

INSTALLATION INSTRUCTIONS



BDS PART #014446

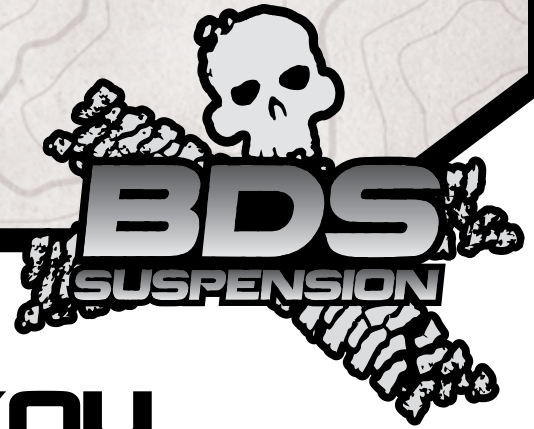
4.5" Suspension System

Jeep Wrangler JK | 2007-2014



BDS
SUSPENSION

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!

FOR YOUR SAFETY

Certain BDS Suspension products are intended to improve off-road performance. For your safety and the safety of your passengers, take the following precautions.

- **HANDLING** - Modified vehicles will likely handle differently than a factory equipped vehicle.
- **ROLLOVERS** - Extreme care must be used to prevent loss of control or vehicle rollover.
- **DRIVE SAFELY** - If you do fail to drive your modified vehicle safely, it may result in serious injury or death.
- **DON'T MIX SYSTEMS** - We do not recommend the combined use of suspension lifts, body lifts, or other lifting devices.
- **STAY SOBER** - You should never operate your modified vehicle under the influence of alcohol or drugs.
- **OBEY THE LAW** - 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.



RECOMMENDATIONS

- **PROFESSIONAL INSTALLATION** - BDS Suspension recommends that this system be installed by a professional technician.
- **PROFESSIONAL KNOWLEDGE** - Disassembly/reassembly procedures and post installation checks must be known to install this system.
- **SPECIAL LITERATURE REQUIRED** - OE Service Manual for model/year of vehicle. Refer to manual for proper disassembly/reassembly procedures of OE and related components.
- **OE RECOMMENDATIONS** - Adhere to recommendations when replacement fasteners, retainers and keepers are called out in the OE manual.
- **LARGER RIM AND TIRE COMBINATIONS** - These 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.
- **DRIVE LINE VIBRATION** - After installation 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.
- **SHOP SAFETY** - Secure and properly block vehicle prior to installation of components. Always wear safety glasses when using power tools.
- **WITH A HOIST** - If installation is to be performed without a hoist, we recommend rear alterations first.
- **AMOUNT OF LIFT** - 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.

TRACTION CONTROL



In an effort to reduce the risk of rollover crashes the National Highway Traffic Safety Administration (NHTSA) established the Federal Motor Vehicle Safety Standard (FMVSS)

No. 126 requiring all new passenger vehicles under 10,000 lbs GVWR include an electronic stability control (ESC) system as standard equipment. Effective August 2012 this law requires aftermarket products to be compliant with these same standards.

NOT APPLICABLE TO ALL BDS SUSPENSION SYSTEMS

AFTER THE INSTALLATION, 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.

[illegible]

#1425H - 4" Lift Kit Shown with Optional Adjustable Lower Control Arms

014446 Box Kit		
Part #	Qty	Description
084402R	1	Dropped Pitman Arm
W96S	4	Trans. Skid Spacer Washer
A187	2	Rear Adjustable Flex UCA
Front and Rear Bump Stops		
3396	2	3in x 3in Front Extension
438	1	Front Bump Stop Bolt Pack
	1	3/8"-16 x 1-1/4" self-tapping bolt
	2	3/8" USS washer
	2	3/8"-16 x 3-1/2" bolt
763	1	Rear Bump Stop Bolt Pack
	2	5/16"-18 x 1-1/4" bolt
	2	5/16"-18 x 7/8" bolt
	4	5/16"-18 prev. torque nut
	8	5/16" SAE washer
01928B	2	Rear Bump Stop Extension
REAR SWAY BAR LINKS		
9202S	2	Sway Bar Extension
SB58BK	4	5/8 ID Hourglass Bushing
62147	4	.625 x .075 x 1.375 Sleeve
758	1	Bolt Pack
	2	12mm-1.75 x 60mm bolt
	2	12mm-1.75 prev. torque nut
	4	1/2" SAE washer

014446 Box Kit		
FRONT TRACK BAR RELOCATION BRACKET		
01964B	1	Front Track Bar Bracket
69	1	.75 x .083 x 1.375 Sleeve
01393B	1	Support Bracket
562	1	Bolt Pack
	2	7/16"-14 x 1" bolt
	3	7/16" SAE washer
	2	7/16"-14 prev. torque nut
	1	9/16"-12 x 3" bolt
	2	9/16" SAE washer
	1	9/16"-12 prev. torque nut
	1	1/2"-13 square nut
	1	1/2"-13 x 1" bolt
	1	1/2" SAE washer
645	1	Bolt Pack
	1	9/16"-12 x 3-1/2" bolt
	2	9/16" SAE washer
	1	9/16"-12 prev. torque nut
	2	3/8"-16 x 1-1/4" bolt
	4	3/8" SAE washer
	2	3/8"-16 prev. torque nut

014446 Box Kit		
REAR TRACK BAR RELOCATION		
01967B	1	Rear Track Bar Bracket
54587	1	.750 x .090 x 1.575 Sleeve
563	1	Bolt Pack
	1	9/16"-12 x 3" bolt
	2	9/16" SAE washer
	1	9/16"-12 prev. torque nut
	1	3/8"-16 x 1-1/4" bolt
	2	3/8" SAE washer
	1	3/8"-16 prev. torque nut
BRAKE LINE RELOCATION		
01716	2	Front Brake Line Relocation
099000	4	11.5in Nylon Cable Tie
JKBL-D	1	Rear Brakeline Brkt - Drv
JKBL-P	1	Rear Brakeline Brkt - Pass
704	1	Bolt Pack - Front Brake Lines
	2	1/4"-20 prev. torque nut
	2	1/4" SAE washer
768	1	Bolt Pack - Rear Brake Lines
	2	1/4"-20 prev. torque nut
	4	1/4" SAE washer
	2	1/4"-20 x 3/4" bolt

124320 Box Kit (Rubicon)		
Part #	Qty	Description
911110	2	Fixed Front Sway Bar Link
46	4	.750 x .120 x 1.450 Sleeve
SB34BK	4	3/4 ID Hourglass Bushing
B12X3G5	2	1/2 x 13 x 3 Bolt
N12PT	2	1/2 x 13 Prevailing Torque Nut
W12S	4	1/2in Washer

4 Door Coil Springs		
Part #	Qty	Description
034411	2	Front Coil Springs - taller (4 door)
034419	2	Rear Coil Springs (4 door)

124310 Box Kit (Non-Rubicon)		
Part #	Qty	Description
A168	2	Front Disconnect Assembly
01302	2	Disconnect Stud
46	2	.750 x .120 x 1.450 Sleeve
912	1	Bolt Pack
	2	1/2"-13 x 3" bolt grade 5
	2	1/2"-13 prevailing torque nut
	8	1/2" SAE flat washer
	2	1/2"-20 prevailing torque nut
	2	1-3/8" OD x 1/2" ID x 3/16" washer
01316	2	13.5in Lanyard

124314 Box Kit (2012+ Only)		
Part #	Qty	Description
01839	1	Exhaust Extension - Drv.
01840	1	Exhaust Extension - Pass
814	1	Bolt Pack
	2	8mm x 70mm bolt
	2	8mm x 60mm bolt
	4	5/16" SAE washer

2 Door Coil Springs		
Part #	Qty	Description
034311	2	Front Coil Springs - taller (2 door)
034319	2	Rear Coil Springs (2 door)

124339 Box Kit		
Part #	Qty	Description
A182	2	Rear LCA w/ rubber bushings

124331 Box Kit		
Part #	Qty	Description
A181	2	Front LCA w/ rubber bushings

TIRES AND WHEELS

37x12.50 on 16x8 with 4.5" backspacing

SPECIAL TOOLS

Pitman arm puller

TECH TIPS

TROUBLESHOOTING INFORMATION FOR YOUR VEHICLE

1. Will not fit 2wd models.
2. Exhaust modification may be required.

INSTALLATION INSTRUCTIONS

PRE-INSTALLATION NOTES

1. Stock wheels cannot be re-installed due to interference with the rear sway bar links.
2. If Fox 2.0 series shocks are being installed. BDS front (104002) and rear (104006) stainless steel brake lines are recommended.

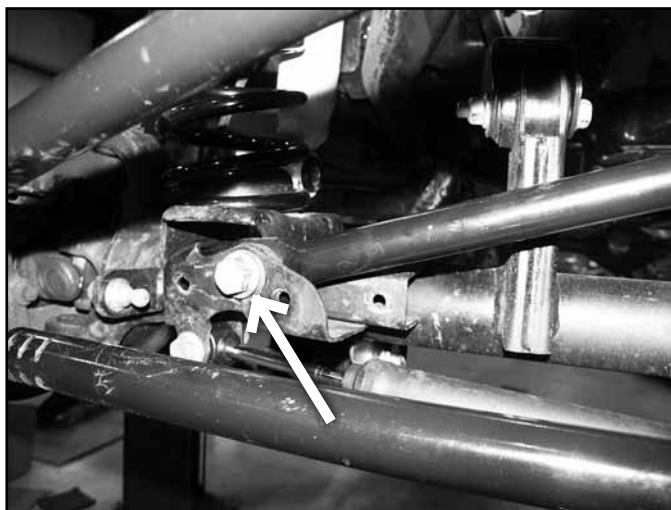
INSTALLATION INSTRUCTIONS

1. Park the vehicle on a clean, flat surface and block the rear wheels for safety.
2. Measure from the center of the wheel up to the bottom edge of the wheel opening and record below:

LF _____ RF _____ LR _____ RR _____

3. Disconnect the front track bar from the passenger's side of the front axle. (Fig 1)

FIGURE 1



4. Raise the front of the vehicle and support the frame with jack stands behind the front lower control arm pockets.
5. Remove the wheels. Remove the 3 bolts mounting the transmission skid plate and remove it from the vehicle.
6. Disconnect ABS wires from rubber grommets below outer knuckle (Fig 2). Disconnect wire from plastic clips on the OE brake line.
7. Disconnect brake line brackets from frame (Fig 3) and at the axle on newer models. Save hardware.

FIGURE 2



FIGURE 3



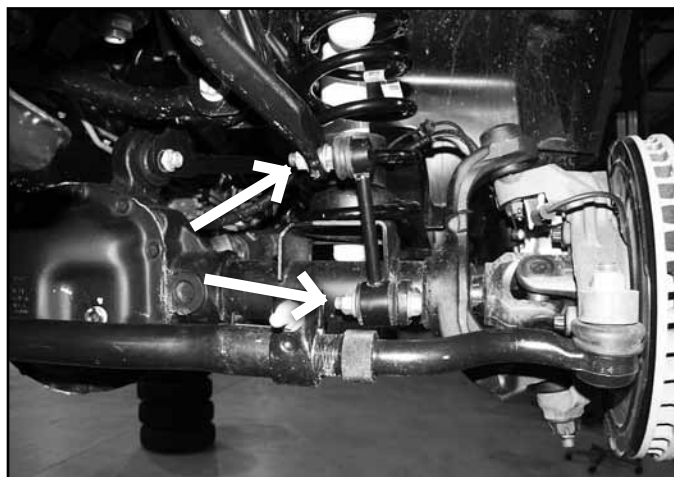
8. Remove the OE steering stabilizer. Save hardware. Leave the stabilizer bracket on tie rod. (Fig 4)

FIGURE 4



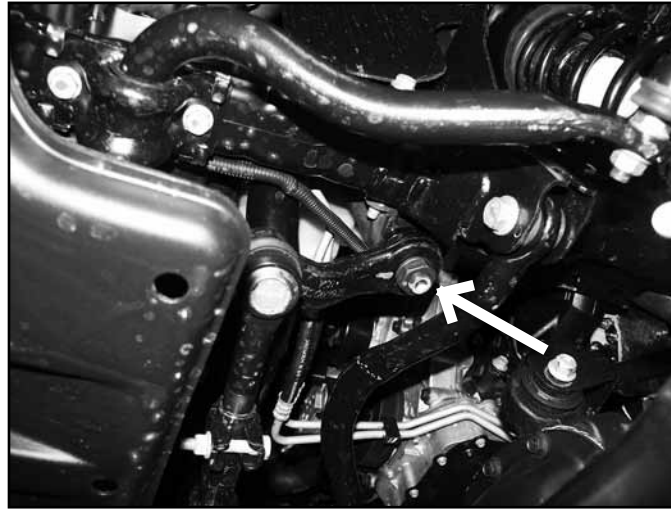
9. Disconnect the sway bar links from the axle and sway bar. (Fig 5)

FIGURE 5



10. Disconnect the steering drag link from the pitman arm. Remove the tie rod end nut and dislodge the tie rod end from the pitman arm with the appropriate puller or pickle fork. Retain tie rod end nut.
11. Make indexing marks on the pitman arm to indicate the position relative to the splines. Remove pitman arm from steering box with appropriate puller. Retain hardware. (Fig 6)

FIGURE 6



12. Transfer indexing marks on pitman arm to the new pitman arm. Install new pitman arm with OE hardware. Tighten to 185 ft-lbs.
13. 2012+ models only: Locate and install the 124314 Exhaust Extension Kit with the instructions included in the kit.
14. Support the front axle with a hydraulic jack. Remove the front shocks from the vehicle. Save lower mounting hardware.
15. Lower the front axle and remove the coil springs from the vehicle.
16. If working on a JK with front axle alignment eccentric bolts at the axle, mark the cam position for reference later.
17. With the axle well supported, remove the lower control arm bolts at the axle and frame. Remove both lower control arms from the vehicle. Save hardware.
18. Using a grinder, remove the material from the control arm mounts as shown for control arm clearance. (Figures 1-2).

FIG. 7A DRIVERS SIDE SHOWN



FIG. 7B PASSENGER SIDE SHOWN



19. Using the OE hardware, install the arms so the bend is up and towards the center (Figure 8). The bend is centered. It may be necessary to raise or lower the axle to align the control arm bolts. Leave hardware loose, it will be tightened with the vehicle at ride height.

FIGURE 8



20. Drill the two small hole in the front face of the OE track bar bracket to 7/16". Drill the single small hole in the back face of the bracket to 1/2". Place track bar relocation bracket over the OE mount. Install the provided (69) crush sleeve (0.750 x 0.083 x 1.375) between bracket and OE pocket. (Fig 9A/B)

FIGURE 9A

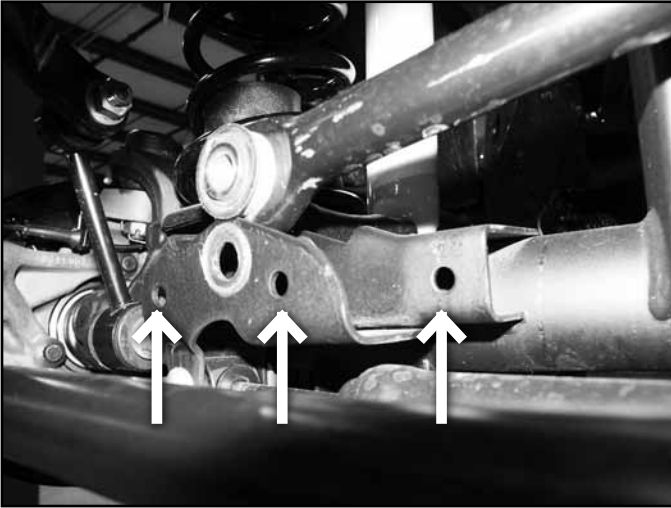
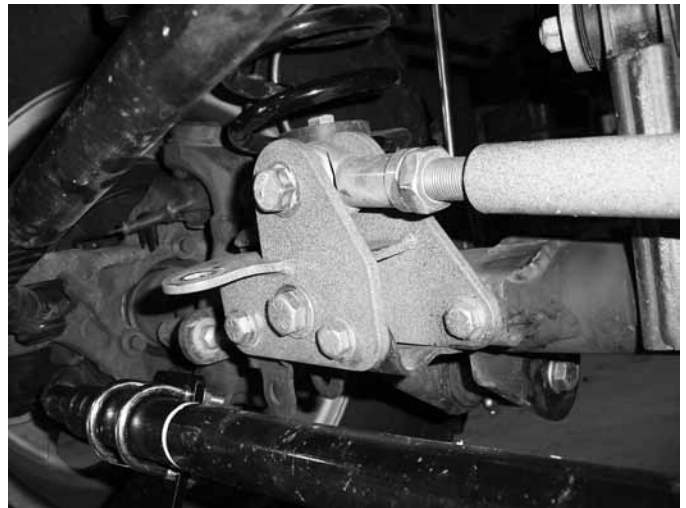


FIGURE 9B



21. Attach track bar bracket to OE mount with 7/16" x 1" bolts, washers, and nuts in the front two holes. Attach the bracket to the back hole with a 1/2" x 1" bolt, washer and square nut. Use 9/16" x 3" bolt, washers and nut through the OE track bar position. Do not hook up the track bar at this time. Note: All hardware is located in bolt pack 562.
22. Tighten 9/16" hardware to 95 ft-lbs, and 7/16" hardware to 45 ft-lbs.
23. Position the new track bar support bracket on the back side of the track bar bracket by aligning the large hole in the bracket to the top hole in the already installed track bar bracket. The tabs on the support bracket will set against the coil mount (top in the front and inside surface in the back). Install the provided 9/16" x 3-1/2" bolt (BP 645) through the track bar bracket and support bracket to help keep the support in place. (Fig 10)

FIGURE 10



24. Make sure the support bracket is setting flush to all mounting surfaces and mark the two holes to be drilling in the coil mount. Remove the support bracket and drill 3/8" holes at the marks.
25. Reinstall the support bracket on the axle with 3/8" x 1-1/4" bolts, nuts and washer (BP 645) in the new holes. Leave hardware loose.
26. Make a mark in the center of the lower coil spring mount pad. Drill a 5/16" hole at the mark. This hole will be used to attach the provided bump stop extension to the axle (Fig 11)

FIGURE 11



27. Tap hole threads by using the 3/8" x 1-1/4" self-tapping bolt provided in bolt pack 438. Remove and reuse for the other coil pad.
28. Place a provided bump stop extension inside one of the new front coil springs and install the spring in the vehicle. Make sure the spring is seated properly in the axle mount.
29. Attach the bump stop extension to the axle through the hole that was drilled earlier using a 3/8" x 3-1/2" bolt and 3/8" USS washer (BP 438). Use Loctite on the bolt threads and torque to approx. 25 ft-lbs. Repeat the spring/bump stop installation of the other side of the vehicle.
30. Install the new shocks with a 93 sleeve (12mm ID) in the lower bushing. Attach with OE lower hardware and new upper bushings, cup washers, and 1/2" fine thread nut. Torque the lower bolt to 65 ft-lbs and the upper nut until the bushings begin to swell.
31. Attach the drag link to the new pitman arm with the OE tie rod end nut. Torque nut to 55 ft-lbs.

NON-RUBICON SWAY BAR DISCONNECT INSTRUCTIONS

32. Install the new sway bar link disconnect ball stud to the original sway bar link mount on the axle. Attach the stud so that the ball is toward the center of the vehicle. Use one 1/2" SAE washer on each side of the mount and fasten with a 1/2" nut (BP 912). Torque nut to 65 ft-lbs. (Fig 12)

FIGURE 12



33. Locate the new sway bar link assemblies. Ensure that they are adjusted to equal length. The links should be adjusted between 8-1/2" and 8-3/4" from the center of the bushing to the very end of the disconnect. Do not lock off the jam nuts at this point.

34. Lightly grease and install the provided sleeves (46) in the new sway bar links assemblies. Attach the new sway bar link assembly to the sway bar with a $\frac{1}{2}$ " x 3" bolt, nut and $\frac{1}{2}$ " SAE washers (BP 912). The link will mount to the outside of the sway bar and position a 1-3/8" extra thick $\frac{1}{2}$ " washer (BP 912) between the bushing and the sway bar (Fig 13). Torque $\frac{1}{2}$ " bolt to 65 ft-lbs.

FIGURE 13



35. Connect the sway bar links to the ball studs on the axle. Adjust the sway bar link ends so that they are square on the ball stud and lock off the jam nut securely.
36. Locate the existing inner fender bolt up near the front body mount. Remove the bolt and attach the new lanyard to the inner fender with the bolt. Torque bolt to 10 ft-lbs. Slide the male clip up the lanyard and attach the female clip to it. This will be the stowed position for the lanyard when not in use. (Fig 14)

FIGURE 14



RUBICON FIXED SWAY BAR LINK INSTALL

37. Install the provided $\frac{3}{4}$ " ID bushings and sleeves (46) into the new front sway bar links (911110). Attach the links to the inside of the OE axle mount with the OE hardware. Attach the link to the outside of the sway bar with the provided $\frac{1}{2}$ " x 3" bolt, nut and washers (BP 912). The link will offset toward the inside of the vehicle as it runs from the axle to the sway bar. Torque hardware to 60 ft-lbs.

ALL MODELS

38. Turn wheel all the way to the driver's side. If installing optional stabilizer, lightly grease and install bushings into steering stabilizer with sleeves provided. Extend cylinder completely and attach stabilizer to trackbar bracket mounting tab. New stabilizer requires a $\frac{1}{2}$ " x 2-1/2" bolt with washers and nut, run bolt from bottom up. The OE stabilizer requires OE hardware, run bolt from bottom up. Do not tighten bolt at this time. (Fig 15)
39. Rotate tie rod bracket up and attach stabilizer with OE nut. (Fig 16)

FIGURE 15**FIGURE 16**

40. Cycle steering and check for proper clearance, adjust as necessary. Tighten 1/2" hardware to 65 ft-lbs, u-bolts to 25 ft-lbs, and stabilizer OE 12mm hardware to 55 ft-lbs.
41. Attach brake line drop brackets (01716) to the side of the frame with OE hardware. Attach brake lines to relocation brackets with nuts and washers from bolt pack 704. It may be necessary to reform the 90 degree bend in the brake line to 45 degrees to gain adequate slack at full droop. Reattach the brake line to the axle on newer models. It may also be necessary to lube the brake line and pull it through the axle mount for additional slack.
42. Reattach ABS wire rubber grommets to mounting bracket on steering knuckles.
43. Attach ABS wire to brake lines with zip-ties.
44. Reattach the factory transmission skid plate to the transmission crossmember and frame rails with the factory hardware. At each frame rail mount, position two 9/16" washers (W96S) between the frame and the skid plate before installing the mounting bolts (Fig 17). This will ensure adequate driveshaft to skid plate clearance. Torque bolts to 55 ft-lbs.

FIGURE 17

45. Install the wheels and torque lug nuts to manufacturer's specifications.
46. Lower the vehicle to the ground and bounce the front to settle the suspension. Torque the lower control arm hardware to 95 ft-lbs.
47. Attach the front track bar to the new axle bracket with the provided 9/16" x 3-1/2" bolt nut and washers (BP 645). Have an assistant turn the steering wheel to aid in aligning the track bar bolt. Run the bolt from front to rear through the bracket, track bar and support bracket. Torque the track bar bolt to 125 ft-lbs. Torque the 3/8" support bracket hardware to 35 ft-lbs.
48. Check all hardware for proper torque.

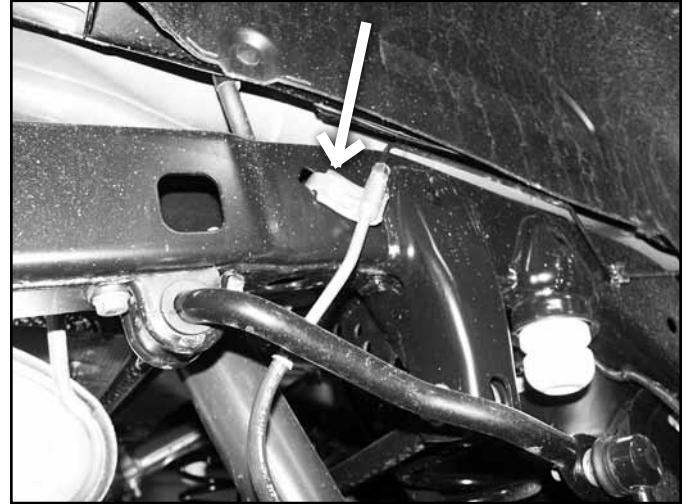
REAR INSTALLATION

49. Block the front wheels for safety.
50. Mark track bar to indicate which end goes into the frame. Remove the rear track bar from vehicle. Retain hardware.
51. Raise the rear of the vehicle and support the frame with jack stands in front of the lower control arm mounts.
52. Remove the wheels.
53. Remove emergency brake cable bracket, it will not be reinstalled (Fig 18). Relocate cables under frame cross member to allow for maximum droop.
54. Disconnect the rear brake line brackets from frame rail (Fig 19).

FIGURE 18



FIGURE 19



55. Support the rear axle with a hydraulic jack. Remove the shocks. Retain the upper and lower mounting hardware.
56. Remove the sway bar links. Retain lower mounting bolt/nut. Discard links. (Fig 20)
57. Lower the axle and remove the rear springs. Note: Do not overextend the brake lines or ABS wires. Remove these from their retaining clips temporarily if necessary. (Fig 21)

FIGURE 20

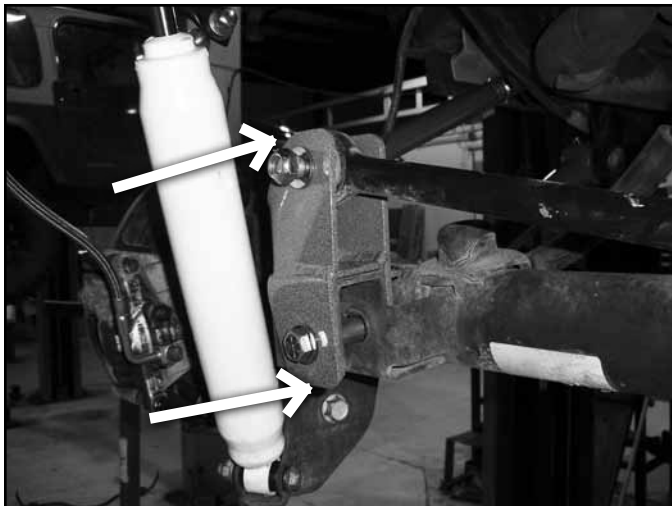
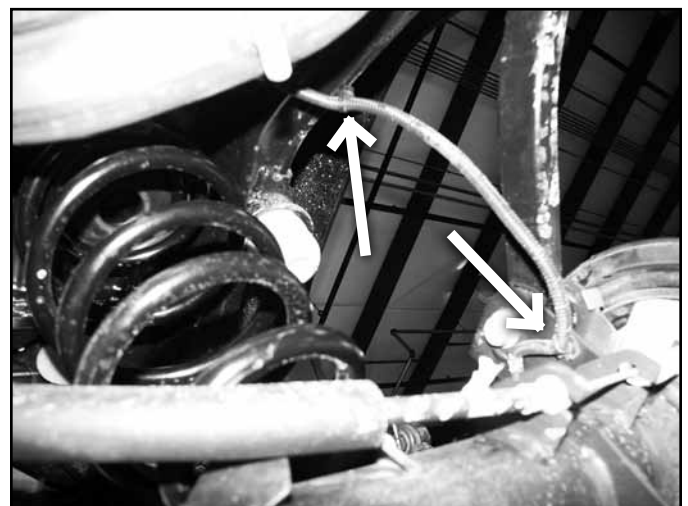
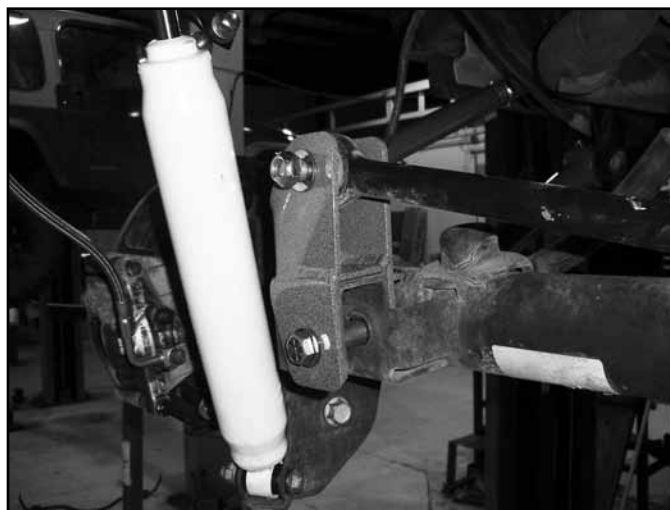


FIGURE 21



58. Install new provided track bar bracket (01967) over the OE track bar axle mount. The support wing on the bracket will set over the existing bump stop pad on the axle. Mark the hole to be drilled on the top of the factory track bar mount and drill to 3/8". Reinstall bracket with the provided crush sleeve (54587) in original track bar position and loosely fasten with a 9/16" x 3-1/2" bolt, nut and washers (BP 563). Install a 3/8" x 1-1/4" bolt, nut and washers in the newly drilled hole (BP 563). Leave hardware loose (Fig 22).

FIGURE 22



59. Position one of the new rear bump stop extensions over the support wing of the track bar bracket so that the existing holes in the factory bump stop pad are aligned with the holes in the track bar support and the bump stop. Fasten the bump stop and track bar bracket support to the factory bracket with 5/16" x 1-1/4" bolts, nuts and washers (BP 763). Run the bolts from the bottom up and torque to 25 ft-lbs. (Fig 23)

FIGURE 23



60. With the support wing/bump stop hardware tight, torque the 3/8" (35 ft-lbs) and 9/16" (100 ft-lbs) track bar bracket hardware.
61. Install the axle end of the factory rear track bar into the new relocation bracket. Fasten the track bar in the bracket with a 9/16" x 3" bolt, nut and washers (BP 563). The bolt must be run from the front to rear to provide proper coil spring clearance. Leave track bar bolt loose. Note: Make sure the track bar is oriented correctly.
62. With the axle well supported, remove the lower control arm bolts at the axle and frame. Remove both lower control arms from the vehicle. Save hardware.
63. Using the OE hardware, install the control arms with the bend up for maximum ground clearance. The bend is centered on the arm. Leave all hardware loose. It will be tightened with the vehicle at ride height.
64. Note the orientation of the stock upper control arms. Disconnect the upper control arms from the frame and axle. Retain hardware.
65. Adjust center-to-center length of the rear upper control arms to 17-7/8" 4-door, or 18-3/8" 2-door. Note: These are a preliminary measurement. The arms may need to be fine tuned to adjust the pinion angle.
66. Install the arms similar to the factory orientation with the bend in towards the center of the vehicle and the adjustable flex end mount in the frame pocket with the grease fitting pointing down (Fig 24). Use factory hardware and leave the axle hardware loose. It will be tightened once the vehicle is at normal ride height. Torque frame bolts to 95 ft-lbs.



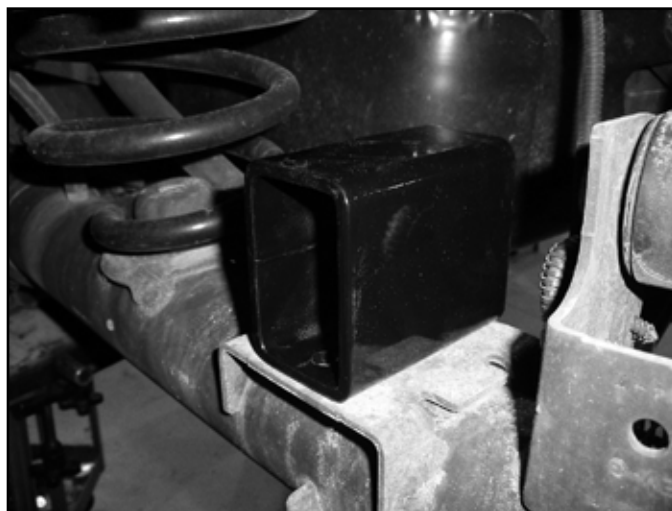
Tip *The pinion can be rotated up or down to aid in aligning the control arm mounting holes with the jack.*

FIGURE 24



67. Install the new rear springs in the vehicle, making sure the OE upper rubber isolator is in place. Raise the axle to slightly compress the spring.
68. Assemble shocks for installation. Shock comes with a preinstalled bar pin in the upper eye. Grease and install the provided bushing and sleeve (0.625 x 0.075 x 1.475) in the lower eye.
69. Install the new shocks to the frame and axle mounts with the OE hardware. Tighten upper mounting hardware to 30 ft-lbs, and lower hardware to 55 ft-lbs.
70. Install the provided bump stop spacer on the passenger's side axle just like the driver's side earlier. Using the existing holes in the axle bump stop pad fasten the spacer to the axle with 5/16" x 7/8" bolts, nuts and 5/16" SAE washers (BP 763). Torque bolts to 20 ft-lbs. (Fig 25)

FIGURE 25



71. Grease and install sway bar link sleeves 5/8" OD x 12mm ID x 1.375 long sleeves (62147) into the preinstalled bushings in the provided links. Attach sway bar links to axle with OE hardware and at sway bar with new 12mm bolts, nuts and washers (BP758). Run the upper bolt from the outside in. The links will mount to the outer surfaces of the sway bar and axle mount tab (Fig 26).

FIGURE 26



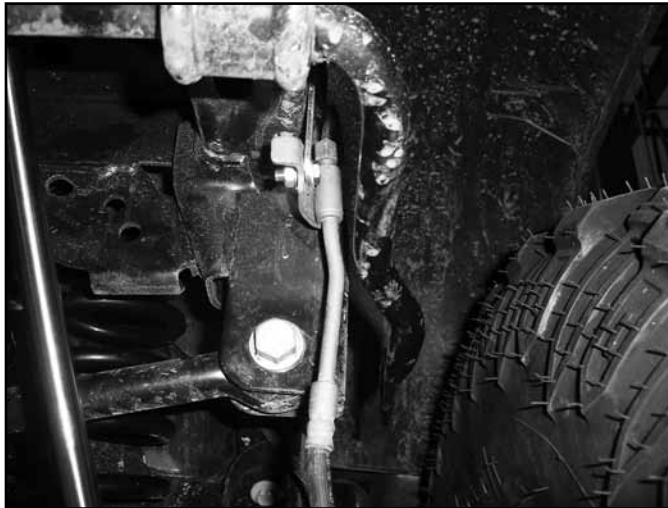
72. Reattach ABS wire clips to original positions.
73. Install brakeline relocation brackets as shown, there are drv and pass side brackets, they will be located into the factory locating tab. The the factory brakeline will be mounted towards the center of the vehicle on the 'inside' of the relocation bracket. Attach with OE and new 1/4" x 1" hardware (BP 768), tighten to 10 ft-lbs. (Fig 27, Note: do not disconnect brakeline, shown for inst. sheet pictures only)

FIGURE 27



Tip *The hardline portion of the brake line (below the mounting tab) can be straightened slightly for more slack and better clearance between the sway bar if necessary. (Fig 28)*

FIGURE 28



74. Reinstall wheels and torque to factory specifications. Lower vehicle to ground.
75. Tighten lower and upper rear control arms to 95 ft-lbs. Lock off control arm jam nuts on the upper arms securely.

FINAL INSTALLATION STEPS:

76. Double check all hardware for proper torque.
77. Check all fasteners after 500 miles and at regularly scheduled maintenance intervals.