



Part#: **014444**

Product: **4.5" Suspension System**

Application: **Jeep Cherokee XJ**

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## **READ AND UNDERSTAND ALL INSTRUCTIONS AND WARNINGS PRIOR TO INSTALLATION OF SYSTEM AND OPERATION OF VEHICLE.**

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**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.

**PRODUCT SAFETY WARNING** 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.

### **PRE-INSTALLATION NOTES**

1. Special literature required: OE Service Manual for model/year of vehicle. Refer to manual for proper disassembly/ reassembly procedures of OE and related components.
2. Adhere to recommendations when replacement fasteners, retainers and keepers are called out in the OE manual.
3. 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.
4. 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.
5. Secure and properly block vehicle prior to installation of BDS Suspension components. Always wear safety glasses when using power tools.
6. If installation is to be performed without a hoist, BDS Suspension Co. recommends rear alterations first.
7. 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.

### **POST-INSTALLATION WARNINGS**

1. 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.
2. 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.
3. Perform head light check and adjustment.
4. Re-torque all fasteners after 500 miles. Always inspect fasteners and components during routine servicing.

## PARTS LIST

Part #	Qty	Description
034452	2	Front Coil Spring
004209	2	Rear Leaf Spring
4012	4	U-bolt w/ nuts & washers (8.25 only)
4005	4	Ubolt w/ nuts & washers (D35 only)

## 014444 BOX KIT

### Brake Line Parts

22510	2	Front Brake Line
22513	1	Rear Brake Line
5188	3	Snap In Brake Line Clip
B06103C	2	Brake Line L-Bracket
CCW-03-050	4	3/8 Brake Line Crush Washer
099000	3	11.5in Nylon Cable Tie

### Bump Stop Extensions

3396	2	3in x 3in Extension
438	1	Bolt Pack
	2	<i>3/8"-16 x 3-1/2" bolt</i>
	2	<i>3/8" USS flat washer</i>
	1	<i>3/8"-16 x 1" self-tapping bolt</i>

### Control Arms

A176	2	Adjustable Flex LCA Assy
A177	2	Adjustable Flex UCA Assy
738	1	Bolt Pack
	2	<i>10mm-1.50 x 80mm bolt</i>
	2	<i>10mm-1.50 prevailing torque nut</i>
	4	<i>3/8" USS flat washer</i>

### Front Track Bar Parts

A153B	1	Track Bar Assembly
M03406BK	2	Track Bar Bushing -Black
55003	1	.625 x .060 x 1.625 Sleeve
516	1	1/4in Grease Zerk
01392	1	Nut Tab
915	1	Bolt Pack
	1	<i>1/2"-13 x 2-3/4" bolt</i>
	1	<i>1/2"-20 nylock nut</i>
	1	<i>12mm flat washer</i>
	1	<i>1/2" SAE thru-hardened washer</i>
	1	<i>5/16"-18 x 3/4" button head bolt</i>

## Rear Components

M02403BK	4	Large Spring Eye Bushing
M02402BK	4	Small Spring Eye Bushing
01312B	2	Rear Shackle
516	2	1/4in Grease Zerk
3533BK	4	Shackle Bushing
51	2	.750 x .095 x 3.140 Sleeve
52	4	.750 x .095 x 2.750 Sleeve
2124	2	Cut & Drill Shim
560312FCP	2	5/16 x 3.5 Pin & Nut

## 124451 BOX KIT

A110	2	Sway Bar Disconnect Assembly
01302	2	Disconnect Stud
45313	2	.625 x .109 x 1.375 Sleeve
01325	2	U-Bracket
01316	2	13.5in Lanyard
718	1	Bolt Pack
	2	<i>1/2-20 prevailing torque nut</i>
	4	<i>1/2" SAE flat washer</i>
	2	<i>3/8"-16 x 2-1/2" bolt</i>
	2	<i>3/8"-16 prevailing torque nut</i>
	4	<i>3/8" SAE flat washer</i>
	2	<i>7/16"-14 x 1-1/2" bolt</i>
	2	<i>7/16"-14 prevailing torque nut</i>
	2	<i>7/16" SAE flat washer</i>
	2	<i>7/16" USS flat washer</i>
	2	<i>#10-16 x 5/8" self-drilling screw</i>

# INSTALLATION INSTRUCTIONS

ⓘ *Note: This kit includes new braided stainless steel brake lines. Installation of these lines requires the entire brake system to be bled following the completed installation and prior to operating the vehicle. Consult your owner's manual for the proper brake fluid to use for your vehicle. Fluid is not included in this kit.*

## FRONT INSTALLATION

1. Measure and record the distance from the center of the wheel to the bottom of the fender opening:  
LF \_\_\_\_\_ RF \_\_\_\_\_ RR \_\_\_\_\_ LR \_\_\_\_\_
2. Park the vehicle on a clean, level surface and block the rear wheels for safety.
3. Safely raise the front of the vehicle and support with jack stands under the frame rails.
4. Support the front axle with a hydraulic jack.
5. Remove wheels and shocks, retain lower shock hardware.
6. Remove OE sway bar end links and discard.
7. Remove track bar by disconnecting at axle (retain hardware) and frame mount by removing cotter pin and nut. Use a pickle fork to dislodge the track bar from the frame mount.
8. Disconnect the drag link from the pitman arm (retain hardware).
9. Remove brake line retaining clips.
10. Remove fasteners holding brake line anchors to frame on driver's and passenger's side.
11. Disconnect passenger's side rubber brake line from metal hard line. Have a container ready to catch the fluid.
12. Disconnect brake line from caliper and discard hardware. Ensure old washer is removed from caliper and brake line mounting area.
13. Install new upper brakeline bracket with OE bolt. (Fig 1)
14. Mount hard line into new bracket before installing new stainless steel line.
15. Install BDS front brake line (22510) by attaching upper portion first. Torque to 20 ft-lbs. (Fig 1)

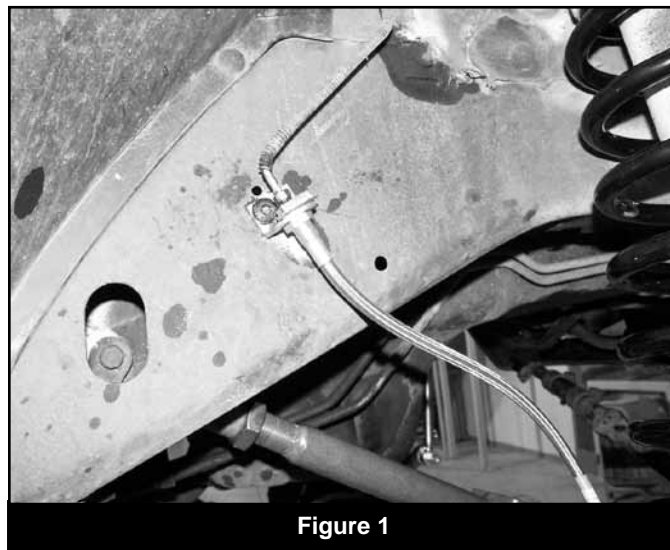


Figure 1

ⓘ *Note: One washer is required on EACH side of the fitting. Brake line must face up after installation. (Fig 2) Torque bolt to 20 ft-lbs.*

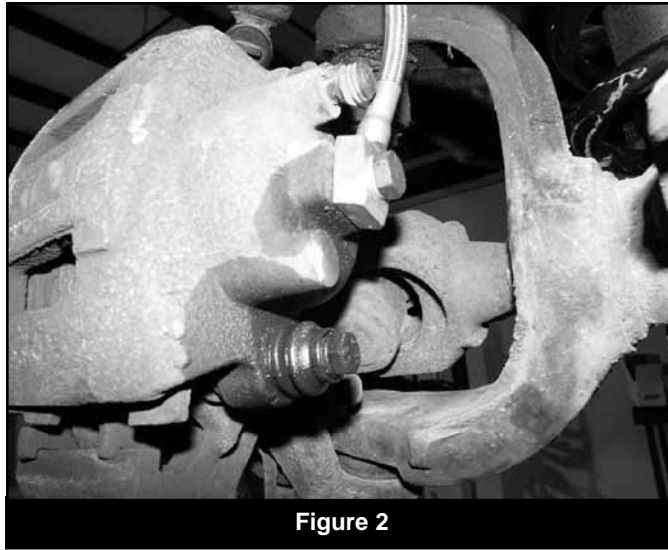


Figure 2

16. Repeat for driver's side.
17. Loosen nuts for all control arms (Do not remove at this time).
18. Remove spring retaining clips (save for reinstallation) and remove coils by lowering front axle.
19. Drill the lower bump stop holes using a 1 1/32" or T size drill and use the 3/8" self-tapping bolt (BP 438) to cut threads for bump stop extensions. Remove the 3/8" self-tapping bolt. (Fig 3)

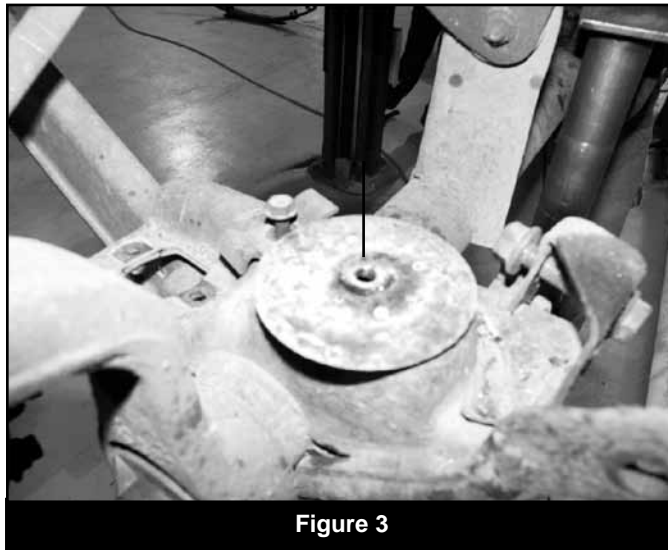


Figure 3

Locat the new adjustable control arms and adjust the lengths: Upper 15-5/8", Lower 16-1/2".  
 Note: These lengths are approximations and may need to be adjusted for proper alignment.

20. With front axle supported, remove both of the lower control arms.
21. Install the adjustable end of the new lower control arms in the frame mount so that the bend in the arm is down and the zerk fitting is on top (Fig 4). Attach the arms to the axle with factory hardware. Leave all hardware loose.

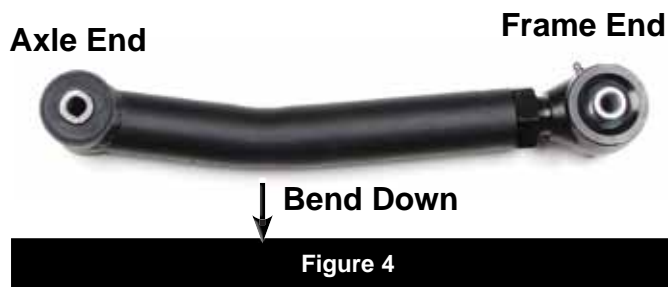


Figure 4

22. Remove the upper control arms from the front axle and frame. Retain frame hardware. Note: Be sure that the axle is well supported.
23. Install the new upper control arms to the axle with the provided 10mm hardware (BP738). Use the factory hardware at the frame and the grease fitting should be on the bottom. (Fig 5). Leave hardware loose.

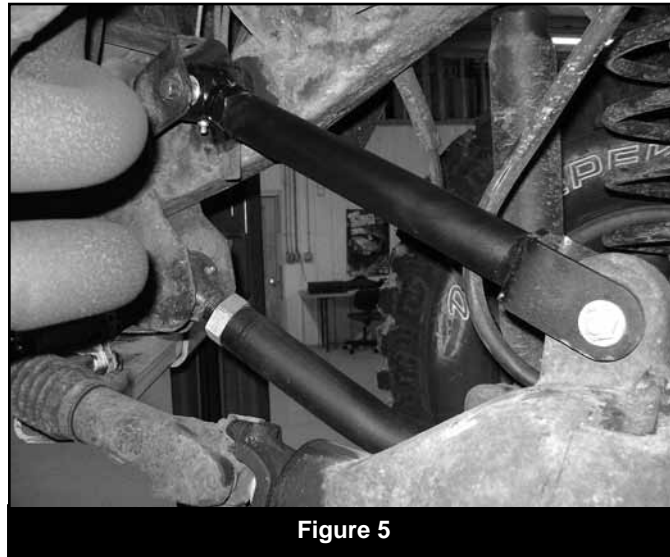


Figure 5

24. Install the BDS coil springs with the bump stop extension inside of spring, do not attach bump stop at this time. Rotate the spring until the end is seated correctly in the axle mount.
25. Attach bump stop extension (3" wide x 3" high block) with 3/8" x 3-1/2" bolt and 3/8" SAE washer (BP 438). Torque to 30 ft-lbs. If equipped re-install coil retaining clips.
26. Install shocks with new upper and OE lower hardware. Torque lower bolts to 20 ft-lbs. Install new upper nut (included with shock), tighten upper bolts until bushing just begins to swell. Install and lock off jam nut to 25 ft-lbs.
27. If installing optional single steering stabilizer, do so at this time.
28. Drill lower OE sway bar mount to 1/2".
29. Install the new lower ball stud to the OE sway bar link axle mount with a 1/2" nut and two 1/2" SAE washers provided. The washers mount on each side of the OE mount. The ball mounts toward the inside of the vehicle (Fig 6). Torque the stud to 60 ft-lbs.

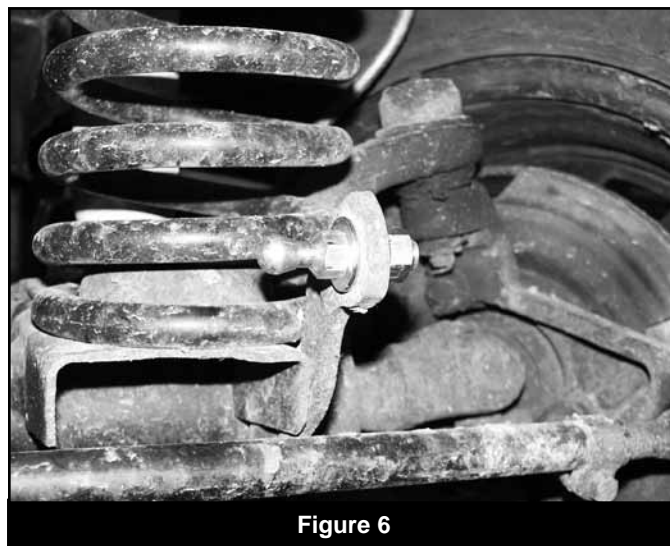


Figure 6

30. Install the provided upper u-bracket (01325) to the sway bar using the original link mounting hole with a 7/16" x 1-1/2" bolt, nut, 7/16" SAE and 7/16" USS washers. Install the bolt up through the u-bracket with an SAE washer into the sway bar. Fasten with the nut and USS washer. Position the bracket so that the thru-holes are parallel to the stud on the axle (Fig 7).

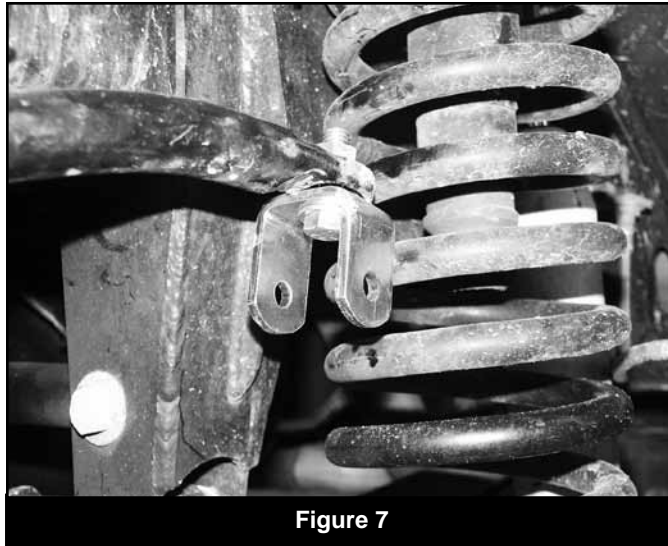


Figure 7

31. Lightly grease and install the provided provided sleeves (45313) into the link bushings. Thread the nut and assembly all the way on to the link (Fig 8). Attach the links to the u-brackets on the sway bar with the provided 3/8" x 2-1/2" bolt, nut and 3/8" SAE washers, running from the inside out. Torque bolt to 30 ft-lbs. Leave the sway bar links disconnected at this time.

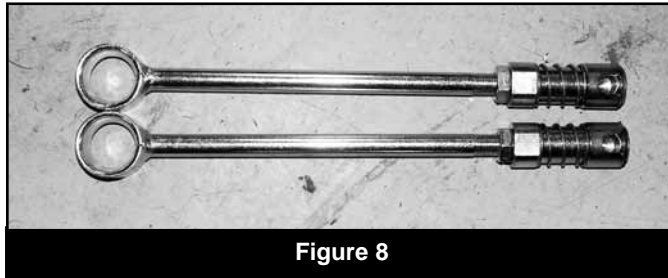



Figure 8

32. Grease and install the provided bushings (M03406RB) and sleeve (55003) into the preassembled adjustable track bar end (A153B). Install the provided straight grease fitting (516) into the ball stud end of the track bar.
33. Drill out the OE track bar axle mounting holes to 1/2" to provided clearance for the new track bar mounting hardware.
34. Install the new track bar tapered ball stud end in the OE track bar from mount with a 1/2"-20 nylock nut and 12mm flat washer (BP 915). Use an 18mm wrench to hold the flats on the stud and torque the 1/2" nut to 55 ft-lbs.

 *Note: There will be a small gap between the flats on the stud and the OE mount when properly installed (Fig 9).*

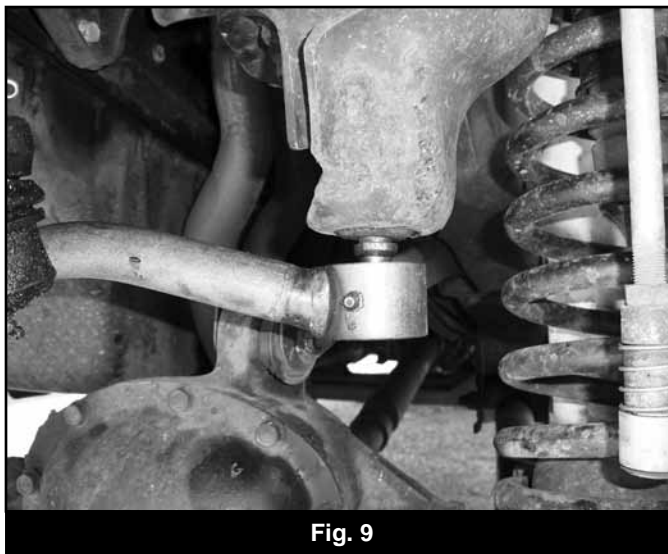


Fig. 9

- 35.

36. Attach the drag link to the pitman arm with the original castellated nut and new provided cotter pin (BP 715). Torque nut to 50 ft-lbs. Do not loosen the nut to install the cotter pin, only tighten.
37. Use provided zip-ties to keep brake line from interfering with any rotating or heated objects.
38. Reinstall wheels and torque lug nuts to specification, see owner's manual.
39. With the suspension hanging, inspect for interference. Turn wheels full turn from left to right while inspecting for interference. Inspect front driveline for proper clearance and lengths. Return wheels/steering to center.
40. Remove jack stands and lower vehicle to the ground.
41. Bounce vehicle to normalize suspension.
42. Torque upper and lower control arms to the following specifications: Upper 45 ft-lbs; Lower 95 ft-lbs.
43. Lock off jam nuts on the control arms. Make sure the flex ends remain square to the mounts.
44. Center the front axle and swing the lower track bar mount into place. Adjust the length as necessary. Attach the track bar to axle mount with  $\frac{1}{2}$ " head bolt and nut tab. Run the nut tab horizontally from the center of the vehicle (Fig 10). Tighten the bolt to 55 ft-lbs.
45. Make sure the mount at the frame is horizontal (front to back) then securely lock off the jam nut on the track bar. Replace the upper most differential cover bolt with the  $\frac{5}{16}$ " button head bolt (bolt pack BP 915).

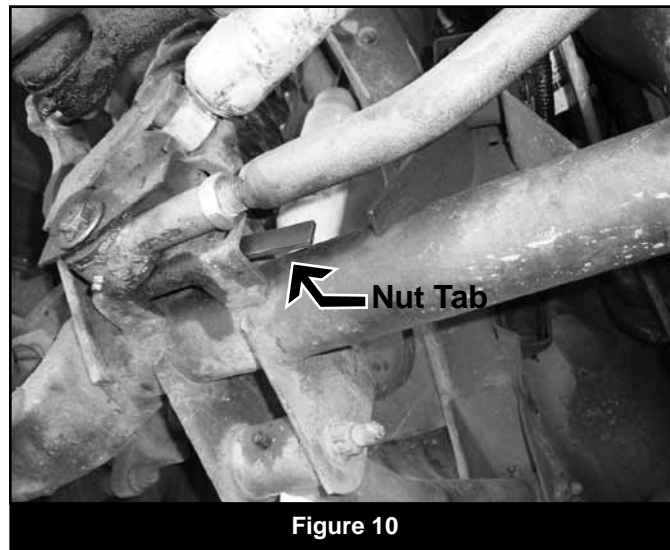


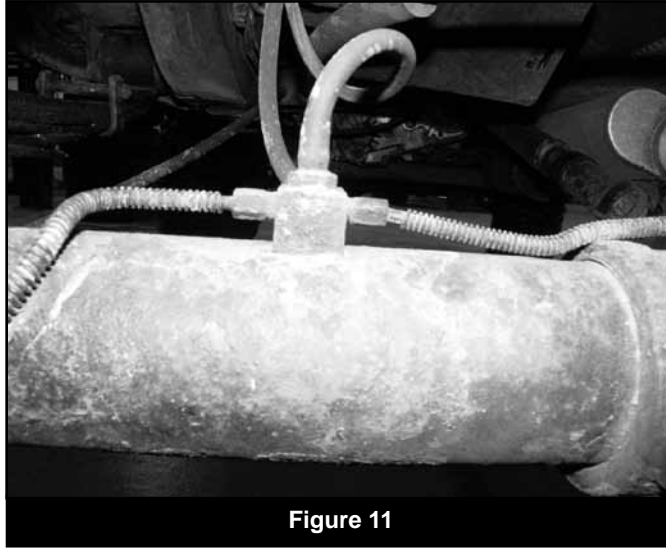
Figure 10

46. Ensure the vehicle setting level on the ground. Pull the spring collar up on the disconnect ends and attach them to the ball studs on the axle. Make sure the disconnect end stud is square with the ball stud and tighten the jam nut against the disconnect end. These disconnects allow for  $\frac{1}{2}$ " adjustment ( $\frac{1}{2}$ " longer from full-bottomed out).
47. Check the jam nuts to be sure they are securely locked off. Disconnect both end links and fold them up against the sway bar. Clip the provided lanyard/clip assembly around the sway bar/end link and find the best position for mounting the lanyard. This position will vary from vehicle to vehicle. Use your best judgment. Use the provided self-drilling screws to mount the lanyard to the body/frame.
48. With the lanyards installed, reconnect the sway bar links to the axle. The lanyards can be reattached to themselves so that they remain out of the way of moving parts when not in use.
49. Grease control arms and track bar fittings.

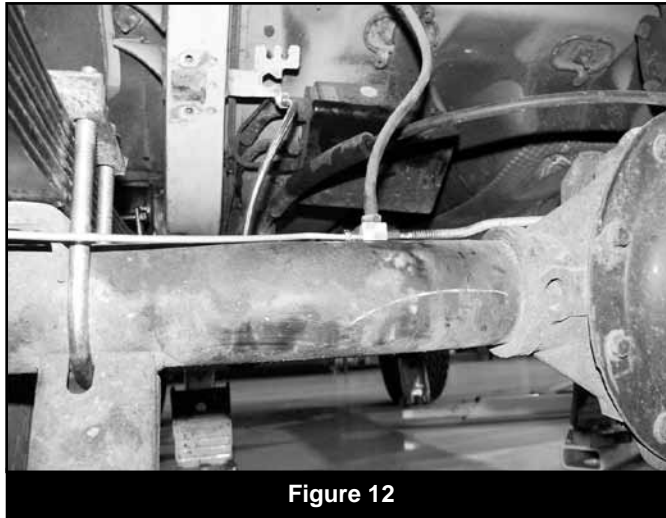
## XJ REAR INSTALLATION

50. Block the front wheels. Safely raise the rear of the vehicle and support with jack stands for safety.
51. Remove wheels.
52. Place a floor jack under the rear axle for support and remove rear shocks, retain OE hardware.
53. Remove sway bar ends from body.
54. Remove retaining clip holding brakeline to driver's side frame.
55. Disconnect rubber brake line from hard line at retaining clip location. Have a container ready to catch the fluid.

56. Disconnect hardlines from brake line junction block on axle.
57. Unbolt brake line junction block from axle. Retain bolts. (Fig 11)



58. Install new BDS rear brake line (22512) in place. Torque to 25 ft-lbs. (Fig 12)



59. Reattach axle breather.
60. Install new retaining clip.
61. Apply a small amount of lithium based grease to bushing (3533RB) and install bushing, sleeve (52), and grease zerk into shackle (01312B).
62. Grease and install bushings into leaf spring eyes (M02402RB & M02403RB) then install sleeves (52 & 51).
63. With the rear differential supported remove passenger side spring mounting bolts, u-bolts, shackle, and springs. Save leaf spring and shackle mounting bolts for later installation.
- ⓘ *Note: Once all of the u-bolts are removed, the sway bar can be disconnected from the frame and removed from the vehicle.*
64. Locate the bumper bolt that is protruding into the shackle pocket. This bolt will contact the new larger shackle through suspension travel. The bolt can either be cut off flush with the welded nut on the body or removed. (Fig 13)



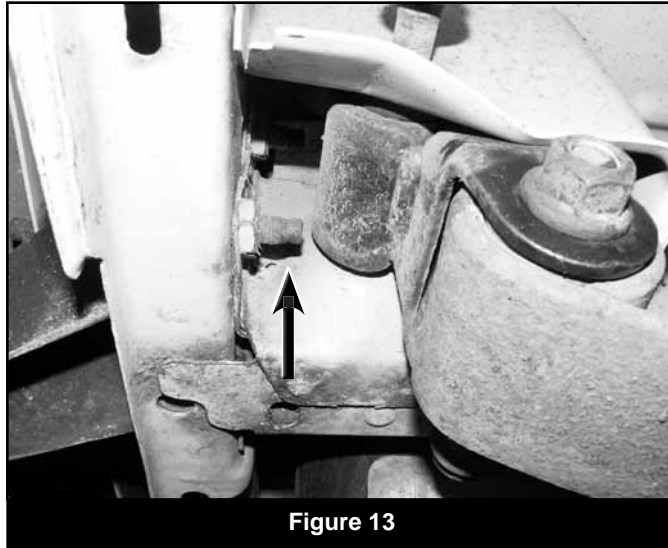


Figure 13

65. Install the new spring and shackle in the OE locations with the original hardware. Leave the spring and shackle bolts loose at this time. The shackle grease fittings should be toward the front of the vehicle.

ⓘ *Note: 4° shims and center pins are supplied. These are only to be used if a slip yoke eliminator and CV style driveshaft are being installed. The shim will be installed with the thick end to the rear.*

66. Install new u-bolts and hardware. Snug hardware (Note: Do not torque to specification until vehicle is on the ground.)

67. Repeat for driver's side.

68. Install new shocks.

69. Install wheels and torque to OE specification.

70. Spin the wheels and look for any possible interference. Inspect driveline for proper operation, clearance, and lengths.

71. Remove jack stands and lower vehicle to the ground. Bounce vehicle to normalize rear suspension. The shackles will now be in their intended position.

72. Torque shackle and leaf spring bolts to 95 ft-lbs.

73. Torque u-bolts to 75-80 ft-lbs.

74. Bleed brakes starting with the wheel furthest away from master cylinder.

## POST INSTALLATION

75. Double-check all fasteners for proper torque.

76. Check all moving parts for clearance.

77. Complete a full radius turning check to ensure that no interference occurs.

78. Align headlights

79. Double check the brake lines for adequate slack at full wheel travel.

80. Complete a vehicle alignment to OE specifications.

81. Check all fasteners after 500 miles.

82. Grease fittings at regularly scheduled maintenance intervals.