TRAIL FORTRESS

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Rough Country 29501 Installation Instructions

Greasable Forged Aluminum Upper Control Arms (3–3.5in Lift)

Part number: 29501

trailfortress.com/greasable-forged-aluminum-upper-control-arms-3-3-5in-lift-rough-country-29501

Scan for fitment, price and install help

ROUGH COUNTRY SUSPENSION SYSTEMS®

29501BAG1

GM 2019 1500 Forged Aluminum Upper Arms

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.

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.

Tools Needed:

Floor Jack
Jack Stands
Hammer
Ratchet
10mm socket /wrench
13 mm socket/wrench
15mm socket / wrench
17mm socket/wrench
18mm socket /wrench
21mm socket /wrench

Torque Specs:

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

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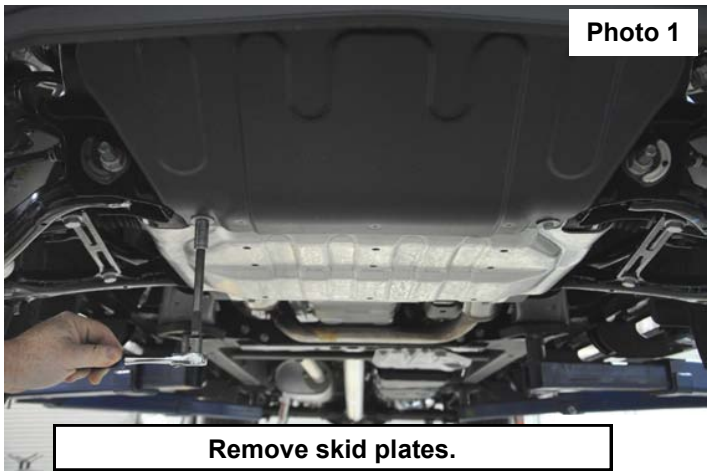
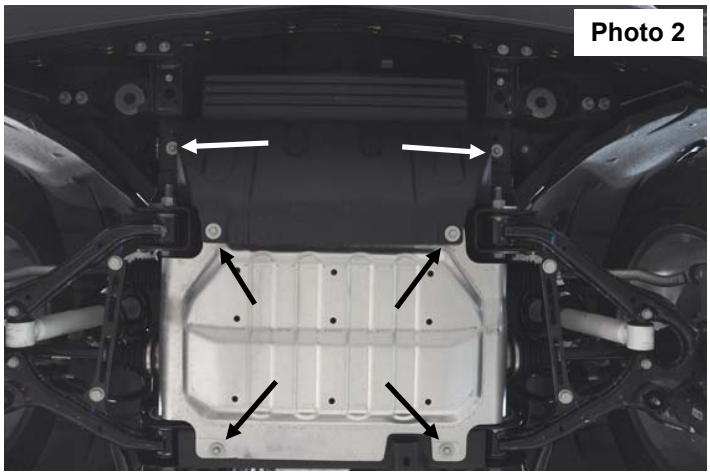
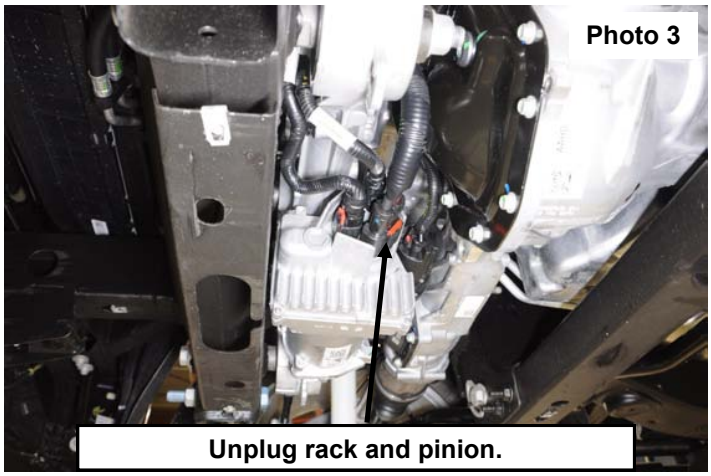
FRONT INSTALLATION

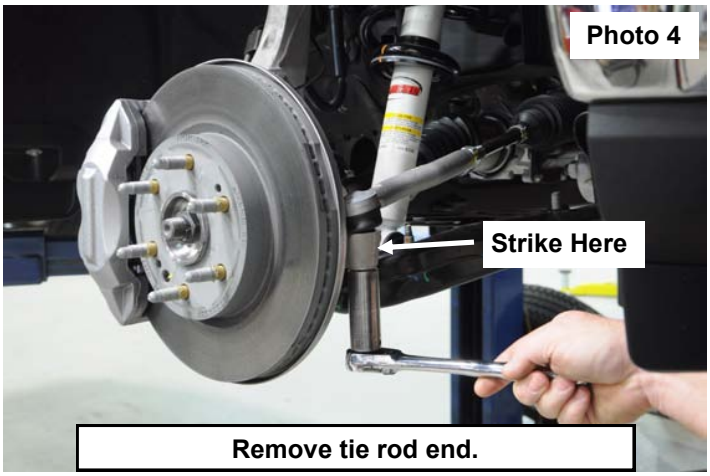
1. Park the vehicle on a level surface and chock the rear wheels. Lock the steering wheel in the straight position.
2. Jack up the front of the vehicle. Place jack stands under the frame rails and lower onto jack stands letting the front sus pension hang.
3. Raise the hood and disconnect the battery using a 10mm socket.
4. Remove the tires and wheels.
5. Remove the 6 bolts holding the factory skid plates, using a 13mm socket. **See Photos 1 & 2.** Retain for later use.



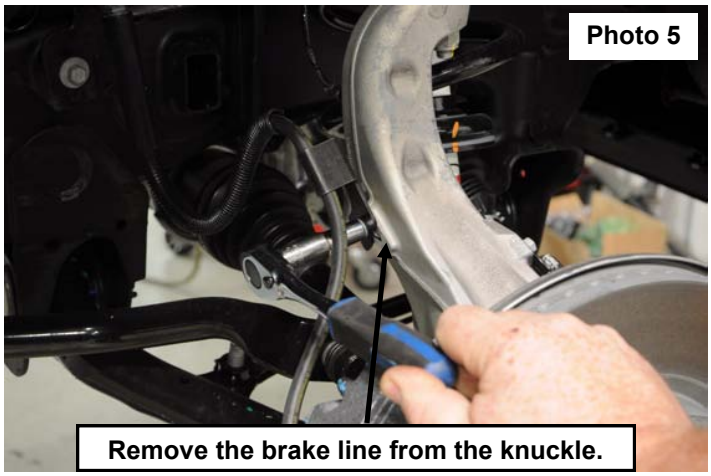


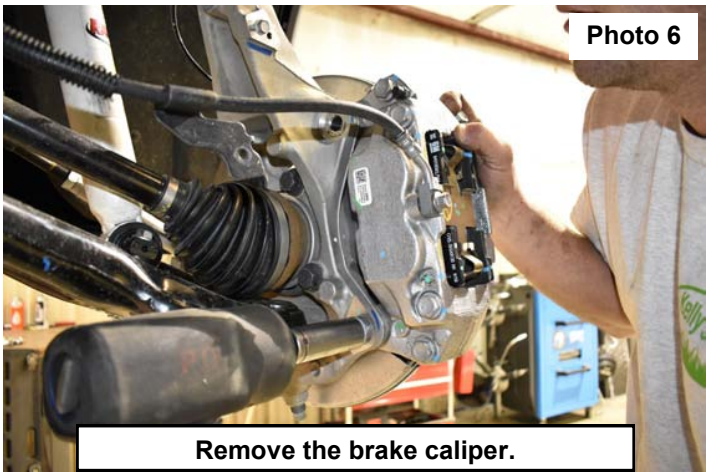
6. Unplug the three connectors going to the rack and pinion. **See Photo 3**.
7. Using a 21mm socket, remove the tie-rod nut as shown in **Photo 4**. Using a hammer, strike the front of the mount to dislodge the tie rod end. Remove from the knuckle.



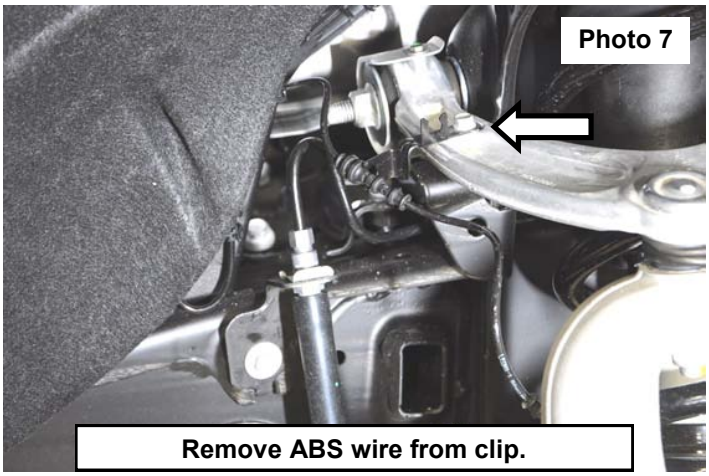


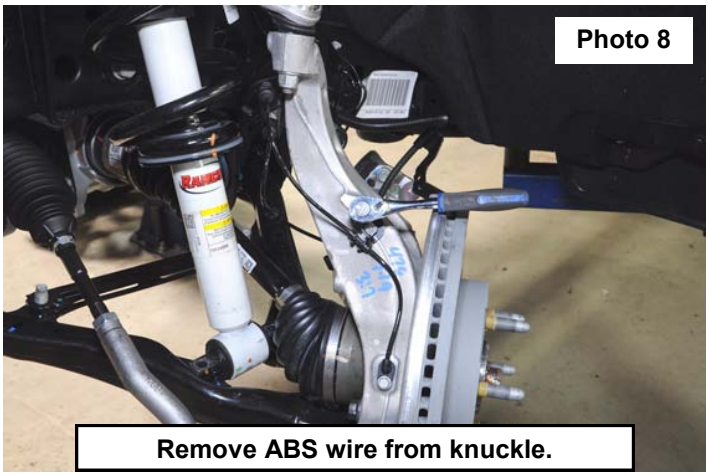
8. Unplug the brake pad sensor wire on the drivers side of the vehicle.
9. Remove the brake line from the knuckle using a 10mm socket. Retain hardware for reuse. **See Photo 5.**
10. Remove the brake caliper using a 18mm socket. Retain the bolts for reuse. **See Photo 6.** Hang caliper out of harms way. Do not hang by the brake line.



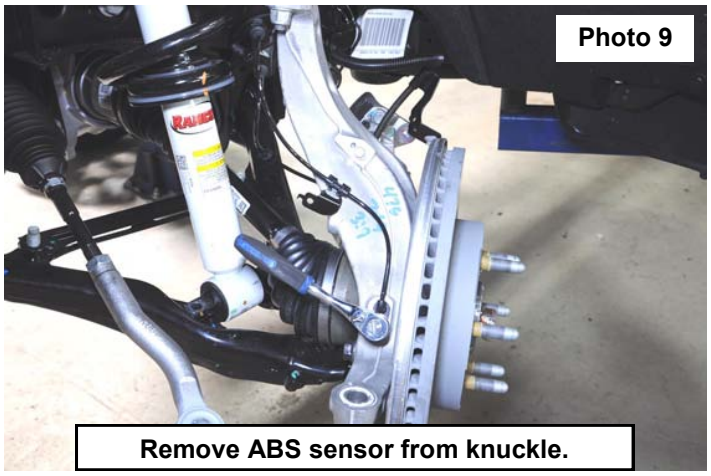


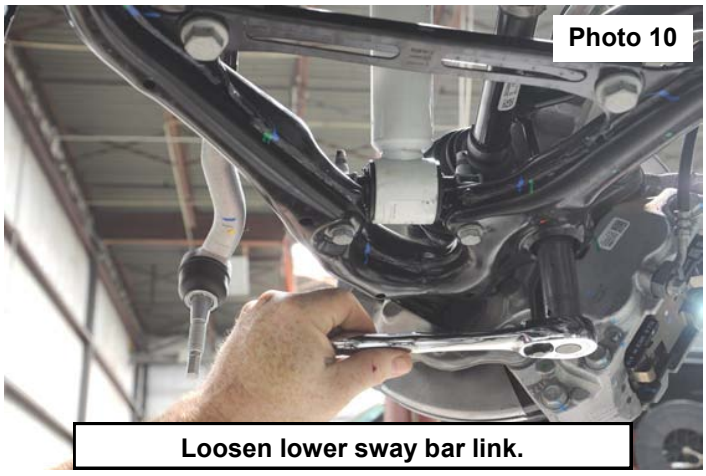
11. Remove the ABS wire clip on the upper control arm mount using a 10mm socket. Retain hardware for reuse. **See Photo 7.**
12. Using a 10mm socket, remove the ABS wire bracket from the knuckle. Retain hardware. **See Photo 8.**



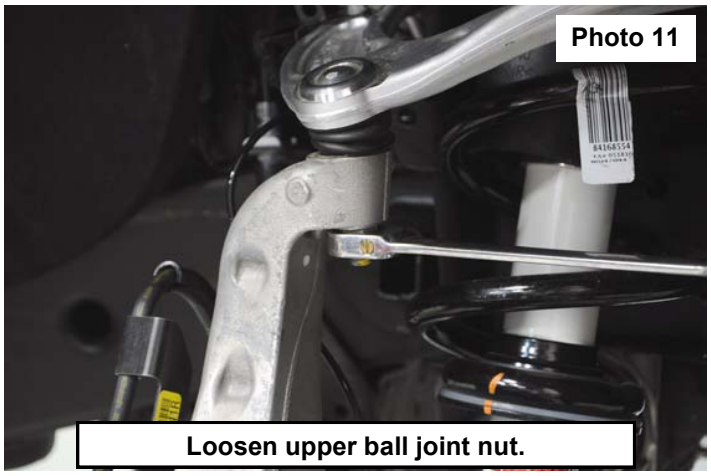


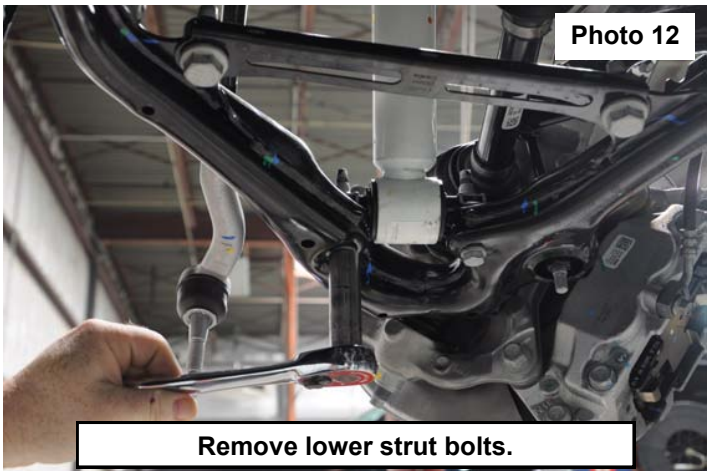
13. Using a 10mm socket, remove the ABS sensor from the knuckle. Retain hardware and hang ABS wire out of the way. **See Photo 9.**
14. Remove the lower sway link nut using an 18mm socket. Retain hardware. **See Photo 10.**



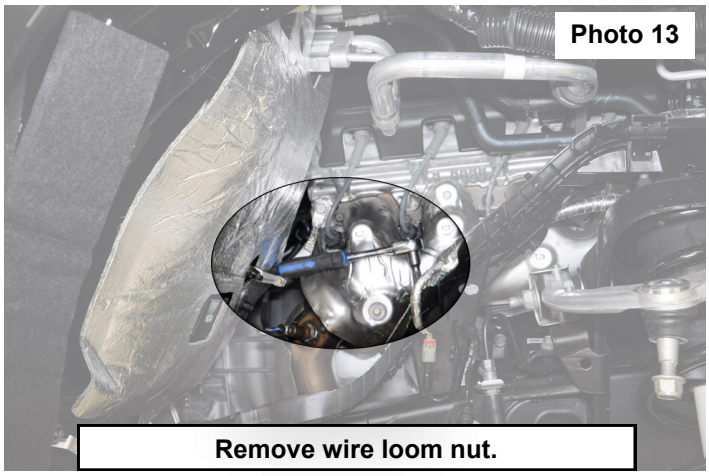


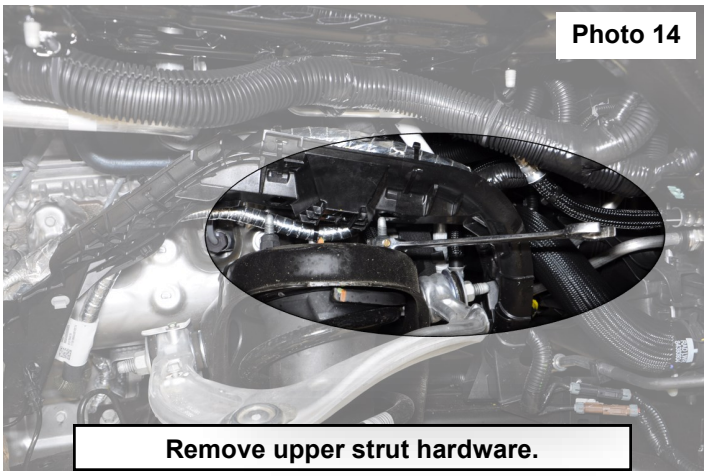
15. Using an 18mm wrench, loosen the upper ball joint nut. Do not completely remove the nut. Strike the knuckle with a hammer to release the ball joint taper. **See Photo 11.**
16. Support the lower control arm then remove the upper ball joint nut and relax the knuckle to the rear of the vehicle.
17. Using a 15mm socket, remove the lower strut mounting bolts. **See Photo 12.**



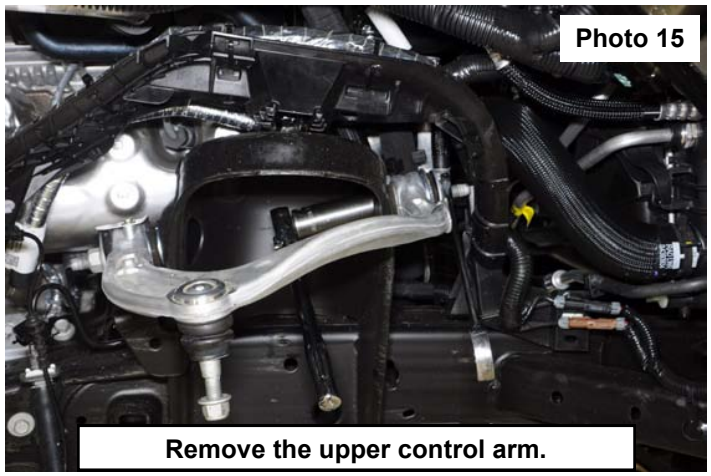


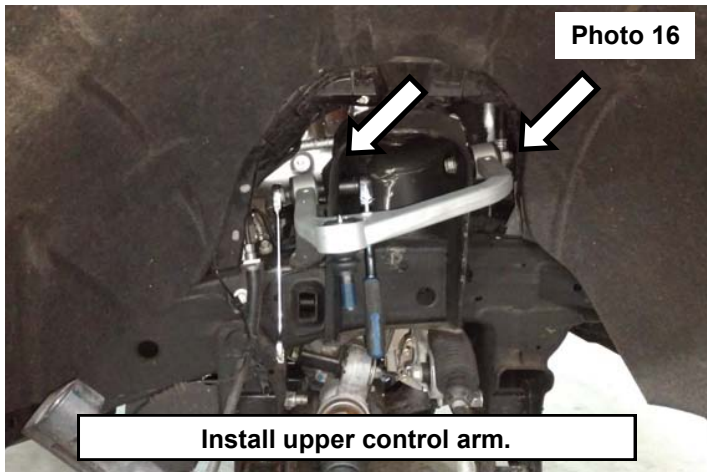
18. On the passenger side, use a 13mm socket to remove the bolt holding the plastic wire loom that is attached to the frame and the upper strut tower. Retain hardware. (Inner fender was removed for pictures) **See Photo 13.**
19. Using an 18mm wrench, remove the upper strut nuts. Retain hardware. Remove the strut from the vehicle. **See Photo 14.**



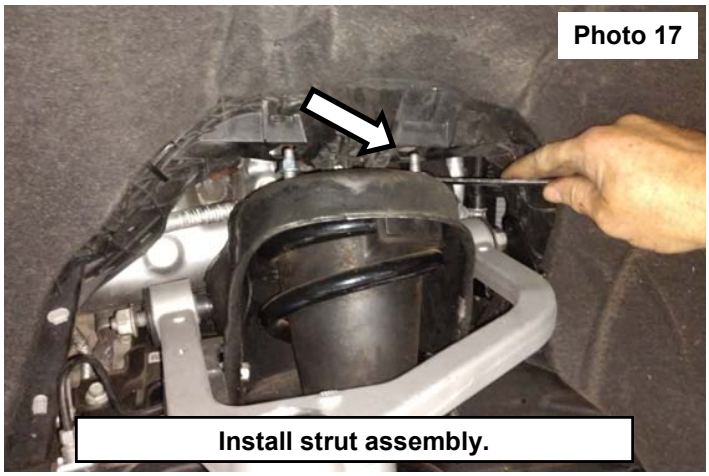


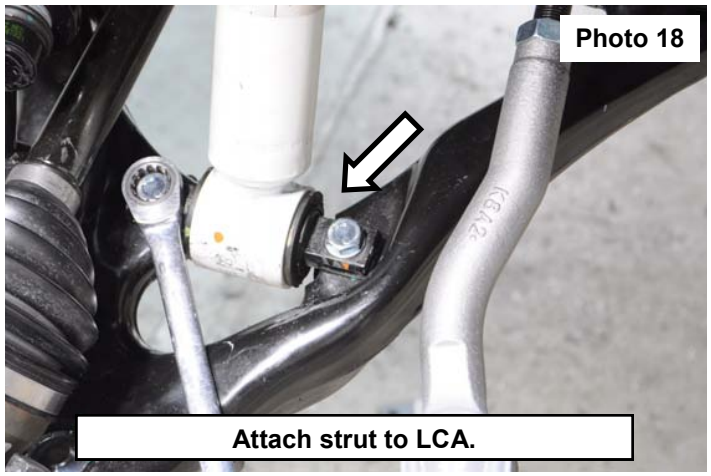
20. Using a 21mm socket and wrench, remove the upper control arm from the vehicle Retain hardware. **See Photo 15.**
21. Install the supplied upper control arm using the factory hardware. Torque to factory specs using a 21mm socket and wrench. **See Photo 16.**



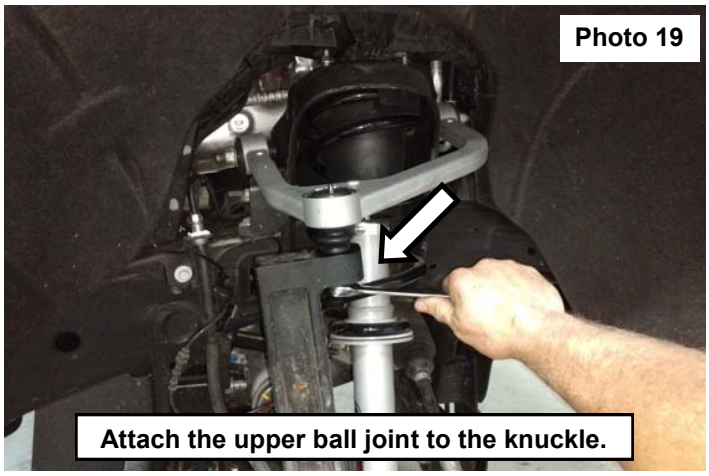


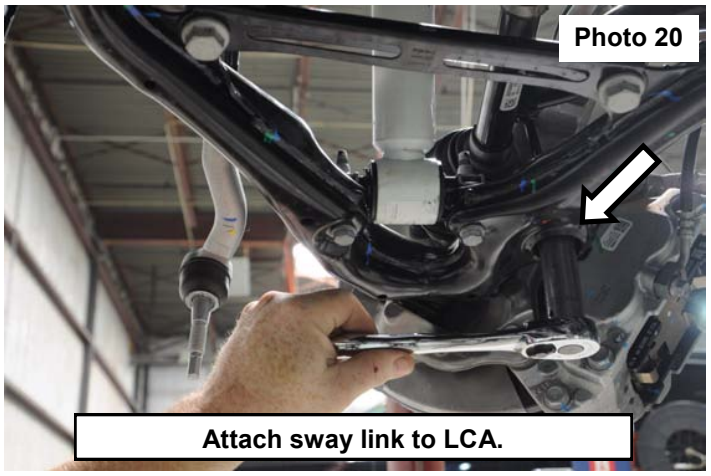
22. Install the strut into the upper mount. Tighten using a 17mm wrench. **See Photo 17.**
23. Attach the lower strut mount to the lower control arm. **Bolts will go in from the top. See Photo 18.**





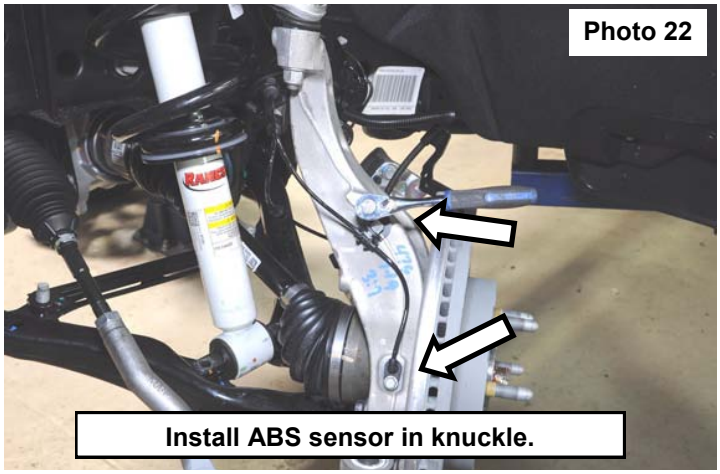
24. Raise the knuckle upright and connect the upper ball joint into the knuckle using the supplied nut to secure. Tighten using a 18mm wrench. **See Photo 19.**
25. Attach the sway bar link to the lower control arm using the factory hardware. Tighten using an 18mm socket. **See Photo 20.**



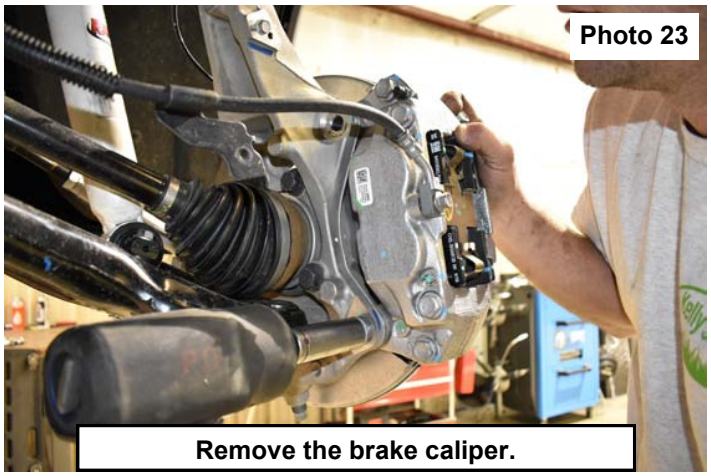


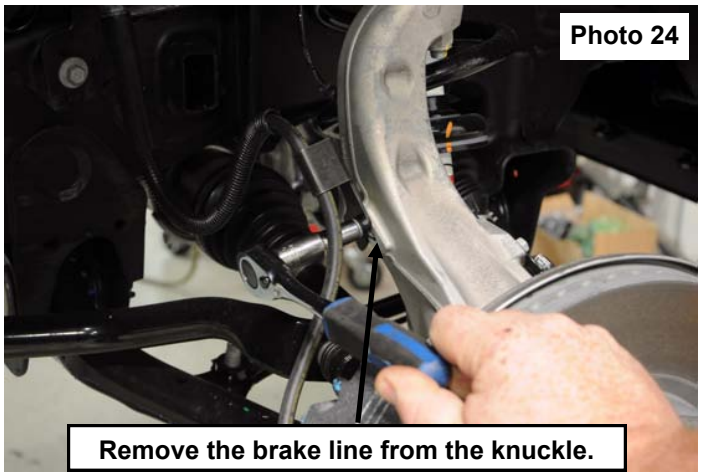
26. Attach the ABS line bracket to the top of the new arm in the OE location using the retained hardware. Tighten using a 10mm wrench. **See Photo 21.**
27. Attach the ABS sensor to the knuckle using the factory hardware. Tighten using a 10mm socket. **See Photo 22.**



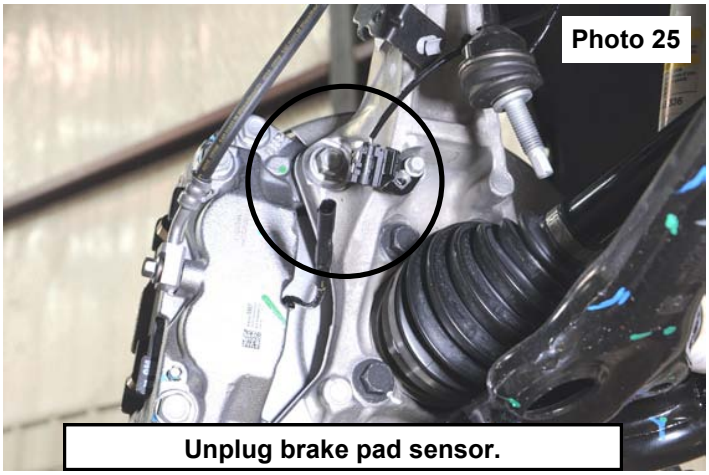


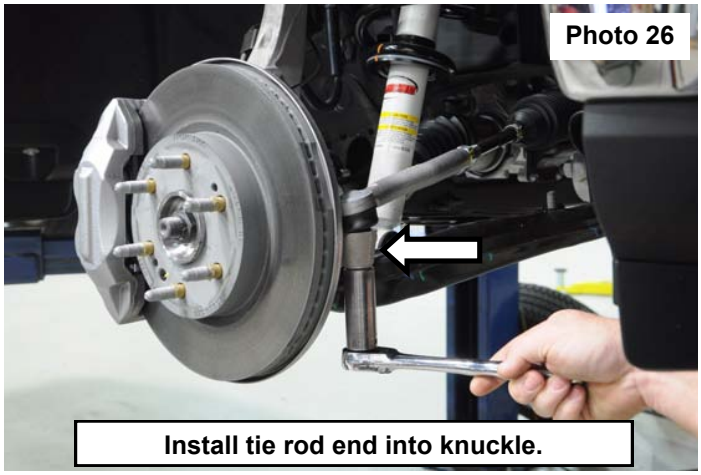
28. Install the brake caliper onto the rotor and secure using the retained bolts. Torque the caliper bolts to 130 ft-lbs. using an 18mm socket. Install the brake line onto the knuckle using the retained bolt. Tighten using a 10mm wrench. **See Photo 23.**
29. Attach brake line to the knuckle using the factory hardware. Tighten using a 10mm socket. **See Photo 24.**



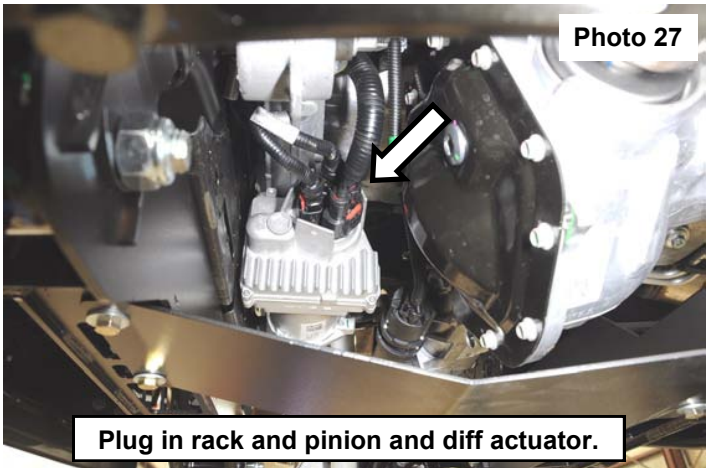


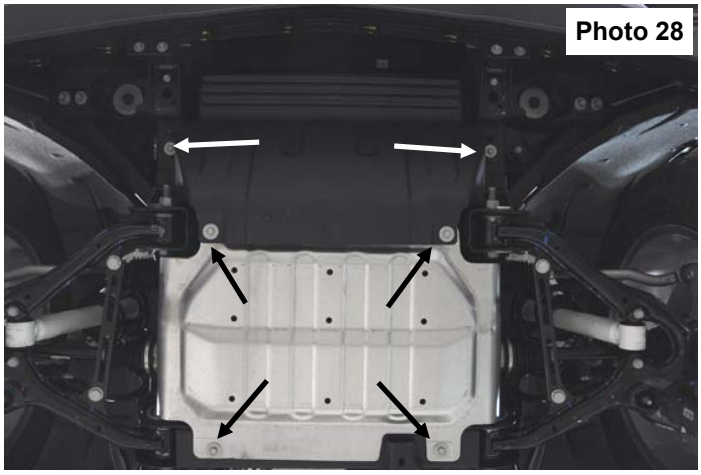
30. Plug up the brake pad wear sensor. **See Photo 25.**
31. Attach the tie rod end to the knuckle using factory hardware. Tighten using a 21mm wrench. **See Photo 26.**





32. Repeat steps 7-26 on the opposite side of the vehicle.
33. Reconnect the plugs to the rack and pinion and the differential actuator. **See Photo 27.**
34. Install the factory skid plates using the retained hardware, using a 13mm socket. Torque to 32 ft-lbs. **See Photo 28.**





35. Install the wheels and tires.
36. Jack up the truck and remove the jack stands. Lower the truck to the ground.
37. Connect the battery cables to the battery.

⚠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.

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.

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

By purchasing any item sold by Rough Country, LLC, the buyer expressly warrants that he/she is in compliance with all applicable Federal, State, and Local laws and regulations regarding the purchase, ownership, and use of the item. It shall be the buyers responsibility to comply with all Federal, State and Local laws governing the sales of any items listed, illustrated or sold. The buyer expressly agrees to indemnify and hold harmless Rough Country, LLC for all claims resulting directly or indirectly from the purchase, ownership, or use of the items.