Rough Country 97640RED Installation Instructions

3.5-Inch Knuckle Lift Kit with M1 Shocks for Silverado/Sierra HD

Part number: 97640RED

trailfortress.com/rough-country-3-5-inch-knuckle-lift-kit-97640red

Scan for fitment, price and install help

ROUGH COUNTRY SUSPENSION SYSTEMS®

1959BAG15

GM 2011-18 2500 2WD/4WD 3.5” Lift Kit with Vertex Shocks

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 This kit is packaged as a leveling kit—raising the front 3.5” and the back 1.5”.

This suspension system was developed using a 295/70-18 tire with factory aluminum 18” wheels. **Note** if wider tires are used, offset wheels will be required and trimming may be required.

NOTICE TO DEALER AND VEHICLE OWNER

⚠NOTICE 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:

- 3/4” Wrench & Socket
- 7/8” Socket
- 15MM Wrench
- 18MM Wrench
- 21MM Wrench & Socket
- 22MM Socket
- 24MM Socket
- Hammer
- Floor Jack
- Jack stands

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

Kit Contents: 95950

1959:
- 1-Driver Side Control Arm
- 1-Pass Side Control Arm

1959BOX5:
- 2-Torsion Keys
- 4-5/8” x 12” U-bolts
- 2-1.5” Rear Blocks
- 5/8BAG
- 1959BAG9
- 1959BAG6
- 1959BAG11

680011 x 2:
- Front Vertex Shocks

690011 x 2:
- Rear Vertex Shocks

Hardware Bags:

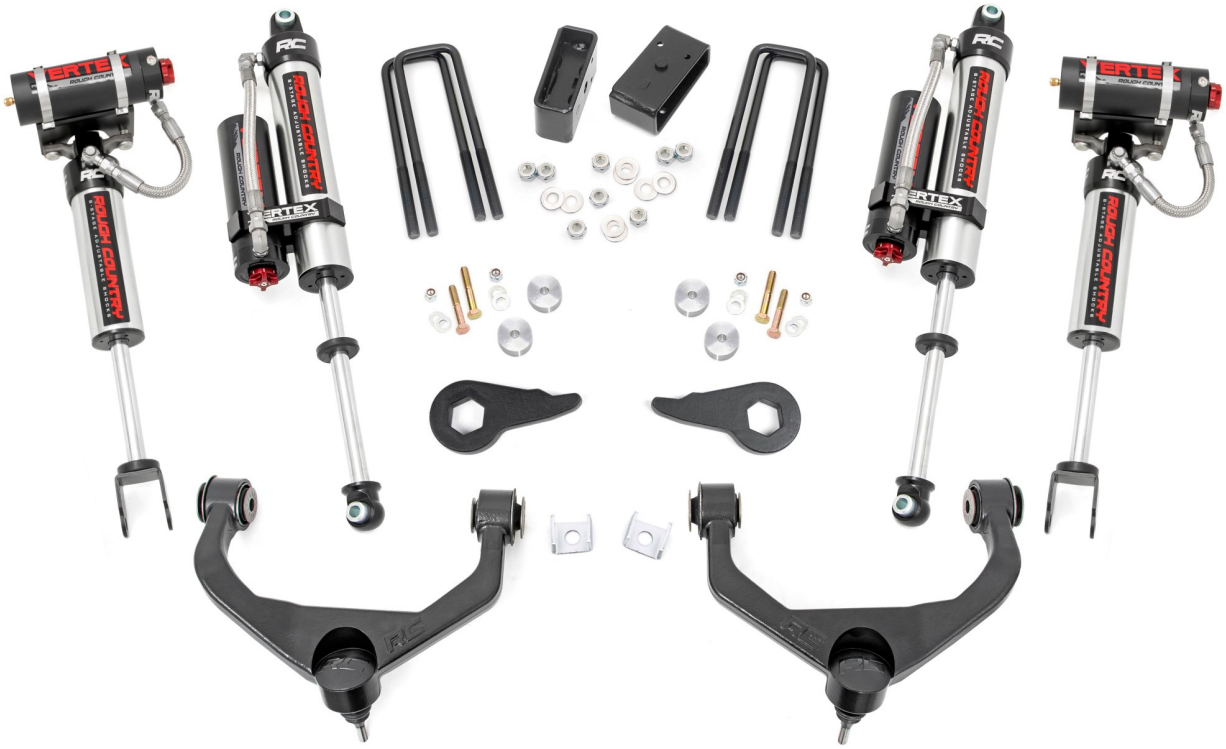
5/8BAG:
- 8-5/8” washers
- 8-5/8” lock nuts

1959BAG6:
- 4-14mm x 110mm Bolts
- 4-14mm Nylock Nuts
- 4-14mm Flat Washers
- 4- 1/2” Aluminum Diff Spacers
- 4- 1/2” x 1.25” Bolts

1959BAG15:
- Instructions
- 1-Warning to Driver Decal
- 1-Service Reminder

1959BAG9:
- 2-Torsion Key Retainers

KIT CONTENT



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680011 x 2:
- Front Vertex Shocks

690011 x 2:
- Rear Vertex Shocks

95750Box 1
- 1-Dr Side Knuckle

95750Box 2
- 1-Pass Side Knuckle

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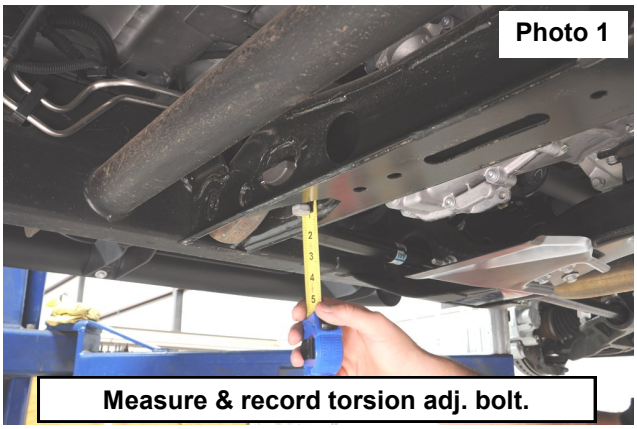
1959BAG9:
- 2-Torsion Key Retainers

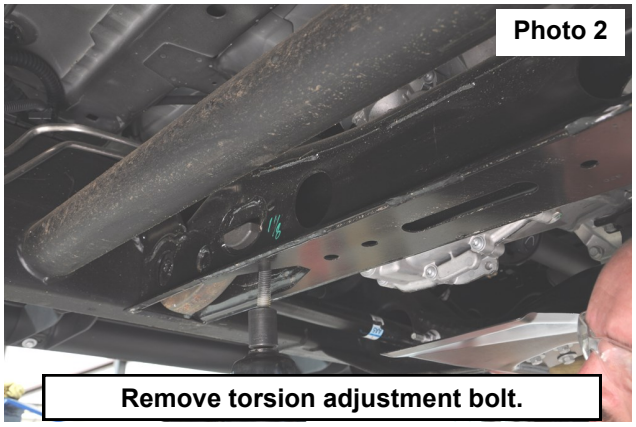
KIT CONTENT



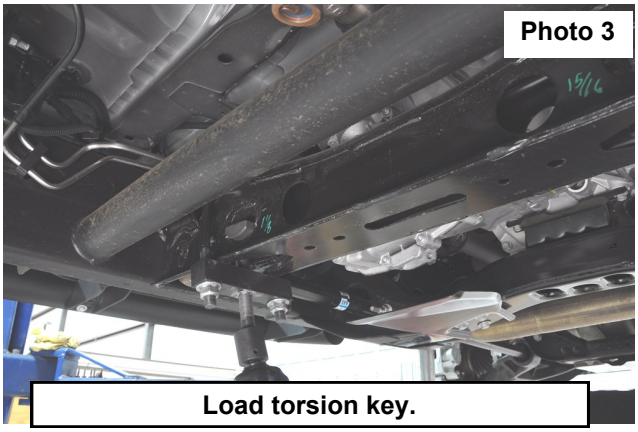
FRONT INSTALLATION

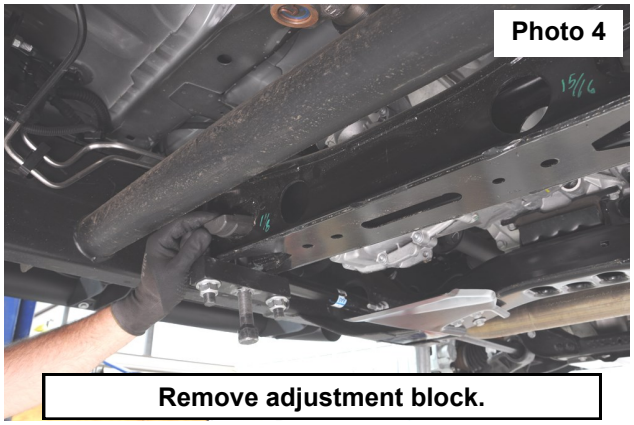
1. Park the vehicle on a level surface and chock the rear wheels.
2. Jack up the front of the vehicle. Place jack stands under the frame rails and lower onto jack stands letting the front suspension hang.
3. Remove the tires and wheels.
4. Measure and record torsion bar adjustment bolts. **See Photo 1**.
5. Using a 21mm socket, remove the torsion bar adjustment bolt. **See Photo 2**.



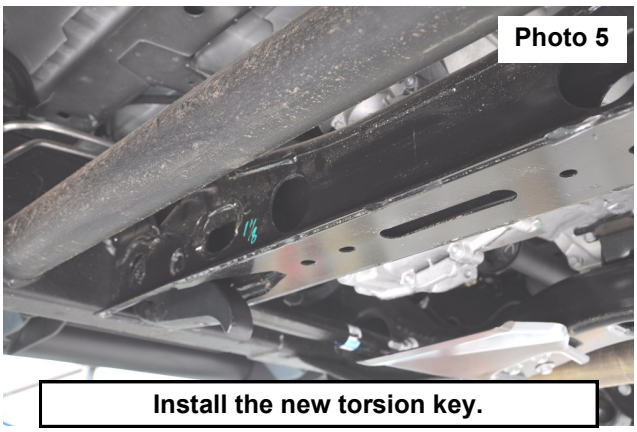


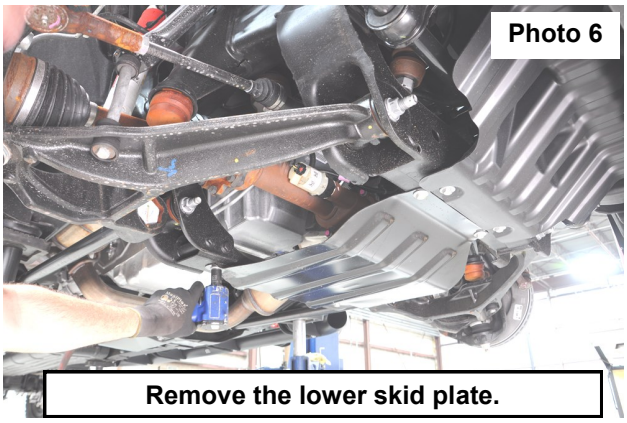
6. Use a torsion bar tool to load the torsion key. **See Photo 3.**
7. Remove the torsion bar adjustment block and factory torsion key. **See Photo 4**.



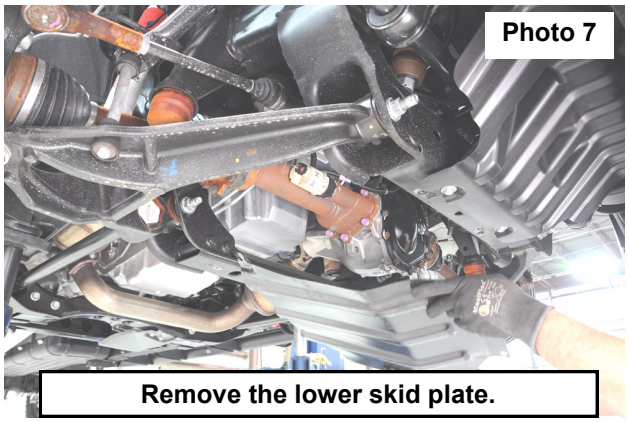


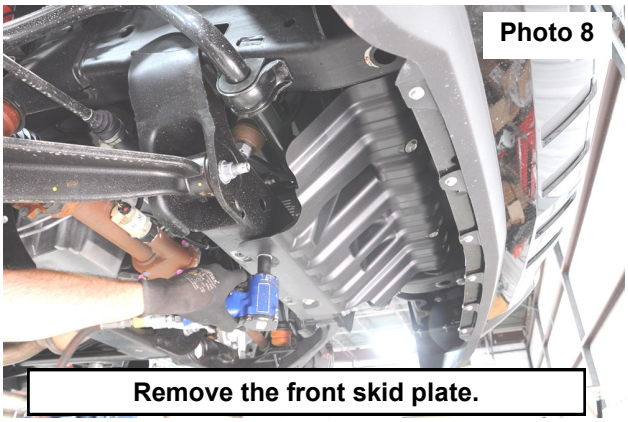
8. Install the new torsion key. **See Photo 5**.
9. **(For 2WD kits skip to step 14)** 4WD Trucks, Use a 15mm socket, remove the lower skid plate. **See Photo 6**.



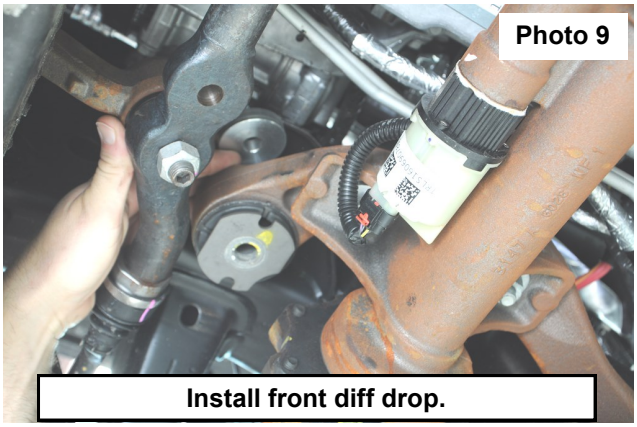


10. Using a 15mm socket, remove the lower skid plate. **See Photo 7.**
11. Using a 15mm socket, remove the front skid plate. **See Photo 8**.



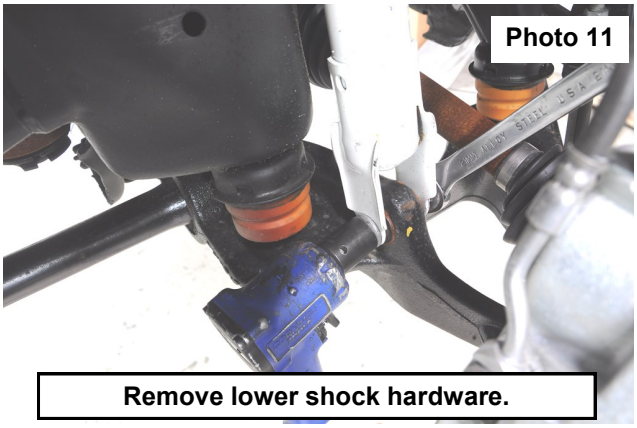


12. Using a 21mm socket and remove the front 2 diff mounting bolts. Install supplied diff spacers between diff mount and frame. Secure using the supplied 14mm x 110mm bolt nut and washers. Tighten to factory specs using a 22mm. **See Photo 9.**
13. Using a 21mm socket and remove the rear 2 diff mounting bolts. Install supplied diff spacers between diff mount and frame. Secure using the supplied 14mm x 110mm bolt nut and washers. Tighten to factory specs using a 22mm. **See Photo 10.**



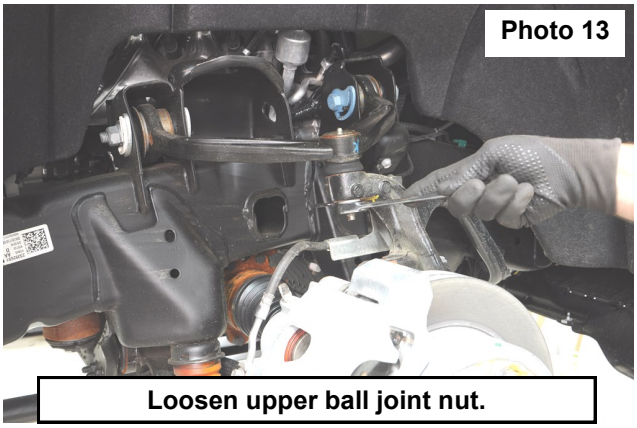


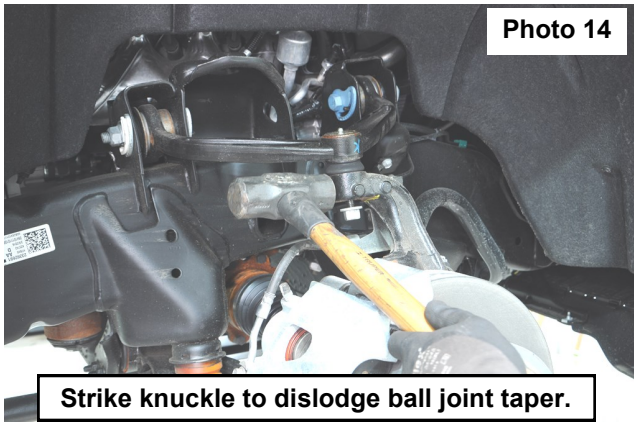
14. Unplug ABS wire at the frame.
15. Using a 21mm wrench and socket, remove the lower shock hardware and retain for later use. **See Photo 11.**
16. Using a 21mm wrench, remove the upper shock hardware, and remove the shock from the truck. Save lower hardware for reuse. **See Photo 12.**



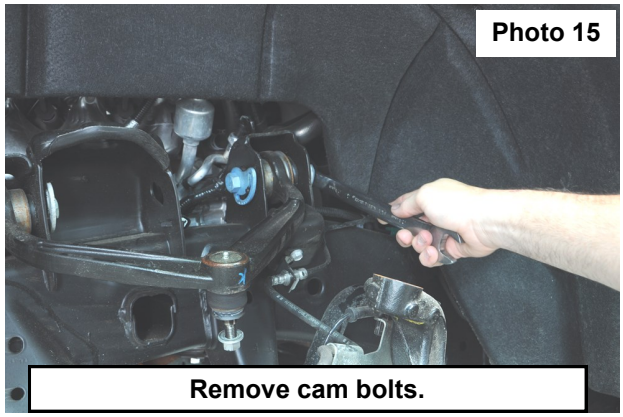


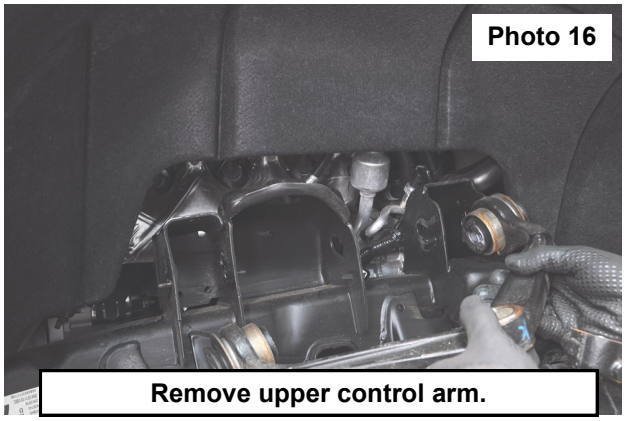
17. Using a 18mm wrench, loosen the upper ball joint nut. **See Photo 13. Do not completely remove nut.**
18. Strike the front of the steering knuckle with a hammer to dislodge ball joint taper. **See Photo 14. Remove nut.**


Photo 13
Loosen upper ball joint nut.


Photo 14
Strike knuckle to dislodge ball joint taper.

19. Using a 24mm wrench, remove the cam bolts. Retain for reuse. **See Photo 15.**
20. Remove the factory upper control arm from the truck. **See Photo 16.**


Photo 15
Remove cam bolts.


Photo 16
Remove upper control arm.

21. Install the new RC supplied upper control arm and factory cam bolts.
Do not tighten. See Photo 17 and **Photo 18.**

NOTE: The RC logo on the arm goes to the rear of the vehicle. Ball joint must be greased before use. Check ball joint grease after the first 100 miles and then every 3000 miles.

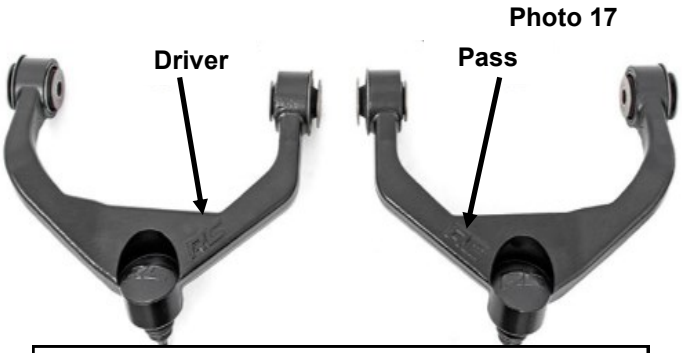
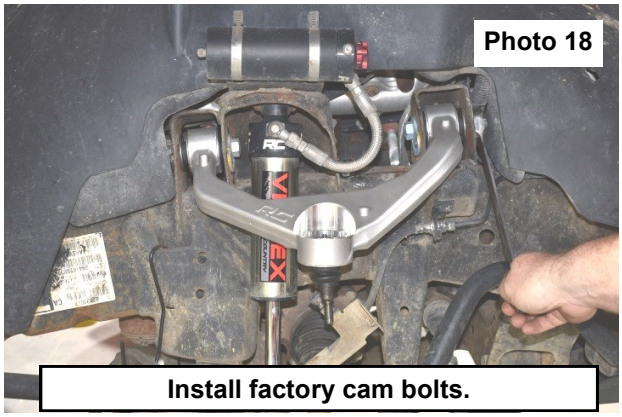
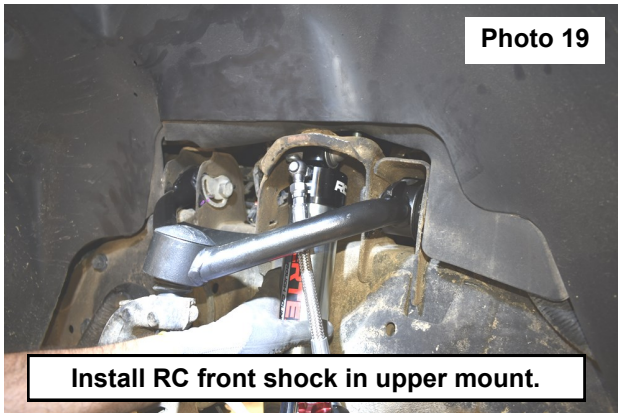
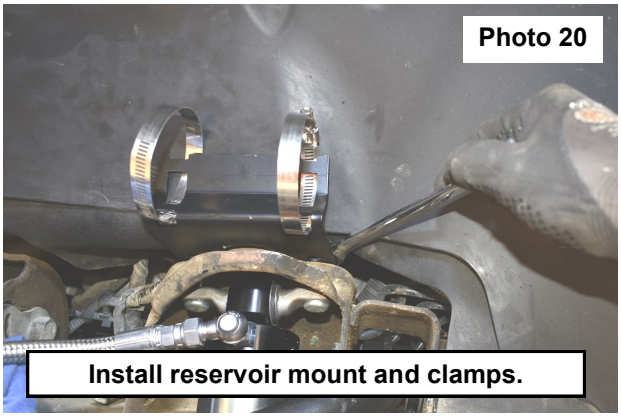


Photo 17
Install new RC control arm.

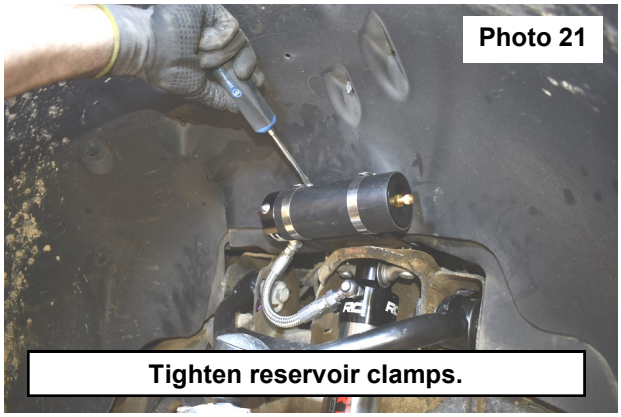

Photo 18
Install factory cam bolts.

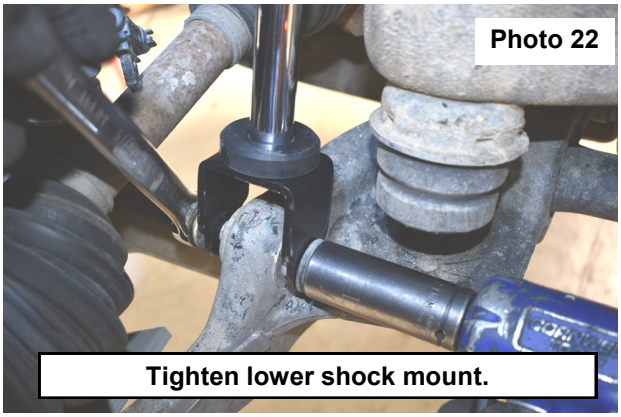
23. Install the front shocks (680011) in the upper mount. Do not install the nuts and washers at this time. **See Photo 19.**
24. Install the supplied clamps on the reservoir mount. Then install the reservoir mount on the upper Vertex shock mounting studs using the supplied flange nuts and tighten using a 17mm wrench. **See Photo 20**.



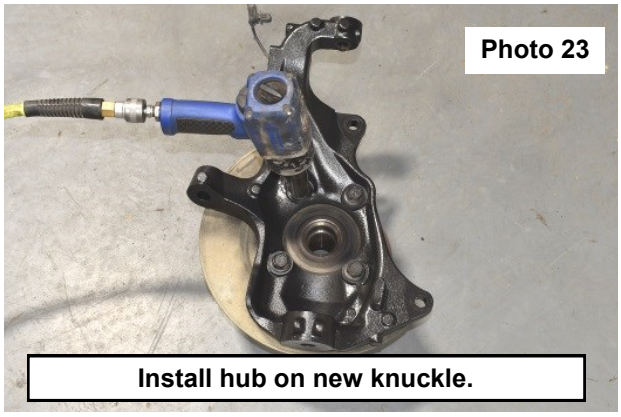


25. Install the Vertex shock reservoir into the clamps from the front of the vehicle. Tighten clamps using a flat screwdriver. **See Photo 21.**
26. Install the Vertex shock on the lower mount using the factory hardware and two 21mm socket/wrenches. **See Photo 22.**



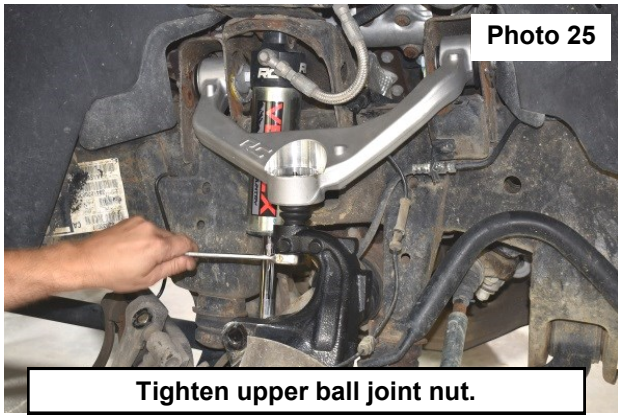


27. **Knuckle Kit Only:** Remove the hub from the stock knuckle and install on the new knuckle using stock hardware. **See Photo 23**.
28. **Knuckle Kit Only:** Install the hub and knuckle to the axle. **See Photo 24**.





23. Using a 18mm wrench, tighten the upper ball joint nut to factory specs. **See Photo 25.**
24. Install the ABS line to the knuckle. **See Photo 26**.

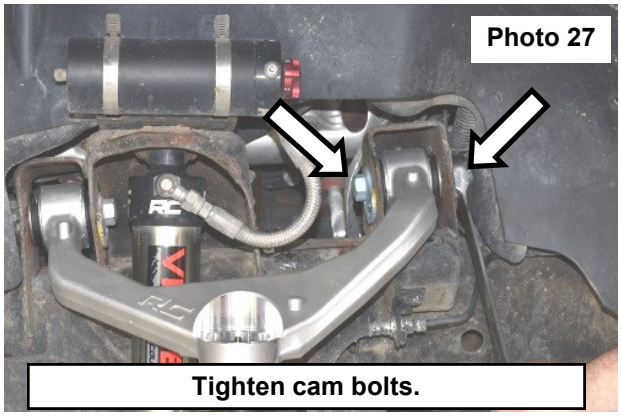


Tighten upper ball joint nut.



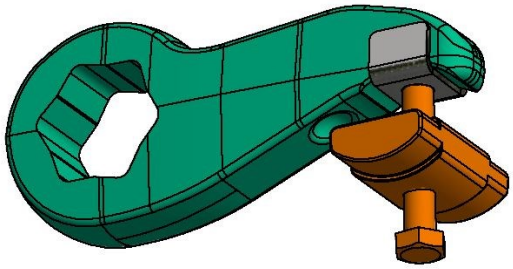
Install ABS line to knuckle.

29. Tighten the cam bolts to factory specs using a 24mm. **See Photo 27**.
30. Install the supplied torsion key bolt retainer on the torsion key. Load the keys and install adjustment blocks and bolts. Wet the bolts to the recorded measurement from step 4 **See Photos 28.**



Tighten cam bolts.

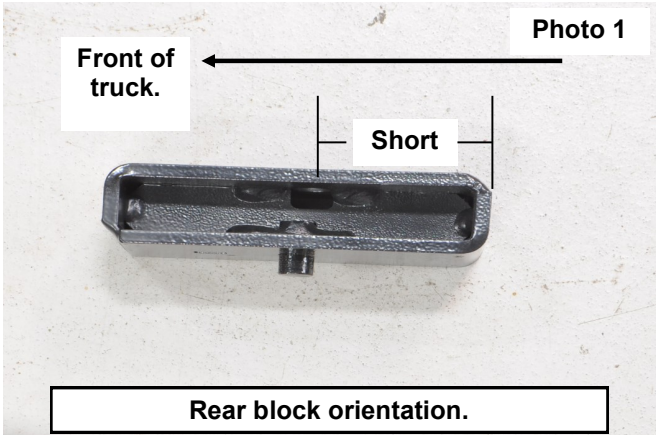
Photo 28


Load keys & install adj. blocks and bolts.

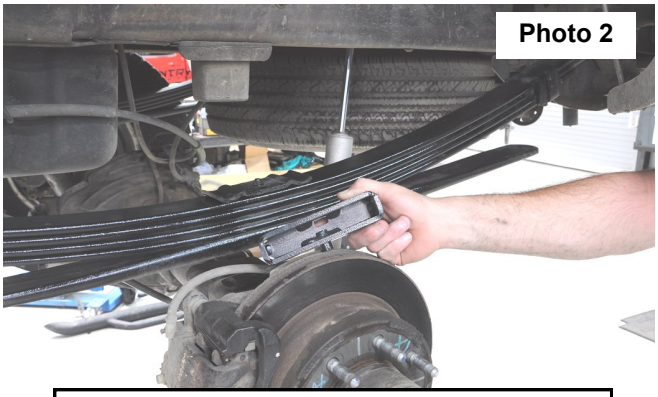
31. Reinstall the wheels/tires.
32. Jack up the vehicle and remove the jack stands.
33. Lower the vehicle to the ground.

REAR INSTALLATION

1. Chock the front wheels.
2. Place a floor jack under the differential and jack up the rear of the vehicle.
3. Place jack stands under the frame rails and lower onto the jack stands.
4. Remove the tires/wheels.
5. Remove the factory shock absorbers using a 21mm wrench & socket. Retain the factory hardware for reuse.
6. Remove the factory u-bolts using a 21mm socket, then remove the factory blocks. Lower the axle using the floor jack to allow for the new 1.5" block to be installed.
7. Install the block on the factory spring pad, **NOTICE** The top center pin hole should be installed offset to the rear of the vehicle. Jack up the axle to meet the springs, making sure to align the center pin. **See Photos 1 & 2**

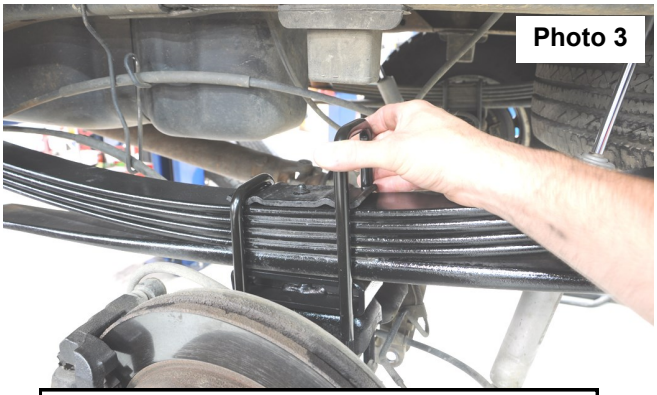


Rear block orientation.

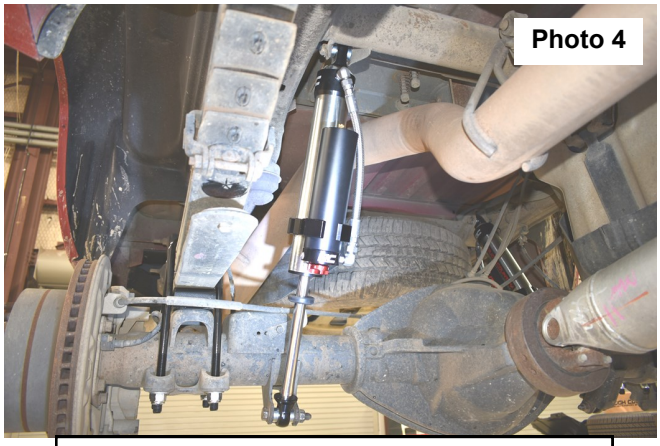


Install rear block.

8. With the floor jack applying slight pressure to the rear axle to keep the pin aligned, install the new supplied u-bolts, washers and nuts. Torque to 125ft/lbs, in a crossing pattern, using a 7/8" socket. **See Photo 3.**
9. Locate the new Vertex shock absorbers (690011) and install the shock absorbers in the factory mounting locations using the factory hardware. Torque to factory specs using a 21mm wrench & socket. **See Photo 4.**



Install new ubolts.



Install new rear shock.

10. Install the tires/wheels.
11. Jack up the vehicle to remove the jack stands. Remove the jack stands and lower the vehicle to the ground.

POST INSTALLATION INSTRUCITONS

1. Have a qualified alignment center align the vehicle immediately. **Alignment specs on following page.**
2. Have headlights adjusted to proper settings.
3. Wheels must be retightened at 50 miles.
4. All kit components must be retightened at 500 miles and then every three thousand miles after installation. Periodically check hardware for tightness.
5. Install “Warning to Driver” decal on sun visor.
6. 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.

Alignment Specs

Front	MIN		MAX
Total Toe	-0.10°	+0.10°	+0.30°
Front Camber	-0.05°	+0.05°	+0.15°
Caster	+1.70°	+2.70°	+3.70°
King-Pin	———	———	———
Incl. Angle	———	———	———
Rear			
Total Toe	°	°	°
Rear Camber	°	°	°
Thrust Angle	-.025°	+0.00°	+0.25°



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