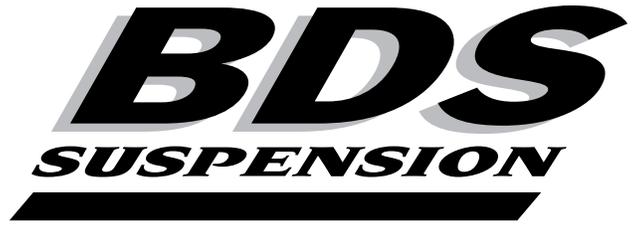


# #014455

## 4.5" Suspension System

### Jeep Cherokee XJ



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

#### **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.

**102 S. Michigan Avenue • Coldwater, MI 49036**  
**517-279-2135 • www.bds-suspension.com**

## PARTS LIST

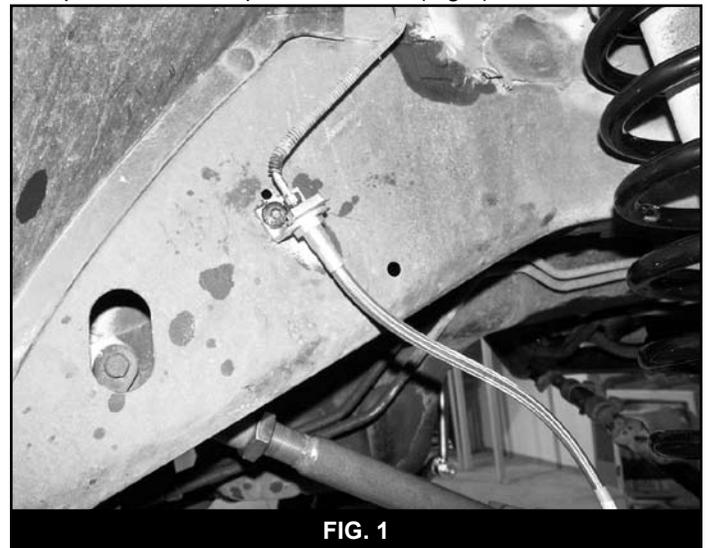
Part #	Qty	Description
01325	2	Disconnect Bracket
45313	2	5/8" x 0.109" x 1.375" Sleeve
01467	2	Lower Control Arm
01468	2	Lower Control Arm End
60107	4	90 Deg. Grease Zerk
36274	2	1-1/2"-12 Jam Nut
01463	2	Front Upper Control Arm
01464	2	Front Upper Control Arm End
67-1	2	3/4" x 0.156" x 2" Sleeve
36270	3	1"-14 Jam Nut
94	1	3/4" x 0.120 x 1.58 sleeve
01396	1	Adjustable track bar end
M03406RB	2	Bushings
01968	1	Track Bar
01338	2	Race (Bushings)
68063	2	Snap ring - Small
01319	2	Washer
01994	1	tie rod end ball
01392	1	1/2" nut tab
915	1	Bolt Pack
22512	1	Rear Brake Line
5188	3	Snap-in Brake Line Clip
099000	3	Cable Tie
22510	2	Front Brake Line
B06103C	2	Brake Line Bracket
CCW-03-050	4	3/8" Brake Line Crush Washer
01358	2	Rear Shackles
51-1	2	3/4" x 0.095" x 3.140" Sleeve
52-1	4	3/4" x 0.095" x 2.750" Sleeve
M02402RB	4	Spring Bushing
M02403RB	4	Spring Bushing
M02400RB	4	Shackle Bushing
516	4	Grease Zerk
3396	2	3" Tall Bump Stop
438	1	Bolt pack - bump stops
3523	8	Control Arm Bushing
61-1	4	7/8" x 0.156" x 2.620" Sleeve
M02957RB	4	Control Arm Bushing
0143450	2	3/8" x 3" Self-Tapping Bolt
W38S	2	3/8" SAE Washer
560312FCP	2	5/16" Center Pin and Nut
2124	2	4 Deg Shim
01300	2	Disconnect End
01301	2	Disconnect Collar
034001	2	Disconnect Spring
68016	2	Retaining Ring
01302	2	Disconnect Stud
01316	2	Lanyard
01317	2	Clip
718	1	Bolt Pack
01306	2	Sway Bar Link
SB58	2	Bushing

## 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 centerlink from 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.
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)



**FIG. 1**

16. Install lower portion with provided new crush washers. 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.

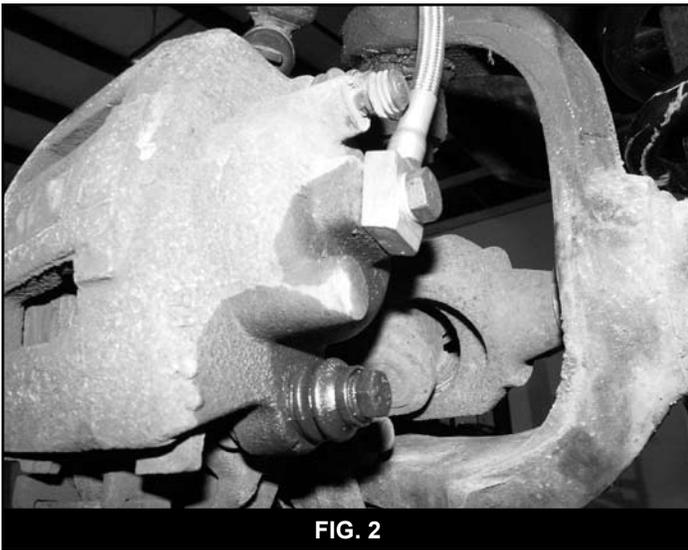


FIG. 2

17. Repeat for driver's side.
18. Loosen nuts for all control arms (Do not remove at this time).
19. Remove spring retaining clips (save for reinstallation) and remove coils by lowering front axle.
20. Drill lower bump stop holes to 5/16" diameter and use 3/8" self-tapping bolt (#438) to cut threads for bump stop extension. Remove 3/8" self-tapping bolt. (Fig 3)

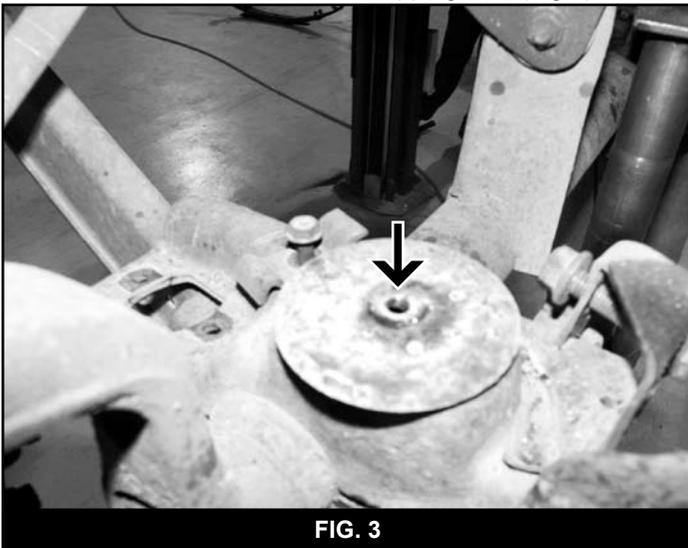


FIG. 3

21. Apply a small amount of lithium based grease to bushings (M02957RB), then install in end of upper control arms.
22. Install 3/4" x .156" x 2.0" (67-1) sleeve in upper control arms.
23. Install 90 degree grease zerk on end of upper and the short section of the lower control arms.
24. Install straight grease zerk into longer section of lower control arm.
25. Grease and install (BSDG1-78) bushings and 7/8" x .156" x 2.7" (11-1) sleeve in both ends of lower control arms.
26. Adjust new control arm lengths as follows:  
Upper 15-5/8", Lower 16-1/2".  
These lengths are approximations and may need to be adjusted for proper alignment.
27. With front axle supported, remove the passenger's side upper and lower control arms.

28. Install new BDS coil on passenger's side with 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.
29. Attach bump stop extension (3" wide x 3" high block) with 3/8" x 3-1/2" bolt and 3/8" SAE washer (#438). Torque to 30 ft-lbs.
30. Install new upper and lower control arms with OE hardware as shown in Fig 4. Do not tighten control arms at this time.

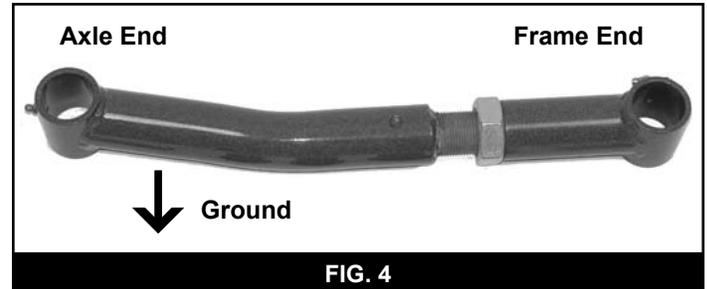


FIG. 4

31. Repeat for Driver's side.
32. Lock off jam nut on new control arms.
33. 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.
34. If installing optional single steering stabilizer, do so at this time.
35. Drill lower OE sway bar mount to 1/2".
36. 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 5). Torque the stud to 60 ft-lbs.

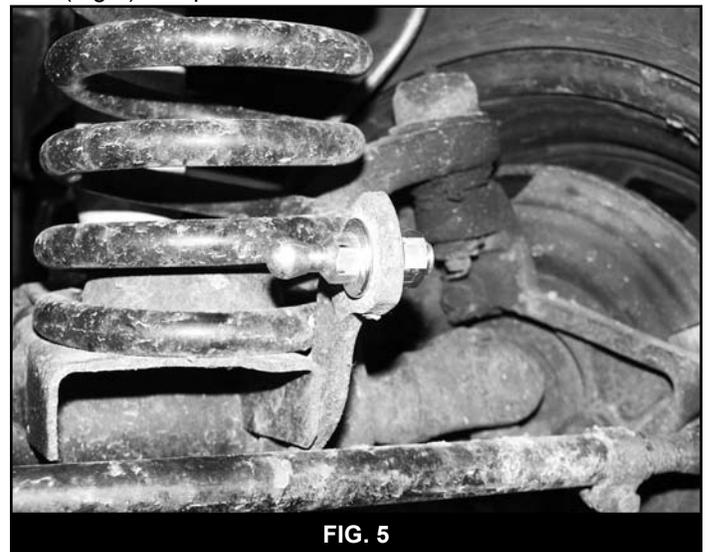


FIG. 5

37. 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 6).

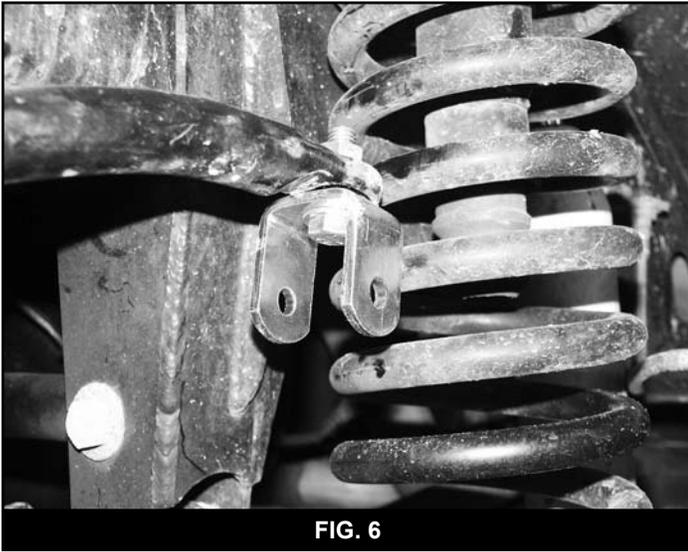


FIG. 6

38. Lightly grease and install the provided hourglass bushings in the ends of the new sway bar links. Lightly grease and install the provided sleeves into the bushings.
39. Install the provided 1/2" jam nut then the spring loaded disconnect assembly on the threaded end of the new link. Thread the nut and assembly all the way on to the link (Fig 7).

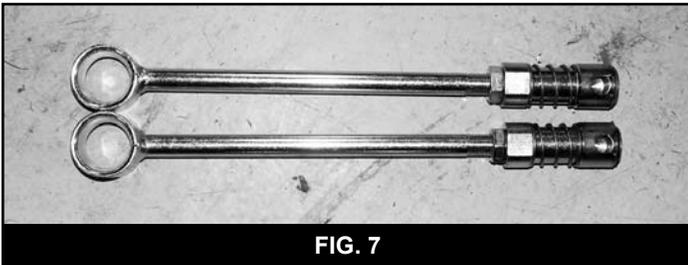


FIG. 7

40. Attach the sway bar link assembly to the upper u-bracket 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.
41. Ensure that the vehicle is setting level. Pull the spring collar up on the disconnect end and attach it to the ball stud. Make sure that the disconnect end stud hole is square with the ball stud and tighten the jam nut against the disconnect end. The disconnects allow for 1/2" of adjustment (1/2" longer from full-bottomed out). If necessary, adjust the links side-to-side to compensate for any unevenness in the vehicle, allowing for the easiest possible disconnecting of the ends.
42. 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 and with different suspension setups. Use your best judgment. Use the provided self-drilling screws to mount the lanyard to the body/frame (Fig 8).

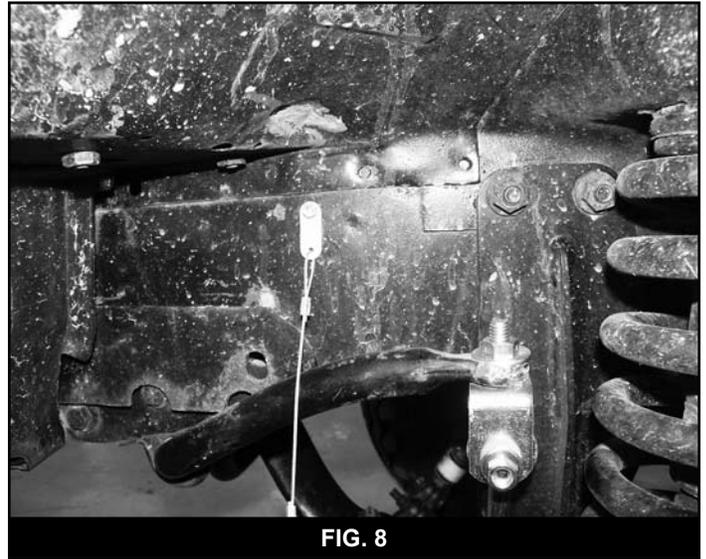


FIG. 8

43. 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.
44. Reattach centerlink to pitman arm. Torque nut to 50 ft-lbs. Install new cotter pin.
45. Use provided zip-ties to keep brake line from interfering with any rotating or heated objects.
46. Reinstall wheels and torque lug nuts to specification, see owner's manual.
47. With 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.
48. Remove jack stands and lower vehicle to the ground.
49. Bounce vehicle to normalize suspension.
50. Grease and install bushings (M03406RB) and sleeve (94) into adjustable track bar end. Thread jam nut onto track bar followed by adjustable end. Make sure there is atleast 1-1/4" of thread engagement. Install straight grease zircs into both ends of track bar. The grease zirc at the axle will face down to allow for access once the track bar is installed.
51. Drill out the OE track bar axle mount to 1/2". Do NOT drill the taper out.
52. Ball stud end is shipped assembled. See figure below for rebuild instructions. Center the stud and install into the original tapered frame mount. Use an 18mm wrench to hold the flats while tightening down the 1/2" fine thread nylock nut with the 12mm flat washer. There will be a slight gap between the flats and OE mount once installed. Tighten to 55 ft-lbs.
53. 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 1/2" head bolt and nut tab. Run the nut tab horizontally from the center of the vehicle as shown. Tighten the bolt to 55 ft-lbs.
54. 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 5/16" button head bolt (bolt pack #915).

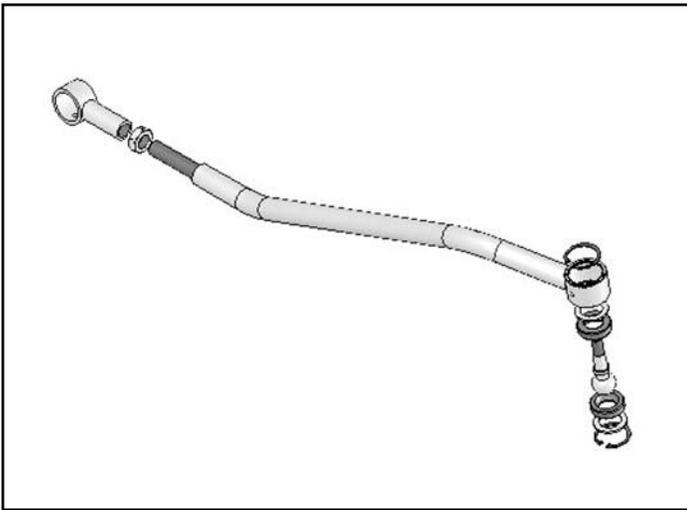


FIG. 9a

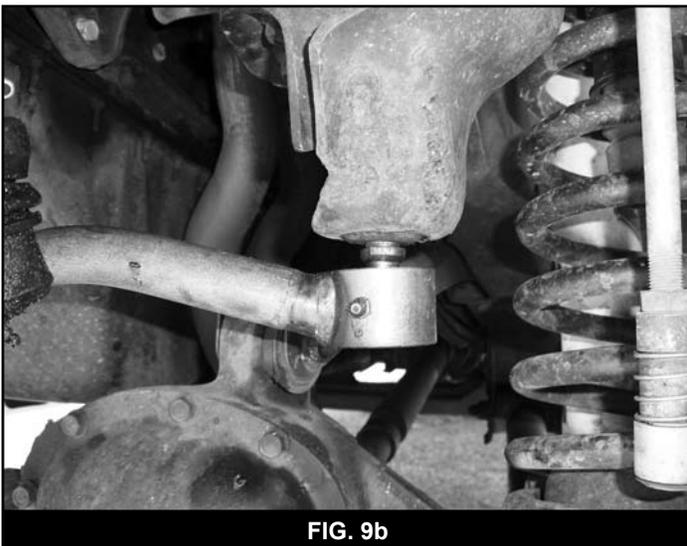


FIG. 9b

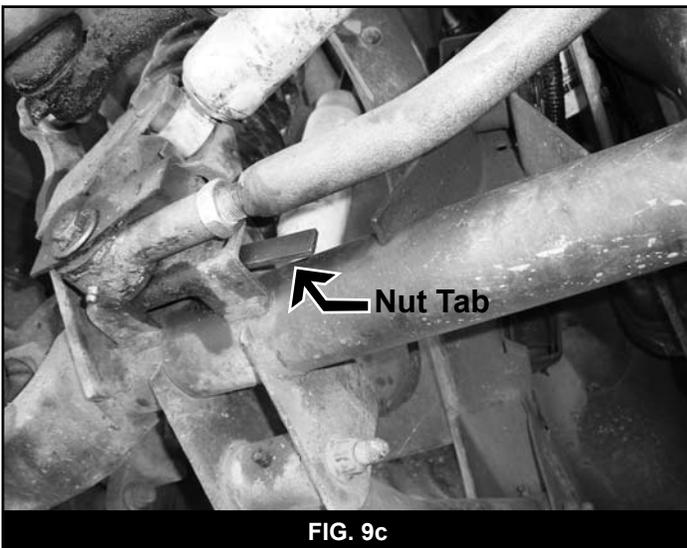


FIG. 9c

55. Torque upper and lower control arms (front and rear) to following specifications: Upper 30 ft-lbs; Lower 95 ft-lbs.
56. Connect sway bar end links with provided safety pins.
57. Grease control arms and track bar fittings at this time.

## XJ REAR INSTALLATION

58. Block the front wheels. Safely raise the rear of the vehicle and support with jack stands for safety.

59. Remove wheels.
60. Place a floor jack under the rear axle for support and remove rear shocks, retain OE hardware.
61. Remove sway bar ends from body.
62. Remove retaining clip holding brakeline to driver's side frame.
63. Disconnect rubber brake line from hard line at retaining clip location.
64. Disconnect hardlines from brake line junction block on axle.
65. Unbolt brake line junction block from axle. Retain bolts. (Fig 10)

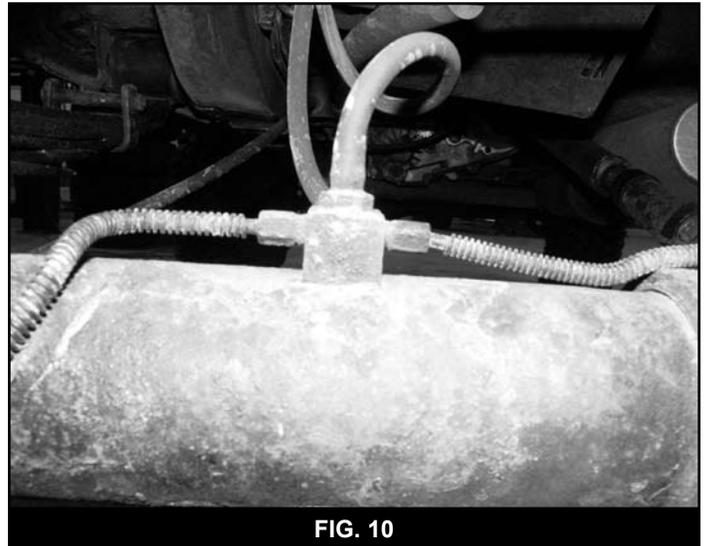


FIG. 10

66. Install new BDS rear brake line (22512) in place. Torque to 25 ft-lbs. (Fig 11)

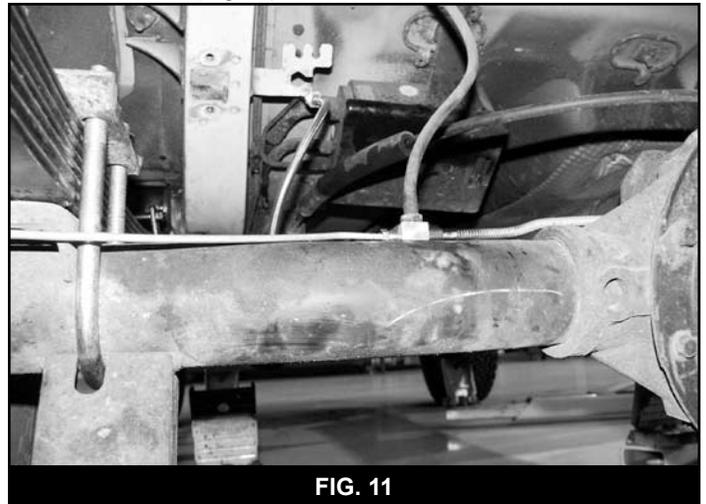


FIG. 11

67. Reattach axle breather.
68. Install new retaining clip.
69. Apply a small amount of lithium based grease to bushing (M02400RB) and install bushing, sleeve (52-1), and grease zerk into shackle.
70. Grease and install bushings into leaf spring eyes (M02402RB & M02403RB) then install sleeves (52-1 & 51-1).
71. 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.

72. 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 12)

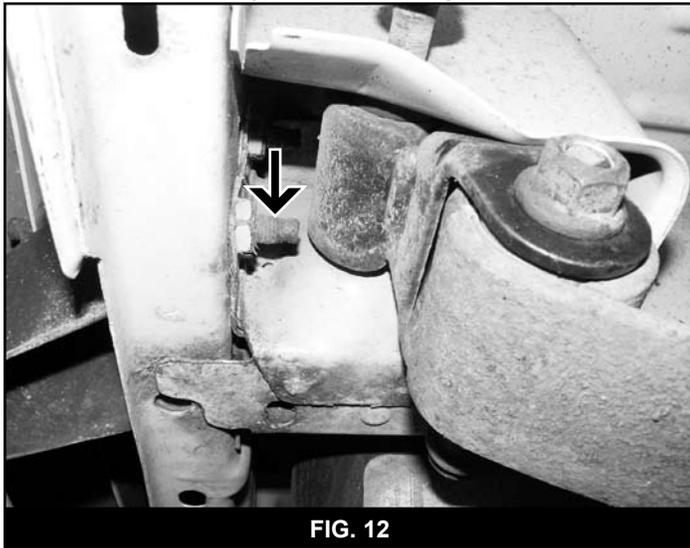


FIG. 12

73. 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.

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

75. Repeat for driver's side.

76. Install new shocks.

77. Install wheels and torque to OE specification.

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

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

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

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

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

## POST INSTALLATION

83. Double-check all fasteners for proper torque.

84. Check all moving parts for clearance.

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

86. Align headlights

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

88. Complete a vehicle alignment to OE specifications.

89. Check all fasteners after 500 miles.

90. Grease fittings at regularly scheduled maintenance intervals.

# Shock Absorber Installation Instructions



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

## LIMITED LIFETIME WARRANTY

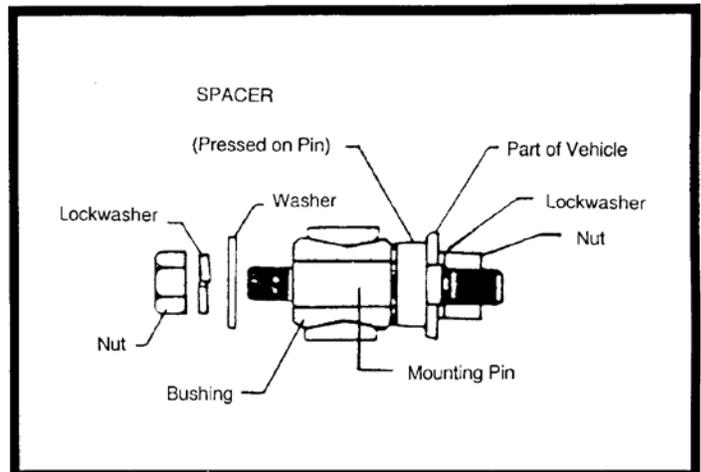
BDS Suspension Co. warrants to the original retail purchaser that its shock and stabilizer cylinders are free from defects in material and workmanship for so long as they own the vehicle. Excluded from this warranty are the finish of the product and mounting bushings. Defects in material and workmanship do not include such things as dented cylinders or bent rods caused by obvious side impact, rust, worn or deformed bushings. A shock absorber is a wear item and over time will experience diminished damping resistance due to normal component wear. This is not a defect in material or workmanship and is therefore not warrantable.

BDS Suspension's obligation under all warranties is limited to the repair or replacement, at BDS's option, of the defective material. Any cost of removal, installation or reinstallation, freight charges, incidental or consequential damages are expressly excluded from these warranties.

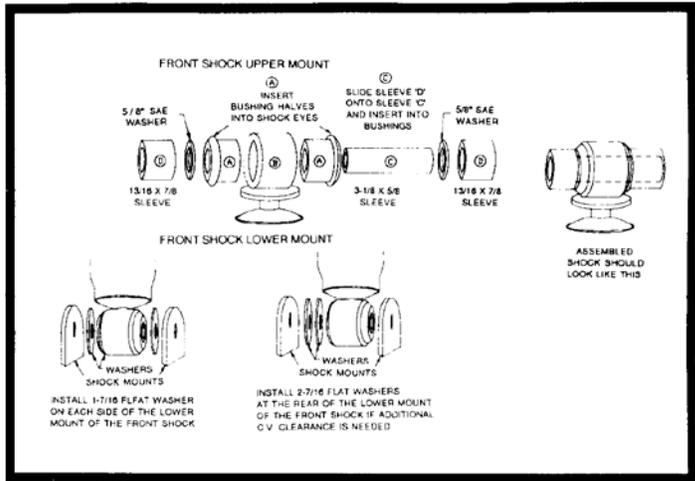
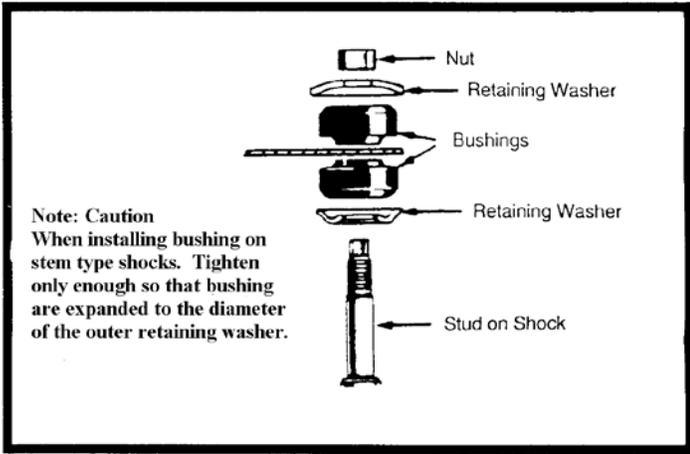
## INSTALLATION INSTRUCTIONS

1. **Note: Please read instructions thoroughly before installing shock absorber.**
2. Remove old shock absorber from vehicle. Note any spacers, washers, sleeves or other hardware and note their location. Compare the existing hardware with the supplied hardware. Always use new hardware wherever possible. Due to the variety of applications, you may not use any or all of the hardware supplied. You may need to use some of the original hardware. If any of the original hardware is damaged, corroded, bent or broken it must be replaced.

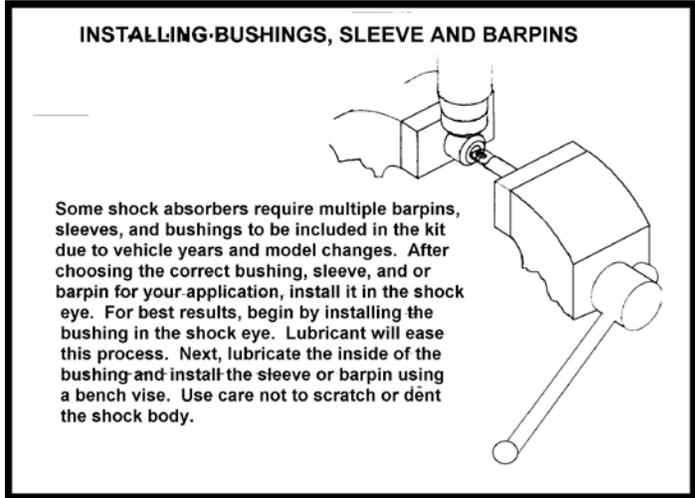
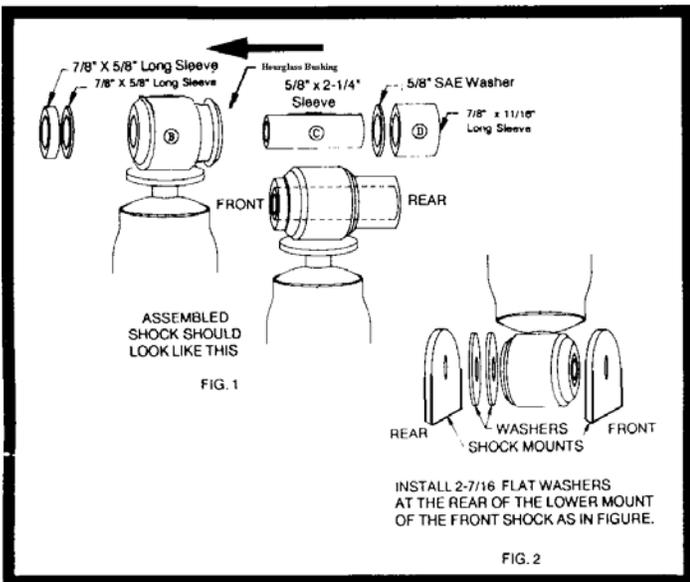
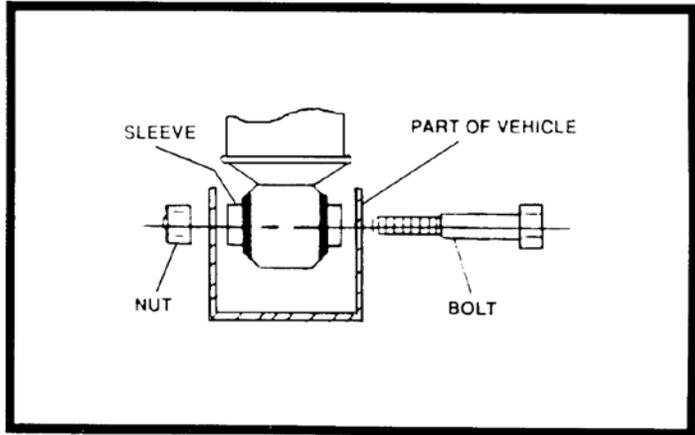
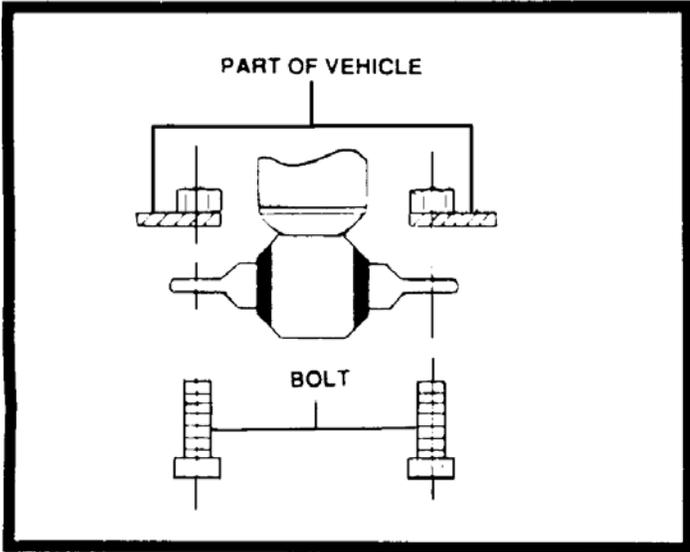
3. If installing dust boot, do so at this time. **Note: The use of a lubricant like dish soap on the inside of the boot will ease installation.** Make sure the washer at the top of the shock is fully seated in the boot all the way around. Secure the bottom of the boot to the cylinder with a plastic tie strap.
4. Install any required bushings and sleeves in to the shock eyes at this time. Install the shock absorber on the vehicle. Use the appropriate illustration as a frame of reference. Due to the different shock mounts within a vehicle model range, the shock eyes must be built to match the shocks that you removed by using the universal hardware kit included. Choose the sleeve with an I.D. closest to the O.D. of the mounting stud or bolt without binding. Some applications will require some extra effort to install.
5. Check all fasteners for tightness before driving and inspect periodically.



102 S. Michigan Avenue • Coldwater, MI 49036  
517-279-2135 • [www.bds-suspension.com](http://www.bds-suspension.com)



CHEV. S-SERIES W/LIFT



FULL-SIZE CHEV. W/LIFT 88-UP MODELS