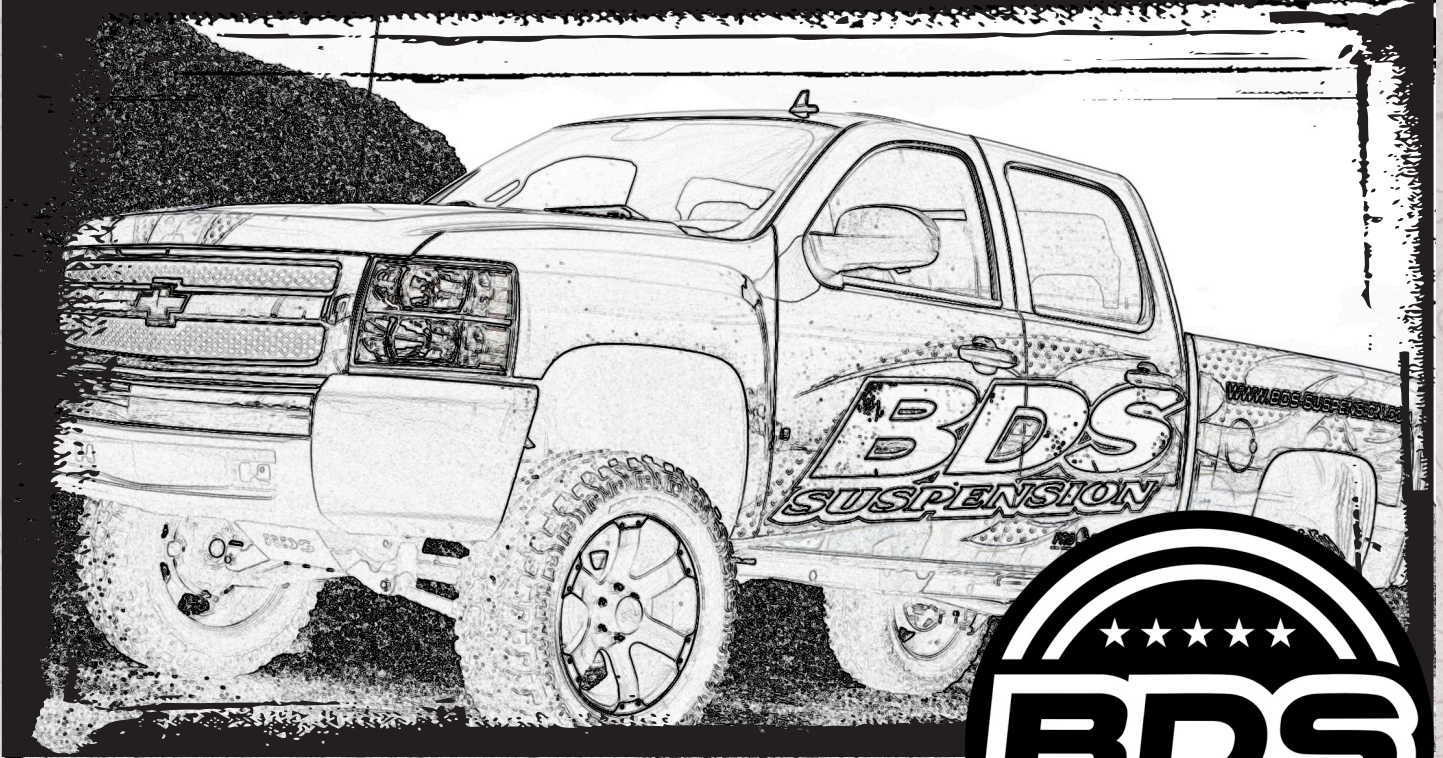


# INSTALLATION GUIDE



Part#: 021308



**HARDCORE LIMITED LIFETIME WARRANTY**

## 3" Suspension System

**Chevy 1500 4WD / 2WD | 2007-2018**  
**GMC 1500 4WD / 2WD | 2007-2018**

Rev. 072525

491 W. Garfield Ave., Coldwater, MI 49036 • Phone: 517-279-2135

Web: [www.bds-suspension.com](http://www.bds-suspension.com) • E-mail: [tech-bds@ridefox.com](mailto:tech-bds@ridefox.com)

# Read And Understand All Instructions And Warnings Prior To Installation Of System And Operation Of Vehicle.



## THANK YOU

Your truck is about to be fitted with the best suspension system on the market today. That means you will be driving the baddest looking truck in the neighborhood, and you'll have the warranty to ensure that it stays that way for years to come.

Thank you for choosing BDS Suspension!

### BEFORE YOU START

BDS Suspension Co. recommends this system be installed by a professional technician. In addition to these instructions, professional knowledge of disassembly/ reassembly procedures and post installation checks must be known.

### FOR YOUR SAFETY

Certain BDS Suspension products are intended to improve off-road performance. Modifying your vehicle for off-road use may result in the vehicle handling differently than a factory equipped vehicle. Extreme care must be used to prevent loss of control or vehicle rollover. Failure to drive your modified vehicle safely may result in serious injury or death. BDS Suspension Co. does not recommend the combined use of suspension lifts, body lifts, or other lifting devices. You should never operate your modified vehicle under the influence of alcohol or drugs. Always drive your modified vehicle at reduced speeds to ensure your ability to control your vehicle under all driving conditions. Always wear your seat belt.

### BEFORE INSTALLATION

- Special literature required: OE Service Manual for model/year of vehicle. Refer to manual for proper disassembly/reassembly procedures of OE and related components.
- Adhere to recommendations when replacement fasteners, retainers and keepers are called out in the OE manual.
- Larger rim and tire combinations may increase leverage on suspension, steering, and related components. When selecting combinations larger than OE, consider the additional stress you could be inducing on the OE and related components.
- Post suspension system vehicles may experience drive line vibrations. Angles may require tuning, slider on shaft may require replacement, shafts may need to be lengthened or trued, and U-joints may need to be replaced.
- Secure and properly block vehicle prior to installation of BDS Suspension components. Always wear safety glasses when using power tools.
- If installation is to be performed without a hoist, BDS Suspension Co. recommends rear alterations first.
- Due to payload options and initial ride height variances, the amount of lift is a base figure. Final ride height dimensions may vary in accordance to original vehicle attitude. Always measure the attitude prior to beginning installation.



Visit [560plus.com](http://560plus.com) for more information.  
**TIRES AND WHEELS**

285 / 70 with 17 x 9 and 4.5 in. Backspace  
285 / 70 with 20 x 9 and 4.5 in. Backspace

Trimming may be required:

33 x 12.5 with 17 x 9 and 5 in. Backspace  
33 x 12.5 with 18 x 9 and 5 in. Backspace  
33 x 12.5 with 20 x 9 and 5 in. Backspace



### BEFORE YOU DRIVE

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.

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.

Perform head light check and adjustment.

Re-torque all fasteners after 500 miles. Always inspect fasteners and components during routine servicing.

# CONTENTS OF YOUR KIT

121151 - Cast Steel Control Arms 121152 - Stamped Steel/ Aluminum Control Arms		
Part #	Qty	Description
A262	1	GM 1500 UCA Drv (121151 only)
A263	1	GM 1500 UCA Pass (121151 only)
A354	1	'14+ GM 1500 UCA Drv (121152 only)
A355	1	'14+ GM 1500 UCA Pass (121152 only)
02826	2	Steering Stop
02911	2	Ball Joint Cap
45NA53	1	Grease Packet
9452K145	2	O-Ring
967	1	Bolt Pack
	2	1/4"-20 x 5/8" bolt
	2	1/4" SAE washer
	2	1/4"-20 Serrated Nut
	2	Wire Clamp
02895	2	6x5.5 Wheel Spacer

021308 Rear Box Kit		
Part #	Qty	Description
3KB-W96	2	3" Lift Block
962961138QB	4	9/16" x 2-9/16" x 11-3/8" Square U-bolt
BP1007	1	Bolt Pack - 9/16" U-Bolt
	8	9/16"-18 High Nut
	8	9/16" SAE washer

# PRE INSTALLATION

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## IMPORTANT

It is required that ride height measurements be taken before and after installation. Measure from the **WHEEL AXLE CENTER** up to the **FENDER LIP** of the wheel opening. Do this for all 4 wheels. Record measurements below.\*\*

### BEFORE

*Left Front* \_\_\_\_\_ *Right Front* \_\_\_\_\_

*Left Rear* \_\_\_\_\_ *Right Rear* \_\_\_\_\_

### AFTER

*Left Front* \_\_\_\_\_ *Right Front* \_\_\_\_\_

*Left Rear* \_\_\_\_\_ *Right Rear* \_\_\_\_\_



**\*\*These ride heights will be required if you have any ride height concerns after installation. Please be prepared to provide these to Technical Support.**

## TECH TIPS

### TROUBLESHOOTING INFORMATION FOR YOUR VEHICLE

1. OE cast aluminum lower control arms are **required** for '16-18 model year trucks for CV boot clearance.
2. - Cast aluminum lower control arm reference numbers = 22853473 and 22853474, or equivalents.
3. - Cast aluminum and stamped steel lower control arms have the same ball joint taper.
4. - Cast steel LCAs have a different ball joint taper and would not be usable for '16-'18 model years.
5. 20" wheels with 5-3/4" backspacing recommended to reduce trimming.
6. Control arms are of much larger size than stock. Tire and wheel selection is critical to allow for proper clearance. Optional weld-on steering stops are for cast steel and stamped steel arms only to eliminate any possible chance for contact between the tire and upper control arm (these steering stops cannot be installed on trucks with aluminum arms).
7. A wheel spacer is included for use in the event the stock spare wheel and tire needs to be installed, this is a temporary measure.
8. Medium-strength thread-lock (blue thread locker) is recommended on all bolts.
9. Will NOT work on MagneRide Equipped models.
10. 121151 Box Kit is for Cast Steel Upper Factory Control Arms, 121152 Box Kit is for Cast Aluminum / Stamped Steel Factory Upper Control Arms. Make sure the CORRECT upper control arm is installed with the correct truck. The ball joint taper is different between the two.
11. When the 121151 or 121152 BDS UCA is combined with a stock knuckles / stock lower control arms, the maximum extended length of a coilover or strut assembly is 20"; the minimum collapsed length is 14-3/4". Arms are designed to work within these limits and may not work with all aftermarket spacer lifts / lift kits. If the arm contacts the droop limiter at full droop the factory droop a different spacer or strut assembly is recommended. Removing the droop limiter may cause range of motion problems with the ball joint.
12. Control arms will work with any 0-2" or 0-3" Fox Coilovers 883-02-028, 883-02 (06)-121, 880-02 (06)-525, 982-05-018, 985-62-004, 985-62-002, or 883-06-164
  - Will NOT work with BDS 4" kits, or 6" coilover kits
13. For replacement ball joints, BDS121151 will use service kit BDS081201. Ball joint is directional and must be installed with the 'dot' facing either inward or outward on the vehicle, otherwise damage may occur.
14. For replacement ball joints, BDS121152 will use service kit BDS081203. Ball joint is directional and must be installed with the 'dot' facing either inward or outward on the vehicle, otherwise damage may occur.
15. Will not fit two mode hybrid models with electronic power steering.

## INSTALLATION INSTRUCTIONS

### INSTALLATION INSTRUCTIONS

#### MEASURE FIRST

Measure and record ride heights as described on page 5.

### SPECIAL TOOLS

Welder - Optional

#### DO YOU KNOW IF YOUR TRUCK HAS CAST STEEL OR ALUMINUM/STAMPED STEEL CONTROL ARMS?

Verify whether the truck has cast steel or aluminum/stamped steel control arms. This kit is specific for each type of steering knuckles due to differences in ball joint taper.

#### RECALL NOTICE

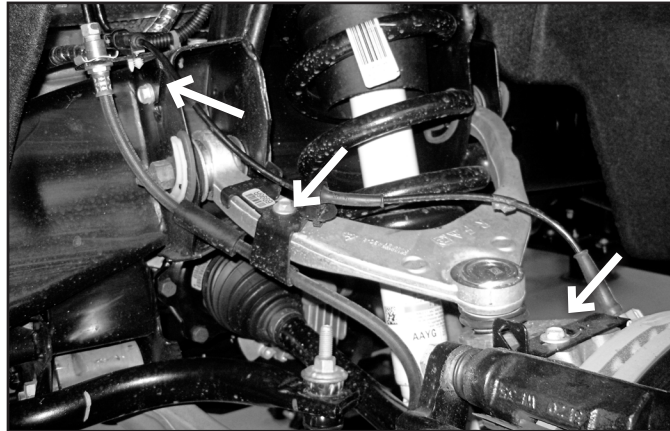
GM issued a safety recall (#42190) for some 2016-17 vehicles built before 4/8/16 that were equipped with stamped steel upper control arms due to poor weld quality. BDS strongly recommends checking if your vehicle is included in the recall and having the fix performed before installing this suspension system.

## WELDING IS OPTIONAL

The installation of this kit includes weld on steering stops for OE cast steel or stamped steel lower control arms. We recommend this procedure be performed by an experienced welder. If necessary, this kit can be completely installed and then driven to a shop to have the plate welded. This method will make reaching the weld locations slightly more difficult but it can be done if necessary.

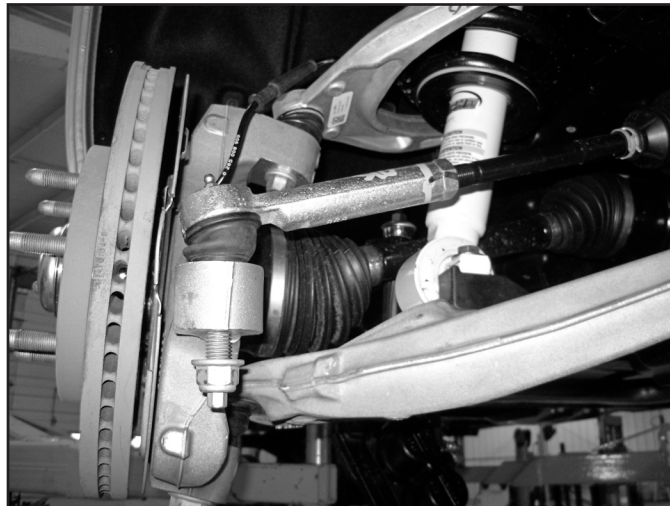
1. Park the vehicle on a clean, flat surface and block the rear wheels for safety.
2. Disconnect the positive and negative battery cables from the battery.
3. Raise the front of the vehicle with a hydraulic jack and support the frame with jack stands. Remove the wheels.
4. Disconnect the ABS line from the connector on the frame (Fig. 1). Remove the ABS line from the retaining clips at the frame, upper control arm and knuckle. Disconnect the brake line bracket from the upper control arm (Fig. 1). Save bolt.

**FIGURE 1**



5. Disconnect the tie rod from the knuckle (Fig. 2). Remove the tie rod end nut. **Steel Knuckle:** Strike the knuckle near the tie rod end with a hammer to unseat the taper. **Aluminum Knuckle:** Avoid striking the knuckle, typically the taper unseats more easily and gently hitting the end of the tie rod end will unseat the taper. A pickle fork can also be used. Save the mounting nut.

**FIGURE 2**



6. Remove the two brake caliper mounting bolts and remove the caliper from the knuckle (Fig. 3). Hang the caliper securely out of the way DO NOT hang the caliper by the brake hose. Save caliper bolts.

**FIGURE 3**

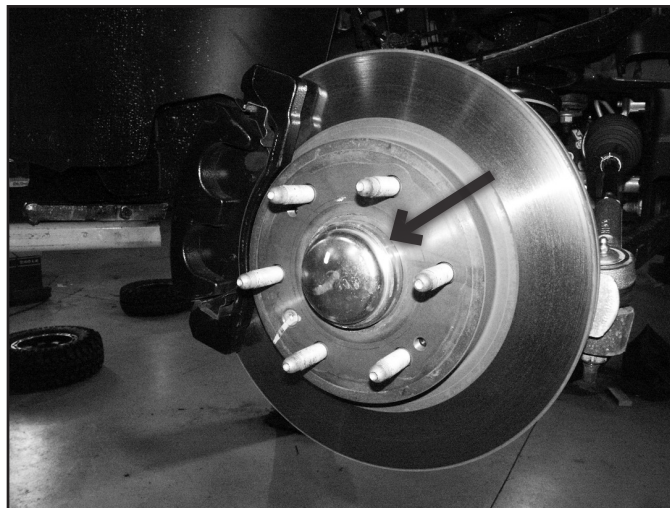


7. Remove the brake rotor retaining bolt and remove the rotor from the vehicle. Retain hardware.
8. For 2016-2018 model years replacing the lower control arm with the required cast aluminum lower control arm, remove the hub dust cap (Fig. 4). Remove the axle shaft nut. Retain nut and cap.



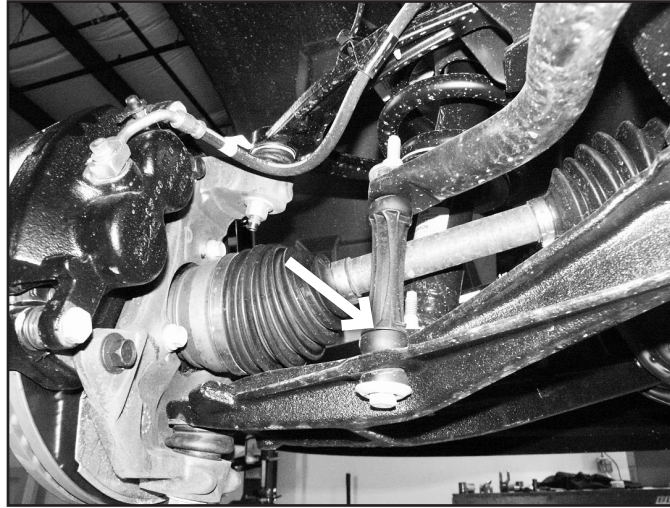
**Tip** Use a small chisel and hammer to carefully separate the edge of the cap from the hub. Work around the circumference of the cap. The axle nut will require a 36mm socket.

**FIGURE 4**



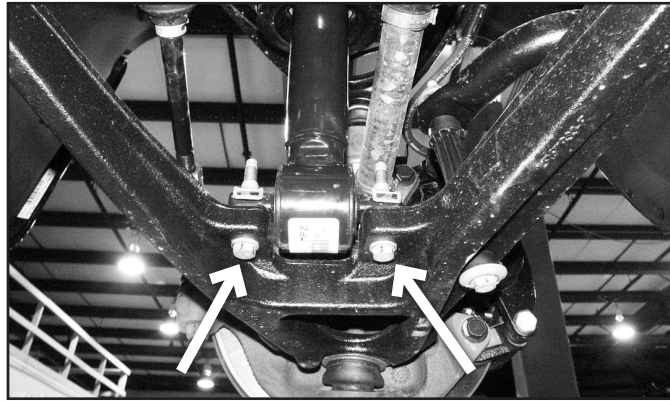
9. Disconnect the sway bar links from the lower control arm (Fig. 5). Save link and hardware.

**FIGURE 5**



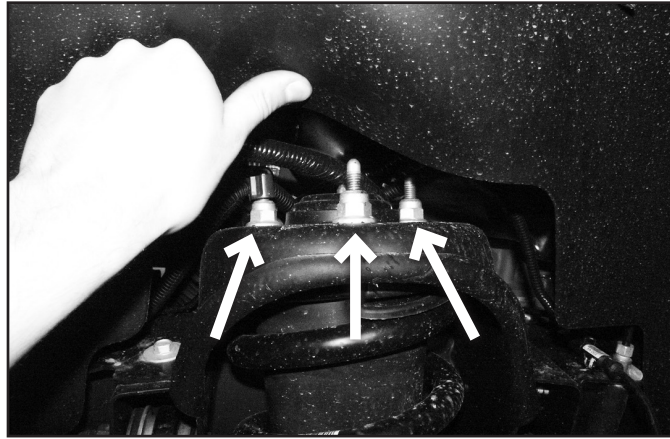
10. Support the lower control arm with a jack. Remove the lower strut mount bolts (Fig. 6). Save bolts.

**FIGURE 6**



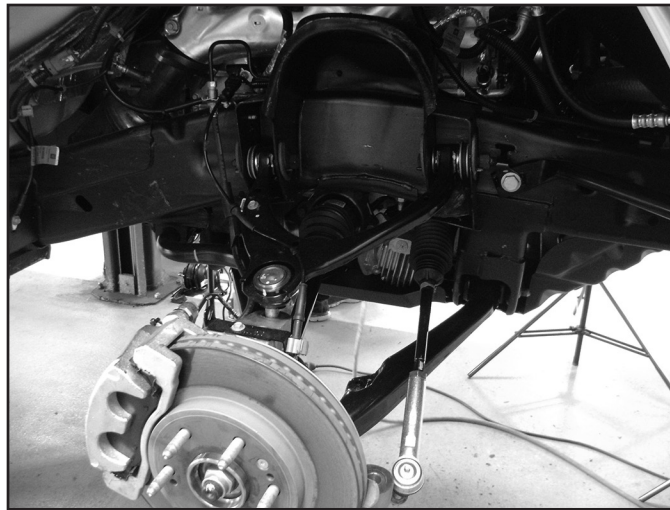
11. Remove the upper and lower ball joint nuts and thread back on by hand a couple of turns. **Steel Knuckle:** Strike the knuckle near the upper and lower ball joints to dislodge the tapered seat. **Aluminum Knuckle:** Avoid striking the knuckle to release the taper, a pickle fork or pry bar can be used to apply a splitting force. Gently hit the end of the ball joint to get it to release. If you do resort to hitting the knuckle avoid re-use and discard.
12. Remove the upper ball joint nut and lower the lower control arm down.
13. For 2016-2018 model years replacing the lower control arm with the required cast aluminum lower control arm: remove the CV shaft from the hub and support the CV shaft to prevent over-extending the joint. Remove the lower ball joint nut and remove the knuckle assembly from the lower control arm. Save ball joint nuts. Remove the lower control arm and replace with the cast aluminum arm using the OE hardware. Final torque of the control arm hardware will be completed with the vehicle on the ground.
14. Remove the three upper strut mounting nuts (Fig. 7) and remove the strut from the vehicle. DO NOT remove the center strut rod nut, it is under extreme pressure. Save nuts.

**FIGURE 7**



15. Remove the upper control arm from vehicle. (Fig 8)

**FIGURE 8**



16. Install new control arm with factory cam bolts. Snug, but do not torque bolts. Do not install the upper ball joint cap at this time. Do not attach to the steering knuckle at this time. (Fig 9)

**FIGURE 9**



17. If installing with Fox Coilovers, install the coilovers at this time. Follow instructions included with the coilovers, and reference the following steps 18-22

*Remote Reservoir Applications: Reservoir will mount to the top side of the factory upper strut bracket. Attach reservoir with included hose clamps. (Fig 10a) Ensure the hose clears the upper arm and cycle the upper arm to ensure that it will clear the hose before attaching to the steering knuckle in later steps. Adjust fittings on reservoir hose / hose location if necessary to gain adequate clearance. The lower offset barpin (Fig 10b) will move the coilover away from the CV shaft. Verify driver side and passenger side coilover assemblies before installation.*

**FIGURE 10A**



**FIGURE 10B**



18. **Fox 2.5 Performance Elite:** The coil-overs are installed with the reservoir hose towards the rear of the vehicle. Locate the positional sticker, marked L or R, on the coilover body.
19. Loosely attach the coil-over to the upper mount using the two inner most upper mounting studs with provided washers and nylock nuts.
20. Locate the reservoir mount and position it on top of the strut tower so it faces out. The slot and semi-circle bracket profile engage the stamped profile of the OE strut tower and outboard mounting stud: fasten the bracket with the provided washer and nut. Torque all three upper mounting nuts to 40 ft-lbs.
21. Install the reservoir to the bracket with the provided clamps (Fig. 11, passenger side shown). Center the Fox reservoir decal between the bracket slots and fasten with the provided two-piece clamps and socket head cap screws. Cycle the upper control arm to ensure clearance to the reservoir hose and reservoir fittings.

**FIGURE 11**



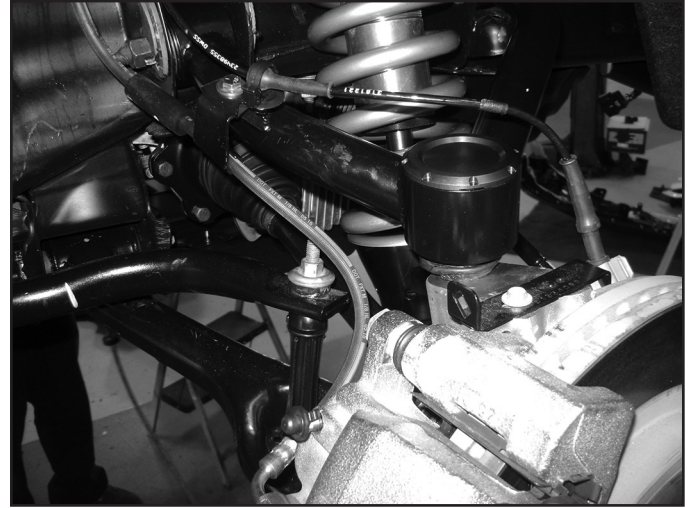
22. Swing the lower control arm up to the lower coil-over mount, apply thread locker, and fasten with the provided bolts. Torque lower hardware to 40 ft-lbs
23. Attach the upper control arm to the steering knuckle with included castellated nut. Tighten to 45 ft-lbs, install cotter pin.
24. For 2016-2018 models replacing the lower control arm: Install the factory CV axle shaft into the hub and fasten with the original nut/washer and torque to 188 ft-lbs. Install dust cap.

25. Grease the upper ball joint at this time. The ball joint cap will need to be removed to grease the joint at future maintenance intervals.
26. Lightly grease the o-ring with included grease and install the o-ring onto the cap. Push cap into the upper control arm squarely to get it to 'pop-in.' Turning the cap as you push down helps. (Fig 12a, 12b)

**FIGURE 12A**

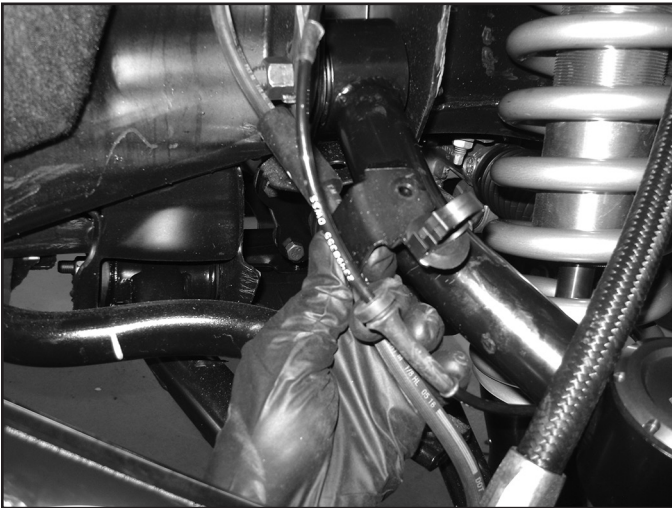


**FIGURE 12B**

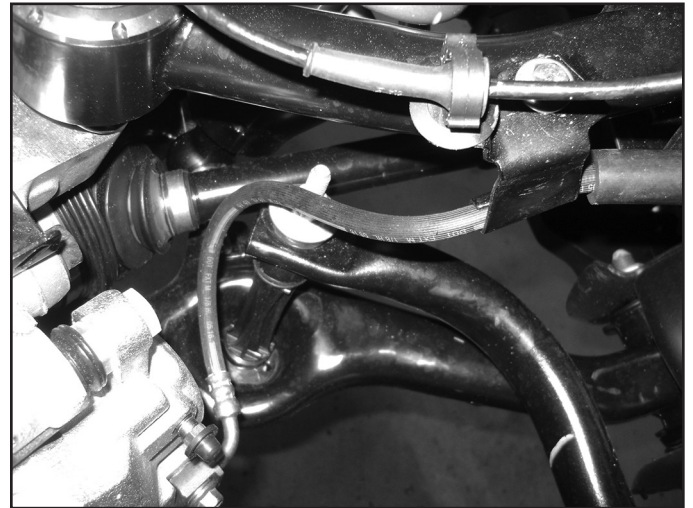


27. Attach modified factory brake line bracket to the upper control arm with 1/4" hardware. Tighten to 12 ft-lbs. Cycle the steering to ensure that the brake line clears the sway bar components. Rotate bracket if necessary. (Fig 14a, 14b)

**FIGURE 13A**



**FIGURE 13B**



28. Reattach ABS wire to factory mounting clips and brackets. It may be necessary to slide the ABS wire in the rubber grommets to get adequate clearance / routing of the wire. Use silicone spray to allow the grommet to slide on the ABS wire.

### **OPTIONAL: STEERING STOP INSTALLATION:**

29. Disconnect battery.
30. Prep the stamped steel or cast steel lower control arm for welding, remove coating at the factory steering stops.
31. Place steering stops on the stock lower control arm and weld the top and bottom of the plate. (Fig 14)

**FIGURE 14**



32. Coat any bare metal surface with paint.
33. Reconnect the steering tie rod ends to the knuckles. Torque the OE tie rod nuts to 26 ft-lbs + 85-100 degrees.
34. Torque the upper ball joint nut to 37 ft-lbs and the lower ball joint nut to 74 ft-lbs.
35. Reinstall the brake rotor onto the hub assembly. Torque the rotor retaining bolt to 106 **in-lb**
36. Attach the caliper to the OE steering knuckle with the original mounting hardware. Torque bolts to 170 ft-lbs.
37. Reattached the sway bar links to the lower control arm. Tighten the OE nut to 17 ft-lbs.
38. Reconnect ABS line at the frame.
39. Install the wheels/tires and lower the front of the vehicle to the ground. Torque OE lug nuts with OE wheels to 140 ft-lbs.
40. Bounce the front of the vehicle to settle the suspension. Torque the lower control arm mounting bolts to 150 ft-lbs. If the upper control arm cam bolts were loosened during the installation, center the cams and torque the bolts to 125 ft-lbs.
41. Check differential and CV shafts for clearance to the coilover and rotating components.
42. Check all hardware for proper torque.
43. Reconnect the battery cables to the battery.

## REAR INSTALLATION

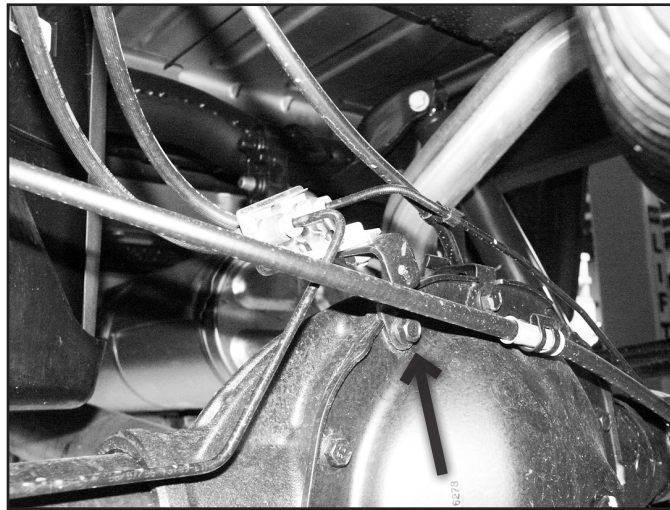
1. Block the front wheels. Safely raise the rear of the vehicle and support with jack stands just ahead of the front leaf spring frame mount.
2. Remove the wheels.
3. Support the rear axle with a floor jack.
4. Disconnect the rear brake line bracket from the top of the differential (Fig. 1). Save hardware.



**Tip**

*The bracket uses a captive bolt, meaning that it is loosely pressed into the bracket hole.*

**FIGURE 1**



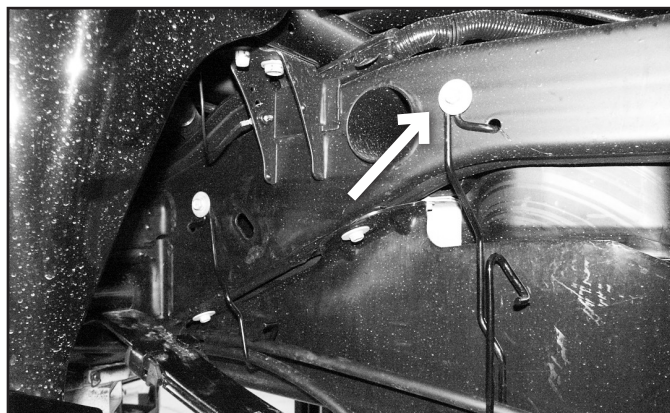
5. Remove the ABS lines from the retaining clip on the bottom of each frame rail. Also disconnect the ABS line connector from the top of the frame rail. (Fig. 2).

**FIGURE 2**



6. Remove the driver's side parking brake cable brackets from the driver's side frame rail. (Fig. 3)

**FIGURE 3**



7. Support the center of the axle with a hydraulic jack. Remove the factory shocks from the axle and frame. Save hardware and discard shocks.

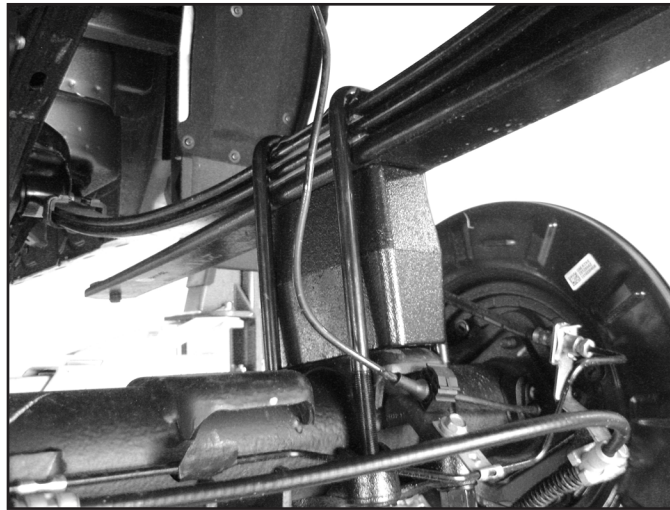
## REAR LIFT BLOCK INSTALLATION

8. With the axle still well support remove the passenger's side u-bolts. The u-bolts will not be reused. Slowly lower the axle and remove the factory block from the axle. The factory block will not be reused.

*The hole in the factory axle mount may need to be clearanced slightly for proper pin fitment.*

9. Lower the axle just enough to install the new provided lift block between the axle and the spring. Position the block so the male pin side is forward when compared to the female or top of the block. This will assist in shifting the axle forward. Align the pin in the block with the hole in the axle and the hole in the block with the leaf spring pin. It may be necessary to loosen the driver's side u-bolts slightly to allow the axle to lower far enough to install the block.
10. Using the support jack, raise the axle so that the axle, spring and block are all touching. Install the new provided u-bolts, nuts and washers allow with the factory u-bolt plate. (Fig. 4) Snug u-bolts but do not tighten.

**FIGURE 4**



11. Repeat the installation on the driver's side of the vehicle. Pay special attention to all of the brake lines and wires. Do not allow them to get over-extended.
12. Fox 2.0 Performance Series rear shocks: Locate the new rear shocks. Install the provided bushings and steel sleeves into the eyes of the shocks. Lubricate the bushings and sleeves with white lithium grease to make installation easier.
13. All rear shocks: Install the new shocks with stock hardware and torque upper and lower bolts to 65 ft-lbs. The axle mounting tabs may need to be bent open slightly to allow for clearance of the larger diameter shocks. Fox 2.5 Performance Elite shocks will be labeled L (left) or R (right) for respective side of vehicle installation.
14. Reconnect the ABS lines to the plastic retaining clip at the bottom of each frame rail. The connector will not be reattached to the top of the frame. Reroute the lines as necessary to gain proper slack.
15. Reconnect the parking brake cable brackets to the driver's side frame rail with the original hardware. The driver's side cable may have to be removed from the rear bracket to gain appropriate slack. Torque bolts to 20 ft-lbs.
16. Reconnect the rear brake line bracket to the top of the differential. Torque bolt to 15 ft-lbs + 20 degrees.
17. Install wheels and tires and tighten lugnuts, then lower vehicle to the ground. Torque lug nuts to 140 ft-lbs.

## POST INSTALLATION

18. Double check all fasteners for proper torque.
19. Check all moving parts for clearance.
20. Complete a full radius turning check to ensure that no interference occurs.
21. Align headlights
22. Double check the brake lines for adequate slack at full wheel travel.
23. Complete a vehicle alignment.
24. Check all fasteners after 500 miles.



## **WE WANT TO SEE YOUR RIDE!**

Grab photos of your BDS-equipped truck in action and send them in for a chance to be featured. Send it in to our Bad Ass Rides customer gallery at [bds-suspension.com/bar](http://bds-suspension.com/bar) and post them on the BDS Fan Page on Facebook at [facebook.com/BDSSuspensions](https://facebook.com/BDSSuspensions). Don't forget about your BDS swag! BDS offers t-shirts, hoodies, decals and more available on the BDS website or through your local BDS distributor.

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## **TIME TO HAVE SOME FUN**

**Thank you for choosing BDS Suspension.**

For questions, technical support and warranty issues relating to this BDS Suspension product, please contact your distributor/installer before contacting BDS Suspension directly.