Rough Country 540.20 Installation Instructions

6-Inch Lift Kit with N3 Shocks for F-250 Super Duty (2011–2014)

Part number: 540.20

trailfortress.com/rough-country-6-inch-lift-kit-540-20

Scan for fitment, price and install help

92154000

ROUGH COUNTRY SUSPENSION SYSTEMS®

2011-14 F250 6″ RADIUS ARM KIT

Thank you for choosing Rough Country for your suspension needs.

Rough Country recommends a certified technician installs 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 parts list. Be sure you have all the needed parts and understand where they go. Also please review the 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. We strongly recommend seat belts and shoulder harnesses should be worn at all times. Avoid situations where a side rollover may occur.

Braking performance and capabilities are decreased when significantly larger/heaver tires and wheels are used. Take this into consideration while driving. Also, speedometer recalibration is necessary when larger tires are installed.

Do no add, alter, or fabricate any factory or after-market parts which increase vehicle height over the intended height of the Rough Country product purchased. Mixing component brands, lifts, and/or combining body lift with suspension lifts voids all warranties. 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.

This kit is packaged as a leveling kitð raising the front 6òand the back 5ò 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 block / u-bolt options. The 6òsuspension system was developed for **37”x12.50x17** tire on an after market wheel w/ 4.5òback spacing.

NOTICE DEALER AND VECHICLE OWNER

Any vehicle equipped with any Rough country product must have the ñWarning to Driverò 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**ð 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.

Kit Contents:

9295	Diesel Coil Springs
1540Box1	Track Bar Bracket
	Pitman Arm
	Fr Bump-stop spacer
	Fr Dr Brake line Bracket
	Fr Pass Brake Line Bracket
	Rear Brake Line Brkt
	Dr Sway Bar Bracket
	Pass Sway Bar Bracket
	Fr Dr Stab Bracket
	Fr Pass Shim Bracket
	Fr Stainless Brake Lines
1536Box1	Radius Arm
1580.20	Shock Box

1564Box3 or 1564BOX4
- Block (2)
- Shim Plates (4)
- U-bolts (4)
- Spring Top Plates (2)

Tools Needed:

- 10mm Socket / Wrench
- |15mm Socket / Wrench
- 18mm Socket / Wrench
- 19mm Socket / Wrench
- 21mm Socket / Wrench
- 24mm Socket /Wrench
- 30mm Socket
- 34 Socket
- 5/8òSocket / Wrench
- 1 1/8òWrench
- Jack Stands
- Jack
- Pliers
- Pitman Arm Tool

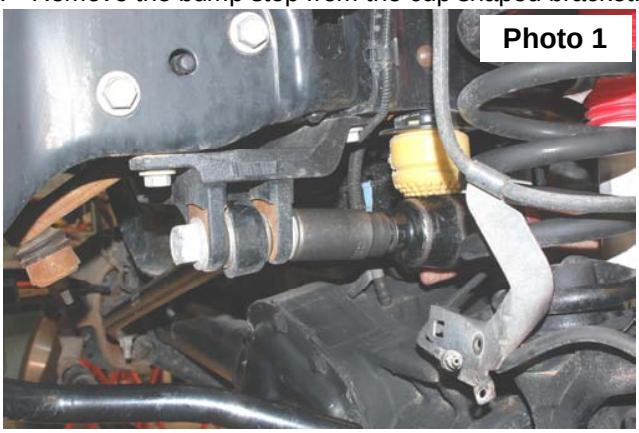
Torque Specs:

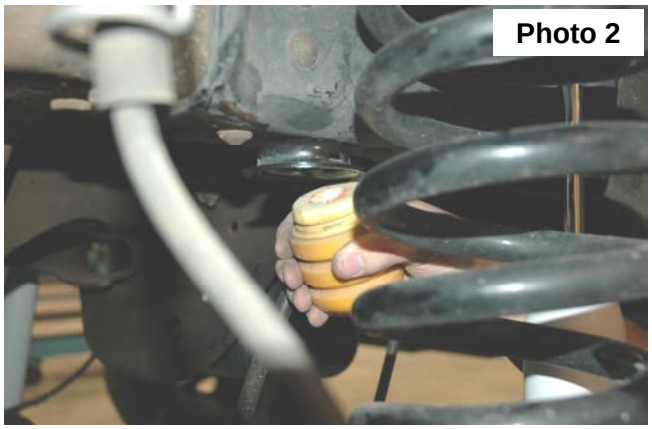
Size	Grade 5	Grade 8
7/16ò	45 ft/lbs	60 ft/lbs
1/2ò	65 ft/lbs	90 ft/lbs
9/16ò	95 ft/lbs	130 ft/lbs
5/8ò	135 ft/lbs	175 ft/lbs
3/4ò	185 ft/lbs	280 ft/lbs

	Class 8.8	Class 10.9
8MM	18ft/lbs	23 ft/lbs
10MM	32ft/lbs	45ft/lbs
12MM	55ft/lbs	75ft/lbs
14MM	85ft/lbs	120ft/lbs

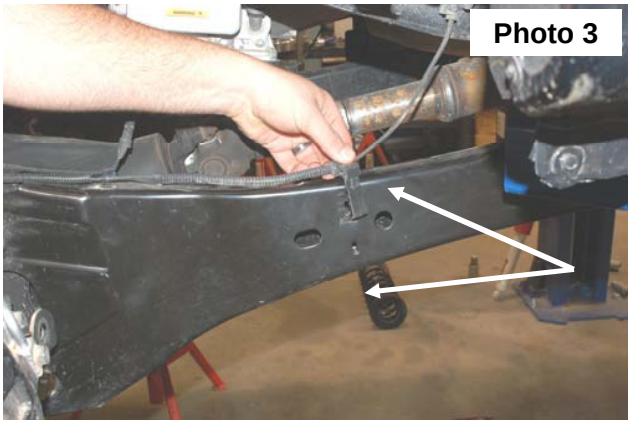
FRONT INSTALLTION INSTRUCTIONS

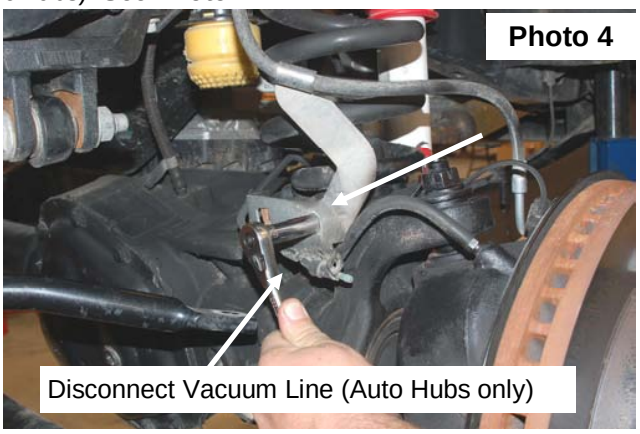
1. Block the rear wheels of the vehicle. Raise the front of the vehicle and support the frame with jack stands. Remove the front wheels and tires and set aside. Position a hydraulic jack under the front axle and raise the jack until the front suspension begins to compress.
2. Disconnect the track bar from the driver side frame bracket, using a 30mm wrench. **See Photo 1.**
3. Remove the bump stop from the cup shaped bracket. Remove the bracket from the frame rail. **See Photo 2**.



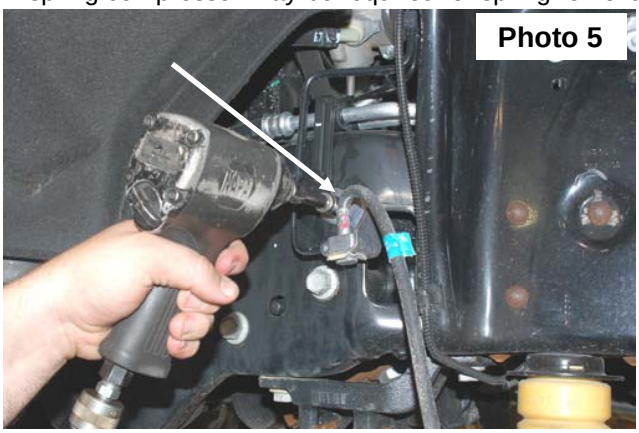


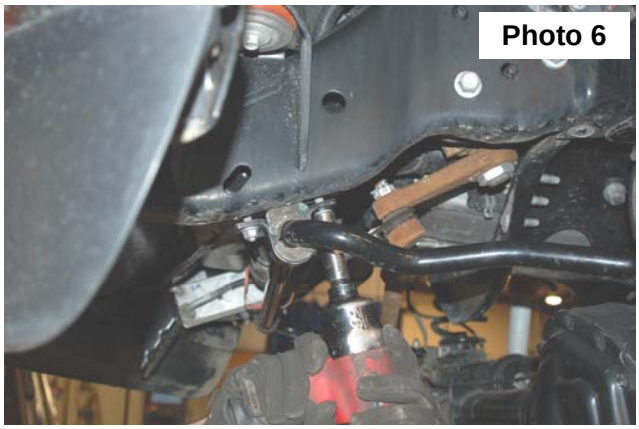
4. Disconnect the ABS sensor wire from the lower spring seat and the radius arm, using pliers. **See Photo 3.**
5. Unbolt the brake line brackets from the the spring seat, using a 10mm wrench. Remove the center disconnect vacuum lines from the clamp on the axle.(If equipped with automatic hubs). **See Photo 4.**





6. Remove the stock brake line from the frame using a 10mm socket. Retain stock hardware. **See Photo 5**.
7. Using a 19mm wrench, remove the nut, retaining washer and rubber bushing from the both upper shock mounts. Using a 18mm wrench remove the lower shock bolts. Retain hardware for re-use.
8. Remove the sway bar from the frame using a 15mm socket. **See Photo 6.** Retain the stock hardware for reuse.
9. Remove the factory stabilizer from the passenger side frame mount using 15mm wrench. Retain hardware for reuse.
10. Carefully lower the jack until the coil springs are free. Remove the coil springs from the vehicle. Note: use of a coil spring compressor may be required for spring removal.



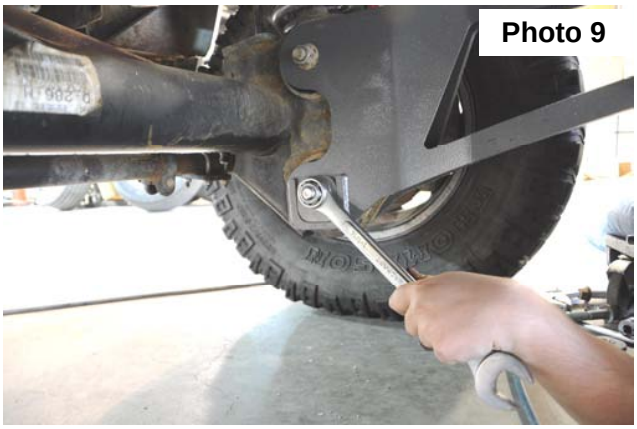


11. Support the radius arms with jack stands. Using a 24mm wrench, and socket remove the bolt holding the upper control arm to the axle. Retain stock hardware for reuse. **See Photo 7.**
12. Using a 1 1/8òwrench, and socket remove the bolt holding the upper control arm to the frame. **See Photo 8.**



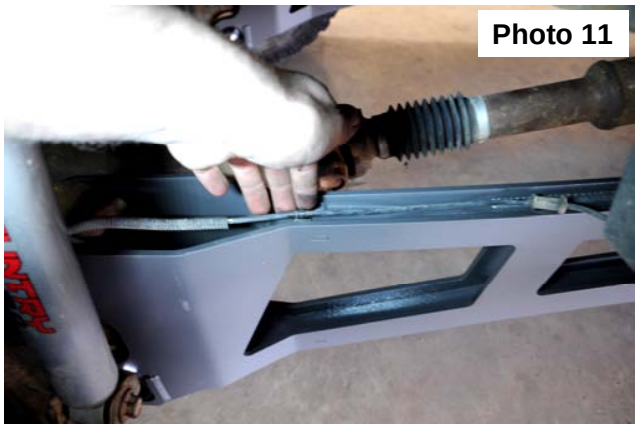


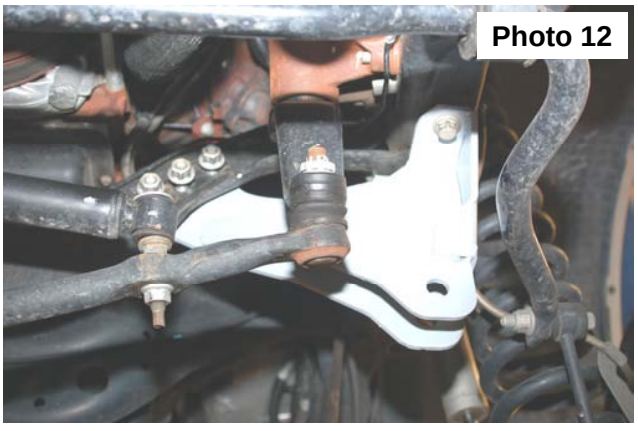
13. Insert the new supplied radius arm into the stock axle location. Use the stock bolt for the upper mount and the supplied 18mm x 130mm bolt, nut, and cam plates for the lower mount. **See Photo 9**.
14. Install the radius arm in the factory frame bracket with stock hardware. **See Photo 10.** Do not tighten at this time.





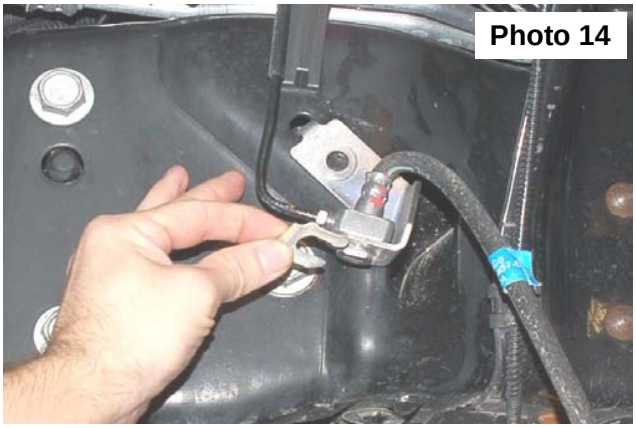
15. Install the ABS wire to the radius arm. **See Photo 11.**
16. Repeat steps on the opposite side.
17. Using a ***21mm wrench and 19mm*** wrench socket remove the factory track bar bracket from the frame. Retain stock hardware for re-use.
18. Position the Rough Country track bar bracket on the frame in the same position as the original and secure using the factory hardware. Tighten hardware using a 18mm wrench. **See Photo 12.**



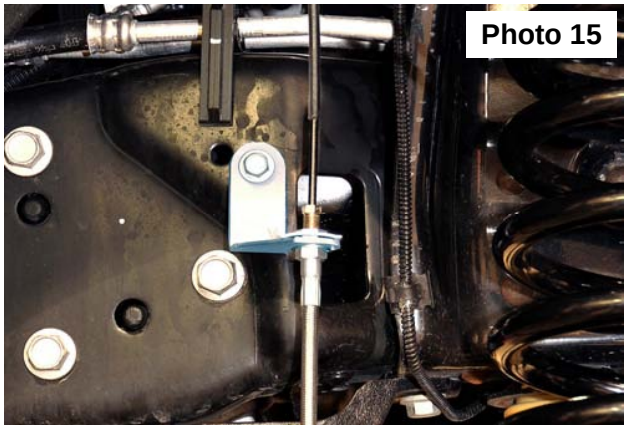


19. Using the nylon bump stop extension provided, place the extension between the frame and the bump stop cup. Bolt back into the original location using the 8mmx95mm bolt supplied. Torque to 15 ft. lbs. Reinstall the factory bump stop in the bump stop cup. **See Photo 13.**
20. Lower the front axle enough to install the new coil springs. Position the coil springs in the lower coil buckets on the axle and rotate as necessary to be sure that the pigtail of the coil in indexed properly in the bucket. Position the factory rubber isolator on top of each coil, then raise the axle enough to seat the coil springs in the upper spring buckets.
21. Install the bushings and sleeves on the front gas shock absorbers part # 658459.
22. Compress the front springs enough to install the front shocks. Bolt the lower end of the shock to the axle using the stock hardware using a 18mm wrench. Attach the upper end of the shock with the stock hardware, using a 19mm wrench. Tighten only enough to bulge the bushing.
23. Install tires and wheels and lower the vehicle to the ground.
24. Line up the track bar with the hole in the new track bar bracket. You may have to start the truck and turn the wheels in the direction the track bar needs to go to help align the track bar with the hole. Install using the stock track bar bolt. Tighten bolt.
25. Remove the clip as shown from the brake line and remove the factory brake line bracket from the line**. See Photo 14**.





26. Loosen the hard line from the brake line block using a 10mm wrench and straighten out the metal brake line.
27. Remove the stock brake lien from the caliper.
28. Secure the new bracket to the frame with the stock hardware. Tighten using a 10mm socket. **See Photo 15.**
29. Install the new supplied brake line to the steel line and tighten.
30. Install the supplied brake line clip to secure the line to the bracket. **See Photo 15.**
31. Reinstall the ABS and vacuum line.
32. Install the new sway bar link drop brackets and sway bar shim bracket if reusing the factory stabilizer as shown in the drivers side factory frame location with the factory hardware. **If the factory stabilizer will not be reused or an after market stabilizer will be installed, the stabilizer bracket will not be installed.** Tighten using a 15mm socket. **See Photo 16**





33. Install the sway bar drop bracket and stabilizer relocation bracket if reusing the factory stabilizer on the passenger side as shown with the factory hardware. **If the factory stabilizer will not be reused or an after market stabilizer will be installed, the stabilizer bracket will not be installed.** Tighten using a 15mm wrench. **See Photo 17.**
34. ***If reinstalling the stock stabilizer***, install the sway bar on the drop brackets and shim plate as shown on the driver side with the supplied 7/16òx 1 1/4ò bolts, washers and lock nuts. Tighten using a 5/8òWrench. **See Photo 18.**

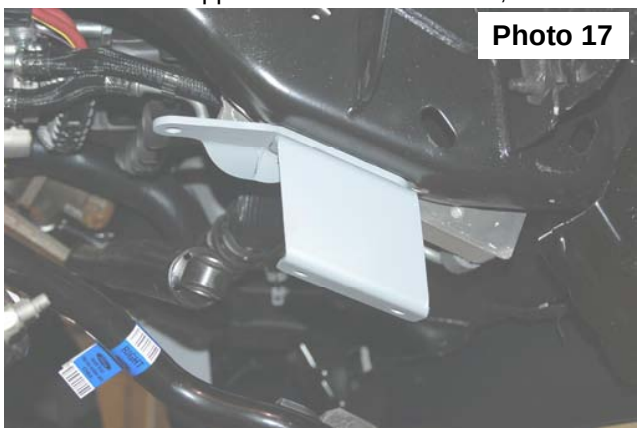
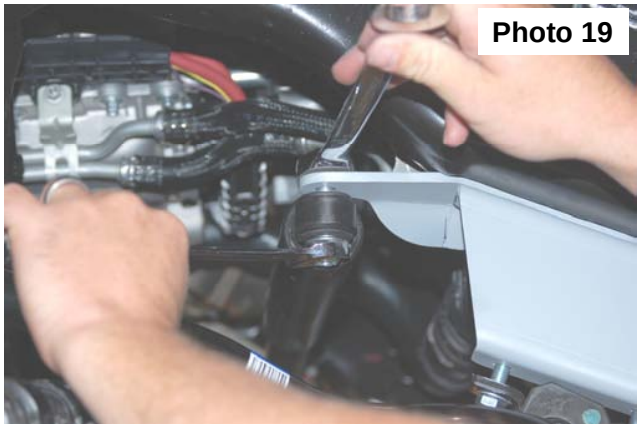
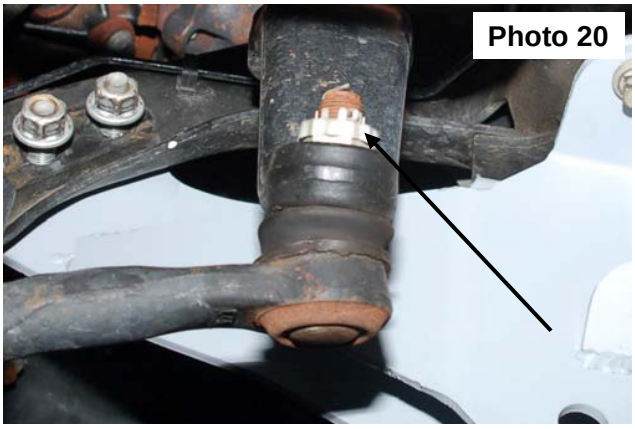

Photo 17


Photo 18

35. Install the stabilizer in the bracket using the stock hardware. **See Photo 19.**
36. Remove the cotter pin and nut using a 21mm wrench, from the drag link end where it attaches to the pitman arm. **See Photo 20.**


Photo 19

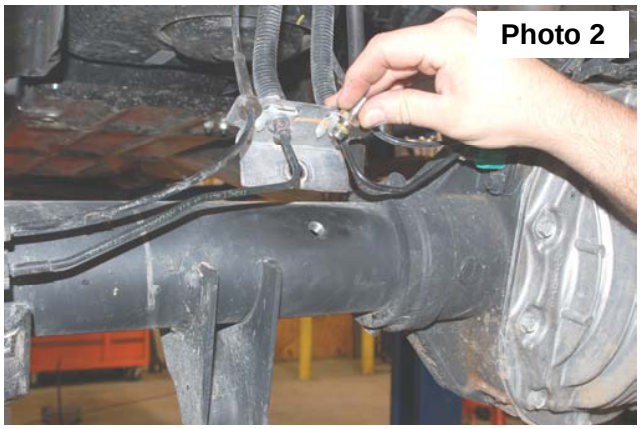

Photo 20

37. Dislodge link with a tie rod end puller, or a pickle fork. Note: replace the link if any stud looseness is detected, or if you can twist the studs in its socket with your fingers.
38. Using a 34mm socket, remove the nut from the steering sector and remove the pitman arm with a puller tool. Inspect the splines on the shaft for excessive wear, repair if needed.
39. Install new arm, lock washer, and nut. Using a 34mm socket, tighten bolt.
40. Attach the drag link stud to the pitman arm. Torque nut to factory specs, and install cotter pin. Check for adequate linkage clearances while turning steering wheel full lock in both positions.
41. Install the wheels/tires.
42. Jack up the vehicle and remove the jack stands.
43. Lower the vehicle to the ground and tighten the radius arm bolts.

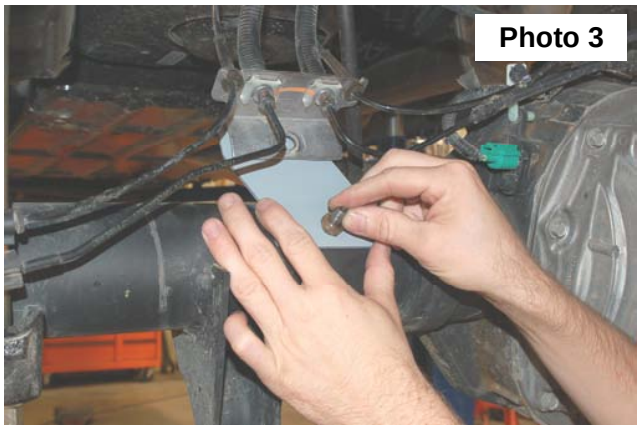
REAR INSTALLATION

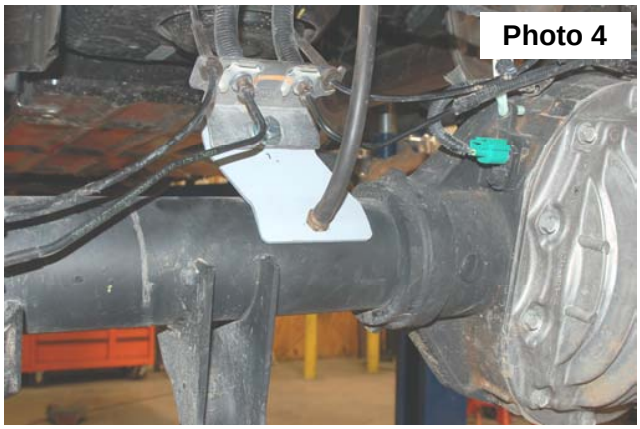
1. Chock front wheels and jack up the rear of the vehicle. Secure with jack stands on the frame rail.
2. Place a floor jack under the rear differential on the rear axle. Using a 18mm wrench for the upper, and 19mm and 15mm wrench for the lower, remove the stock shock absorbers, retain the stock hardware for reuse.
3. Remove the diff vent hose from the differential. **See Photo 1.**
4. Remove the diff vent tube using a 5/8òwrench. Retain the vent tube for reuse. **See Photo 2.**



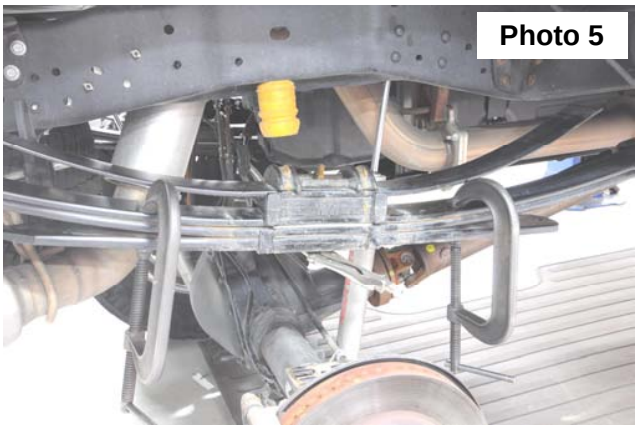


5. Install the supplied bracket in the stock location using the stock hardware. Tighten using a 5/8òwrench. **See Photo 3.**
6. Install the stock brake line bracket to the new bracket with the supplied 7/16òx 1òBolts, washers and lock nuts and tighten using 5/8òwrench. Reinstall the diff vent hose as shown. **See Photo 4.**

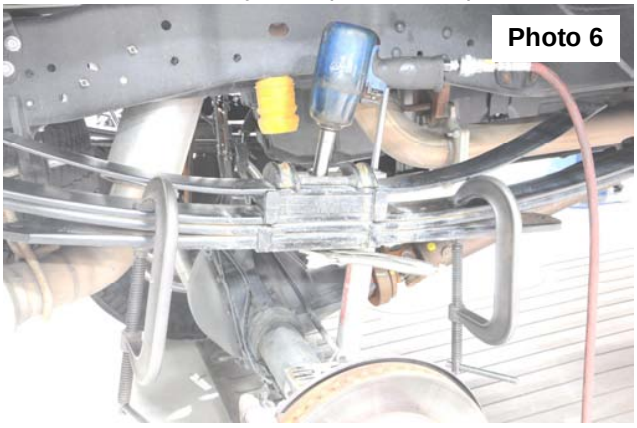




7. Using a 24mm socket, remove the stock u-bolts. Use the floor jack to lower the axle assembly to allow for lifted block installation.
8. Using C-clamps, clamp the spring pack on each side of the center pin.
9. Using locking pliers, lock onto the bottom of the center pin. **See Photo 5.**

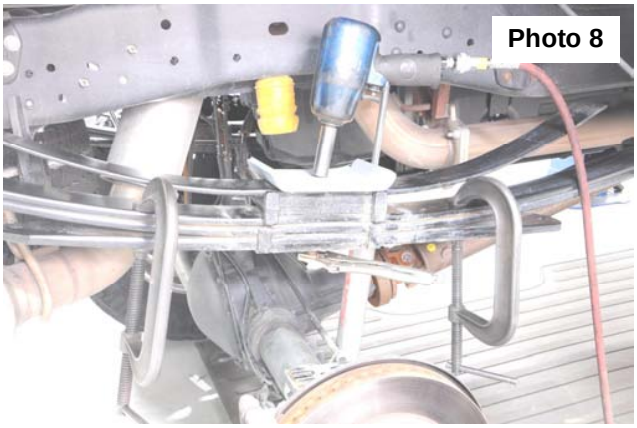


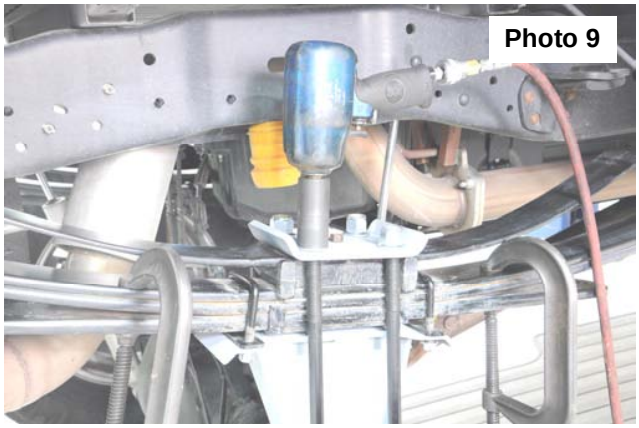
10. Using a 9/16ò socket, remove the nut from the center pin. **See Photo 6.**
11. Remove the factory ubolt plate and replace with the supplied spring top plate. **See Photo 7.**





12. Using the stock hardware, attach the supplied ubolt plate and tighten the center pin using a 9/16ò socket. **See Photo 8.**
13. Install the supplied shim plates between the block and the leaf spring. Install the supplied 7/16ò square ubolts and hardware. Tighten using a 5/8ò socket.
14. Install the new supplied 3/4ò ubolts from the bottom.(16.5ò long ubolts for trucks with out a factory overload and 18ò long ubolts for trucks with a factory overload spring.) Use the supplied 3/4ò hardware and tighten using a 1-1/8ò socket. **See Photo 9. Pics shown with factory overload.**





15. Locate shock part number 658601 gas shock and assemble poly bushings and sleeve in shock. Using a 18mm wrench, for the upper, and a 19mm and 15mm wrench for the lower. Install using factory hardware on upper and lower shock mount
16. Install the tires and wheels.
17. Jack up the rear of the vehicle and remove the jack stands. Lower the vehicle to the floor.
18. With the weight of the vehicle on the axle, torque the u-bolts to 130-150 ft-lbs.
19. Check all hardware for proper torque.

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.

POST INSTALLTION INSTRUCTIONS

1. Adjust steering wheel to re-center prior to driving.
2. 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.
3. 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. Longer replacement hoses, if needed can be purchased from a local parts supplier.
4. Have a qualified alignment center realign front end to
   Caster miniï 4.0 degree
   Camber ï 0.6ð .09 degree
   Toe ï .10ï .15 degree
5. Install Warning to Driver decal on sun visor.
6. Re-torque all nuts, bolts, and especially u-bolts after the first 100 miles, again after another 100 miles and then check periodically thereafter.
7. All components must be retightened after 500 miles, and every three thousand miles after installation
8. Adjust headlights to proper settings.



Thank you for choosing Rough Country for your suspension needs.