



CS-FTSB-LVL-11
CS-FTSB-45-11
Ford Torsion Sway Bar System

Carli Suspension, Inc.
596 Crane St.
Lake Elsinore, CA 92530
888-992-2754

Note

Please review the product instructions prior to attempting installation to ensure installer is equipped with all tools and capabilities necessary to complete the product installation. We recommend thoroughly reading the instructions at least twice prior to attempting installation.

Before beginning disassembly of the vehicle, check the "What's Included" section of the instructions to ensure you've received all parts necessary to complete installation. Further, verify that the parts received are PROPER TO YOUR application (year range, motor, etc.) to avoid potential down-time in correcting potential discrepancies. Any discrepancies will be handled by Carli Suspension and the correcting products will be shipped UPS Ground.

Parts Checklist - CS-FTSB-LVL-11 & CS-FTSB-45-11

- (Qty. 1) - Torsion Bar**
- (Qty. 2) - Torsion Sway Bar Arms, Mirrored**
 - ◆ **Arm Preload Hardware**
 - (Qty. 2) - FLAT Stainless Preload Washers
 - (Qty. 2) - INSET Stainless Preload Washers
 - (Qty. 2) - 3/8" Split Lock Washers
 - (Qty. 2) - 3/8"-24 x 1.00" Grade 8 Bolt
 - ◆ **Arm Pinch Bolts**
 - (Qty. 2) - 3/8"-24 x 3.25" Grade 8 Bolt
 - (Qty. 2) - 3/8"-24 Crimp Lock Nut
 - (Qty. 4) - 3/8 Washer
- (Qty. 2) - Torsion Sway Bar Bracket**
With (2) Bushings Preinstalled, Mirrored
 - (Qty. 4) - 3/8"-16 x 1.75" Grade 8 Bolt
 - (Qty. 4) - 3/8" Grade 8 Flat Washer
 - * (Qty. 4) - 3/8"-16 x 1.00" Grade 8 Bolt –*These will not be used with the 11-16 trucks, only the 17+. This hardware kit is shared between the two models so they're included.*
- (Qty. 2) - Torsion Sway Bar FRAME Drop Brackets** *Side Specific, labeled D & P*
 - (Qty. 2) - Zinc-Plated Captured Nut Brackets
 - (Qty. 4) - 3/8"-16 x 1.75" Grade 8 Bolt
 - (Qty. 4) - 3/8" Grade 8 Flat Washer
 - (Qty. 4) - 3/8" Split Lock Washers
- (Qty. 2) - Carli Stainless, Extended End Links**
 - ◆ **Preassembled End Links**
 - Assembled End Links
 - FK Heim with Jam Nut Installed
 - ◆ **End Link Hardware Kits**
 - (Qty. 4) 11-16 Sway Bar End Link Misalignment Spacers
 - (Qty. 2) 11-16 Sway Bar End Link Clevis
 - (Qty. 2) 7/16-20 x 2.5" Bolts for Clevis/End Link
 - (Qty. 1) Driver's Side Axle Mount End Link Locator
 - (Qty. 1) Passenger's Side Axle Mount End Link Locator
 - (Qty. 2) 7/16-20 x 1.25" Bolts for Axle Mount
 - (Qty. 6) 7/16 Grade 8 Washers
 - (Qty. 4) 7/16-20 Grade 8 C-Lock Nuts

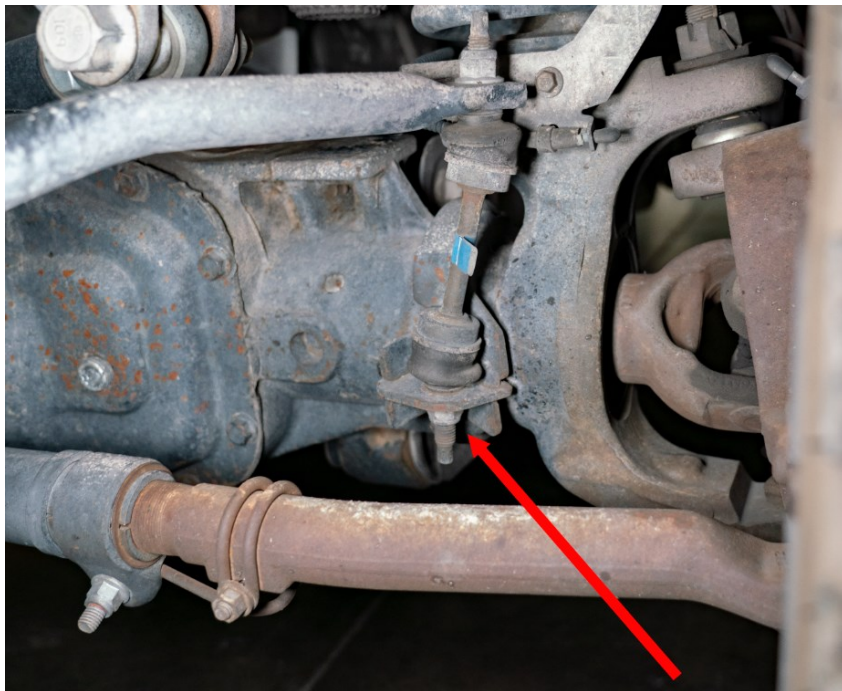
ADJUSTMENT — INITIAL SETUP AND MAINTENANCE

The sway bar end links are built with replaceable bronze wear surfaces. When unboxed, the ball joint ends should be tight and relatively difficult to move but not immobile. Test their mobility. If they're immobile, loosen the cap slightly (turn counter-clockwise); If they flop easily, tighten the cap (clockwise). The goal is to tighten them enough so they're difficult to move **BY HAND**.
DO NOT USE ANY TOOLS TO TIGHTEN THE CAPS

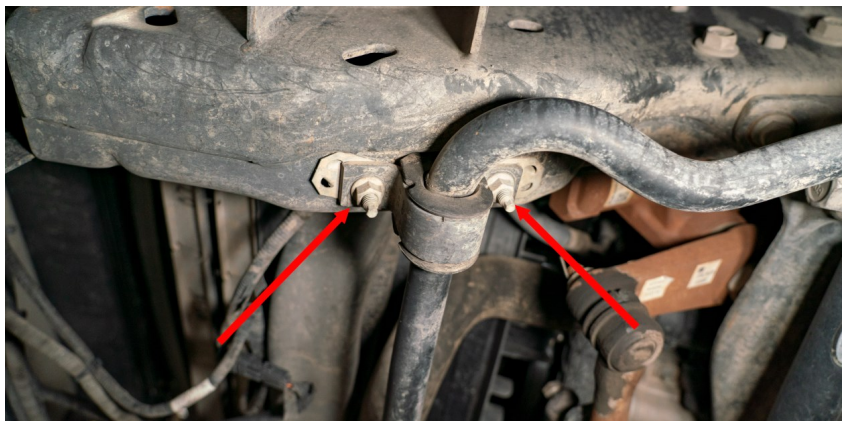
After the first 500 miles, check the end links for movement. They should be moving around smoothly & freely (should no longer be tight) but have **NO** plunging (vertical clunking). If there's any plunging present from break in, repeat the above process. Once confirmed or adjusted, grease them and check them every oil change.

Instructions

1. 18mm Socket (5/16" to hold stud) — Remove the nut securing the factory sway bar to the axle.

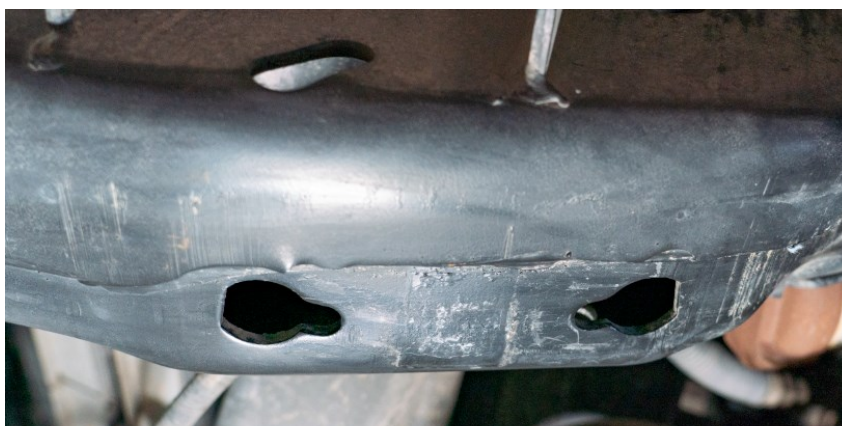


2. 15mm socket — Remove the 4 nuts holding the sway bar to the frame. We recommend using a hand ratchet for these to avoid breaking the capture-bolts from their bracket. These will NOT be reused.
3. Remove the sway bar from the vehicle.
4. Remove the 4 capture bolts from the frame rail. Get a flat head to lift the side with the impressions and slide the bolts out of the frame AWAY from the center. The fronts slide to the front, rears slide out to the rear.



5. Insert the provided captured-nut bracket into the frame rail. The insert indexes into the opening and it should fit flush against the frame rail with the threaded inserts facing upward into the frame. Insert the bracket into the frame hole from which the front capture-bolt was removed.

NOTE: an easy way to insert and seat the bracket is to thread a 3/8" bolt into the bracket, then slide it in and use the bolt to seat the bracket to the frame holes, then remove the bolt.



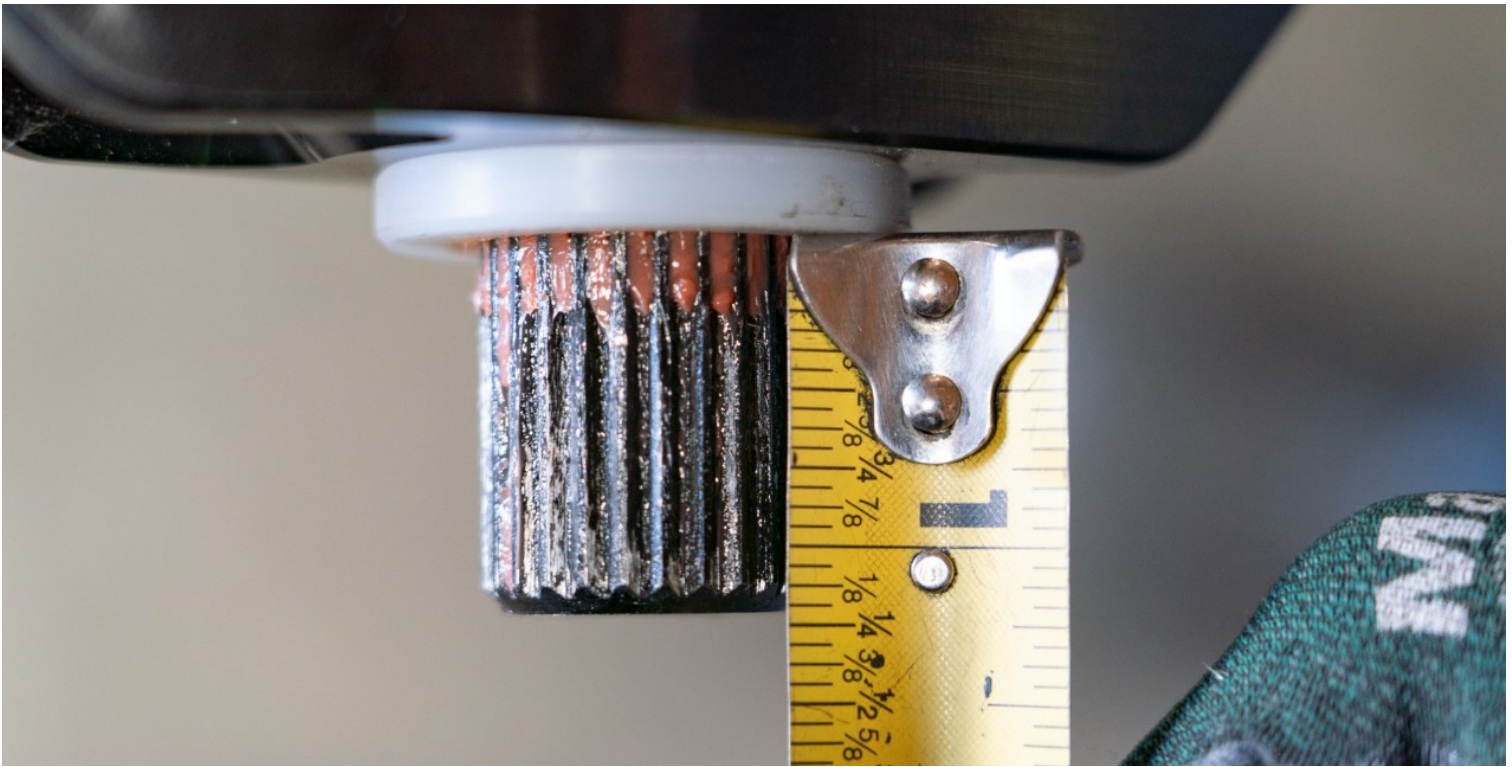
6. Attach the Frame blocks to the nut brackets you just inserted into the frame using 3/8-16 x 1.75" bolts, Split Washers and Flat Washers.

The frame brackets are SIDE SPECIFIC; D installs to Driver, P to Passenger. These brackets will offset the sway bar assembly FORWARD.

NOTE: There are holes on the inside of the frame through which you can use your fingers to apply downward pressure on the nut-brackets to avoid dislodging them.



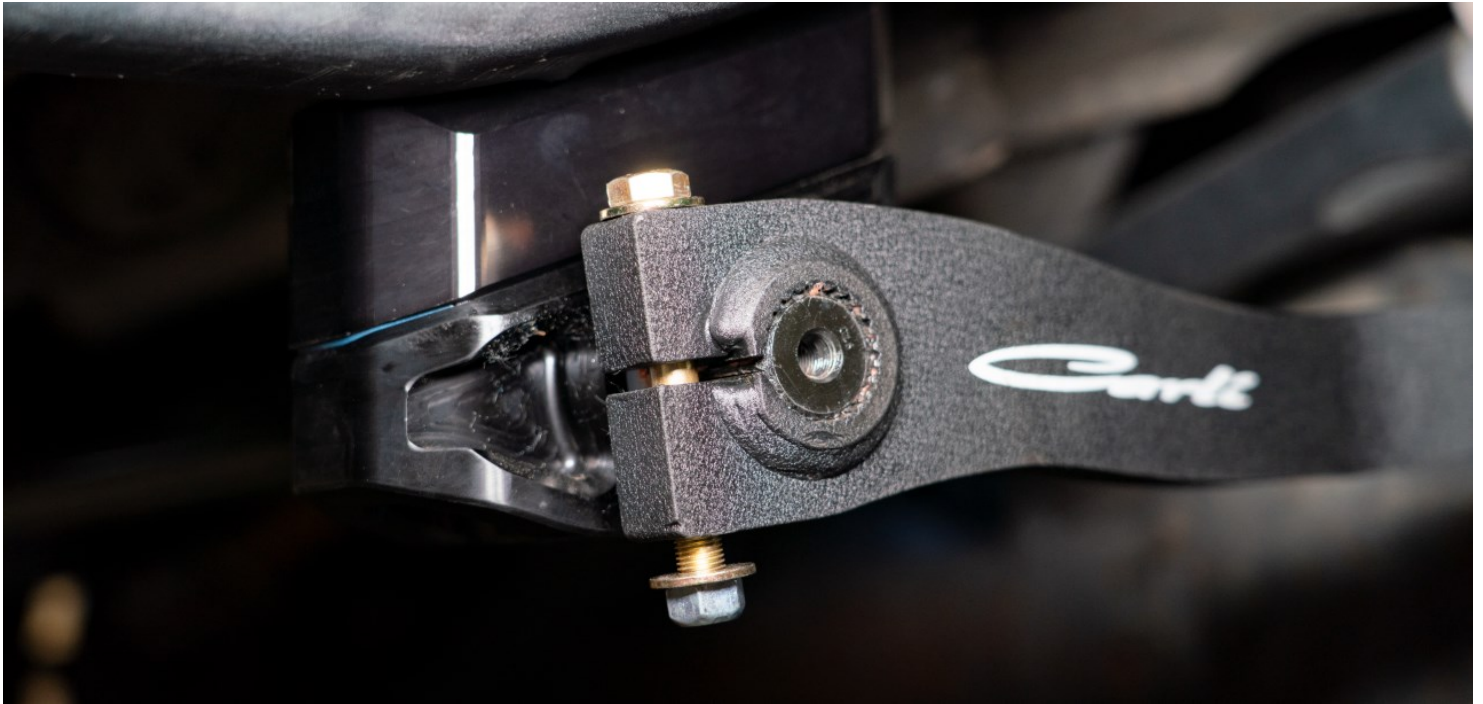
7. 9/16" Socket — Torque 3/8" bolts to 30lb/ft.
8. The sway bar brackets can now be installed to the sway bar.
9. Coat the inside of the bushings and splines of the Torsion Bar with grease or assembly lube.
10. Place a block of wood on the ground and place the opposite side of the torsion bar on it.
11. Set the bracket onto the end of the bar ensuring the bar is lined up with the bushing and use a large dead-blow hammer/mallet to start the bracket onto the bar.
12. Use a piece of tube or a large impact socket (We used 1/2" Drive 1-1/4" Matco Deep Impact Socket) that matches the inner and outer diameter of the bushing - ensure it's deep enough for the bar to slide into while striking. Use the dead-blow mallet to push the bracket down onto the bar until there's 1-3/16" of splines protruding from the outside of the bushing.



13. Do the same on the other side ensuring the brackets are rotated/indexed symmetrically to install to flat to the brackets already installed to the frame rail. The tapered portion of the sway bar brackets will face FORWARD.
14. Use the 3/8"-16 x 1.75" bolts and washers to assemble the bar/brackets to the installed frame drops. **Coat these bolts in BLUE (medium strength) Loctite before installation as you're threading hardened steel bolts into aluminum threads.**
15. If it's off a bit, install one side and hit the bar with the dead-blow until the second side lines up.
16. 9/16" Socket — With both sides installed to the frame drops hand tight, torque the 3/8-16 x 1.75" bolts to 30lb.ft.
17. Measure to ensure the spine protrusion is exactly the same on both sides - if it's not, use the dead-blow to adjust as necessary.

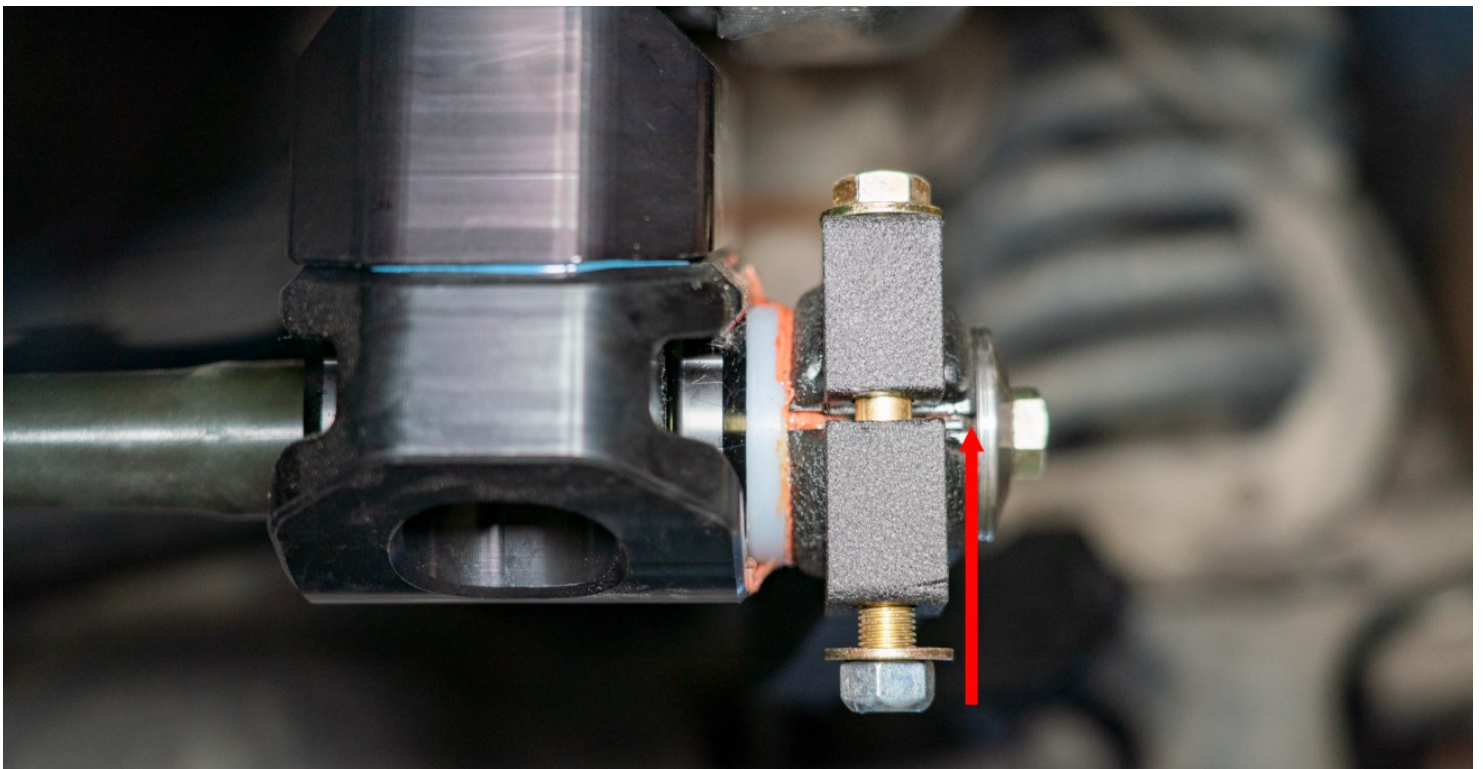


18. Loosely install the 3/8"-24 x 3-1/4 Pinch Bolts into the arms. There should be a washer on each side of the arm and the Crimp-Lock nut on the bottom. Again, the head of the pinch bolt will need to be on the top, threads down.
19. Slide the arms onto the splines of the sway bar **ensuring they're indexed the same on both sides** - they should be perfectly parallel (side to side)! The arms should go on relatively easy; if there's a bit of powder coat in the broaching, it may require a mallet to get them on. **MAKE SURE THE SPLINES ARE PERFECTLY LINED UP BEFORE USING A Mallet!**



20. With the arms installed, install the 3/8"-24 x 1" Bolt & Lock Washer into the FLAT Stainless Steel Preload Washer — thread this into the end of the sway bar on both sides, hand tight. **Coat these threads with BLUE Loctite.**
21. Begin tightening the preload bolts in the end of the arms. Tighten them with a 9/16" ratchet until the assembly begins to firm up while eyeing the slit in the end of the arm. Through this cut-away, you can see the splines of the bar behind the pinch bolt. Ensure the bar isn't being pulled to one side or the other as you torque the assembly. There should be a 1/16" gap (approximately) maintained between the end of the bar and the preload washer on both sides.

NOTE: The gap should be even on both sides. If it's over 1/16", use the inset washers instead of the flat preload washers. With 1/16" gap on both sides (approx.), ensure both sides are snug.



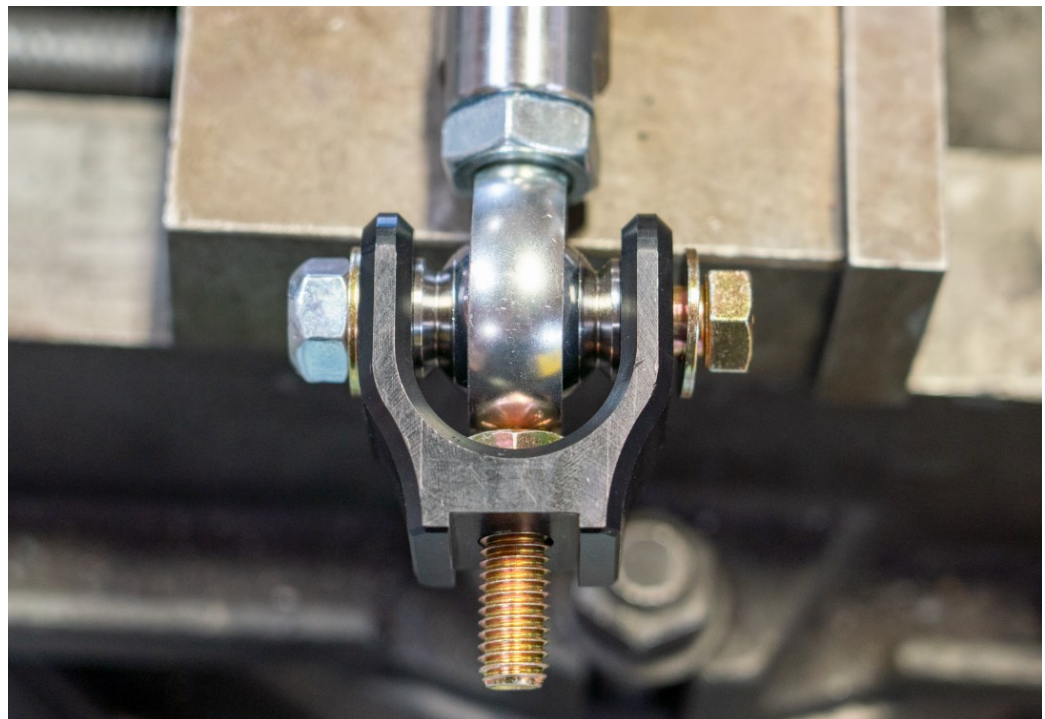
22. The point of the preload washers/bolt is to take the slack out of the assembly and seat the washers to the arm, arm to the bushing, and bushing to the bracket. There's no need to over-torque these as it can actually pull the frame brackets inward.
23. With the assembly tight, use a 9/16" socket to torque the pinch bolt nuts to 35lb.ft.
24. The sway bar end links are built with replaceable bronze wear surfaces on the pin side with the boot. When unboxed, the ball joint ends should be tight and relatively difficult to move but not immobile. Double-check their mobility — If they're immobile, SLIGHTLY loosen the cap; If they flop easily, tighten the cap. The goal is to tighten them enough so they're VERY difficult to move BY HAND. The square o-ring will hold the tension. DO NOT USE ANY TOOLS TO TIGHTEN THE CAPS
25. To build the end links, remove the heim from the end link body by unthreading it counter-clockwise and ensure the jam-nut is bottomed out.
26. Coat the threads in Blue Loctite.



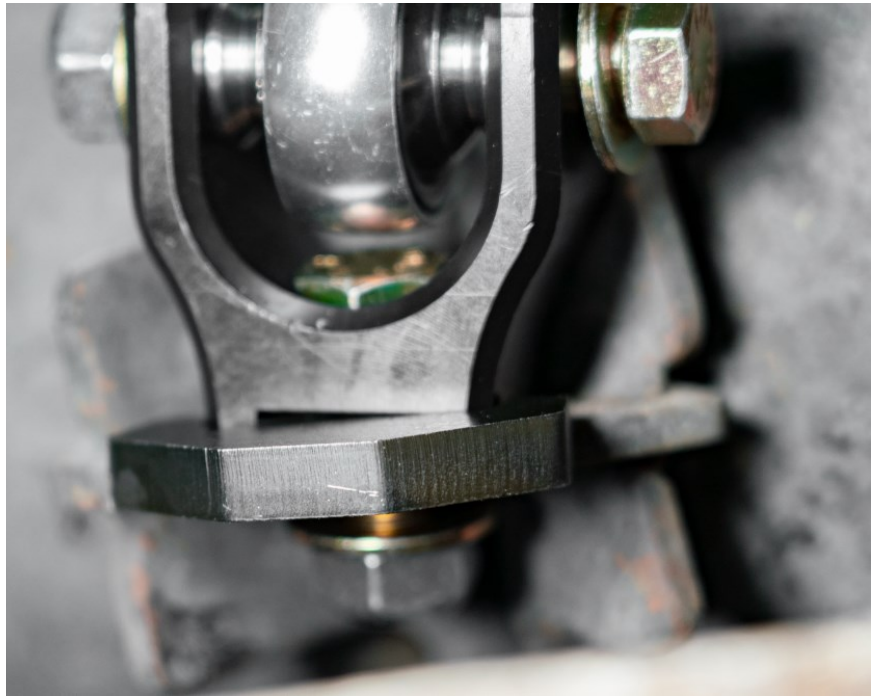
27. Thread the end link back into the body until it bottoms out, then back off until the rod end is parallel with the zerk fitting on the body.
28. Use (2) 15/16" wrenches, one on the body flats, one on the jam-nut, to tighten the jam nut securing the heim's orientation. Use 15/16" Crow's-Foot to Torque jam-nut to 30/ft.



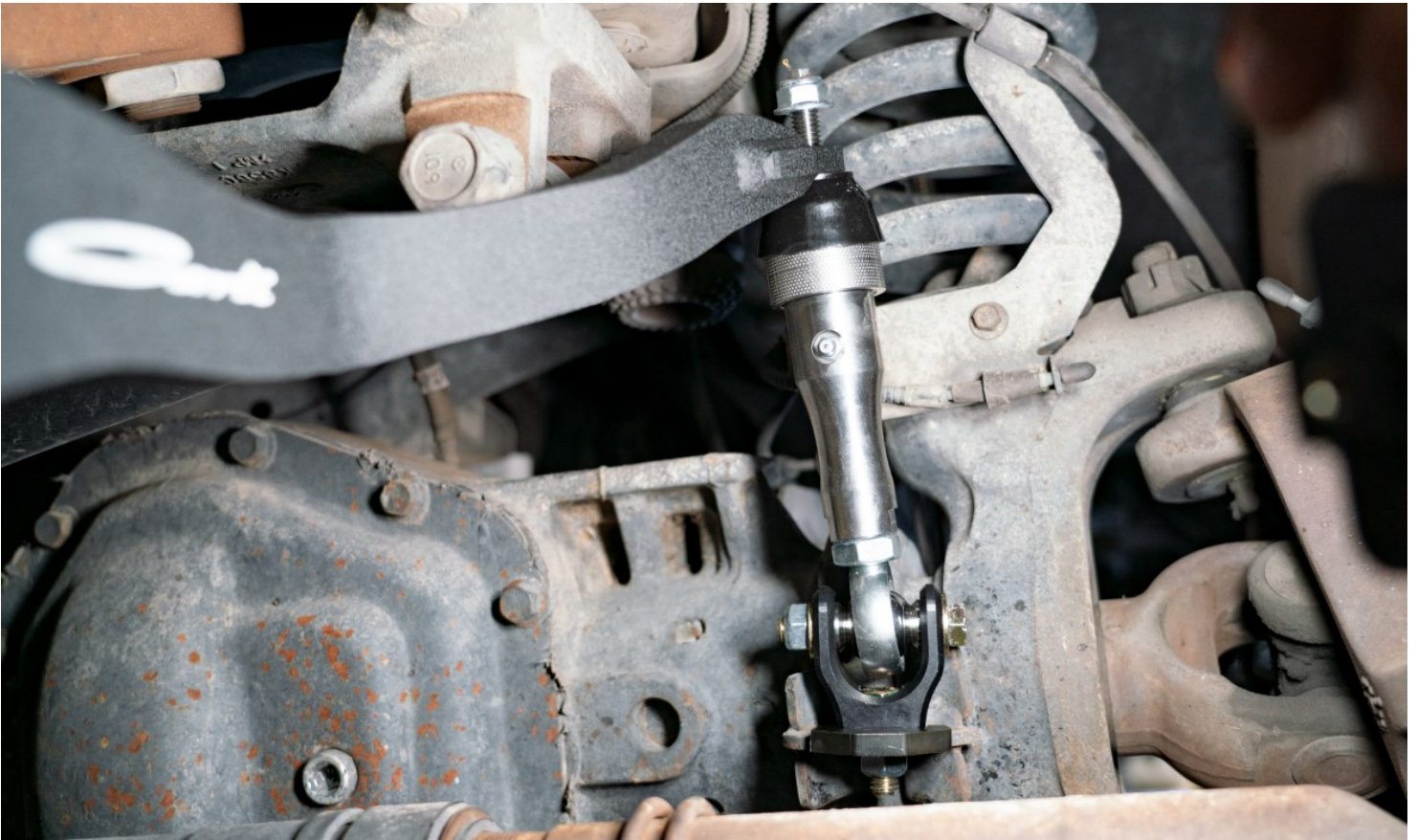
29. Insert the 7/16-20 x 1.25" bolt (no washers) into the bottom of the clevis.
30. Install the provided misalignment spacers into the heim joint.
31. Install the Clevis to the misalignment spacers and secure with the 7/16"-20 x 2.5" Bolt, Washers and C-Lock Nut, hand-tight.



32. Place the Driver's Side Axle Mount End Link Locator onto the 7/16" threads protruding from the clevis. The locator will fit into the clevis and overhang of the locator will hang downward OVER the axle mount to prevent the clevis from turning when installed.
33. Place the end link and locator onto the Driver's side axle mount and secure with a 7/16" washer and C-Lock nut.
34. 5/8" Socket — Torque the axle-mount to 50lb.ft.
35. Once the axle mount bolt is torqued, torque the 7/16" clevis bolt that secures the heim to 50lb.ft.
36. Repeat on Passenger's side



37. Pull Sway Bar down onto the top of the Carli End Link and thread the nut on a few threads.



38. Use a 5/16" wrench to hold the hex and 11/16" ratcheting wrench to tighten the sway bar end link nuts to the sway bar arms. The Zerk fittings should be indexed forward for easy access.
39. 11/16" Socket — Once wrench-tight, torque the upper end link nuts to 30 lb./ft.
40. Grease the sway bar links!

After the first 500 miles, check the end links for movement. They should be moving around smoothly & freely (should no longer be tight) but have NO plunging (vertical clunking). If there's any plunging present from break in, repeat the adjustment process. Once confirmed or adjusted, grease them and check them every oil change.