



Mirrored from: <http://www.wranglerforum.com/f274/install-synergy-suspension-ball-joints-write-up-147062.html>

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#1

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Join Date: May 2011

Posts: 22,234

[Garage](#)



Install Synergy Suspension Ball Joints Write-up

Thanks to this forum, it didn't take me long to decide to ditch the crappy factory ball joints for something better: Synergy Suspension ball joints. I tried to put the entire install in one thread but the site only allows a maximum of 15 images in a thread so I broke it down into 4 threads.

Vehicle

2011 Rubicon Unlimited

Tools & Supplies

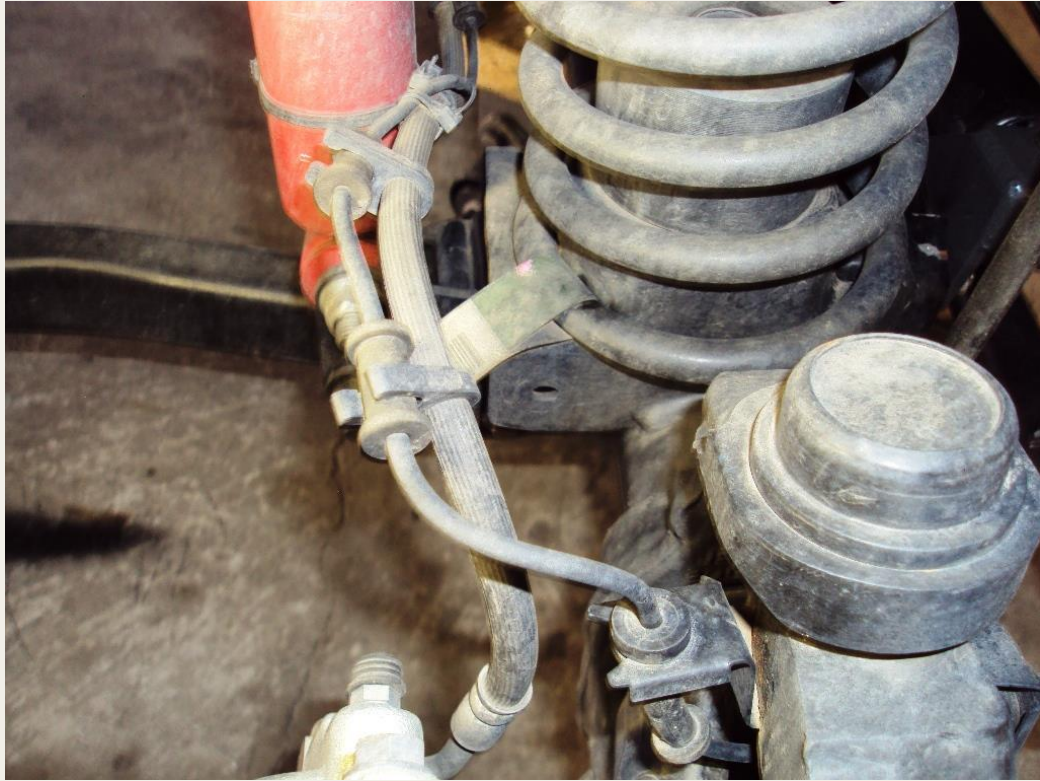
2-3 pound hammer
Pair of jackstands
Floor jack
1/2" drive breaker bar
1/2" drive ratchet
1/2" drive extensions
1/2" drive 21mm socket
1/2" drive 13mm 12 point socket
Torque wrench
5mm allen wrench
Small flat blade screwdriver
7/8", 1-1/16", and 1-1/8" combination wrenches or sockets
5/16" socket or combination wrench
Diagonal pliers
Anti-seize
Wire Brush or Dremel
180 or 240 grit sandpaper
Ball joint press
Adapter set
Bungee cord or zip ties
Rubber mallet or deadblow hammer
New ball joints
Brake cleaner
Rags
Extreme pressure moly grease

Notes

- A. If you do this indoors make sure you allow at least 4 feet of space on the passenger side so you have room to remove the axle shaft and hub assembly.
- B. The upper ball joint is pressed out/in from the top.
- C. The lower ball joint is pressed in/out from the bottom.
- D. I also installed axle tube seals at the same time.

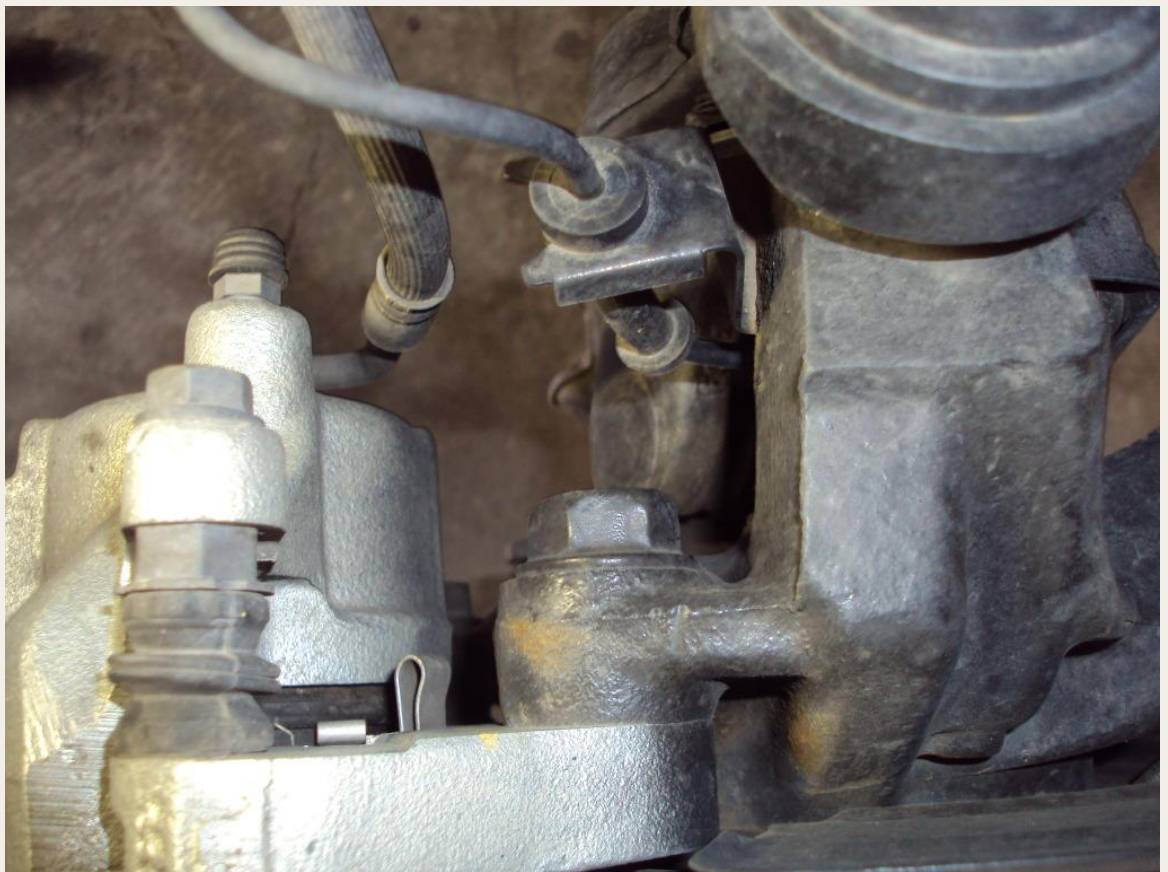
Steps

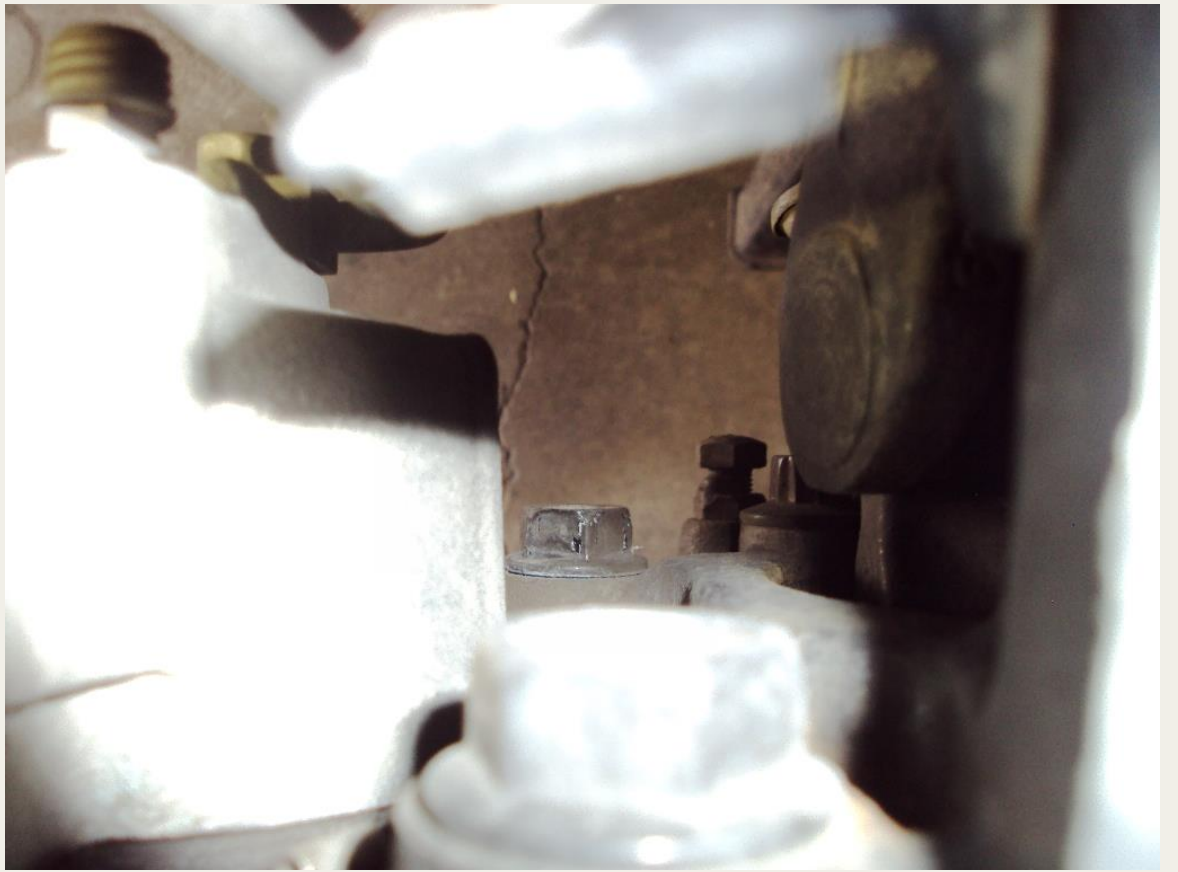
- 1) Place the transmission in Park or 1st. Set the parking brake. Start on one side and loosen the wheel nuts. Raise the front of the Jeep and place a jackstand under the axle tube just inside of the axle 'C'.
- 2) Remove wheel/tire and set it out of the way.
- 3) Unclip the wheel speed sensor harness from the brake hose and upper ball joint bracket.





4) Remove the two 21mm bolts that hold the caliper assembly to the knuckle. Slide the caliper off the rotor and hang it from the frame with a bungee cord or zip ties. **DO NOT LET THE CALIPER HANG BY THE BRAKE HOSE!** Remove the rotor and set it aside.

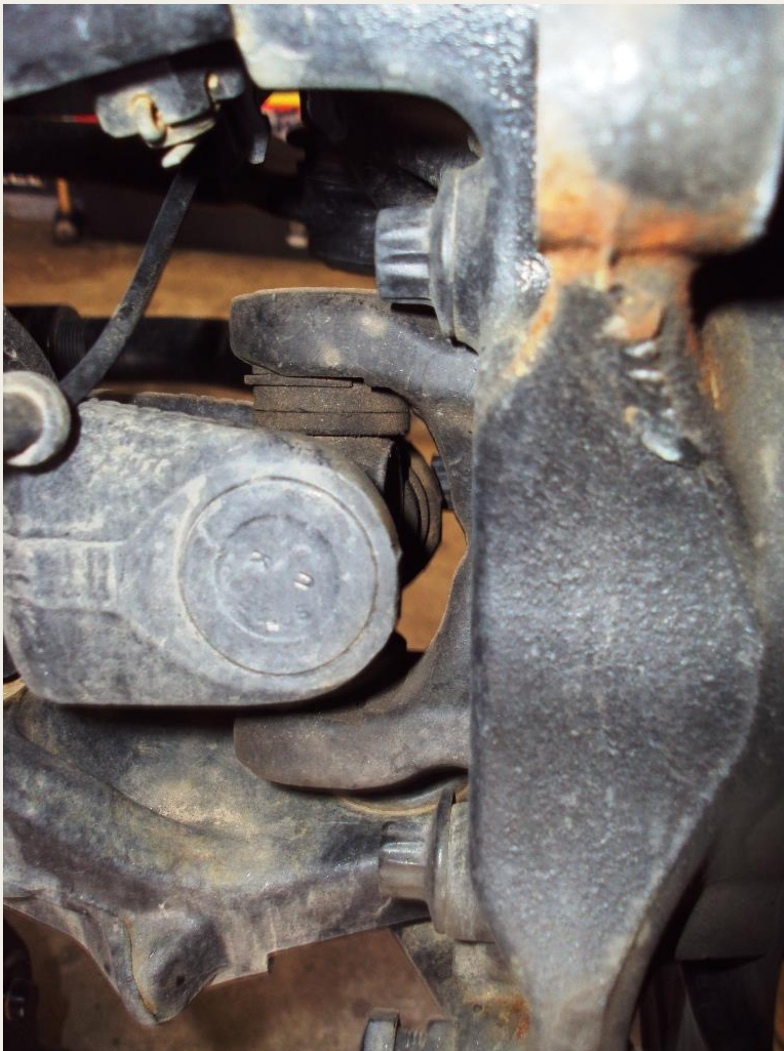




5) Remove the bolt that hold the wheel speed sensor to the hub bearing but do not remove sensor at this time.



6) Using a 13mm 12 pint socket, remove the three bolts on the back side of the knuckle that mount the hub assembly to the knuckle.

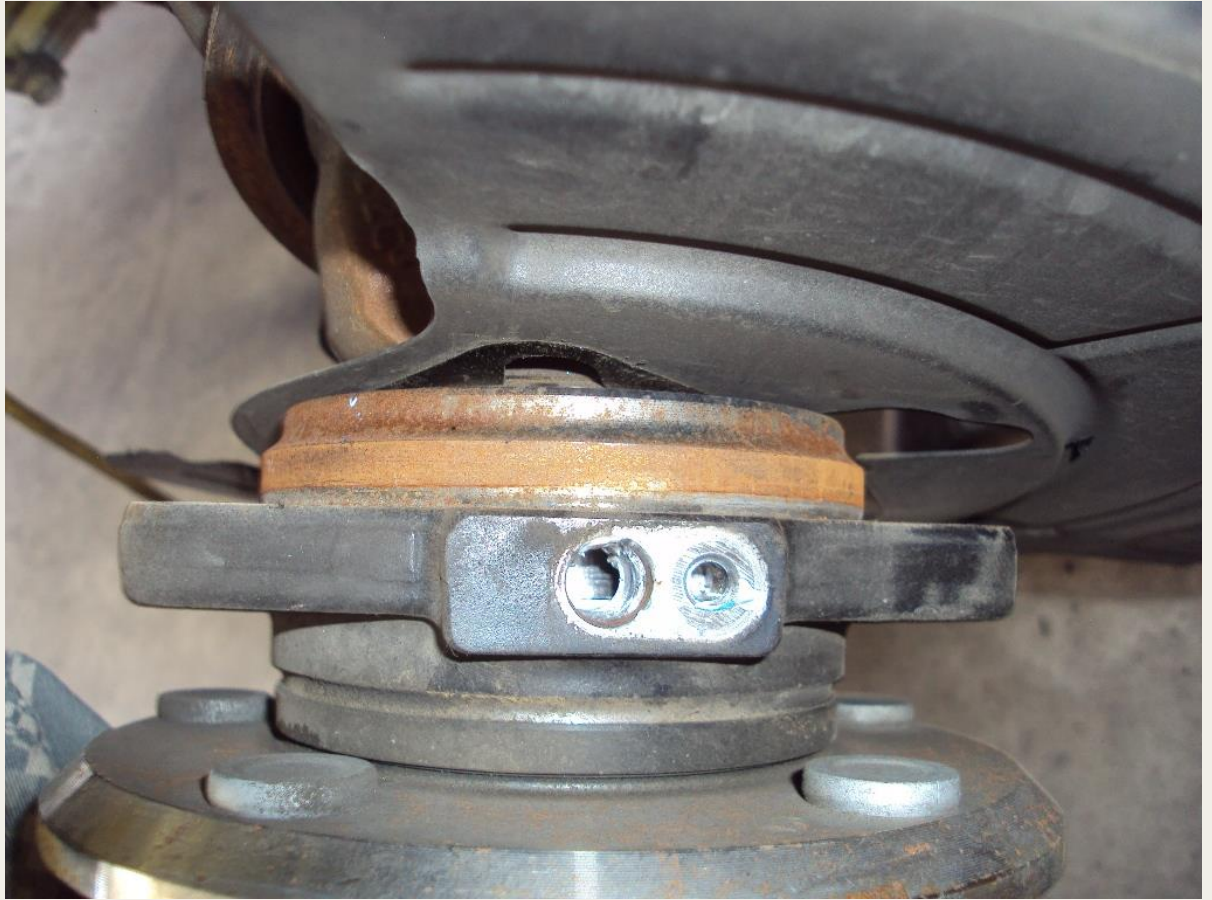




7) Rap the outer edge of the hub assembly with a rubber mallet or dead blow hammer and pull it out from the knuckle a few inches.

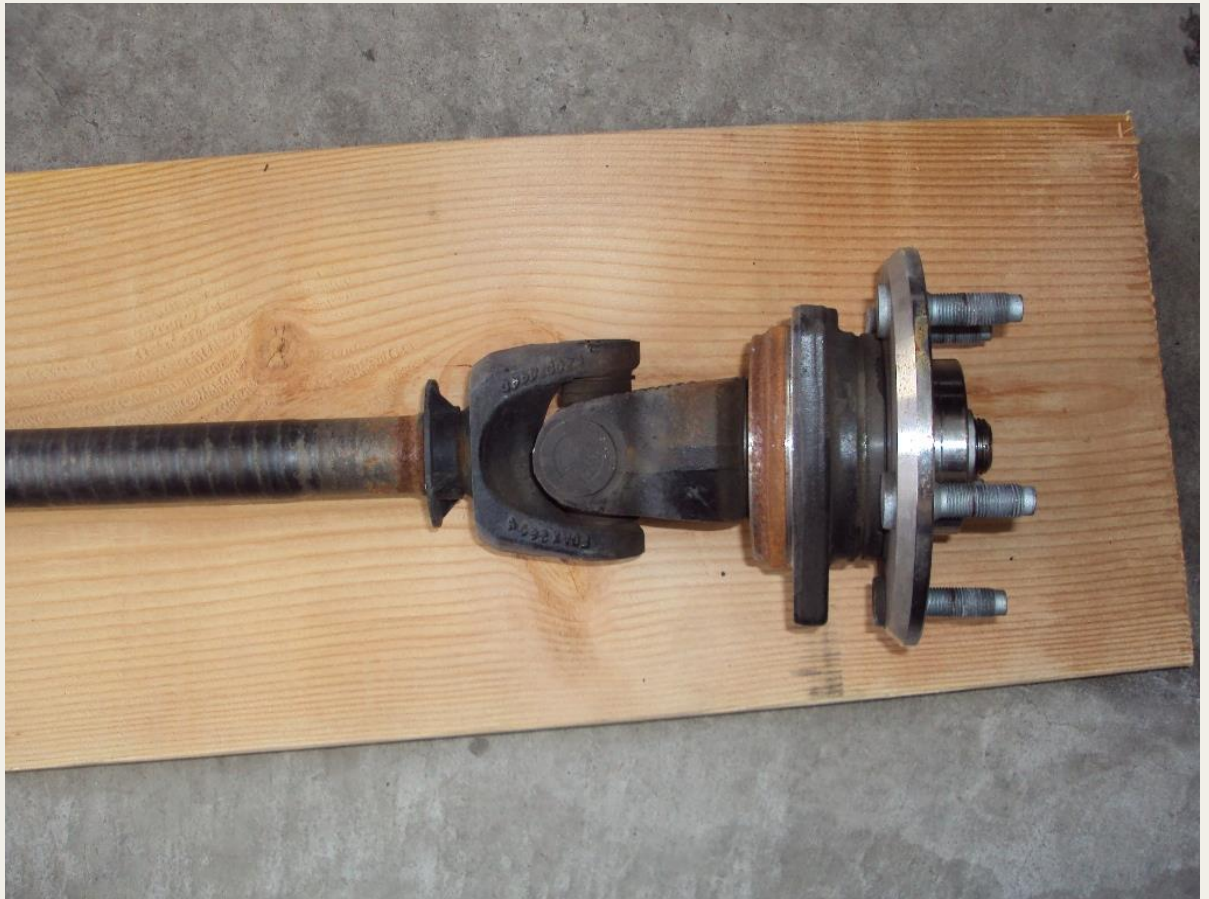


8) Carefully remove the wheel speed sensor from the hub and pass it through the slot in the backing plate. Hang the harness and sensor on the brake caliper. Treat the sensor gently as it can be easily broken or damaged.



9) Pull the axle shaft completely out and set it on a clean surface.





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[Garage](#)**Install Synergy Suspension Ball Joints Part 2**

10) Pay attention to the plastic guides on the splined end of the axle. There are two of these. If one or both are missing, check inside the axle tube. If they slide off when removing the axle shaft, use a coat hanger or wire rod to fish them out and place them back on the splined end of the axle.



11) Remove the cotter pin and upper ball joint nut.



12) Remove the cotter pin and loosen the lower ball joint nut until only a few threads are left.



13) Give the knuckle several sharp blows with the hammer to break it loose from the ball joints.



14) Remove the lower ball joint nut; then remove the knuckle from the ball joint studs and swing it out of the way. Support the knuckle by placing a jack stand under the tie rod.



15) Using the ball joint press and adapter kit, press the upper ball joint out of the axle 'C'. Tighten the press until the joint comes free. Periodically tap the area of the 'C' around the ball joint with the hammer. The vibrations will help the joint to press out.



U.S. GENERAL[®]

MASTER BALL JOINT ADAPTER SET / 14 PC

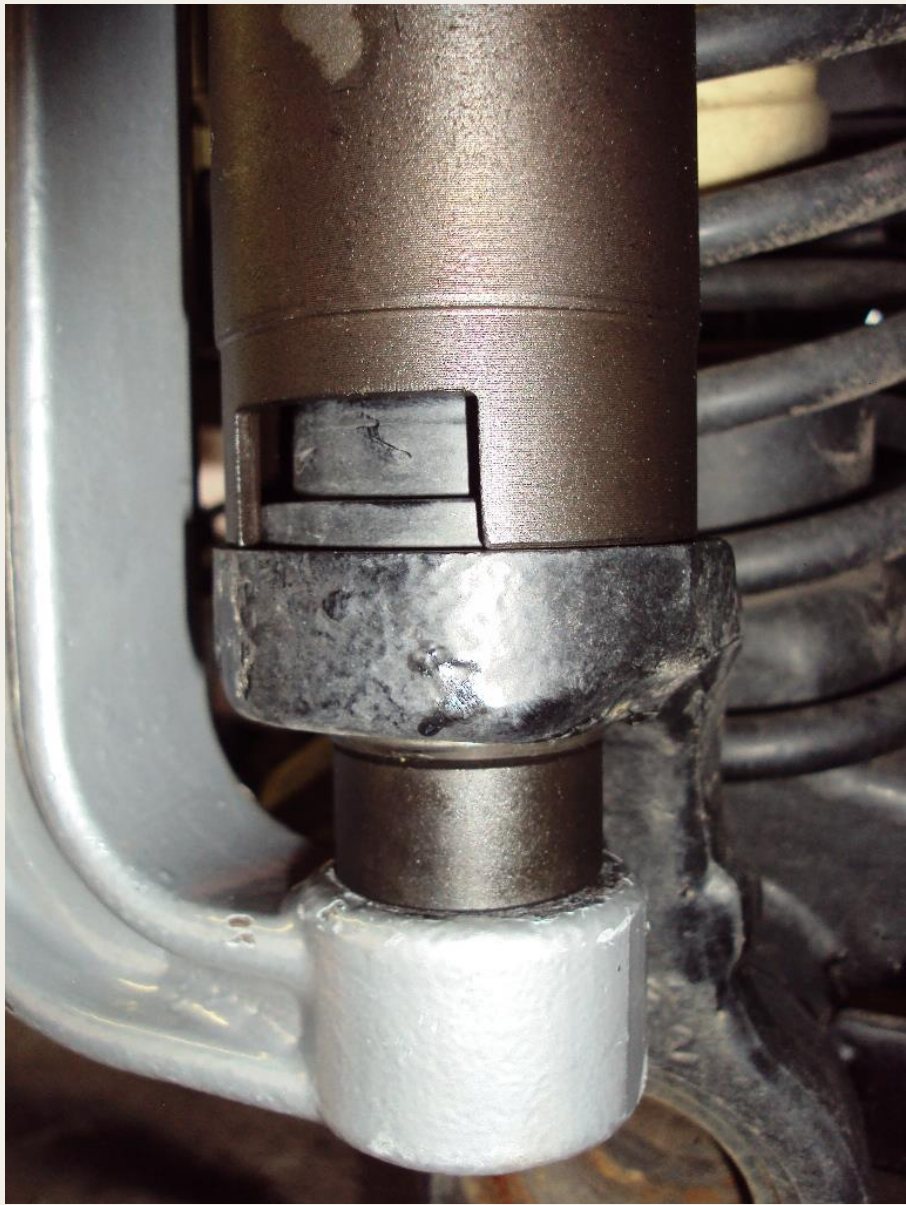
(FOR USE WITH 3-IN-1 SERVICE KIT - MODEL 38335)

Model 66958

OPERATING INFORMATION







16) Once the ball joint is loose, remove the press, adapter, and ball joint.



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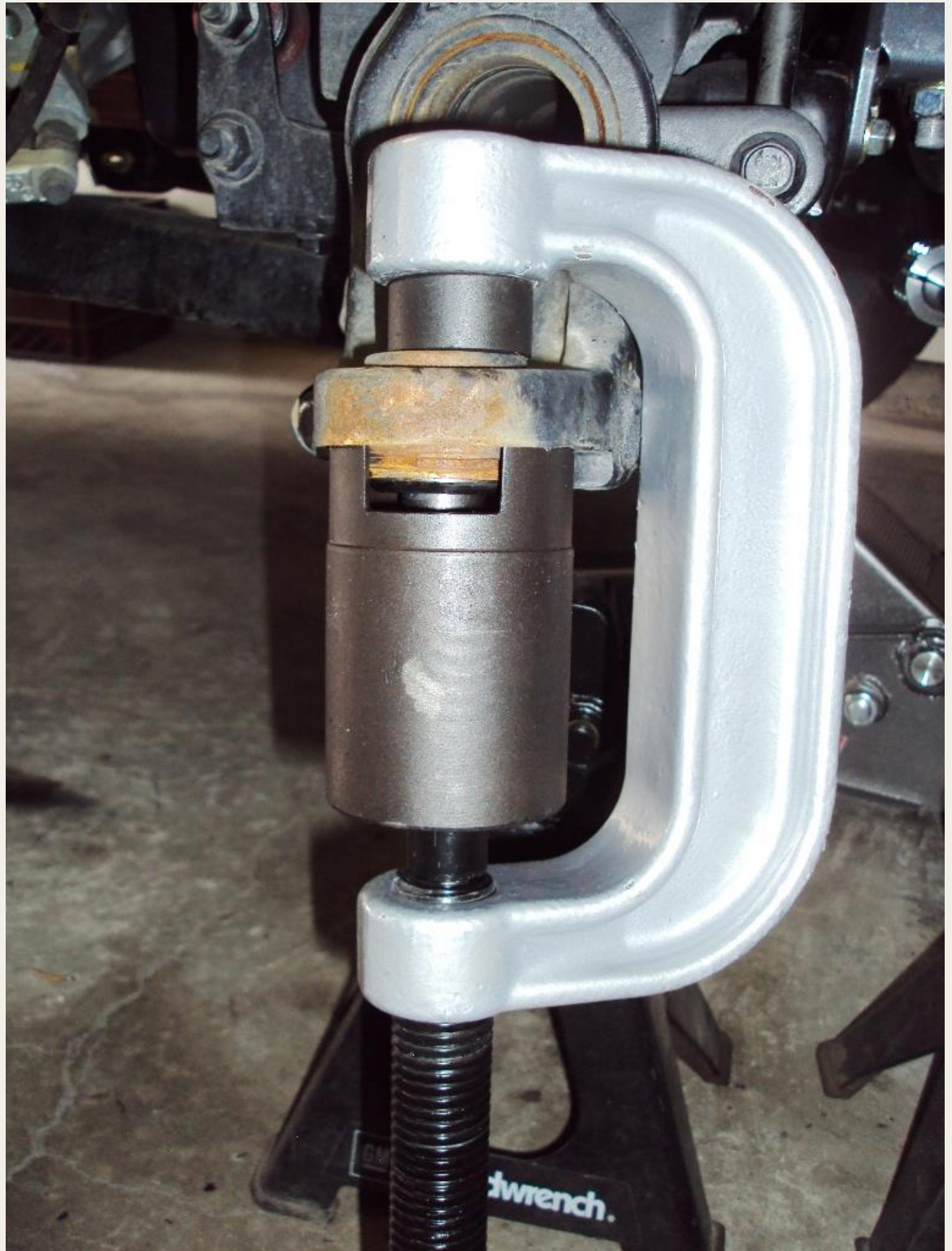
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Install Synergy Suspension Ball Joints Part 3

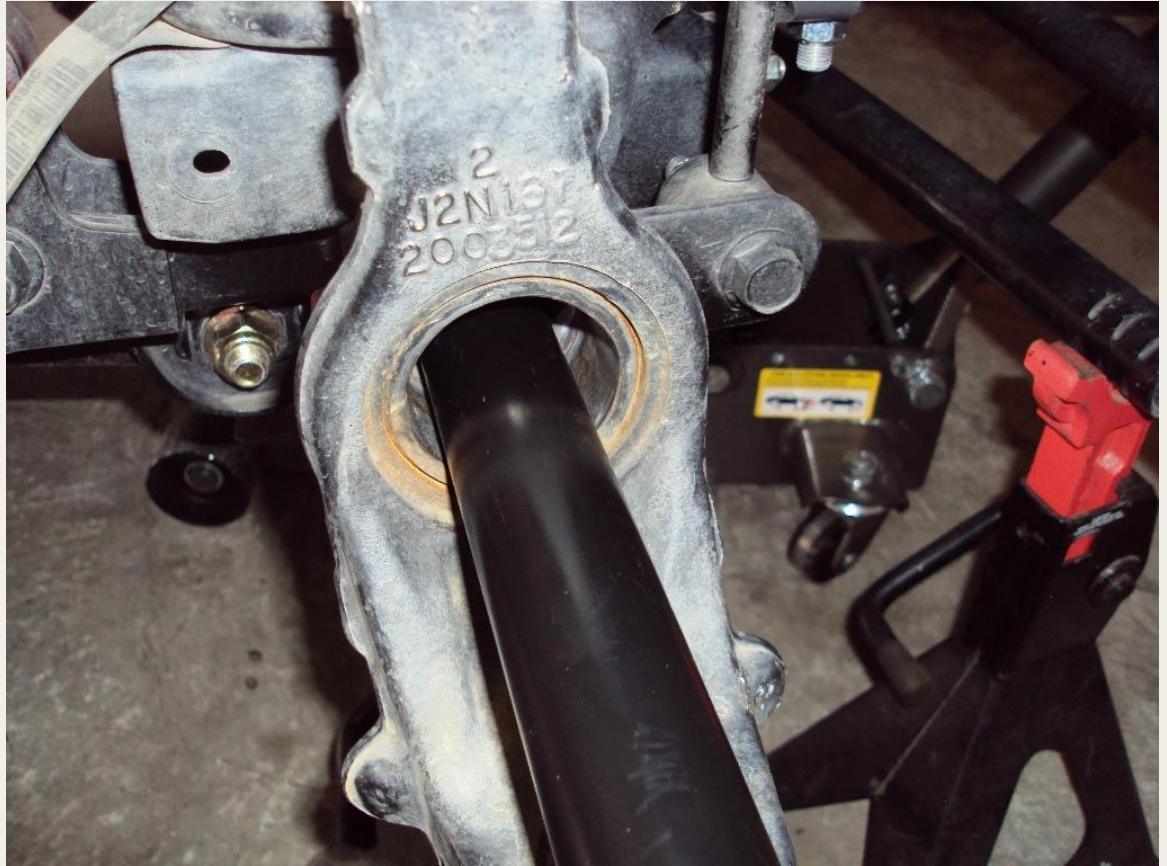
17) Turn the press upside down and remove the lower ball joint.





18) Clean the inside of the ball joint mounting holes with sandpaper or a wire brush and then wipe clean with brake cleaner on a rag. Apply a thin film of anti-seize to the inside of the holes.

19) Clean any dirt and debris from the inside of the axle tube. A vacuum cleaner with an extension wand works well for this.

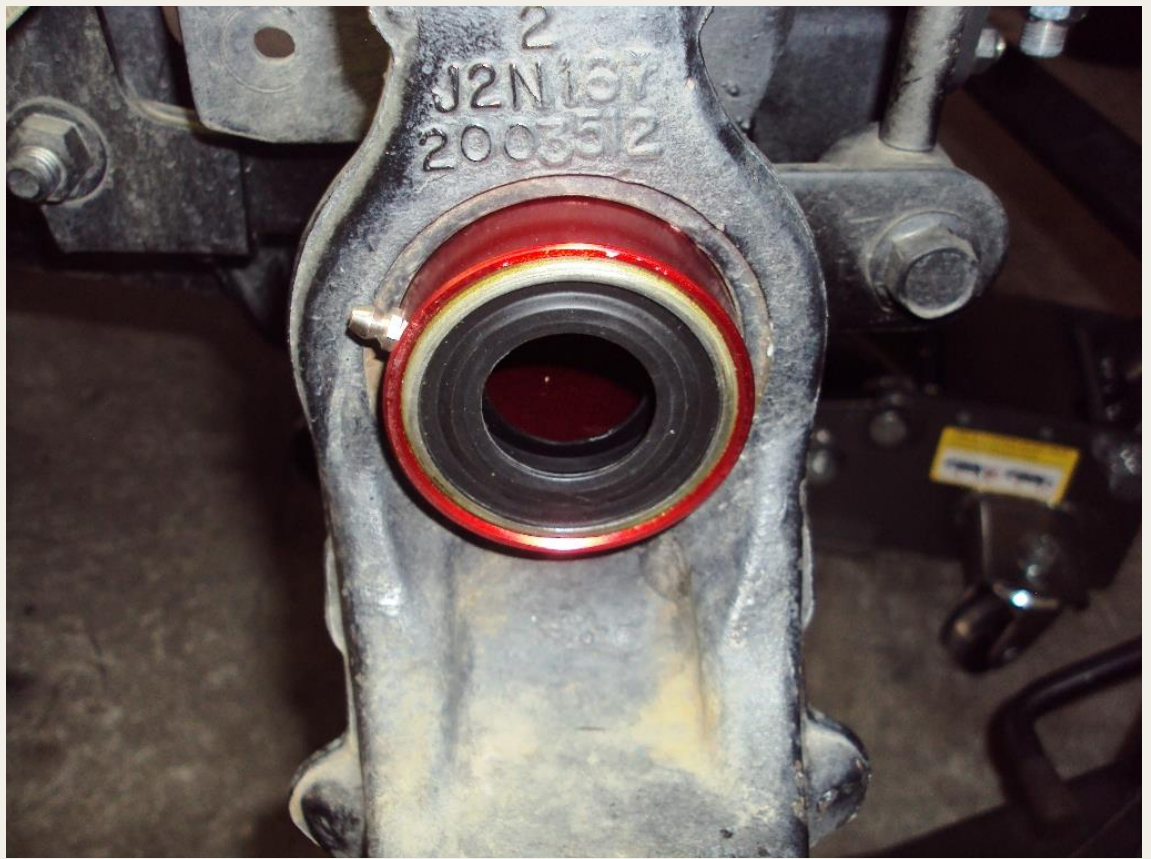


20) If installing axle tube seals proceed to Step 21. If not, skip to Step 23.

21) Using sandpaper or a wire brush, clean any rust from the outer 2" of the axle tube. Wipe clean with brake cleaner on a rag. Apply a thin film of anti-seize to the inside of the axle tube.

22) Turn the axle tube seal so the grease fitting is facing to the rear and push it into the axle tube. If necessary, place a rag over the seal and use a hammer and block of wood to fully seat the seal in the end of the tube.





23) Remove the boot from the Synergy Suspension lower ball joint by carefully pulling it free.

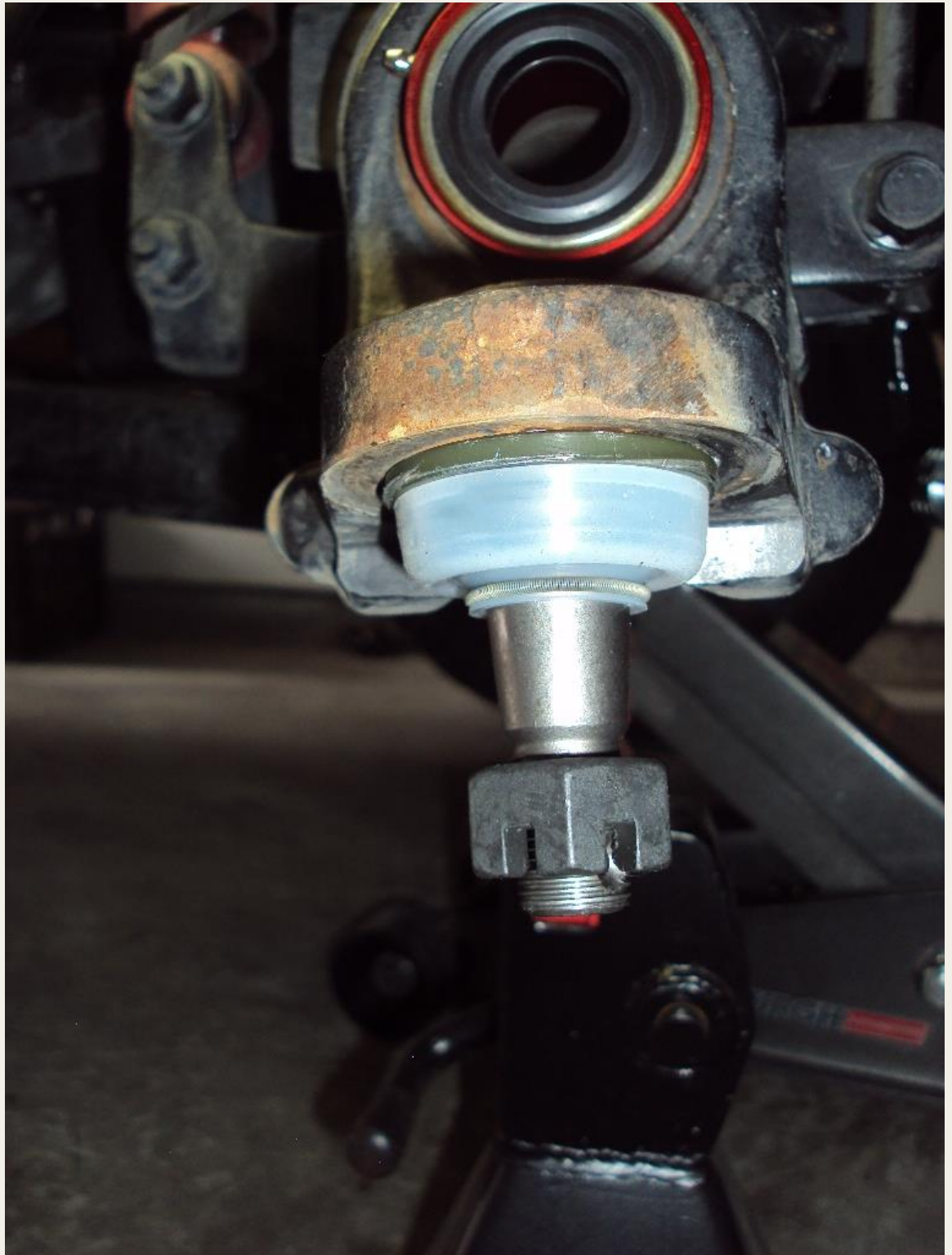




24) Using the press and adapter, install the lower ball joint until the lip is flush against the axle 'C'. MAKE SURE THE HOLE FOR THE GREASE FITTING IS FACING FORWARD AND ANGLED TOWARD THE AXLE 'C'!



25) Install the dust boot on the lower ball joint by sliding it up the stud and seating the boot into the groove. Thread the nut onto the stud for safekeeping.

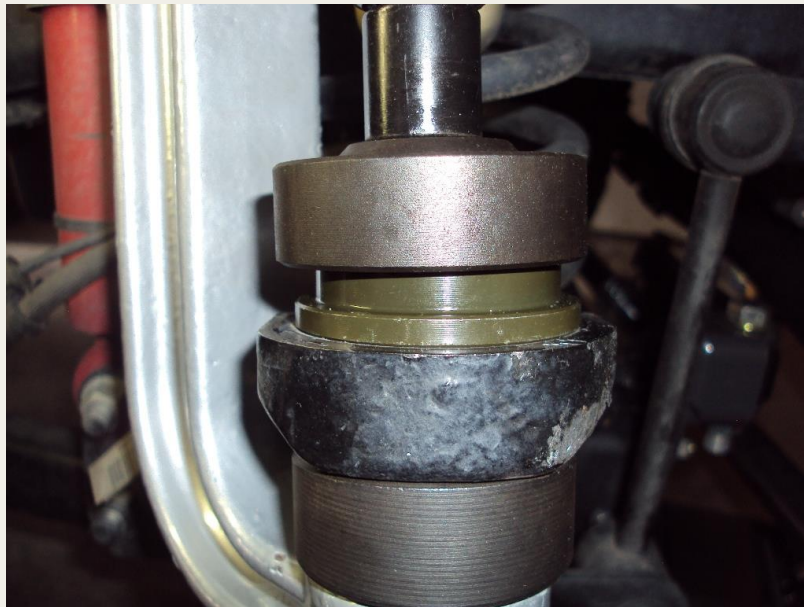


26) Install the grease fitting into the ball joint. DO NOT OVERTIGHTEN!



27) Remove the boot from the upper ball joint and install using the press and adapter.





28) Install the grease fitting and boot onto upper ball joint. There is very little clearance for the boot to seat inside the axle 'C' so use a small flat blade screwdriver to carefully push it into place.



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[Garage](#)**Install Synergy Suspension Ball Joints Part 4**

29) Install the knuckle onto the ball joint studs and start the nuts.

30) Tighten the upper nut to 30 ft lbs.

31) Tighten the lower nut to 85 ft lbs. Then tighten the nut just enough to pass the cotter pin thru the hole. Bend the legs of the cotter pin to secure it in place.

32) Tighten the upper nut to 75 ft lbs. Then tighten the nut just enough to pass the cotter pin thru the hole. Bend the legs of the cotter pin to secure it in place.

33) Clean the area on the knuckle where the hub bearing mounts with sandpaper or a wire brush. Clean with brake cleaner and a rag and apply a thin film of anti-seize.



34) Clean the area on the hub bearing where it mounts to the knuckle with sandpaper or a wire brush and wipe clean.



34A) If you installed axle tube seals, cut the plastic dirt deflector from the axle shaft and clean off the rust. Wipe clean and apply a film of wheel extreme pressure moly grease. Also remove the plastic guides from the inner end of the axle.



35) Place the backing plate on the axle shaft and slide the axle shaft into the axle housing until the hub bearing is 2-3" from the knuckle.

36) Turn the axle so the wheel speed sensor mounting hole is on top. Guide the wheel speed sensor harness under the upper axle 'C' and thru the slot in the backing plate and carefully put sensor into its' mounting hole.

37) Push the axle shaft fully in so the hub bearing and backing plate are flush against the knuckle. Line up the holes in the knuckle with the holes in the backing plate and hub bearing and install the three 13mm 12 point bolts. Torque the bolts to 70 ft lbs.

38) Clip the wheel speed sensor harness back to the upper ball joint bracket and brake hose.

39) Install the speed sensor mounting screw and tighten to 34-50 inch pounds.

40) Slide the brake caliper back over the rotor and install the caliper bolts. Tighten to 120 ft lbs.

41) Install wheel/tire and torque the wheel nuts to 95 ft lbs.

42) Remove the jack stand and lower the vehicle.

43) Grease the ball joints until the boots begin to unseat from joints. Re-seat the boots and wipe off the excess grease.

44) Go for a short test drive and make sure the ABS light doesn't come on.