TRAIL FORTRESS

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Rough Country 53650 Installation Instructions

6-Inch D-Coil Lift Kit with Vertex 2.5 Shocks for Super Duty 4WD

Part number: 53650

trailfortress.com/rough-country-6-inch-lift-kit-53650

Scan for fitment, price and install help



92153600

05-07 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.

⚠WARNING 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, because of roll-over possibility, that the vehicle be equipped with a functional roll-bar and cage system. 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.

⚠WARNING 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.

NOTICE This kit is packaged as a leveling kitð raising the front 6òand the back 5ò If you desire a different look or if your truck has a tool box or something else that is going to bring the rear end down, please consult with your sales representative about options. Due to payload options and initial ride height variation the amount of lift shown is a base figure. Final ride height may vary slightly.

⚠WARNING The 6òsuspension system was developed for 37x12.50x17 tire on an after market wheel with 4.5òof back spacing.

If equipped with factory rear contact overload springs, pleaser note that they will need to be removed with the addition of the block /add-a-leaf combination on this kit.

NOTICE DEALER AND VECHICLE OWNER

Any vehicle equipped with any Rough country product must have the ñWarning to Driveròdecal 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 in-

Kit Contents

9295	Diesel Coil Springs **or**
9296	Gas Coil Springs
1580Box4	Front Shock (2)
	Rear Shock (2)
1593Box1	Pitman Arm
	Track Bar Bracket
	Control Arm Bracket
	Brake Line Drop Bracket
	Sway Bar Link Ext.
	Hardware Bags
1536Box1	Radius Arm
6111	Add-a-leaf
6578	3òBlock and U-Bolt Kit

Tools Needed

8mm Wrench	1 1/8òWrench
10mm Wrench	1 13/16òWrench
12mm Wrench	Jack Stands
15mm Wrench	Jack
17mm Wrench	
17mm Socket	
18mm Wrench	
18mm Socket	
19mm Wrench	
21mm Wrench	
24mm Socket	
30mm Socket	
1 1/16òWrench	

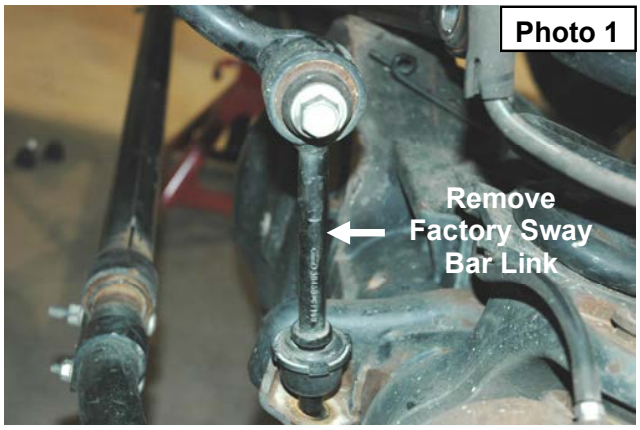
Torque Specs:

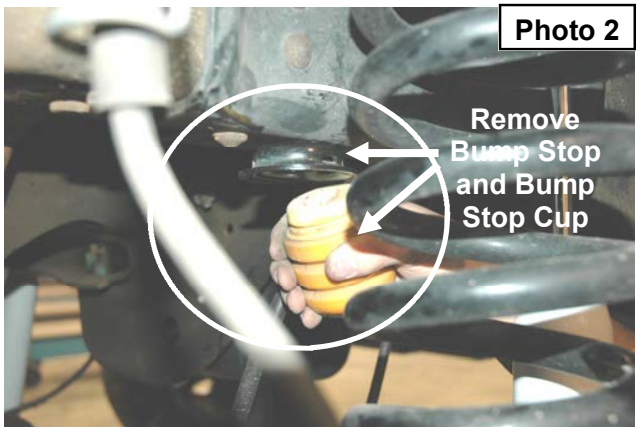
Size	Grade 5	Grade 8
5/16ò	15 ft/lbs	20 ft/lbs
3/8ò	30 ft/lbs	35 ft/lbs
7/16ò	45 ft/lbs	60 ft/lbs
1/2ò	65 ft/lbs	90 ft/lbs
9/16ò	95 ft/lbs	130 ft/lbs
5/8ò	135 ft/lbs	175 ft/lbs
3/4ò	185 ft/lbs	280 ft/lbs

	Class 8.8	Class 10.9
6MM	5 ft/lbs	9 ft/lbs
8MM	18ft/lbs	23 ft/lbs
10MM	32ft/lbs	45ft/lbs
12MM	55ft/lbs	75ft/lbs
14MM	85ft/lbs	120ft/lbs
16MM	130ft/lbs	165ft/lbs
18MM	170ft/lbs	240ft/lbs

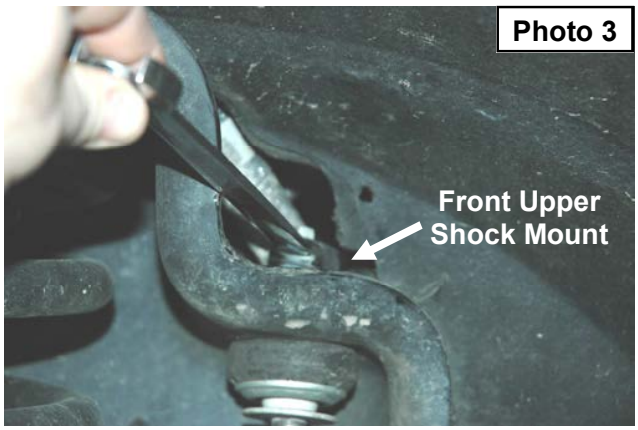
FRONT INSTALLTION INSTRUCTIONS

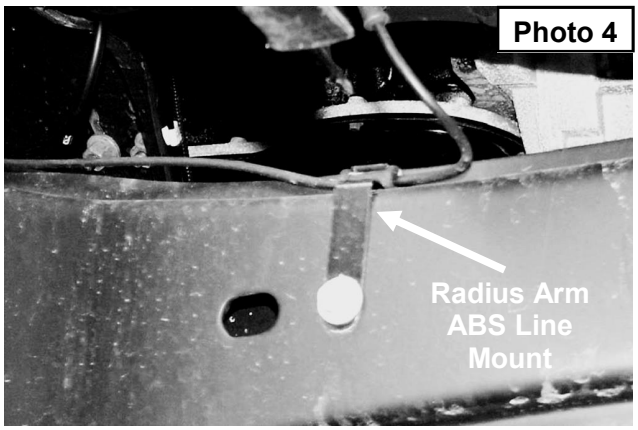
1. Block the rear wheels of the vehicle. Raise the front of the vehicle and support the frame with jack stands. Remove the front wheels and tires and set aside. Position a hydraulic jack under the front axle and raise the jack until the front suspension begins to compress.
2. Disconnect the track bar from the driver side frame bracket, using a 30mm wrench.
3. Disconnect the sway bar end links from the axle bracket, using a 21mm wrench. Remove end links **See Photo 1**. Retain for reuse.
4. Remove the bump stop from the cup shaped bracket. Remove the bracket from the frame rail. **See Photo 2**.



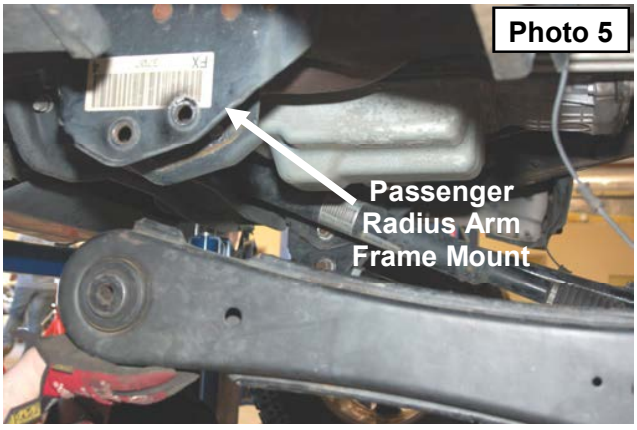


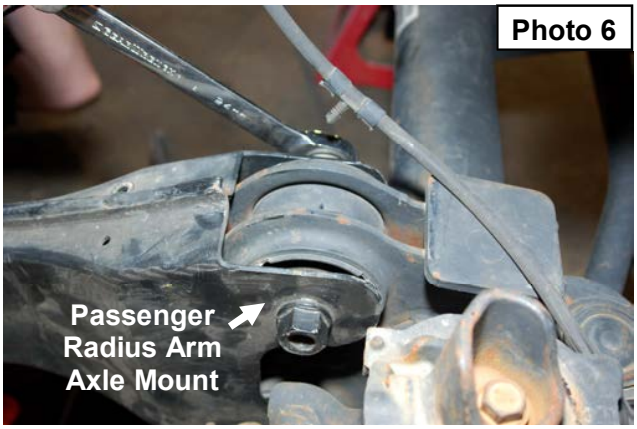
5. Disconnect the ABS sensor wire from the lower spring seat and the radius arm, using a 8mm wrench.
6. Unbolt the brake line brackets from the axle, using a 10mm wrench, to ensure brake line free play during the suspension system installation.
7. Remove the center disconnect vacuum lines from the clamp on the axle.(If equipped with automatic hubs).
8. 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. **See Photo 3**.
9. 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.
10. Remove the ABS line from the retaining tab on the radius arm and carefully pull the plastic clip free from the radius arm. **See Photo 4.** This is done to prevent over extending line during bracket installation.





11. Using a 1 1/8òwrench, and socket remove the bolt holding the radius arm to the frame. **See Photo 5.**
12. Using a 24mm wrench, and socket remove the bolts holding the radius arm to the axle. **See Photo 6.**





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 washers for the lower mount. **See Photo 7.**

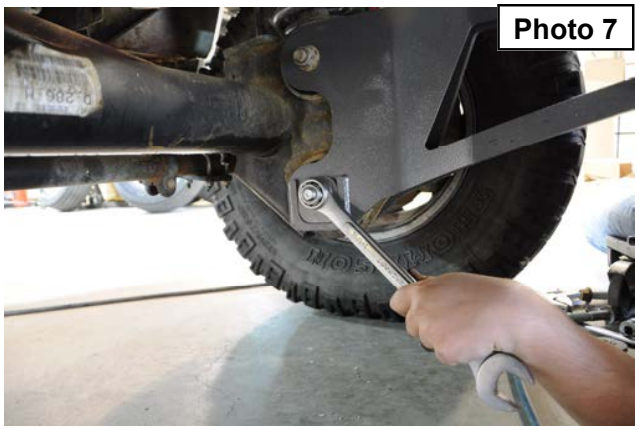


Photo 7


Photo 8

14. Install the radius arm in the factory frame bracket with stock hardware. **See Photo 8.** Leave loose. All 6 radius arm bolts will be torqued with the weight of the vehicle on the axle.
15. Reattach the ABS wire to the radius arm. **See Photo 9.**
16. Repeat step 3-15 on the opposite side.
17. Using a 21mm wrench and 19mm wrench socket remove the factory track bar bracket. 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 all 5 mounting bolts to 129 ft/lbs. **See Photo 10.**
19. Disconnect the drag link from the pitman arm. Retain hardware. Free the drag link from the pitman arm with a pickle fork.
20. Remove the pitman arm nut. Note the indexing of the pitman arm in relation to the steering sector shaft and remove the pitman arm from the steering box using the appropriate puller.
21. Install the new pitman arm (indexed the same as the OE) and fasten with the OE nut using 34mm socket. Torque the nut to 350 ft-lbs.
22. 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.
23. 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.
24. Install the bushings and sleeves on the front gas shock absorbers part # 658459
25. 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 using the stock hardware, and a 19mm wrench, tighten only enough to bulge the bushing.
26. Factory brackets secured the brake hoses to the front of the coil spring tower on the frame, these brackets where removed during disassembly. Remove the stock brake line strap from the brake hose to allow more of the rubber holes to be utilized. Attach the brake line drop brackets to the coil towers where the factory brackets where mounted using the stock hardware. Insert the supplied 5/16òx 3/4òbolt through the bracket and coil tower just below the factory bolt and secure using the supplied 5/16ònut.

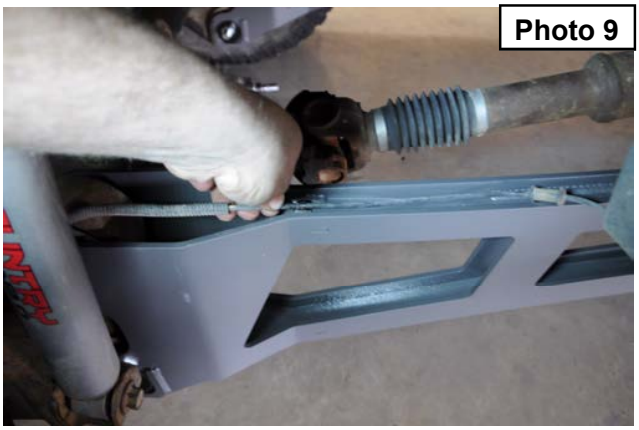


Photo 9

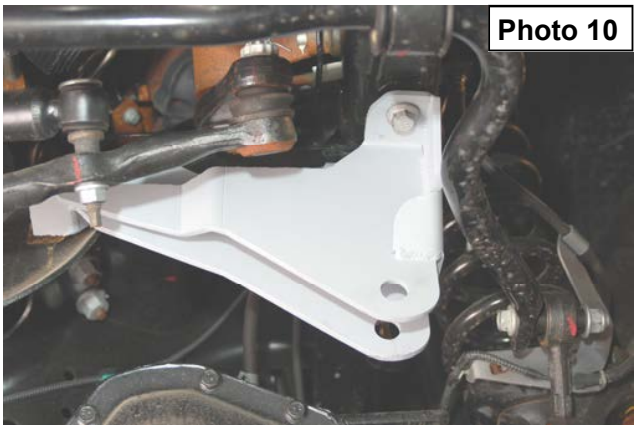
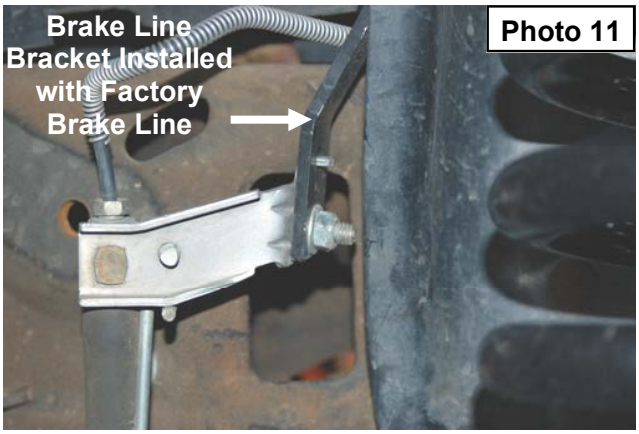
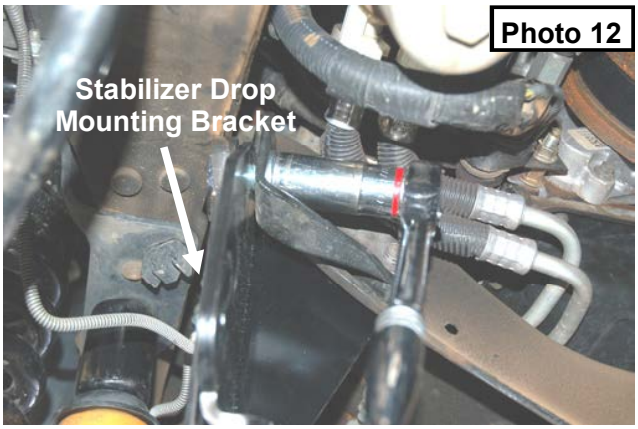


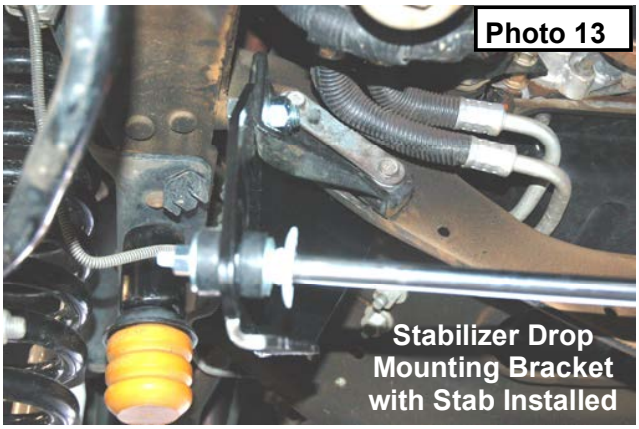
Photo 10

27. Carefully reform the metal brake line as necessary in order to line up the factory brake hose bracket with the lower end of the drop bracket. Attach the factory bracket to the drop bracket using the supplied 1/4ò x 3/4ò bolt and nut. Attach the lower brake hose brackets to the axle using the factory hardware and tighten. **See Photo 11**.
28. The factory steering stabilizer bracket is attached to the front lip of the engine cross member via a two bolt tab. Remove the nuts securing the stabilizer mount to the cross member, using a 19mm socket. It is not necessary to entirely remove the factory bracket. Position the steering stabilizer drop bracket on the back side of the cross-member lip and secure it using the factory tab bolts and nuts. Do not tighten at this time

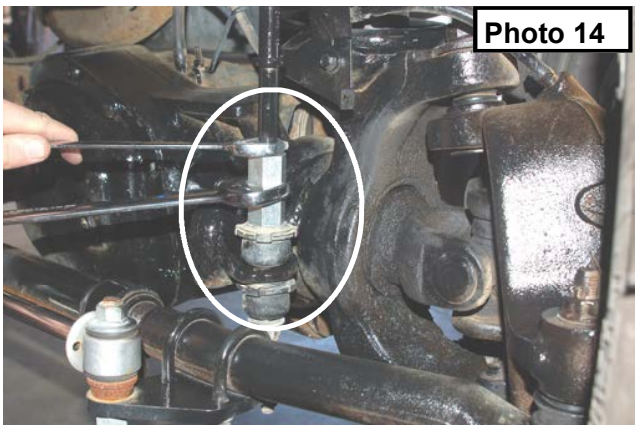


29. Install the supplied 5/8ò X 1.50ò bolt through the factory bracket, where the stabilizer used to mount and the new bracket. The bolt should be installed from the outside and secured with the supplied washers and nut. Tighten the 5/8ò bolt to 112 ft/lbs and the factory bolt to 136 ft/lbs. Using a 24mm socket See **Photo 12.**
30. Install the factory washer and bushing half on the stem end of the stock stabilizer, them position the stem through the remaining hole in the new stabilizer drop bracket. Install the remaining bushing half, washer, and factory nut, then tighten until the bushing swells slightly. See **Photo 13.** With lifted applications and larger tires we highly recommend the use of the Rough Country problem solver heavy duty stabilizer or a Rough Country dual stabilizer system.

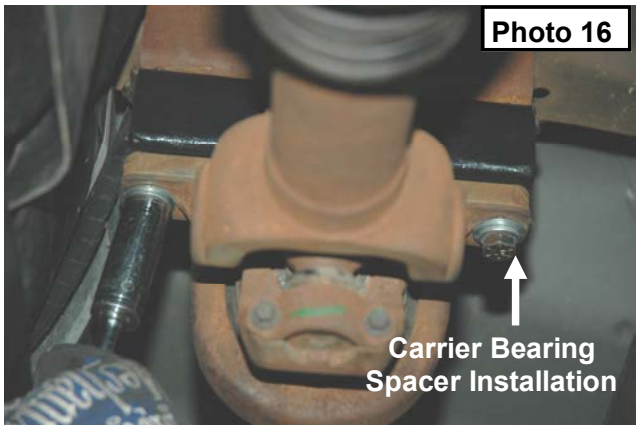




31. Install tires and wheels and lower the vehicle to the ground.
32. Thread the female end of the anti-sway bar link extension and supplied jam nut on the factory sway bar end links and tighten to 60 ft/lbs. **See Photo 14.**
33. Attach the drag link stud to the pitman arm. Torque nut to factory specs, and install cotter pin. Check for adequate linkage clearances while turning steering wheel full lock in both positions.
34. 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 to factory specifications.
35. Torque all 6 radius arm bolts to factory specifications.



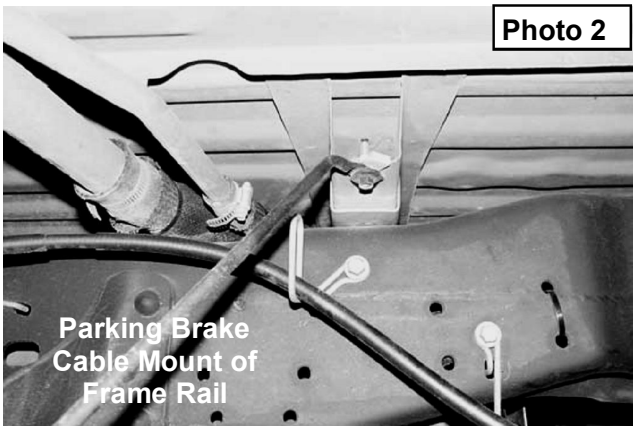
37. For vehicles with 2 piece drive shafts, support the driveshaft, using a 17mm socket remove the bolts from the carrier bearing bracket. Insert the carrier bearing spacer between the bearing bracket and body mount. Reattach the carrier bearing using the supplied 7/16ò x 3 1/4ò bolts and washers. Torque to 60 ft/lbs. **See Photo 16.**



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. Using a 24mm socket, remove the stock u-bolts. Use the floor jack to lower the axle assembly to allow for lifted block installation.
4. Remove the spring eye bolts and nuts and remove the spring. If equipped: the top mounted block and top mounted overload spring must be removed. The top spring plate may need to be drilled out to accept the nut for the new spring center pin. Make sure before starting that you have access to a drill and a 13/16ò to 7/8ò drill bit. Have c-clamps in place on either side of each strap before center bolt is removed
5. Unbolt center pin and remove. Un-clamp leaf spring. **CAUTION** -Take care when releasing the c-clamps since the springs are under load and will ñspringò apart when released.
6. Position add-a-leaf under the next longest leaf of the spring pack. Replace the shorter spring leafs under the helper leaf and clamp together, being careful to align the center pin holes in the spring leafs. If less lift is desired the leaf under the new add-a-leaf can be removed
7. Insert the new center pin supplied with the kit through the spring assembly with the head of the center pin in the same location as the stock pin. Re-compress the pack with the c-clamps, not center pin, to avoid stripping of nut/ bolt threads. Bolt together, being sure to align leafs. Cut off excess threads on the center pin with a hack saw. If applicable, re-form straps or install new bend straps. If heat is used on the straps, allow them to cool naturally and thoroughly before removing the c-clamps.
8. Replace spring on vehicle. Torque to 86-110 ft./lbs.
9. Install the Rough Country block in between the leaf spring and the axle. Jack up the axle and align the pins in the blocks and axle seat. Secure with new u-bolts and torque evenly to 85 ft/lbs. On Driver side disconnect the parking brake cable bracket from the spring plate and retain hardware **See Photo 1**. Take care not to over extend the brake lines.
10. Reattach parking brake cable bracket to the spring plate. If more slack is needed remove the cable from the rearmost cable ring on the frame rail **See Photo 2.**





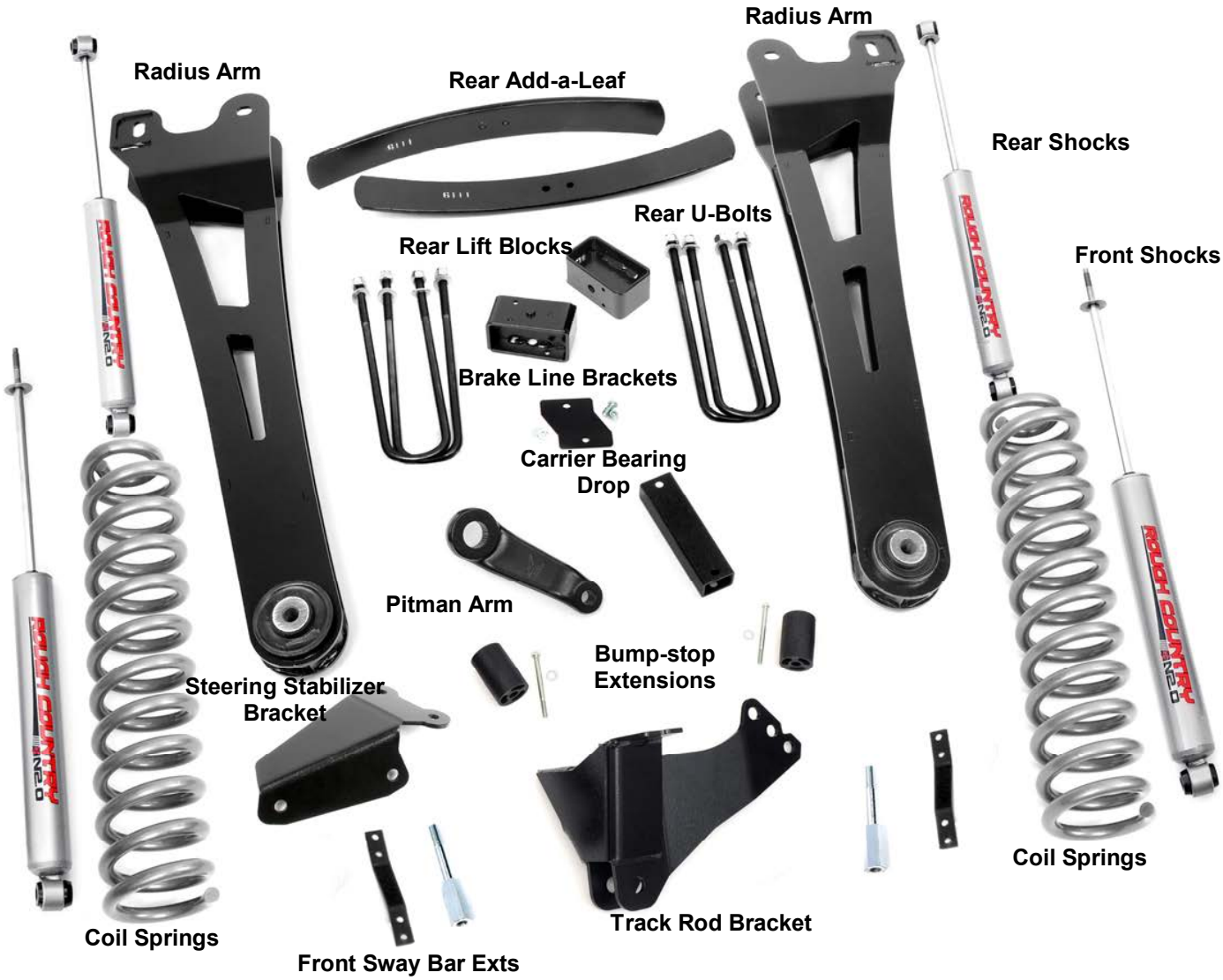
11. Locate shock part number 658601 gas shock and assemble poly bushings and sleeve in shock. Using a 18mm wrench, for the upper, and a 19mm and 15mm wrench for the lower. Install using factory hardware on upper and lower shock mount
12. Install the tires and wheels.
13. Jack up the rear of the vehicle and remove the jack stands. Lower the vehicle to the floor.
14. With the weight of the vehicle on the axle, torque the u-bolts to 130-150 ft-lbs.
15. On the leaf spring to front spring hanger torque bolts to 222 ft.lbs. and on rear leaf spring to shackle and shackle to frame mount torque bolts to 185 ft.lbs.
16. Check all hardware for proper torque.

POST INSTALLATION 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 minï 4.0 degree
   Camber ï 0.6ð .09 degree
   Toe ï .10ï .15 degree
5. If drive line vibration is experienced you may have to fine tune shaft angles. Shafts may need to lengthened or trued and u-joints may need to be replaced.
6. Install Warning to Driver decal on sun visor.
7. Re-torque all nuts, bolts, and especially u-bolts after the first 100 miles, again after another 100 miles and then check periodically thereafter.
8. All components must be retightened after 500 miles, and every three thousand miles after installation
9. Adjust headlights to proper settings.

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.

KIT CONTENTS



Kit Bag Contents:

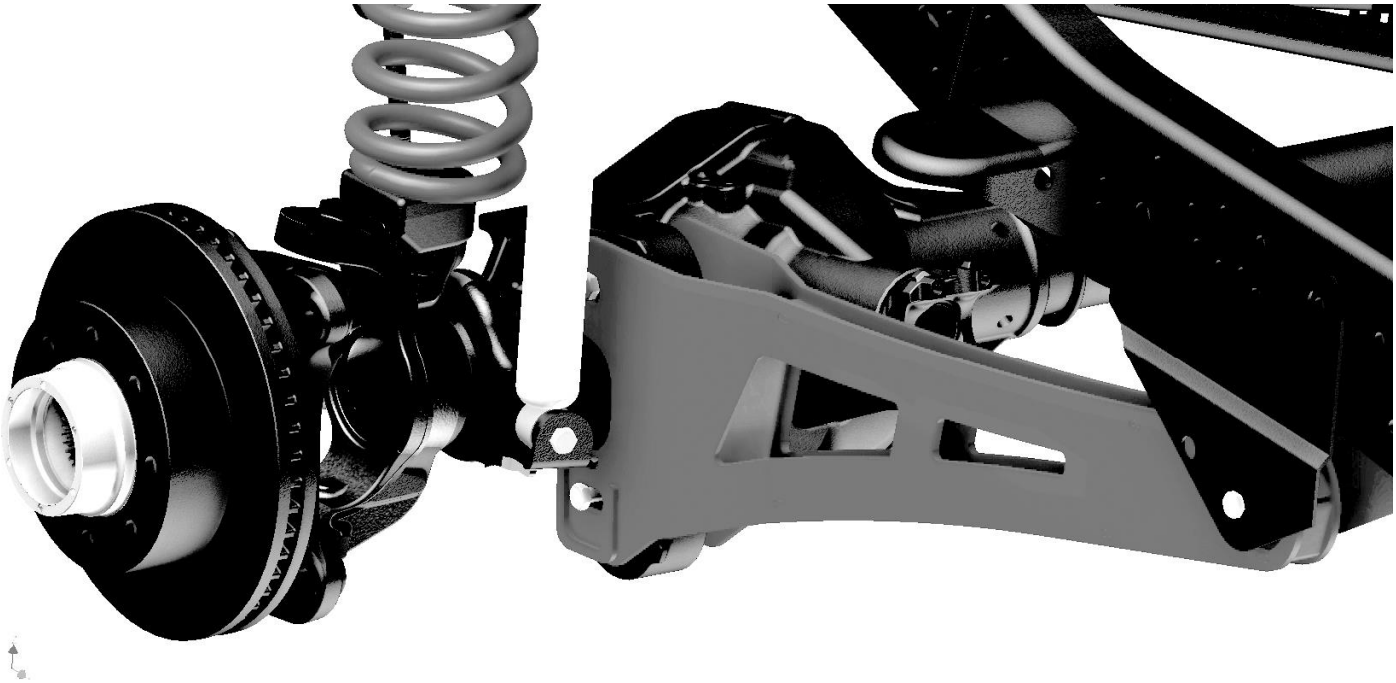
- 2— .437-14X2.75" Bolt
- 2— .4375" Washer
- 2— M8-1.25X95mm Bolt
- 6— .3125 Washer
- 1— .625-11 X1.50 Bolt
- 1— .625-11 Nut
- 1— .625 Washer
- 4— .250 Washer
- 2— .250-20 Nylock Nut
- 2— .250-20X.75"Bolt
- 2— .312-18X.75" Bolt
- 2— .3125-18 Nut
- 2— 18mm x 130mm Bolt
- 2—18mm Nylock Nut

Thank you for choosing Rough Country for your suspension needs.

Part #87491.20



Don’t forget Rough Country can meet all of your 4WD suspension needs. From Dual Stabilizers to Dual Shock Kits.



ROUGH COUNTRY
SUSPENSION SYSTEMS