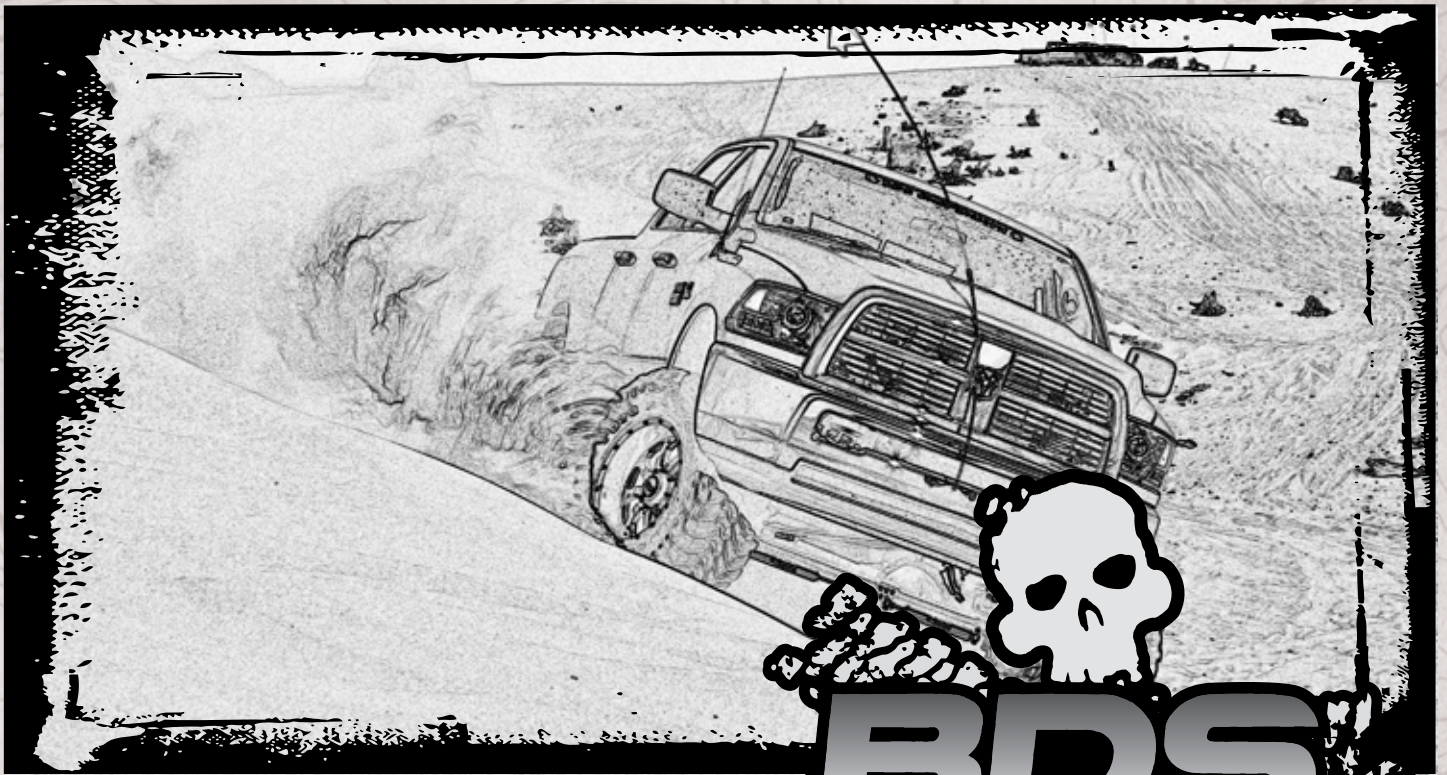


# Installation instructions



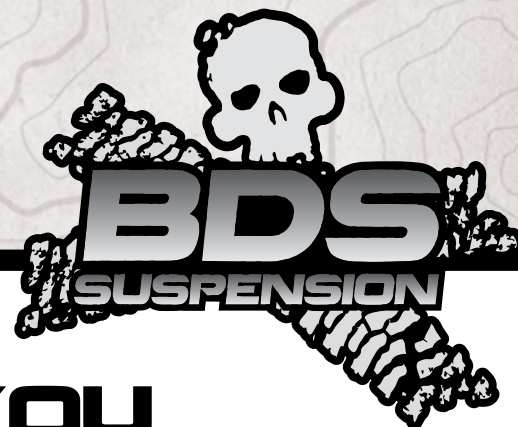
Part#: 012801

## 6" and 8" Long Travel Suspension System

Dodge Ram 2500 | 2003-2012



# 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.



### TIRES AND WHEELS

6" Kit: 37x12.50 w/ 17x9 with 4.5-5.5" backspacing  
8" Kit: 38x13.50 w/ 17x9 with 4.5-5" backspacing



### 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.



The kit you are installing may not be exactly as the kit shown.

## CONTENTS OF YOUR KIT

### 122801/122802/122811 T-Case Indexing Kit (8" only)

See separate instruction sheet

#### 012801 Long Arm Box Kit

| Part # | Qty | Description                        |
|--------|-----|------------------------------------|
| 01286B | 1   | Long Arm Bracket - Drv             |
| 01287B | 1   | Long Arm Bracket - Pass            |
| 782    | 1   | Bolt Pack                          |
|        | 10  | 1/2"-13 x 1-1/2" bolt - grade 8    |
|        | 10  | 1/2" SAE thru hardened washer      |
|        | 2   | 1/2" External serrated edge washer |
|        | 2   | 5/8"-11 Hex nut                    |
|        | 6   | 5/8" USS washer                    |
|        | 4   | 9/16"-12 x 7" bolt - grade 8       |
|        | 4   | 14mm-2.00 x 100mm bolt class 10.9  |
|        | 16  | 9/16" SAE thru hardened washer     |
|        | 4   | 9/16"-12 Prevailing torque nut     |
|        | 2   | 3/4"-10 x 5" bolt grade 8          |
|        | 2   | 3/4"-10 prevailing torque nut      |
|        | 4   | 3/4" SAE flat washer thru-hardened |
|        | 4   | 14mm-2.00 prevailing torque nut    |
|        | 9   | 1/2 - 13 Rivet Nut                 |

#### 032801R Front Coil Spring

| Part #  | Qty | Description                   |
|---------|-----|-------------------------------|
| 032801R | 2   | Front Coil Spring - Diesel 8" |

#### 012802 Long Arm Box Kit

| Part # | Qty | Description                                        |
|--------|-----|----------------------------------------------------|
| 114    | 4   | UCA Sleeve .750 x .095 x 2.33                      |
| 120    | 2   | LCA Sleeve 1.00 x .1875 x 2.60                     |
| 121    | 2   | LCA Sleeve 1.00 x 5/32 x 2.60 2010+ only (18mm ID) |
| 7      | 2   | LCA Sleeve 1.00 x .120 x 3.25                      |
| 60107  | 8   | 90 Degree Grease Zerk                              |
| 01288B | 1   | Upper Control Arm - Drv                            |
| 02288B | 1   | Upper Control Arm - Pass                           |
| 01289B | 2   | Lower Control Arm                                  |
| 3522BK | 8   | UCA Bushing - 3/4" ID                              |
| 3536BK | 4   | LCA Bushing - Axle                                 |
| 3527BK | 4   | LCA Bushing - Frame                                |

#### 012518 Rear Block Kit (3-1/2" axle)

| Part #      | Qty | Description                        |
|-------------|-----|------------------------------------|
| 02285       | 2   | 5in Bump Stop Block                |
| 963121412RB | 4   | 9/16 x 3-1/2 x 14-1/2 Round U-bolt |
| W96S-B      | 8   | 9/16 SAE Flat Washer               |
| N96FH-B     | 8   | 9/16 Fine High Nut                 |
| 01599       | 2   | Leaf Pin                           |

#### 012516 Rear Block Kit (4" axle)

| Part #      | Qty | Description                    |
|-------------|-----|--------------------------------|
| 02285       | 2   | 5in Bump Stop Block            |
| 01599       | 2   | Leaf Pin                       |
| 964001614RB | 4   | 9/16 x 4 x 16-1/4 Round U-Bolt |
| W96S-B      | 8   | 9/16 SAE Flat Washer           |
| N96FH-B     | 8   | 9/16 Fine High Nut             |

**6"-012601/8"-012803 Box Kit- 2009+ models****6"-012602/8"-012804 Box Kit- 2008 models****6"-012603/8"-012805 Box Kit- 03-07 models**

| Part #    | Qty | Description                         |
|-----------|-----|-------------------------------------|
| 082403R   | 1   | Pitman Arm (03-08)                  |
| 082404R   | 1   | Pitman Arm (09+)                    |
| 02258B    | 1   | Track Bar Bracket (03-07)           |
| 609       | 1   | Bolt Pack (03-07)                   |
|           | 2   | 9/16"-12 x 3" bolt grade 8          |
|           | 4   | 1/2" USS flat washers thru-hardened |
|           | 2   | 9/16"-12 prevailing torque nut      |
|           | 1   | 14mm-2.00 x 80mm bolt class 10.9    |
|           | 1   | 9/16" SAE flat washer               |
| 02259B    | 1   | Track Bar Bracket (08+)             |
| 642       | 1   | Bolt Pack (08+)                     |
|           | 1   | 9/16"-12 x 3" bolt grade 8          |
|           | 2   | 1/2" USS flat washers thru-hardened |
|           | 1   | 9/16"-12 prevailing torque nut      |
|           | 2   | 5/8"-11 x 3" bolt grade 8           |
|           | 4   | 5/8" SAE flat washer thru-hardened  |
|           | 2   | 5/8"-11 prevailing torque nut       |
| 01311     | 2   | Sway Bar Link (03-08)               |
| 911110    | 2   | Sway Bar Link (09+)                 |
| 02294B    | 1   | Sway Bar Mount - Drv (03-08)        |
| 02295B    | 1   | Sway Bar Mount - Pass (03-08)       |
| 02255B    | 2   | Bump Stop Bracket                   |
| M02096-BK | 2   | Urethane Bump Stop                  |
| 02256     | 1   | Brakeline adaptor - Drv             |
| 02257     | 1   | Brakeline adaptor - Pass            |
| 02260     | 2   | Steering Stop - Weld On             |
| 02129     | 2   | Sway Bar Link U-Bracket             |
| SB58BK    | 2   | 5/8" ID Hourglass Bushing           |
| SB35BK    | 2   | 3/4" ID Wide Hourglass Bushing      |
| 45313     | 2   | .625 x .109 x 1.375 Sleeve          |
| 54587     | 2   | .750 x .090 x 1.575 Sleeve          |
| 783       | 1   | Bolt Pack - Sway Bar Hardware       |
|           | 2   | 5/8"-11 Nylock nut                  |
|           | 3   | 5/8" SAE Washer                     |
|           | 2   | 3/8"-16 x 2-1/4" bolt - grade 5     |
|           | 4   | 3/8" SAE Thru hardened washer       |
|           | 2   | 3/8"-16 Prevailing Torque nut       |
|           | 2   | 9/16"-12 x 3" bolt - grade 5        |
|           | 2   | 9/16"-12 Nylock nut                 |
|           | 5   | 9/16" SAE washer                    |
|           | 3   | 1/2"-13 square nut (13/16" width)   |
|           | 3   | 1/2"-13 x 1-1/4" bolt - grade 8     |
|           | 3   | 1/2" SAE Thru hardened washer       |

**6"-012601/8"-012803 Box Kit- 2009+ models****6"-012602/8"-012804 Box Kit- 2008 models****6"-012603/8"-012805 Box Kit- 03-07 models**

|       |   |                                       |
|-------|---|---------------------------------------|
|       | 1 | 14mm-2.00 x 75mm bolt - class 10.9    |
|       | 1 | 16mm-2.00 x 75mm bolt - class 10.9    |
| 784   | 1 | Bolt Pack - Misc. Hardware            |
|       | 4 | 3/18"-16 x 1-1/4 self tapping screw   |
|       | 4 | 3/8"-16 x 2" bolt - grade 5           |
|       | 6 | 3/8" SAE Washer                       |
|       | 2 | 3/8" Split lock washer                |
|       | 2 | 3/8"-16 nut - grade 5                 |
|       | 2 | 5/16"-18 x 1" bolt - grade 5          |
|       | 4 | 5/16" SAE Washer                      |
|       | 2 | 5/16"-18 Nylock nut - grade 5         |
|       | 1 | 1/4"-20 x 1" self threading bolt      |
|       | 1 | 1/4"-20 x 1" bolt - grade 5           |
|       | 1 | 1/4"-20 Nylock nut                    |
|       | 1 | 1/4" SAE Washer                       |
| 73    | 6 | 1.25 x 5/16 x .875 Sleeve             |
| 812   | 1 | Bolt Pack - Bumper Spacer             |
|       | 6 | 1/2"-13 x 2" carriage bolts - grade 5 |
|       | 6 | 1/2"-13 Nylock nut                    |
|       | 6 | 1/2" internal tooth washer            |
|       | 6 | 1/2" USS washer                       |
|       | 2 | 5/16"-18 x 1-1/2" self threading bolt |
|       | 2 | 5/16" Fender washer                   |
|       | 2 | 3/4" SAE washer                       |
| 01642 | 1 | Rear Brake Line Brkt (03-08)          |
| 02422 | 1 | Rear Brake Line Brkt (09-12)          |
| 124   | 1 | Rear Brake Line Brkt Spacer (09-12)   |
| 02296 | 1 | Front Driveshaft Spacer (6" Box Kits) |
| 932   | 1 | Bolt Pack - Driveshaft (6" Box Kits)  |

## TROUBLESHOOTING INFORMATION FOR YOUR VEHICLE

### TECH TIPS

1. Do not put a spacer on top of the coil to get more than 8-inches of lift. You will have driveline and driveability issues.
2. Do not use this kit with an adjustable trackbar. Under full compression the trackbar bracket clears the coil bucket by a small amount. Any variation from the factory length will cause contact.
3. If you have a mega cab model or quad cab long bed, you will need the carrier bearing drop kit (available separately).
4. If you ever need to buy a replacement transmission output seal. The transmission seal you need is from a 48RE transmission. This was found in all automatic transmissions behind the 4wd 5.9 Cummins 03-07. Federal Mogul part # 710058. It has an outside diameter of 2.563". Kits built after 9-10-2010 (R or M code 091210) (month day year) will include the seal.
5. Manual transmission models require T-case indexing ring kit 122802 instead of 122801. Additional front driveshaft clearance at the transmission crossmember may be needed on manual transmission models with the indexing ring installed.
6. A step drill is highly recommended. 11/16" holes are required to be drilled in the installation.
7. If installing optional coilover kit, welding is required, disconnect the battery before you start!
8. 03-08 model year trucks require sway bar relocation brackets at the axle for steering clearance. They are included in the kit. 09+ model years have a different style steering that requires no axle bracket relocation.

## INSTALLATION INSTRUCTIONS

### SPECIAL TOOLS

1. Park vehicle on clean flat and level surface.
2. Block the wheels for safety.
3. Measure and record the distance from the center of the hub to the bottom of the fender lip. Record below:

Pitman arm puller

Depending on model year kit: Cutoff tools, transmission jack, welder, grinder

Left Front \_\_\_\_\_

Right Front \_\_\_\_\_

Left Rear \_\_\_\_\_

Right Rear \_\_\_\_\_

4. These instructions cover a complete BDS lift kit installation. If installing a long arm upgrade kit, follow steps 6-14 for the bracket installation and steps 19-24 for the long arm installation. For final control arm torque specifications see the end of the instruction sheet.
5. Disconnect the front trackbar from the frame. Retain hardware. Do this when the vehicle is on the ground. It may be necessary to have an assistant shake the steering wheel back and forth to get the bolt to remove more easily. (Fig 1a)

**FIG. 1**



### 8" KITS ONLY - TRANSFER CASE INDEXING RING



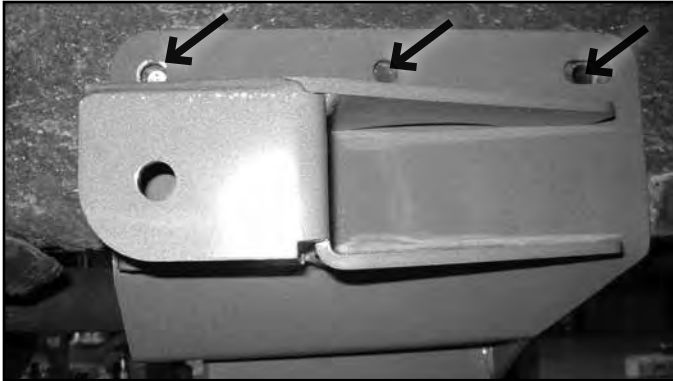
**Tip**

See separate instruction sheet for indexing ring installation.

## 6" AND 8" LONG ARM BRACKET INSTALLATION (BOLT PACK # 782):

6. Support the transmission crossmember with a jack.
7. Remove the 4 bolts that hold the transmission crossmember into position (Fig 6a).
8. Remove the 4 bolts that attach the front driveshaft to the transfer case. (Fig 7a, 7b)
9. Remove transfer case skid plate if equipped. It will not be reinstalled.
10. Install long arm bracket to the side of the frame rail around the transmission crossmember mount. Loosely attach with 9/16" x 7" bolts. Mark the top center holes to be drilled. Bolt pack # 782 (Fig 14a, 14b)

**FIG. 14A**



**FIG. 14B**



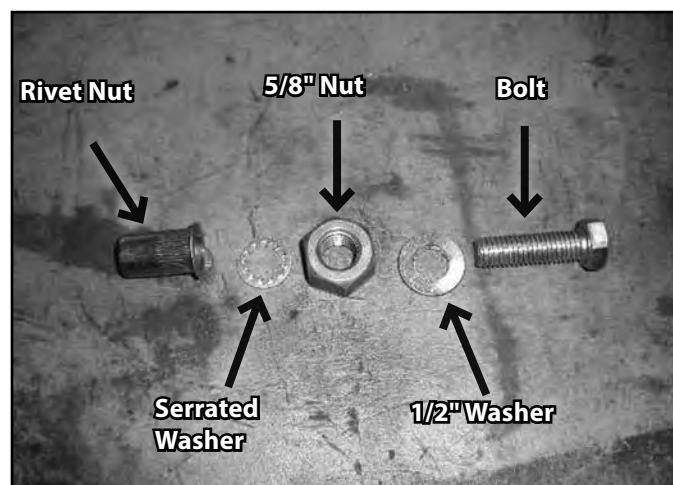
11. Remove the bracket and drill / clearance holes to 11/16". A step drill is highly recommended.
12. Install rivet nuts with serrated edge washer as shown (Fig 15a, 15b, 15c – shows collapsed rivet nut as a reference). The 1/2" bolt goes thru the 5/8" nut with a serrated edge washer that will bite into the rivet nut to keep it from spinning. Tighten until the backside of the rivet nut has been deformed INSIDE THE FRAME RAIL and is set into place (rivet nut will lock itself in place).



**Tip**

*Note: See the end of this instruction sheet for detailed rivet nut installation procedures.*

**FIG. 15A**

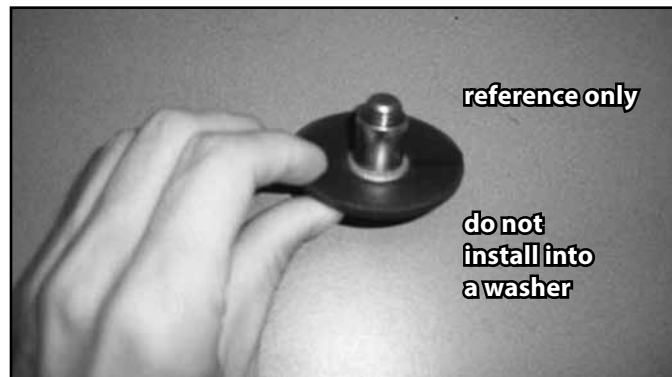




**FIG. 15B**



**FIG. 15C**



13. Reinstall brackets with 9/16" x 7" bolts through the bracket and transmission cross member. Attach to rivet nuts with 1/2" x 1-1/2" bolts with loctite on threads, use a spacer washer at the 3 locations on outside of the frame rail. Tighten 1/2" hardware to 60 ft-lbs and 9/16" hardware to 95 ft-lbs. (Fig 16)

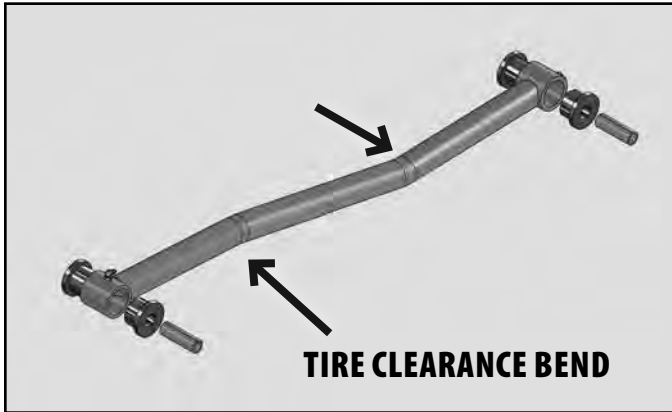
**FIG. 16**



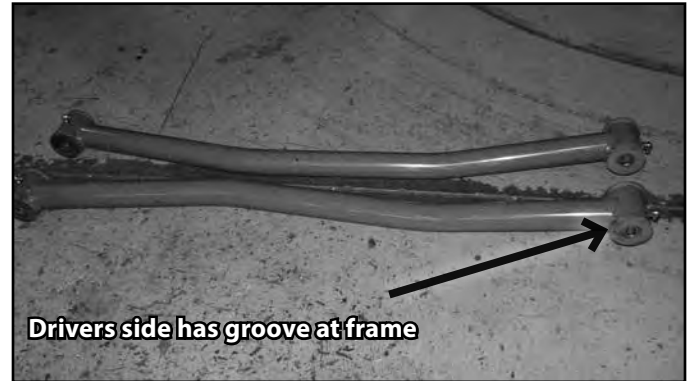
14. Repeat for opposite side.
15. Disconnect the drag link from the pitman arm. Do not damage the rubber boot.
16. Disconnect the brakeline bracket from the axle. Retain bolt.
17. Support the front axle. Disconnect the front shocks
18. Lower the front axle and remove the front coils.
19. Grease and install bushings and sleeves into new longer shocks. Install the shocks with OE bolt in the lower mount, and new cup washers and bushings in the upper mount. Thread the upper nut on to get full engagement. The shocks will be removed and reinstalled later. The shocks are designed to carry the weight of the front axle and will allow the axle to move easily to remove and install the control arms.
20. With the axle well supported, remove the upper and lower control arms from the vehicle.

21. Grease and install the bushings and sleeves into the lower longer control arms. \*note 2003-2009 models require 16mm ID sleeves, 2010 models require 18mm ID sleeves in the axle end of the lower control arm. Install the grease zerks into control arms. All grease fittings are 90 degree fittings, rotate so they will be accessible once installed. (DRV Upper arm shown - Fig 17 & 18)

**FIG. 17 - BODY MOUNT CLEARANCE BEND**



**FIG. 18**



22. Install the upper control arms into the vehicle. Use new 14mm x 100mm bolts for the upper arms at both the bracket and axle. The upper arm will have a clearance bend to clear the tire when the wheel is turned. Run the bolts from outside to inside the vehicle. The Driver's Arm will have a groove machined on the OD of the end that will go in the frame bracket. The main tube will be offset to the bottom side of the arm to give clearance to the body mount.
23. Use the factory cam bolt at the axle for the lower control arms. Attach the lower control arm to the relocation bracket with  $\frac{3}{4}$ " x 5" hardware.
24. Do not tighten the control arm hardware at this time. It will be done with the vehicle set at ride height.

**TRACKBAR / PITMAN ARM INSTRUCTIONS (BOLT PACK # 609 / 642):**

25. Mark the orientation of the pitman arm. Remove the pitman arm with appropriate tool.
26. Transfer mark over to the new pitman arm and reinstall with factory hardware. Tighten nut 150 ft-lbs.
27. Attach the tie rod end from the bottom with factory nut. Tighten to 65 ft-lbs. (Fig 19)

**FIG. 19**



28. Install new trackbar bracket with 9/16" (#609 03-07 model years), 5/8" (#642 08+ model years) through the original trackbar mounting hole. Attach the opposite end of the bracket to the frame crossmember with 9/16" x 3" bolt. (Fig 20)



**FIG. 20**



- 29. Tighten 9/16" hardware to 95 ft-lbs, 5/8" hardware to 120 ft-lbs.
- 30. Do not install the trackbar into this bracket at this time.

**BUMP STOP INSTRUCTIONS (BOLT PACK # 784):**

- 31. Remove factory bumpstops. It is easiest to take a hammer and hit the bumpstop sideways in order to get them to pop out of the cups, or use a set of channel locks. (Fig 21)

**FIG. 21**



- 32. Locate the center of the two circular recesses in the cup. Mark the centers and drill out to 5/16"~21/64". Install the 3/8" x 1-1/4" self threading bolts to cut threads into the frame. Remove the bolts after the threads are cut. BP# 784 (Fig 22)

**FIG. 22**



- 33. Install the new urethane bumpstop into the bumpstop brackets with 3/8" flat washer, lock washer, and nut. Tighten nut securely. Bolt pack #784
- 34. Install the bumpstop assembly onto the frame with new 3/8" x 2" bolts and washers with loctite on the threads. Tighten to 35 ft-lbs. (Fig 23)

**FIG. 23**



## **SWAY BAR LINK INSTRUCTIONS (SEE SPECIFIC YEAR RANGE INSTRUCTIONS):**

### **2009-2012 MODELS WITH SOLID TIE ROD (T-LINK STEERING SETUP):**

35. Grease and install SB35 bushings (longer hour glass bushings with  $\frac{3}{4}$ " ID) into one end of the sway bar link with 54587 sleeve ( $\frac{3}{4}$ " x  $\frac{9}{16}$ " ID x 1.575). Grease and install SB58 (shorter bushings with  $\frac{5}{8}$ " ID bushing) into the other end with 45313 sleeve ( $\frac{5}{8}$ " x 10mm ID x 1- $\frac{3}{8}$ " long).
36. Attach stem eliminator bracket to the sway bar with  $\frac{5}{8}$ " nylock nut with washer. Tighten securely.
37. Install the sway bar link with the small bushings into the stem eliminator bracket with  $\frac{3}{8}$ " hardware.
38. Attach the other end of the sway bar link to the axle with  $\frac{9}{16}$ " hardware. Run the bolts from inside to the outside of the vehicle. (Fig 24) It may be necessary to slightly clearance the holes to accept the  $\frac{9}{16}$ " hardware. 09 and newer models will have left over hardware from bolt pack #783.

**FIG. 24**



### **03-08 MODEL YEAR TRUCKS (Y-LINK STEERING):**



**Tip**

*Models with y-link steering (03-08 models that have the drag link go from the pitman arm to the passenger's side steering knuckle). This steering does not provide enough clearance to the sway bar mounts, they must be modified. If you have an 03-08 model with the new T-link setup, installation of the brackets is still required due to the length of the sway bar links.*

39. Disconnect the tie rod end from one of the steering knuckles and swing the whole assembly out of the way. (Fig 25)

**FIG. 25**



40. Disconnect the trackbar from the axle. Retain nut tab.
41. Cut the welds on both sides of the sway bar link mount at the axle. Remove the brackets from the vehicle.
42. Clean the area with a flap wheel or grinding wheel.
43. Place the sway bar mounting bracket against the axle as shown. The passenger's side will use the factory trackbar hole. Mark and drill the other hole to  $\frac{1}{2}$ "~17/32".
44. Attach the bracket to the axle with the trackbar in position with new trackbar bolt and washer (14mm 03-07 / 16mm 08+) with factory nut tab, and  $\frac{1}{2}$ " bolt (with loctite), with washer on the outside and square nut on the inside. The square nut will rest against the inside gussets of the axle and eliminate the need for a wrench. Tighten the  $\frac{1}{2}$ " hardware to 65 ft-lbs. Do not tighten the trackbar mounting bolt at this time. (Fig 26)

**FIG. 26**



45. Repeat installation for drivers side. Align the bracket with the existing hole. Mark the opposite hole and drill both holes to  $\frac{1}{2}$ "~17/32". Reinstall the bracket with  $\frac{1}{2}$ " bolts (with loctite) with washers on the outside and square nuts on the inside of the bracket. Tighten to 65 ft-lbs. (Fig 27)



**FIG. 27**



46. Grease and install SB35 (3/4" ID) bushings into one end of the sway bar link with 54587 sleeve (3/4" x 9/16ID x 1.575). Grease and install SB58 (5/8" ID) into the other end with 45313 sleeve (5/8" x 10mm ID x 1.375).
47. Attach stem eliminator bracket to the sway bar with 5/8" nylock nut with washer. Make the brackets parallel to the axle. Tighten securely.
48. Install the sway bar link with the small bushings into the stem eliminator bracket with 3/8" hardware.
49. Attach the other end of the sway bar link to the new axle bracket with 9/16" hardware. Run the bolts from inside to the outside of the vehicle. (See above Fig 24)



**Tip**

*Depending on model year, there will be either an extra 14mm or 16mm bolt leftover from bolt pack #783.*

#### **COIL / SHOCK INSTALLATION:**



**Tip**

*If installing optional coilovers, see separate instruction sheet for bracket installation - welding is required, don't forget to disconnect the battery.*

50. Lower the front axle enough to install the coils. Use care not to overextend the factory brakelines or ABS wires.
51. Install the factory rubber isolator on top of the coils.
52. Install the coil and shock at the same time. Attach the lower shock mount to the axle with factory hardware.
53. Use caution and compress the coil slightly to hook up the upper shock mount.
54. Tighten the upper shock hardware until the bushings begin to swell.
55. Install brakeline relocation brackets to axle with factory hardware. Attach factory brakelines to the relocation brackets with 5/16" x 1" hardware (#784). Tighten to 25 ft-lbs. (Fig 28a, 28b)

**FIG. 28A**



**FIG. 28B**



#### **FINAL FRONT STEPS:**

56. Reinstall the rear driveshaft with factory hardware (Torque to 75 ft-lbs), use loctite on threads. If the vehicle is equipped with a carrier bearing, install carrier bearing drop at this time (sold separately).



**Tip**

*Before hooking up the front driveshaft, now is a great time to grease the nearly impossible to access grease fitting on the front dual cardan joint. A needle adaptor on a grease gun is required. This fitting is required to be serviced at every oil change interval. Ensure that this maintenance is not skipped!*

57. Reinstall front driveshaft to the transfer case with driveshaft spacer and new hardware. Use loctite on threads and tighten to 75 ft-lbs. Bolt pack # 932 (Fig 29a, 29b)

**FIG. 29A**



**FIG. 29B**



58. Reinstall wheels and tighten lug nuts to factory specifications.
59. Once the front driveshaft has been re-installed, Lower the vehicle to the ground.
60. Tighten control arm hardware as follows: 14mm upper arm hardware 120 ft-lbs, ¾" Lower at frame 160 ft-lbs, 16mm cam bolt at axle 160 ft-lbs (03-09 models only), 18mm cam bolt at axle 180 ft-lbs (2010+ models only).
61. Attach the trackbar to the relocation bracket with 14mm hardware (03-07) or 5/8" hardware (08+). Tighten 14mm hardware to 120 ft-lbs at axle and relocation bracket. Tighten 5/8" hardware to 150 ft-lbs.

## REAR INSTALLATION

62. 2003-11 Models: Drill the hole in the brakeline bracket at the frame to ¼"~5/16"
63. 2003-11 Models: Use extreme caution around the fuel tank. Cut the factory brakeline bracket with a sawzall. Do not use any method that will create sparks. (Fig 30a, 30b)

**FIG. 30A**

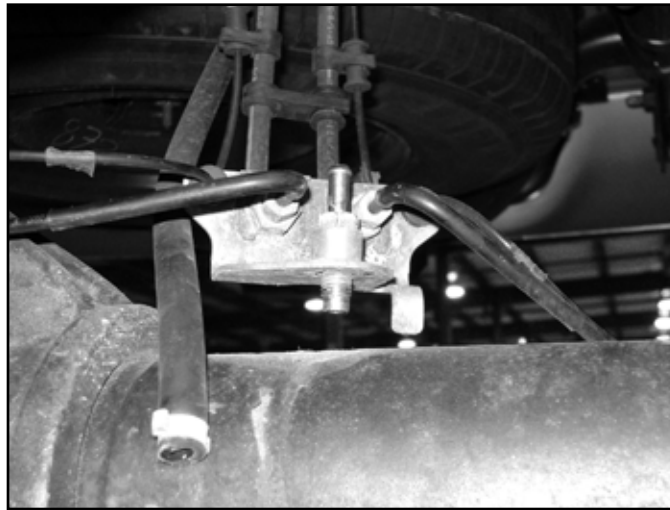


**FIG. 30B**



64. 2003-11 Models: Reform the brakeline to aim down towards the axle.
65. 2012 Models: Disconnect the rear brake line bracket from the axle by removing the vent line. (Fig 30c)

**FIG 30C**



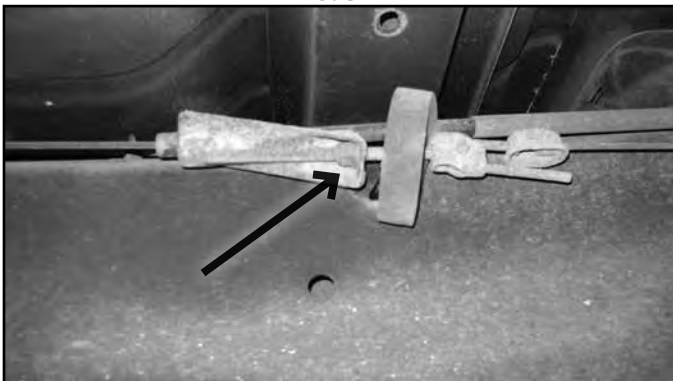
66. Disconnect parking brake guide bracket on side of frame and remove from vehicle, it will not be reused. (Fig 31)

**FIG. 31**



67. Disconnect the parking brake cable by unthreading nut with 13mm ratchet wrench.
68. Disconnect the cable completely from the junction in front of the rear spring hanger. Reroute the cable to the inside of the leaf spring hanger as shown to give more slack at full droop. (Fig 32a & 32b)

**FIG. 32A**



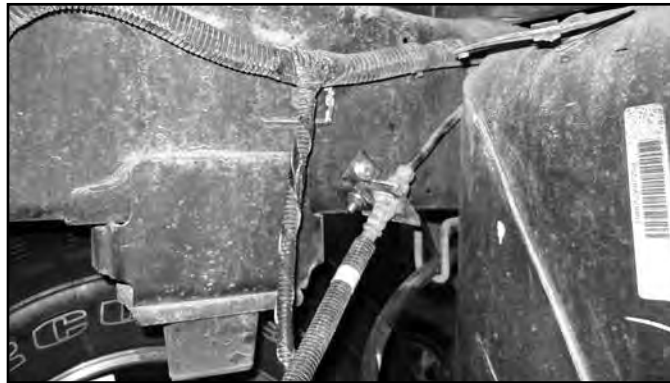
**FIG. 34B**



69. Support the axle.
70. Disconnect the shocks, retain hardware.

71. Remove the passenger side factory u-bolts and lower axle.
72. If installing new leaf springs, remove the spring from the vehicle and replace with the BDS leaf spring so the shorter side that is labeled front is towards the front of the vehicle.
73. If installing rear lift blocks, install the new press in center pin into the leaf pack.
74. Install the new lift blocks with the bump stop wing facing 'in' towards the center of the vehicle.
75. Align the pins and install into the axle perch.
76. Install new u-bolts. Snug but do not tighten at this time.
77. Repeat leaf spring or block and pin installation on opposite side of the vehicle.
78. Grease and install bushings and sleeves into the new shocks. Install the shocks with factory hardware.
79. 2003-11 Models: Adjust the brakeline bracket at the frame to give adequate slack at full droop.
80. 2003-11 Models: Attach the brakeline relocation bracket to the factory bracket. Form bracket to rest against the frame. Mark the hole center and drill out to 7/32". (Fig 33a)

**FIG. 33A**



81. 2003-11 Models: Attach 'L' bracket to the frame with 1/4"x1" Self threading bolt. Attach brakeline bracket to 'L' bracket with 1/4" x 1" hardware. Tighten to 15 ft-lbs. (#784).
82. 2012 Models: Remove the brake line bracket from the lines. This can be done by cutting slots in the bracket with a small cut-off wheel to avoid disconnecting the lines.
83. 2012 Models: Install the provided brake line relocation bracket with the provided sleeve and factory vent bolt. Reform the lines to line up with the bracket and attach them with the factory clips.

**FIG 33B**



84. Lower vehicle and tighten u-bolts to 125 ft-lbs.

## **BUMPER SPACER & PINCH WELD MODIFICATION FOR 38" TIRES (BOLT PACK # 812)**

85. Disconnect the fog light wiring harness (if equipped).



86. Remove the 6 bolts (3 per side) that attach the bumper to the frame horns. Later model trucks (2010-2012) may have 4 bolts per side, the top inside one is next to impossible to access, we do not provide replacement hardware for this position. Installing 3 bolts per side will be the same as early model (03-09) model year trucks.
87. Knock out the carriage bolts from the bumper.
88. Install new carriage bolts with retaining clips on the outer 2 positions. Install carriage bolt into the center positions without a retaining clip. (Fig 34a, 34b)

**FIG. 34A**



**FIG. 34B**



89. Install bumper onto vehicle with spacers over the carriage bolts. There are 2 bolts that will need to have a  $\frac{3}{4}$ " washer added under the head. These bolts only go through one layer of the bumper. The rest of the bolts do not need a washer under the head of the carriage bolt.
90. Adjust bumper so that it sits even.
91. Tighten  $\frac{1}{2}$ " carriage bolts to 55 ft-lbs.
92. Reconnect the fog light wiring harness.
93. The front plastic inner fender well needs to be removed. Bend over the pinch weld and trim 4 inches from the bottom of the foam insulation.
94. Reinstall plastic inner fender well, but do not attach the lower rear mount to the body.
95. Mark and drill a  $\frac{1}{4}$ " ~ 17/64 hole thru the inner fender well into the body. Attach the plastic inner fender well with 5/16" self threading bolt with a fender washer. This will give more clearance for larger sized tires, additional trimming on the bottom of the plastic may be required.
96. Place the inner fender well to the 'front' side of the bumper.
97. Perform a steering sweep to ensure there is enough clearance. If the tires rub on the upper control arm, disconnect the battery and weld on the steering stops. (Fig 35)
98. Check the shift linkage for manual shift transfer cases. Adjust the linkage as necessary to allow all gear ranges to be selected.
99. Recheck all fasteners for proper torque.

**FIG. 35**



# DETAILED RIVET NUT INSTALLATION INSTRUCTIONS

## RIVET NUT SIZING

100. Verify the correct size rivet nut for the application based on the thickness of material where the rivet nut is to be installed using the following chart.

| Part Number | Thread Size | Body Length (in) | Material Thickness (in) |      | Drill Size (in) |
|-------------|-------------|------------------|-------------------------|------|-----------------|
|             |             |                  | Min.                    | Max. |                 |
| 95105A159   | 3/8-16      | .690             | .027                    | .150 | 17/32           |
| 95105A168   | 3/8-16      | .805             | .150                    | .312 | 17/32           |
| 95105A169   | 1/2-13      | 1.150            | .063                    | .200 | 11/16           |
| 95105A170   | 1/2-13      | 1.300            | .200                    | .350 | 11/16           |

## HOLE PREPARATION

101. Drill hole to appropriate size for rivet nut installation. 1/2" Rivnuts require an 11/16" hole and 3/8" Rivnuts require a 17/32" drill. It is critical that this hole is drilled to the correct size. Remove any burrs that could keep the rivet nut from seating flat against either side of the hole surface.



### Tip

*If the correct drill size is not available, it is possible to drill the hole to an available smaller size and slowly grind it out to until the rivet nut fits tight.*

## RIVET NUT INSTALLATION TOOL ASSEMBLY

102. For a 3/8" rivet nut, place the provided 3/8" SAE flat washer on the 3/8" x 1-1/2" bolt, followed by 7/16" hex nut and then a 3/8" serrated washer. Thread this tool assembly into the rivet nut.
103. For a 1/2" rivet nut, place the provided 1/2" SAE washer on a 1/2" bolt followed by a 5/8" nut and 1/2" serrated edge lock washer. Thread this tool assembly into the rivet nut.

## RIVET NUT INSTALLATION

104. Place the installation tool with the rivet nut threaded on the end into the appropriately sized hole.
105. For a 3/8" rivet nut, hold the nut closest to the rivet nut still with a 5/8" wrench and tighten the 3/8" bolt with a 9/16 wrench to set the rivet nut. Be sure to hold the rivet nut flush to the surface and square to the hole as it is tightened. (Fig 1)



### Tip

*If available, an impact gun is recommended for tightening the bolt to ensure the rivet nut remains square to the hole and to ease holding the nut from spinning.*

106. For a 1/2" rivet nut, hold the nut closest to the rivet nut still with a wrench and tighten the 1/2" bolt with a 3/4" wrench or impact gun to set the rivet nut. Be sure to hold the rivet nut flush to the surface and square to the hole as it is tightened. (Fig 2)

**FIGURE 1 - 1/2" RIVET NUT SHOWN**



### **TORQUE SPECIFICATIONS**

- 107. 3/8" rivet nuts will approach 40 ft. lbs for maximum grip strength. Do not exceed 45 ft-lbs when setting the rivet nut.
- 108. 1/2" rivet nuts will approach 90 ft lbs for maximum grip strength. Do not exceed 100 ft-lbs when setting the rivet nut.



#### **Tip**

*If using the recommended impact gun, use caution to not exceed the recommended torque specifications.*

### **RIVET NUT TOOL REMOVAL**

- 109. Once the center bolt is tightened, remain holding the nut from spinning with the wrench and loosen the center bolt to remove the installation tool.

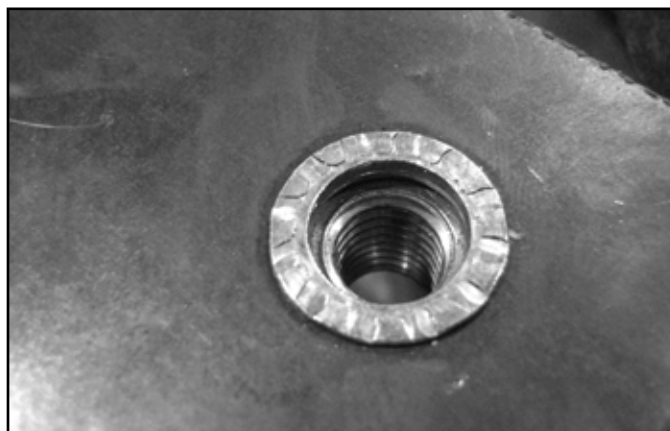


#### **Caution**

*It is very important to hold the nut as the bolt is loosened because the grip of the star washer will try to spin the rivet nut and ruin the installation.*

- 110. Verify proper installation by checking for consistent rivet nut deformation to see the threads are square and centered to the rivet nut. (Fig 2).

**FIGURE 2**



# Coil-Over Mounting Kit

Dodge Ram 2500/3500 Pickup | 2003-2012

Part #: 122810

Rev. 10/2014



## SAFETY WARNING

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.



## SPECIAL TOOLS

A plasma cutter is highly recommended for this installation, if one is not available a 4-1/2" hole saw will suffice. A welder is also required. This kit is designed to specifically work with the BDS 4-link long arm system with an indexing ring kit installed. Use with other systems is not recommended due to the extra wheel travel gained with this kit.

## INSTALLATION INSTRUCTIONS

1. Park vehicle on clean, flat, and level surface.
2. Disconnect the battery, welding is required for this installation.
3. Raise the front of the vehicle and support the frame rails with jack stands.
4. Support the front axle with a hydraulic jack.
5. Remove the front wheels.
6. Remove the inner fenders, retain all fasteners. (Fig 1)

### Box Kit

| Part # | Qty | Description                                    |
|--------|-----|------------------------------------------------|
| 2700   | 2   | 03-12 Dodge Coilover Upper Mount               |
| 2703   | 1   | 03-12 Dodge Coilover Drill / Cut Template      |
| 2704   | 2   | Coilover Lower Support                         |
| 2705   | 2   | Coilover Lower Support w/ Nut                  |
| 2737   | 2   | Reservoir Mount                                |
|        | 1   | loc-tite                                       |
| 820    | 1   | bolt pack - Coilover Mount                     |
|        | 2   | 1/2"-13 x 6" bolt - grade 8 - yellow zinc      |
|        | 16  | 1/2"-13 x 1-1/4" bolt - grade 8 - yellow zinc  |
|        | 26  | 1/2" SAE Thru hardened washer - yellow zinc    |
|        | 10  | 1/2"-13 Serrated edge flanged nut - clear zinc |
|        | 8   | 1/2"-13 Prevailing torque nut - yellow zinc    |
|        | 2   | 9/16"-12 x 3-1/2" bolt - grade 8 - yellow zinc |
|        | 2   | 9/16" SAE Thru hardened washer - yellow zinc   |

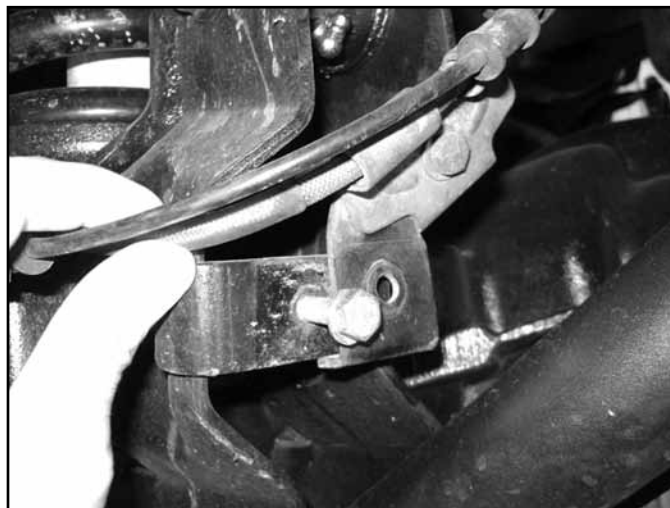


**FIGURE 1**



7. Disconnect the brake lines from the axle, retain the hardware. Disconnect / adjust ABS wires to allow for extra droop later in the installation. (Fig 2)

**FIGURE 2**



8. Disconnect the sway bar links from the sway bar clevis bracket which is included in the long arm kits (Fig 3).

**FIGURE 3**



9. Disconnect the drag link from the pitman arm (retain nut), disconnect the trackbar from the frame bracket. (Fig 4)

**FIGURE 4**



10. Vehicles WITHOUT transfer case indexing ring kit installed or gas model trucks: Disconnect the driveshaft from the front axle. Note: It may be necessary to heat the front axle yoke to get the loc-tite to break free. Retain all hardware. (Fig 5) (Diesel trucks w/ indexing ring kit installed may skip this step)

**FIGURE 5**



11. Disconnect the front shocks and allow the axle to droop out. Remove the coil springs, remove the front shocks. Check for adequate clearance of brake lines, ABS wires, driveshaft to exhaust (gas models), etc.
12. Prep the axle for welding, remove corrosion and paint from the lower coil bucket, remove the factory lower shock nut clips, and test fit the weld on support plates. A minor amount of modification to the weld in support plates may be required due to variations in the lower coil bucket on the axle.
13. Install new 9/16" shock hardware bolt into the lower mount to hold the plates into place - SNUG THE BOLT, do not tighten. Weld the support plates into place, allow to cool, and coat with paint. (Fig 6a, 6b)

**FIGURE 6A**



**FIGURE 6B**



14. Remove the upper shock towers.
15. Drill the 3 factory shock tower mounting holes out to 1/2" ~9/16". Bolt the included template (#02703) in place and drill the remaining 3 holes out to 1/2" ~9/16". Repeat on opposite side. The template is only used for drilling holes and will not be installed on the vehicle once drilling is completed. (Fig 7a)
16. The ID of the template will also be used for material removal. Place the template on top of the coil bucket and use bolts to locate it in place. Use the plasma cutter to remove the lip of the stock coil bucket. If a plasma cutter is not available, a 4-1/2" hole saw can be used to remove the lip and create clearance for the coilover assembly. Use lots of lubrication, the factory lip of the frame will keep the hole saw centered. (Fig 7b)

**FIGURE 7A**

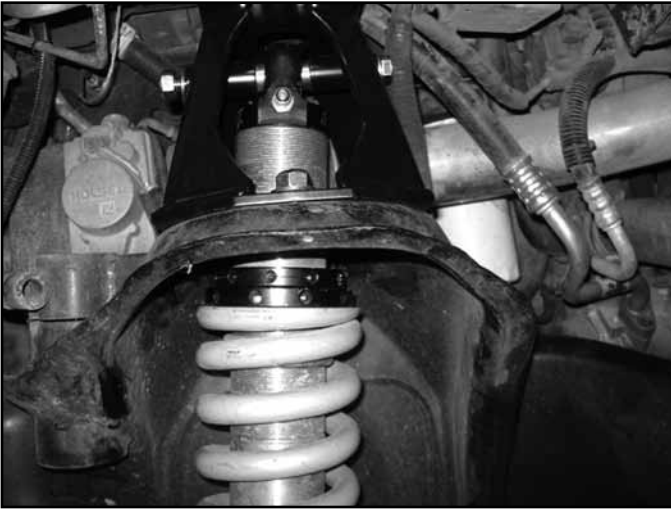


**FIGURE 7B**



17. Place the upper coilover mount on top of the coil bucket. Do NOT bolt it in at this time. Install the coilover assembly at this time, the hose will point FORWARD out of the coilover body. Route the reservoir through the coil bucket hole and the new upper coilover mount.
18. Attach the upper coilover mount to the coilover with new 1/2" x 6" bolt, washers, and prevailing torque nuts (BP #820). Note: The bracket to the coilover will be a tight fit. (Fig 8a)
19. Attach the upper coilover mount to the frame with (6) 1/2" x 1-1/4" bolts, washers, and nuts, use loc-tite on hardware. 5 places will use a serrated edge flanged nut, due to difficult access, the front easily accessible spot will require a washer and prevailing torque nut. See figure for nut location. (Fig 8b, 8c, 8d)

**FIGURE 8A**



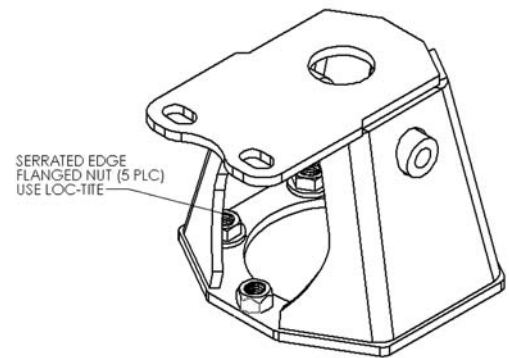
**FIGURE 8B**



**FIGURE 8C**



**FIGURE 8D**



20. Tighten all 1/2" upper coilover hardware to 65 ft-lbs.
21. Raise the axle and attach the lower coilover mount to the axle with new 9/16" bolt with washer. Tighten to 95 ft-lbs.
22. Loosely reinstall the inner fender well and mark areas that will need to be trimmed to clear the upper coilover mount. Trim area from the inner fender and reinstall with factory hardware. (Fig 9)

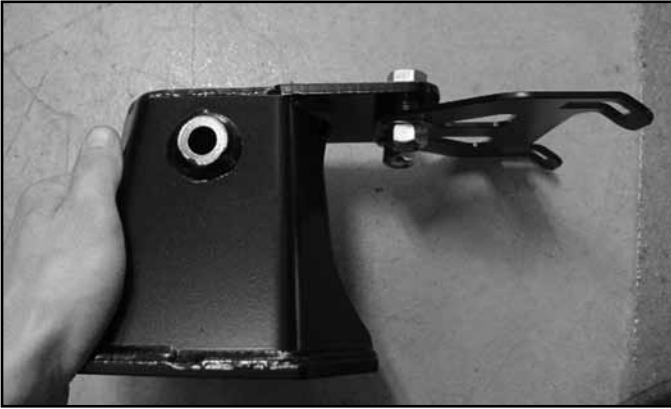
**FIGURE 9**





23. Attach the reservoir mount to the upper coilover mount with ½" hardware with washers and loc nuts. Tighten to 65 ft-lbs. Attach reservoir to the mount with hose clamps included with Fox Coilover Box Kit. (Fig 10a, 10b)

**FIGURE 10A**



**FIGURE 10B**



24. Allow the axle to droop out fully, reattach the driveshaft with factory hardware with loctite, tighten to factory specifications. If axle is unable to be reattached it may be necessary to clearance the dual cardan at the transfer case to allow for extra droop, additionally an indexing ring kit may be required as indicated in the pre-installation notes. Gas models may require exhaust modification at this time for driveshaft clearance at full droop.
25. Reattach brake line relocation brackets to the axle with factory hardware, slide the brake line in the holding bracket if additional slack is required. Secure ABS wires at this time.
26. Reattach sway bar links to the sway bar, tighten to 35 ft-lbs.
27. Reattach the drag link to the pitman arm with factory nut, tighten to 65 ft-lbs.
28. Reinstall wheels, lower vehicle to the ground, torque lug nuts to factory specifications.
29. Turn the steering wheel to get the trackbar to link up with the frame bracket. Attach with correct hardware and tighten to 120 ft-lbs 03-07 / 150 ft-lbs 08-12 model years.
30. Perform a steering sweep, check the brake lines / ABS wires for any interference issues.
31. Check for clearance between upper coilover bracket and any other lines or wires. Reroute as necessary.
32. Recheck all hardware after 500 miles.