TRAIL FORTRESS

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Rough Country 21800 Installation Instructions

3.5-Inch Lift Kit for Air Ride Chevy Tahoe 4WD (2021–2024)

Part number: 21800

trailfortress.com/3-5-inch-lift-kit-air-ride-chevy-tahoe-4wd-rough-country-21800

Scan for fitment, price and install help



CHEVY 2021-24 TAHOE W/ AIR RIDE 3.5” LIFT KIT

Thank you for choosing Rough Country for your vehicle 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.

⚠NOTICE Trucks equipped with a mass damper on the front diff, the damper will have to be removed.

This kit is packaged as a leveling kit—raising the front 4” and the back 3.5”. If you desire a different look or if the vehicle has a tool box or added weight in the rear, please consult with your sales representative about other block and u-bolt options.

This suspension system was developed using a 285/60 tire with 20” x 9” wheel and a offset of –12mm. If wider tires are used trimming may be required.

⚠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

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Kit Contents

Front:
1 - Driver Side Upper Control Arm
1 - Passenger Side Upper Control Arm
2 - Front Upper Strut Spacer
1 - Dr. Side UCA Ride Height Sensor Relocation Bracket
1 - Pass. Side UCA Ride Height Sensor Relocation Bracket

Rear:
2 - Rear Strut Spacer
2 - Ride Height Sensor Relocation Bracket

Air Kit:
4 - Air Line Hose Brass Fitting
4 - 3” of 6mm OD x 3mm ID Air Hose
4 - 6mm Straight Union Connector

TOOLS NEEDED:
Jack
Jack Stands
12mm Wrench
10mm Wrench
21mm Wrench
18mm Wrench
15mm Wrench
4mm Allen Wrench
T15 Torx
13mm Wrench
24mm Wrench

Hardware Included

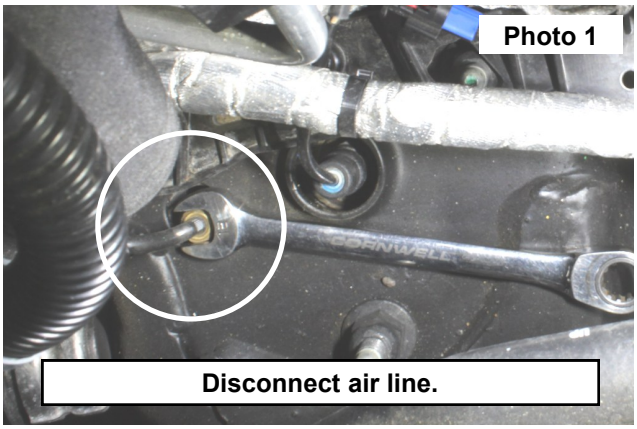
Front:
12 - 10mm Flange Nut
2 - 6mm Lock Nut
4 - 6mm x 14mm Button Head Allen Bolt

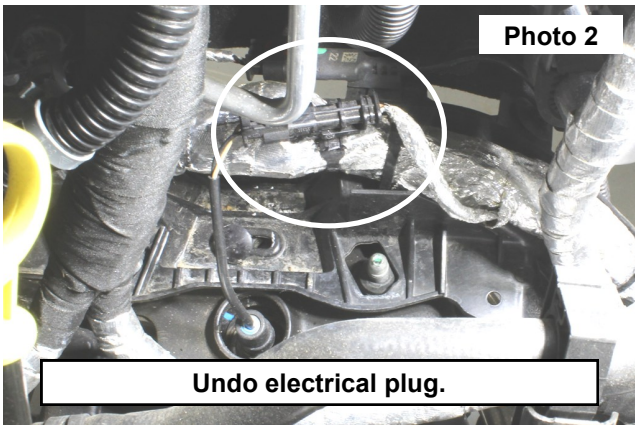
Rear:
12 - 10mm Flange Nut
2 - 6mm Lock Nut
4- 6mm x 14mm Button Head Allen Bolt
4 - 6mm Flat Washer



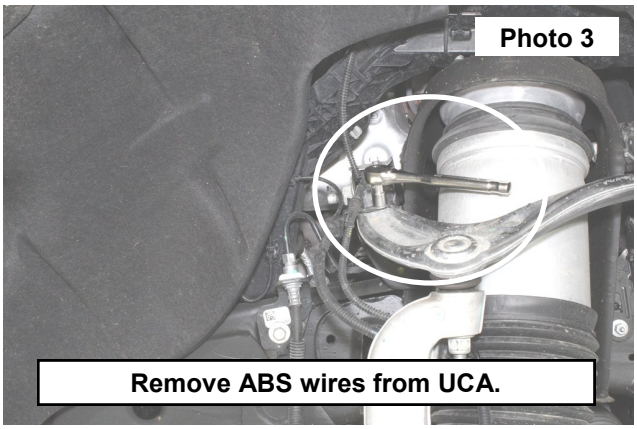
FRONT INSTALLATION INSTRUCTONS

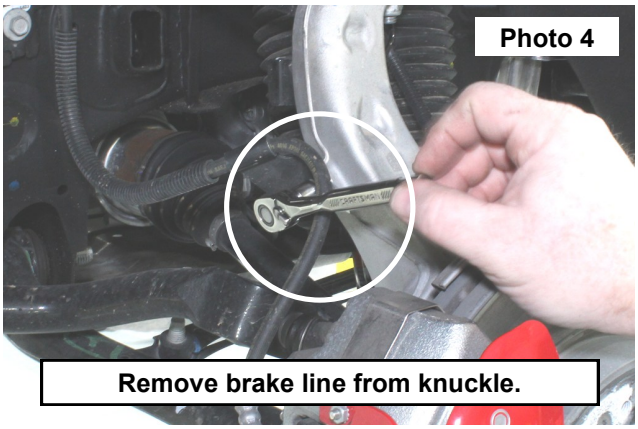
1. Follow factory instructions to place vehicle in service mode.
2. Lift vehicle with a jack and place on jack stands. Remove the wheels with a deep well socket.
3. **NOTE:** Instructions show the passenger side of the vehicle.
4. Disconnect air line from the top of the strut. **See Photo 1.** Disconnect air ride electric plug from top of strut. **See Photo 2.**



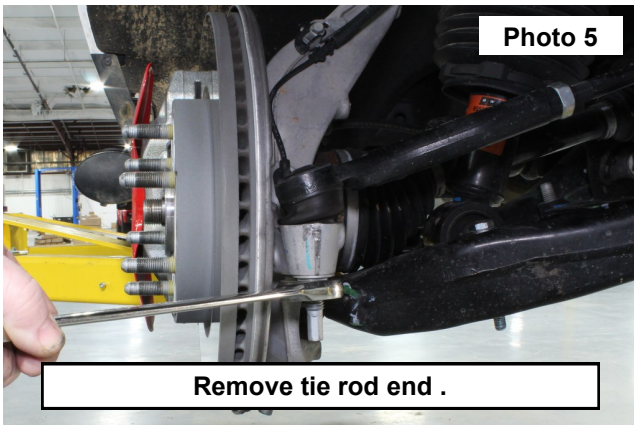


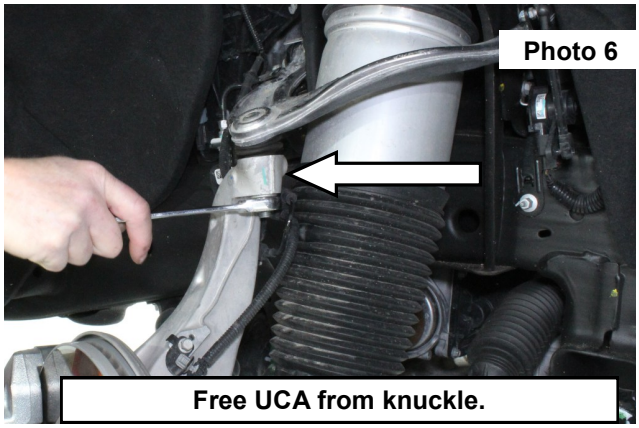
5. Use a 10mm wrench to remove the ABS wires from the upper control arm. Retain hardware for reuse. **See Photo 3.**
6. Use a 10mm wrench to remove brake line from the side of the knuckle. Retain hardware for reuse. **See Photo 4.**



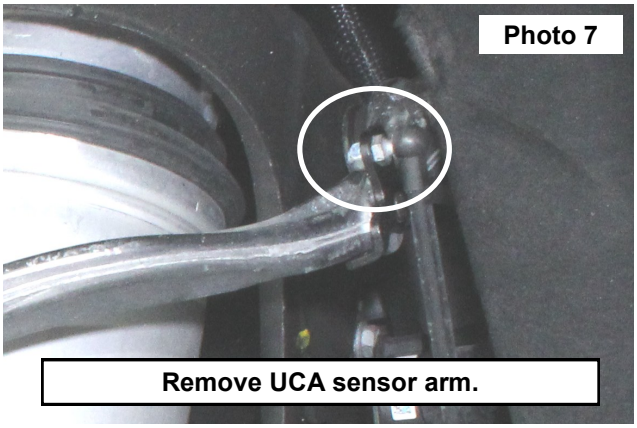


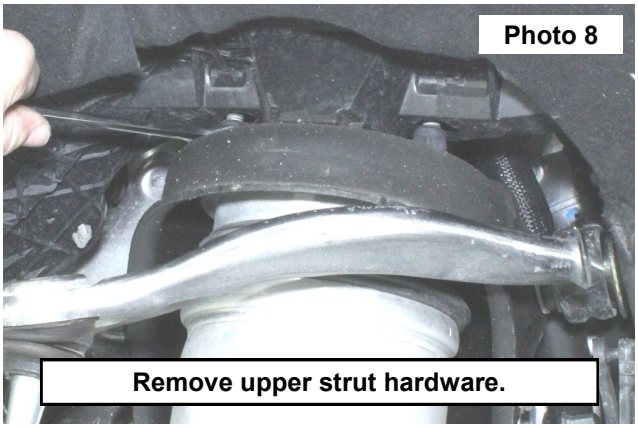
7. With a 21mm wrench, remove the nut securing the tie rod end. Retain hardware for reuse. **See Photo 5.**
8. Using an 18mm wrench, loosen the nut securing the upper ball joint. Do not remove at this time. Hit the knuckle with a hammer at the shown location to release the taper. Once the ball joint is free, remove the nut and separate the upper control arm from the knuckle. **See Photo 6.**



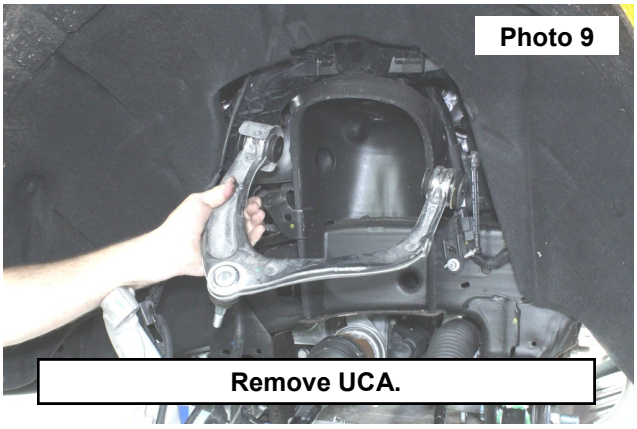


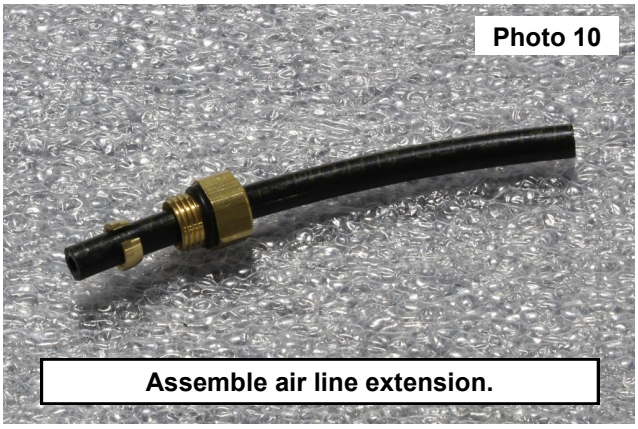
9. Remove the lower sway bar link nuts with an 18mm socket. Retain hardware for reuse.
10. Use a 15mm socket to release the lower strut hardware. Retain hardware for reuse.
11. Remove upper control arm sensor arm with a 10mm wrench. **See Photo 7.**
12. Remove upper strut hardware with an 18mm wrench and remove strut from vehicle. Retain hardware for reuse. **See Photo 8.**



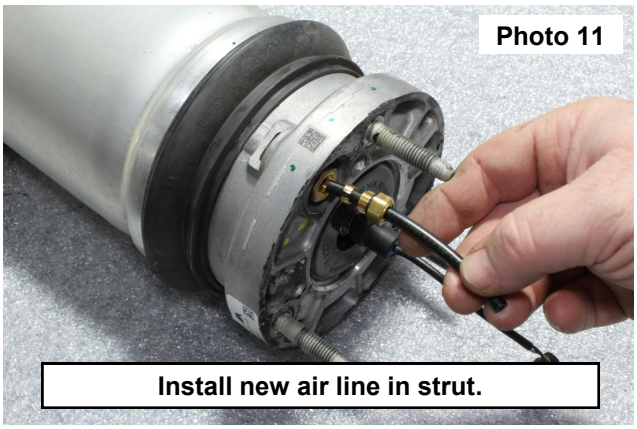


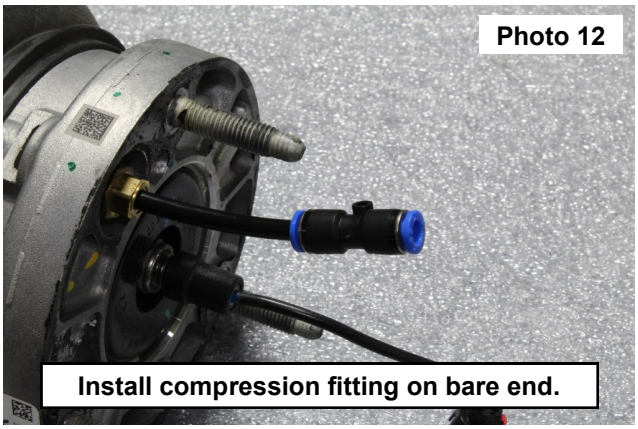
13. Use a 21mm wrench and socket to remove the upper control arm from the vehicle. Retain hardware for reuse. **See Photo 9.**
14. Cut the stock air line just above the ferrule fitting and remove the stock nut. Take the supplied 3” air line and assemble as shown with supplied hardware. Leave 3/8” of air line beyond the ferrule. **See Photo 10.**



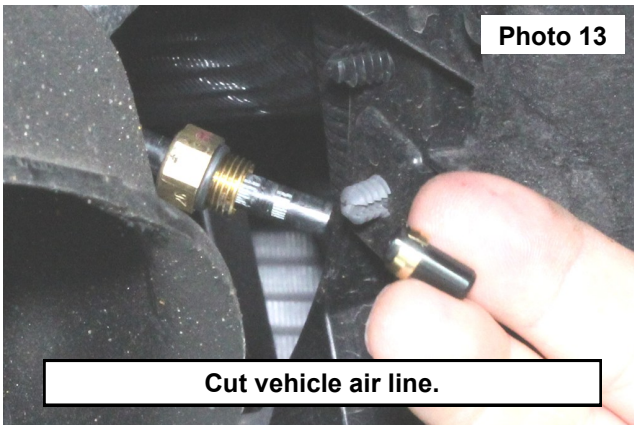


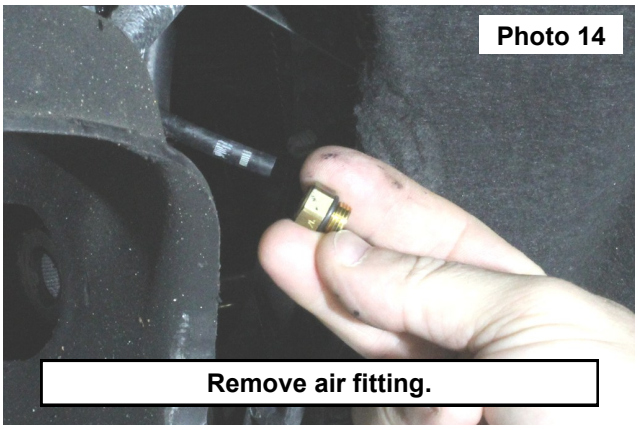
15. Push the new air line into the factory air fitting on the strut. Make sure the line is pushing against the valve inside the fitting and then tighten the new nut using a 12mm wrench. Install the compression fitting on the bare end of the air line. **See Photo 11 and Photo 12.**



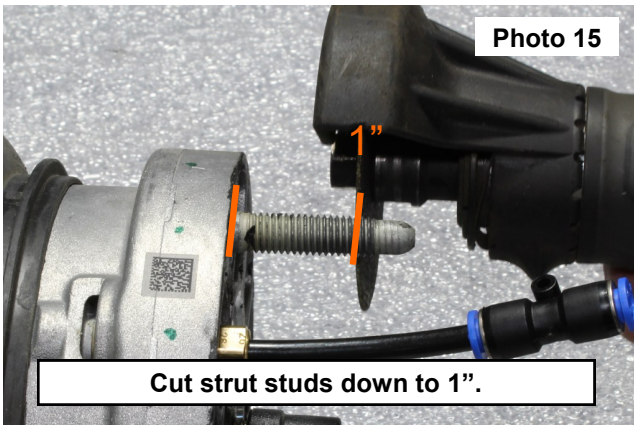


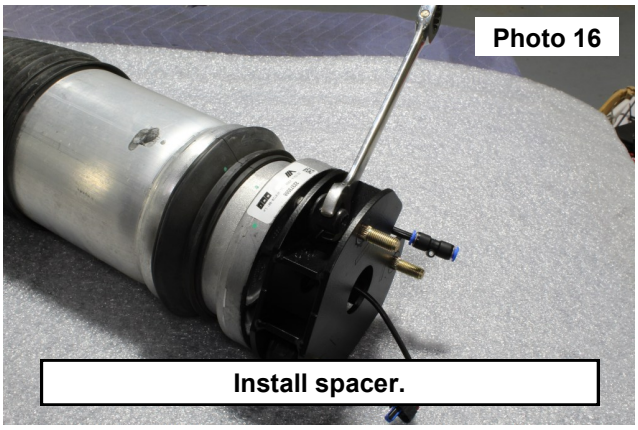
16. Measure 1/2” from the end of the vehicle air line and place bottom of ferrule at marked location. Make a cut with a razor blade at the top of the ferrule. **See Photo 13.**
17. Remove factory nut from air line. **See Photo 14.**



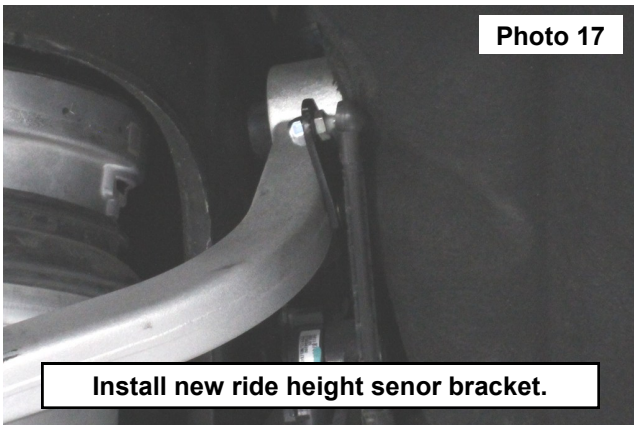


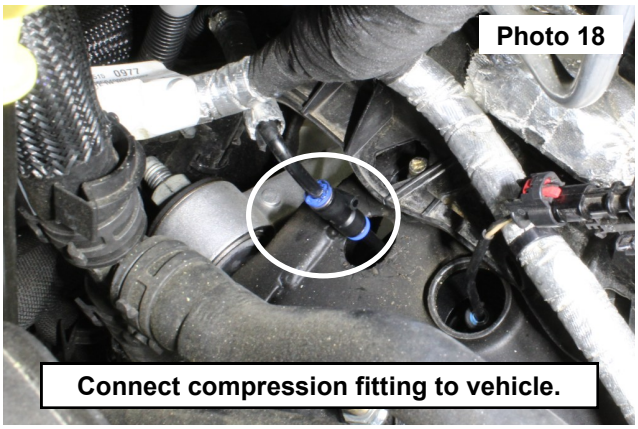
18. Cut the studs on the top hat of the strut so the studs are 1” long. **See Photo 15.**
19. Install the new spacer with the supplied 6mm flange nuts using a 15mm wrench. **See Photo 16.**





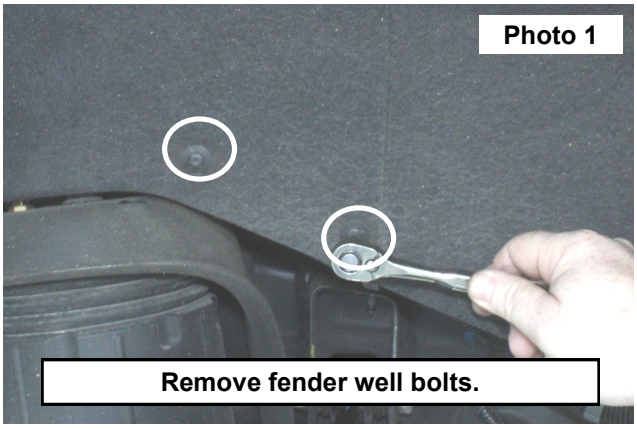
20. Install the new upper control arm using the factory hardware in reverse order of disassembly. Once the new control arm is installed, install the new passenger side ride height sensor arm bracket with the supplied 6mm button head Allen bolt. Tighten with a 4mm Allen wrench and 10mm wrench. **See Photo 17.**
21. Reinstall the strut to the vehicle with supplied 6mm flange nuts.
22. Connect the new compression fitting on the strut to the bare air line that was cut in Step 15. **See Photo 18.**
23. Reinstall remaining components in reverse order of disassembly.
24. Repeat steps for driver side.

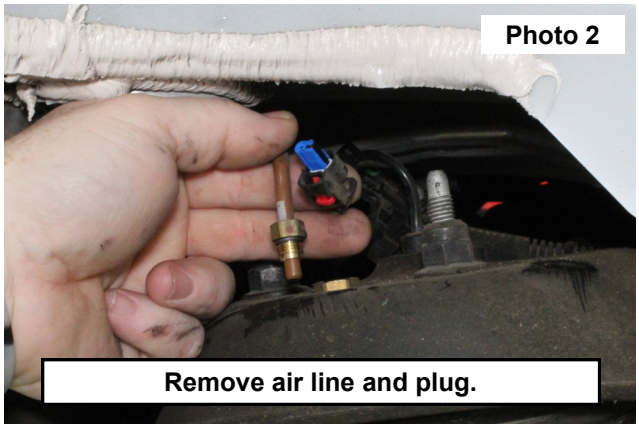




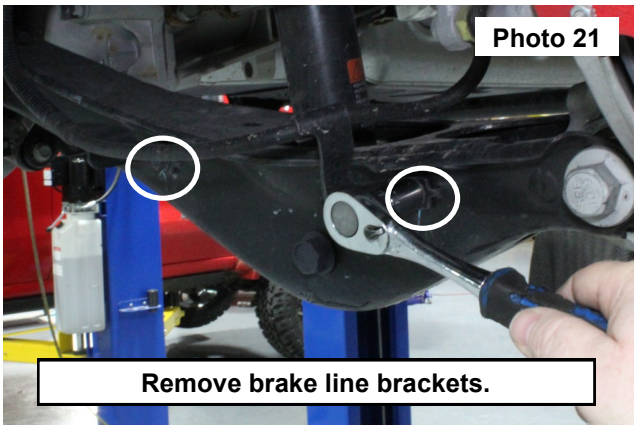
REAR INSTALLATION INSTRUCTONS

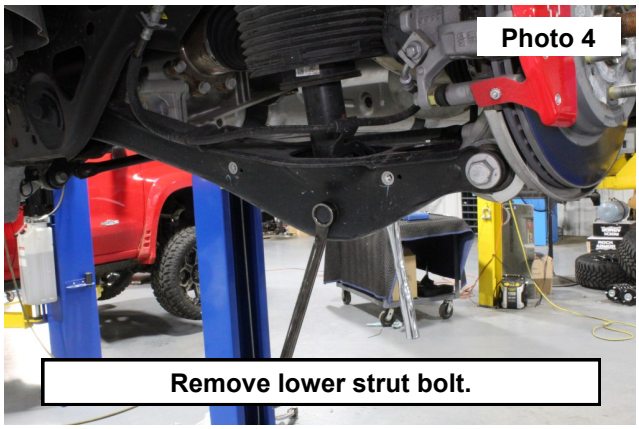
1. Follow factory instructions to place vehicle in service mode.
2. Lift vehicle with a jack and place on jack stands. Remove the wheels with a deep well socket.
3. Use a T15 torx to remove the inner fender well bolts to gain access to the top of the strut. **See Photo 1.**
4. Remove air line nut with a 12mm wrench and unplug the electrical connection. **See Photo 2.**



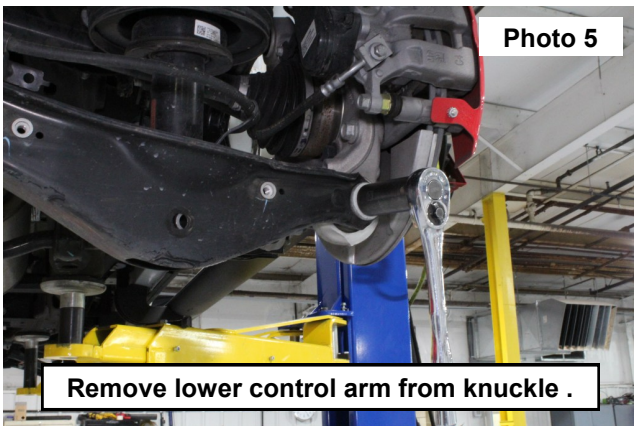


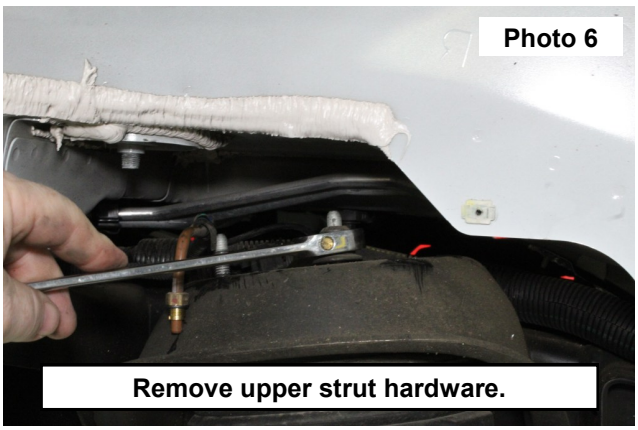
5. Remove the two brackets connecting the brake line to the control arm with a 13mm wrench. Retain hardware for re-use. **See Photo 3.**
6. Use a 21mm wrench and socket to remove the lower strut bolt. Retain hardware for reuse. **See Photo 4.**



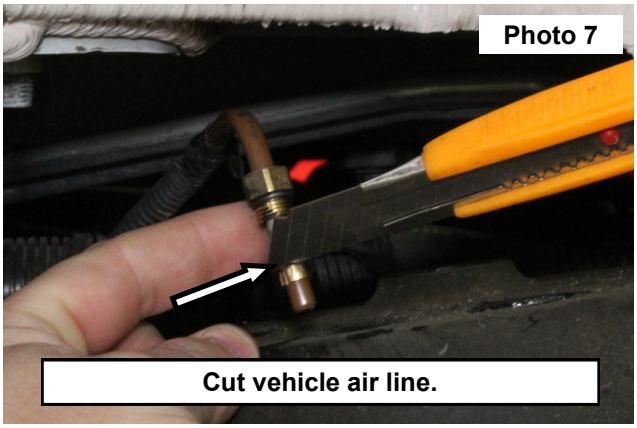


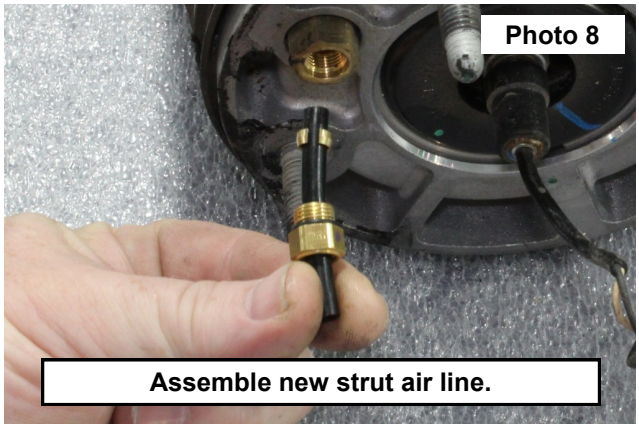
7. With a 24mm socket, remove the lower control arm from the knuckle. Retain hardware for reuse. **See Photo 5.**
8. Use an 18mm wrench to remove the upper strut nuts. **See Photo 6.**



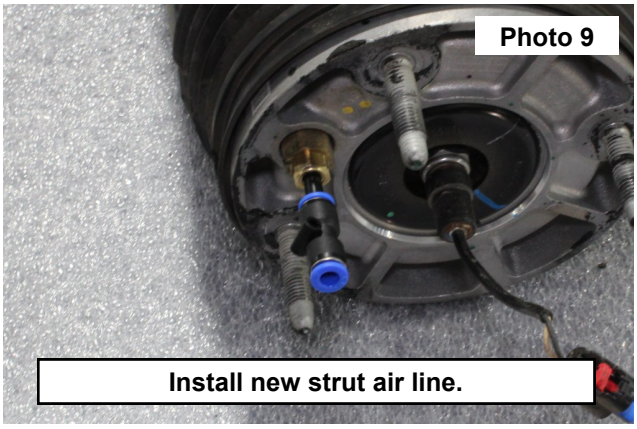


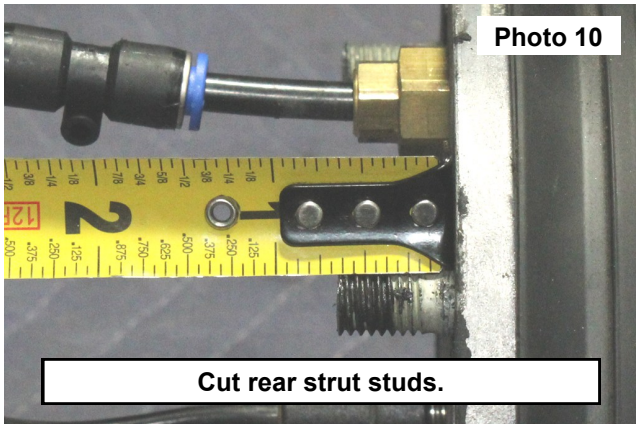
9. Remove rear strut from vehicle.
10. Cut the factory air line on the vehicle just above the factory ferrule and remove factory hardware. **See Photo 7.**
11. Install supplied air line and hardware as shown below. Make sure there is 3/8” beyond the supplied split ferrule. **See Photo 8.**



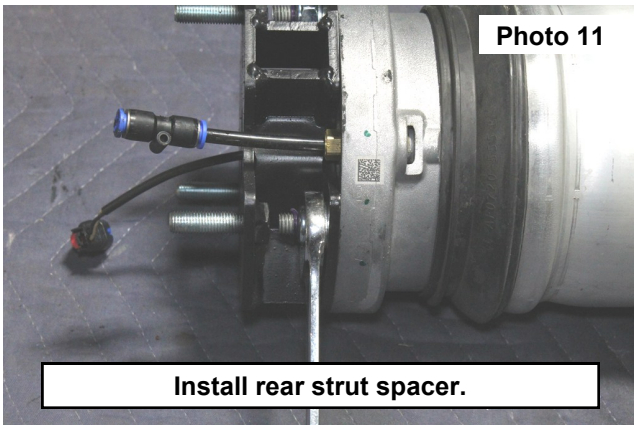


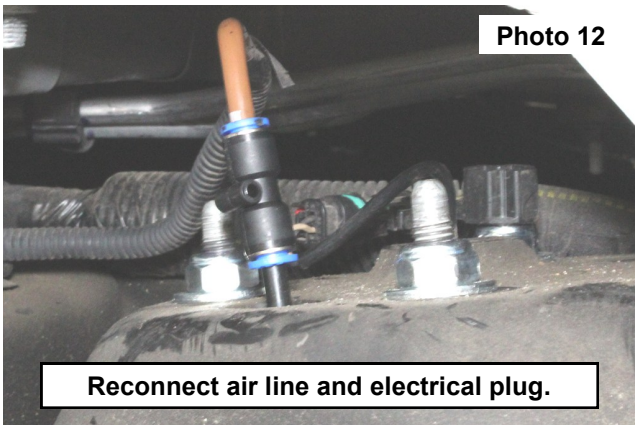
12. Push the new air line into the factory air fitting on the strut. Make sure the line is pushing against the valve inside the fitting and then tighten the new nut using a 12mm wrench. Install the compression fitting on the bare end of the air line. **See Photo 9.**
13. Cut the rear strut studs so they are 5/8” long. **See Photo 10.**





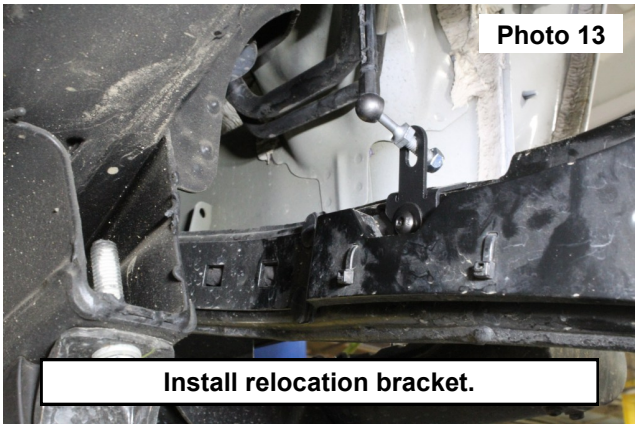
14. Install the spacer using the supplied 6mm flange nuts using a 10mm wrench. **See Photo 11.**
15. Use supplied 6mm flange nuts to reinstall the strut to the vehicle. Tighten with a 10mm wrench. Use factory hardware to reinstall the lower strut.
16. Install the factory vehicle air line into the new compression fitting. Connect the electrical plug. **See Photo 12.**

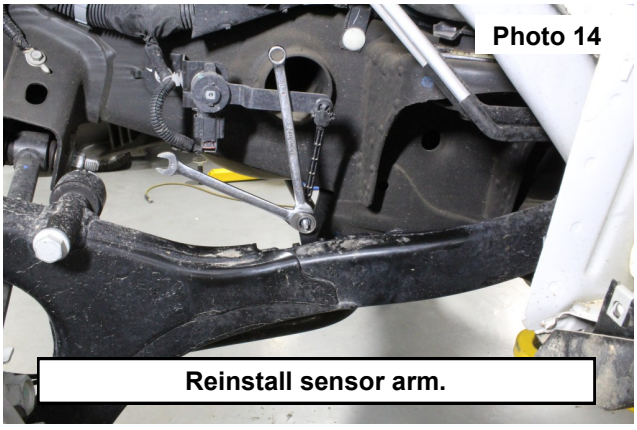




17. Use a 10mm wrench to remove the ride height sensor arm from the trailing arm and install the supplied relocation bracket using the supplied hardware. Tighten with a 4mm Allen wrench and 10mm wrench. **See Photo 12, Photo 13, and Photo 14.**
18. Reinstall remaining components in reverse order of assembly.
19. Repeat steps for other side of vehicle.
20. Reinstall wheels and lower vehicle.









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