102 S. Michigan Ave., Coldwater, MI 49036
Phone: 517-279-2135
Web/live chat: www.bds-suspension.com
E-mail: tech@bds-suspension.com

Part#: **013012, 013613**
Product: **4", 6" 4-Link Suspension System**
Application: **2008 Ford Super Duty 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 — 4" SYSTEM

Part #	Qty	Description
033411	2	Coil Spring (Diesel)
02033	1	Track Bar Bracket
02019	2	Cam Washer
01253	1	Sway Bar Drop Bracket (drv)
01254	1	Sway Bar Drop Bracket (pass)
422	1	Bolt Pack
	4	*3/8"-16 x 1-1/4" bolt grade 8 yellow zinc*
	4	*3/8"-16 prevailing torque nut yellow zinc*
	8	*3/8" USS flat washer thru-hardened yellow zinc*
B8100G5	2	8mm-1.25 x 100mm Bolt
W56SAE	2	5/16" SAE Flat Washer
01000	2	Bump Stop Spacer
22501	2	Brake Hardline Extension
01055	2	Front Brakeline Bracket
083404	1	Pitman Arm
01528	1	Stabilizer Bracket
P01385	1	Mounting Stud
P00932	1	Mounting Stud
02026	1	4-Link Bracket
02027	1	4-Link Bracket
01046	1	Fuel Module Spacer
3527RB	8	Bushing
432	1	Bolt Pack
	14	*1/2"-13 x 1-1/2" bolt grade 8 yellow zinc*
	1	*1/2"-13 x 1" bolt grade 8 yellow zinc*
	14	*1/2"-13 prevailing torque nut yellow zinc*
	28	*1/2" SAE flat washer thru-hardened yellow zinc*
	4	*3/4"-10 x 5-1/2" bolt grade 8 yellow zinc*
	4	*3/4"-10 prevailing torque nut yellow zinc*
	8	*3/4" SAE flat washer thru-hardened yellow zinc*
	2	*Wire Clip*
	2	*1/4"-20 x 3/4" bolt grade 5 clear zinc*
	2	*1/4"-20 prevailing torque nut clear zinc*
	4	*1/4" SAE flat washer clear zinc*
60107	4	90 Degree Grease Zerk
342701	1	Loctite
02024	2	Upper 4-Link Arm
02023	2	Lower 4-Link Arm
7	4	1.00 x 0.120 x 3.25 Sleeve
099000	2	Zip Tie

PARTS LIST — 6" SYSTEM

Part #	Qty	Description
02033	1	Track Bar Bracket
02019	2	Cam Washer
01044	1	Sway Bar Drop Bracket (drv)
01045	1	Sway Bar Drop Bracket (pass)
422	1	Bolt Pack
	4	*3/8"-16 x 1-1/4" bolt grade 8 yellow zinc*
	4	*3/8"-16 prevailing torque nut yellow zinc*
	8	*3/8" USS flat washer thru-hardened yellow zinc*
B8125G5	2	8mm-1.25 x 125mm Bolt
W56SAE	2	5/16" SAE Flat Washer
02018	2	Bump Stop Spacer
22502	2	6" Brake Hardline Extension
01049	2	Front Brakeline Bracket
083404	1	Pitman Arm
01528	1	Stabilizer Bracket
P01385	1	Mounting Stud
P00932	1	Mounting Stud
02026	1	4-Link Bracket
02027	1	4-Link Bracket
01046	1	Fuel Module Spacer
3527RB	8	Bushing
432	1	Bolt Pack
	14	*1/2"-13 x 1-1/2" bolt grade 8 yellow zinc*
	1	*1/2"-13 x 1" bolt grade 8 yellow zinc*
	14	*1/2"-13 prevailing torque nut yellow zinc*
	28	*1/2" SAE flat washer thru-hardened yellow zinc*
	4	*3/4"-10 x 5-1/2" bolt grade 8 yellow zinc*
	4	*3/4"-10 prevailing torque nut yellow zinc*
	8	*3/4" SAE flat washer thru-hardened yellow zinc*
	2	*Wire Clip*
	2	*1/4"-20 x 3/4" bolt grade 5 clear zinc*
	2	*1/4"-20 prevailing torque nut clear zinc*
	4	*1/4" SAE flat washer clear zinc*
60107	4	90 Degree Grease Zerk
342701	1	Loctite
02024	2	Upper 4-Link Arm
02023	2	Lower 4-Link Arm
7	4	1.00 x 0.120 x 3.25 Sleeve
099000	2	Zip Tie

INSTALLATION INSTRUCTIONS

Front Installation

1. Park the vehicle on a clean, flat surface and block the rear wheels for safety.
2. Disconnect the front track bar from the frame mount. Retain hardware.
3. Raise the front of the vehicle and support under the frame rails with jack stands. **Note:** *As a result of the location of the long radius arm suspension, support locations are limited. Use your best judgment while supporting the vehicle with sufficient strength stands at appropriate locations. The radius arms will need to move freely during this installation.*
4. Remove the front wheels.
5. Support the front axle with a hydraulic jack.
6. Disconnect the front brake line brackets from the axle and frame (Fig 1). Retain hardware.

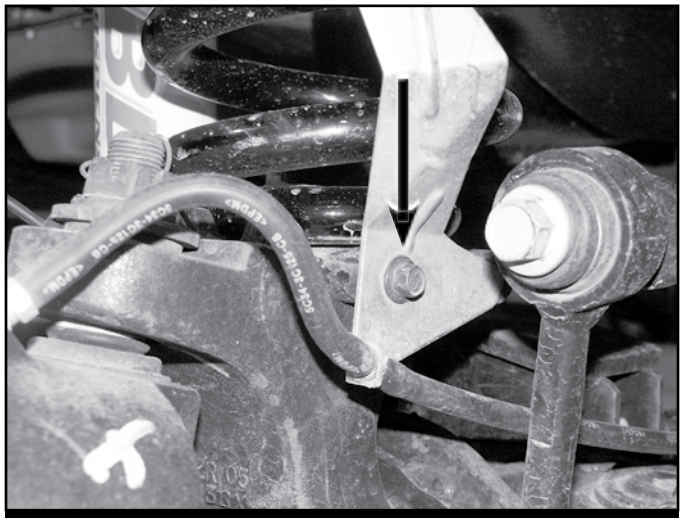


Fig. 1

7. Free the hub vacuum lines from the axle (Fig 2, 3).

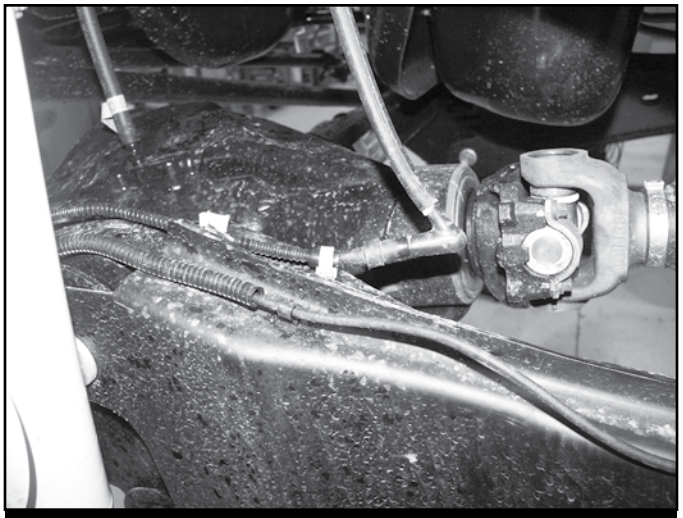


Fig. 2

Fig. 3

8. Disconnect the sway bar end links from the sway bar. Retain hardware.
9. Remove the OE shock. Retain lower mounting hardware.
10. Remove the ABS line from the retaining tab on the radius arm (Fig 4). Carefully pull the plastic retaining clip free from the radius arm (Fig 5).

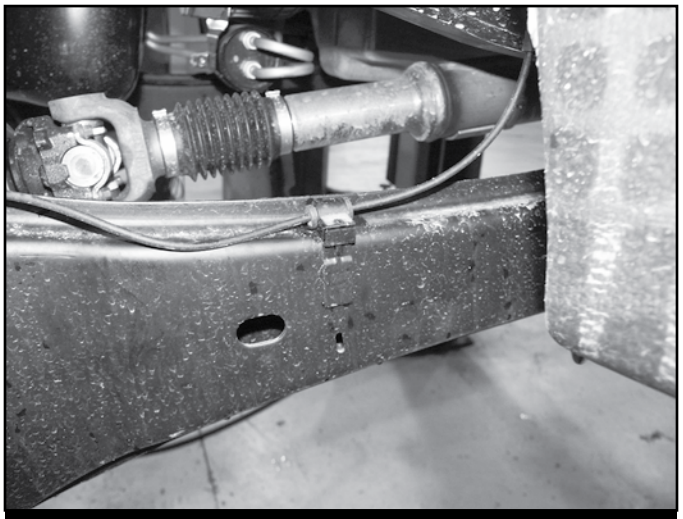


Fig. 4

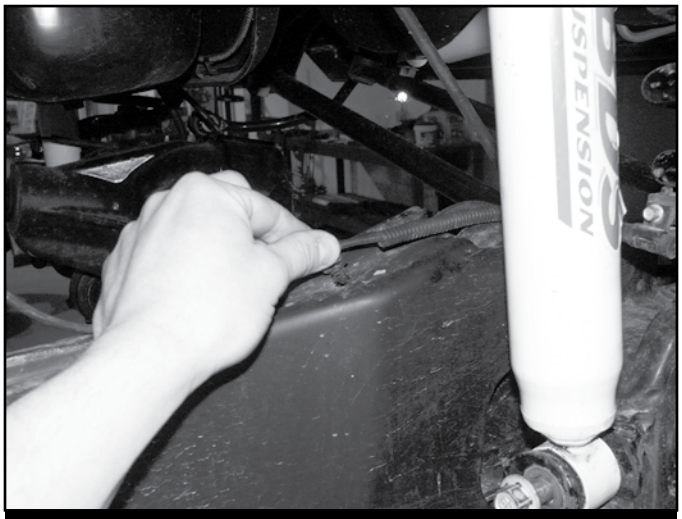


Fig. 5

11. Disconnect the OE steering stabilizer from the drag link and the frame mount. Remove the two nuts (and bolt tab) mounting the stabilizer frame mount and remove it from the vehicle. Retain the frame bracket mounting hardware.
12. Install the new steering stabilizer bracket to the frame using the original hardware (Fig 6). Mount the stabilizer bracket to the back side of the frame crossmember in the original mounting holes. Torque hardware to 55 ft-lbs.
13. Install the provided shock stud in the new stabilizer bracket up through the bracket so that the stud points down (Fig 6). Torque to 50 ft-lbs.

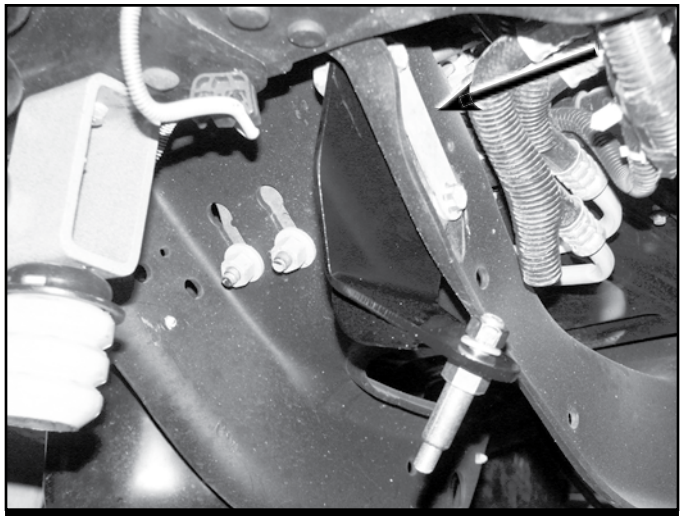


Fig. 6

14. Disconnect the (5) bolts mounting the OE track bar bracket to the frame. Remove bracket and retain hardware.
15. Disconnect the drag link from the pitman arm. Retain hardware. Free the drag link from the pitman arm with a pickle fork.
16. Remove the pitman arm nut. Note the indexing of the pitman arm in relation to the steering sector shaft and remove the pitman arm from the steering box using the appropriate puller.
17. Remove all of the dri-lock compound on the threads of the OE nut and steering sector shafts. This is important to ensure that the new thread lock compound will adhere properly.
18. Apply a bead of the supplied thread lock all the way around the threads of the OE nut.
19. Install the new pitman arm (indexed the same as the OE) and fasten with the OE nut. Torque the nut to 350 ft-lbs.
20. Lower the axle until the OE coil springs are free and remove the springs from the vehicle. Retain the upper spring isolator for use with the new springs. **Note:** *Do not over extend the brake lines.*
21. Install the new track bar bracket using the stock mounting hardware as it was removed (Fig 7). Torque all (5) mounting bolts to 129 ft-lbs.

Fig. 7 (from front)

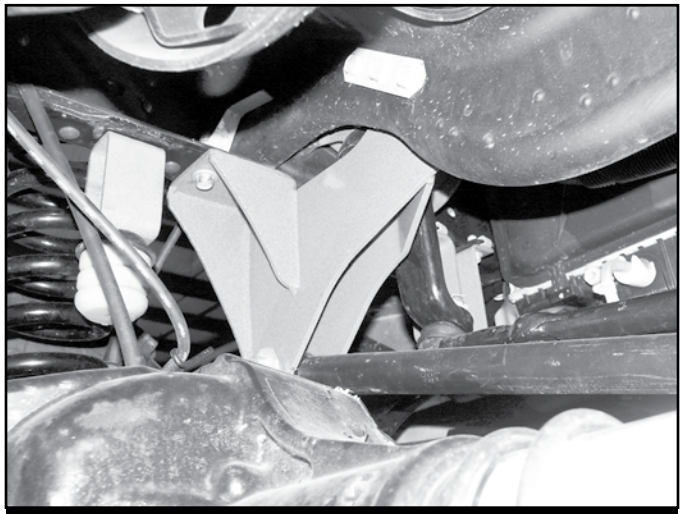


Fig. 7 (from rear)

22. Pull the OE front bump stops free from the bump stop cups and remove the bolt mounting the cup to the frame (Fig 8).

Fig. 8

23. Position the cup on the provided bump stop extension. The alignment tab on the bump stop cup will fit in the second hole in the extension.

24. Install a provided 8mm x 100mm bolt and 5/16" SAE washer through the cup extension and attach to the frame in the original hole. Use Loctite on the threads and torque to 20 ft-lbs (Fig 9).

Fig. 9

25. Loosen the four radius arm-to-axle mounting bolts but do not remove. Once again, ensure that the front axle is well supported.

26. Starting with the passenger's side, remove the upper radius arm-to-axle mounting bolt. Remove the radius arm-to-frame bolt as well. This will allow the radius arm to swing down away from the frame. Remove the lower radius arm-to-axle bolt and remove the arm from the vehicle. Retain hardware.

27. Lightly grease and install the provided bushings (3527RB) and sleeves (7-1) in the four new control arms (02023, 02024).

28. Install the provided 90° grease fittings in the threaded holes at the bushing end of the control arms. When installed the fittings should point toward the body of the control arm. (Fig. 10)

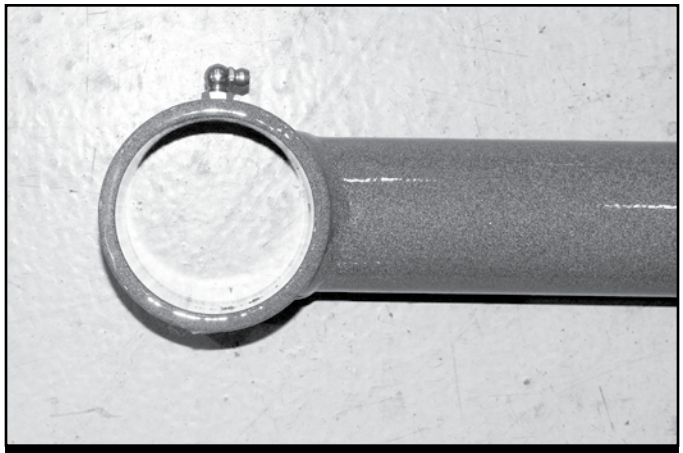


Fig. 10

29. Locate the seven rivets that attach the OE radius arm mounting bracket to the frame. There will be four on the outside and three in the inside of the bracket fastening the bracket to the bottom of the frame. (Fig. 11)

Fig. 11

30. Remove the seven rivets with a grinder, drill, air chisel or combination of these tools. Do not use a torch. The undercoating used on the frame is highly flammable. Also, the fuel system lines run inside of the driver's side frame rail.

31. With the rivets removed, free the radius arm bracket from the frame. Ensure that all of the rivets are removed from the holes in the frame.

32. Place the new passenger's side 4-Link bracket (02027) up to the frame and align the existing rivet holes with the corresponding holes in the bracket. Attach the bracket with ½" x 1-1/2" bolts, nuts and ½" SAE flat washers from bolt pack #432. Torque ½" hardware to 90 ft-lbs. (Fig. 12, 13)

Fig. 12

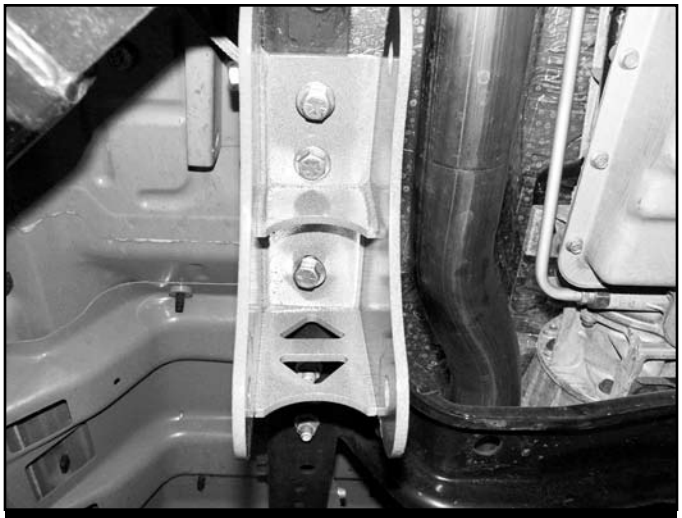


Fig. 13

33. Install the assembled upper control arm in the new frame bracket and fasten with a ¾" x 5-1/2" bolt, nut and ¾" SAE flat washers from bolt pack #432. The two tabs on the control arm go up. Leave hardware loose. (Fig. 14)

Fig. 14

34. Attach the axle end of the control arm with the original hardware. Leave hardware loose. (Fig. 15)

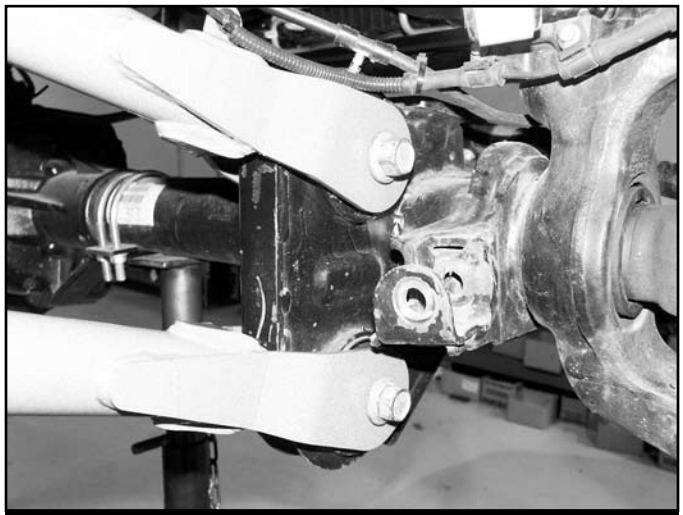


Fig. 15

35. Install the new lower control arm in the new frame bracket with a ¾" x 5-1/2" bolt, nut and ¾" SAE flat washers. Install arm so that the grease fitting is up. Leave hardware loose.

36. With the axle well supported, disconnect the driver's side radius arm from the axle. Retain hardware.

37. Attach the new passenger's side lower control arm to the axle with the original hardware. Leave hardware loose.

38. If equipped, remove the 3 nuts mounting the fuel module to the inside of the driver's side frame rail above the radius arm bracket (Fig 16A). Remove the fuel lines from the clip just ahead of the fuel module on the inside of the frame and pull the module in, away from the frame (Fig 16B). Retain hardware.

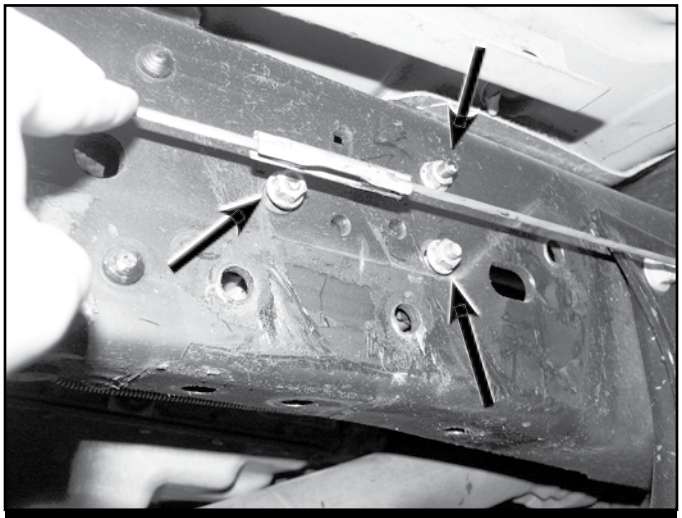


Fig. 16A

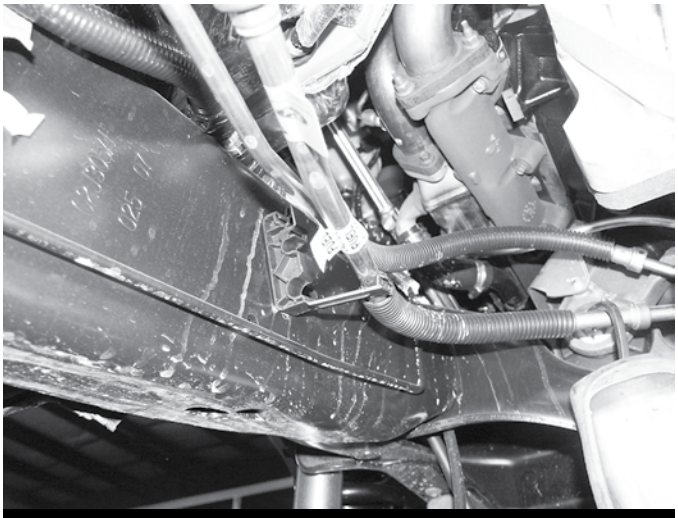


Fig. 16B

39. Repeat the frame bracket and control arm installation procedure on the driver's side of the vehicle. When mounting the new bracket, use a ½" x 1" bolt in the 2nd (from the front) outside mounting hole (Fig 17A). This shorter bolt is necessary to properly clear the fuel module when it is reinstalled. Note: Use the nut that was removed from the radius arm-to-frame bolt for the upper control arm-to-axle mount bolt when installing the new control arm. The OE nut in this position is welded to the radius arm.

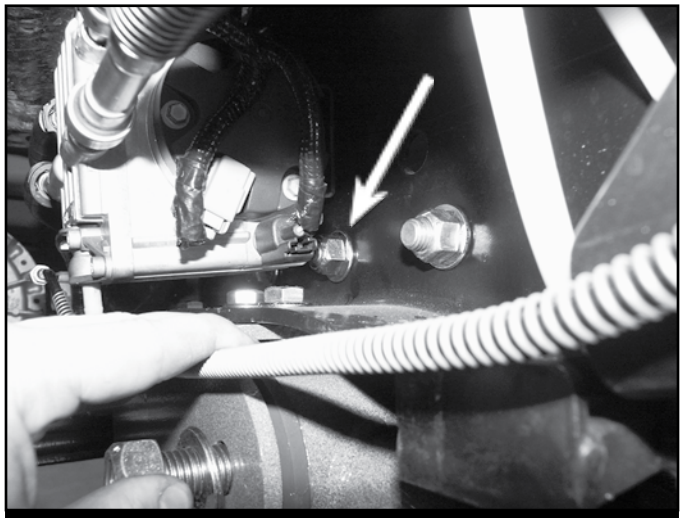


Fig. 17A

40. Install the provided fuel module spacer plate over the 3 studs of the fuel module bracket and reinstall the module in the original holes with the factory nuts (Fig 17B). Torque nuts to 20 ft-lbs.

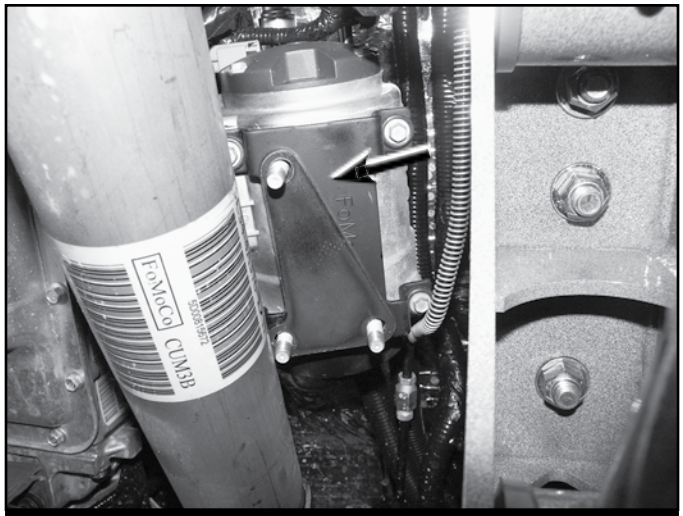


Fig. 17B

41. With all of the control arms attached, reinstall the fuel junction block (if removed) on the driver's side frame rail. Torque hardware to 20 ft-lbs.

42. Attach the plastic ABS wire clip to the front tab on the new upper control arm. Secure the wire to the rear tab with the provided wire clip and 1/4" x 3/4" bolt, nut and 1/4" USS washers. Torque 1/4" hardware to 10 ft-lbs. (Fig. 18)

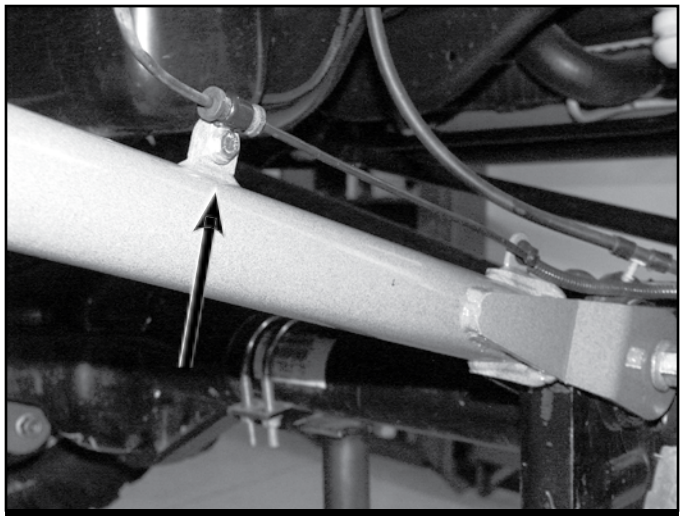


Fig. 18

43. Install the new coil springs in conjunction with the OE top isolator. Rotate the springs so that they seat in the bottom coil perch properly.

44. Install the new shocks using the original lower mounting hardware and the provided upper mounting hardware. Torque the lower bolt to 100 ft-lbs and the upper until the bushings begin to swell.

45. Note the orientation of the front sway bar (top verses bottom). Disconnect the sway bar from the frame and remove from the vehicle. Retain hardware.

46. Install the provided sway bar drop bracket to the original sway bar frame mounting locations with the original hardware. Mount the drop bracket with the open face toward the inside of the vehicle and the bracket offset toward the front. Torque hardware to 30 ft-lbs.

47. Attach the sway bar to the new drop brackets in the correct orientation with the 3/8" hardware from bolt pack #422. Torque hardware to 30 ft-lbs (Fig 19).

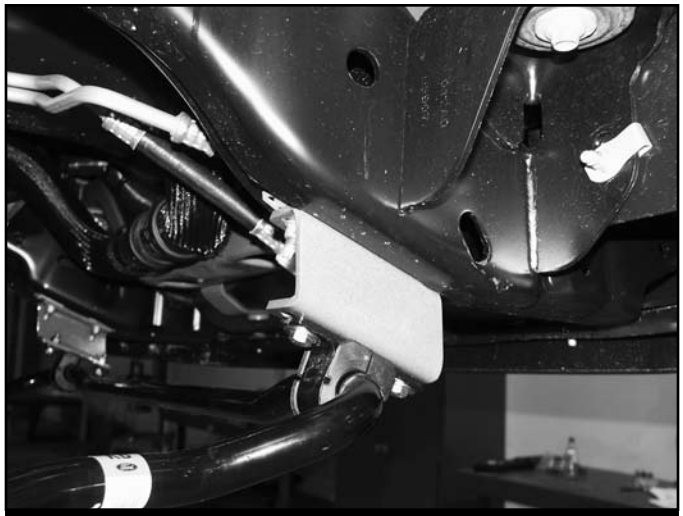


Fig. 19

48. Install the sway bar link ends to the sway bar and secure with the OE hardware. Torque to 90 ft-lbs.
49. Install the provided brake line bracket to the frame with the original bolt and mounting hole. Torque bolt to 20 ft-lbs.
50. Separate the OE rubber brake line from the hard line. Install the provided hard line extension on the OE hard line and tighten the fitting securely.
51. Remove the brake line clip and factory brake line bracket from the rubber line. Retain the clip and discard the bracket.
52. Run the end of the rubber line through the new bracket and attach to the hard line extension. Tight the fitting securely and retain the line to the bracket with the OE clip. (Fig 20)

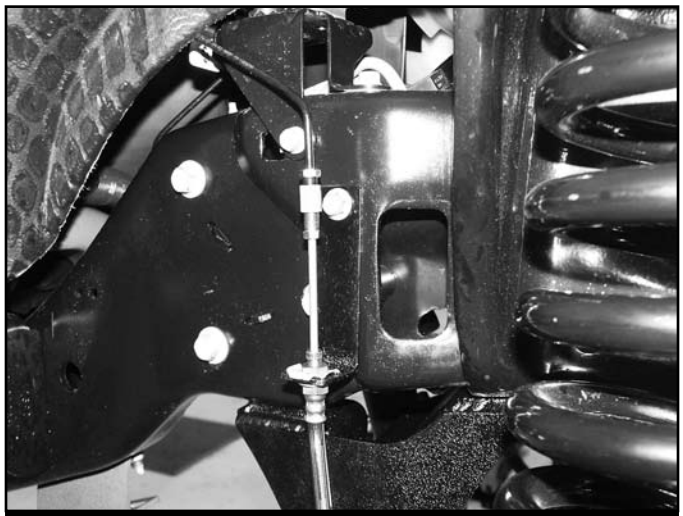


Fig. 20

53. Properly bleed the brake system of air and top off the brake fluid reservoir with the proper type of fluid (see owners manual).
54. Install the wheels and lower the vehicle to the ground.
55. Attach the track bar to the new bracket with the OE hardware. Turn the steering wheels to aid in aligning the track bar in the bracket. Install the provided cam washers between the alignment tabs on the bracket. Install cam washers so the hole is closer to the driver's side for a 4" lift (Fig 21) and the passenger's side for a 6" lift. Torque hardware to 406 ft-lbs.
56. Torque all six radius arm bolts to 250 ft-lbs.

Fig. 21

REAR INSTALLATION

57. Raise the rear of the vehicle and support with jack stands under the frame rails just ahead of the spring hangers.
58. Remove the wheels.
59. Support the axle with a hydraulic jack.
60. Remove the OE shocks. Retain all mounting hardware.

4" Block Kit Only

61. Disconnect the passenger's side spring u-bolts.
62. Lower the axle enough to place the provided 4" lift block between the axle and OE block.

Note: to eliminate stacking blocks, use BDS #013518 or BDS #013519 and remove factory block for a level stance.

63. Ensure that the mounting surfaces are clean of dirt and corrosion and install the new block so that the short end is toward the front. Also make certain that the OE block is on top of the new block and that the bump stop wing is pointing inward.
64. Raise the axle to engage all of the block/spring alignment pins. Fasten the entire assembly with the provided u-bolts, high nuts and washers. Snug but do not torque the u-bolts at this time.
65. Repeat block installation of the driver's side. Take care not to over extend the brake lines. **Note:** *You may disconnect the parking brake mounting tab on the spring plate before removing the u-bolts and reattach after the installation is complete* (Fig 15).

Leaf Spring Kit Only

66. Disconnect the passenger's side u-bolts and lower the axle from the spring.
    4" Kit: Remove the OE block, it will not be reused.
    6" Kit: Retain OE block to be installed with new spring.
67. Loosen and remove the front spring-to-frame and rear shackle-to-frame bolts and remove the spring from the vehicle.
68. Remove the shackle from the OE spring and loosely install it on the new rear spring. Be sure that the shackle is oriented on the new spring identical to the old. The shackles mount of the longer end of the spring (opposite of the end marked with "FRT").
69. Install the new spring in the vehicle with the OE bolts. Leave hardware loose. All of the spring pivot bolts will be torqued with the weight of the vehicle on the springs.
70. Remove all dirt and corrosion from the axle spring pad and raise the axle to the spring while aligning the center pin with the center pin hole. Fasten the spring with the provided u-bolts. Snug but do not torque u-bolts at this time.
71. Repeat the procedure on the driver's side. Disconnect the parking brake cable bracket from the spring plate and retain hardware (Fig 22). Take care not to over extend the brake lines.

Fig. 22

72. Reattach parking brake cable bracket to the spring plate. If more slack is needed remove the cable from the rear-most cable ring on the frame rail (Fig 23).

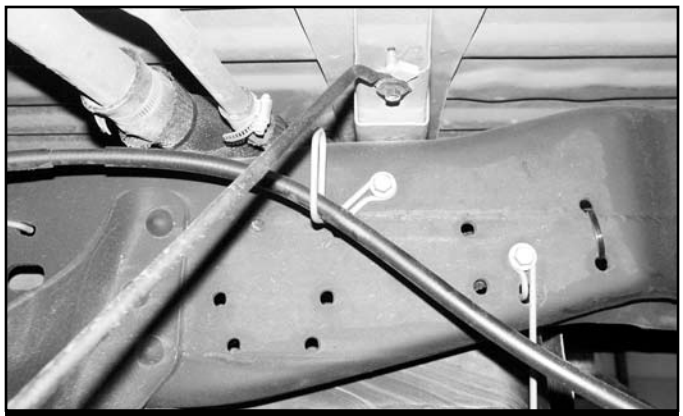


Fig. 23

Block and Leaf Springs Kits

73. Install the new shocks with the original mounting hardware.
74. Install wheels and lower the vehicle to the ground.
75. With the weight of the vehicle on the axle, torque the u-bolts to 130-150 ft-lbs.
76. Check all hardware for proper torque.
77. Adjust steering wheel.
78. Adjust headlights
79. Check 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:

Shock Absorber

Installation Instructions

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

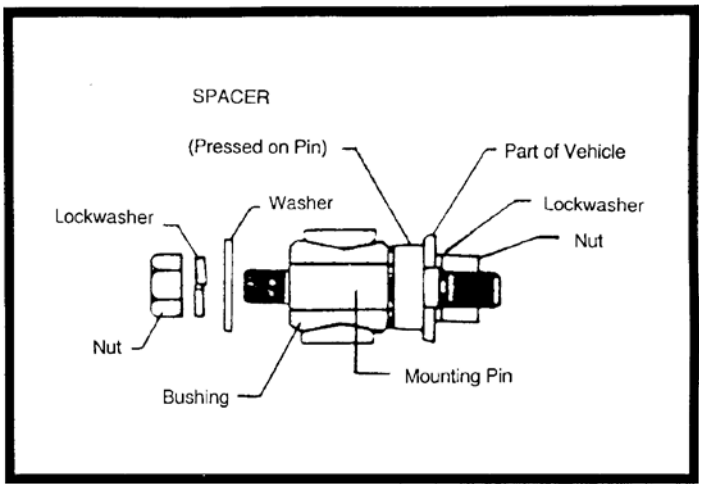
LIMITED LIFETIME WARRANTY

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

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

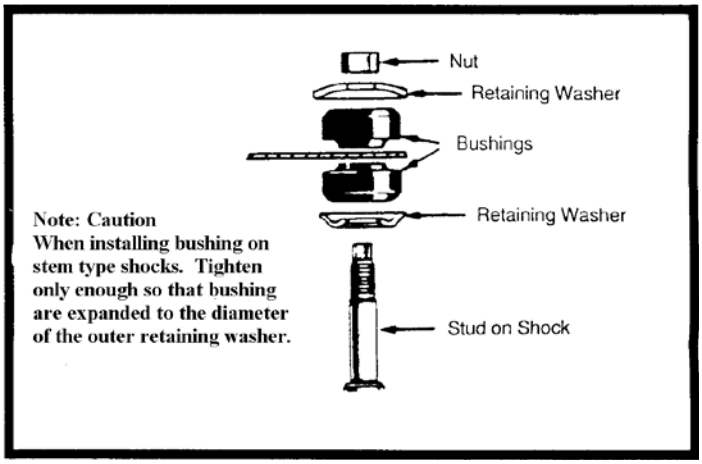
INSTALLATION INSTRUCTIONS

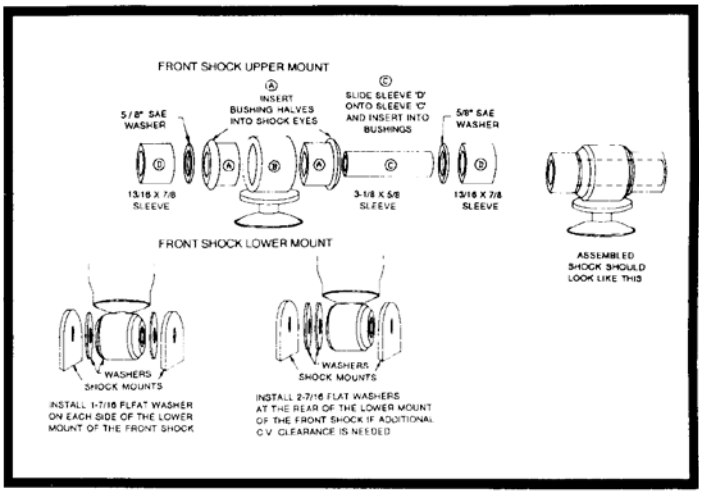
1. **Note: Please read instructions thoroughly before installing shock absorber.**
2. Remove old shock absorber from vehicle. Note any spacers, washers, sleeves or other hardware and note their location. Compare the existing hardware with the supplied hardware. Always use new hardware wherever possible. Due to the variety of applications, you may not use any or all of the hardware supplied. You may need to use some of the original hardware. If any of the original hardware is damaged, corroded, bent or broken it must be replaced.
3. If installing dust boot, do so at this time. **Note: The use of a lubricant like dish soap on the inside of the boot will ease installation.** Make sure the washer at the top of the shock is fully seated in the boot all the way around. Secure the bottom of the boot to the cylinder with a plastic tie strap.
4. Install any required bushings and sleeves in to the shock eyes at this time. Install the shock absorber on the vehicle. Use the appropriate illustration as a frame of reference. Due to the different shock mounts within a vehicle model range, the shock eyes must be built to match the shocks that you removed by using the universal hardware kit included. Choose the sleeve with an I.D. closest to the O.D. of the mounting stud or bolt without binding. Some applications will require some extra effort to install.
5. Check all fasteners for tightness before driving and inspect periodically.



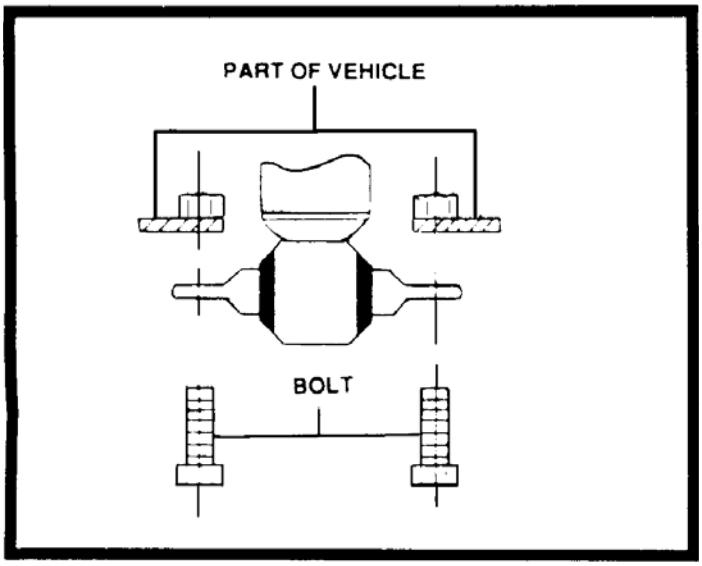
102 S. Michigan Avenue • Coldwater, MI 49036
517-279-2135 • www.bds-suspension.com

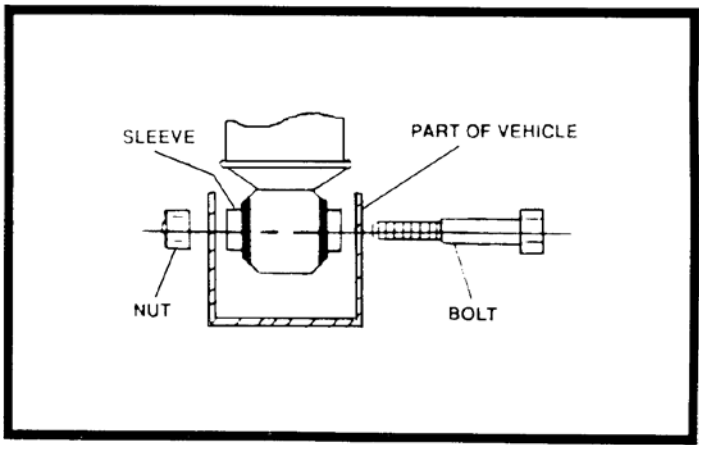
rev. 12/22/2005

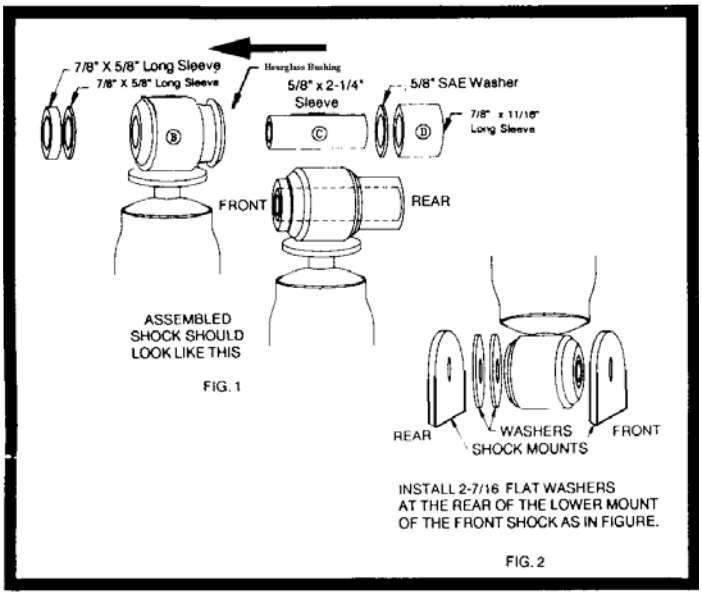




CHEV. S-SERIES W/LIFT

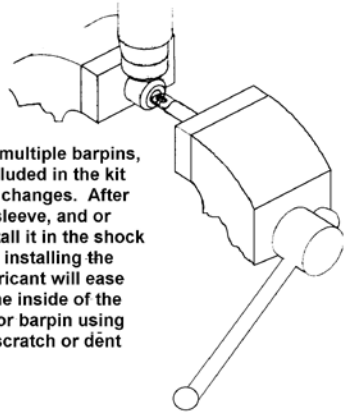






FULL-SIZE CHEV. W/LIFT 88-UP MODELS

INSTALLING BUSHINGS, SLEEVE AND BARPINS



Some shock absorbers require multiple barpins, sleeves, and bushings to be included in the kit due to vehicle years and model changes. After choosing the correct bushing, sleeve, and or barpin for your application, install it in the shock eye. For best results, begin by installing the bushing in the shock eye. Lubricant will ease this process. Next, lubricate the inside of the bushing and install the sleeve or barpin using a bench vise. Use care not to scratch or dent the shock body.