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2020 GM HD 2500/3500 2WD/4WD CSS-C3-24 8-10" S.T.L. LIFT KIT

READ THE FOLLOWING NOTES PRIOR TO INSTALLATION

DO NOT ALTER THE FINISH OF ANY COMPONENTS. CHANGING THE FINISH SUCH AS CHROMING, ZINC-PLATING, OR ANY TYPE OF PAINTING CAN CAUSE STRUCTURAL FATIGUE OF COMPONENTS.

PRIOR TO INSTALLATION, COMPARE THE PARTS LIST WITH THE COMPONENTS RECEIVED IN THE KIT. IF ANY PIECES ARE MISSING PLEASE CONTACT YOUR LOCAL RETAILER OR CST PERFORMANCE SUSPENSION AT 951-571-0212, AND YOU WILL BE TAKEN CARE OF IN A TIMELY MANNER.

READ ALL INSTRUCTIONS FROM START TO FINISH BEFORE BEGINNING INSTALLATION. IF THESE INSTRUCTIONS ARE NOT PROPERLY FOLLOWED, SEVERE FRAME, TIRE, OR SUSPENSION DAMAGE MAY RESULT TO THE VEHICLE. IF YOU INCUR A PROBLEM DURING THE INSTALLATION OF THIS KIT, FIRST BE SURE YOU HAVE FOLLOWED THE INSTRUCTION FROM START TO FINISH ACCURATELY AND IF SO PLEASE CALL 951-571-0212, WE WILL DO OUR BEST OVER THE PHONE TO ASSIST YOU WITH YOUR PROBLEM, OR DIRECT YOU ACCORDINGLY.

VEHICLES THAT RECEIVE OVER SIZED TIRES SHOULD CHECK BALL JOINTS, TIE ROD ENDS AND PIVOT POINTS, AS WELL AS GENERALLY INSPECT THE ENTIRE SUSPENSION FRONT TO REAR EVERY 2500 – 5000 MILES FOR WEAR AND REPLACE PARTS AS NEEDED.

ALSO, WE WOULD LOVE TO SEE YOUR TRUCK COMPLETED. IF YOU WOULD LIKE TO HAVE YOUR VEHICLE FEATURED ON OUR SOCIAL MEDIA PAGES, PLEASE E-MAIL US AT sales@cstsuspension.com WITH PICTURES OF YOUR VEHICLE, LIST OF MODS, YOUR ACCOUNT NAME AND WE WILL GET THEM POSTED. THANK YOU FOR SUPPORTING CST!!!



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Before and after measurements

We suggest you measure from the center of wheel hub to bottom of fender

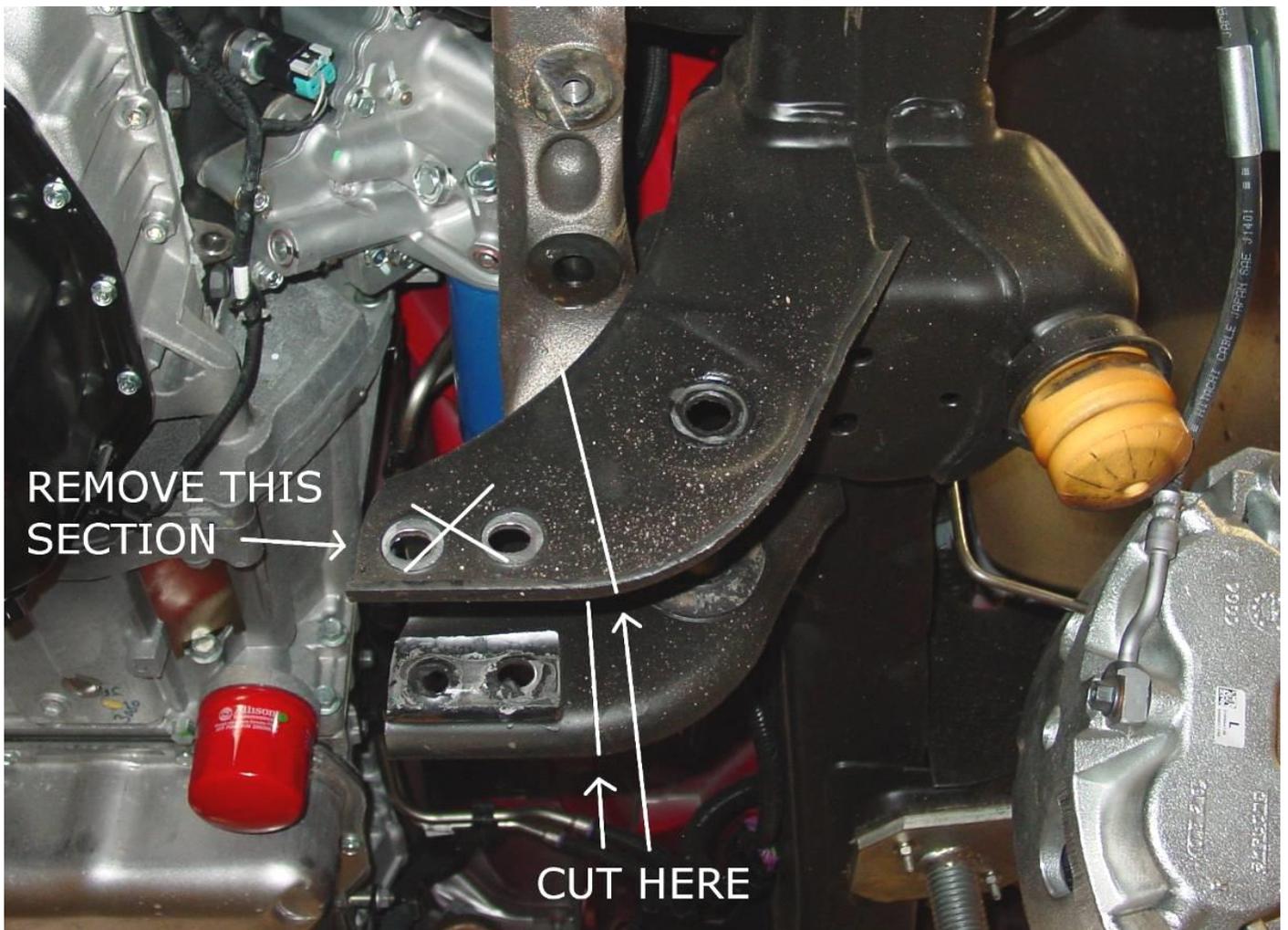
BEFORE: DF _____ PF _____ DR _____ PR _____

AFTER: DF _____ PF _____ DR _____ PR _____

Instructions:

1. Measure the ride height and document it for later reference, do all 4 corners, measure from the fender well to the center of the wheel.
2. Lift the truck up and support it under the frame with jack stands. Do not work under an unsupported vehicle.
3. Remove the front wheels. (🔧 22mm socket)
4. Measure the torsion bar adjusters and document their setting. Mark the back side of the torsion bars driver and passenger so you can reinstall them the same way during reassembly.
5. Remove the torsion adjustment bolts. (🔧 21mm socket)
6. Use a torsion key tool to hold the torsion key up and slide the torsion adjuster block out of the torsion cross member.
7. Slide the torsion bars forward and remove the torsion adjuster keys.
8. On some Models: Remove the 2 bolts that hold the ABS module to the inside of the driver frame rail located just in front of the torsion cross member. This will help create enough room to get the torsion cross member bolts out.
9. Remove the torsion cross member. (🔧 21mm socket)
10. Remove the torsion bars. Mark the torsion bars so that they can be re-installed the same way they came out of the vehicle.
11. Remove the lower skid plate. (🔧 15mm socket)
12. Separate the tie rods from the spindles. (🔧 21mm socket)
13. Unbolt the antilock wire from bottom of spindle. (🔧 channel lock pliers)
14. Remove brake line and antilock wire from bracket attached to the inside of spindle. Discard this bracket, it will not be reused. (🔧 10mm socket)
15. Remove the 4 bolts that hold each brake calipers to the spindles and hang the calipers out of the way, do not let them hang on the brake lines. Do not separate the brake line from the brake caliper. (🔧 21mm socket)
16. Remove the small bolt that holds the rotor on the hub and slide the rotor off the hub. Mark the hubs and rotors driver and passenger so you can put them on the correct side during reassembly. (🔧 t30 torx)
17. Pull the dust cap off of the hub and remove the nut that holds the axle into the hub. (🔧 34mm socket)
18. Do NOT remove the axles. Leave attached to front diff.
19. Remove the sway bar links. (🔧 18mm socket)
20. Remove the front shocks. (🔧 21mm socket, 21mm wrench)
21. Separate both upper and lower ball joints from spindle. ***Be careful this spindle is heavy.*** As your removing the spindle from the vehicle, point the spindle down and out while letting the front axles slide out of the hub. Make sure to hang front CV axles so you do not cause any damage to the CV joints. (🔧 18mm wrench, 24mm socket)
22. Remove the lower control arms. (🔧 21mm socket, 24mm wrench)
23. Separate the inner tie rod ends from the factory steering centerlink. (🔧 40mm or 1-9/16 wrench)
24. Remove the rear bump stops. (🔧 flat head screwdriver)
25. Remove the rear cross member under the front differential. (🔧 18mm socket, 18mm wrench)

26. Separate the front driveshaft from the differential. Make sure to use a paint marker and mark the driveshaft flange and front diff. This way the front driveshaft can be bolted directly up the same way it came off. Use a tie down/zip ties to hold it up out of the way for now. (🔧 11mm socket)
27. Unclip the wiring harness that plugs into the front differential. Make sure not to damage the connector. Free the wire completely from the differential and tuck it up out of the way for now. Disconnect the vent line.
28. **We recommend 2 people for this step.** Support the front differential and remove all the bolts that hold the front differential to the diff mounts, do not remove the rubber mounted diff mounts. Remove the differential with front axles attached. **Use caution, it is heavy.** (🔧 21mm socket, 18mm socket, 18mm wrench, 15mm socket)
29. Remove the Steering Centerlink. (🔧 24mm socket, 2 jaw puller)
30. Wrap the included paper pattern (last page of the instructions) around the driver's side rear lower arm mount. Line it up and mark the mount with a paint pen. Cut the marked section off using a sawzall or a die grinder cut off wheel. Note that the front side gets more material cut off than the rear. Clean up any sharp edges and paint any bare metal to prevent rust.



31. Open parts bag # 1 (Diff Drop Top)

- 32.** Install the Diff Drop using supplied bolts on the driver side and OEM Nuts on the passenger side. The side with the large cutout for the diff goes on the driver's side. If there is any slack in the holes push the diff drop towards the passenger side. Use Loctite on OEM nuts and tighten. (🔧 19mm socket, 🔧 20mm socket)



- 33.** Open parts bag # 2 (Diff Drop Passenger/Driver Lower)

- 34.** Install the front differential using the supplied hardware. Once you have all the bolts in you can tighten everything up, if there is any play side to side, push the front diff towards the passenger side before tightening. Make sure the differential does not hit the frame where you cut it, remove more frame material if necessary. The 9/16 x 3-1/2 bolt goes to the driver's side rear bolt hole. The 1/2 x 3-1/2 goes to the driver's side front bolt hole. The 1/2 x 1-1/2 bolts go to the passenger side. (🔧 3/4 socket, 13/16 socket)



- 35.** Reattach the wires for the diff; run the wire through the diff drop and use the supplied zip ties to attach the wire to the top of the diff. Install the 6" vent line extension.



- 36.** Attach the drive shaft to the differential using the stock hardware and Loctite. (🔧 11mm socket)

- 37.** Install the steering centerlink using the stock hardware. The side with the tabs sticking out goes toward the front of the truck. Clean off any powder coat that is on the raw ends of the centerlink. (🔧 24mm socket)



38. Open parts bag #3 (Subframe)

39. Install the sub-frame using the stock bolts and Loctite on the main holes. Use the included 1/2" bolts on the passenger smaller holes. Install bolts front to back and tighten all bolts. (🔧 21mm socket, 24mm wrench, 3/4 socket, 3/4 wrench)

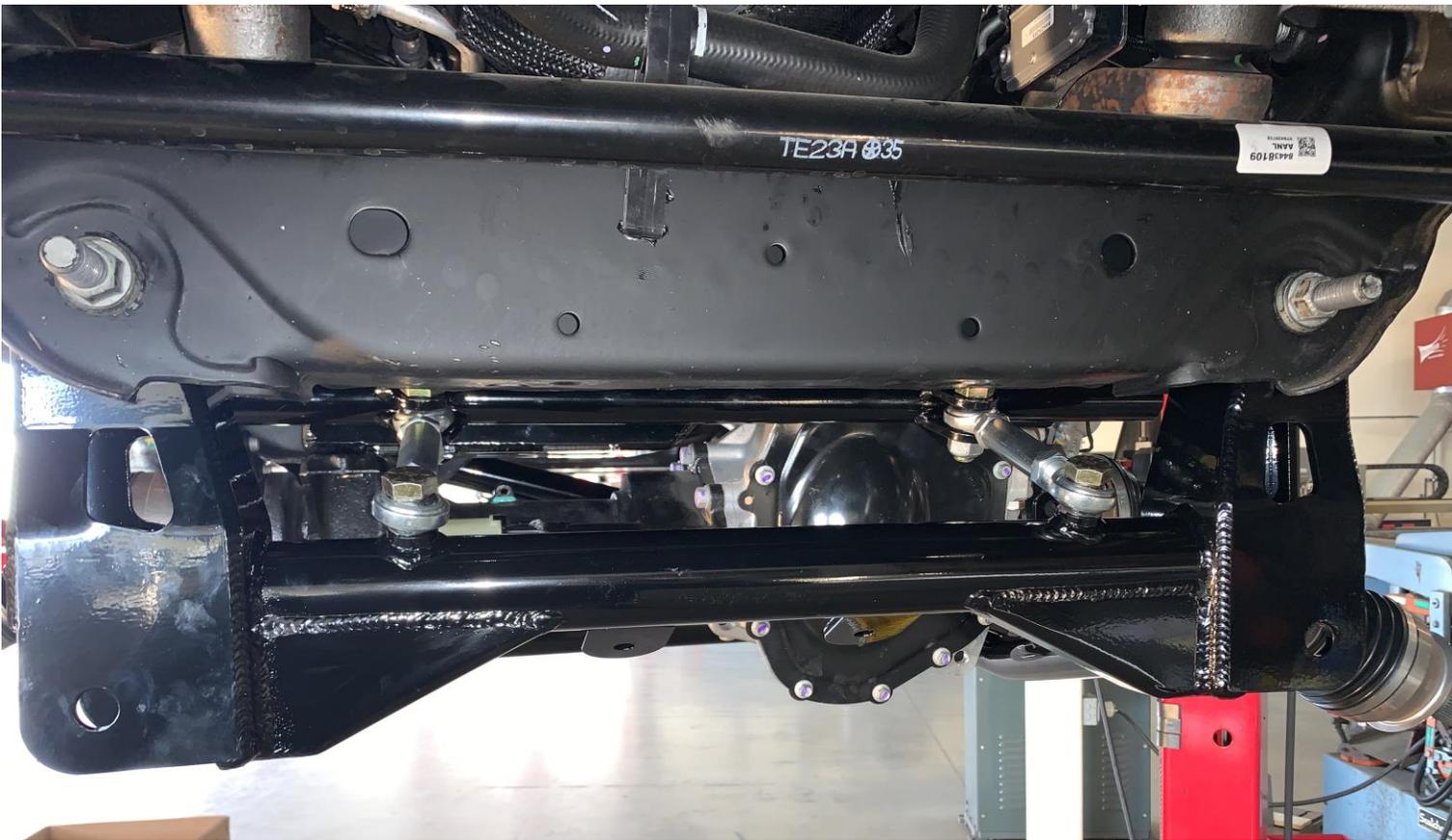
40. Open parts bag #4 (Steering)

41. Assemble the heim links and adjust them to a length of 6-7/16" center to center. Run the jam nuts against the threaded bung hand tight, it will be fully tightened later. Make sure there is an equal amount of threads showing on each heim.

42. Bolt the links to the subframe using the included 5/8 fine thread bolts. Be careful that you do not cross thread these bolts. Use Loctite and tighten. (🔧 15/16 socket)

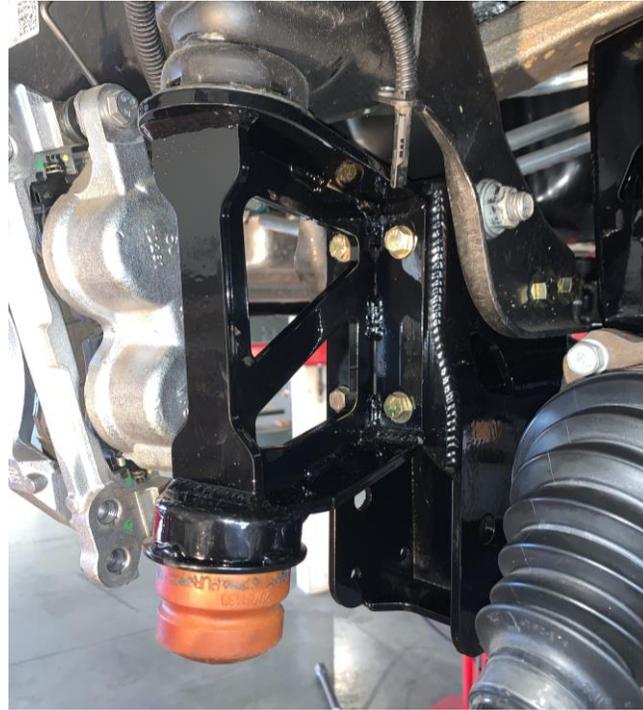
43. Attach the heim links to the steering centerlink in-between the tabs and install the supplied 5/8 bolts. If you can't get the holes to line up you can adjust the length of the heim links a little bit. If you are installing the optional steering stabilizer do so at this time. (🔧 15/16 socket, 15/16 wrench)

44. Tighten up the heim links, make sure the heims line up with each other when tight (rotate them until they stop, tighten one jam nut, then rotate the other way and tighten the other jam nut) (🔧 15/16 wrench)



45. Open parts bag #5 (Bump stops)

- 46.** Install the OEM rubber bump stop into bottom of supplied Bump stop mount. Once rubber bump stop is installed, attach bump stop mount to the subframe using supplied 3/8" bolts. Push up on bump stop mount until it rests against the frame where the OEM bump stop was, and then tighten. (🔧 9/16 socket)



- 47.** Install the tie rod ends into the steering centerlink using Loctite. (40 mm or 1-9/16 wrench)

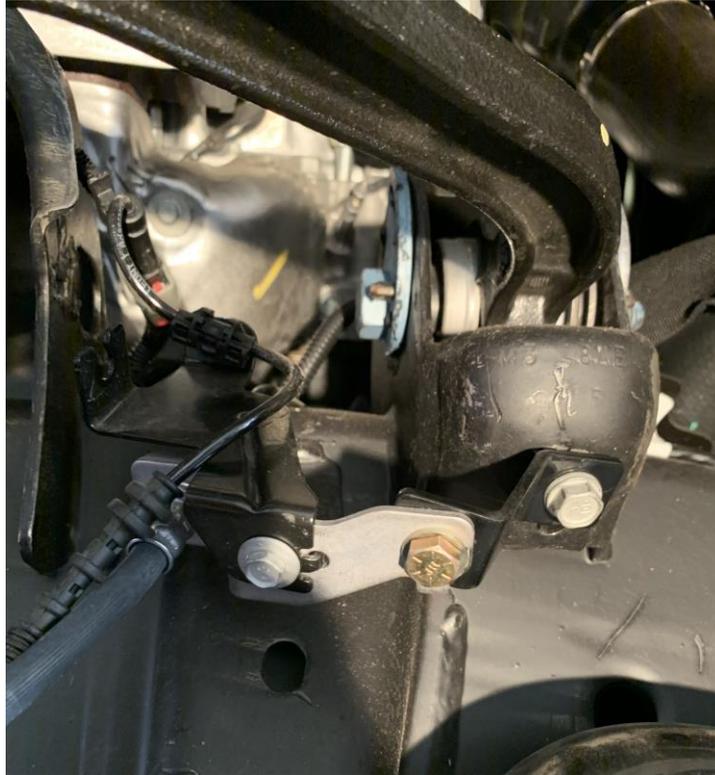
- 48.** Open parts bag #6 (Lower Arms)

- 49.** Install the lower arms using the supplied bolts. Install the front bolts with the nut side to the rear. And the opposite for the rear bolts. Do not tighten these bolts at this time; you need to do this at ride height to lessen wear on the rubber bushings.



50. Open parts bag #7(Front Brake lines)

51. Install the brake line bracket using the stock bolt and carefully bend the brake line down to match up to the bracket. Bolt the stock bracket to the supplied one using the supplied hardware. Use the picture below for reference. (13mm socket, 1/2" socket, 1/2" wrench)



52. Set the stock spindles on the table with the hub side down. Remove the hub bolts and remove the stock spindle from the hub. Leave dust shield in place on hub. (🔧 21mm socket)

53. Set the new CST spindle on to the hub and dust shield. Bolt the spindle to the hub using the stock bolts and locktite. You must reuse the dust shields. (🔧 21mm socket)

54. Install the spindles onto the truck using the stock hardware. Make sure to slide axle through hub as installing front spindle onto lower ball joint. Install upper control arm onto spindle. Tighten upper and lower ball joints nuts to factory torque spec. (🔧 24mm socket, 18mm wrench)

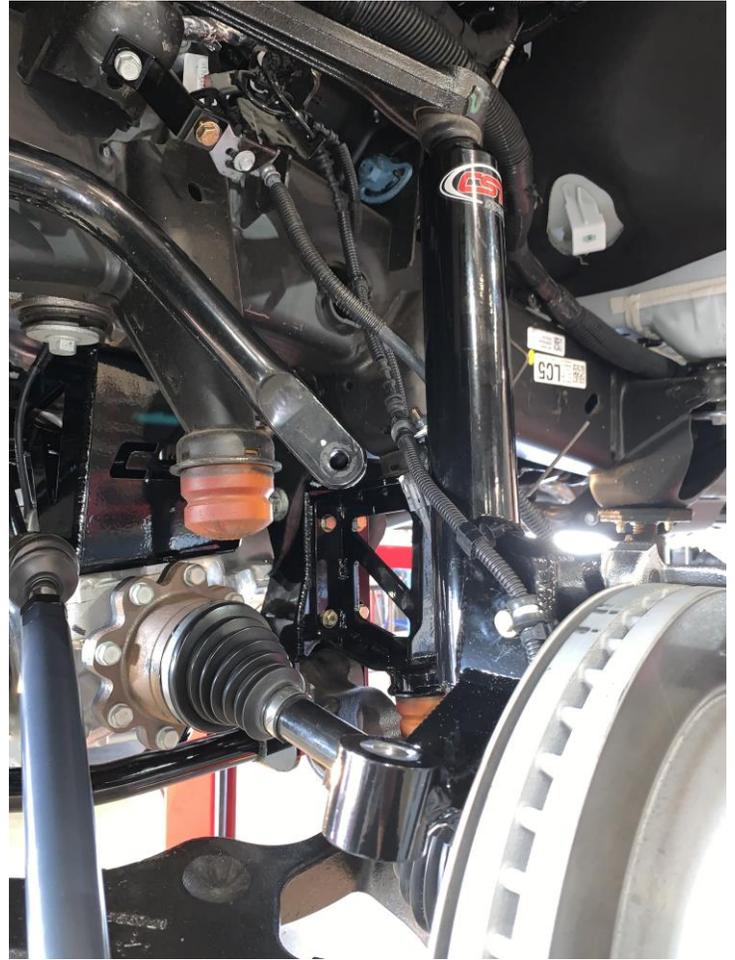
55. Do not install tie rods at this time.

56. Install the axle nut and washer and tighten the nut with Loctite. Tap the dust cover back on. (🔧 34mm socket, rubber mallet)

57. Install the rotors (🔧 t30 torx)

58. Install the brake calipers using the stock bolts and red locktite. Make sure the brake line is behind the spindle. (🔧 21mm socket)

- 59.** Route the antilock wire along the spindle using supplied Adel clamps and bolts. Run the antilock sensor between the dust cover and the steering so it is out of the way. Attach the antilock sensor using OEM bolt. Make sure the brake line and the antilock wire have as much slack as possible for the suspension.
(🔧 10mm socket, 7/16 wrench, 7/16 socket)



- 60.** Install CST shocks onto truck and tighten. If using stock shocks, shock extension bracket sold separately. (🔧 21mm wrench, 21mm socket)
- 61.** Open parts bag # 8 (Sway Bar Links)
- 62.** Assemble Sway Bar Links by threading the rod ends into the $\frac{3}{4}$ " Aluminum Links. Center to center they should be $15 \frac{1}{4}$ " then tighten jam nuts. Make sure rod ends line up with each other. Install new sway bar links into OEM locations and tighten.
- 63.** Attach the tie rod ends to the spindle using the stock hardware. (🔧 21mm socket)
- 64.** Open parts bag #9 (Torsion Drop Mounts)
- 65.** Set the torsion cross member on the bench and install the torsion drop mounts. Use the stock main bolts and the supplied $\frac{1}{2}$ " bolts for the smaller holes. Use Loctite on the stock bolts and tighten everything.
(🔧 21mm socket, 3/4 socket, 3/4 wrench)
- 66.** Slide the torsion bars into the lower arms the same way they came out. Push them forward into the arms past where the normally sit, let them hang for now.

- 67.** Install the torsion cross member onto the stock mounts of the truck using the supplied 9/16" bolts and tighten. Reattach OEM heat shield onto passenger side torsion mount. (🔧 13/16 socket, 7/8 wrench)



- 68.** If driver's side ABS module next to torsion cross member was removed from the frame at the beginning of kit instructions, Reinstall the ABS module to the frame using the factory hardware and tighten.
- 69.** If using CST Torsion keys, skip this step: Use a large drill bit to put a recess in the torsion key where the adjuster bolt sits against the key. Center it in the key. Use a drill bit between the sizes of 3/4 and 1" and drill it 3/16" deep at the deepest part of the hole. When you are finished it should look like the key in the picture below.



- 70.** Hold the torsion keys in place and slide the torsion bars back into the keys. You may need to use a torsion key tool to hold the keys up and install the adjusters. Adjust the keys 1/4" higher than they were stock. You will finalize the ride height later after the truck is on the ground. (🔧 21mm socket, torsion key tool)

- 71.** Install the torsion side plates onto the drop mount using the supplied 5/16" bolts. Put stainless steel back plate behind CST torsion plate and bolt onto torsion mount together. Make them parallel to the frame and tighten. (🔧 1/2 socket, 1/2 wrench)



- 72.** Open parts bag #10(Skid Plate)

- 73.** Install the skid plate using the supplied hardware. (🔧 5/8 socket, 11/16 wrench)

- 74.** Install the front wheels. (🔧 22mm socket)

- 75.** Open parts bag #11 (Rear Brake lines)

- 76.** Rear lift: *(If using rear kit, please refer to those instructions now)*

- 77.** Remove the rear wheels. (🔧 22mm socket)

- 78.** Remove the bolts that hold the top of the wiring harness to the cross member. See photo on next page. (🔧 13mm socket or T30 Torx)

- 79.** Remove the bolts that hold the upper brake line bracket to the frame on the driver's side. See photo on next page. (🔧 13mm socket)

- 80.** Remove the bolts that hold the brake line brackets to the axle housing where the diff cover bolts on. See photo on following pages. (🔧 13mm socket)

- 81.** Support the rear axle with a jack and remove the shocks. (🔧 21mm socket, 21mm wrench)

- 82.** Use caution when installing the rear lift, it is a good idea to put a couple straps under the rear axle and the pinion for safety. Do one side at a time. Make sure you do not over stretch any lines during installation.

- 83.** With the jack under one side of the rear axle remove the U-bolts on that side. Lower it down and install the lift. Install the supplied u-bolts and snug them up a little. Then repeat for the other side of the truck. Once both sides are in tighten the u-bolts. (🔧 28mm or 1 1/16 socket)

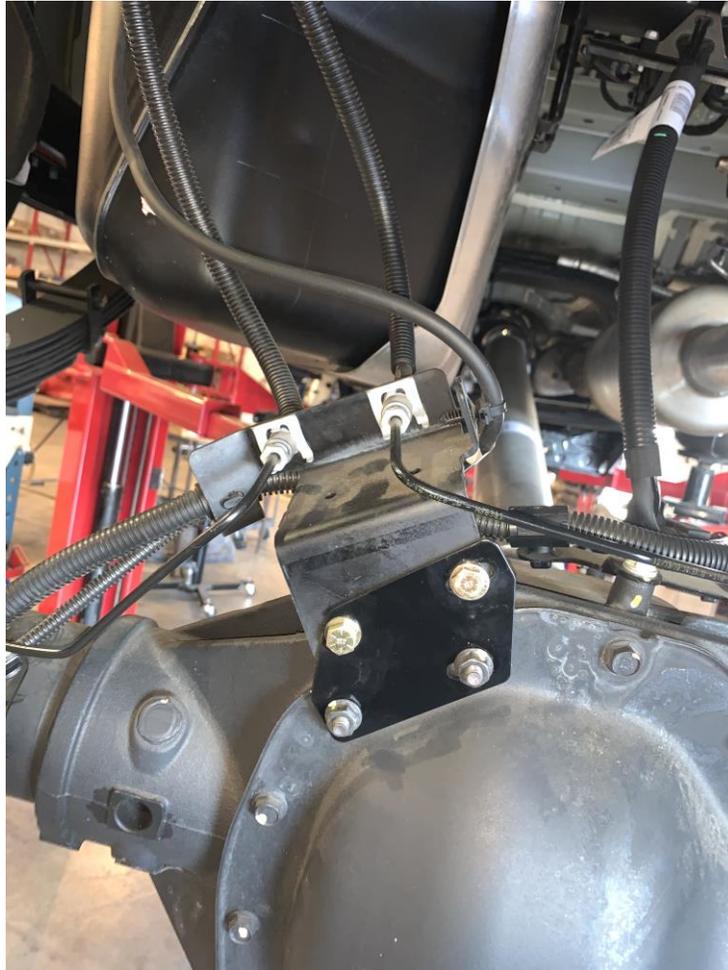
- 84.** Jack the rear end up a little and install the new rear shocks using the stock hardware and Loctite. (🔧 21mm socket, 21mm wrench)
- 85.** Install the driver's side rear brake line bracket using supplied hardware and OEM bolts. You will need to carefully bend down the brake lines to get the bracket to line up nicely. (🔧 13mm socket, 1/2 socket, 1/2 wrench)



- 86.** Install the upper center brake line bracket using supplied hardware and OEM bolts. Use Loctite on OEM bolts and tighten. (🔧 13mm socket or T30 Torx, 1/2 socket, 1/2 wrench)



- 87.** Install the rear lower brake line bracket to the axle housing using the stock bolts and Loctite. Attach the stock bracket to the new bracket using the supplied hardware. You will need to carefully bend up the brake lines to get the bracket to line up nicely. (🔧 13mm socket, 1/2" socket, 1/2" wrench)



- 88.** Check that all lines are clear from interference and have enough slack for the suspension.
- 89.** Install the rear wheels and set the truck on the ground.
- 90.** Torque the lug nuts to 100 ft. Lbs. (🔧 22mm socket)
- 91.** Torque the u-bolts to 100 ft. Lbs. (🔧 1 1/16" socket)
- 92.** Tighten the bolts for the front lower arms. (🔧 27mm socket, 27mm wrench)
- 93.** Make sure the ride height in the front is the same from side to side; adjust the torsion bars as necessary. (🔧 21mm socket)
- 94.** You can crank the torsion keys up more if you want more lift, but you should make sure you leave at least 1" of droop travel for a comfortable and safe ride. You can check this when you are finished by letting the truck sit on the ground, measure from the top of the tire to the fender well, then jack the truck up and re-measure. It should be at least 1" different. If you crank torsion keys up more than 1" then CST Torsion Keys may be needed.
- 95.** Turn the steering all the way from side to side and make sure the brake lines and antilock wires are in a safe location and do not rub the wheels or get pinched between any suspension parts.
- 96.** Visually inspect the suspension and make sure all the bolts are tight, and that everything is finished.
- 97.** Have the truck professionally aligned.
- 98.** Visually inspect the suspension and re-torque the U-bolts after 200 miles.

PARTS BAG # 1 (Diff Drop Top)

- 2 1/2" WASHERS
- 2 12mm (1.75) X 35 mm BOLTS

PARTS BAG # 2 (Diff Drop Driver/Passenger Lower)

- 2 1/2-13 x 1 1/2" BOLTS
- 3 1/2" WASHERS
- 1 6" VENT LINE EXTENSION W/FITTING
- 1 1/2-13 x 3 1/2" BOLT
- 1 9/16-12 x 3 1/2" BOLT
- 1 9/16" WASHER
- 2 Black Nylon Zip Ties (7.31" Long)

PARTS BAG # 3 (Subframe)

- 4 1/2-13 x 1 1/4" BOLTS
- 4 1/2-13 LOCK NUTS
- 8 1/2" WASHERS

PARTS BAG # 4 (Steering)

- 2 5/8-11 x 2" BOLTS
- 2 5/8-11 LOCK NUTS
- 2 5/8-18 x 1 1/2" BOLTS
- 2 Steering Heim Link Assembly

PARTS BAG # 5 (Bump Stops)

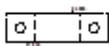
- 8 3/8-16 x 1" Bolts
- 8 3/8" Washers

PARTS BAG #6 (Lower Arms)

- 2 18mm (2.5) x 120mm Bolts
- 2 18 mm (2.5) x 140mm Bolts
- 8 18mm Washers
- 4 18mm (2.5) NY-Lock Nuts

PARTS BAG #7 (Front Brake lines)

- 2 5/15-18 x 3/4" Bolts
- 1 1/4-20 x 1" Bolts
- 3 1/4-20 x 3/4" Bolts
- 6 1/4" Washers
- 4 5/16" Washers
- 2 1/4-20 Lock Nuts
- 2 5/16-18 Lock Nuts
- 5 3/8" Adel Clamps
- 2 Front Brake Line Brackets Bent 1/8"



PARTS BAG #8 (Sway Bar Links)

- 2 3/4" Aluminum Threaded Sway Bar Links
- 2 Rod Ends for Threaded Sway Bar Links

Parts Bag #9 (Torsion Drop Mounts/Side Plates)

- 2 1/2-13 x 1 1/4" Bolts
- 2 9/16-12 x 3 3/4" Bolts
- 8 5/16-18 x 1" Bolts
- 2 1/2" Washers
- 4 9/16" Washers
- 16 5/16" Washers
- 8 5/16-18 Lock Nuts
- 2 1/2-13 Lock Nuts
- 2 9/16-12 Lock Nuts

PARTS BAG #10 (SkidPlate)

- 4 7/16-14x1 1/4" Bolts)
- 4 7/16-14 Lock Nuts
- 8 7/16" Washers

PARTS BAG #11 (Rear Brake Lines)

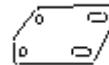
- 6 5/16-18 x 3/4" Bolts
- 12 5/16" Washers
- 6 5/16-18 Lock Nuts
- 1 Rear Upper ABS Wire Drop Bracket Bent 1/8"



- 1 Rear Upper Brake Line Bracket Bent 1/8"



- 1 Rear Lower Brake Line Bracket for Center Of Rear End 1/8"



Box 1

- 1 Subframe
- 1 Steering Centerlink
- 2 Torsion Side Plates
- 2 Torsion Stainless Steel BackPlate
- 1 1/8" Steel Skidplate Bent

Box 2

- 1 Fabricated Spindle Drivers Side
- 1 Fabricated Spindle Passenger Side

Box 3

- 2 Torsion Drop Mounts
- 1 Diff Drop
- 1 Driver Bump Stop Mount
- 1 Passenger Bump Stop Mount
- 1 Parts Bags #1-11
- 1 Instructions/Warranty Sheet

Center holes with holes on frame



Frame Cut Pattern

Mark frame to be cut
make sure frame is cut correctly or diff will not fit

This side comes within 3/4"
from main frame hole. This cut is
critical to ensure fitment of the diff.