

**# 022600, 022601,  
022602, 022603**

**6" Suspension System**

**2002-2005 Dodge 1500 4WD**



**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
01230	1	Steering Knuckle (drv)
01231	1	Steering Knuckle (pass)
617	1	Bolt Pack
618	1	Bolt Pack
619	1	Bolt Pack
621	1	Bolt Pack
542	1	Bolt Pack
422	1	Bolt Pack
01232	1	Front Crossmember
01233	1	Rear Crossmember
01235	2	Torsion Bar Drop Brkt
01234	1	Differential Drop Brkt (pass)
01236	1	Differential Drop Brkt (drv front)
01237	1	Differential Drop Brkt (drv front)
01238	1	Differential Drop Brkt (drv rear)
01188	2	Compression Strut
01242	2	Compression Strut Brkt
2081BK	8	Compression Strut Bushing
32-1	4	Compression Strut Sleeve
01248	2	Compression Strut Nut Tab
01239	2	Crossmember Spacer (alum)
01240	1	Front Driveshaft Spacer
01241	1	Differential Skid Plate
01243	1	Bump Stop Extension (pass)
01244	1	Bump Stop Extension (drv)
911103	2	Sway Bar End Links
SB58RB	4	Bushings
M02096RB	2	Pyramid Bump Stop
01499	2	1" OD x 1/2" ID x 1/4" Thick Spacer
27-1	4	0.875 x 0.156 x 1.640 Sleeve
01325	4	Sway Bar Link Bracket
45313	4	0.625 x 0.109 x 1.375 Sleeve
01224	2	Rear Bump Stop Extension
342701	2	Loctite

### BOLT PACK 422

Qty	Description
4	3/8"-16 x 1-1/4" bolt
4	3/8"-16 prevailing torque nut
8	3/8" USS flat washer

### BOLT PACK 542

Qty	Description
4	3/8"-16 x 2-1/2" bolt
8	3/8" SAE flat washer
4	3/8"-16 prevailing torque nut
4	7/16"-14 x 1-1/2" bolt
4	7/16"-14 prevailing torque nut
4	7/16" SAE flat washer
4	7/16" USS flat washer

### BOLT PACK 617

Qty	Description
4	1/2"-13 x 2-3/4" bolt
7	1/2"-13 x 2-1/2" bolt
11	1/2"-13 prevailing torque nut
25	1/2" SAE flat washer
3	12mm-1.75 x 30mm bolt

### BOLT PACK 618

Qty	Description
2	12mm-1.75 x 90mm bolt
4	12mm-1.75 x 100mm bolt
6	12mm-1.75 prevailing torque nut
4	3/8"-16 x 1-1/4" self-tapping bolt
4	12mm-1.75 x 45mm bolt
16	12mm flat washer
2	3/8"-16 x 1-1/4" SHCS
2	3/8" SAE flat washer
6	1/2"-13 x 1-1/2" bolt
4	1/2"-13 prevailing torque nut
10	1/2" SAE flat washer
2	5/16"-18 x 1-1/4" self-tapping bolt

### BOLT PACK 619

Qty	Description
4	7/16"-14 x 1-1/4" bolt
4	7/16"-14 x 3-1/2" bolt
4	7/16"-14 prevailing torque nut
12	7/16" SAE flat washer

### BOLT PACK 621

Qty	Description
2	5/8"-11 x 4-1/2" bolt
2	5/8"-11 x 5-1/2" bolt
4	5/8"-11 prevailing torque nut
8	5/8" SAE flat washer

## PRE-INSTALLATION NOTES

- A special tool is required to load/unload the torsion bars. The Dodge service manual lists tool #8686. This tool differs slightly from the C-clamp style tool used on most other IFS vehicles.
- A special tool is required to remove the factory rear lower control arm bushings from the frame. This tool is available through Dodge or SPX-Miller Special Tools (#8682). SPX-Miller Special Tool- 1-800-801-5420.
- The factory service manual specifically states that striking the knuckle to loosen the ball joints or tie rod ends is prohibited. Striking the aluminum knuckle can damage it. A special puller tool #8677 (or equivalent ball joint tool) is recommended to be used to separate these components from the knuckle.
- On some vehicles an exhaust modification will be required to clear the front driveshaft in its new, lower position.
- T-60 and T-55 impact quality torx sockets are necessary for the installation of this kit.

## PRE-INSTALLATION MEASUREMENTS

Measure from the center of the wheel up to the bottom edge of the wheel opening

LF \_\_\_\_\_ RF \_\_\_\_\_ LR \_\_\_\_\_ RR \_\_\_\_\_

## INSTALLATION INSTRUCTIONS

### FRONT INSTALLATION

1. Park the vehicle on a clean, flat surface and block the rear wheels for safety.
2. Raise the front of the vehicle and support with jack stands under the frame rails.
3. Remove the wheels.
4. Measure and record the length of the exposed thread on the torsion bar adjusting bolts for later reference (Fig 1).  
DRV \_\_\_\_\_ PASS \_\_\_\_\_

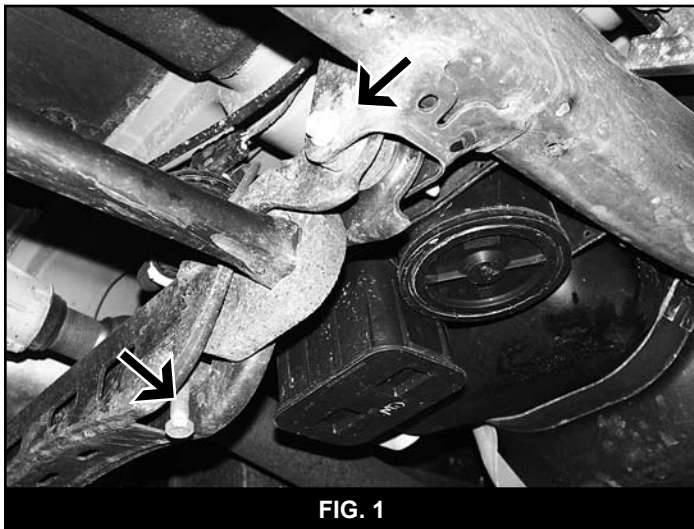


FIG. 1

5. Remove the torsion bar assembly. CAUTION: The torsion bars are under extreme pressure. Use the correct unloading tool to remove the pressure on the torsion bars before attempting to remove the assembly. Be sure to follow the OE manual and the torsion bar unloading tool literature as to how to unload the torsion bars properly.
6. Unload the torsion bars but do not remove.
7. Mark the unloaded torsion bars to indicate passenger's and driver's side. Mark both of the torsion bars to indicate the front versus the rear for later installation. Also mark the torsion bars relative to the control arms at the front to note the indexing. Mark the rear of the bars relative to the adjusting arms to indicate indexing.
8. Pull the torsion bars back out of the lower control arms.
9. Remove the two bolts mounting the torsion bar crossmember to the frame (Fig 1). Remove the crossmember and retain the mounting hardware.
10. Remove the OE shocks. Retain the lower mounting hardware. Discard the shock and the upper mounting hardware.
11. Disconnect the sway bar links from the lower control arms and sway bar (Fig 2). Discard the links.

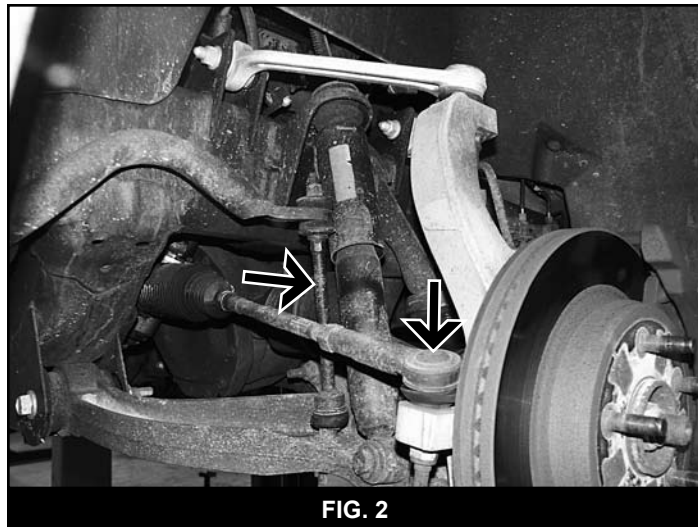


FIG. 2

12. Remove and discard the OE front skid plate, if equipped.
13. Disconnect the tie rod ends from the steering knuckles (Fig 2). Remove and retain the mounting nuts. Use the appropriate puller to separate the tie rod end from the steering knuckle. Take care not to damage the tie rod end.
14. If equipped, disconnect the ABS brake line at the frame. Remove it from any retaining clips.
15. Remove the brake caliper anchor bracket bolts (Fig 3) and pull the caliper free from the steering knuckle and rotor. Hang the caliper securely out of the way. Retain caliper mounting hardware. Remove the brake rotor from the hub. Note: Do not allow the brake caliper to hang from the brake hose.

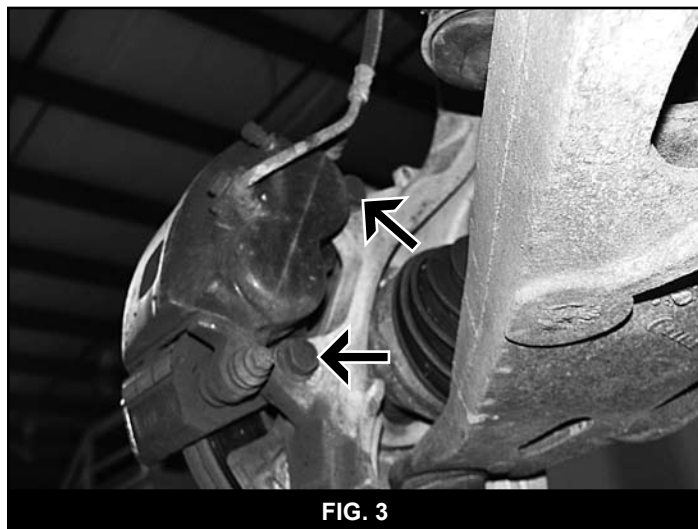


FIG. 3

16. Remove the hub axle nut. Retain nut.
17. Loosen but do not remove the lower control arm bolts.
18. Disconnect the CV axles from the differential by carefully prying CV out at the differential to disengage the internal retaining clip (Fig 4). Pry the shaft out just enough to release the clip and leave the axle on the differential at this time.

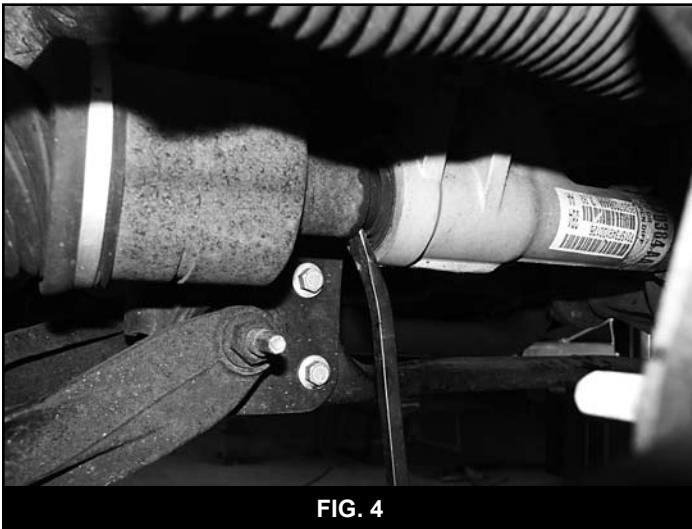


FIG. 4

19. Remove the upper and lower ball joint nuts. Reinstall the nuts a few turns by hand. Separate the upper and lower ball joints from the steering knuckle using the appropriate puller. Take care not to damage the ball joint. Remove the upper ball joint nut and allow the knuckle/CV axle and lower control arm to swing down while sliding the CV axle off of the differential. Remove the CV axle from hub.
20. Remove the lower ball joint nut and remove the knuckle from the lower control arm. Retain the ball joint nuts.
21. Remove the three bolts mounting the hub bearing assembly to the OE steering knuckle. Retain the mounting bolts. Remove the hub assembly and dust shield from the knuckle. Note: It may be necessary to press the hub out of the knuckle as a result of excessive corrosion on some vehicles.
22. Install the hubs in the corresponding new knuckles (01230, 01231) and fasten with the stock mounting bolts. Index the hub so that the ABS line runs out the front side of the knuckle toward the steering arm. Use Loctite on the bolt threads and torque to 125 ft-lbs.
23. Remove the lower control arms from the frame. Retain hardware.
24. Make indexing marks on the front drive shaft and differential input flange for realignment later (Fig 5). Remove the four bolts and disconnect the drive shaft from the differential. Discard mounting bolts.

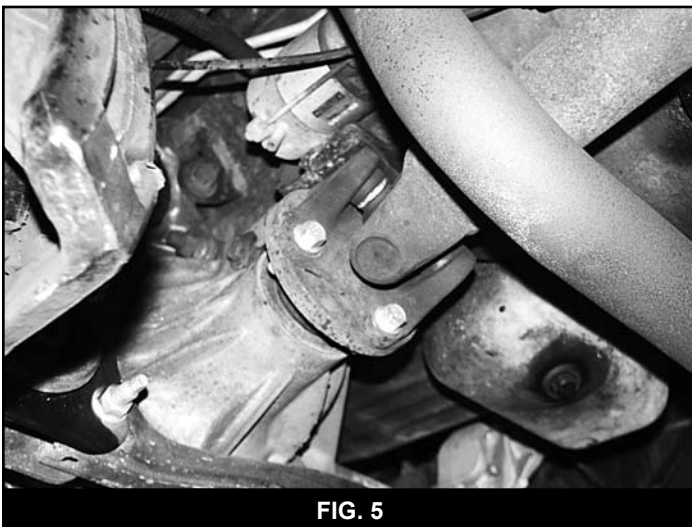


FIG. 5

25. Locate the exhaust crossover pipe. If the crossover pipe runs under the front driveshaft it must be modified (Fig 6). The pipe can either be completely removed or cut to clear the driveshaft at this time. The other option is to wire up the front drive shaft if traveling a very short distance to the exhaust shop. Note: Vehicles equipped with a crossover pipe that runs near the transfer case will not require an exhaust modification. Have the exhaust modifications completed by a quality exhaust shop when

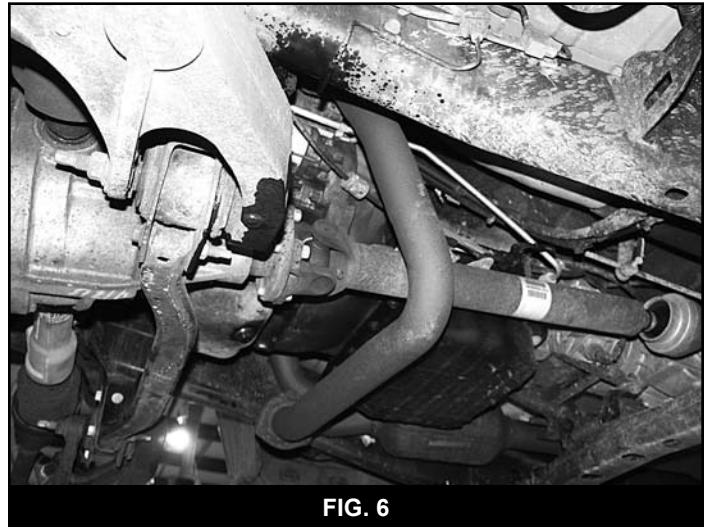


FIG. 6

the installation of this suspension system is complete.

26. Remove the four bolts mounting the OE rear crossmember to the frame rails and remove the crossmember from the vehicle (Fig 7). Discard the crossmember and the hardware.

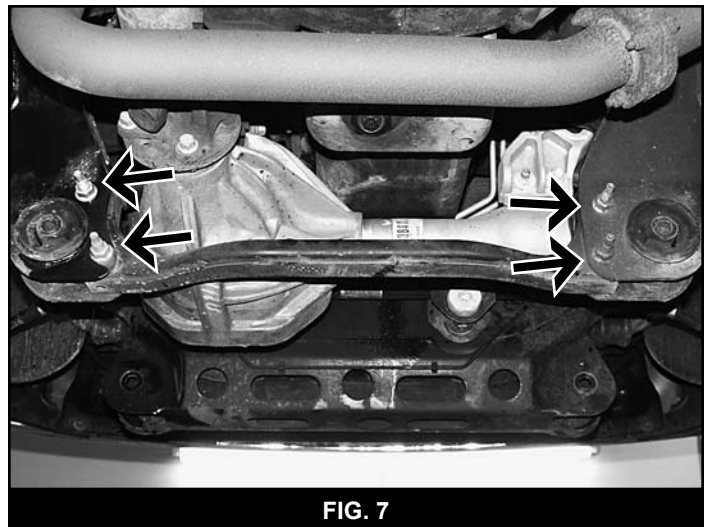
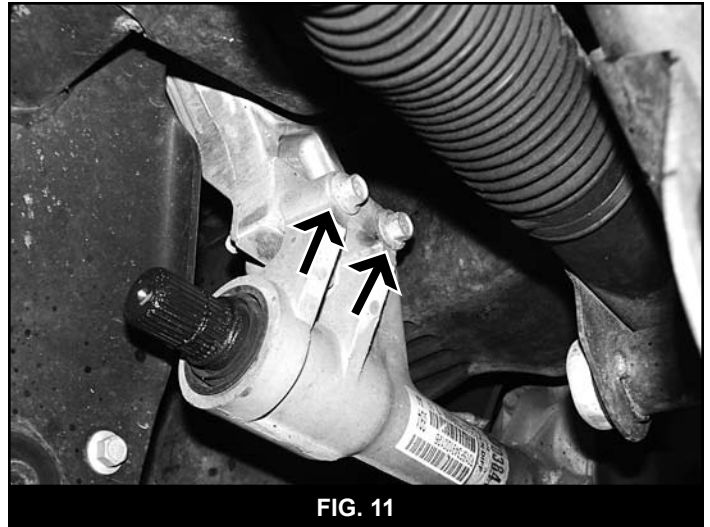
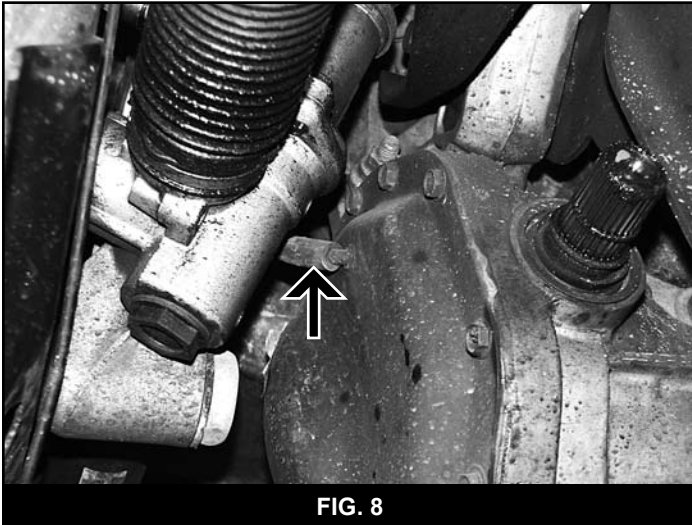
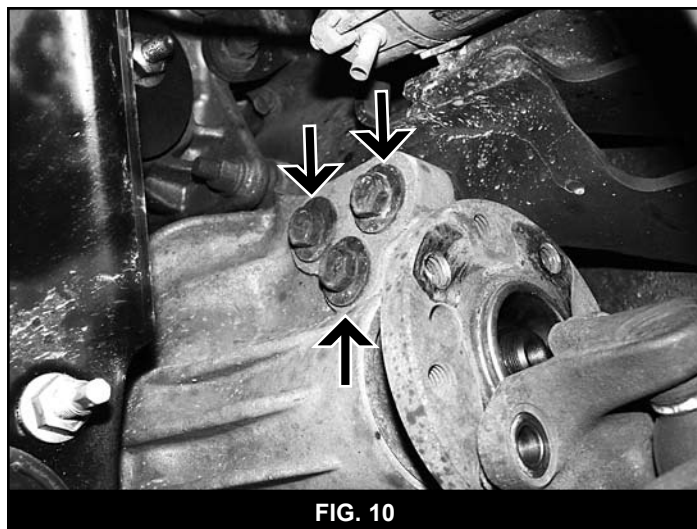
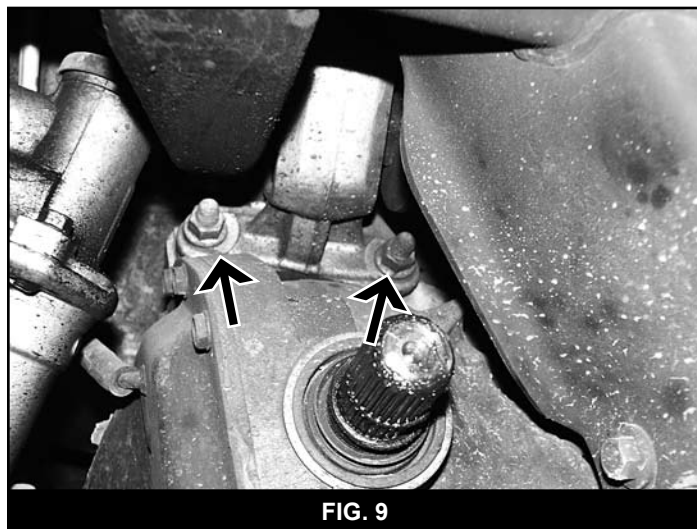


FIG. 7

27. Disconnect the vent hose and wiring (if equipped) from the differential (Fig 8).



28. Using a jack, support the differential. Loosen and remove the two forward-most differential mounting bolts on the driver's side (Fig 9). Loosen but do not remove the three rear driver's side bolts (Fig 10) and the two passenger's side bolts (Fig 11).



29. With the differential securely supported, remove the remaining bolts and lower the differential from the vehicle.

30. Using the appropriate puller tool, press out the OE rear lower control arm bushings from the frame. Refer to individual puller tool instructions for proper operating procedures.

31. Remove any loose corrosion in the rear lower control arm bushing holes. Lightly grease the outside of the provided aluminum crossmember spacers (01239) and install them in place of the OE rubber bushings in the frame. Install the spacers from the rear to front. Use a rubber mallet to seat the spacer flush with the edge of the frame (Fig 12).



32. The lower control arm bump stop cups must be removed from the frame. Using a saw-zall or cutoff wheel, cut the weld beads holding the bump stop cups to the frame (Fig 13 A/B). Remove the cups and be sure that the surface is ground flush. Paint any bare metal to prevent rust.

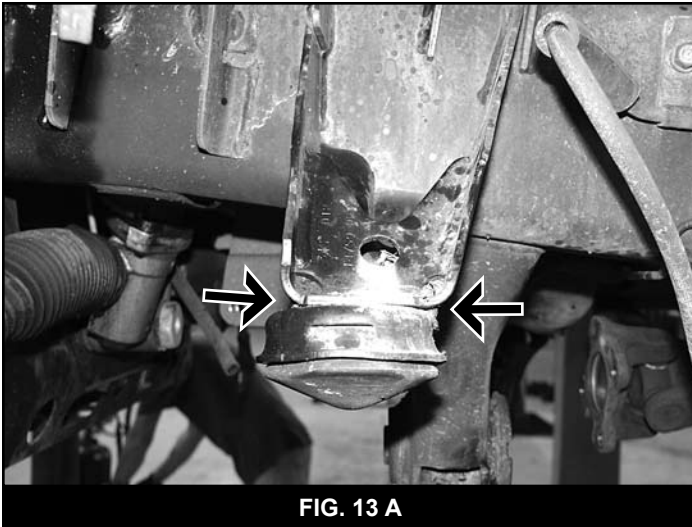


FIG. 13 A

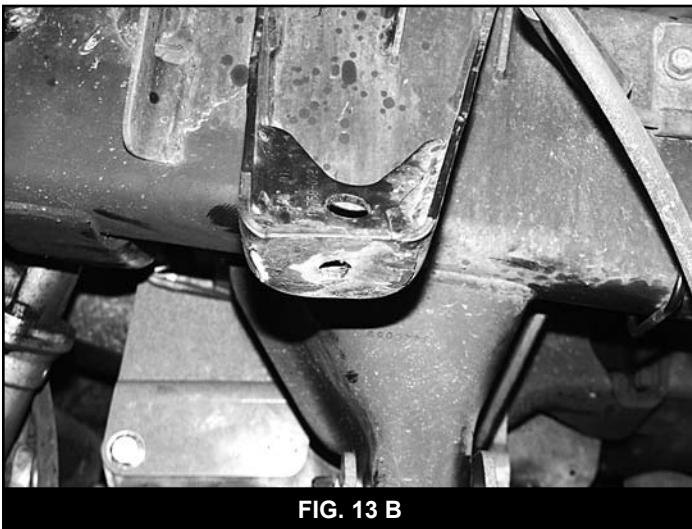


FIG. 13 B

33. Install the provided passenger's side differential drop bracket (01234) to the original frame mount with two  $\frac{1}{2}$ " x 2-3/4" bolts, nuts and  $\frac{1}{2}$ " SAE washers (BP #617). Leave hardware loose (Fig 14).

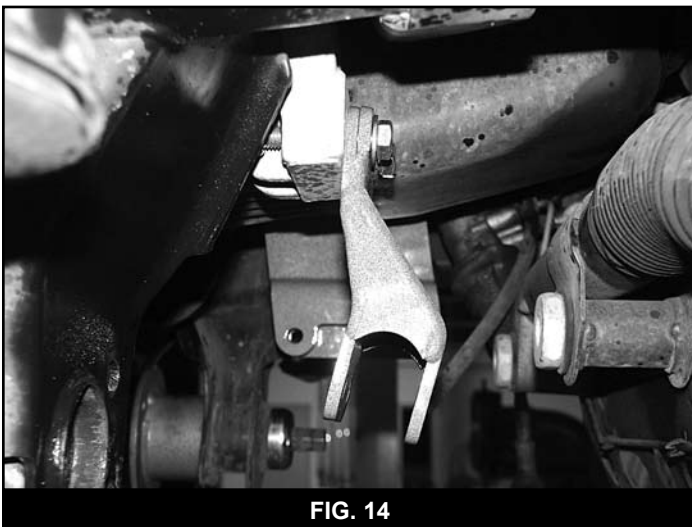


FIG. 14

34. Install the two front driver's side differential drop brackets so that the bracket with the small offset (01236) is toward the outside of the vehicle (offsetting out) and the one with the bigger offset (01237) is on the inside (offsetting in). The brackets should taper down in height as they go toward the rear of the vehicle. Fasten the brackets to the frame with two  $\frac{1}{2}$ " x 2-1/2" bolts, nuts and  $\frac{1}{2}$ " SAE washers (BP #617). Leave hardware loose.
35. Install the driver's side rear differential drop bracket (01238) to the frame with three 12mm x 30mm bolts and  $\frac{1}{2}$ " SAE washers (BP #617) into the existing welded nuts on the frame. The bracket will offset toward the outside of the vehicle with the gusset to the front. Leave hardware loose.
36. Using a jack (and an assistant to aid in balancing) raise the differential to the new brackets.
37. Attach the differential to the driver's side front and rear brackets (Fig 15) with  $\frac{1}{2}$ " x 2-1/2" bolts, nuts and washers (BP #617). Attach the passenger's side to the differential (Fig 16) with  $\frac{1}{2}$ " x 2-3/4" bolts, nuts and  $\frac{1}{2}$ " SAE washers (BP #617). Leave all differential hardware loose.

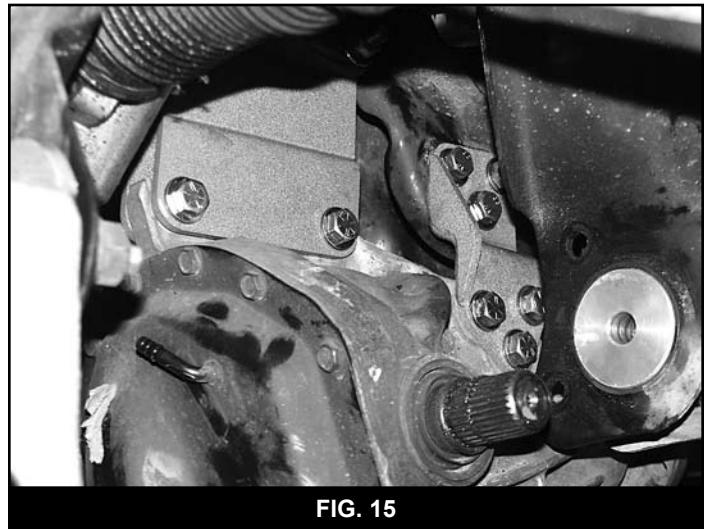


FIG. 15

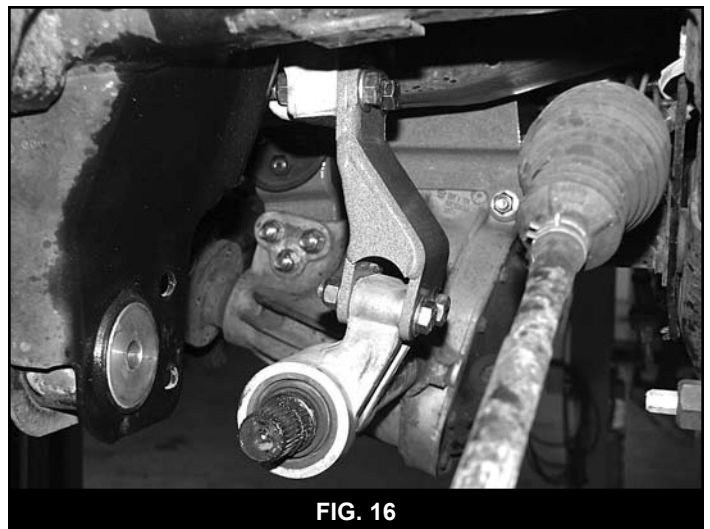


FIG. 16

38. Torque all 14 differential mounting bolts. Torque the  $\frac{1}{2}$ " hardware to 65 ft-lbs and the 12mm hardware to 50 ft-lbs.
39. Attach the breather hose and wiring to the differential.

40. Install the new front crossmember (01232) in the OE front lower control arm pockets and loosely fasten with the OE lower control arm hardware (Fig 17). Note: The offset in the crossmember goes to the front, bolts run from front to rear.

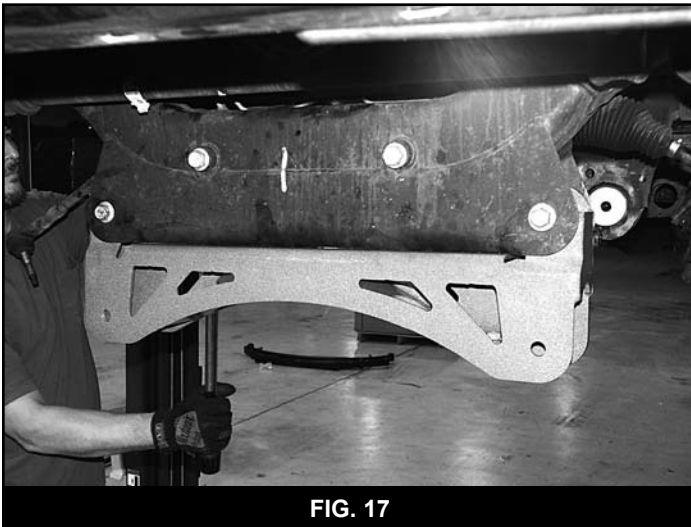


FIG. 17

41. Install the new rear crossmember (01233) to the OE rear lower control arm mounts in conjunction with the aluminum spacers that were installed earlier. Fasten the crossmembers through the aluminum spacers with 5/8" x 4-1/2" bolts, nuts and 5/8" SAE washers (BP #621). Run the bolts from front to rear and leave loose at this time.
42. Install the provided 7/8" x 1.640" spacer sleeves at each of the four OE rear crossmember mounting holes (Fig 18) and fasten through the new crossmember, OE mount and sleeves with 12mm x 100mm bolts, nuts and 12mm washer (BP #618). At the driver's side top mounting hole, in addition to the spacer sleeve, install the two provided 1/4" spacer washers between the new crossmember and the OE frame mount (Fig 19). Leave hardware loose (Fig 20).

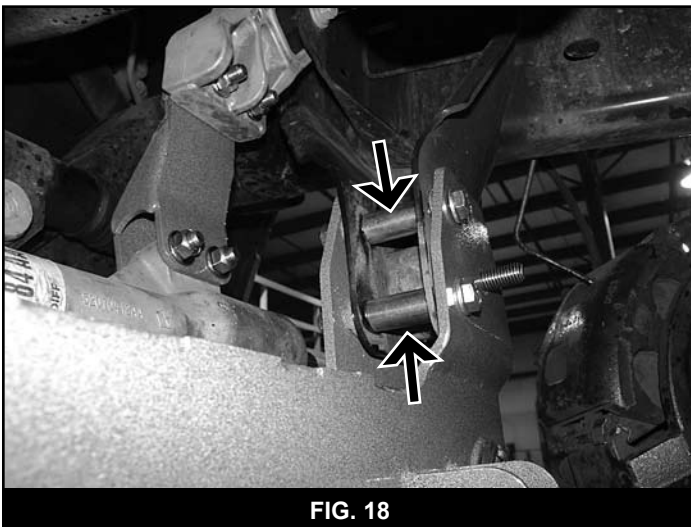


FIG. 18

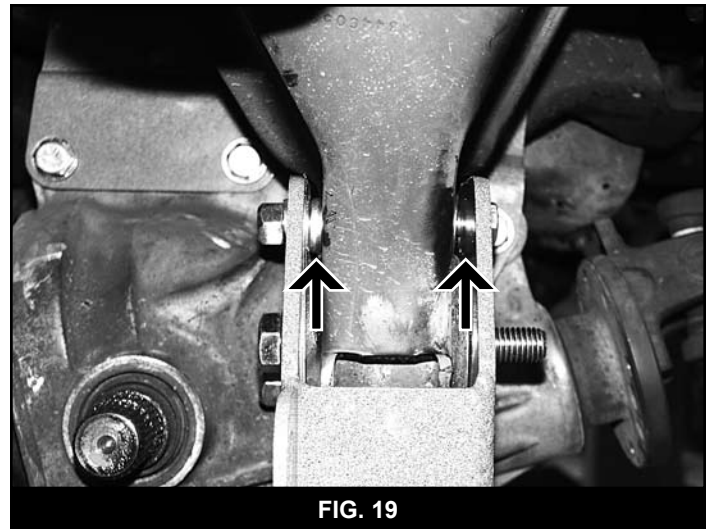


FIG. 19

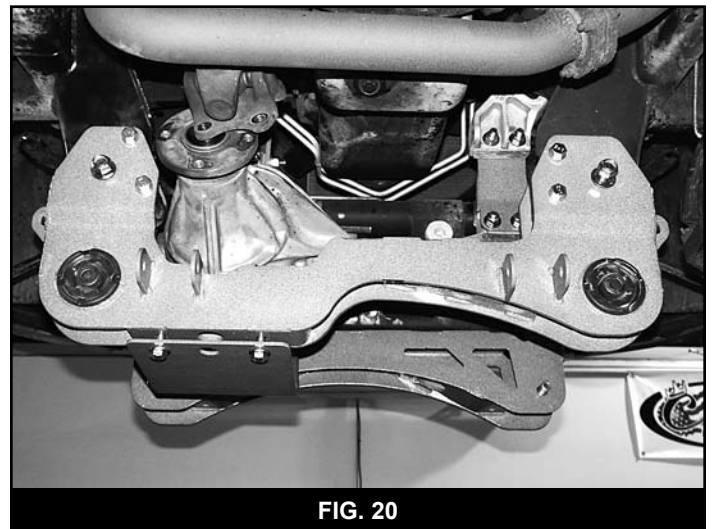


FIG. 20

43. Install the new differential skid plate to the front crossmember with 1/2" x 1-1/2" bolts, nuts and 1/2" SAE washers (BP #618). Install the back of the skid plate to the rear crossmember with 1/2" x 1-1/2" bolts and 1/2" SAE washers (BP #618) into the welded nuts in the crossmember (Fig 21). Leave hardware loose.

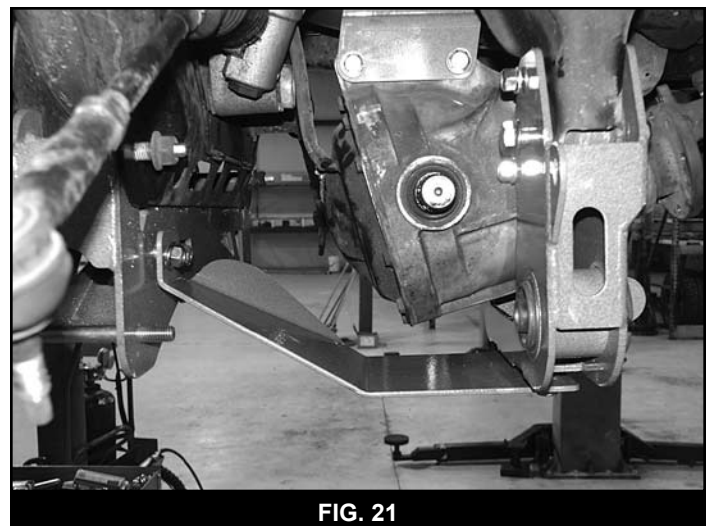
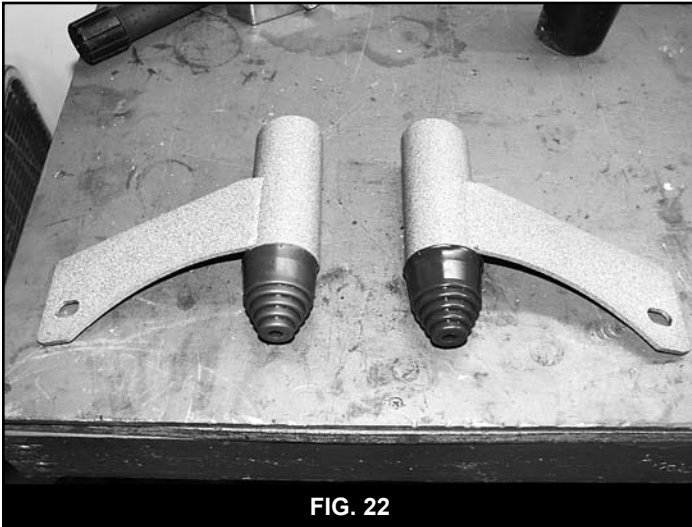


FIG. 21

44. Install the provided pyramid urethane bump stops to the new bump stop extensions (01243, 01244) (Fig 22).

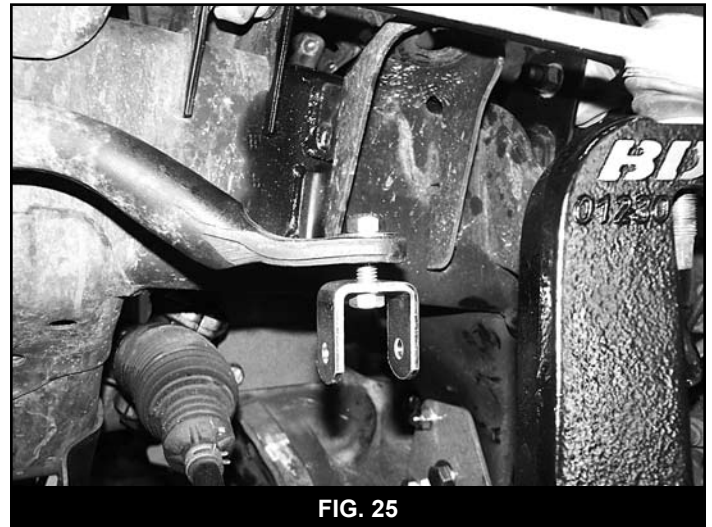


45. Attach the bump stop extension to the frame with 3/8" x 1-1/4" socket head cap bolts and 3/8" SAE washers down through the original bump stop frame mount (Use loctite on the threads). The flat plate on the bump stop extension will be to the rear of the vehicle and the tapered tube end will go up to the frame. These will mount to the back side of the crossmember tab (Fig 23).



46. Install the bump stop extensions to the tabs on the rear crossmember with 1/2" x 1-1/2" bolts, nuts and 1/2" SAE washers (BP #618). Torque the 3/8" hardware to 25 ft-lbs. Torque the 1/2" hardware to 65 ft-lbs. Note: The existing hole in the OE bump stop bracket can be widened with a rotary style grinding tool to ease access to the 3/8" allen head bolt.
47. Install the lower control arms in the front and rear crossmembers. Attach the control arms to the front crossmember with 5/8" x 5-1/2" bolts, nuts and 5/8" SAE washers (BP #621) (installed from front to back). Attach the arms to the rear crossmember with the OE torx head bolts and nuts (installed from the back to front). Leave hardware loose.

48. With the lower control arms installed, torque the crossmember hardware as follows: Front crossmember-upper OE bolts 125 ft-lbs; Rear crossmember- 5/8" hardware 125 ft-lbs, 12mm hardware- 55 ft-lbs. Leave control arms loose.
49. Torque the differential skid plate hardware to 65 ft-lbs.
50. Install the provided drive shaft spacer on the differential input flange. Attach the front driveshaft to the differential by aligning the marks made earlier. Fasten the driveshaft and spacer to the differential flange with 12mm x 45mm bolts and 12mm washers (BP#618). Use loctite on the bolt threads and torque to 55 ft-lbs.
51. Install the new driver's side steering knuckle to the driver's side lower control arm ball joint and loosely attach with the original nut. Install the driver's side CV axle in the hub and loosely fasten with the original axle nut. Swing the knuckle/CV assembly up while aligning the axle with the differential output shaft. Loosely attach the knuckle to the upper control arm ball joint with the original nut. Push the CV axle all the way onto the differential output to seat the internal retaining clip.
52. Torque the upper ball joint nut to 55 ft-lbs and the lower ball joint nut to 60 ft-lbs. Torque the axle nut to 185 ft-lbs.
53. Repeat knuckle/CV installation on passenger's side.
54. Attach the tie rod ends to the new steering knuckles with the OE nut. Torque to 45 ft-lbs.
55. Loosely install the provided sway bar link u-brackets (01325) to the link mounting holes in the sway bar and lower control arms (Fig 25) with 7/16" x 1-1/2" bolts, nuts, USS and SAE washers (BP #542). The SAE washers will mount on the head of the bolt inside of the u-bracket. Leave hardware loose.



56. Install the provided hourglass bushings (SB58RB) and sleeves (45313) in the eyes of the provided sway bar links (911103). Install the links in the u-brackets mounting on the lower control arms and sway bar. The links should be mounting so that the u-shape of all the brackets can be seen from the side of the vehicle. Retain the links in the brackets with 3/8" x 2-1/2" bolts, nuts and 3/8" SAE washers (BP #542).



57. With the sway bar links completely installed (Fig 26), torque the 3/8" hardware to 30 ft-lbs and the 7/16" hardware to 45 ft-lbs.



FIG. 26

58. Passenger's side brake line: Remove the bolt retaining the line bracket to the frame (Fig 27). Carefully reform the hard line so that the mounting bracket can be lowered approximately 3" (remove the hard line from the retaining clip on the inside of the frame rail). Measure back 1/2" from the lower existing hole in the frame and drill a 17/64" hole (Fig 28). Attach the brake line to the new hole with the provided 5/16" x 1-1/4" self-tapping bolt (BP #618). Ensure that the hard line is properly routed.

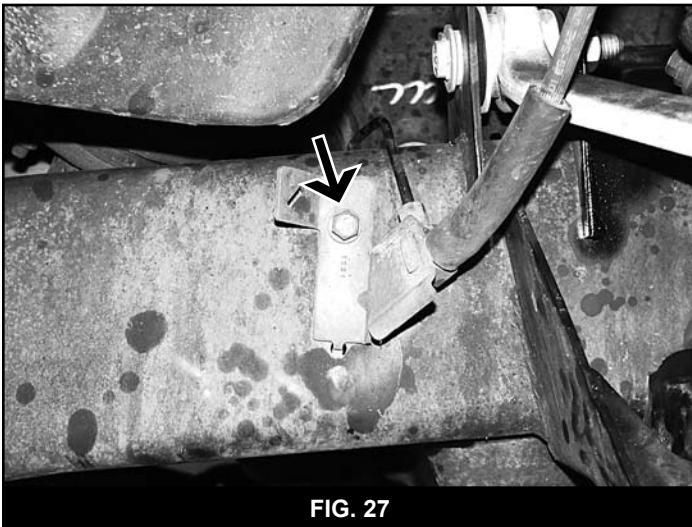


FIG. 27

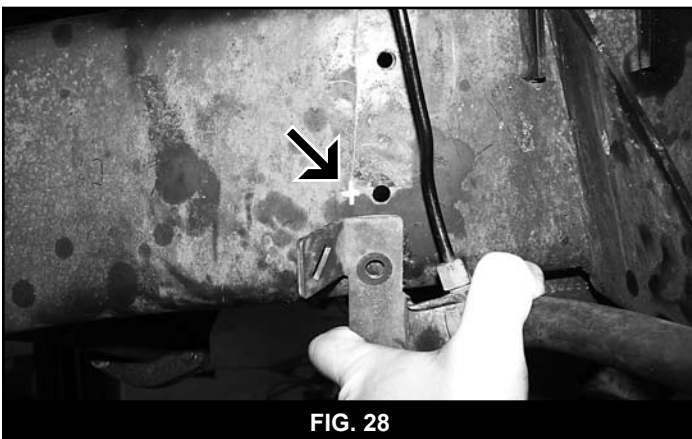


FIG. 28

59. Driver's side brake line: Remove the bolt retaining the line bracket to the frame (Fig 29). Support the hard leader with pliers and carefully bend the line down approximately 30° (Fig 30). Mark and drill the new mounting location on the frame with a 17/64" drill. Fasten the bracket with the provided 5/16" x 1-1/4" self-tapping bolt (BP #618).

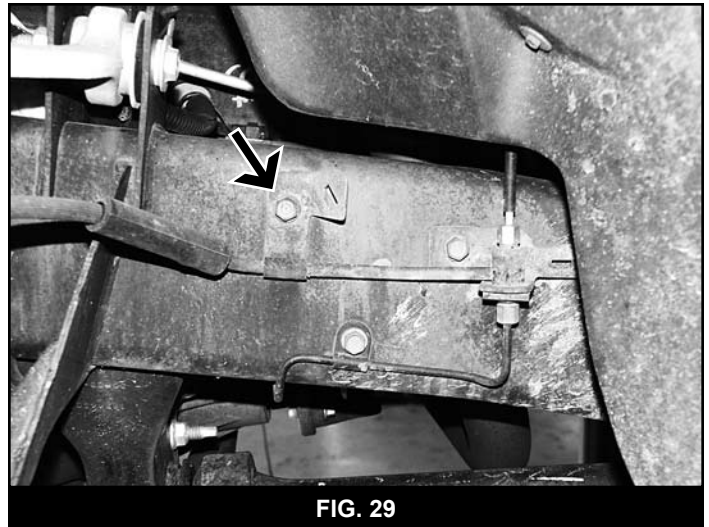


FIG. 29

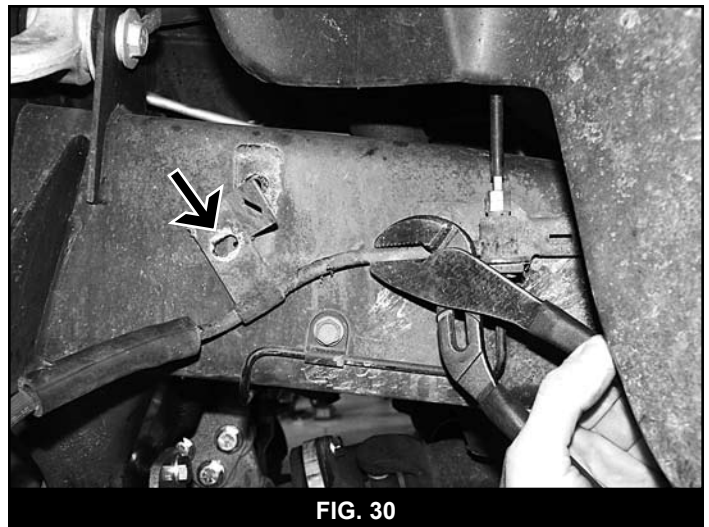


FIG. 30

60. Install the brake rotor and caliper on the knuckle/hub. Torque the OE caliper bolts to 130 ft-lbs.
61. If equipped, connect the ABS wire at the frame.
62. Place a jack under the lower control arm and raise the arm until the distance from the center of the hub to the edge of the fender is 6" more than measured in the pre-installation measurements (typically about 28"). Torque the lower control arm hardware to 125 ft-lbs. Note: Failure to complete this step will result in premature lower control arm bushing wear as well as poor ride quality.
63. Install the new front shocks. Attach the shocks to the lower control arm with the OE hardware and to the frame with the provided new hardware. Torque the lower bolt to 95 ft-lbs and the upper hardware until the bushings begin to swell.

64. Grease and install bushings (2081BK) into compression struts (01188). Install sleeves (32-1) into bushings. Install compression strut into rear cross member with 7/16" x 3-1/2" bolts, nuts and 7/16" SAE washers (BP #619) leave hardware loose.
65. Install compression strut bracket (01242) onto end of compression strut with 7/16" hardware. Tabs face towards inside of vehicle. Mark the center of holes that are best centered in the crossmember and drill out to 7/16" (Fig 31). Remove the brackets from the compression struts and install the brackets with nut tabs (insert through large holes in the crossmember) (01248) and 7/16" x 1-1/4" bolts and washers. Torque the 7/16" hardware to 45 ft-lbs and the 3/8" hardware to 30 ft-lbs.

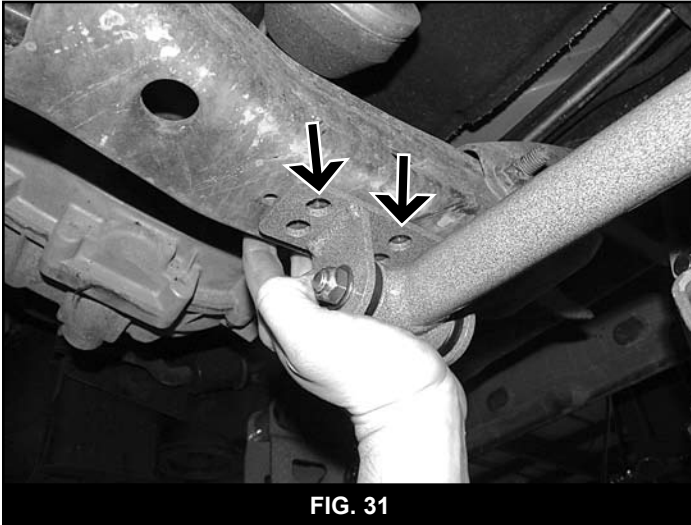


FIG. 31

66. Install DRIVER'S SIDE torsion bar drop bracket (01235) with OE hardware into OE torsion bar crossmember mount and mark 2 holes to be drilled (Fig 32). Remove bracket and drill holes to 5/16".

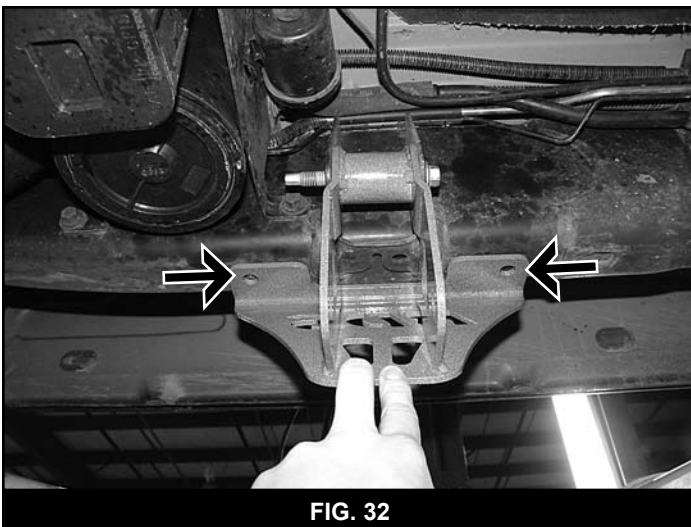


FIG. 32

67. Reinstall bracket and use the 3/8" x 1-1/4" self tapping bolts (BP #618), threaded into frame, washers are not required. Use OE 12mm bolt at top mounting location.
68. Install torsion bar crossmember with new 12mm x 90mm bolt, nut, and 12mm washers (BP #618) in the driver's side bracket. Leave hardware loose.

69. Loosely attach the passenger's side torsion bar bracket (01235) to the passenger's side OE torsion bar crossmember mount with the OE hardware. Swing the crossmember up to the bracket and fasten with a 12mm x 90mm bolt. Mark the two holes to be drilled to 5/16". Remove the bracket and drill the holes at the two marks. Note: Installing the crossmember this way will ensure the location of the drilled holes is correct due to the OE slotted mounting hole on the passenger's side.
70. Reinstall the passenger's side bracket and use the 3/8" x 1-1/4" self tapping bolts (BP #618), threaded into frame, washers are not required. Use OE 12mm bolt at top mounting location. Install the crossmember in the passenger's side bracket with a 12mm x 90mm bolt, nut and 12mm washers (BP #618). Torque 12mm hardware to 55 ft-lbs and 3/8" hardware to 25 ft-lbs.
71. Reinstall and load the torsion bars. Adjust length of adjusting bolts to that recorded at the beginning of the installation.
72. Reinstall front wheels. Torque to OE specifications, see owner's manual.
73. Lower the vehicle to the ground and bounce the front to settle the suspension.
74. Torque lower control arm hardware to 150 ft-lbs.
75. Check all fasteners for proper torque. Recheck all fasteners after 500 miles and at regularly scheduled maintenance intervals.
76. A complete front end alignment is required.
77. Recheck the final lift height and compare to the pre-installation measurements recorded earlier. If necessary, adjust the torsion bars to achieve 6" of lift over the original measurements. This will ensure proper front end alignment

## Rear Installation

1. Block the front wheels for safety. Raise the rear of the vehicle and support the frame with jack stands.
2. Remove the wheels.
3. Support the axle with a hydraulic jack.
4. Remove the OE shocks. Retain the mounting hardware.
5. Remove the parking brake cable retaining ring from the driver's side frame rail (Fig 33). Remove the ring from the cables.



FIG. 33

## Leaf Spring Installation

1. Remove the passenger's side u-bolts. Lower the axle from the leaf spring.
2. Remove the spring-to-frame pivot bolt and the spring-to-shackle pivot bolt and remove the spring from the vehicle. Retain mounting hardware.
3. Install the new spring in the vehicle with the OE frame and shackle bolts. Leave hardware loose. Install the spring so that the end marked "FRT" is toward the front of the vehicle and the thick end of the wedge is at the back edge of the axle mount. Lower the axle enough to install the spring while taking care not to over-extend any wires or hoses. Make adjustments where necessary.
4. Attach the new spring to the axle with the provided u-bolts, high nuts and washers. Snug u-bolts. The final u-bolt torque is performed with the vehicle on the ground.
5. Repeat installation on the driver's side of the vehicle.  
Note: In some cases the new rear spring may contact the OE exhaust on the passenger's side of the vehicle at full suspension droop. If this occurs the tail pipe clamp can be loosened and the tail pipe rotated down slightly to gain clearance.

## Block Installation

1. Remove the passenger's side u-bolts. Lower the axle from the leaf spring enough to install the provided 4" lift block. Note: Take care not to over-extend any wires or hoses. Make adjustments where necessary.
2. Install the 4" block so that the short end of the block is toward the front of the vehicle. Fasten the spring, block and axle together with the provided u-bolts, high nuts and washers. Snug u-bolts. The final u-bolt torque is performed with the vehicle on the ground.
3. Repeat installation on the driver's side of the vehicle.

## Both Lift Options

1. Remove the two bolts mounting each of the rear OE bump stops to the frame (Fig 34). Retain hardware.



2. Attach the bump stop to the provided bump stop extension (01224) with 3/8" x 1-1/4" bolts, nuts and washers (BP #422). Torque hardware to 30 ft-lbs.
3. Attached the modified bump stop assembly to the frame in the original holes using the OE hardware. Torque hardware to 35 ft-lbs. The open end of the bracket should face the inside of the vehicle.
4. Install the new BDS shocks with the OE hardware.
5. Install the wheels.
6. Lower the vehicle to the ground and bounce the vehicle to settle the suspension.
7. Torque the u-bolts to 100-120 ft-lbs.
8. If installing new rear springs, torque spring bolts to 95 ft-lbs.
9. Check all hardware for proper torque.
10. Check all hardware after 500 miles.



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Part#: **022612, 022613**

Product: **6" Suspension System**

Application: **2002-2005 Dodge Ram 1500 4wd**

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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
01230	1	Steering Knuckle (drv)
01231	1	Steering Knuckle (pass)
02270	1	Front Crossmember - HC
02271	1	Rear Crossmember -HC
3527RB	4	Bushing
112	2	Sleeve
113	2	Large dia washers
516	2	Grease zerk - straight
02272	1	Torsion Bar Bracket (drv)
02273	1	Torsion Bar Bracket (pass)
02274	2	Torsion Bar Brkt Spacer
02268	2	Front Bump Stop Bracket
M02096RB	2	Bump Stops - Blue
02269	1	Crossmember Brace
02276	1	Differential Skid Plate
01249	2	Sway Bar Link Extension
01240	1	Front Driveshaft Spacer
01234	1	Differential Brkt (pass)
01236	1	Differential Brkt (drv)
01237	1	Differential Brkt (pass)
01238	1	Differential Brkt
01224	2	Rear Bump Stop
422	1	Bolt pack - Rear Bump Stop
	4	3/8"-16 x 1-1/4" bolt
	4	3/8"-16 prevailing torque nut
	8	3/8" USS flat washer

617	1	Bolt Pack - Differential Drop
	4	1/2"-13 x 2-3/4" bolt
	7	1/2"-13 x 2-1/2" bolt
	11	1/2"-13 prevailing torque nut
	25	1/2" SAE flat washer
	3	12mm-1.75 x 30mm bolt
778	1	Bolt pack - Main hardware
	2	5/8"-11 x 5-1/2" bolt
	2	5/8"-11 x 8" bolt
	4	5/8"-11 prevailing torque nut
	8	5/8" SAE flat washer
	4	1/2"-13 x 3" Button head bolt
	4	1/2"-13 prevailing torque nut
	6	1/2"-13 x 1-1/4" bolt
	2	1/2"-13 x 1-3/4" bolt
	12	1/2" SAE washer
	2	1/2"-13 flanged nut
779	1	Bolt pack - Front Driveshaft - misc.
	4	12mm-1.75 x 45mm bolt
	4	12mm flat washer
	2	3/8"-16 x 1-1/4" SHCS
	2	3/8" SAE Flat washer
	2	5/16"-18 x 1-1/4" self tapping bolt
loc-tite	1	loc-tite

# INSTALLATION INSTRUCTIONS

## PRE-INSTALLATION NOTES

- A special tool is required to load/unload the torsion bars. The Dodge service manual lists tool #8686. This tool differs slightly from the C-clamp style tool used on most other IFS vehicles.
- A special tool is required to remove the factory rear lower control arm bushings from the frame. This tool is available through Dodge or SPX-Miller Special Tools (#8682). SPX-Miller Special Tool- 1-800-801-5420.
- The factory service manual specifically states that striking the knuckle to loosen the ball joints or tie rod ends is prohibited. Striking the aluminum knuckle can damage it. A special puller tool #8677 (or equivalent ball joint tool) is recommended to be used to separate these components from the knuckle.
- On some vehicles an exhaust modification will be required to clear the front driveshaft in its new, lower position.
- T-60 and T-55 impact quality torx sockets are necessary for the installation of this kit.

## PRE-INSTALLATION MEASUREMENTS

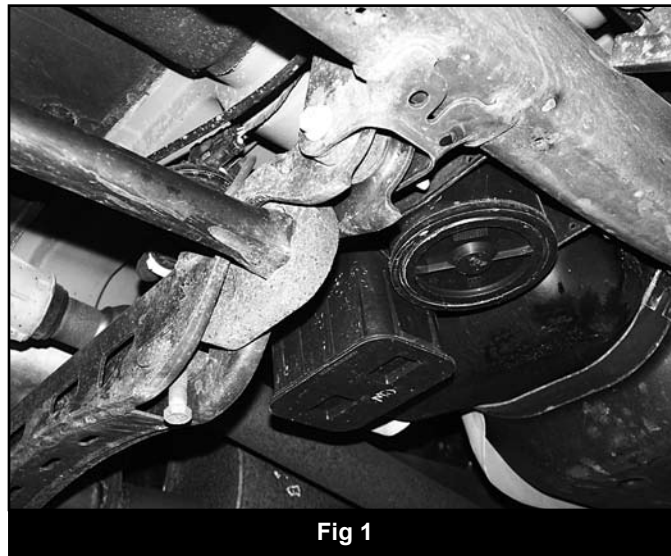
Measure from the center of the wheel up to the bottom edge of the wheel opening

LF\_\_\_\_\_ RF\_\_\_\_\_ LR\_\_\_\_\_ RR\_\_\_\_\_

## FRONT INSTALLATION

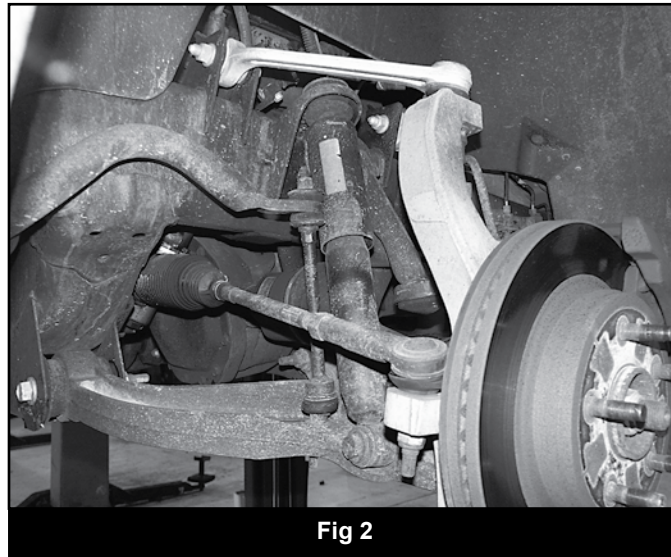
1. Park the vehicle on a clean, flat surface and block the rear wheels for safety.
2. Raise the front of the vehicle and support with jack stands under the frame rails.
3. Remove the wheels.
4. Measure and record the length of the exposed thread on the torsion bar adjusting bolts for later reference (Fig 1).

DRV\_\_\_\_\_ PASS\_\_\_\_\_

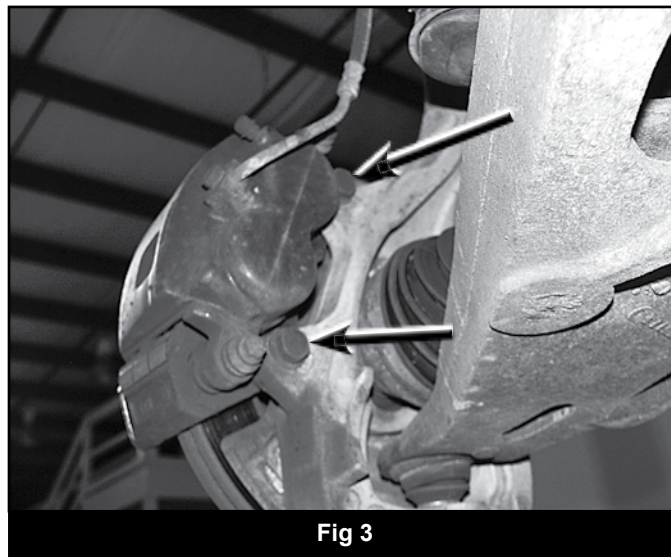


5. Remove the torsion bar adjuster bolt and retainer block. **CAUTION:** The torsion bars are under extreme pressure. Use the correct unloading tool to remove the pressure on the torsion bars before attempting to remove the assembly. Be sure to follow the OE manual and the torsion bar unloading tool literature as to how to unload the torsion bars properly.
6. Mark the unloaded torsion bars to indicate passenger's and driver's side. Mark both of the torsion bars to indicate the front versus the rear for later installation. Mark the rear of the bars relative to the adjusting arms to indicate indexing.
7. Pull the torsion bars back out of the lower control arms and remove them from the vehicle.
8. Remove the OE shocks. Retain the lower mounting hardware. Discard the shock and the upper mounting hardware.

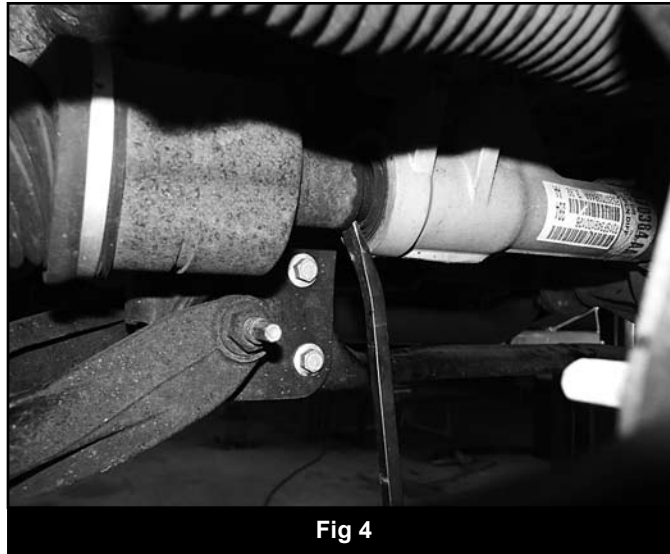
9. Disconnect the sway bar links from the sway bar. Retain all bushings, cup washers, and nuts.
10. Remove and discard the OE front skid plate, if equipped.
11. Disconnect the tie rod ends from the steering knuckles (Fig 2). Remove and retain the mounting nuts. Use the appropriate puller to separate the tie rod end from the steering knuckle. Take care not to damage the tie rod end.



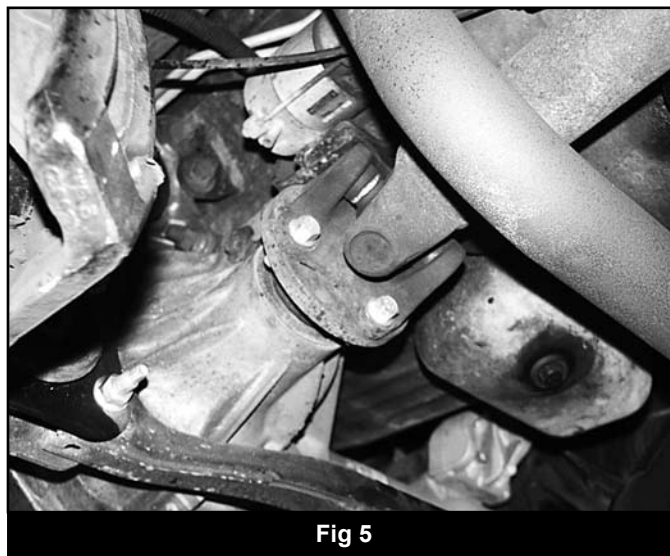
12. If equipped, disconnect the ABS brake line at the frame. Remove it from any retaining clips.
13. Remove the brake caliper anchor bracket bolts (Fig 3) and pull the caliper free from the steering knuckle and rotor. Hang the caliper securely out of the way. Retain caliper mounting hardware. Remove the brake rotor from the hub. Note: Do not allow the brake caliper to hang from the brake hose.



14. Remove the hub axle nut. Retain nut.
15. Loosen but do not remove the lower control arm bolts.
16. Disconnect the CV axles from the differential by carefully prying CV out at the differential to disengage the internal retaining clip (Fig 4). Pry the shaft out just enough to release the clip and leave the axle on the differential at this time.



17. Remove the upper and lower ball joint nuts. Reinstall the nuts a few turns by hand. Separate the upper and lower ball joints from the steering knuckle using the appropriate puller. Take care not to damage the ball joint. Remove the upper ball joint nut and allow the knuckle/CV axle and lower control arm to swing down while sliding the CV axle off of the differential. Remove the CV axle from hub.
18. Remove the lower ball joint nut and remove the knuckle from the lower control arm. Retain the ball joint nuts.
19. Remove the three bolts mounting the hub bearing assembly to the OE steering knuckle. Retain the mounting bolts. Remove the hub assembly and dust shield from the knuckle. Note: It may be necessary to press the hub out of the knuckle as a result of excessive corrosion on some vehicles.
20. Install the hubs and factory dust shield on the corresponding new knuckles (01230, 01231) and fasten with the stock mounting bolts. Index the hub so that the ABS line runs out the front side of the knuckle toward the steering arm. Use Loctite on the bolt threads and torque to 125 ft-lbs.
21. Remove the lower control arms from the frame. Retain hardware.
22. Make indexing marks on the front drive shaft and differential input flange for realignment later (Fig 5). Remove the four bolts and disconnect the drive shaft from the differential. Discard mounting bolts.



23. Locate the exhaust crossover pipe. If the crossover pipe runs under the front driveshaft it must be modified (Fig 6). The pipe can either be completely removed or cut to clear the driveshaft at this time. The other option is to wire up the front drive shaft if traveling a very short distance to the exhaust shop. Note: Vehicles equipped with a crossover pipe that runs near the transfer case will not require an exhaust modification. Have the exhaust modifications completed by a quality exhaust shop when the installation of this suspension system is complete.



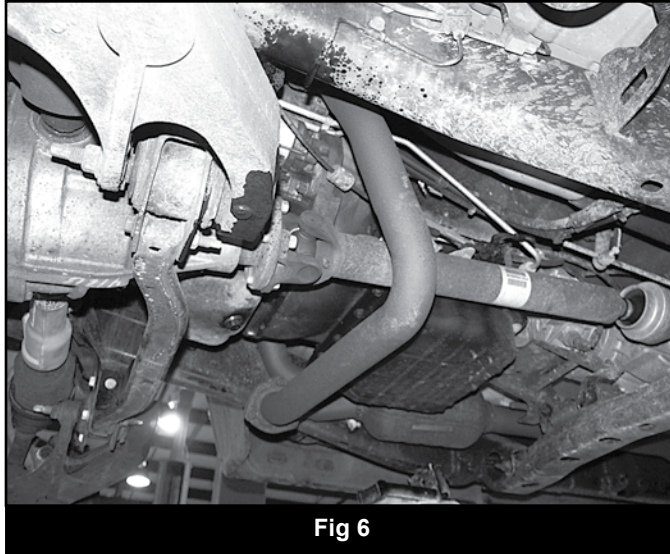


Fig 6

24. Remove the four bolts mounting the OE rear crossmember to the frame rails and remove the crossmember from the vehicle (Fig 7). Discard the crossmember and the hardware.

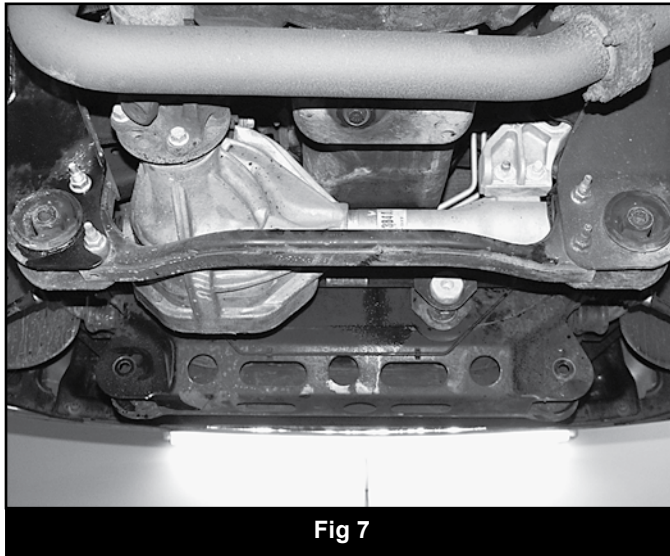


Fig 7

25. Disconnect the vent hose and wiring (if equipped) from the differential (Fig 8).

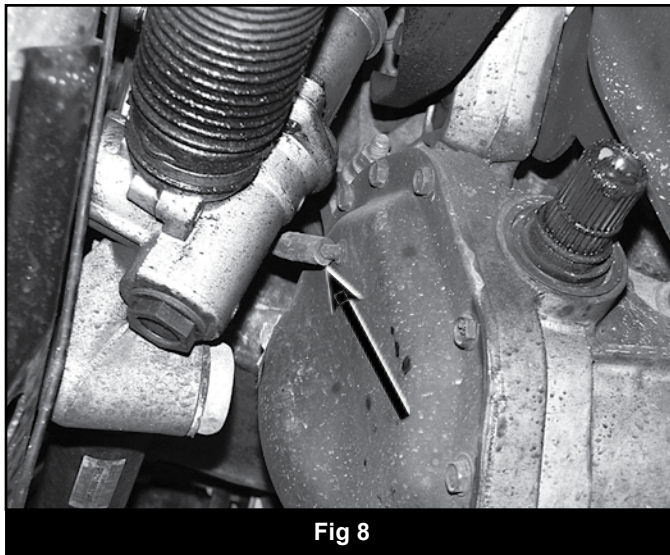


Fig 8

26. Using a jack, support the differential. Loosen and remove the two forward-most differential mounting bolts on the driver's side (Fig 9). Loosen but do not remove the three rear driver's side bolts (Fig 10) and the two passenger's side bolts (Fig 11).

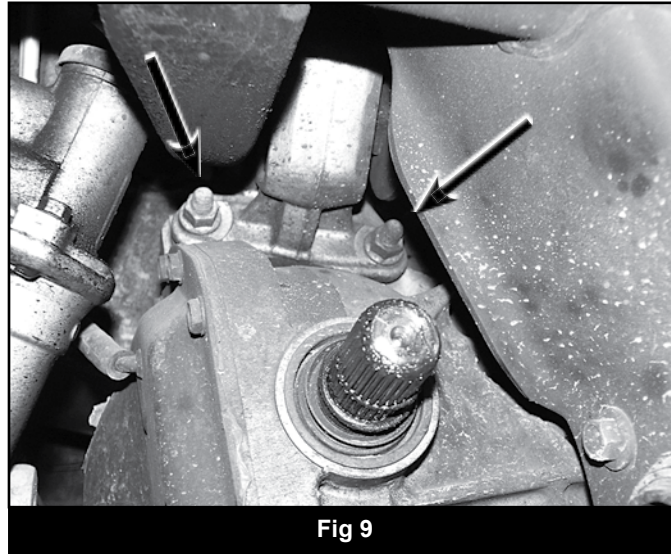


Fig 9

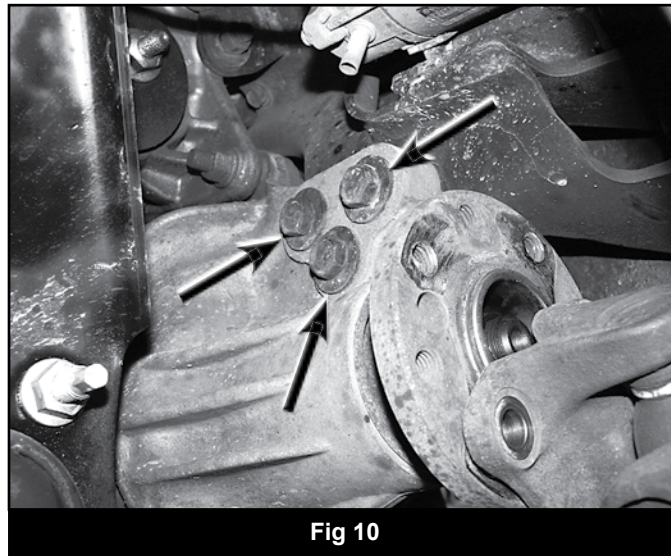


Fig 10

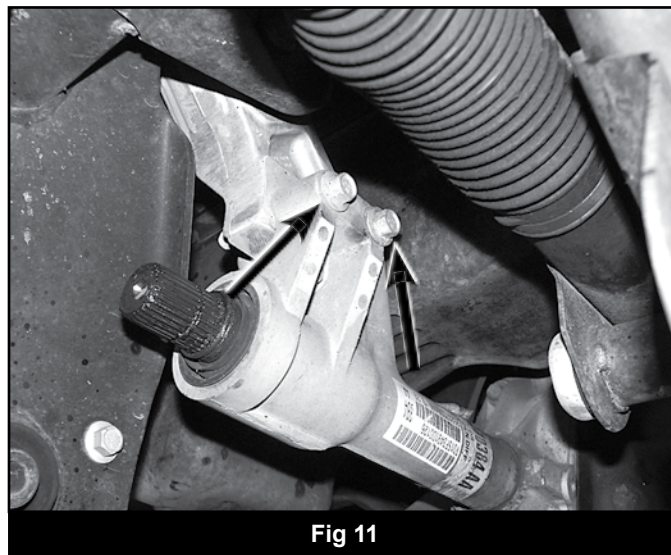


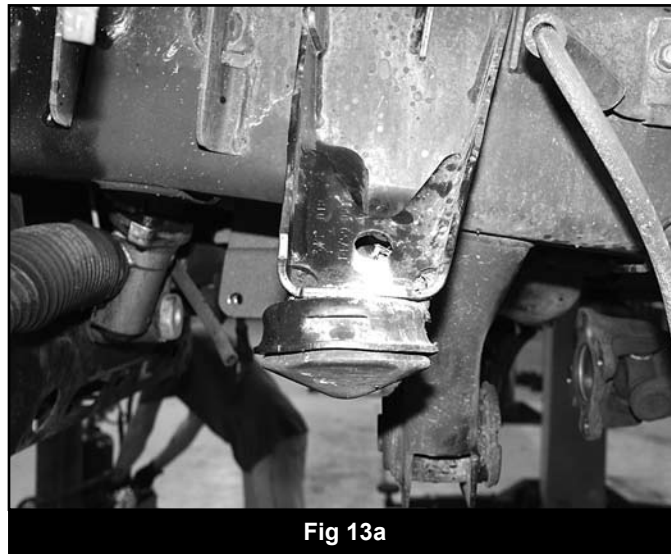
Fig 11

27. With the differential securely supported, remove the remaining bolts and lower the differential from the vehicle.

28. Using the appropriate puller tool, press out the OE rear lower control arm bushings from the frame. Refer to individual puller tool instructions for proper operating procedures. Another option is to cut the OE bushing flush with the backside of the frame. This is needed for clearance of the torsion bar relocation brackets (Fig 12).



29. The lower control arm bump stop cups must be removed from the frame. Using a saw-zall or cutoff wheel, cut the weld beads holding the bump stop cups to the frame (Fig 13 A/B). Remove the cups and be sure that the surface is ground flush. Paint any bare metal to prevent rust.



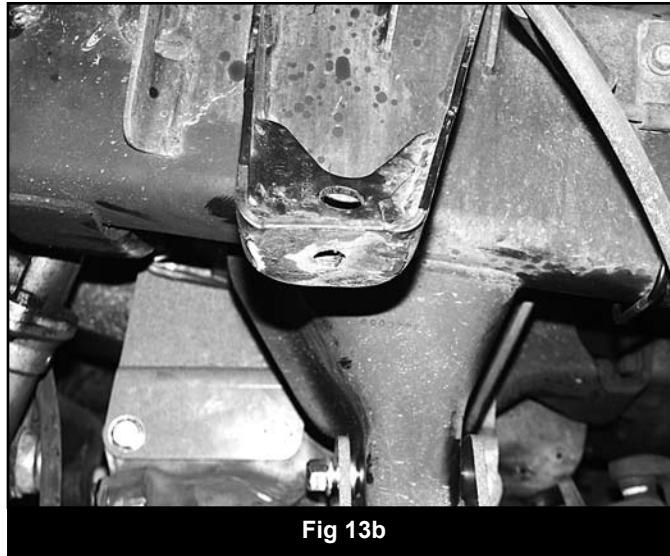


Fig 13b

30. Install the provided passenger's side differential drop bracket (01234) to the original frame mount with two  $\frac{1}{2}$ " x 2-3/4" bolts, nuts and  $\frac{1}{2}$ " SAE washers (BP #617). Leave hardware loose (Fig 14).

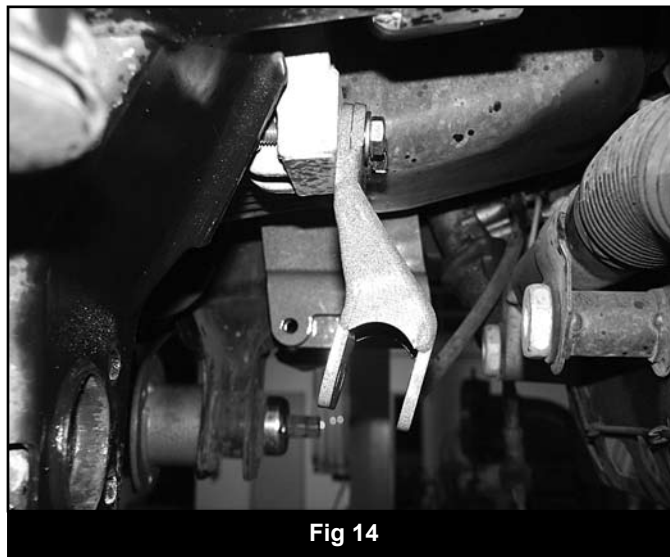
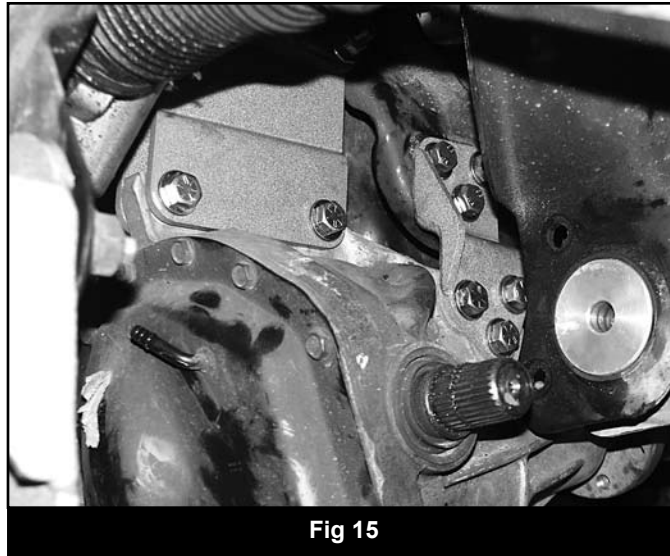


Fig 14

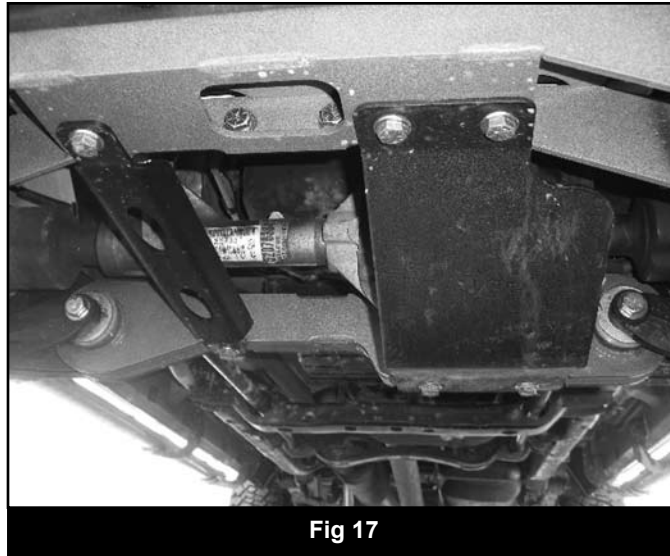
31. Install the two front driver's side differential drop brackets so that the bracket with the small offset (01236) is toward the outside of the vehicle (offsetting out) and the one with the bigger offset (01237) is on the inside (offsetting in). The brackets should taper down in height as they go toward the rear of the vehicle. Fasten the brackets to the frame with two  $\frac{1}{2}$ " x 2-1/2" bolts, nuts and  $\frac{1}{2}$ " SAE washers (BP #617). Leave hardware loose.
32. Install the driver's side rear differential drop bracket (01238) to the frame with three 12mm x 30mm bolts and  $\frac{1}{2}$ " SAE washers (BP #617) into the existing welded nuts on the frame. The bracket will offset toward the outside of the vehicle with the gusset to the front. Leave hardware loose.
33. Using a jack (and an assistant to aid in balancing) raise the differential up to the new brackets.
34. Attach the differential to the driver's side front and rear brackets (Fig 15) with  $\frac{1}{2}$ " x 2-1/2" bolts, nuts and washers (BP #617). Attach the passenger's side to the differential with  $\frac{1}{2}$ " x 2-3/4" bolts, nuts and  $\frac{1}{2}$ " SAE washers (BP #617). Leave all differential hardware loose.



35. Torque all 14 differential mounting bolts. Torque the ½" hardware to 65 ft-lbs and the 12mm hardware to 50 ft-lbs.
36. Attach the breather hose and wiring to the differential.
37. Install the new front crossmember (02270) in the OE front lower control arm pockets and loosely fasten with the OE lower control arm hardware. Note: The offset in the crossmember goes to the front, bolts run from front to rear. If installing optional dual steering stabilizers, the tips must be cut off the bolts for additional clearance.
38. Grease and install new bushings and sleeve into the rear crossmember. Install grease zerks into crossmember and tighten securely.
39. Install the new rear crossmember (02271). The crossmember is attached with ½" x 3" button head bolts. Do not put a washer on the head of the bolt. Run the bolt from REAR to FRONT and attach with ½" SAE washer and Prevailing Torque Nut. It may be necessary to slightly clearance the holes in the frame for the larger than factory bolts, do not tighten at this time (Fig 16).



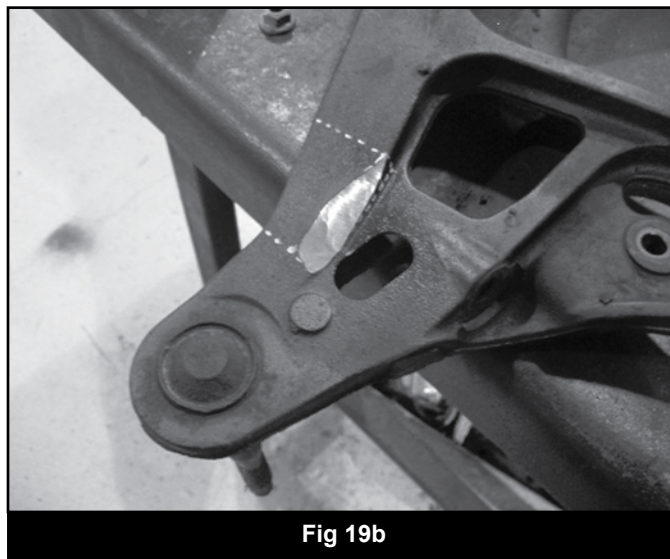
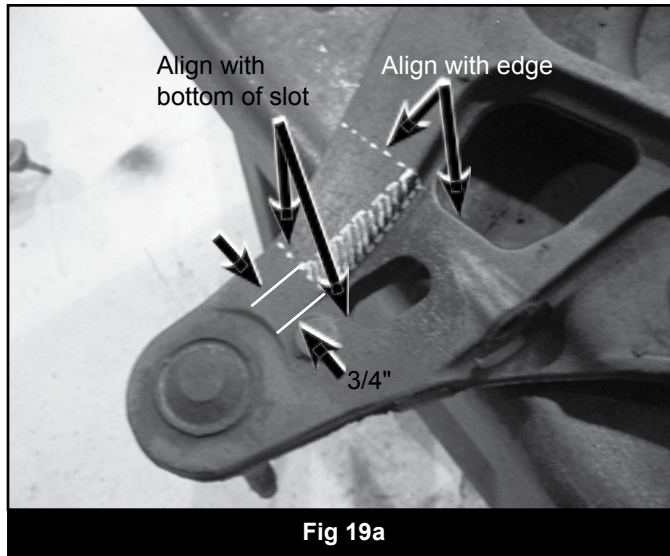
40. Install the new differential skid plate to the crossmembers with ½" x 1-1/4" bolts and SAE washers (BP #618).
41. Install the passenger's side skid plate with ½" x 1-1/4" bolts and SAE washers (Fig 17).



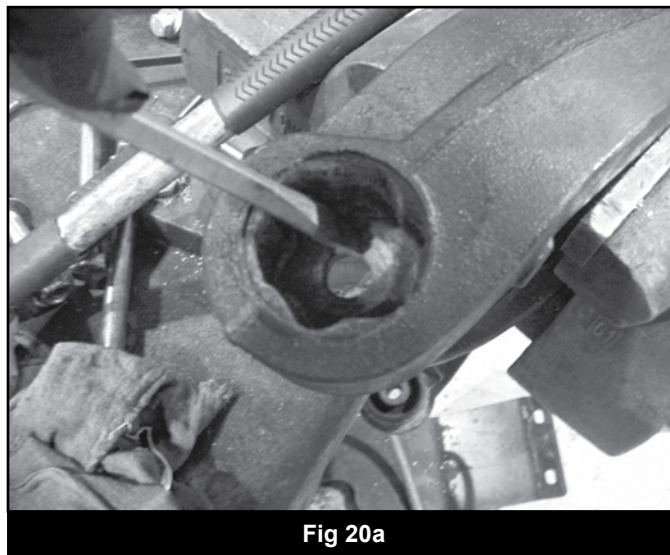
42. Install the provided pyramid urethane bump stops to the new bump stop extensions (02268).
43. Attach the bump stop extension to the frame with 3/8" x 1-1/4" socket head cap bolts and 3/8" SAE washers down through the original bump stop frame mount (Use loctite on the threads). Use a rag to protect the powdercoat if a wrench is used on the bumpstop (Fig 18).



44. Mark the control arm as shown. This area must be removed from the control arm for CV boot clearance. The area to be removed is wedge shaped. Draw a triangle to connect the points, and remove material with a grinder. Coat with paint after material is removed (Fig 19a, b).



45. Remove corrosion inside the lower control arm where the bolt head originally rested. Install the spacer as shown (Fig 20a, b).



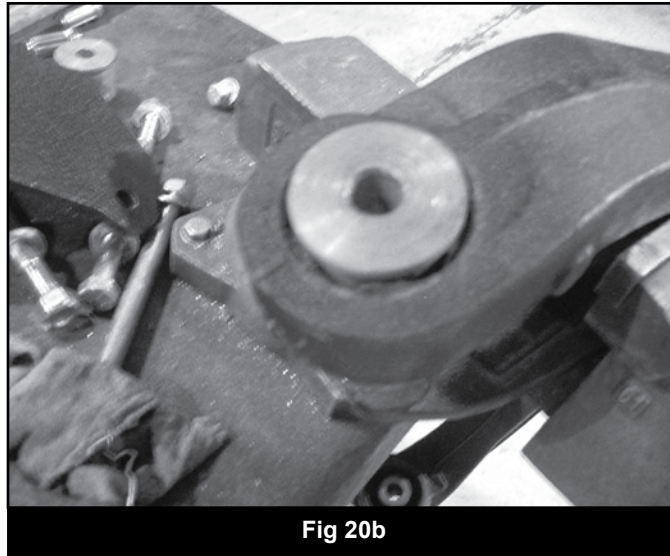


Fig 20b

46. Install the torsion relocation brackets on the arm as shown. Rotate the arm so that the flat bracket rests on the control arm. Mark the hole center and drill to  $\frac{1}{2}$ ". Attach with  $\frac{1}{2}$ " x 1-3/4" bolt with washer on the head of the bolt, and a serrated flanged nut on the inside of the control arm. Use loc-tite on the threads and tighten to 65 ft-lbs (Fig 21).

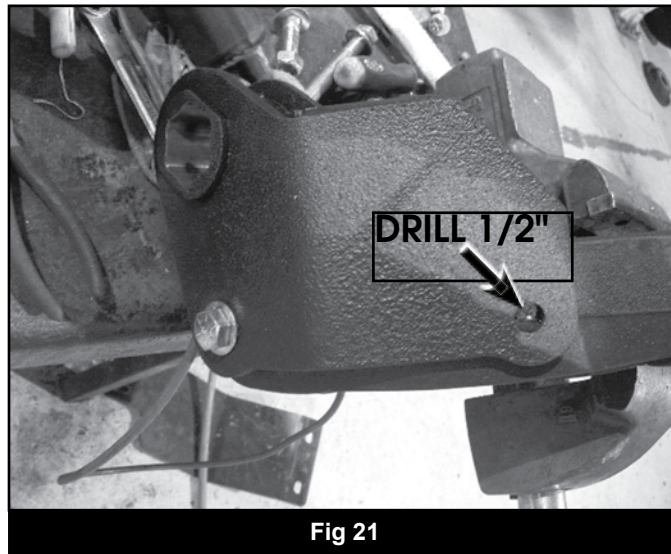


Fig 21

47. Install the lower control arms in the front and rear crossmembers. Attach the control arms to the front crossmember with  $\frac{5}{8}$ " x 5-1/2" bolts, nuts and  $\frac{5}{8}$ " SAE washers (BP #778) (installed from front to back). Install the spacer washer as shown, attach the arms to the rear crossmember with  $\frac{5}{8}$ " x 8" bolts, nuts, and  $\frac{5}{8}$ " SAE washers (installed from front to back) (Fig 22a, b).



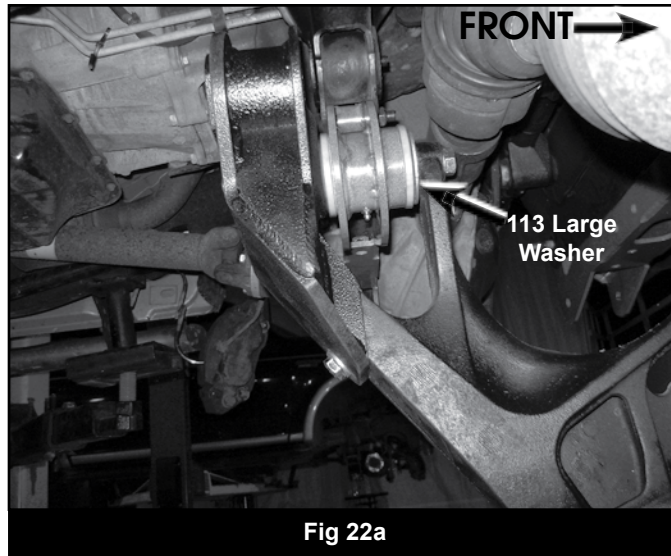


Fig 22a

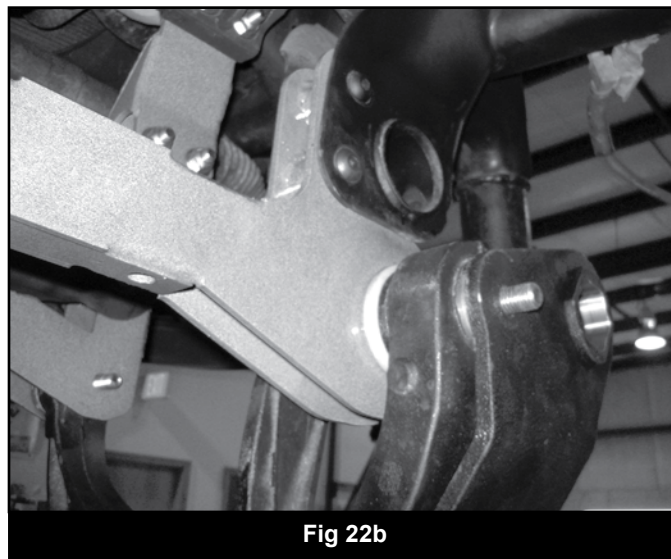


Fig 22b

48. With the lower control arms installed, torque the crossmember hardware as follows: Front crossmember- upper OE bolts 125 ft-lbs; Rear crossmember- 1/2" button head hardware 65 ft-lbs. Leave control arms loose.
49. Torque the differential skid plate hardware to 65 ft-lbs.
50. Install the provided drive shaft spacer on the differential input flange. Attach the front driveshaft to the differential by aligning the marks made earlier. Fasten the driveshaft and spacer to the differential flange with 12mm x 45mm bolts and 12mm washers (BP#779). Use loctite on the bolt threads and torque to 55 ft-lbs (Fig 23).



Fig 23

51. Install the new driver's side steering knuckle to the driver's side lower control arm ball joint and loosely attach with the original nut. Install the driver's side CV axle in the hub and loosely fasten with the original axle nut. Swing the knuckle/CV assembly up while aligning the axle with the differential output shaft. Loosely attach the knuckle to the upper control arm ball joint with the original nut. Push the CV axle all the way onto the differential output to seat the internal retaining clip.
52. Torque the upper ball joint nut to 55 ft-lbs and the lower ball joint nut to 60 ft-lbs. Torque the axle nut to 185 ft-lbs.
53. Repeat knuckle/CV installation on passenger's side.
54. Attach the tie rod ends to the new steering knuckles with the OE nut. Torque to 45 ft-lbs.
55. Install the sway bar link extensions onto the factory sway bar links, tighten securely. Install factory cup washers and rubber bushings onto sway bar links. Attach to sway bar with OE hardware. Tighten until the bushings begin to swell - Do NOT overtighten.
56. Passenger's side brake line: Remove the bolt retaining the line bracket to the frame (Fig 24). Carefully reform the hard line so that the mounting bracket can be lowered approximately 3" (remove the hard line from the retaining clip on the inside of the frame rail). Measure back  $\frac{1}{2}$ " from the lower existing hole in the frame and drill a  $\frac{17}{64}$ " hole (Fig 25). Attach the brake line to the new hole with the provided  $\frac{5}{16}$ " x 1- $\frac{1}{4}$ " self-tapping bolt (BP #779). Ensure that the hard line is properly routed.



Fig 24



Fig 25

57. Driver's side brake line: Remove the bolt retaining the line bracket to the frame (Fig 26). Support the hard leader with pliers and carefully bend the line down approximately 30° (Fig 27). Mark and drill the new mounting location on the frame with a 17/64" drill. Fasten the bracket with the provided 5/16" x 1-1/4" self-tapping bolt (BP #779).

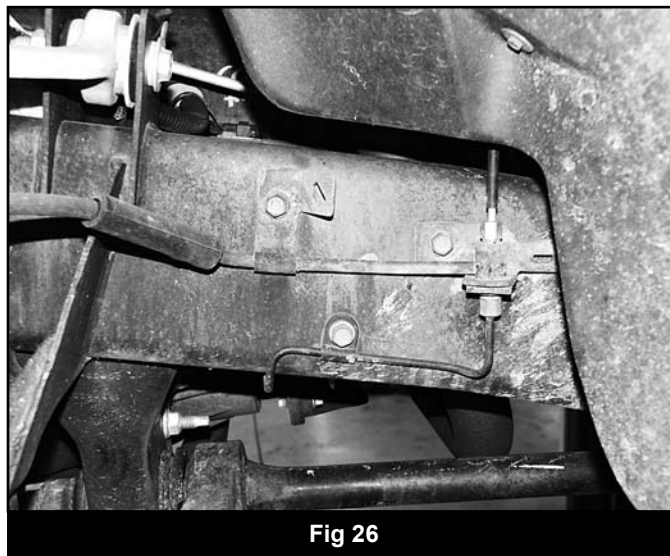
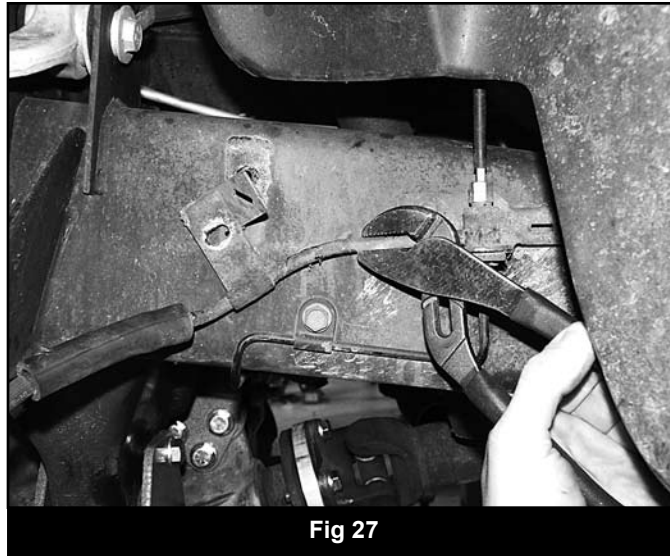


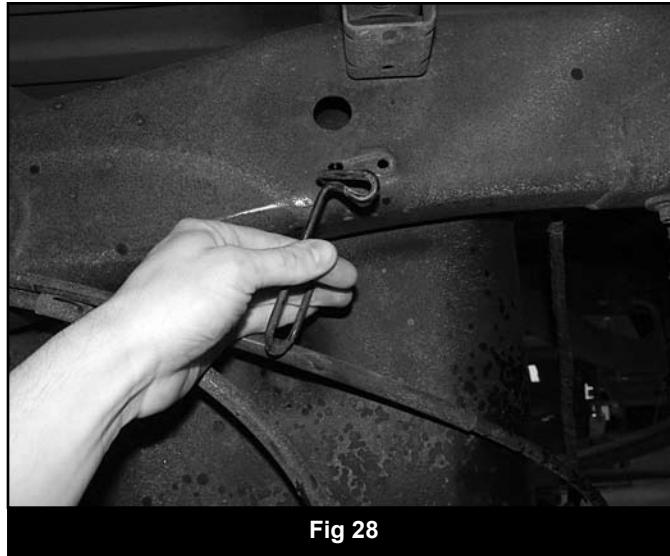
Fig 26



58. Install the brake rotor and caliper on the knuckle/hub. Torque the OE caliper bolts to 130 ft-lbs.
59. If equipped, connect the ABS wire at the frame.
60. Place a jack under the lower control arm and raise the arm until the distance from the center of the hub to the edge of the fender is 6" more than measured in the pre-installation measurements (typically about 28"). Torque the lower control arm hardware to 125 ft-lbs. Note: Failure to complete this step will result in premature lower control arm bushing wear as well as poor ride quality.
61. Install the new front shocks. Attach the shocks to the lower control arm with the OE hardware and to the frame with the provided new hardware. Torque the lower bolt to 95 ft-lbs and the upper hardware until the bushings begin to swell.
62. Reinstall and load the torsion bars. Adjust length of adjusting bolts to that recorded at the beginning of the installation.
63. Reinstall front wheels. Torque to OE specifications, see owner's manual.
64. Grease rear lower control arm bushings.
65. Lower the vehicle to the ground and bounce the front to settle the suspension.
66. Check all fasteners for proper torque. Recheck all fasteners after 500 miles and at regularly scheduled maintenance intervals.
67. A complete front end alignment is required.
68. Recheck the final lift height and compare to the pre-installation measurements recorded earlier. If necessary, adjust the torsion bars to achieve 6" of lift over the original measurements. The front height measurement should not exceed 28-1/2". If your vehicle is equipped with aftermarket fenderflares, check the 'z' height. Measure and record the distance from the center of the lower control arm bolt to the ground and from the center of the lower shock bolt to the ground. The difference between the two should not exceed 1". This will ensure proper front end alignment and good ride quality.

## REAR INSTALLATION

69. Block the front wheels for safety. Raise the rear of the vehicle and support the frame with jack stands.
70. Remove the wheels.
71. Support the axle with a hydraulic jack.
72. Remove the OE shocks. Retain the mounting hardware.
73. Remove the parking brake cable retaining ring from the driver's side frame rail (Fig 28). Remove the ring from the cables.



### **Leaf Spring Installation**

74. Remove the passenger's side u-bolts. Lower the axle from the leaf spring.
75. Remove the spring-to-frame pivot bolt and the spring-to-shackle pivot bolt and remove the spring from the vehicle. Retain mounting hardware.
76. Install the new spring in the vehicle with the OE frame and shackle bolts. Leave hardware loose. Install the spring so that the end marked "FRT" is toward the front of the vehicle and the thick end of the wedge is at the back edge of the axle mount. Lower the axle enough to install the spring while taking care not to over-extend any wires or hoses. Make adjustments where necessary.
77. Attach the new spring to the axle with the provided u-bolts, high nuts and washers. Snug u-bolts. The final u-bolt torque is performed with the vehicle on the ground.
78. Repeat installation on the driver's side of the vehicle. Note: In some cases the new rear spring may contact the OE exhaust on the passenger's side of the vehicle at full suspension droop. If this occurs the tail pipe clamp can be loosened and the tail pipe rotated down slightly to gain clearance.

### **Block Installation**

79. Remove the passenger's side u-bolts. Lower the axle from the leaf spring enough to install the provided 4" lift block. Note: Take care not to over-extend any wires or hoses. Make adjustments where necessary.
80. Install the 4" block so that the short end of the block is toward the front of the vehicle. Fasten the spring, block and axle together with the provided u-bolts, high nuts and washers. Snug u-bolts. The final u-bolt torque is performed with the vehicle on the ground.
81. Repeat installation on the driver's side of the vehicle.

## Both Lift Options

82. Remove the two bolts mounting each of the rear OE bump stops to the frame (Fig 29). Retain hardware.
83. Attach the bump stop to the provided bump stop extension (01224) with 3/8" x 1-1/4" bolts, nuts and washers (BP #422). Torque hardware to 30 ft-lbs.
84. Attached the modified bump stop assembly to the frame in the original holes using the OE hardware. Torque hardware to 35 ft-lbs. The open end of the bracket should face the inside of the vehicle.
85. Install the new BDS shocks with the OE hardware.
86. Install the wheels.
87. Lower the vehicle to the ground and bounce the vehicle to settle the suspension.
88. Torque the u-bolts to 100-120 ft-lbs.
89. If installing new rear springs, torque spring bolts to 95 ft-lbs.
90. Check all hardware for proper torque.
91. Check all hardware after 500 miles.



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### NOTICE TO DEALER/INSTALLER

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

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

**Sold/Installed by:**

# Shock Absorber Installation Instructions



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

## LIMITED LIFETIME WARRANTY

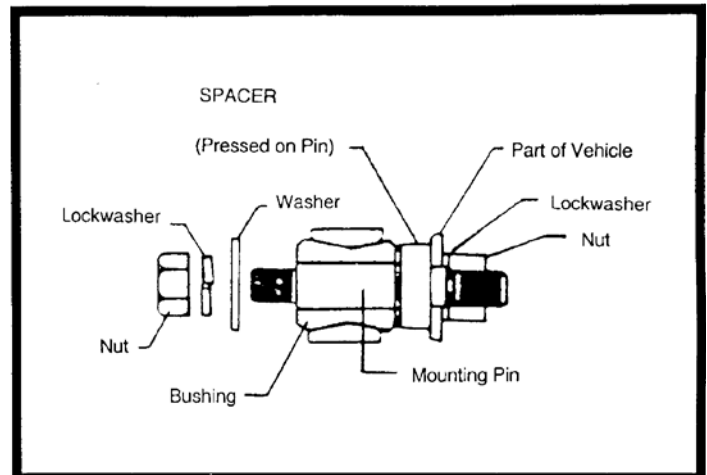
BDS Suspension Co. warrants to the original retail purchaser that its shock and stabilizer cylinders are free from defects in material and workmanship for so long as they own the vehicle. Excluded from this warranty are the finish of the product and mounting bushings. Defects in material and workmanship 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.

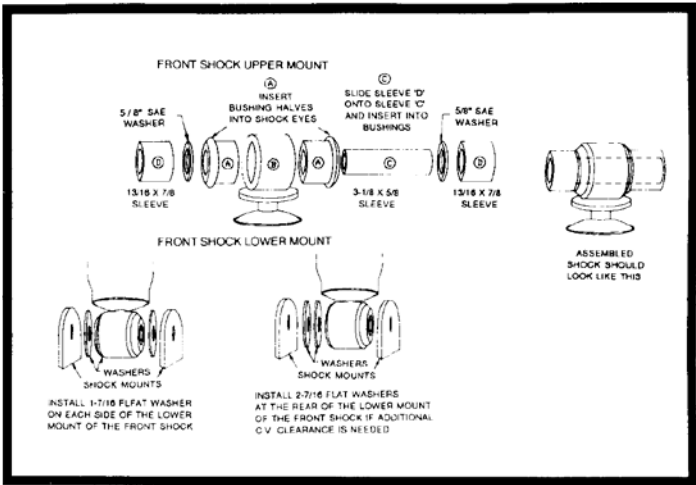
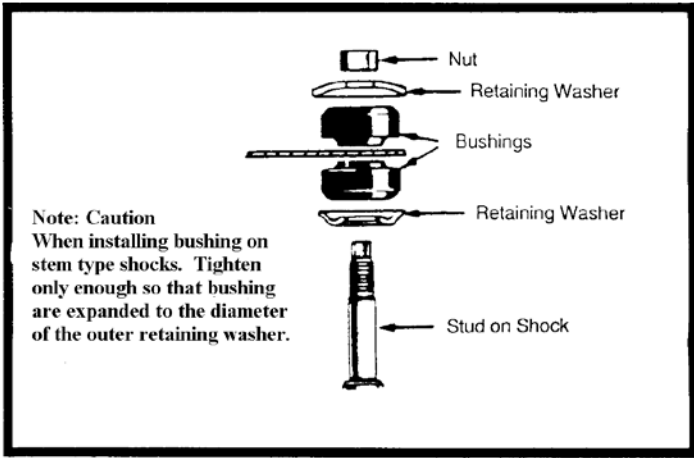
## INSTALLATION INSTRUCTIONS

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.

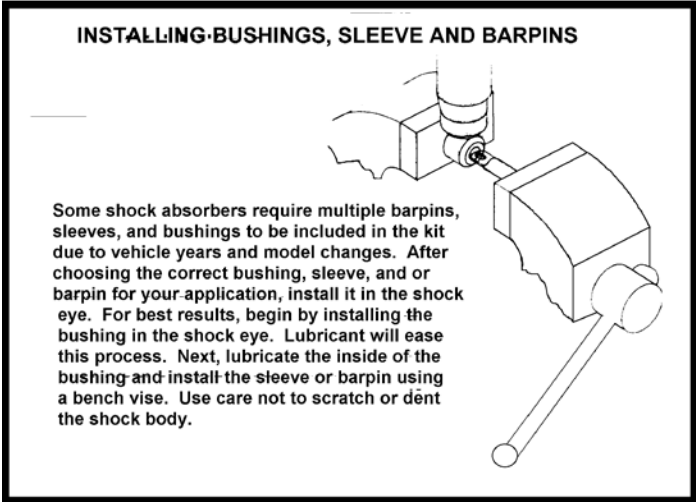
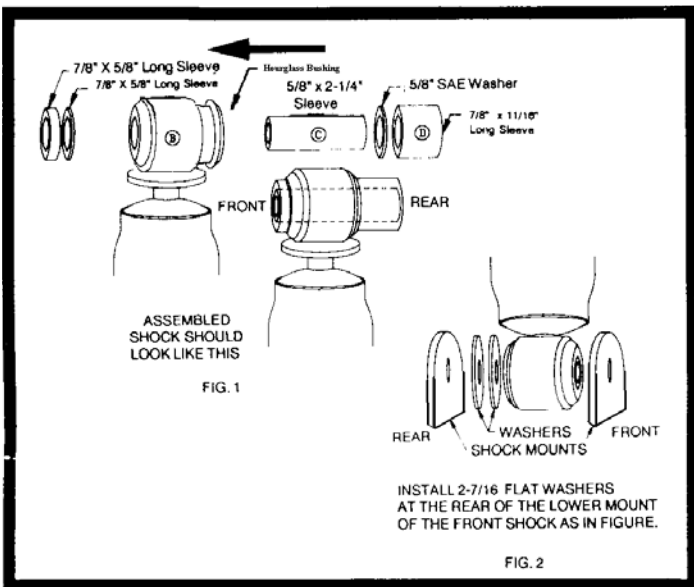
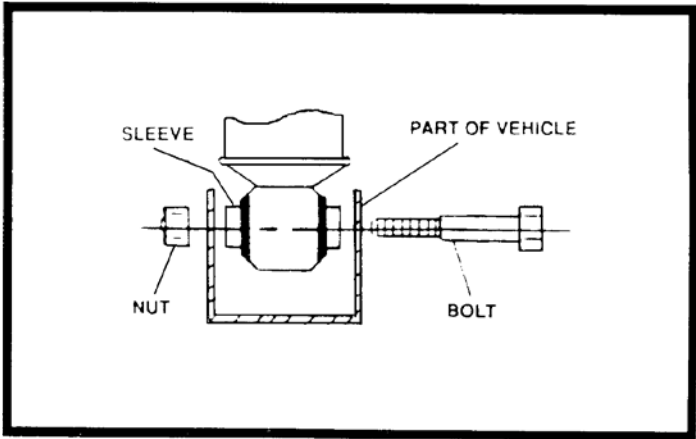
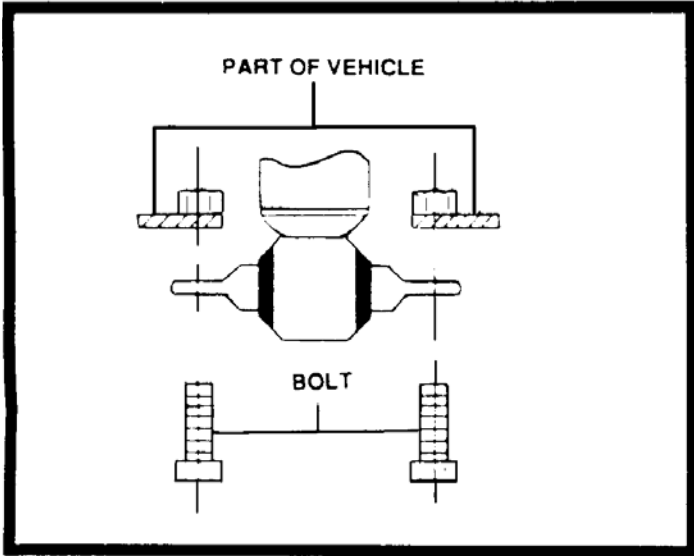
3. If installing dust boot, do so at this time. **Note: The use of a lubricant like dish soap on the inside of the boot will ease installation.** Make sure the washer at the top of the shock is fully seated in the boot all the way around. Secure the bottom of the boot to the cylinder with a plastic tie 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.



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