Rough Country 500010 Installation Instructions

3.5-Inch Lift Kit with N3 Shocks for 2019–2023 Ford Ranger 4WD, Part 500010

Part number: 500010

trailfortress.com/rough-country-3-5-inch-lift-kit-500010

Scan for fitment, price and install help

2019 - UP Ford Ranger 3.5” Lift Kit

Thank you for choosing Rough Country for all of your suspension needs.

Rough Country recommends that a certified technician install this system. In addition to these instructions, professional knowledge of disassemble/reassembly procedures as well as post installation checks must be known. Attempts to install this system without this knowledge and expertise may jeopardize the integrity and/or operating safety of the vehicle. Please read all the instructions before beginning the installation. Check the kit hardware against the ‘’Kit Contents’’ list below. If question exist, please call us @1-800-222-7023. We will be happy to answer any questions concerning this product. Check all fasteners for proper torque. Check to ensure for adequate clearance between all components. Check and retighten wheels at 50 miles and again at 500 miles. Periodically check all hardware for tightness. Be sure you have all the needed parts and understand where they go. Also, please review the “Tools Needed” list to be certain you have the necessary tools to complete the installation.

PRODUCT USE INFORMATION

⚠WARNING As a general rule, the taller a vehicle is the easier it will roll. We strongly recommend that seat belts and shoulder harnesses be worn at all times. Braking performance and capabilities are decreased when significantly larger/ heavier tires and wheels are used. Do not add, alter, or fabricate any factory or after-market parts which increase vehicle height over the intended height of the Rough Country product purchased. Rough Country makes no claims regarding lifting devices and excludes any and all implied claims. We will not be responsible for any product that is altered.

TIRE FITMENT

This kit was developed using a 285/55/r20 for a no rub on a 20 x 9 +30 offset. Larger tires and offsets will require trimming. Due to differences in manufacturing, dimension and inflated measurements, tire and wheel combinations should be test fit prior to installation.

NOTICE TO DEALER AND VEHICLE OWNER

⚠NOTICE Any vehicle equipped with any Rough country product must have the “Warning to Driver” decal installed on the sun visor or dash. The decal is to act as a constant reminder for whoever is operating the vehicle of its unique handling characteristics. INSTALLING DEALER—It is your responsibility to install the warning decal and to forward these installation instructions on too the vehicle owner for review and to be kept in the vehicle for its service life.



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2019 - UP Ford Ranger 3.5” Lift Kit

TOOLS NEEDED:

Jack
Safety Stands
Wheel Chocks
Phillips Screwdriver
Drill
7/16” Drill Bit
9/16” Drill Bit

Metric Wrench/Socket

8mm
10mm
13mm
15mm
18mm
21mm
22mm
24mm
36mm

SAE Wrench/Socket

5/8”

KIT CONTENTS:

Driver Upper Control Arm (1)
Pass Upper Control Arm (1)
Control Arm Spacer (4)
Strut Spacer (2)
Spring Seat Spacer (2)
Driver Left Diff Drop Plate (1)
Driver Right Diff Drop Plate (1)
Pass Diff Drop (1)
Pass Diff Drop Flag Nut (1)
Rear Block (2)

HARDWARE INCLUDED:

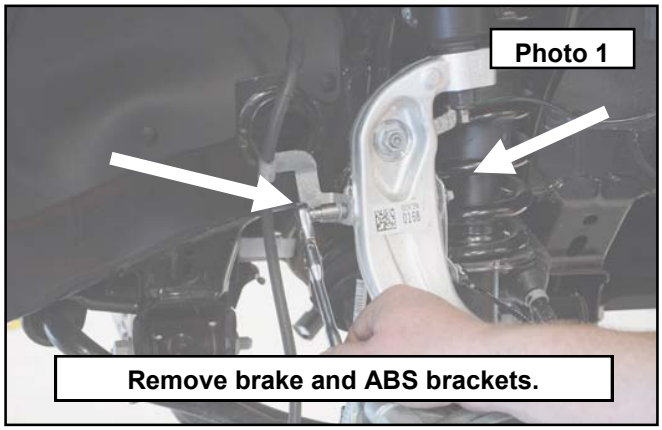
U-Bolt (4)
U-Bolt Hardware Bag (1)
Zip Tie (4)
10mm Stud Bag (1)
10mm x 70mm Bolt (1)
10mm Lock Washer (1)
10mm Flat Washer (1)
16mm Nut (1)
16mm Flat Washer (1)
3/8” x 1.25” Bolt (1)
3/8” Lock Washer (1)
3/8” Flat Washer (1)
7/16” x 1.25” Bolt (3)
7/16” Flat Washer (6)
7/16” Lock Nut (3)

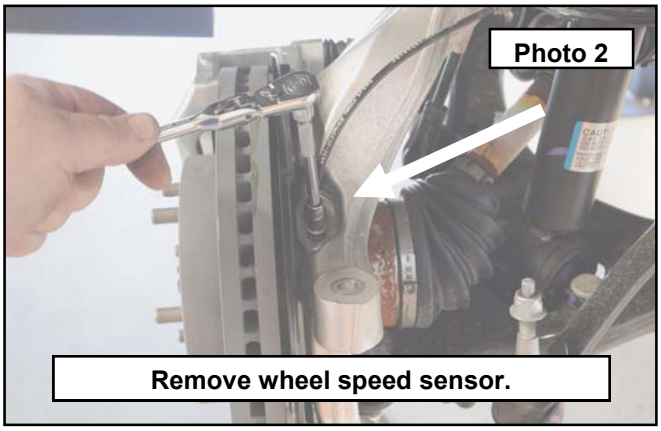


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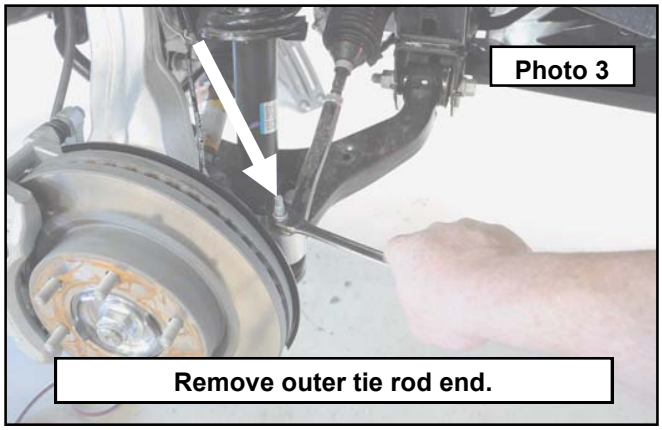
Front Installation

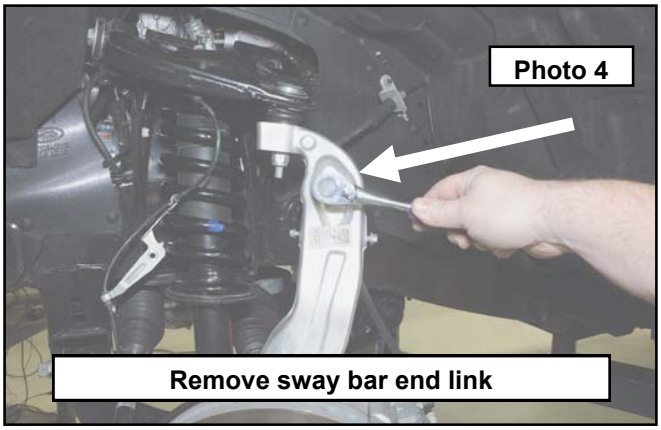
1. Park your vehicle on a clean flat surface, engage the parking brake and block the rear tires.
2. Jack the front of the vehicle up and place safety stands at the indicated lift points for the frame in the service manual. Remove the front wheels and set aside.
3. **Save all hardware removed from the vehicle unless noted. All steps are for both sides unless noted.**
4. Open the hood and disconnect the negative terminal on the battery.
5. Remove the brake line and ABS wire brackets from the knuckle using a 10mm socket. **Photo 1**
6. Remove the wheel speed sensor from the knuckle using a 8mm socket. Let the wire hang out of the way. **Photo 2**



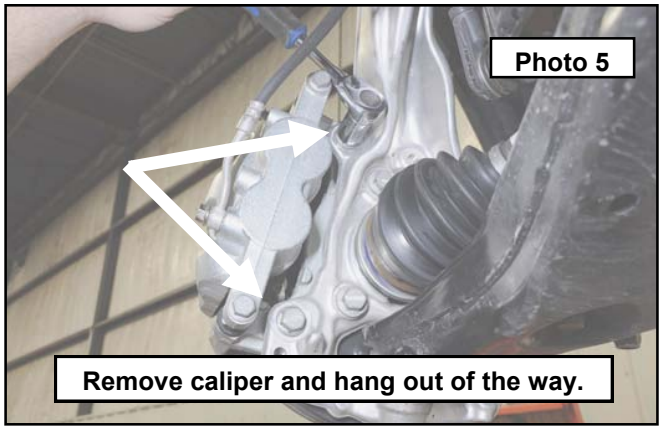


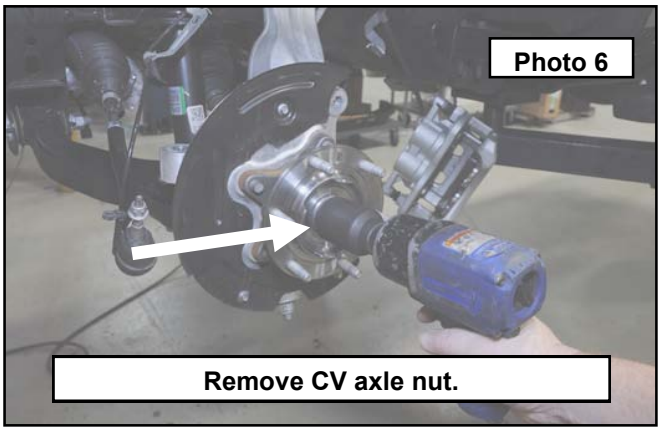
7. Remove the outer tie rod from the knuckle using a 15mm wrench. Strike the tie rod boss with a hammer to dislodge the taper. Take care to not hit or damage the threads on the tie rod end. Doing so can inhibit reinstallation later. **Photo 3**
8. Remove the sway bar end link from the knuckle using a 18mm socket. Let the sway bar end link hang out of the way. **Photo 4**





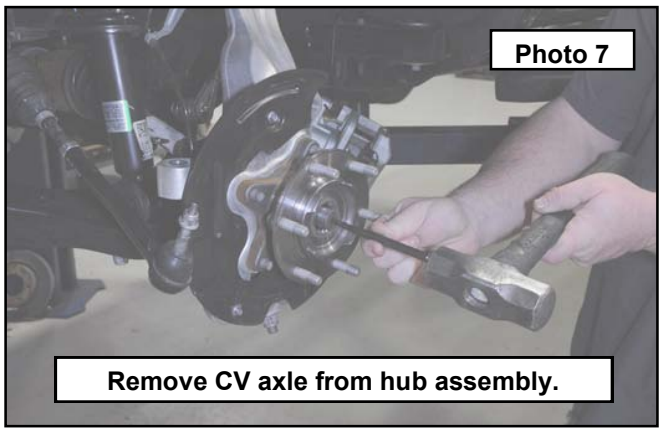
9. Remove the brake caliper using a 18mm socket. Use a suitable device, hang out of the way. **DO NOT** let the caliper hang from the rubber brake line. Remove the rotor and set aside. **Photo 5**
10. Remove the CV axle nut using a 36mm socket. **Photo 6**





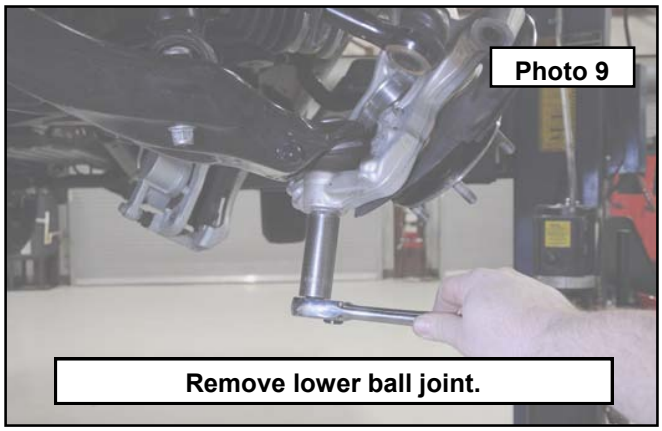
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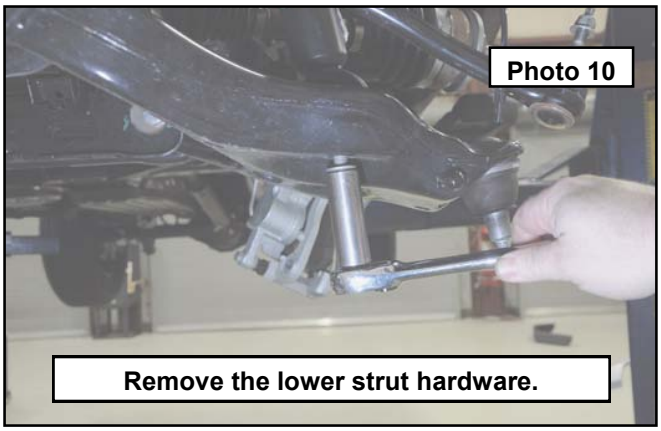
11. Use a hammer and punch to “press” the CV axle out of the hub assembly. Take care to not hit or damage the threads on the CV axle. Doing so can inhibit reinstallation later. **Photo 7**
12. Loosen but do not completely remove the upper ball joint nut using a 18mm wrench. Strike the ball joint boss with a hammer to dislodge the taper. Take care to not hit or damage the threads on the ball joint. Doing so can inhibit reinstallation later. Support the knuckle, remove the upper ball joint nut. Let the knuckle hang out of the way while making sure to not over extend the CV axle, brake lines and ABS wires. **Photo 8**





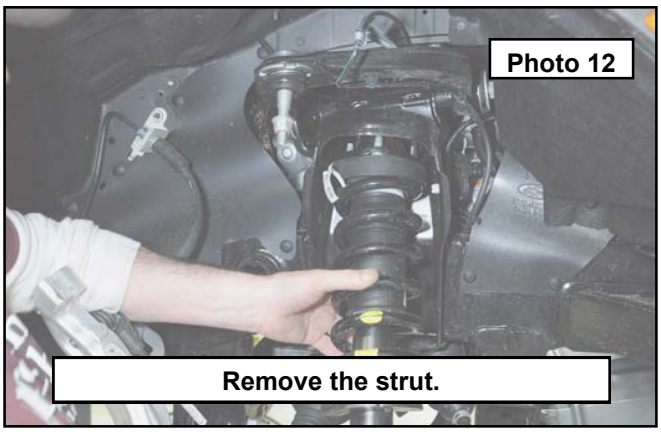
13. Loosen but do not completely remove the lower ball joint nut using a 21mm wrench. Strike the ball joint boss with a hammer to dislodge the taper. Take care to not hit or damage the threads on the ball joint. Doing so can inhibit reinstallation later. Support the knuckle, remove the lower ball joint nut, and set the knuckle off to the side. **Photo 9**
14. Remove the lower strut hardware. **Photo 10**





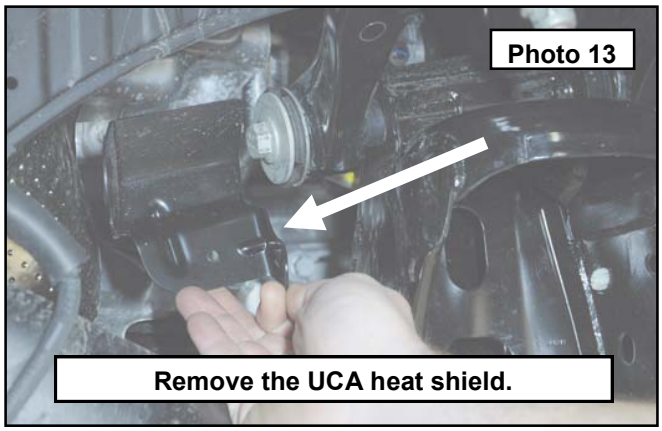
15. DRIVER SIDE ONLY: Remove the lower control arm from the frame using 21 and 24mm wrenches. PASSENGER SIDE ONLY: Loosen but do not remove the lower control arm at the frame and let hang out of the way. You may have to pry it downwards to clear the strut pins. **Photo 11**
16. Support the lower control arm with a jack. Remove the upper strut hardware using a 15mm wrench. Remove the strut from the frame and set aside. Mark the spring, spring seat, and top hat orientation to each other for reassembly later. **Photo 12**

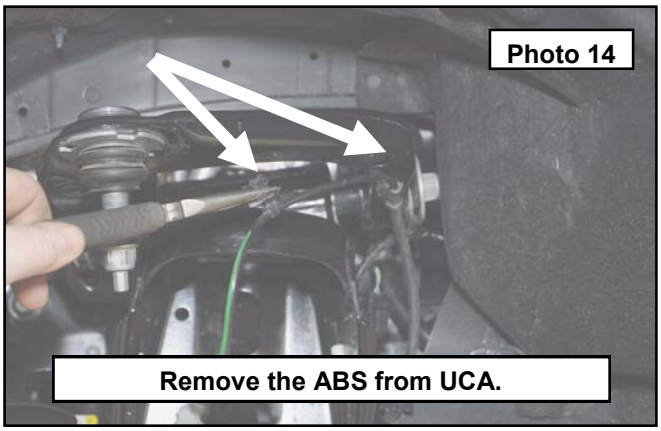




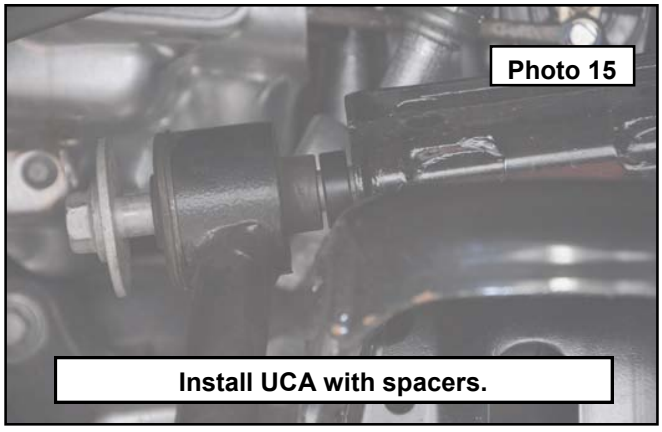
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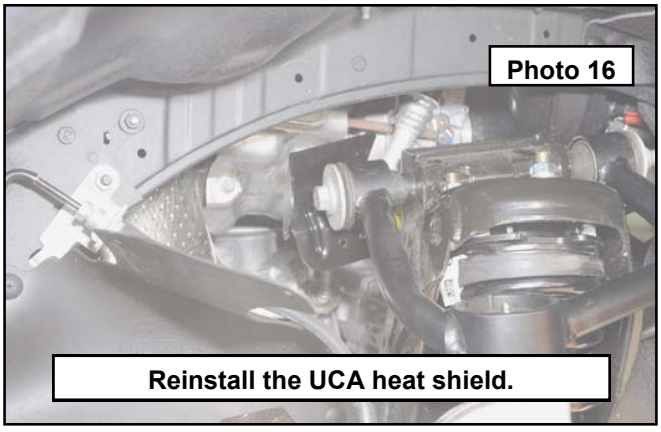
17. Remove the heat shield from the strut tower using a 10mm wrench. **Photo 13**
18. Remove the ABS wire harness clips from the upper control arm and let hang out of the way. **Photo 14**





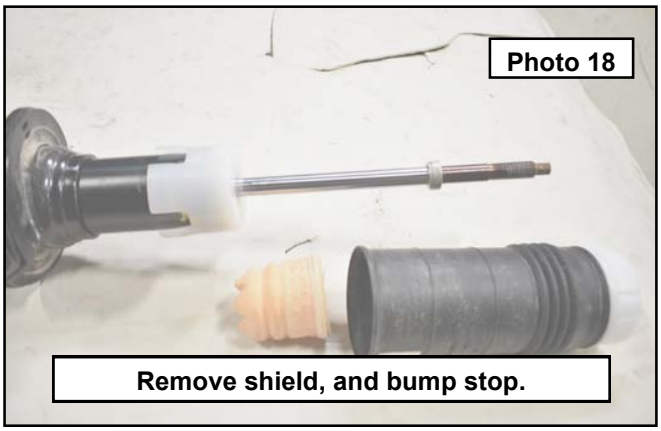
19. Remove the upper control arm from the frame. Install the appropriate side replacement upper control arm using the factory hardware and the provided spacers between the control arm bushing and the frame. Failure to do so will result in the upper control arm not fitting. **DO NOT** tighten the control arm hardware at this time. The bushings in this arm are bonded and need to be torqued with full vehicle weight on the wheels/tires to set the bushing properly for ride height. **Photo 15**
20. Reinstall the heat shield using the factory hardware and 10mm wrench. Torque to **5 ft-lbs**. **Photo 16**





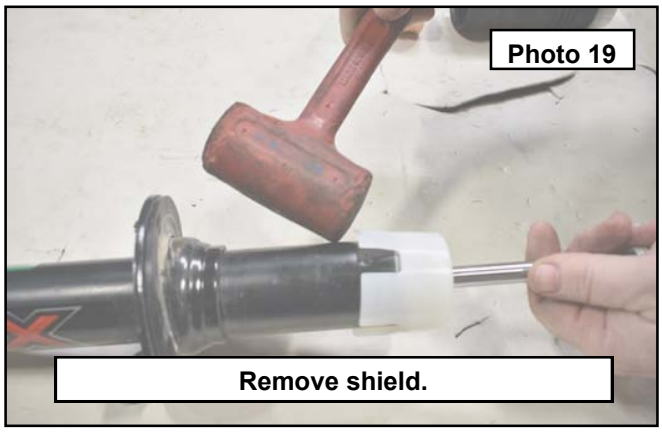
21. Place the strut into a spring compressor, relieve the spring tension enough to remove the top hat hardware using a 18mm and 10mm wrench. **DO NOT** use an impact gun. You need to use two wrenches for proper disassembly and reassembly. One to hold the shock shaft from spinning and one to undo the nut. **Photo 17**
22. Once the shock is removed from the top hat and spring, remove the dust shield and bump stop. Set aside for reassembly. **Photo 18**

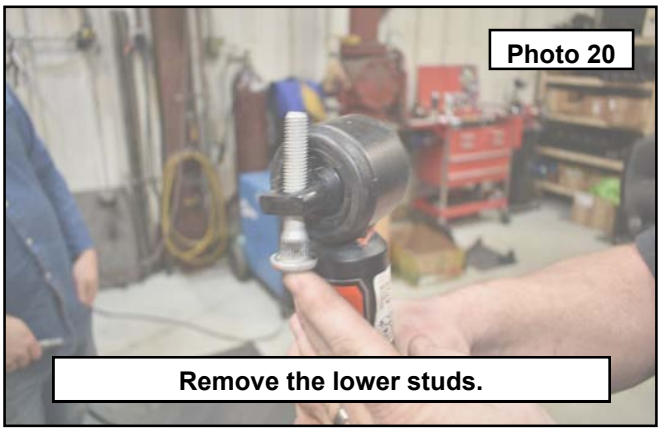




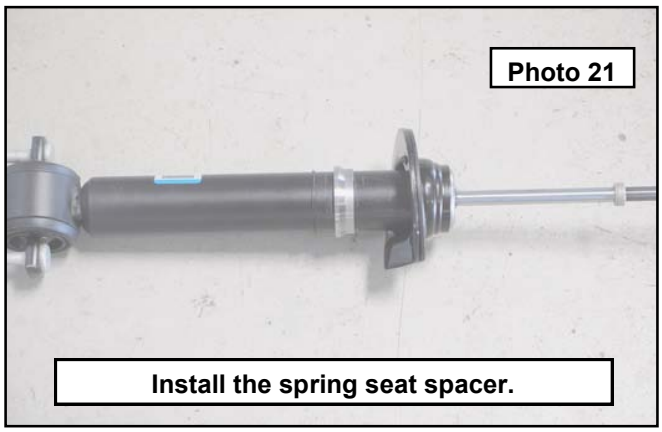
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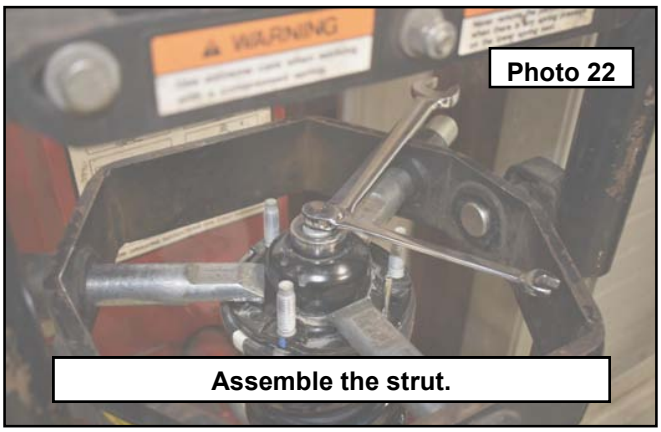
23. Using a rubber mallet, gently tap on the bump stop landing pad to remove it from the shock body, then slide the lower spring seat off. You may have to tap on it with the hammer as well. **Photo 19**
24. Now that all the shock items are removed, place the lower shock cross pin studs over a receiving cup and press the studs out of the cross pin. This step is to ease reassembly back into the vehicle later. **Photo 20**



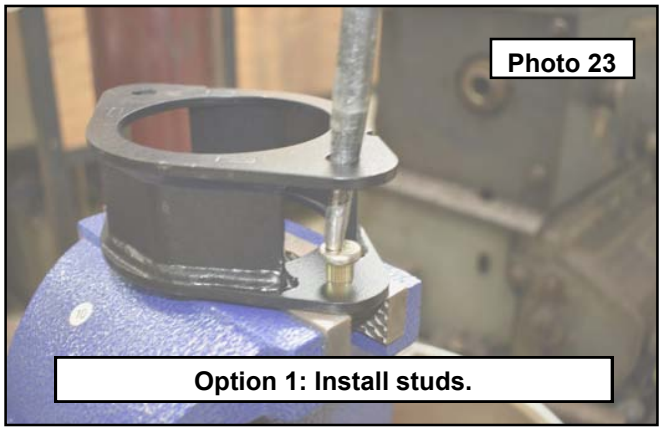


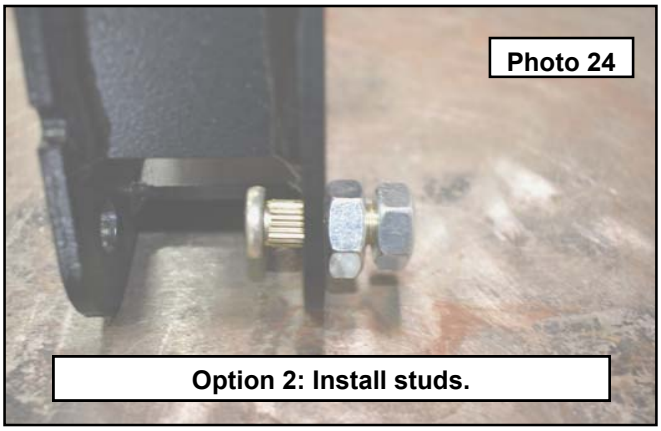
25. Install the spring seat spacer onto the shock making sure that it seats fully around the seat clip. Once in place, reinstall all removed items in their same positions back onto the shock body. **Photo 21.**
26. Reinstall the shock back into the spring and top hat using making sure to line up all the previously made line up marks. You may have to compress the spring more to get the shock to pass all the way through. Torque the shock hardware to **45 ft-lbs**. **Photo 22**





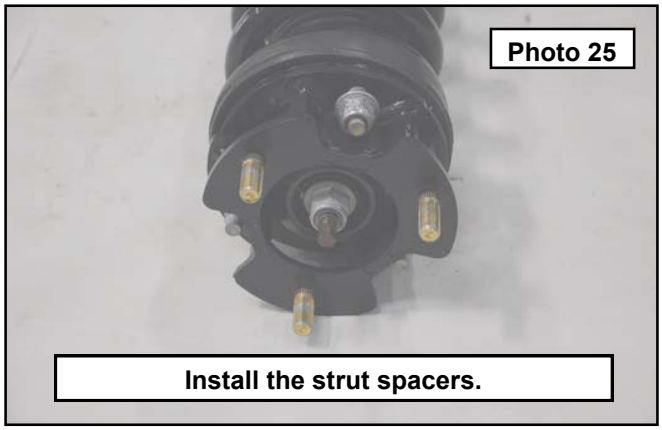
27. There are two methods to installing the provided studs to the spacers. Option 1 is to use a punch and hammer to seat the studs into place. Make sure to fully seat the studs without damaging the threads. **Photo 23**
28. The 2nd option is to install the studs into the tops of the strut spacers using the provided 1/2” nut acting as a spacer and the spare 10mm nut to suck the stud into place. Use of a lubricant is suggested between the two nuts to prevent galling of the metals. Once the stud is fully seated, repeat the process for the rest of the studs. **Photo 24**

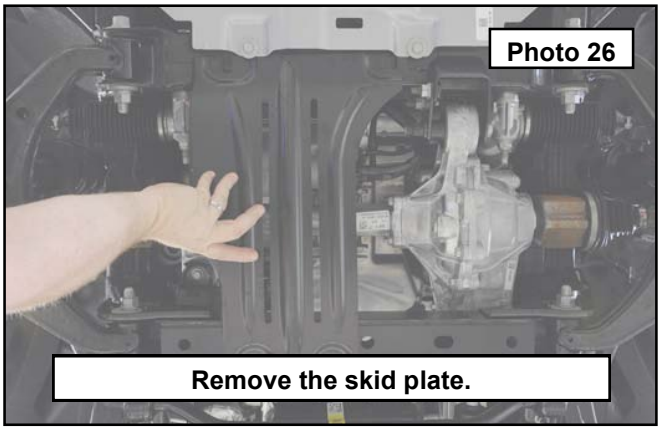




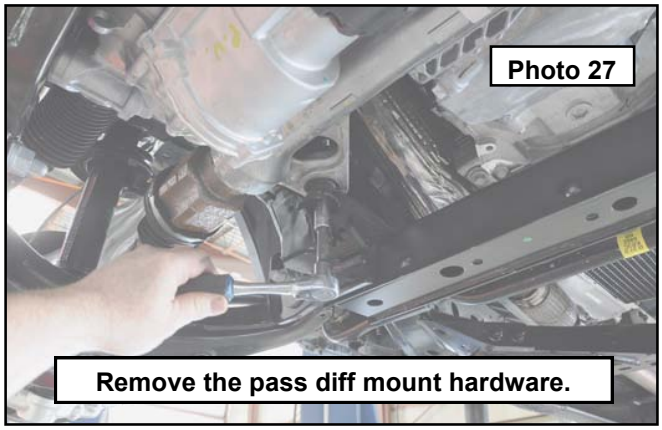
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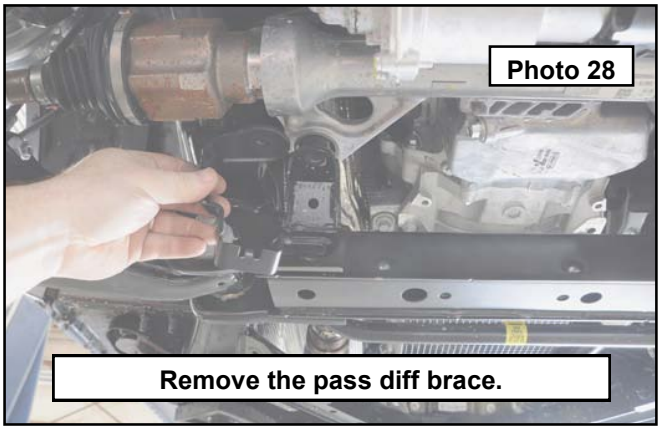
29. Remove the locating roll pin in the factory top hat and install the strut spacers to the assembled strut using the factory hardware with a 15mm wrench. Torque to **30 ft-lbs**. **Photo 25**
30. Move to under the vehicle, remove the skid plate using a 15mm socket. **Photo 26**



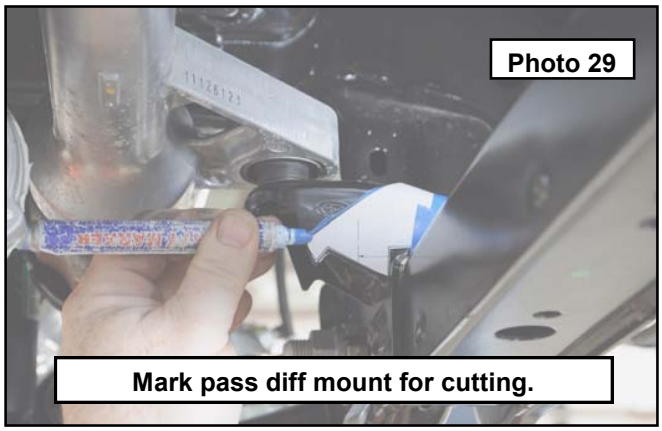


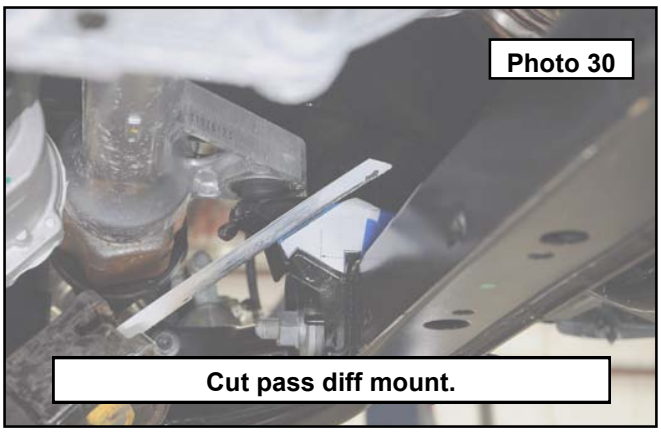
31. Support the differential with a jack.
32. Remove the passenger side differential mounting hardware using a 13mm socket . **Photo 27**
33. Remove the passenger side differential double shear brace and discard. **Photo 28**





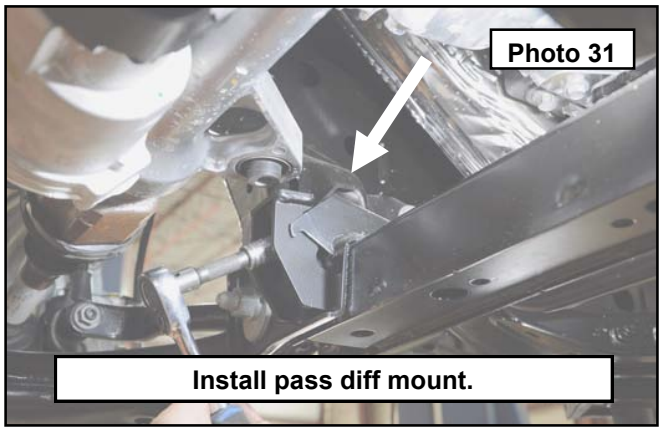
34. Raise the passenger side of the differential up to gain clear access to the frame mount. Use the supplied template in this instruction booklet to mark the frame for cutting.
35. Cut out the template and install onto the frame as shown. The outer profile of the template will line up with the profile of the frame mount. Mark the line on both of the outer sides of the mount. **Photo 29**
36. Use a suitable cutting tool (Sawzall shown) to cut along the marked edge straight across to the other opposite side of the mount. You are removing the entire top section of the factory mount. DO NOT cut through the hole in the factory bracket when viewed from the front. You will be using this to mount the new bracket in place. Sand all the burrs off and paint any exposed metal with a quality rust preventative paint. **Photo 30**

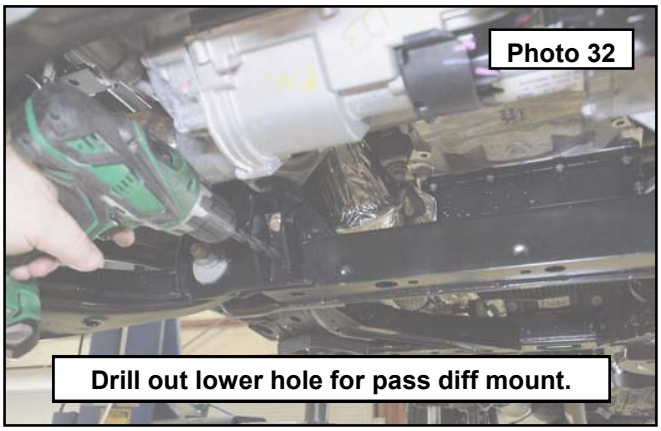




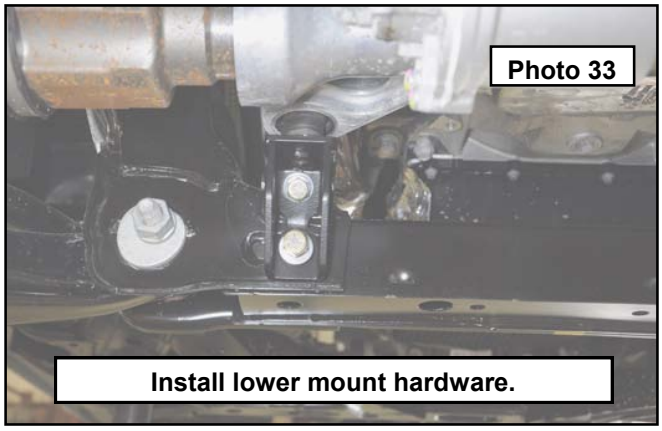
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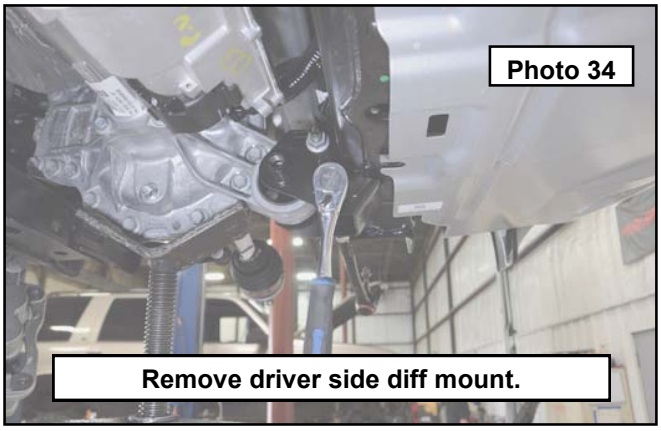
37. Install the new passenger side bracket into place using the provided 3/8” x 1.25” bolt, lock washer, flat washer, tab nut and 9/16” socket. Torque to 35 ft-lbs. **Photo 31**
38. Use the hole in the bracket as a guide, drill out the factory frame with a 7/16” drill bit. You do not need to drill through the entire cross member, just the front plate. **Photo 32**



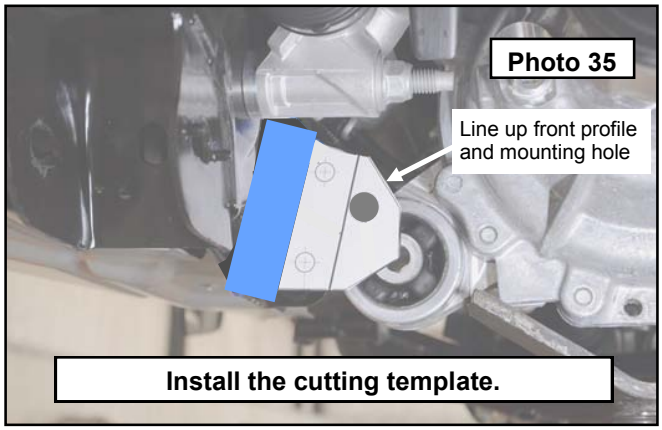


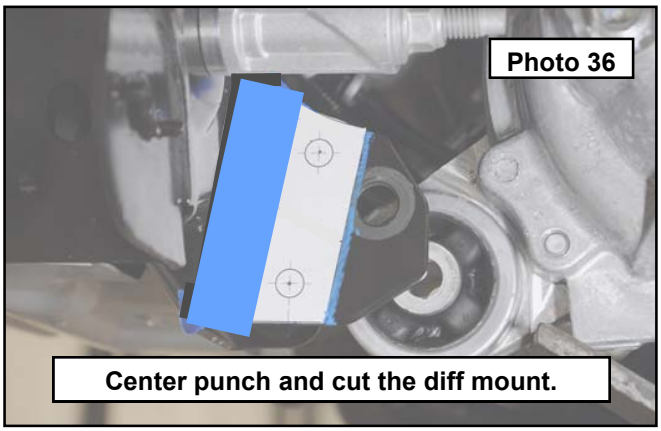
39. Install the provided 7/16” x 1.25” bolt, flat washers, and nut using a 5/8” socket and wrench. Torque to **45 ft-lbs**. **Photo 33**
40. Remove the driver side main differential mount hardware using a 21mm wrench.
41. Remove the driver side mounting plate from the frame using a 19mm socket and discard the plate but save the hardware. **Photo 34**





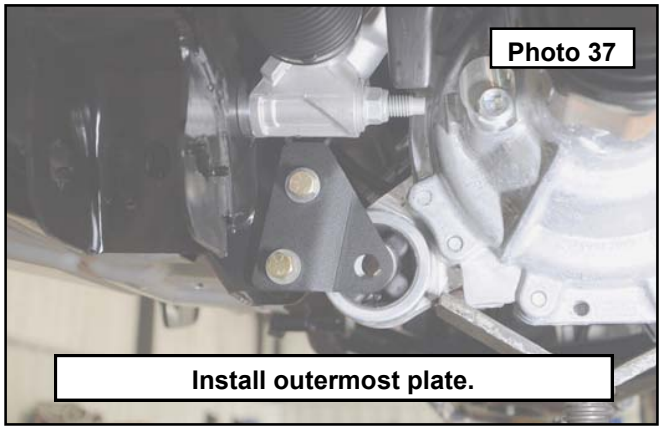
42. Locate the remaining template from the instruction booklet and cut out the main profile and the main mounting hole. The profile will line up with the profile on the factory mount. **Photo 35**
43. Once the template has been taped into place using the front profile and the main mounting hole as a guide, trim off the front edge using the cut line as a guide. Mark the cut line and use a center punch to mark the two holes to drill. Use a suitable cutting tool and cut along the line made. Drill out the holes using a 7/16” drill bit. **Photo 36**

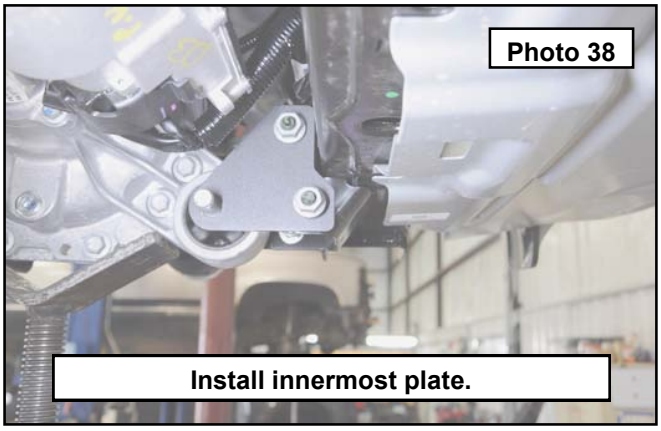




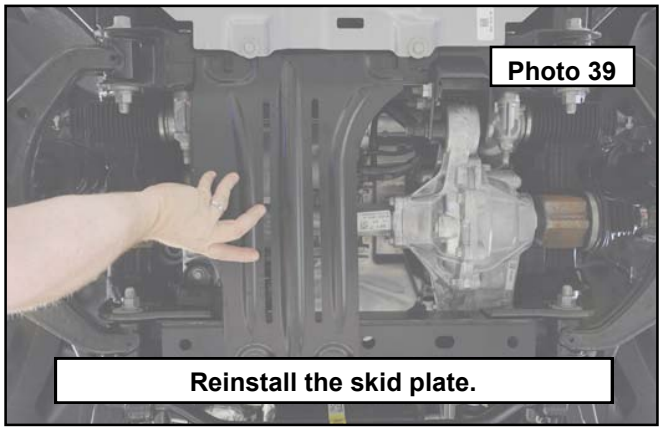
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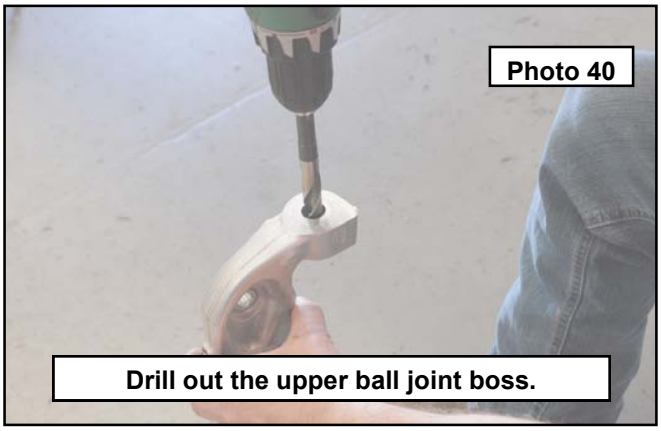
44. Sand any burrs off the frame and paint the exposed metal with a quality rust preventative paint.
45. Install the outermost driver side differential bracket using the provided 7/16” x 1” bolts, washers, and locking nuts. Leave loose to aid in the rest of the installation. **Photo 37**
46. Install the innermost driver side differential bracket using the factory hardware. Leave loose, lower the differential down and install the main differential factory bolt and the provided 16mm washer and nut. Leave loose to aid in the rest of the installation. Move to the passenger side mount and install the provided 10mm x 70mm bolt, lock washer, flat washers and nut. Once all have been installed, torque the 7/16” and factory nuts to 45 ft-lbs, and the main differential bolt to 120 ft-lbs. **Photo 38**



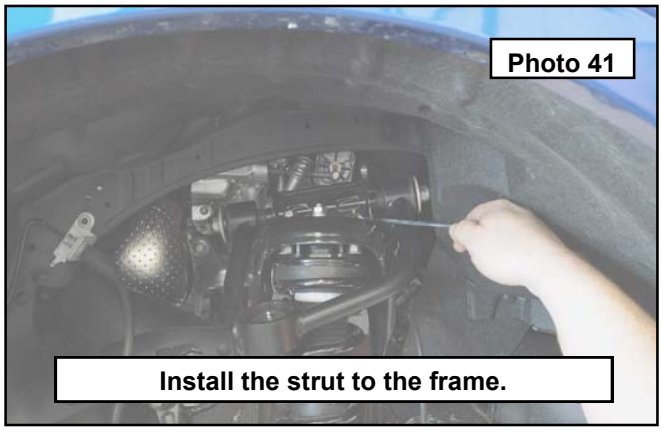


47. Reinstall the factory skid plate using the factory hardware. Torque all to the 45 ft-lbs. **Photo 39**
48. Reinstall the driver side lower control arm using the factory hardware. Leave loose at this time.
49. Drill out the upper ball joint boss on the knuckles using a 9/16” drill bit. **DO NOT** drill into the taper or mess the taper up. You are merely opening the lower end of the hole up to accommodate the new ball joint. **Photo 40**





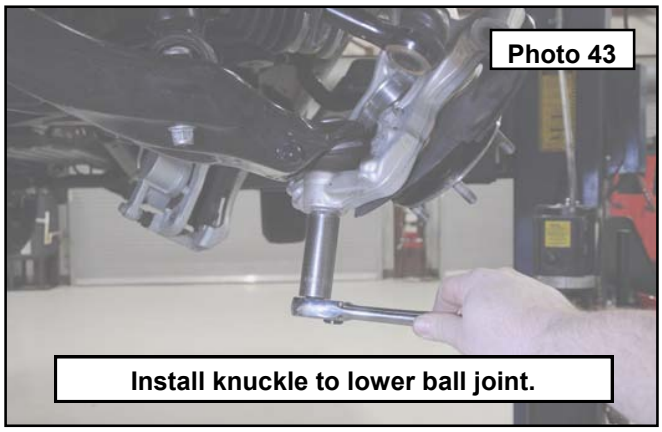
50. Install the completed strut assemblies into the frame using the provided 10mm nuts. Leave loose at this time. **Photo 41**
51. Install the lower control arm to the strut using the removed studs and nuts. Once the hardware is started, use the nut to seat the stud back into the strut cross pin using a 18mm socket. Torque the lower mount to **120 ft-lbs** and the upper mount to **30 ft-lbs** using a 17mm socket. **Photo 42**

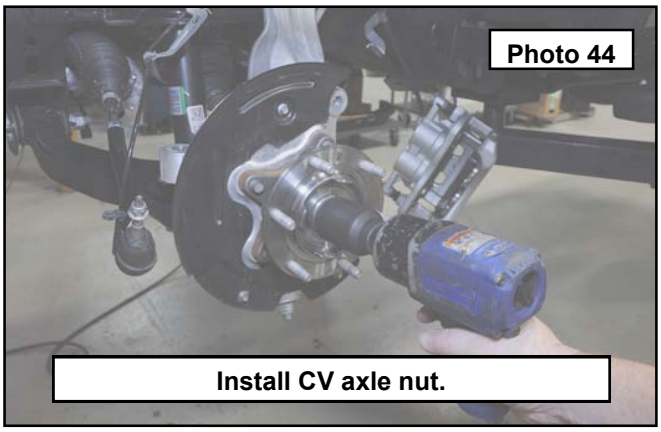




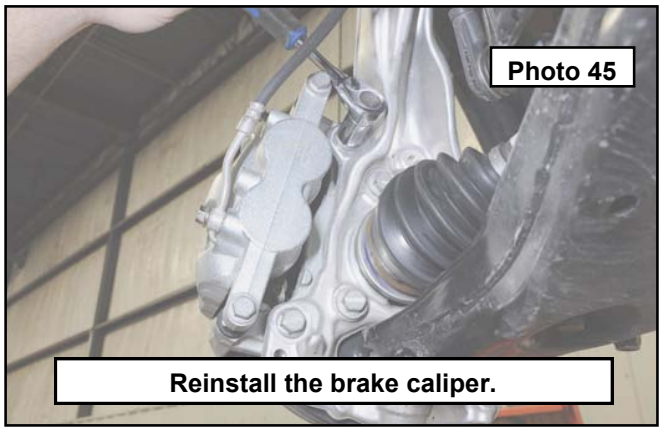
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52. Install the knuckle to the lower ball joint (while guiding the cv axle into the hub assembly) using the factory hardware and 21mm socket. Torque to **85 ft-lbs**. **Photo 43**
53. Install the upper ball joint using the provided hardware and 21mm wrench. Torque to **65 ft-lbs**. Install the CV axle nut using a 36mm socket and torque to **200 ft-lbs**. **Photo 44**



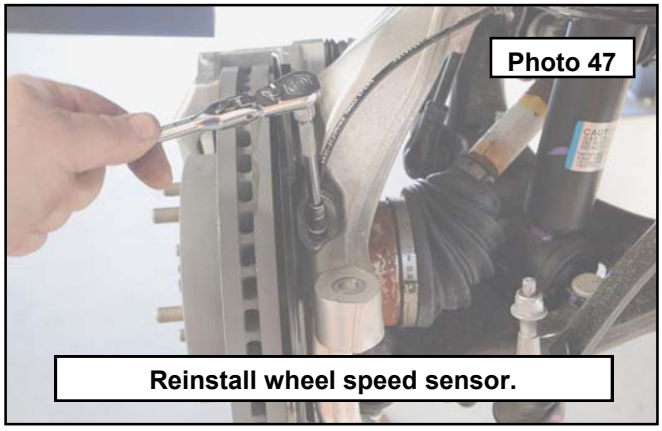


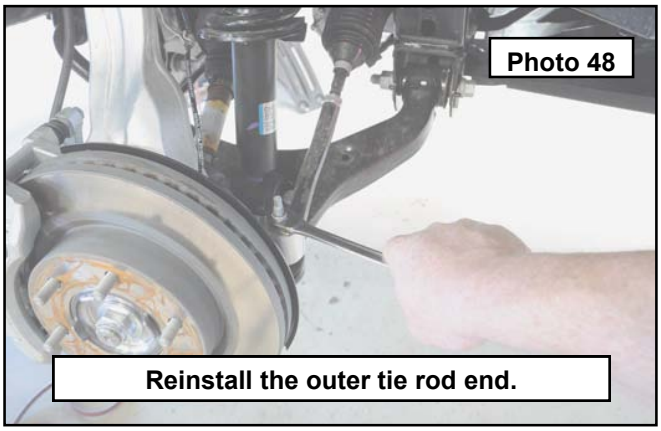
54. Install the rotor and caliper using the factory hardware, blue thread locker, and 18mm socket. Torque to **120 ft-lbs**. **Photo 45**
55. Reinstall the sway bar end link to the knuckle using the factory hardware and 18mm socket. Torque to **75ft-lbs**. **Photo 46**





56. Reinstall the wheel speed sensor to the knuckle using the factory hardware and 8mm socket. Make sure the sensor is clean from any debris that may have gotten on it during the kit installation. Any debris left on may make the ABS system work improperly causing dash warning lights and unruly handling. Reinstall the brake and ABS lines to the knuckle using the factory hardware and 10mm socket. Torque all to **5 ft-lbs**. Using the provided zip ties, attach the ABS wire to the upper control arm in two places making sure there is enough slack for the suspension cycling and turning. **Photo 47**
57. Reinstall the outer tie rod end to the knuckle using the factory hardware and 15mm socket. Torque to **65ft-lbs**. **Photo 48**. Install the front wheels/tires and lower the vehicle to the ground. Torque the lug nuts to the wheel manufacturer's specs.

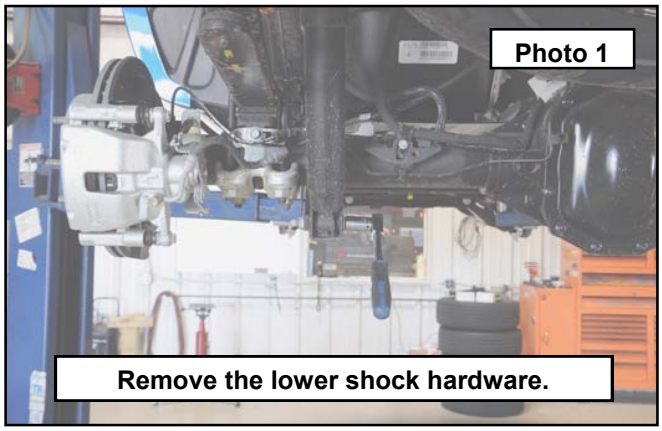


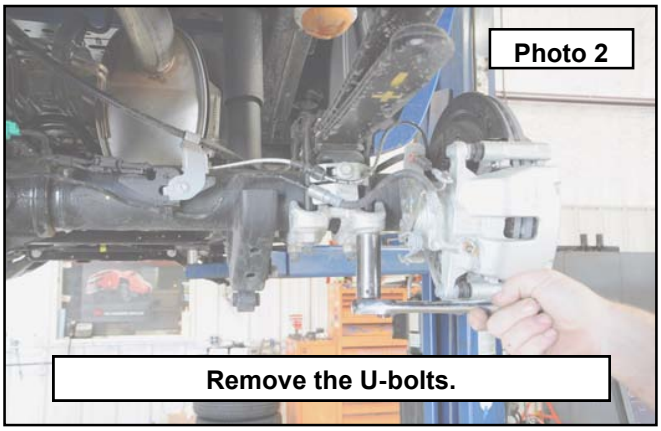


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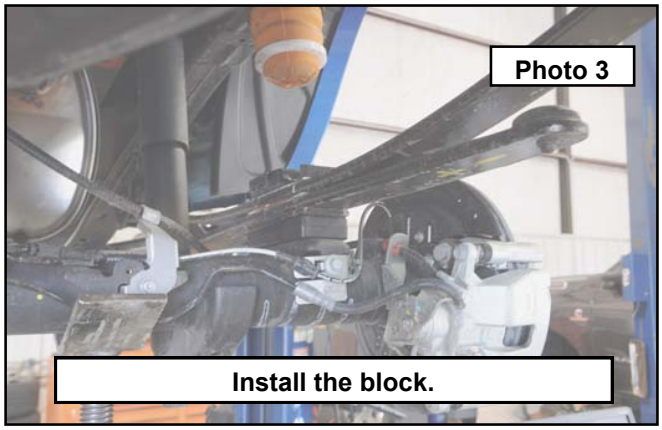
Rear Installation

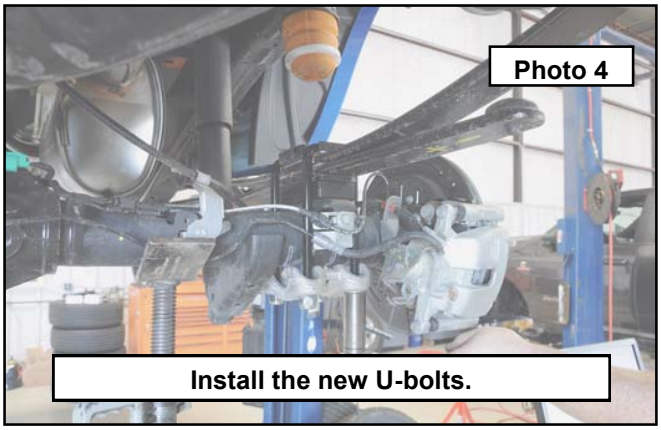
1. Block the front wheels. Jack the front of the vehicle up and place safety stands at the indicated lift points for the frame in the service manual. Remove the rear wheels and set aside.
2. Place a jack under the axle for support. Remove the lower shock mount hardware using a 18mm socket and wrench. **Photo 1**
3. Starting with one side of the axle, loosen but do not remove the U-bolt nuts. On the opposite side, remove the U-bolts completely and discard all. **Photo 2**





4. Lower the axle just enough to install the lift block. **Photo 3**
5. Raise the axle up and install the provided U-bolts and hardware. DO NOT fully tighten at this time. Repeat the steps for the opposite side. Failure to install in this order can lead to a bind in the axle/leaf springs that will make it difficult to install the opposite side and lead to a bad thrust angle when it is time for the alignment. Once both blocks and all U-bolts are installed, torque the U-bolts in a crisscross pattern to **90 ft-lbs**. **Photo 4**





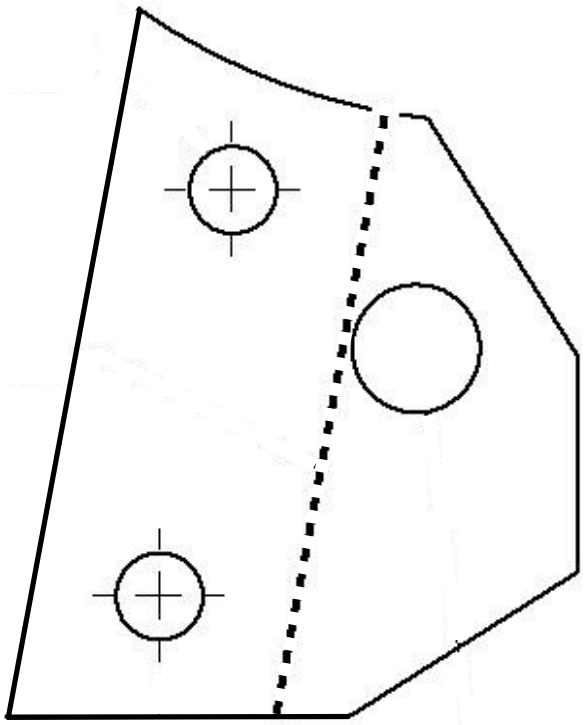
6. Reinstall the lower factory shock and hardware but do not tighten at this time.
7. Install the wheels/tires and lower the vehicle to the ground.
8. Reconnect the negative terminal at the battery.
9. Start the vehicle making sure there are not any dash lights pertaining to suspension. Cycle the steering from lock to lock making sure that all clearances between wheel/tire, suspension and body panels are good. Adjust as necessary.
10. Roll the vehicle forward and backwards a few feet to get it to settle to the new ride height. Once the vehicle is settled, torque the upper control arms to 120 ft-lbs, center the lower control arm cam bolts and torque to 130 ft-lbs (final torque to be set by alignment technician), and torque the rear lower shock hardware to 65 ft-lbs.
11. Have the alignment set by a reputable alignment shop to the provided numbers below.

FRONT	DRIVER	PASSENGER	TOLERANCE
CAMBER	-0.2	-0.2	+/-0.5
CASTER	+2.5	+2.5	+/-0.5
TOE	+0.5	+0.5	+/-.05

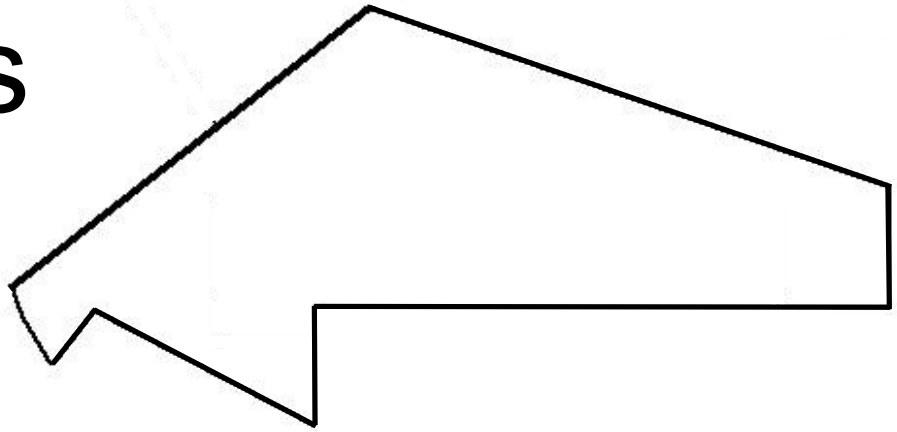
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Driver



Pass



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