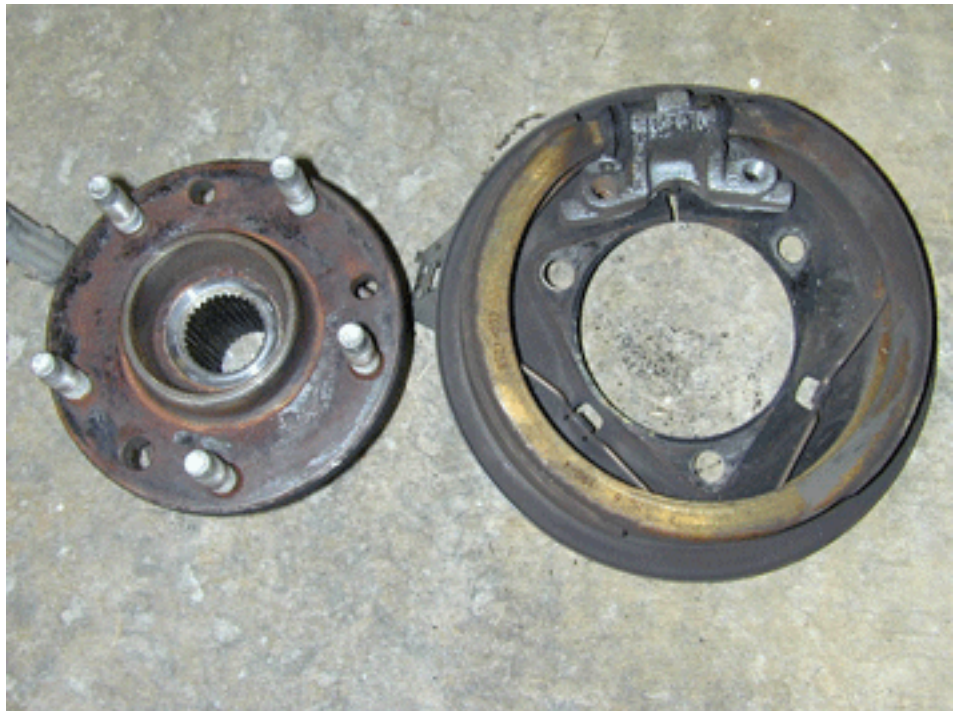
17.) Rotate the upright so that you can get to the three star bolts (T55 Star Socket) which bolt the bearing housing into the upright. (see diagram)



- 18.) Remove the three star bolts. You may have to use an impact wrench (or breaker bar) to break the initial clamping torque on these bolts. Remove them w/ a ratchet to prevent cross threading. (see diagram above)
- 19.) Remove bearing/emergency brake assembly from upright. (see diagram)

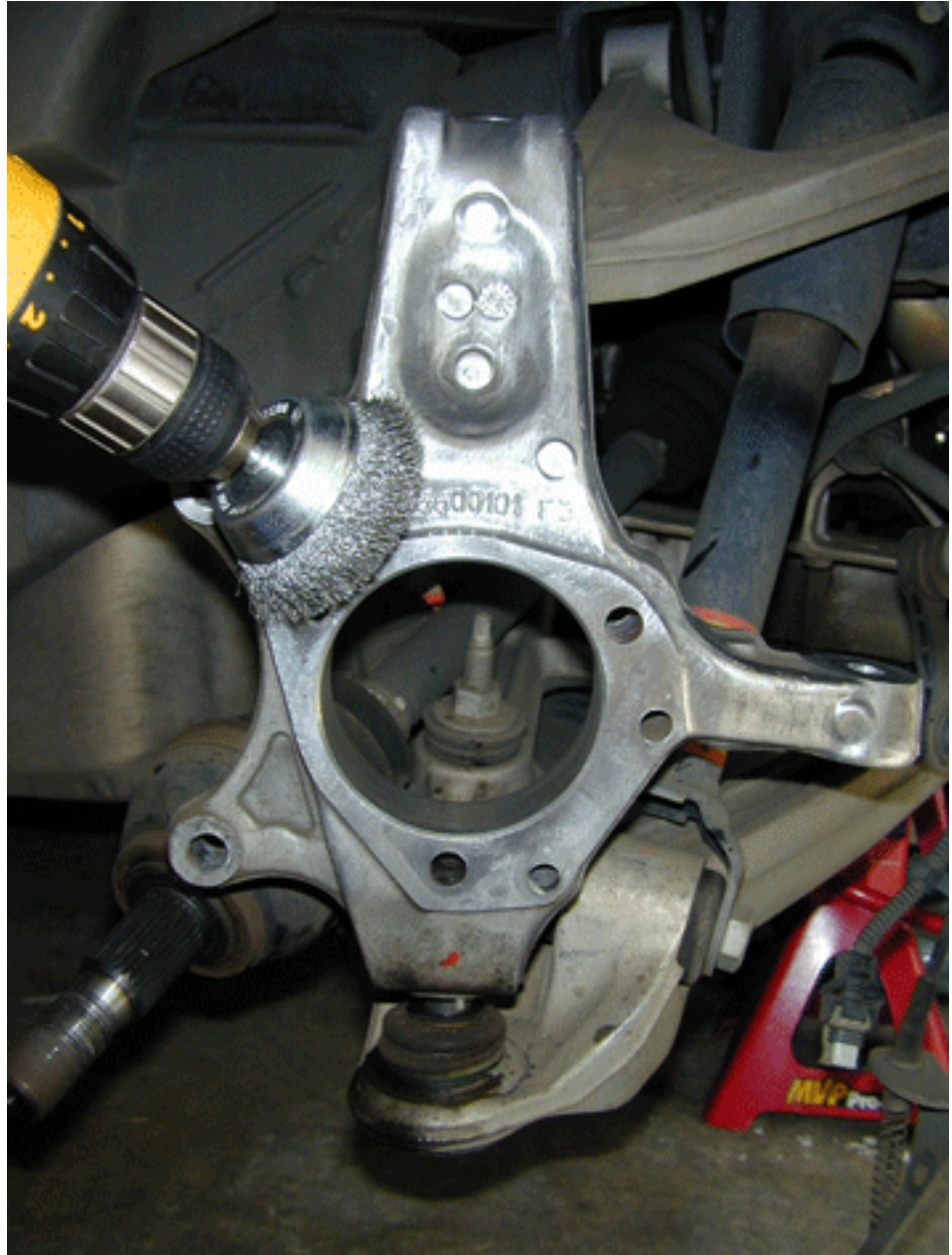


20.) Remove bearing assembly from emergency brake assembly. (see diagram)



21.) Clean the upright (w/ stainless steel wire brush).
I used a regular steel brush, but my buddies told me that it impregnates tiny pieces of steel into the

aluminum upright, which will cause it to corrode.
We'll see.



- 22.) Clean the CV splines, then lube w/ grease.
- 23.) Install the new hub assembly into the emergency brake unit.

NOTICE position of sensor wire w/ respect to emergency brake lever and ABS sensor plug mount, etc. (see diagram)



24.) Bolt bearing/emergency brake assembly back into upright.

NOTE: ABS Sensor wire goes thru hole in upright and wraps back around to the ABS plug mount. This is why I wanted you to remember the routing of the ABS sensor wire in step 12.

NOTE: I put a little grease on the star bolts to make them go in easier.

(see diagram)



- 25.) Torque your hub/wheel bearing bolts (the torx ones)
- 26.) Install the CV axle, then the CV axle nut until snug. We'll torque it later when the car is on the ground.
- 27.) Mount upright back onto lower ball joint and replace nut until there is about an 1/8" gap between the bottom of the nut and the upright.

Pry the ball joint back up into the upright using the ball joint wedge/fork by putting it between the ball joint nut and the upright (see diagram). Again, make sure you don't damage the aluminum upright!



If you don't snug the ball joint shaft into the upright, it will simply spin when you install and tighten the nut! ☺

- 28.) Install emergency brake cable and mounting bracket.
- 29.) Plug in ABS sensor
- 30.) Install rear toe link & torque to spec.

NOTE: This ball joint has a hex cut into the end of the ball joint shaft so that you can keep it from spinning while tightening the nut (w/ a wrench, of course). Cool! ☺ Once the ball joint has been seated, you can torque it w/ a torque wrench.



31.) Clean corrosion off of and install rear brake rotors. (see diagram)



32.) Install brake calipers.



For you boys and girls out there who are having the notorious "Fuel gauge reading empty" problem, notice that the sending unit (for the left tank) is just in front of the rear suspension, underneath the car (and covered with a gas tank shield). SEE YELLOW ARROW

As you can see, my gas tank shield has a squirt of WD-40 on it :)

However, the problem is supposedly w/ the right fuel sending unit. I just wanted to point out how ACCESSIBLE this area is in case you wanted to replace the right fuel sending unit to fix the problem.

I will eventually. ☺

Okay, back to the procedure.

33.) Bolt wheel back on and snug lug nuts.

34.) Lower car w/ jack and remove the jack stands(duh!).

35.) Torque the lug nuts to 100 ft-lbs (that was the torque specified in my corvette owners manual).

36.) Torque the CV axle nut to 130 ft-lbs. If someone is educated on the correct torque PLEASE let me know and I'll update these procedures.

I based this number upon consulting w/ some buddies who are Vehicle Development Engineers for Panoz Auto Development (Roadsters and Esperantes).

37.) Enjoy the noiseless ride and the money you saved!

If anybody has anything they'd like to add to this procedure, lemme' know and I'll consider it.

HAPPY DUDE!

