Part#: **014314, 014315**
Product: **3" Ultimate Suspension System**
Application: **Jeep Wrangler TJ**

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.

PARTS LIST

Part #	Qty	Description
034302	2	Front Coil Springs
034308	2	Rear Coil Springs

014314/014315 Box Kit

Brake Line Parts

22510	2	Front Brake Line 25"
22511	1	Rear Brake Line 25"
5188	3	Snap In Brake Line Clip
B06103C	3	Brake Line L-Bracket
CCW-03-050	4	3/8" Crush Washer
099000	3	11.5in Nylon Cable Tie - Black

Bump Stop Extensions

2296	2	2" Rear Bump Stop Extension
B1080G5	2	10mm x 80mm Bolt
3296	2	3" Front Bump Stop Extension
439	1	Bolt Pack
	2	*3/8"-16 x 2-1/2" bolt*
	2	*3/8" USS flat washer*
	1	*3/8"-16 x 1" self-tapping bolt*

Control Arm Parts

A176	4	Adjustable Flex Front and Rear LCA
A177	2	Adjustable Flex Front UCA
738	1	Bolt Pack
	2	*10mm-1.50 x 80mm bolt*
	2	*10mm-1.50 prevailing torque nut*
	4	*3/8" USS flat washer*
A178	1	Adjustable Flex Rear UCA - Drv
A179	1	TJ Adjustable Flex Rear UCA - Pass
941	1	Bolt Pack
	2	*12mm-1.75 x 80mm bolt*
	2	*12mm-1.75 prevailing torque nut*
	4	*12mm flat washer*

Front Adjustable Track Bar

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

Rear Sway Bar Links

911104	2	Sway Bar Link
SB58BK	4	5/8 ID Hourglass Bushing
45313	4	.625 x .109 x 1.375 Sleeve
709	1	Bolt Pack
	4	*10mm-1.50 x 60mm bolt*
	4	*10mm-1.50 prevailing torque nu*

Rear Track Bar Relocation

01326	1	Rear Track Bar Bracket
54587	1	.750 x .090 x 1.575 Sleeve
711	1	Bolt Pack
	2	*5/16"-18 x 1" bolt*
	2	*5/16-18 prevailing torque nut*
	6	*5/16" USS washer*
	1	*3/8"-16 x 1" bolt*
	1	*3/8"-16 prevailing torque nut*
	2	*12mm-1.75 x 80mm bolt*
	2	*12mm-1.75 prevailing torque nut*
	3	*7/16" USS washer*

Transfer Case Shift Adapter

01420	1	T-Case Shifter Adapter
704	1	Bolt Pack
	2	*1/4"-20 prevailing torque nut*
	2	*1/4" SAE flat washer*

Transfer Case Drop (014314 only)

01834	1	T-Case Drop Spacer - Drv
01835	1	T-Case Drop Spacer - Pass
200-03369	4	Tube Plug
YJTC6	6	T-Case Tapered Washer
B12X3G5	6	1/2 x 13 x 3 Grade 5 Bolt
W76USS	6	7/16 USS Thru Hard Washer

Transfer Case Drop (014315 only)

01834	2	Transfer Case Drop Spacer
200-03369	4	Spacer Tube End Cap
716	1	Bolt Pack
	8	*12mm-1.75 x 70mm bolt*
	8	*12mm flat washer*

124652 Front Sway Bar Disconnects

A100	2	Sway Bar Link
01302	2	Disconnect Stud
01325	2	U-Bracket For Sway Bar Disconnect
01316	2	13.5in Lanyard
45313	2	.625 x .109 x 1.375 Sleeve
718	1	Jeep Tj 4.5in Bolt Pack
	2	*1/2-20 prevailing torque nut*
	4	*1/2" SAE flat washer*
	2	*1/2"-20 jam nut*
	2	*3/8"-16 x 2-1/2" bolt*
	2	*3/8"-16 prevailing torque nut*
	4	*3/8" SAE flat washer*
	2	*7/16"-14 x 1-1/2" bolt*
	2	*7/16"-14 prevailing torque nut*
	2	*7/16" SAE flat washer*
	2	*7/16" USS flat washer*
	2	*#10-16 x 5/8" self-drilling screw*

PRE-INSTALLATION NOTES

1. This step is to be performed at the beginning of the installation: Remove the forward transmission skid plate. Remove the two frame mount bolts (one per side) and three center skid plate bolts. Remove skid plate from vehicle.

Note: As a result of the increased suspension travel obtained by the addition of this suspension system, the forward transmission skid plate cannot be reinstalled. Installation of this skid plate will result in contact between the front driveshaft and skid plate crossmember throughout normal suspension travel, possibly damaging the driveshaft.

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

Fig. 1

18. Install the caliper side with the provided 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

19. Repeat front brake line installation on the driver's side.
20. Loosen nuts for all control arms (Do not remove at this time).
21. Remove spring retaining clips (save for reinstallation) and remove coils by lowering the axle.
22. Drill the center holes in the lower spring mounts using an 11/32 or T size drill. Use the self tapping bolt located in bolt pack 439 to cut 3/8" threads (Fig 3).

Fig. 3

23. Adjust new control arm lengths as follows:

    Upper 15-1/4", Lower 16-1/4"

    These lengths are approximations and may need to be adjusted for proper alignment.
24. With front axle supported, remove both lower control arms.
25. Install the lower control arms with OE hardware as shown (Fig 4) with the bend down and the flex end in the frame with the grease fitting on the top. Do not tighten control arms at this time.

Figure 4

26. Remove the upper control arms from the front axle and frame. Retain hardware. Note: Be sure that the axle is well supported.

27. 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.

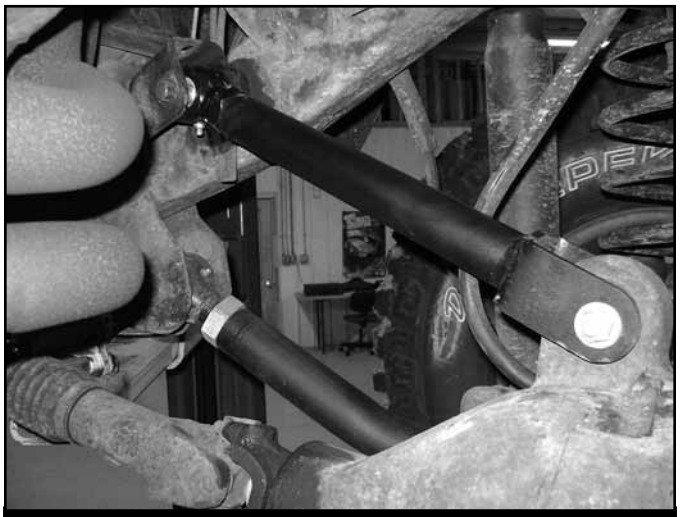

Fig 5

28. Install the new coil spring (034302) along with the provided 3" dia. x 2" tall bump stop spacer. Rotate the coil so it is seated properly in the axle mount. Install the OE spring retainer clip with the original bolt and torque to 20 ft-lbs. Once again, take care not to overextend any lines or hoses while installing the springs. Fasten the bump stop extensions to the axle with the 3/8 x 2-1/2" bolts and washers (BP 439). Torque to 30 ft-lbs.

29. 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.

30. Attach the drag link to the pitman arm with the OE castellated nut and supplied new cotter pin. Torque nut to 60 ft-lbs. *Note: Never loosen the castellated nut to align the cotter pin hole, always tighten.*

31. If installing optional single steering stabilizer, do so at this time.

32. Install the new lower ball stud to the OE sway bar link axle mount with a ½" nut and two ½" SAE washers provided in pack 718. 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.

Fig. 6

33. 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 (Pack 718). 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)

Note: It might be necessary to clearance the hole in the sway bar slightly to accept the 7/16" bolt. Tighten 7/16" hardware to 40 ft-lbs.

Fig. 7

34. 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.

35. Install the provided ½" jam nut followed by 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 8).

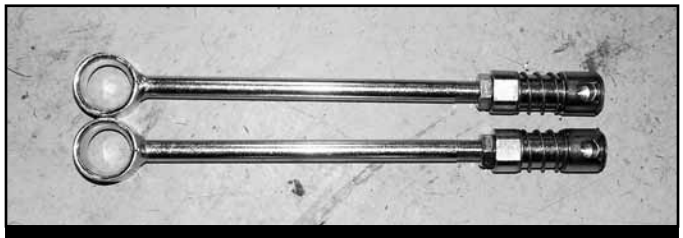

Fig. 8

36. 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.

37. Grease and install bushings (M03406BK) and sleeve (55003) into the adjustable track bar end. Thread jam nut onto track bar followed by adjustable end. Make sure there is at least 1" of thread engagement. Install straight grease fitting into the frame side of the track bar.

38. Drill out the OE track bar axle mount to ½". Do NOT drill the taper out.

39. The ball stud end is shipped assembled. See figure 9A 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 ½" 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.

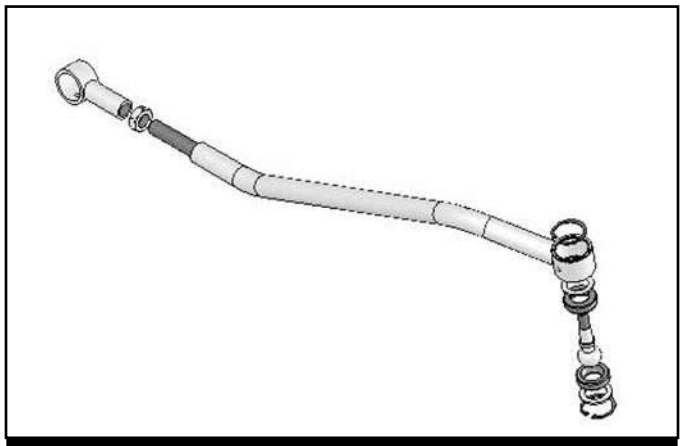

Fig. 9A

40. Install the wheels and lower the front of the vehicle to the ground.

41. Bounce vehicle to setlle the suspension.

42. 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 ½" button 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.

43. 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 9B

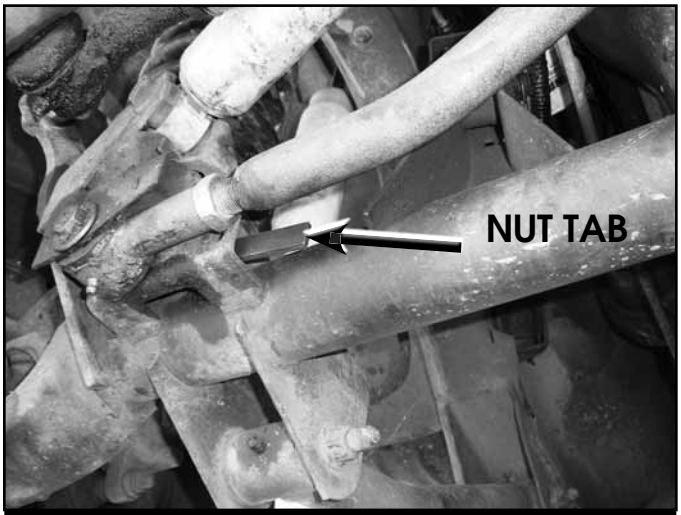

Fig 9C

44. Torque upper and lower control arms (front and rear) to following specifications:

Front suspension arm lower axle bracket	85 ft.lbs.
Front suspension arm lower frame bracket	130 ft. lbs.
Front suspension arm upper axle bracket	55 ft. lbs.
Front suspension arm upper frame bracket	55 ft. lbs.

45. Grease control arms and track bar fitting at this time.

46. Ensure that the vehicle is sitting 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 ½" 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.

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 and with different suspension setups. 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. Use provided zip-ties to keep brake line from interfering with any rotating or heated objects.

REAR INSTALLATION

1. Block the front wheels. Safely raise the rear of the vehicle and support with jack stands for safety.
2. Remove wheels.
3. Place a floor jack under the rear axle for support and remove rear shocks, retain OE hardware.
4. Disconnect the track bar at the passenger's side frame. Retain hardware.
5. Remove sway bar links from sway bar and frame.
6. Remove retaining clip holding brakeline to driver's side frame.
7. Disconnect rubber brake line from hard line at retaining clip location.
8. Disconnect hardlines from brake line junction block on axle.
9. Unbolt brake line junction block from axle. Retain bolts. (Fig 10)

Fig. 10

10. Install new BDS rear brake line (22511) in place. Torque to 25 ft-lbs.
11. Reattach axle breather.
12. Install new retaining clip.
13. Lower rear axle and remove springs.
14. Remove the upper rubber bump stop from the mount. Remove the mount from the frame.
15. Install the provided 2" x 2" bump stop spacer between the OE mount and the frame with a 10mm x 80mm bolt. Torque to 30 ft-lbs. (Fig 11)

Fig. 11

16. Adjust the length of the lower control arms to 16” center to center.
17. Adjust the length of the upper control arms to 13-1/2”.
18. Remove the OE lower control arms from the axle and frame. Retain all hardware.
19. Install the new lower control arms in the axle and frame mounts. The adjustable end goes in the frame with the zerk fitting up (Fig 4). Fasten the arms with the OE hardware. Leave hardware loose.
20. Remove the driver's and passenger's upper control arms from the axle and frame mounts. Retain all hardware.
21. The holes at the axle mounts will need to be enlarged to accept the new 12mm hardware (BP 941). Using a 31/64" drill or grinding tool open up the holes to accept the new hardware
22. Install the new upper control arms. The arms are driver and passenger side specific. When installed correctly, the adjustable end is at the frame with the zerk fitting down and the brake line tab is facing inward and down (Fig 12). Fasten to the frame with the OE hardware. At the axle use the provided 12mm x 80mm bolts, nuts, and washers (BP941) Leave hardware loose.

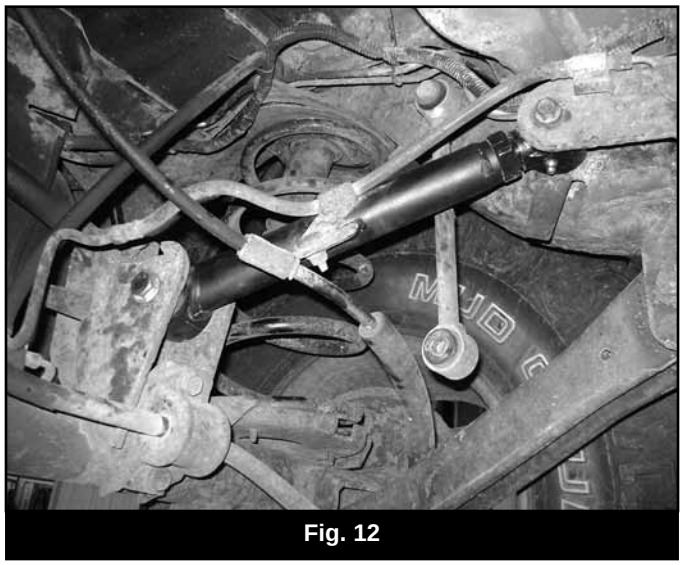

Fig. 12

23. Install lower control arm with OE hardware, do not tighten hardware at this time.
24. Install new coil springs, lower axle if necessary.

25. Remove the plastic cover from the track bar mount on the driver's side of the axle (Fig 12). Discard the cover. Disconnect the track bar from the axle by removing the Torx head bolt (T55). Note the orientation of the track bar, it can rest in the vehicle or be removed for re-installation later.

26. Position the provided track bar relocation bracket up to the OE axle mount. Insert the supplied 1.57" long sleeve (54587) in the OE axle mount. Attach the bracket to the axle through the original track bar mounting hole and new sleeve with a 12mm x 80mm bolt and 7/16" USS washer with the OE nut tab. Snug hardware to hold the bracket in place.

Note: If the nut tab is damaged use a provided 12mm nut.

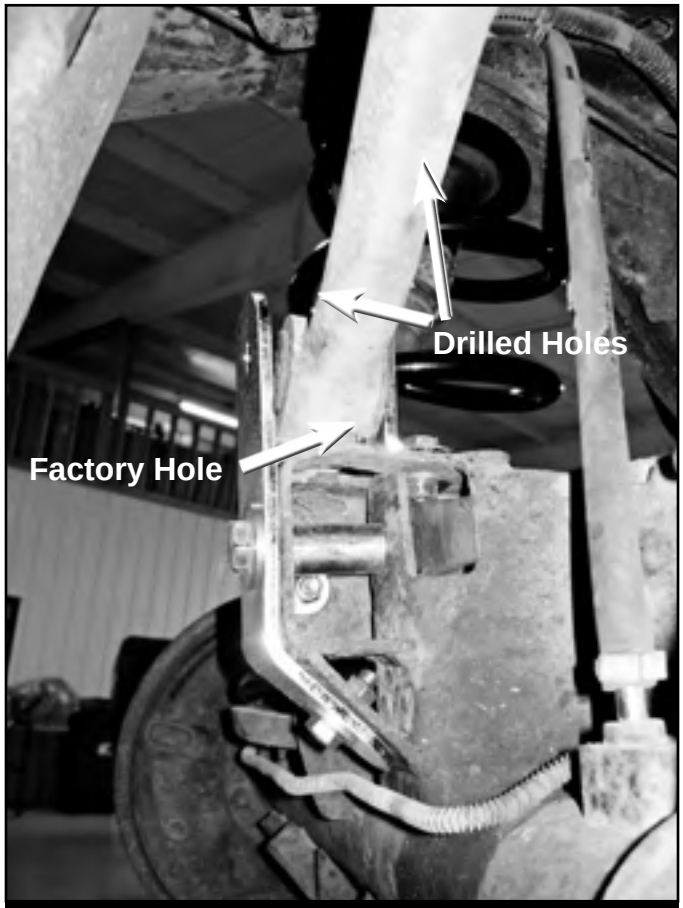

Fig. 13

27. Using the new bracket as a template, mark the two additional mounting holes to be drilled. Note: The lowest hole in the bracket will line up with an existing hole that may need to be widened slightly.

28. Remove the bracket and drill 5/16" holes at the top two marks and widen the lower hole, if necessary, to accept the 3/8" bolt.

29. Reinstall the bracket as instructed before in addition to install the provided 5/16" x 1" bolts, nuts and washers (BP 711) in the upper two newly drilled mounting holes and the 3/8" x 1" bolt, nut and washers (BP 711) in the lower hole. Leave hardware loose until all bolts are installed. Torque all mounting bolts: 12mm hardware- 60 ft-lbs, 3/8" hardware- 30 ft-lbs, 5/16" hardware- 15 ft-lbs.

30. Install the track bar in the new track bar bracket with the provided 12mm x 80mm bolt, nut and 7/16" USS washers. Be sure to run the bolt from back to front. Leave hardware loose.

31. Install the BDS shocks. Use OE upper and lower hardware. Torque the lower hardware to 60 ft-lbs. Torque the upper hardware to 22 ft-lbs.

32. Lightly grease and install the provided hourglass bushings into the new solid rear sway bar links (911104). Lightly grease and install the supplied 45313 sleeves into the bushings.

33. Install the rear sway bar links to the original frame mount and the sway bar with the provided 10mm x 60mm bolts, nut and washers (BP 709). Torque the bolts to 30 ft-lbs. The OE 10mm nut tab can be reused at the frame.

34. Install the wheels and lower the vehicle to the ground. *Note: Make sure the track bar doesn't get pitched when lowering the vehicle.*

35. Bounce vehicle to settle the rear suspension.

36. Install track bar end into passenger side frame mount. The body may need to be shifted slightly side-to-side to align the bolt. Torque the frame and axle hardware to 60 ft-lbs.

37. Torque upper and lower control arms to following specifications:

Rear suspension arm lower axle bracket	130 ft.lbs.
Rear suspension arm lower frame bracket	130 ft.lbs.
Rear suspension arm upper axle bracket	55 ft.lbs.
Rear suspension arm upper frame bracket	55 ft.lbs.

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

97-02 Models - Transfer Case Lowering Kit

39. Support the transfer case skid plate with a floor jack.

40. Locate both of the transfer case drop spacer tubes and the (4) plastic caps. Lightly tap the caps squarely into the ends of the spacer tubes until fully seated.

41. Loosen but do not remove all six skid plate mounting bolts.

42. Remove the three bolts on the drvier's side mounting the skid plate to the frame. Locate the shorter transfer case spacer tube. Slowly lower the jack until the tube can be installed between the skid plate and the frame. With the large holes facing up, line up the holes at each mounting bolt location.

43. Attach the skid plate and transfer case drop with the provided 1/2"" x 3" bolts, 7/16" USS washers, and conical washers (Fig 14). Leave bolts loose.

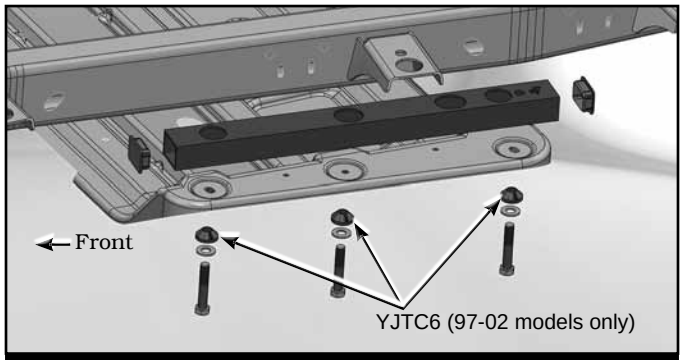

Fig. 14

44. Repeat the procedure for the passenger's side of the skid plate.

45. With all six bolts and tube spacers installed, torque the bolts to 65 ft-lbs.

Note: Some models may experience interference between the transfer case and the skid plate. It will be necessary to trim the pan in these cases to obtain clearance.

03-06 Models - Transfer Case Lowering Kit

46. Support the transfer case skid plate with a floor jack.

47. Locate both of the transfer case drop spacer tubes and the (4) plastic caps. Lightly tap the caps squarely into the ends of the spacer tubes.

48. Loosen but do not remove all six skid plate mounting bolts.

49. Remove the three bolts on the driver's side mounting the skid plate to the frame. Slowly lower the jack until one of the spacer tubes can be installed between the skid plate and the frame. With the large holes facing up, line up the holes at each mounting bolt location.

50. Attach the skid plate and transfer case drop with the provided, 12mm x 70mm bolts and 12 mm flat washers. (Fig 14). Leave bolts loose.

51. Repeat the procedure for the passenger's side of the skid plate.

52. With all six bolts and tube spacers installed, torque the bolts to 65 ft-lbs.

Note: Some models may experience interference between the transfer case and the skid plate. It will be necessary to trim the pan in these cases to obtain clearance.

Shift Linkage Relocation

53. Remove the two bolts mounting the shift linkage pivot bushing from the pivot bracket on the underside of the driver's side floorboard.
54. Remove the pivot bracket from the floorboard. Pull up the floor covering (carpet, rubber mat, etc.) in front of the driver's seat to access the four bracket mounting bolts. Remove the bolts and remove the pivot bracket and bushing from the vehicle.
55. Mount the pivot bushing relocation bracket to the OE bracket as shown in the figure.
56. Mount the pivot bushing to the relocation bracket as shown in the figure. Torque all mounting hardware to proper specs.
57. Install the modified bracket assembly in original location under the floorboard by sliding the linkage rod through the pivot bushing. Fasten the bracket to the floorboard using the OE hardware. Torque hardware to proper specs.

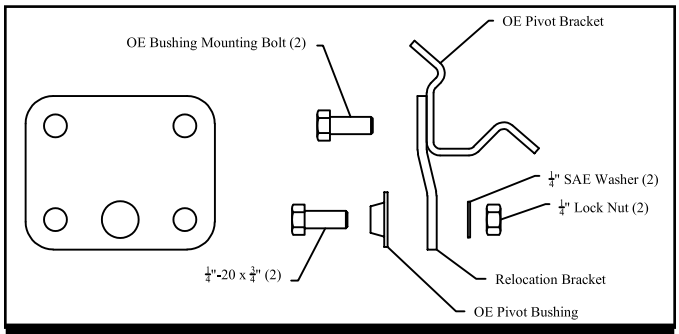

Fig. 15

POST INSTALLATION

1. Double-check all fasteners for proper torque.
2. Check all moving parts for clearance.
3. Complete a full radius turning check to ensure that no interference occurs.
4. Align headlights
5. Double check the brake lines for adequate slack at full wheel travel.
6. Complete a vehicle alignment to OE specifications.
7. Check all fasteners after 500 miles.
8. Grease fittings at regularly scheduled maintenance intervals.

NOTICE TO DEALER/INSTALLER

These instructions, the warning card, and included decals must be given to the owner of this BDS Suspension product.

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