TRAIL FORTRESS

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Rough Country 29601 Installation Instructions

3.5-Inch Lift Kit for Silverado 1500 & Sierra 1500 (2019-2024)

Part number: 29601

trailfortress.com/rough-country-3-5-inch-lift-kit-29601

Scan for fitment, price and install help

ROUGH COUNTRY
SUSPENSION SYSTEMS®

GM 2019 4WD 1500 w/ Adaptive Ride Control 3.5 Inch Lift Kit

Thank you for choosing Rough Country for your suspension needs.

Rough Country recommends 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 instructions before beginning installation. Check the kit hardware against the parts list on the rear cover of these instructions. Be sure you have all needed parts and know where they go. Also please review tools needed list and make sure you have needed tools.

PRODUCT USE INFORMATION

⚠WARNING As a general rule, the taller a vehicle is, the easier it will roll. Seat belts and shoulder harnesses should be worn at all times. Avoid situations where a side rollover may occur. Generally, braking performance and capability are decreased when larger/heavier tires and wheels are used. Take this into consideration while driving. Do not add, alter, or fabricate any factory or after-market parts to increase vehicle height over the intended height of the Rough Country product purchased. Mixing component brands is not recommended.

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. If question exist we will be happy to answer any questions concerning the design, function, and correct use of our products.

⚠NOTICE The electric power steering must be unplugged before any of the steering components are removed. Failure to do so may cause damage to the electric power steering.

This suspension system was developed using a 295/60R20 tire on the factory 20” wheel. If wider tires are used trimming may be required. Due to manufacturing, dimension variances, and inflation, all tire and wheel combinations should be tested prior to installation on all oversized / wider then stock tires and wheels.

⚠NOTICE **DEALER AND VEHICLE OWNER**

Any vehicle equipped with any Rough Country product should have a “Warning to Driver” decal installed on the inside of the windshield or on the vehicle’s dash. The decal should act as a constant reminder for whoever is operating the vehicle.

Torque Specs:

Size	Grade 5	Grade 8	Size	Class 8.8	Class 10.9
5/16”	15 ft/lbs	20ft/lbs	6MM	5ft/lbs	9ft/lbs
3/8”	30 ft/lbs	35ft/lbs	8MM	18ft/lbs	23ft/lbs
7/16”	45 ft/lbs	60ft/lbs	10MM	32ft/lbs	45ft/lbs
1/2”	65 ft/lbs	90ft/lbs	12MM	55ft/lbs	75ft/lbs
9/16”	95 ft/lbs	130ft/lbs	14MM	85ft/lbs	120ft/lbs
5/8”	135ft/lbs	175ft/lbs	16MM	130ft/lbs	165ft/lbs
3/4”	185ft/lbs	280ft/lbs	18MM	170ft/lbs	240ft/lbs

TOOLS NEEDED:

10mm wrench and socket
13mm wrench and socket
15mm wrench and socket
17mm wrench and socket
18mm wrench and socket
19mm wrench and socket
21mm wrench and socket
22mm socket
Torque Wrench
Floor Jack
Jack stands
Ratchet
Spring Compressor
Wheel chocks

KIT CONTENTS:

29501 *(Upper Control Arms):*
Forged Aluminum Dr Upper Arm x1
Forged Aluminum Pass Upper Arm x1
29501BAG1 x1
Ball Joint Hardware Bag x2

29600BOX3 *(4WD Lift Kit)*
10MM Stud Bag –2 x1
29600BAG2 x1
1189BAG2 x1
29501BAG2 x1
275BAG3
9/16 X 2 1/2 X 9 1/2 Square U-bolts x4
2" Rear Blocks x2
Mag Ride Shock Relocation Bracket x2
Upper Strut Spacer x2
Mag Ride Preload Spacer x4

HARDWARE INCLUDED:

29600BAG1
Instruction Sheet
29501BAG1
Instruction Sheet

29501BAG2 *(Adaptive Ride Control):*
M6 x1.0 Nylock Nuts x2
M6-1.0 x 14MM Button Head Bolt x4
Adaptive Ride Control Bracket x2

10MMSTUDBAG-2 *(Strut Spacers):*
10mm Stud x6
10mm Hex Nuts x1
10mm Serrated Flange Nut x6
1/2" Jam Nut x1

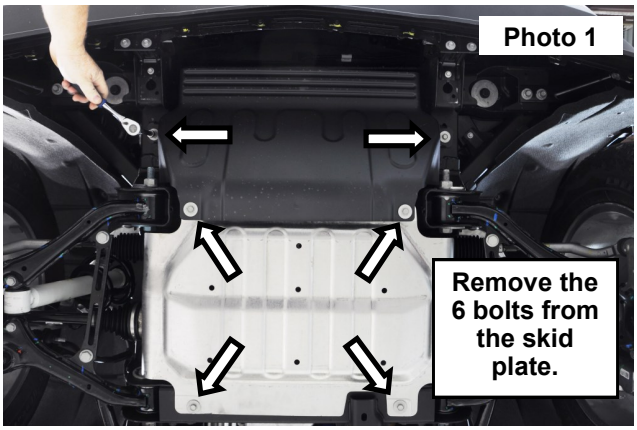
1189BAG2 *(Rear Shock Brackets):*
14mm-2.0 x100mm bolts x2
14mm-2.0 Nylock Nuts x2
9/16 Flat Washer x2
9/16 Sleeve x2

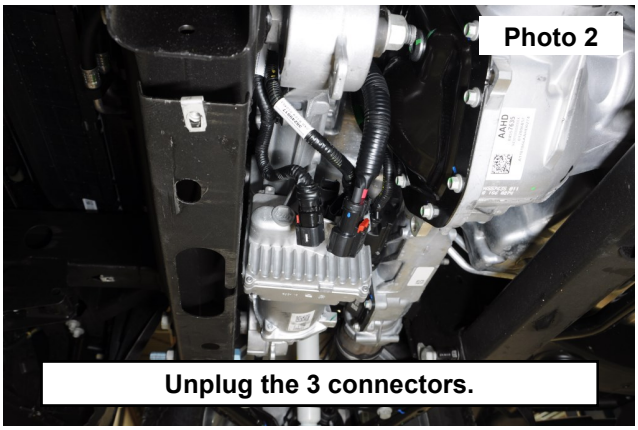
9/16BAG *(Rear U-bolts):*
9/16 Nylock Nut x8
9/16 Flat Washer x8

275BAG3 *(Lower Strut Bolts):*
10mm-1.5 x 65mm Hex Head Bolt x4
10mm Flat Washer x8
10mm-1.5 Nylock Nut x4

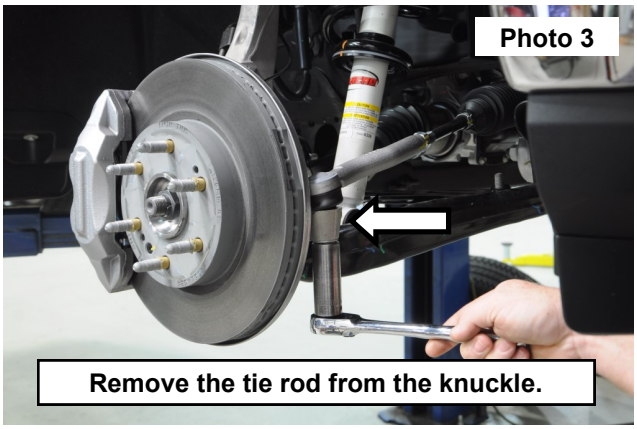
INSTALLATION INSTRUCTONS

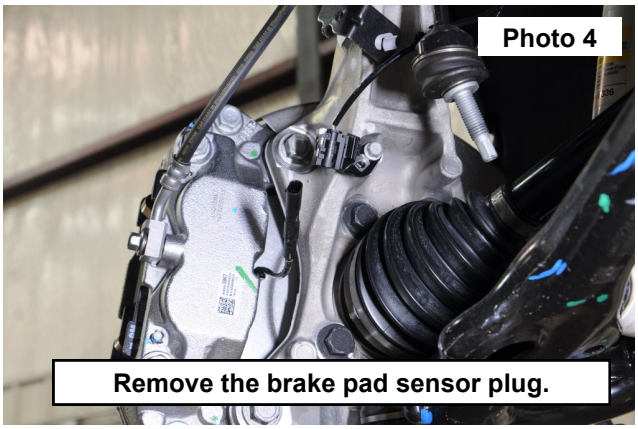
1. Park the vehicle on a level surface and chock the rear wheels.
2. Jack up the front of the vehicle. Place jack stands under the frame rails and lower onto jack stands letting the front suspension hang.
3. Remove the tires and wheels using a 22mm socket.
4. Remove the 6 bolts holding the factory skid plates, using a 13mm socket. **See Photo 1.**
5. Unplug the 3 connectors going to the rack and pinion. **See Photo 2.**



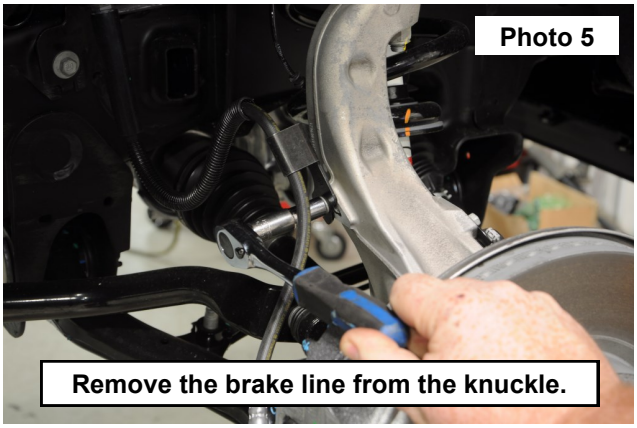


6. Using a 21mm socket, loosen the tie-rod nut as shown in **Photo 3.** Using a hammer, strike the front of the mount to dislodge the tie rod end. Remove the nut and the tie rod from the knuckle.





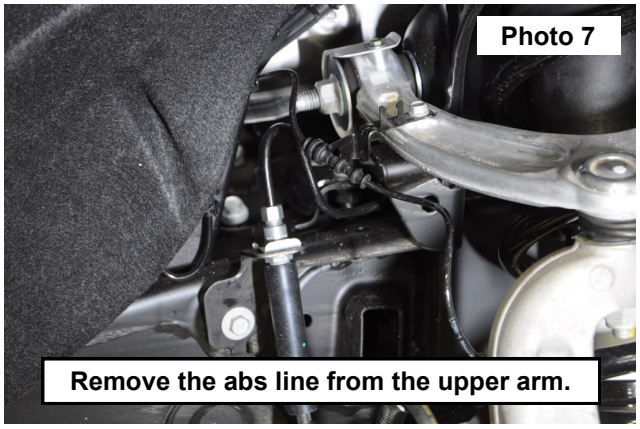
7. Unplug the brake pad sensor wire on the drivers side of the vehicle. **See Photo 4.**
8. Remove the brake line from the knuckle using a 10mm socket. Retain hardware for reuse. **See Photo 5.**
9. Remove the brake caliper using a 18mm socket. Retain the bolts for reuse. **See Photo 6.** Hang caliper out of harms

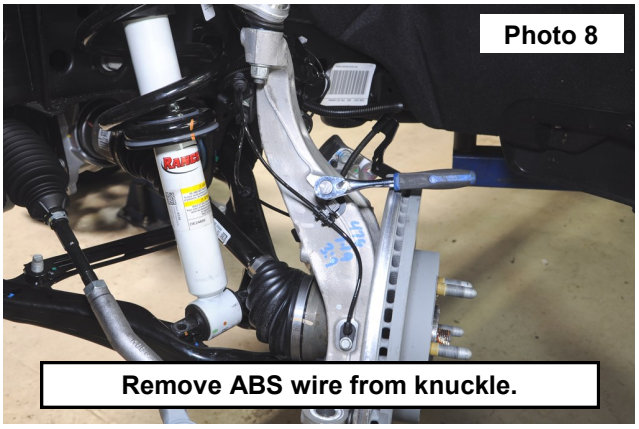




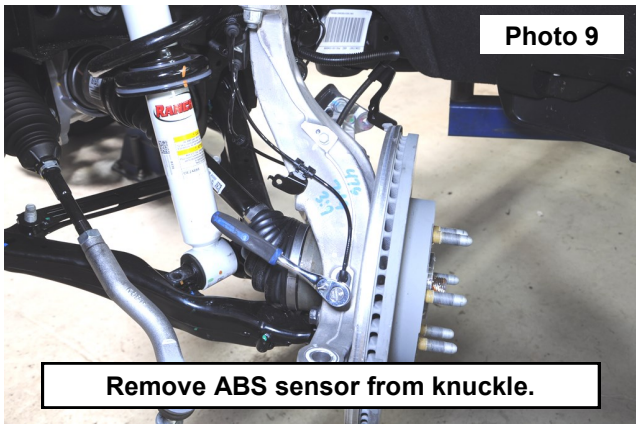
way. Do not hang by the brake line.

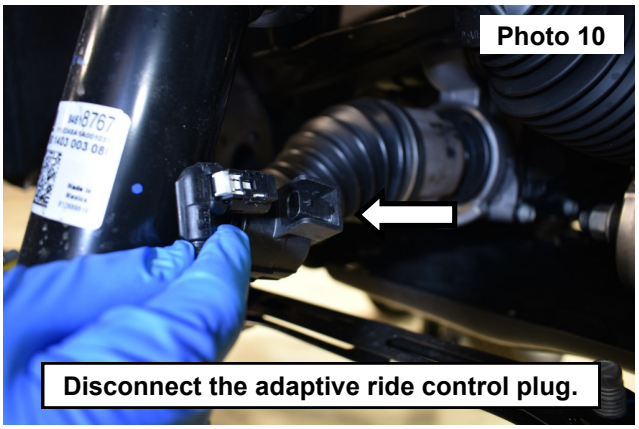
10. Remove the ABS wire bracket from the upper control arm mount. **See Photo 7.**



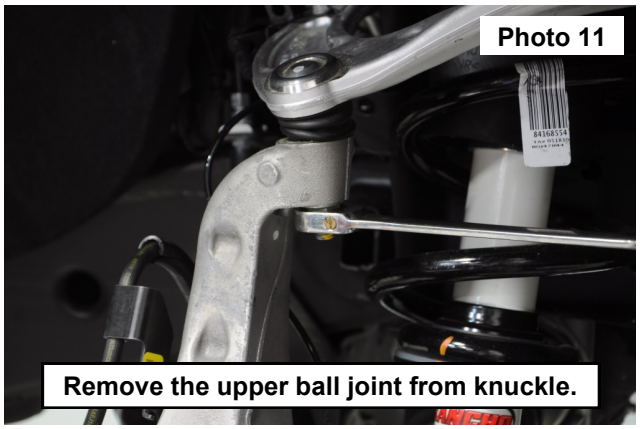


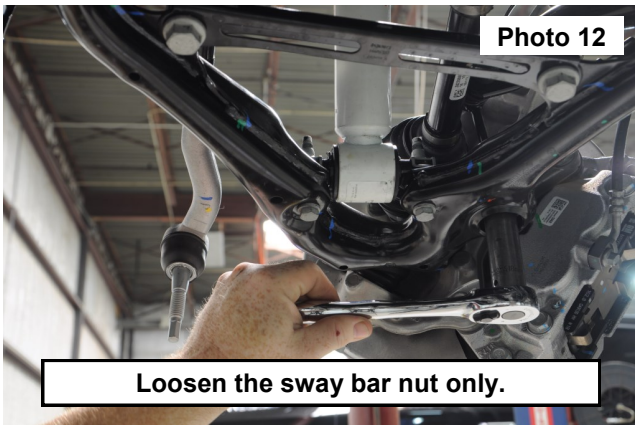
11. Using a 10mm socket, remove the ABS wire bracket from the knuckle. Retain hardware. **See Photo 8.**
12. Using a 10mm socket, remove the ABS sensor from the knuckle. Retain hardware and hang ABS wire out of the way. **See Photo 9.**



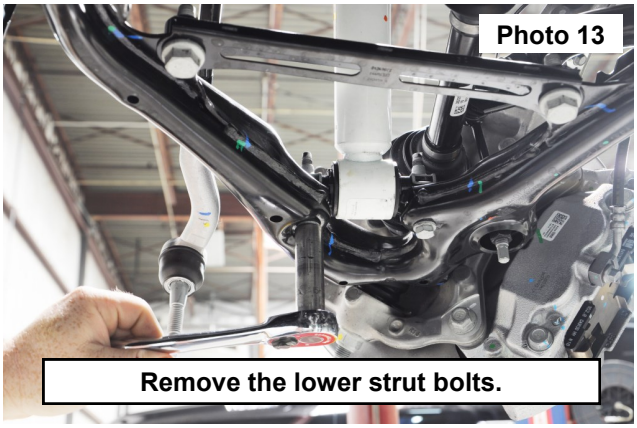


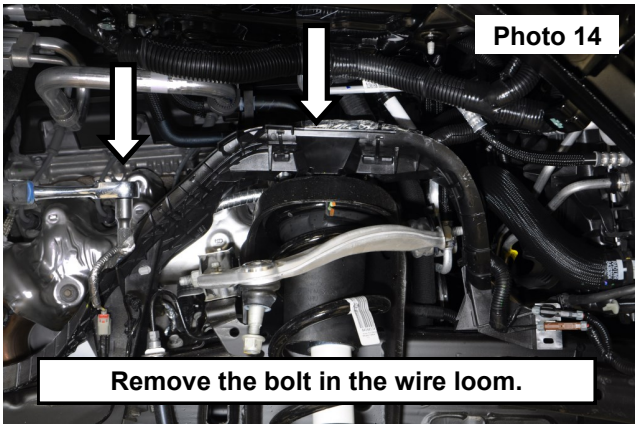
13. Disconnect the adaptive ride control plug from the strut. **See Photo 10.**
14. Using an 18mm wrench, loosen the upper ball joint nut. Do not completely remove the nut. Strike the knuckle with a hammer to release the ball joint taper. **See Photo 11.**
15. Remove the upper control arm nut and remove the control arm from the knuckle.
16. Support the lower control arm.



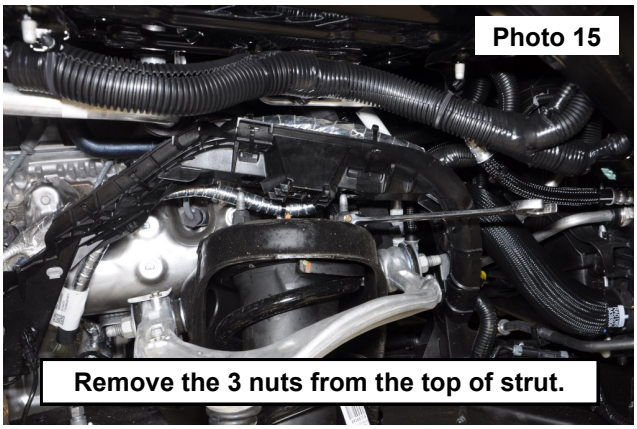


17. Loosen the sway link nut to allow room to remove the strut. **See Photo 12.**
18. Remove the 2 lower strut bolts, using a 15mm socket. **See Photo 13.** Retain hardware.
19. On the passenger side, use a 13mm socket to remove the bolt holding the plastic wire loom that is attached to the





frame and the upper strut tower. Retain hardware. (Inner fender was removed for pictures) **See Photo 14.**
20. Remove the 3 nuts from the top of the strut, using a 18mm wrench. **See Photo 15.** Retain hardware.
21. Remove the strut from the vehicle.
22. Place the strut into a strut compressor. Make sure to locate or mark the position of the lower barpin. Compress the spring to remove tension from the strut top plate. Remove the center nut with a 15mm socket. Retain factory nut.





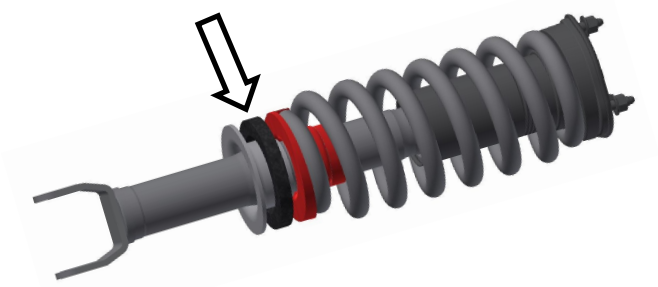
See Photo 16.
23. Remove the strut from the bottom of the assembly as shown in **Photo 17.**
24. Remove the factory lower coil spring isolator from the OEM strut. **See Photo 18.** Save for reuse.





25. Install 2 strut pre-load spacers onto the strut. Then, place the isolator onto the strut. **See Photo 19.**
26. Slide the strut up through the bottom of the factory coil spring and hand tighten the factory nut. Make sure the barpin is located in the same position by lining up the marks made on the strut. **See Photo 20.**

Photo 19



Install the strut pre-load spacer onto the strut.

Photo 20



Install the strut in the factory spring.

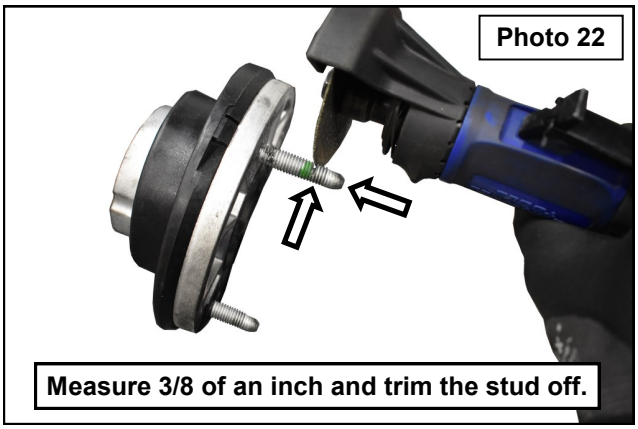
27. Using a 15mm socket tighten the center nut on the strut plate. Torque to 33-35 ft-lbs. **See Photo 21.**
28. Measure from the top of the stud down 3/8 inch, mark the stud and cut off with a cut off wheel to clear the strut spacer with the studs installed. **See Photo 22.**

Photo 21



Install the nut on the top of the strut.

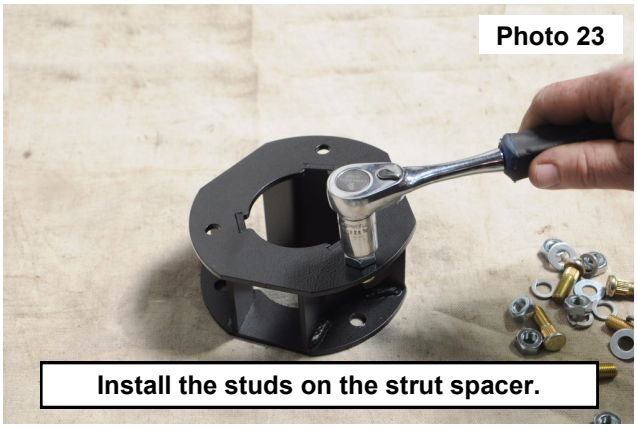
Photo 22



Measure 3/8 of an inch and trim the stud off.

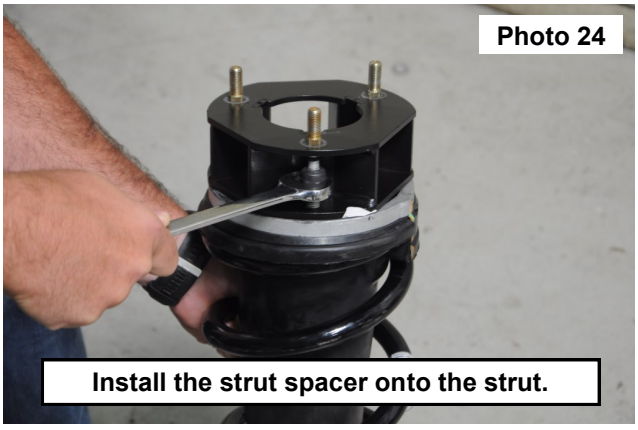
29. Install the 10mm studs into the smaller holes in the strut spacer, using the supplied 1/2” jam nut to slide over each stud to act as a spacer allowing you to pull the stud through the hole with the 10mm hex nut and a 17mm wrench, locking the stud into place. Remove sleeve and repeat on the other five studs. **See Photo 23.**
30. Install the strut spacer on top of the factory strut, secure using the OE nuts, Torque to 45 ft-lbs. using an 18mm wrench. **See Photo 24.**
31. Remove the linkage rod off of the upper control arm ball stud. **See Photo 25.**

Photo 23



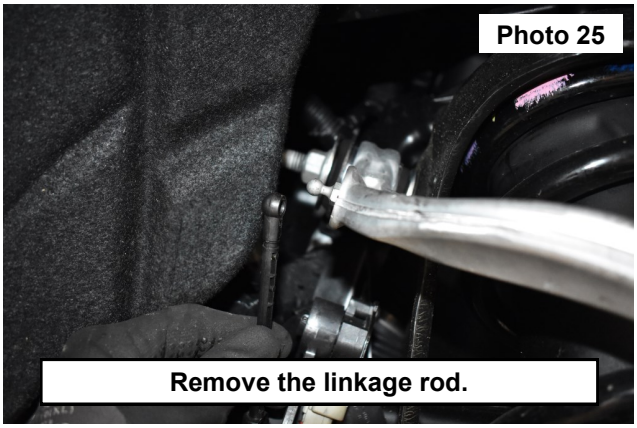
Install the studs on the strut spacer.

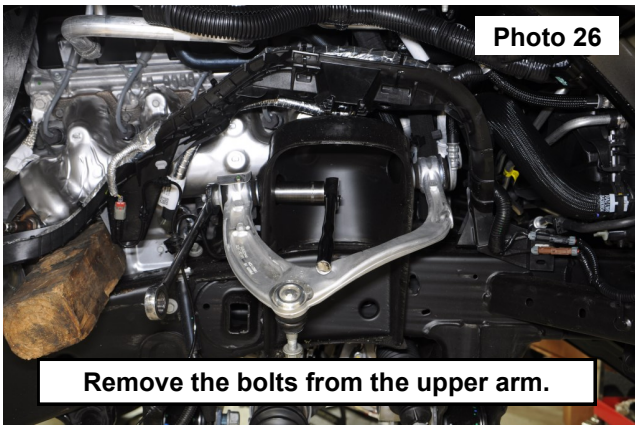
Photo 24



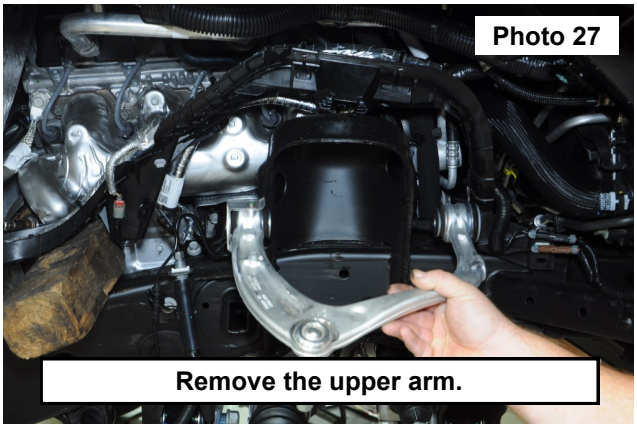
Install the strut spacer onto the strut.

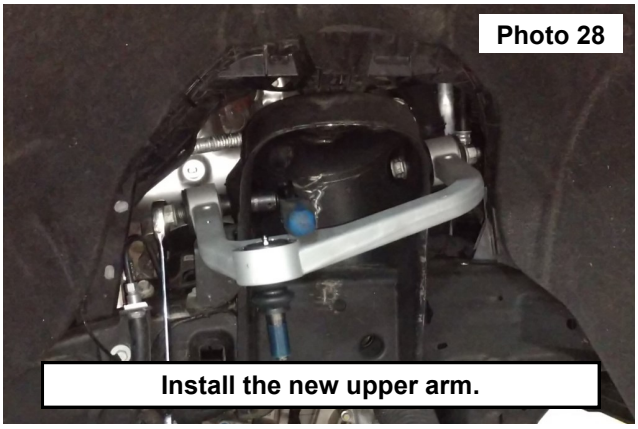
32. Mark the location of the upper control arm. Remove the 2 bolts and nuts from the upper control arm, use a 21mm socket and wrench. **See Photo 26.** Save for reuse.
33. Remove the upper control arm from the vehicle. **See Photo 27.**



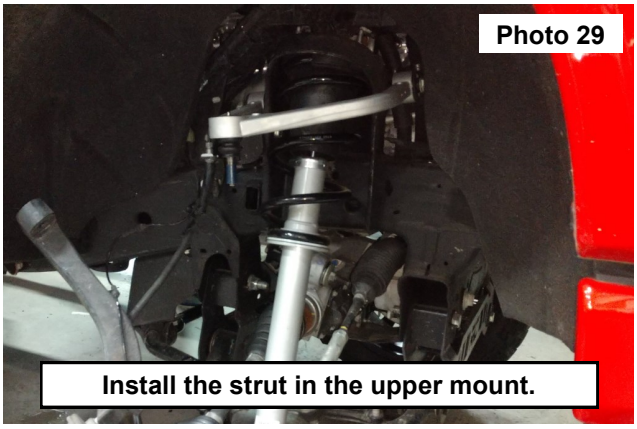


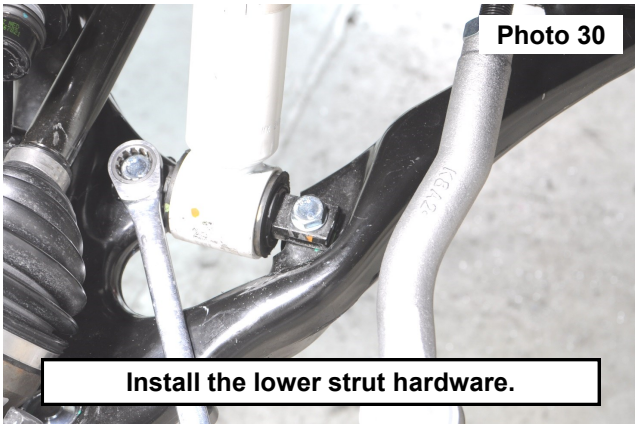
34. Install the new supplied upper control arm in the stock location, using the OE hardware, align the marks made in step 27. Torque to 80 ft-lbs, using a 21mm socket and wrench. **See Photo 28.**
35. Install the strut into the factory mount on the frame, use the supplied nuts, flat washers, and lock washers



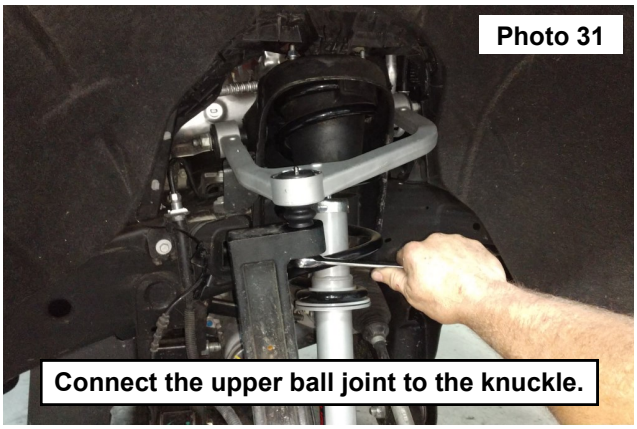


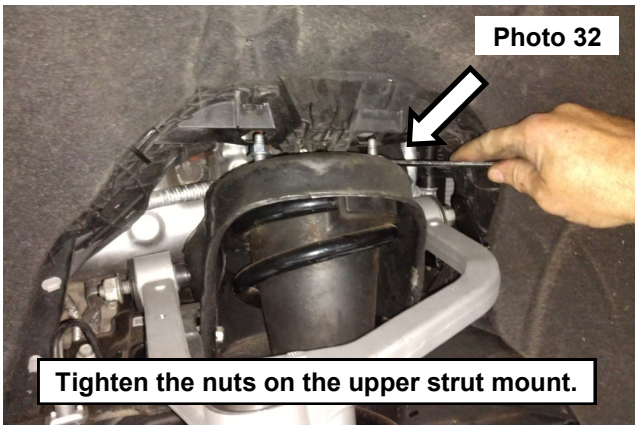
(10MMSTUDBAG-2). **See Photo 29.** Hand tighten only.
36. Use a flat screwdriver to remove the factory clip nuts from the lower strut bar pin.
37. Attach the lower strut mount to the lower control arm using the supplied 10mm x 65mm, washers, and nylock nuts. **Bolts will go in from the top. See Photo 30.**



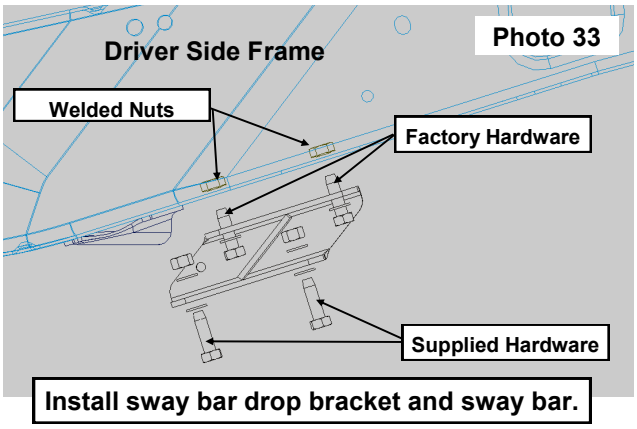


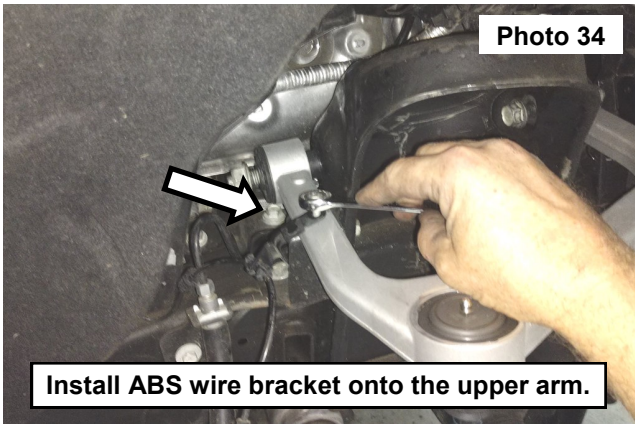
38. Connect the upper control arm to the knuckle, using the supplied nut and cotter pin, Torque to 40 ft-lbs. using a 18mm socket. **See Photo 31.**
39. Attach the brake line bracket to the upper control arm using the OE bolt. Tighten using a 10mm socket.
40. Torque the 3 upper strut nuts 32 ft-lbs, using a 17mm socket. **See Photo 32.**



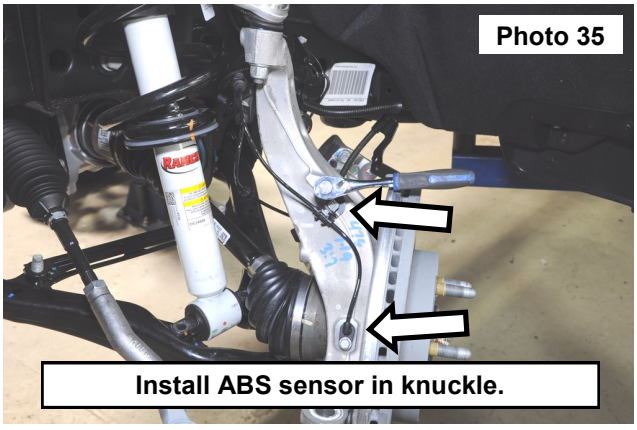


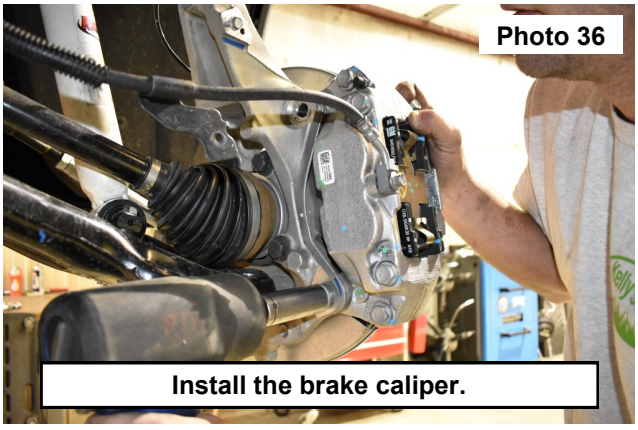
41. Install the sway bar drop bracket in the factory location with the factory hardware. Install the sway bar to the bottom of the bracket using the supplied 10mm x 35mm bolts, nuts, and washers. Attach the sway bar link to the lower control arm using factory hardware. Tighten with a 16mm and 18mm socket. **See Photo 33.**
42. Install the ABS sensor wire bracket onto the upper control arm using the OE bolt. Tighten using a 10mm socket. **See Photo 34.**





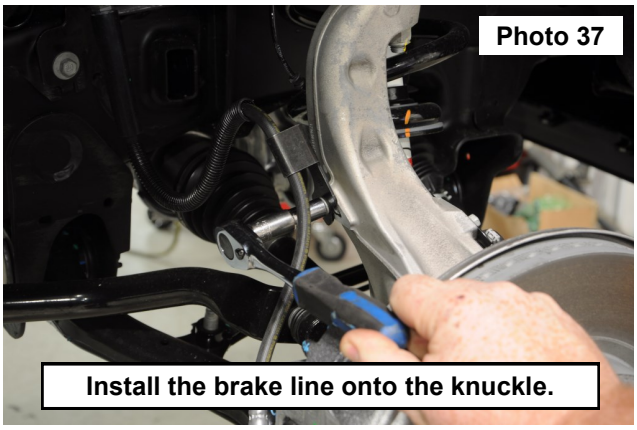
43. Attach the ABS sensor to the knuckle using the factory hardware. Tighten using a 10mm socket. **See Photo 35.**
44. Install the brake caliper onto the rotor and secure using the retained bolts. Torque the caliper bolts to 130 ft-lbs. using an 18mm socket. Install the brake line onto the knuckle using the retained bolt. Tighten using a 10mm wrench.

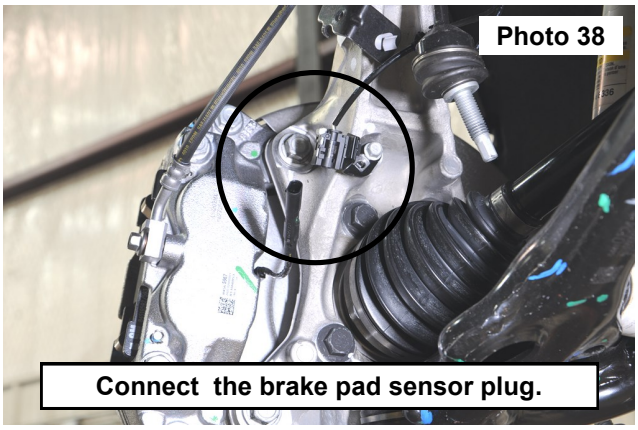




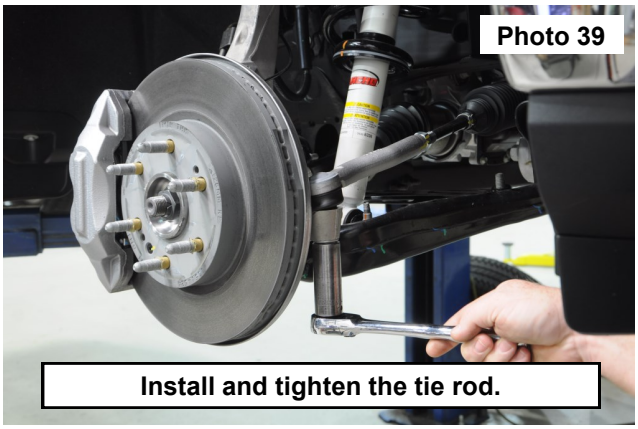
See Photo 36.

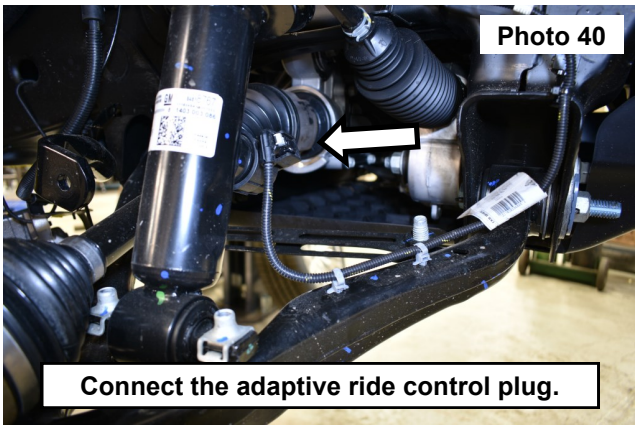
45. Attach brake line to the knuckle using the factory hardware. Tighten using a 10mm socket. **See Photo 37.**



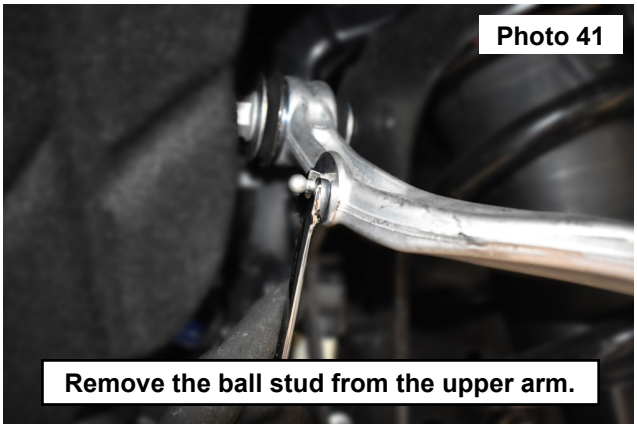


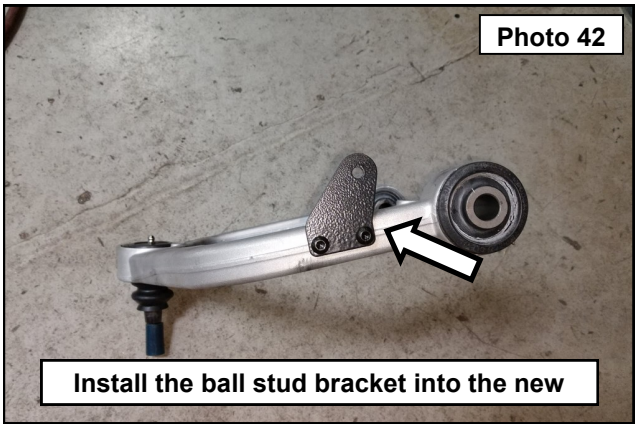
46. Plug up the brake pad wear sensor. **See Photo 38.**
47. Install the wiring harness over the strut mount on top of the frame, tighten using a 13mm socket.
48. Install the tie rod onto the knuckle, Torque to 32 ft-lbs. using a 21mm socket. **See Photo 39.**





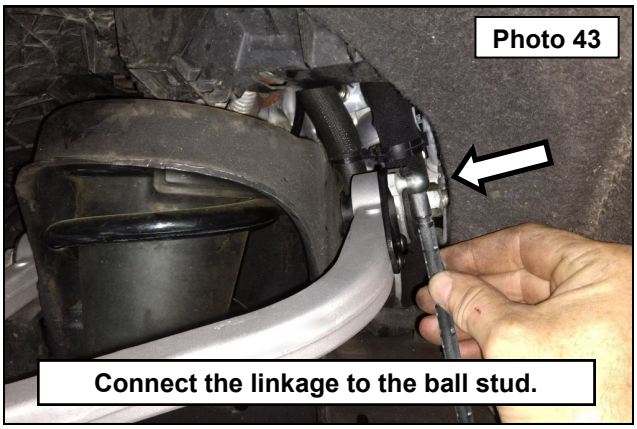
49. Connect the adaptive ride control plug onto the lower strut. **See Photo 40.**
50. Remove the ball stud from the upper control arm, using a 10mm wrench. **See Photo 41.**
51. Install the bracket onto the control arm using 2 of the supplied 6mm-1.0 x 14mm button head bolts. Tighten using a

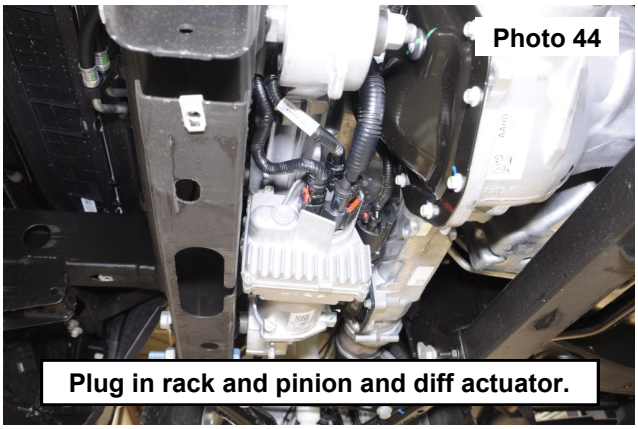




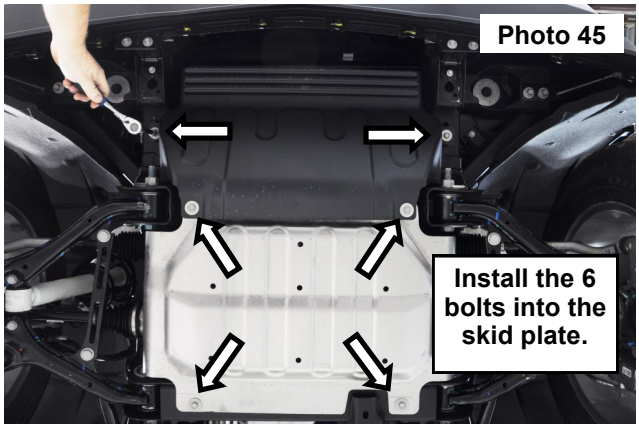
4mm allen wrench. **See Photo 42.**

52. Install the ball stud into the mount on the new upper control arm, using the supplied M6 x1.0 nylock nut (29600BAG) tighten using a 10mm wrench. Connect the linkage onto the ball stud on the control arm. **See Photo 43.**





53. Reconnect the plugs to the rack and pinion and the differential actuator. **See Photo 44.**
54. Install the skid plates onto the original mounts on the vehicle, secure using the 6 factory bolts. Tighten using a 15mm



socket. **See Photo 45.**

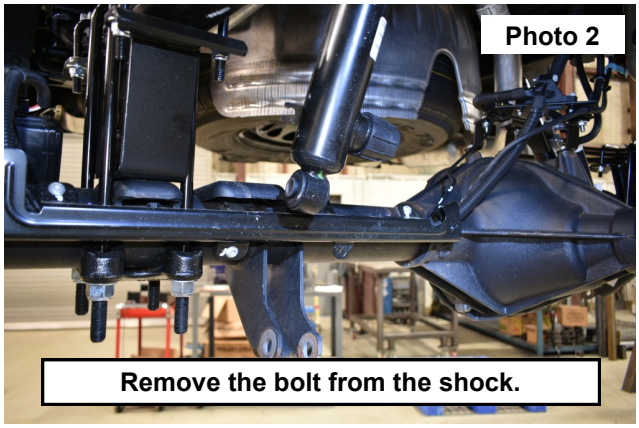
55. Install the wheels and tires. Tighten using a 22mm socket.
56. Jack the vehicle up, remove the jack stands and lower onto the ground.
57. Remove the wheel chocks from the rear of the vehicle.
58. The front-end will need to have an alignment.

⚠WARNING Take caution when installing the wheels, making sure they completely clear the brake caliper. Any pressure on the brake caliper from the wheel will cause an error in the brake system. The braking system will not function properly. The vehicle will have to be reset by a GM dealership.

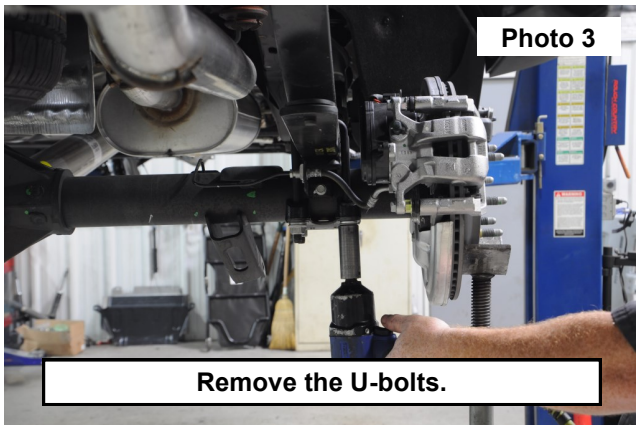
REAR INSTALLATION INSTRUCTONS

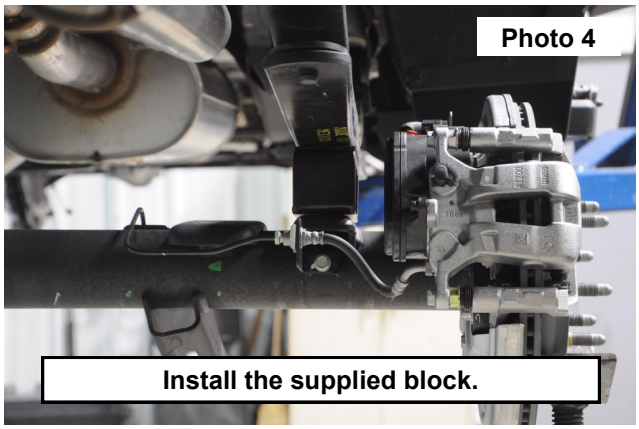
1. Park the vehicle on a level surface and chock the front wheels.
2. Jack up the rear of the vehicle. Place jack stands under the frame rails and lower onto jack stands letting the rear suspension hang. Place a jack under the rear differential.
3. Remove the tires and wheels using a 22mm socket.
4. Unplug the adaptive ride control plug from both rear shocks. **See Photo 1.**
5. Remove the bolt from the shock on the axle, using a 21mm wrench and socket. **See Photo 2.** Save hardware for reuse.



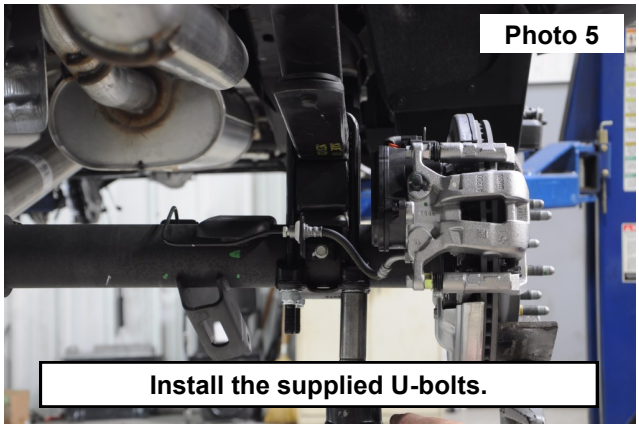


6. Place a jack under the rear axle, remove the 2 U-bolts from around the leaf spring, use a 21mm socket. **See Photo 3. Save the U-bolt plate for reuse.** The U-bolts and nuts will not be reused.
7. Lower the jack down and install the supplied block, with the tallest height to the rear of the vehicle. **See Photo 4.**
8. Lift the axle up to seat the leaf spring pin into the rear block.





9. Install the supplied U-bolts and nuts onto the leaf spring. Torque the U-bolts to 90 ft-lbs. using a 22mm socket. **See Photo 5.**

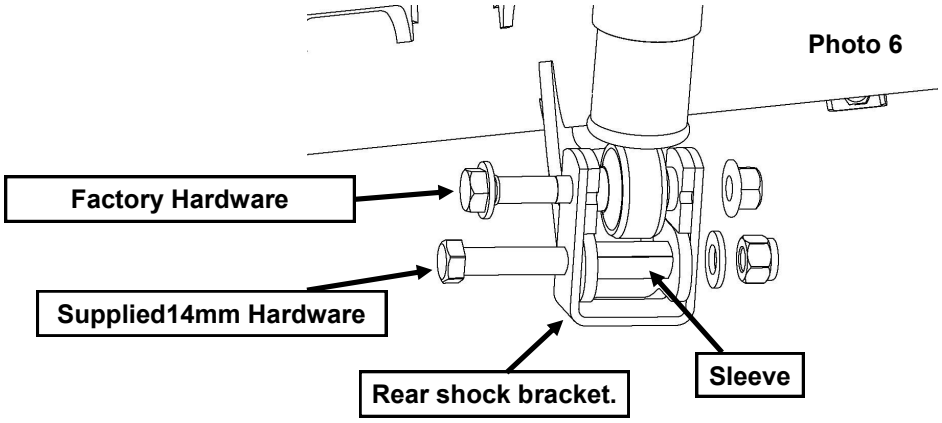


10. Using the supplied sleeves, bolts, washers, and nuts from 1189BAG2, install the shock relocation brackets. Connect the adaptive ride control plug back to the rear shocks. **See Photo 6.**
11. Torque the shock mounting bolts to 85ft-lbs using a 21mm wrench and socket.
12. Install the rear wheels and tires, tighten using a 22mm socket.

⚠WARNING Take caution when installing the wheels, making sure they completely clear the brake caliper. Any pressure on the brake caliper from the wheel will cause an error in the brake system. The braking system will not function properly. The vehicle will have to be reset by a GM dealership.

15. Lift up the vehicle, removing the jack stands. Lower the vehicle onto the ground.
16. Remove the front wheel chocks.

Photo 6



POST INSTALLATION INSTRUCTIONS

1. Check all fasteners for proper torque. Check to ensure for adequate clearance between all rotating, mobile, fixed, and heated members. Verify clearance between exhaust and brake lines, fuel lines, fuel tank, floor boards and wiring harness. Check steering gear for clearance. Test and inspect brake system.
2. Perform steering sweep to ensure front brake hoses have adequate slack and do not contact any rotating, mobile or heated members. Inspect rear brake hoses at full extension for adequate slack. Failure to perform hose check/ replacement may result in component failure.
3. On some vehicles the front lower skirting will need to be trimmed if using certain wheel /tire combinations and with heavy offset wheels. Trim only as needed.
4. Activate four wheel drive system and check front hubs for engagement.
5. Have a qualified alignment center align the vehicle immediately. Realign to factory specifications. The following are the recommended specifications:

Caster in degrees	4.0 +-1.0
Camber in degrees	-.4 +-.8
Toe In in degrees	0.1 +-.2

6. Perform head light check and adjustment to proper settings.
7. Check and retighten wheels at 50 miles and again at 500 miles.
8. All kit components must be retightened at 500 miles and then every three thousand miles after installation. Periodically check all hardware for tightness.
9. Install “Warning to Driver” decal on sun visor

Note: Installation of larger tires will require speedometer recalibration.

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