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Part#: 012418, 012218, 012519

Product: 4" & 6" High Clearance Suspension System

Application: 2006 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.

PARTS LIST

Part #	Qty	Description
617	1	Bolt Pack
	4	1/2" x 2-3/4" bolt
	7	1/2" x 2-1/2" bolt
	11	1/2" prevailing torque nut
	25	1/2" SAE flat washer
	3	12mm x 30mm bolt
631	1	Bolt Pack - brake line hardware
	2	1/2" x 1-1/4" bolt
	2	1/2" prevailing torque nut
	4	1/2" SAE flat washer
422	1	Bolt Pack - rear bump stops (6in kit)
	4	3/8" x 1-1/4" bolt
	4	3/8" prevailing torque nut
	8	3/8" USS flat washer
811	1	Bolt Pack - main hardware
	4	12mm x 45mm bolt
	4	12mm flat washer
	4	1/2" x 1-1/4" bolt
	4	1/2" SAE flat washer
	2	1/4" x 1/2" bolt
	2	1/4" prevailing torque nut
	4	1/4" SAE flat washer
	2	Wire Clip
	6	10mm Prevailing torque nut
	6	10mm flat washer
02230	1	Steering Knuckle - Drv Side
02231	1	Steering Knuckle - Pass Side
44066	2	Tie Rod Ends
02002ZP	4	18mm-2.50 x 150mm bolt - class 10.9
N18MPT	4	18mm Prevailing Torque Nut
01295	1	Front Crossmember
01296	1	Rear Crossmember
01264	8	Cam Slot Washer
04801487AA	1	Front Differential Wiring Harness
01267	2	Strut Spacer (6in) or
02267	2	Strut Space (4in)
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)
01240	1	Front Driveshaft Spacer
01298	1	Differential Skid Plate
911114	2	Sway Bar Link Extension
654	1	Sway Bar Link Bolt Pack
01224	2	Rear Bump Stop Extension (6in kit)
02281	1	Brakeline drop bracket (4in kit - D)
02282	1	Brakeline drop bracket (4in kit - P)
765	1	Brakeline drop hardware (4in kit)
22531	2	Brake Line (6in only)
01274	2	Brake Line Bracket (6in only)
5188	2	Brake Line Clip (6in only)
CCW-03-050	4	Crush Washer (6in only)
342701	2	Loctite
099000	4	Zip Ties

Note: 6in comes with replacement front brakelines, 4in kit comes with brakeline drop brackets.



PRE-INSTALLATION NOTES

- 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.

PRE-INSTALLATION MEASUREMENTS

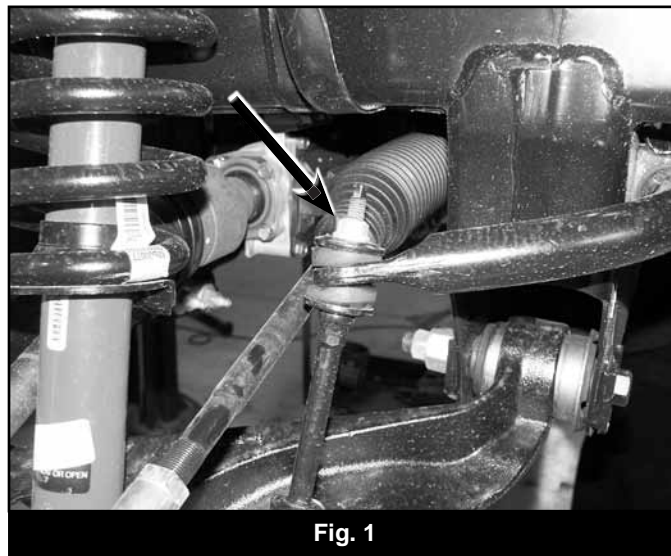
Measure from the center of the wheel up to the bottom edge of the wheel opening

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. Disconnect the sway bar links from the sway bar (Fig 1). Retain the mounting bushings, washers and nuts.



5. Remove and discard the OE front skid plate, if equipped.
6. Disconnect the tie rod ends from the steering knuckles. 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.
7. If equipped, disconnect the ABS brake line at the frame. Remove it from any retaining clips.
8. Steps 9-14 are for 6in kit with replacement brakeline. Steps 15-19 are for 4in kit with brakeline drop brackets. If installing optional brakeline drop brackets on 4in kit, follow steps 9-14.
9. 6inch kits only: Disconnect the driver's side front brake hose from the caliper. Retain the banjo bolt and discard the crush washers.
10. 6inch kits only: Disconnect the hard line from the brake hose fitting at the frame. Remove the hose fitting retaining bolt and remove the hose from the vehicle. Retain the hose fitting mounting bolt.
11. 6inch kits only: Attach the provided brake line relocation bracket (01274) to the frame where the original line mounted. Fasten the bracket with the OE fitting bolt through the original threaded hole and the corresponding small hole in the new bracket (Fig 2). Align the other mounting hole in the bracket with the brake line hole in the frame and fasten with a $\frac{1}{2}$ " x 1-1/4" bolt, nut and $\frac{1}{2}$ " SAE washers (BP #631). Torque the OE bolt to 10 ft-lbs and the $\frac{1}{2}$ " bolt to 50 ft-lbs. Note: The third hole in the bracket should be hanging out past the edge of the frame.

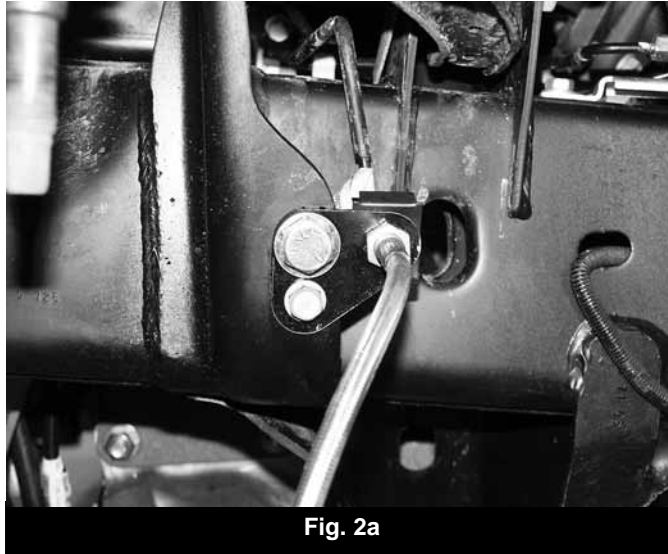


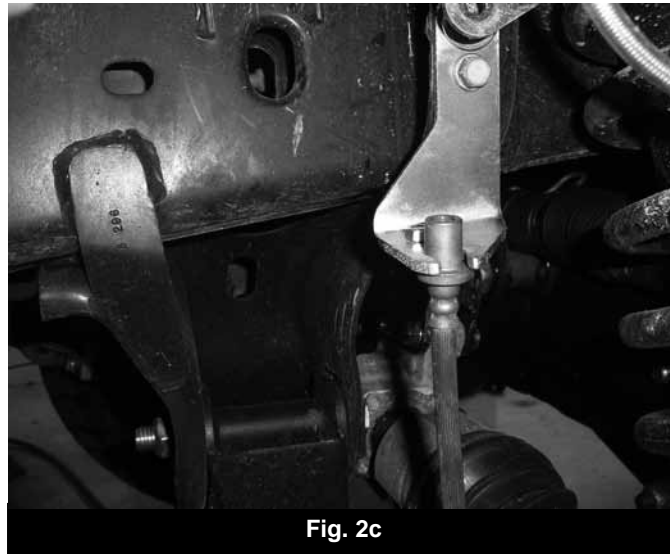
Fig. 2a

12. 6inch kits only: Route the new stainless steel brake line through the relocation bracket and attach it to the hard line. Tighten the fitting securely. Fasten the line to the bracket with the provided retaining clip.
13. 6inch kits only: Attach the opposite end of the new brake line to the caliper with the OE banjo bolt and one new crush washer on each side of the fitting. Torque the banjo bolt to 18 ft-lbs.
14. 6inch kits only: Repeat brake line installation on the passenger's side of the vehicle.
15. 4 inch kits only: Disconnect the brakeline hardware from the strut tower and pull the brakeline through the mount. Cut a slot to allow the brakeline to be removed from the frame. If you do not wish to cut on the frame, the line can be disconnected and reconnected after it is removed from the frame. If the line is disconnected the brakes must be bled at the end of the installation **Figure 2b**

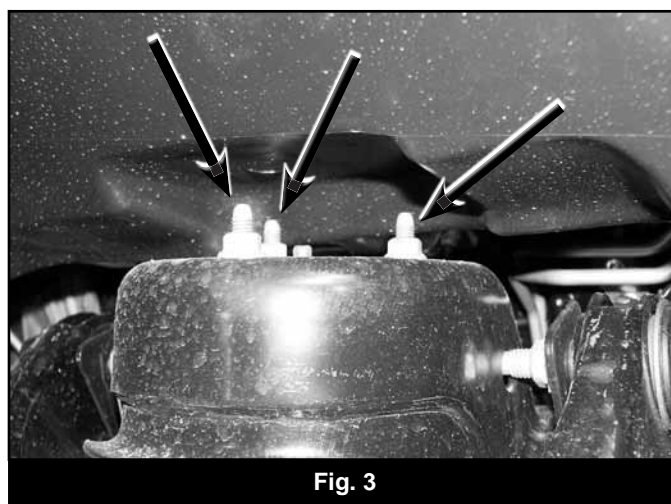


Fig. 2b

16. 4 inch kits only: Attach the provided brake line relocation bracket to the frame where the original line mounted. The brakeline bracket will offset towards the rear of the vehicle. Torque the factory bolt to 10 ft-lbs and the 1/2" bolt to 50 ft-lbs.
17. 4 inch kits only: Carefully reform the hardline to gain additional length. Attach to the relocation bracket with 1/4" hardware **Figure 2c**



18. 4 inch kits only: Repeat brake line relocation bracket installation on the passenger's side of the vehicle
 19. Remove the brake caliper anchor bracket bolts 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.*
20. Remove the hub axle nut. Retain nut.
 21. Loosen but do not remove the lower control arm bolts.
 22. Disconnect the CV axles from the differential by carefully prying CV out at the differential to disengage the internal retaining clip. Pry the shaft out just enough to release the clip and leave the axle on the differential at this time.
 23. Support the lower control arm with a hydraulic jack. Remove the three strut-to-frame mounting nuts (**Fig 3**).
⚠ *DO NOT loosen the middle strut nut.*



24. Loosen the strut-to-lower control arm hardware (**Fig 4**). Remove the nut from the bolt and leave the bolt in place to temporarily retain the strut to the lower control arm. Retain the nut.

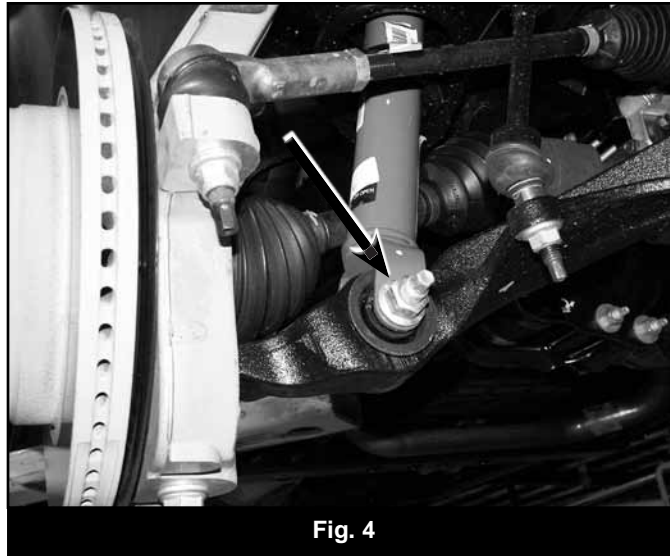


Fig. 4

25. 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.
 26. Remove the upper ball joint nut. Lower the jack enough to allow removal of the strut. Remove the lower strut bolt and remove the strut from the vehicle. Mark the strut from the appropriate side (driver's or passenger's). Retain mounting bolt and upper ball joint nuts.
 27. Continue to lower the jack allowing the knuckle/CV axle and lower control arm to swing down. Slide the CV axle off of the differential. Remove the CV axle from hub.
 28. Remove the lower ball joint nut and remove the knuckle from the lower control arm. Retain the lower ball joint nut.
 29. 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.*
30. Install the hubs in the corresponding new knuckles (01230, 01231) and fasten with the stock mounting bolts (Fig 5). 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.



Fig. 5

31. Remove the lower control arms from the frame. Retain hardware.
32. Make indexing marks on the front drive shaft and differential input flange for realignment later. Remove the four bolts and disconnect the drive shaft from the differential. Discard mounting bolts.
33. Remove the four bolts mounting the OE rear crossmember to the frame rails and remove the crossmember from the vehicle. Discard the crossmember and the hardware.

34. Disconnect the vent hose and wiring from the differential.
35. Using a jack, support the differential. Loosen and remove the two forward-most differential mounting bolts on the driver's side (Fig 6). Loosen but do not remove the three rear driver's side bolts (Fig 7) and the two passenger's side bolts (Fig 8).

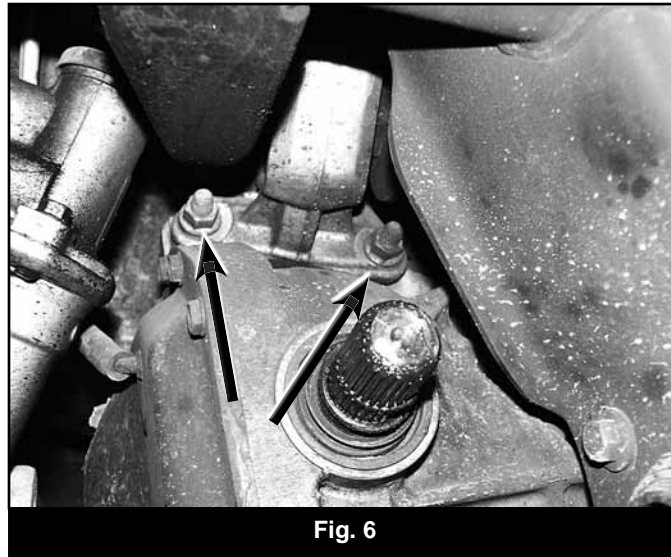


Fig. 6

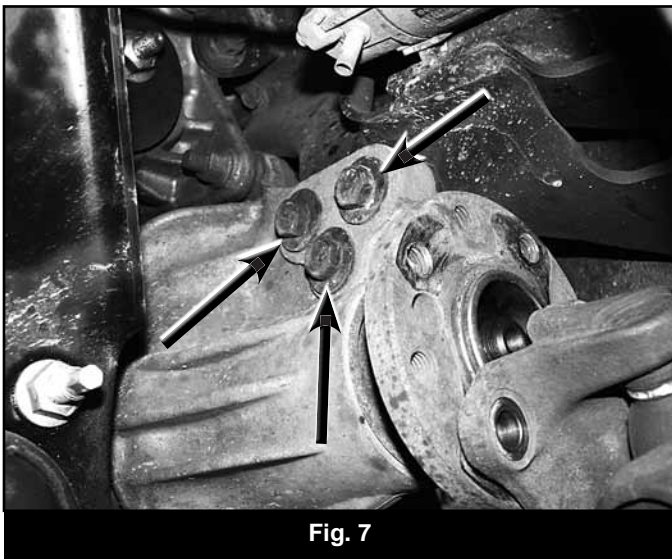


Fig. 7



Fig. 8

36. With the differential securely supported, remove the remaining bolts and lower the differential from the vehicle.
37. The driver's side rear lower control arm pocket must be trimmed to provide clearance for the differential in its lowered position. Measure inward from the center of the outer OE crossmember mounting hole 9/16" and mark. Repeat on the opposite side of the pocket. Make a continuous line connecting the two marks over the top edge of the pocket. Trim the pocket on the line with a saw-zall or cut off wheel. Paint any exposed metal to prevent corrosion (Fig 9).

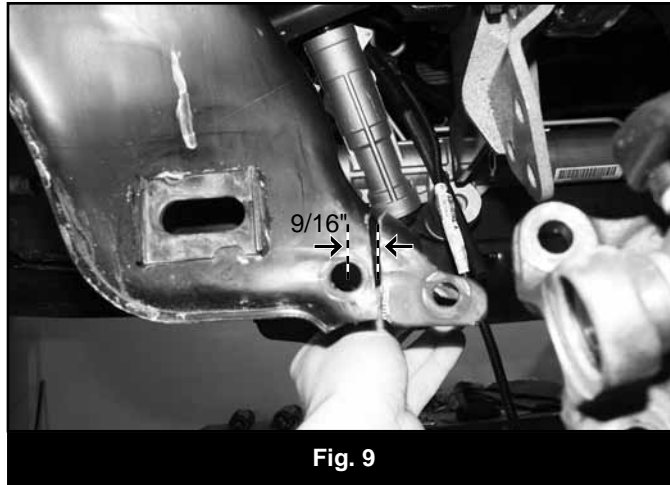


Fig. 9

38. Locate the front differential wiring harness. Connect the provided extension harness. Leave the provided extension tied up as it was supplied as it will give adequate length to attach to the differential once it is lowered.
39. 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) '08 models will use OE hardware. Leave hardware loose. (Fig. 10)

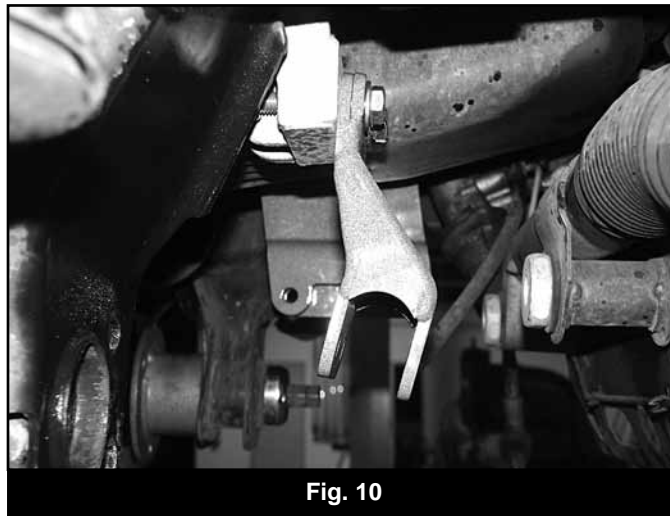


Fig. 10

40. 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. (Fig. 11)

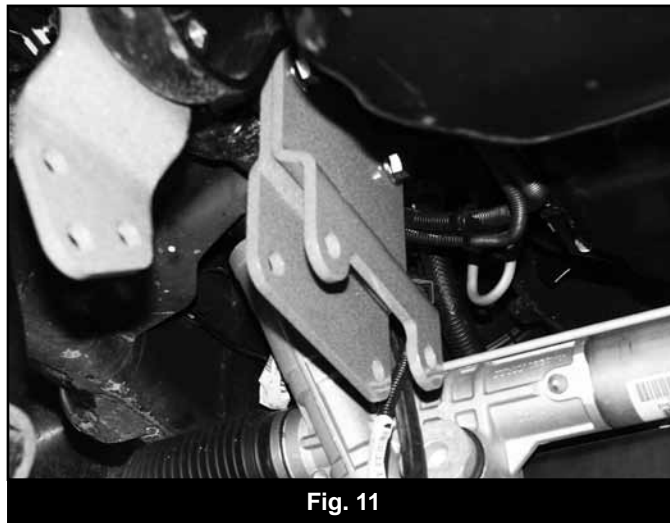
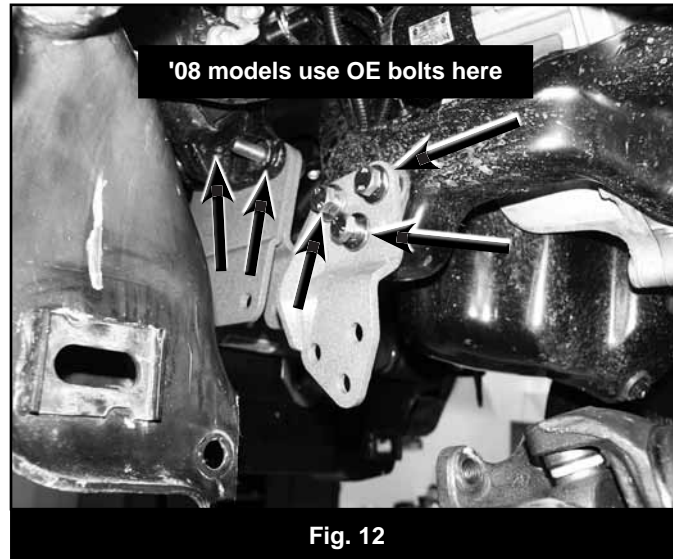


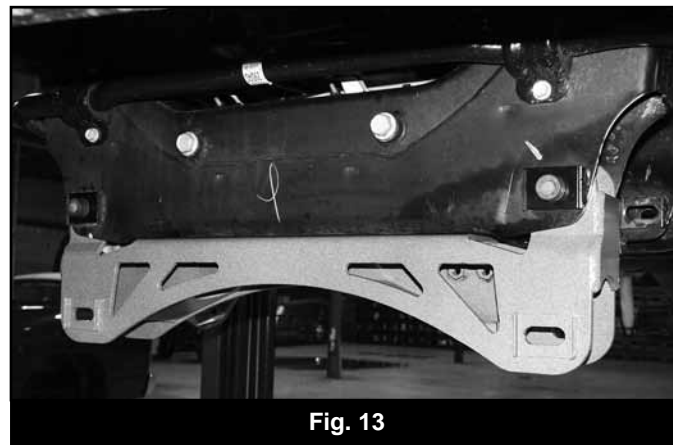
Fig. 11

41. Install the driver's side rear differential drop bracket (01238) to the frame with three 12mm x 30mm bolts and ½" SAE washers (BP #617) into the existing welded nuts on the frame. (Fig. 12) The bracket will offset toward the outside of the vehicle with the gusset to the front. Leave hardware loose.



42. Using a jack (and an assistant to aid in balancing) raise the differential up to the new brackets.
43. Attach the differential to the driver's side front and rear brackets with ½" x 2-1/2" bolts, nuts and washers (BP #617). Attach the passenger's side to the differential with ½" x 2-3/4" bolts, nuts and ½" SAE washers (BP #617). Leave all differential hardware loose.
44. Torque all 14 differential mounting bolts. Torque the ½" hardware to 65 ft-lbs and the 12mm hardware to 50 ft-lbs.
45. Attach the breather hose and wiring harness extension to the differential.
46. Install the new front crossmember (01295) in the OE front lower control arm pockets (Fig 13) and loosely fasten with the provided 18mm x 150mm bolts, nuts in conjunction with the provided rectangle cam slot washers (01264).

ⓘ Note: The offset in the crossmember goes to the front, bolts run from front to rear.



47. Install the new rear crossmember (01296) in the OE rear lower control arm pockets and loosely fasten with the provided 18mm x 150mm bolts, nuts in conjunction with the provided rectangle cam slot washers (01264). Run the bolts from front to rear and leave loose at this time. (Fig. 14)

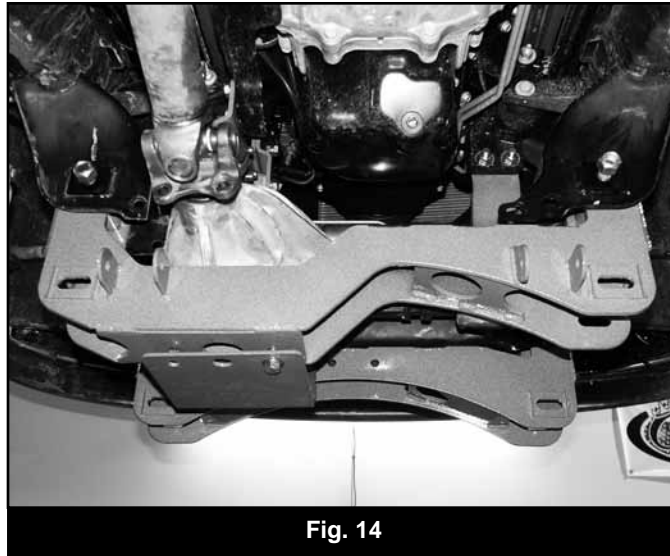
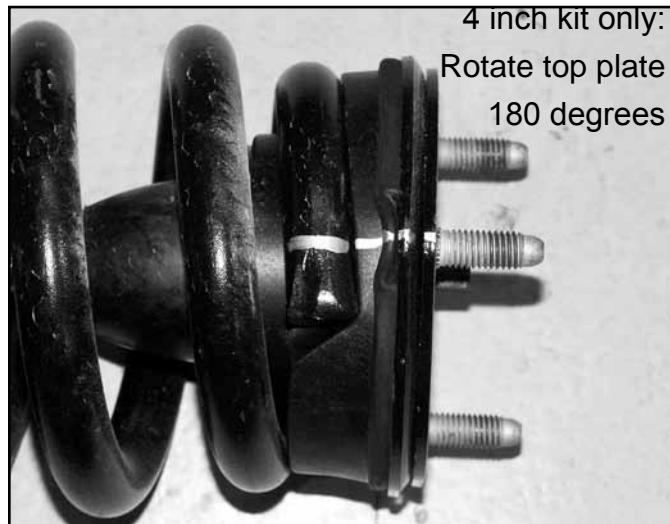


Fig. 14

48. Install the new differential skid plate to the front crossmember with ½" x 1-1/4" bolts and ½" SAE washers (BP #811) into the welded nuts in the crossmember. Install the back of the skid plate to the rear crossmember with ½" x 1-1/4" bolts and ½" SAE washers (BP #811) into the welded nuts in the crossmember. Leave hardware loose.
49. Install the lower control arms in the front and rear crossmembers. Attach the control arms to the crossmembers with the OE cam bolts, washers and nuts running from front to rear. Leave hardware loose.
50. With the lower control arms installed, torque the 18mm crossmember mounting bolts to 220 ft-lbs. Torque the ½" differential skid plate hardware to 65 ft-lbs.
51. Install the provided drive shaft spacer (01240) 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 #811). Use loctite on the bolt threads and torque to 55 ft-lbs.
52. 4 inch kit only: Rotate the top of the strut 180 degrees. This will change the position of the coil bow to give enough clearance to the frame rail. Compress the coil slightly to allow the top plate, and only the top plate to rotate around 1/2 turn.



53. Install the provided strut spacers (01267 - 6in kit, 02267 - 4in kit) on the struts with the original strut mounting hardware. Torque nuts to 30 ft-lbs.
54. Loosely install the strut assemblies on the appropriate sides of the truck with the provided 10mm nuts and washers (BP #811) on the strut spacer studs.
55. 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 strut to the lower control arm with the original hardware. Push the CV axle all the way onto the differential output to seat the internal retaining clip.

56. Support the lower control arm with a hydraulic jack and attach the knuckle to the upper ball joint with the OE nut.
57. 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. Torque the upper strut-to-frame nuts to 30 ft-lbs.
58. Repeat knuckle/CV installation on passenger's side.
59. Install the brake rotor and caliper on the knuckle/hub. Torque the OE caliper bolts to 130 ft-lbs. Use loctite on the caliper bolts.
60. Remove the OE tie rod ends. Trim 3/8"-7/16" from the male thread on the tie rod end. To make sure enough has been removed, thread the jam nut flush with the last thread followed by the new tie rod end. There should be no visible threads. Take care not to trim too much off from the male threads.
61. Attach the tie rod ends to the new steering knuckles with the included nut. Torque to 55 ft-lbs. Securely lock off the jam nut. It is recommended to have approximately 2 threads left exposed past the jam nut for ease of alignment adjustment.
62. If equipped, connect the ABS wire at the frame.
63. Route the brake and ABS lines around the back side of the knuckle and use zip ties to secure them out of the way of any moving or rotating parts. Make sure the lines cannot get pinched between the knuckle and the coil spring.
64. Apply Loctite to the OE sway bar link threads and install the provided link extension (911114). Tighten the extension securely on the link.
65. Attach the sway bar link extensions to the sway bar with the OE bushings, washers and new 10mm bolts with loc-tite (Fig 15). Tighten the bolt until the bushings begin to swell. It is not necessary to bottom out the bolt, Tighten enough to slightly deform the bushings.



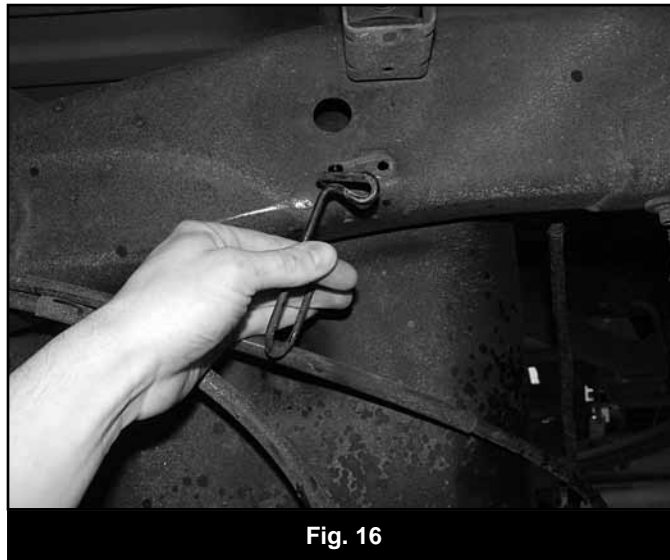
Fig. 15

66. Reinstall front wheels. Torque to OE specifications, see owner's manual.
67. Lower the vehicle to the ground and bounce the front to settle the suspension.
68. Center the lower control arm cams and torque lower control arm hardware to 125 ft-lbs. Torque the strut-to-lower control arm bolt to 125 ft-lbs.

69. If the front brakelines were disconnect, the front brakes must be bled before driving vehicle.
70. Check all fasteners for proper torque. Recheck all fasteners after 500 miles and at regularly scheduled maintenance intervals.
71. A complete front end alignment is required.

Rear Installation

72. Block the front wheels for safety. Raise the rear of the vehicle and support the frame with jack stands.
73. Remove the wheels.
74. Support the axle under the differential with a hydraulic jack.
75. Remove the OE shocks. Retain the mounting hardware.
76. Remove the parking brake cable retaining ring from the driver's side frame rail (Fig 16). Remove the driver's side parking brake cable from the ring and reinstall the ring on the frame with the passenger's side cable still in it.
77. Disconnect brakeline bracket from frame rail.




Leaf Spring Installation

78. Remove the passenger's side u-bolts. Lower the axle from the leaf spring.
79. Remove the spring-to-frame pivot bolt and the spring-to-shackle pivot bolt and remove the spring from the vehicle. Retain mounting hardware.
80. 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.
81. 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.
82. 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

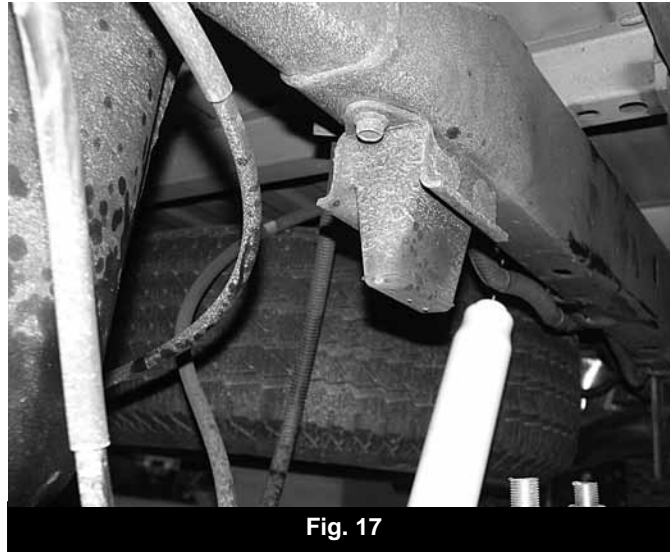
83. Remove the passenger's side u-bolts. Lower the axle from the leaf spring enough to install the provided 4" lift block.

 *Note: Take care not to over-extend any wires or hoses. Make adjustments where necessary.*

84. Install the 4" block (6inch front kit), 2" block (4inch front kit) 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.
85. Repeat installation on the driver's side of the vehicle.

Both Lift Options

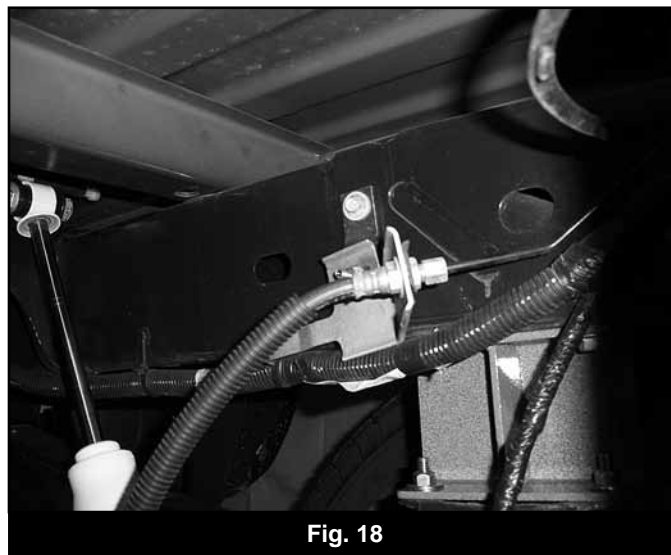
86. 6 inch kit only: Remove the two bolts mounting each of the rear OE bump stops to the frame (Fig 17). Retain hardware.



87. 6inch kit only: 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.

88. 6 inch kit only: 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.

89. Install rear brakeline relocation bracket (01716) with OE bolt into frame and attach 1/4" nut and washer on new bracket (BP#704). (Fig 18)



90. Install the new BDS shocks with the OE hardware.

91. Install the wheels.

92. Lower the vehicle to the ground and bounce the vehicle to settle the suspension.

93. Torque the u-bolts to 100-120 ft-lbs.

94. If installing new rear springs, torque spring bolts to 95 ft-lbs.

95. Check all hardware for proper torque.

96. Check all hardware after 500 miles.

NOTICE TO DEALER/INSTALLER

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

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

Sold/Installed by: