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Part#: **014641, 014841**

Product: **6.5" & 8.5" Long Arm Suspension System**

Application: **1987-2001 Jeep Cherokee XJ (4.0L I6./auto trans.)**

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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
034652	2	Front Coil Springs
	004509 2	Rear :Leaf Springs

### 014641/014841 BOX KIT

084601R	1	Jeep XJ Pitman Arm
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#### Brake Line Parts

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

#### Bump Stop Extensions

3396	2	3in x 3in Extension
438	1	Bolt Pack
	2	3/8"-16 x 3-1/2" bolt
	2	3/8" USS flat washer
	1	3/8"-16 x 1" self-tapping bolt

#### Front Shock Stem Eliminator (014641 only)

01308	2	Stem Eliminator
906	1	Bolt Pack
	2	3/4"-10 standard hex nut
	2	3/4" SAE flat washer
	2	3/4" lock washer
	2	1/2"-13 x 2-1/2" bolt
	2	1/2"-13 prevailing torque nut
	4	1/2" SAE flat washer

#### Front Track Bar Parts

A161B	1	Track Bar Assembly
M02888BK	2	Track Bar Bushing
516	1	Grease Zerk
133	1	0.625 x 0.058 x 1.375 Sleeve
01398B	1	Track Bar Bracket
440	1	Bolt Pack
	1	12mm-1.75 x 80mm bolt
	1	12mm-1.75 prevailing torque nut
	1	1/2"-13 x 2-1/2" bolt
	1	1/2"-13 prevailing torque nut
	4	1/2" SAE washer

#### Sway Bar & Stabilizer Mount

01565	1	Weld On Stab Mount
01360	2	Weld On Sway Bar Link Mount
01361	2	Weld On Sway Bar Link Gusset
917	1	Bolt Pack
	2	1/2"-13 x 2-1/2" bolt
	2	1/2"-13 prevailing torque nut
	4	1/2" SAE washer
	1	1/2"-20 nylock nut
	1	12mm flat washer

### 014654 BOX KIT

01370B	1	Long Arm Crossmember
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### 014655 BOX KIT

A191	2	Adjustable Flex LCA
A190	2	Adjustable Flex UCA
60107	2	90 Degree Grease Zerk

01371B	1	Side Support Plate - DS
01372B	1	Side Support Plate - PS
01377	1	Nut Tab
01378	1	Nut Tab
22	2	.625 x .083 x 3.610 Sleeve
342701	1	Loctite - 1ml
715	1	Bolt Pack
	2	9/16"-12 x 4-1/2" bolt
	2	9/16"-12 prevailing torque nut
	4	9/16" SAE flat washer
	2	7/16" SAE flat washer
	2	7/16"-14 x 3-1/2" bolt
	2	10mm-1.50 x 80mm bolt
	4	10mm-1.50 x 40mm bolt
	2	10mm-1.50 x 30mm bolt
	2	10mm-1.50 prevailing torque nut
	18	3/8" USS flat washer
	2	3/8"-16 x 1-1/2" self-tapping bolt
	2	7/16"-14 x 4-1/2" bolt grade
	2	7/16" prevailing torque nut
	2	7/16"-14 x 1-1/4" bolt
	2	#12 x 3/4" self-drilling screw
	2	Wire Clamps
	1	Mountable nylon cable tie
	1	1/8" x 1-1/4" cotter pin

### 014658/014858,014659/014859 BOX KITS

22513	1	Rear Brake Line
5188	1	Snap In Brake Line Clip
099000	1	11.5in Nylon Cable Tie
01312B	2	Rear Shackles
3533BK	4	Shackle Bushing
516	2	Grease Zerk
51	2	.750 x .095 x 3.140 Sleeve
52	4	.750 x .095 x 2.750 Sleeve
M02402BK	4	Small Eye Bushing
M02403BK	4	Large Eye Bushing

#### Parts unique to 014658/014659

01350B	2	Bar Pin Eliminator
322	1	Bolt Pack
122340812RB	4	1/2 x 2-3/4 x 8-1/2 U-bolt (-658)
W12SB	8	1/2in Washer- Black (-658)
N12FH-B	8	1/2 x 20 Fine High Nut (-658)
963000712RB	4	9/16 x 3 x 7-1/2 U-bolt (-659)
N96FH-B	8	9/16 Fine High Nut (-659)
W96S-B	8	9/16 SAE Flat Washer (-659)

#### Parts unique to 014858/014859

01475	2	Weld On Shock Bracket
P00932	2	Shock Stud
B561G2	2	5/16 x 18 x 1 Self Tap Bolt
2KB-W96	2	2in Block - 9/16in Pin
122341100RB	4	1/2 x 2-3/4 x 11 U-bolt (-858)
W12SB	8	1/2in Washer (-858)
N12FH-B	8	1/2 x 20 Fine High Nut (-858)
963000912R	4	9/16 x 3 x 9-1/2 U-bolt (-859)
W96S	8	9/16 SAE Flat Washer (-859)
N96FH	8	9/16 Fine High Nut (-859)

### 174001 (87-96), 174002 (97-01) Bump Stops

3529BK	2	Bump Stop (174001)
3528BK	2	Bump Stop (174002)

Continued on Page 3

## 124451 Sway Bar Disconnects

A110	2	Sway Bar Link
01325	2	U-Bracket
01316	2	13.5in Lanyard
01302	2	Disconnect Stud
45313	2	.625 x .109 x 1.375 Sleeve
718	1	Bolt Pack
	2	1/2-20 prevailing torque nut
	4	1/2" SAE flat washer
	2	3/8"-16 x 2-1/2" bolt
	2	3/8"-16 prevailing torque nut
	4	3/8" SAE flat washer
	2	7/16"-14 x 1-1/2" bolt
	2	7/16"-14 prevailing torque nut
	2	7/16" SAE flat washer
	2	7/16" USS flat washer
	2	#10-16 x 5/8" self-drilling screw



6 1/2" KIT



8 1/2" KIT

## GLOSSARY OF TERMS

**OE** : Original Equipment

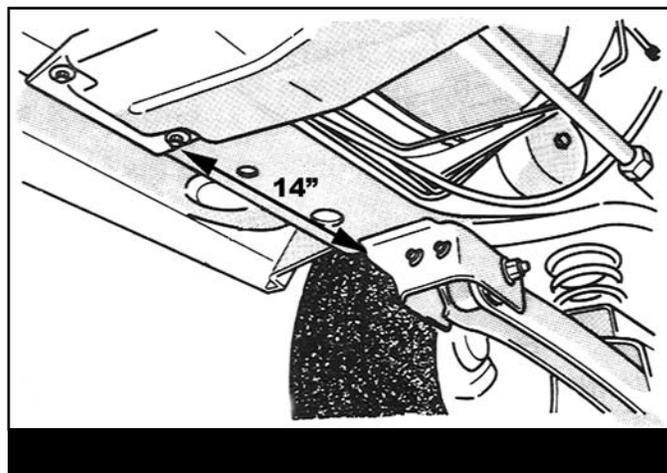
**SAE washer** : Small OD, tight fit to bolt of same size

**USS washer** : Larger OD than SAE, loose fit on bolt of same size

**ft-lbs** : Foot Pounds - standard torque units

## INSTALLATION INSTRUCTIONS

**Note:** This suspension system is design for use with 4.0 L 6 cylinder engine/automatic transmission equipped vehicles only. With this setup the transmission crossmembers will be positioned approximately 14" from the back of the OE lower control arm pocket. This dimension can be checked to ensure the proper fitment of this suspension system on your vehicle.

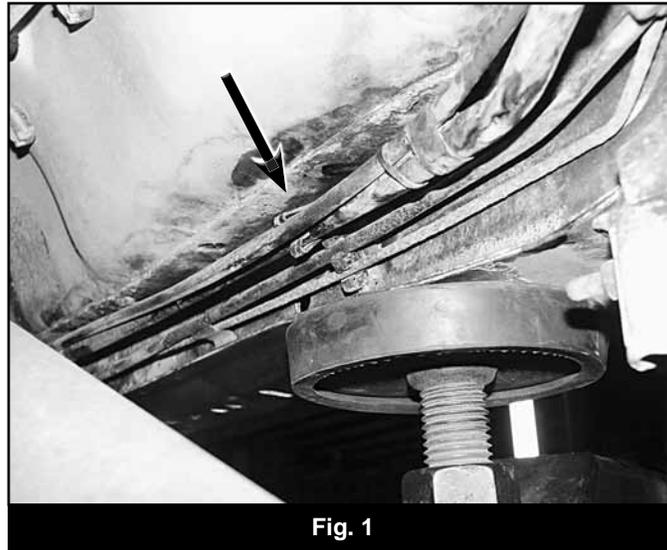


## FRONT INSTALLATION

1. Measure and record the distance from the center of the wheel to the bottom of the fender opening:

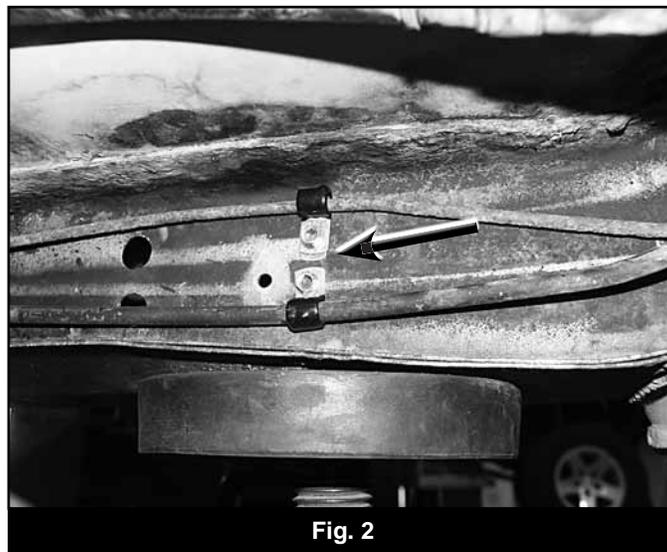
LF \_\_\_\_\_ RF \_\_\_\_\_ RR \_\_\_\_\_ LR \_\_\_\_\_

2. Park the vehicle on a clean, level surface and block the rear wheels for safety.
3. Safely raise the front of the vehicle and support with jack stands under the frame rails.
4. Remove the front wheels.
5. Locate the plastic retaining clip on the inside of the driver's side uni-body frame rail (Fig 1). This clip will be holding 4 lines/hoses. Remove the lines/hoses from the clip and remove the clip from the body.



6. The two steel lines (fuel and brake) will be reattached with the provided clips and self-drilling screws. Disconnecting the front drive shaft from the differential will make this easier but is not necessary. The remaining plastic lines will be fastened to the new crossmember after it is installed.
7. Locate the hole in the frame where the original plastic retaining clip was installed. Install the brake hard line to the frame with the provided clip and self-drilling screw just ahead (1/2" max) of the existing hole in the frame (Fig 2). Position the line up against the floor with the clip mounting tab pointing down. Carefully reform the brake line as needed. Tighten screw securely.
8. Attach the fuel line in the same manner as the brake line. Position the clip directly below the brake line clip with the mounting tab pointing up (Fig 2). This will make the fuel line run low, close to the uni-body pinch weld.

ⓘ *Note: These line locations provide clearance for the new upper control arm mounting bolt.*



9. Remove the four transmission mount nuts from the transmission crossmember (Fig 3). Retain hardware.



Fig. 3

10. With a hydraulic jack, lift the transfer case/transmission assembly just enough to relieve pressure from the transmission crossmember.
11. Remove the nuts/bolts retaining the crossmember to the frame and remove the crossmember from the vehicle (Fig 4).

ⓘ *Note: If equipped with a factory installed transfer case skid plate, remove that as well (Fig 5). It will not be reused.*

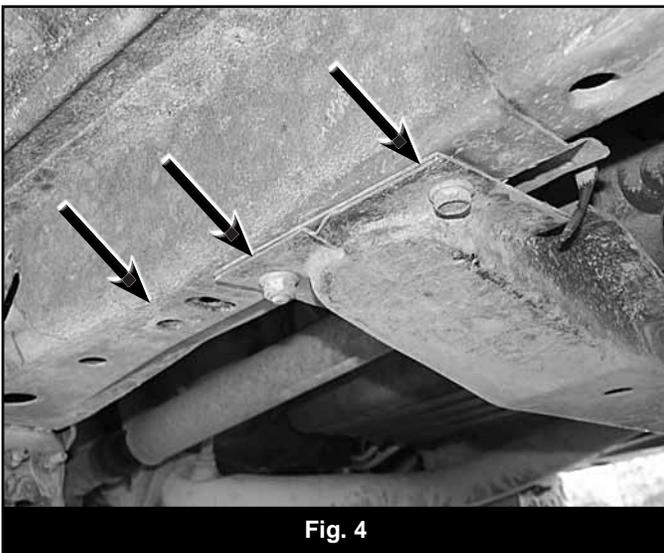


Fig. 4

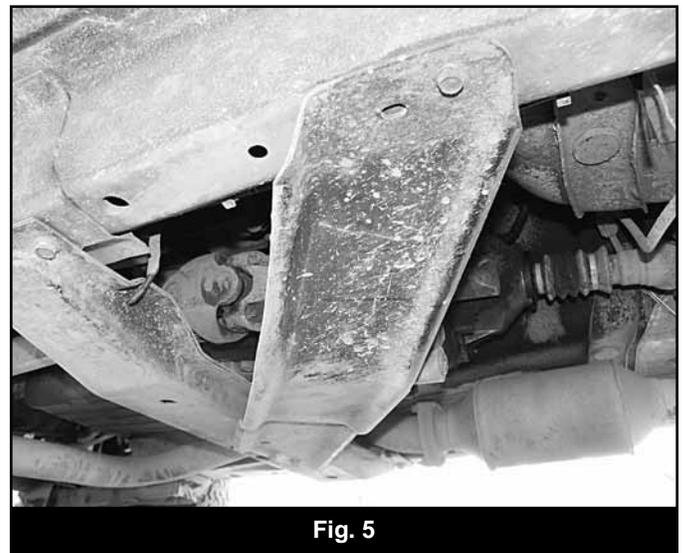


Fig. 5

12. Some models may use a combination of threaded studs/nuts and bolts to fasten the OE crossmember (Fig 4). If this is the case, the threaded studs must be removed. The studs can be removed by either clamping vise grips on it, using the double nut method or tack welding a nut to the stud and using a wrench to remove it.
13. Locate the third threaded hole in the uni-body rails just ahead of the two that were used to mount the OE crossmember (Fig 4). Ensure that the threads are clean of dirt and rust (10mm-1.5). These holes will be used to mount the new crossmember in conjunction with the original two holes (per side).
14. With the help of an assistant, place the crossmember (01370) up to the uni-body and align the front threaded hole in the body with the front mounting hole in the crossmember. Loosely attach the crossmember to the frame with a 10mm x 30mm bolt and 3/8" USS washer (BP 715) in the second hole from the front of the crossmember on each side of the vehicle (Fig 6).

ⓘ *Note: Make sure that the remaining loose plastic lines on the driver's side are to the inside of the upper control arm mount on the new crossmember.*

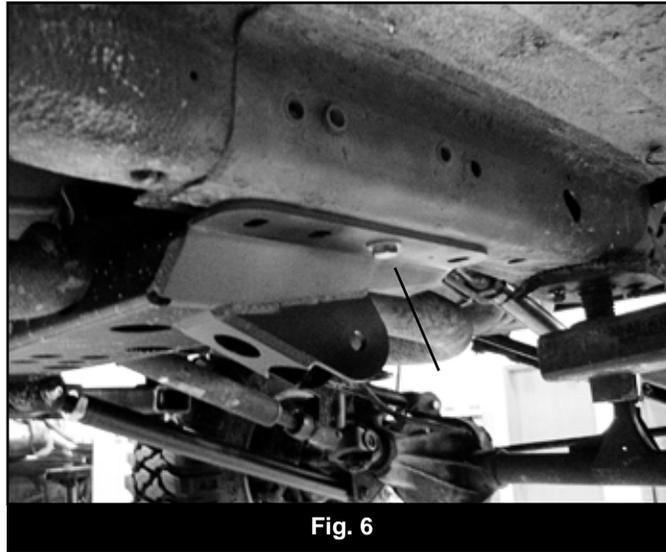


Fig. 6

15. Thread a 10mm x 40mm bolt and 3/8" oversized washer (BP 715) in the front hole on each side of the crossmember just a couple of turns to help square it to the frame and snug the 10mm x 30mm bolt so the crossmember is setting tight to the bottom of the frame. Remove the front 10mm x 40mm bolt and washer.
16. Locate the provided crossmember side support plates (01371, 01372). These parts are driver's and passenger's side specific. Identify the correct side by matching the large relief in the brackets to the existing bolt holding the crossmember. The relief in the bracket will clear the bolt head.
17. Attach the side support plate so that they "sandwich" the crossmember between themselves and the frame (Fig 7). Attach the brackets with 10mm x 40mm bolts and 3/8" oversized washers (BP 715) in the forward-most and rearward-most holes in the side plates/crossmember. Ensure that the side plates are flush against the side of the frame and snug hardware.

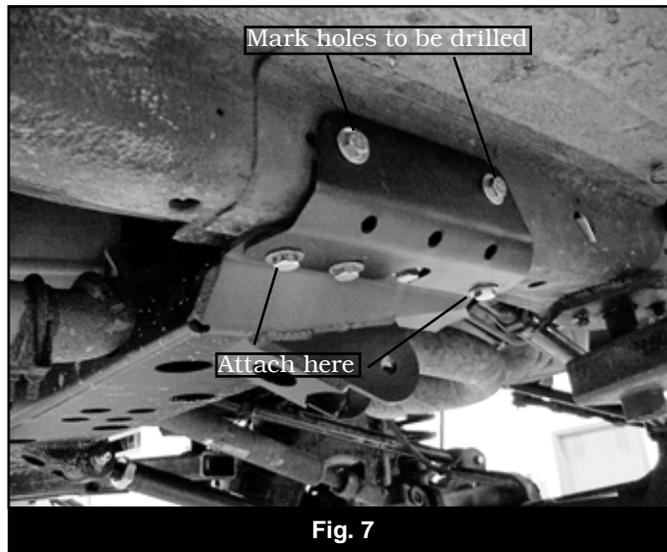


Fig. 7

18. With the side plates in position, mark the center of the two side mounting holes to be drilled. The rear hole is larger than the front hole.
19. With the side support mounting holes marked, remove the two outer 10mm bolts and remove the side supports from the vehicle.
20. Drill a 7/16" hole at the front mark for the side plate. Only drill through the first layer of the frame. Do not drill all the way through the frame.
21. Drill a 7/16" hole at the rear mark for the side plate. Drill outside and inside layers of the frame. Drill straight in the frame as square as possible to the bottom surface of the frame.

**▲ CAUTION: BE CERTAIN that all the fuel lines, brake lines, etc are clear from the area being drilled.**

22. With the rear thru-hole drilled to 7/16", go back with a 5/8" drill (or a uni-bit works well too) and drill just the outside layer of the frame. You will now have a 7/16" and a 5/8" hole in the outside of the frame and a single 7/16" hole on the inside (Fig 8).

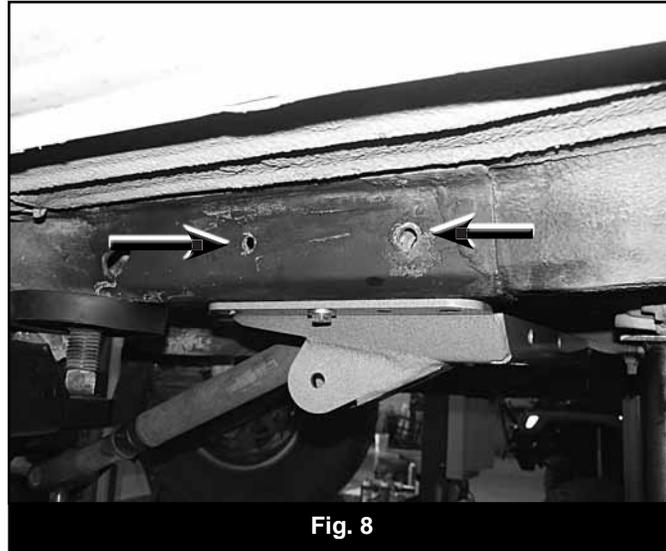


Fig. 8

23. Install the side supports back into position with the same hardware as before. Lightly snug the hardware. Install the provided nut tab (01377, 01378) in the slotted hole in the frame in front of the side support (Fig 9), back to the 7/16" hole drilled earlier (the nut tabs are driver's and passenger's side specific to match the angle of the slot). Loosely fasten the side support with a 7/16" x 1-1/4" bolt and 3/8" USS washer (BP 715) into the nut tab.

 *Note: Holding the nut tab with vise grip pliers eases installation.*

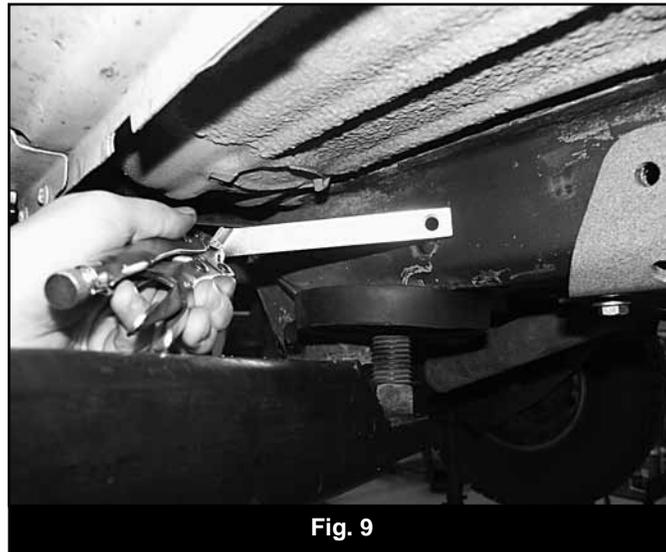
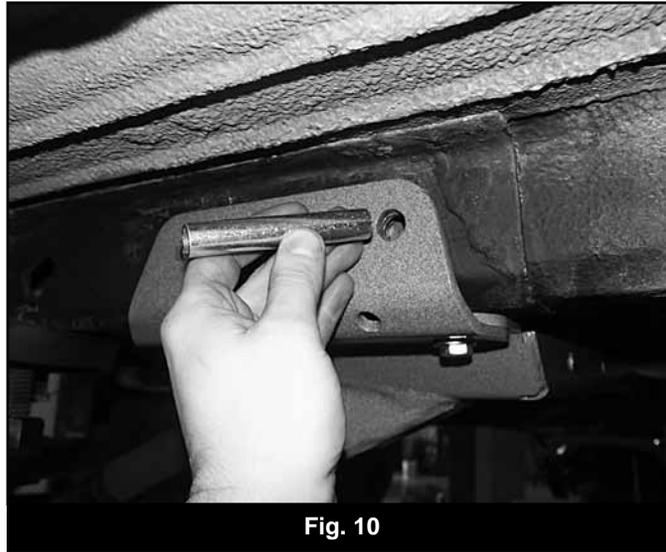


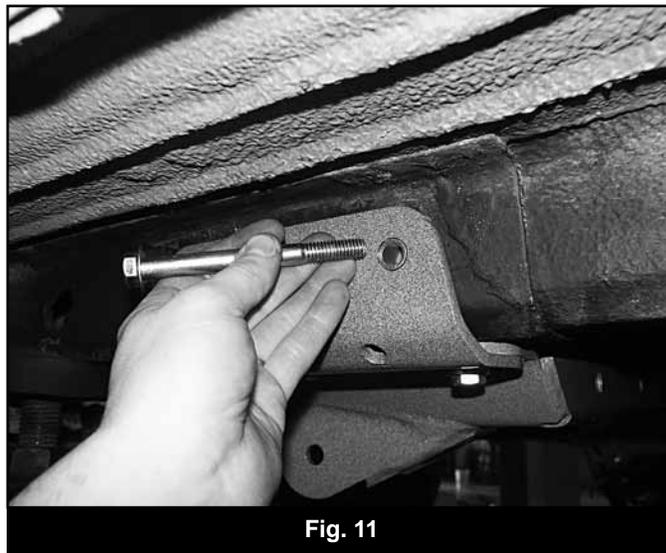
Fig. 9

24. Insert the provided 5/8" x 3-5/8" frame crush sleeve (22) in the 5/8" hole just drilled in the frame (Fig 10). Do not push it all the way in at this time.



**Fig. 10**

25. Install a 3/8" USS washer on a 7/16" x 4-1/2" bolt (BP 715) and insert it into the frame crush sleeve. Push the bolt and sleeve all the way into the frame so that the sleeve is against the inside surface of the frame and the bolt is sticking out of the inside 7/16" hole. Fasten the bolt on the inside of the frame with a 3/8" USS washer and 7/16" nut from bolt pack 715 (Fig 11). Leave hardware loose. Ensure that the bolt does not hit the fuel or brake lines. Reform these lines as necessary.



**Fig. 11**

26. Locate the second hole from the rear of the crossmember (Fig 12 - on both sides). Using the crossmember hole as a guide mark and drill the hole to 5/16".

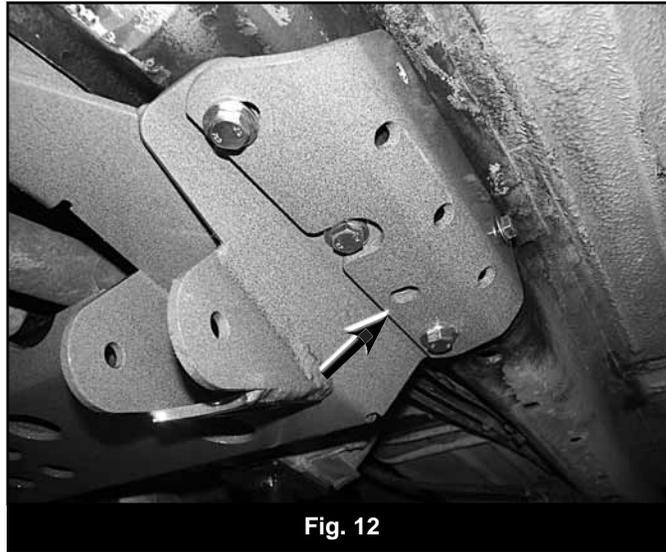


Fig. 12

27. Apply Loctite® to the threads of a 3/8" x 1-1/2" self-tapping bolt and 3/8" oversized washer (BP 715) and install in each of the drilled holes in the bottom of the frame (one on each side). Torque bolt to 30 ft-lbs.
28. Remove each of the 10mm bolts one at a time and apply Loctite® to the threads. Reinstall the bolts and torque to 40 ft-lbs.
29. With all of the main crossmember bolts tight, go back and torque the four 7/16" side plate bolts to 50 ft-lbs.
30. Lower the transmission mount onto the crossmember by aligning the studs in the slots. Fasten the mount to the crossmember with the OE nuts and torque to 25 ft-lbs.
31. Go back and check the clearance of all the lines running down the driver's side of the frame. Attach the plastic lines to the crossmember with the mount style wire tie (BP 715) by pushing the wire tie into the 1/4" hole in the upper control arm mount and securing the lines (Fig 13).

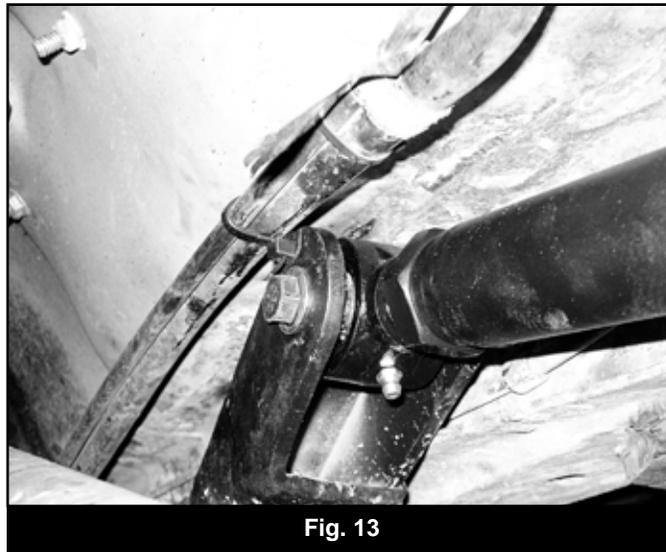
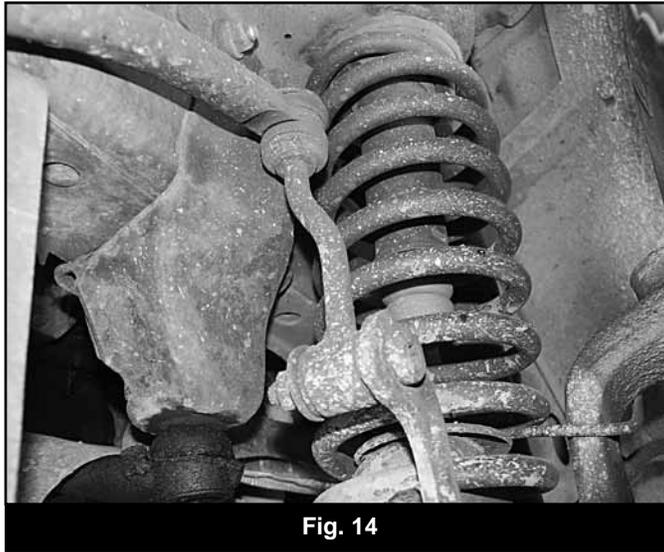
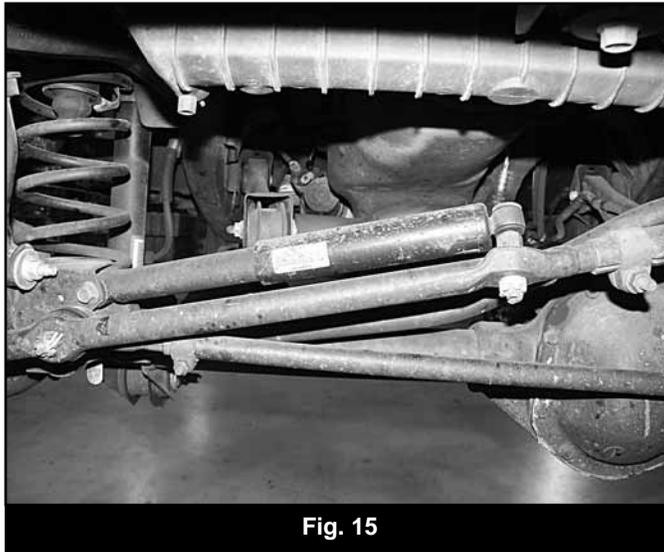


Fig. 13

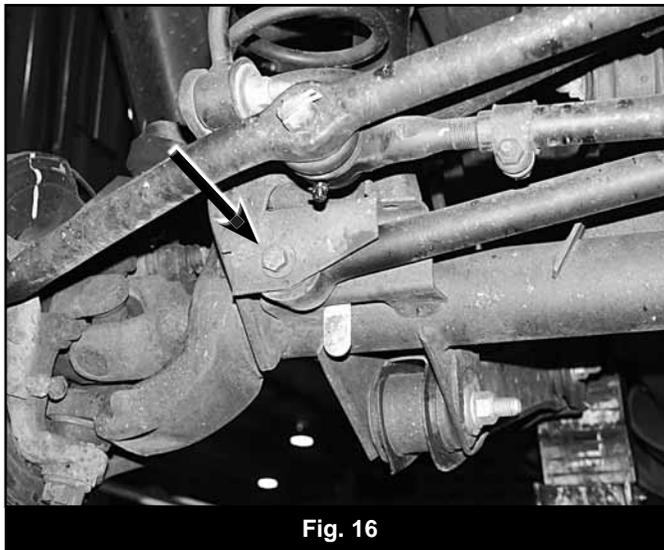
32. Support the front axle with a hydraulic jack.
33. Remove shocks, retain lower shock hardware.
34. Remove OE sway bar end links and discard (Fig 14).



35. Disconnect the steering stabilizer from the axle and retain hardware. If replacing, remove the steering stabilizer from the drag link by removing the nut and dislodging the tapered stud with a pickle fork (Fig 15).



36. Disconnect the track bar from the axle (Fig 16). Disconnect the OE track bar frame bracket from the driver's side. Remove the four bolts/nuts and remove the bracket and track bar from the vehicle. Save the frame mount hardware.



37. Disconnect drag link from pitman arm (retain hardware). Use a pickle fork to dislodge the drag link from the pitman arm.
38. Mark the relationship between the pitman arm and the steering box sector shaft. Remove the pitman arm mounting nut and washer. Retain hardware.
39. Using the appropriate pitman arm puller, remove the OE pitman arm and install the new provided drop pitman arm (084601R) using the alignment marks to ensure it is indexed properly. Fasten with the OE nut and washer and torque to 185 ft-lbs.
40. Remove brake line retaining clips.
41. Remove fasteners holding brake line anchors to frame on driver's and passenger's side.
42. Disconnect passenger's side rubber brake line from metal hard line.
43. Disconnect brake line from caliper and discard crush washers, retain the OE banjo bolt. Ensure old washer is removed from caliper and brake line mounting area.
44. Install new upper brakeline bracket (B06103C) with OE bolt.
45. Mount hard line into new bracket before installing new stainless steel line.
46. Install BDS front brake line (22510) by attaching upper portion first. Tighten securely (Fig 17).

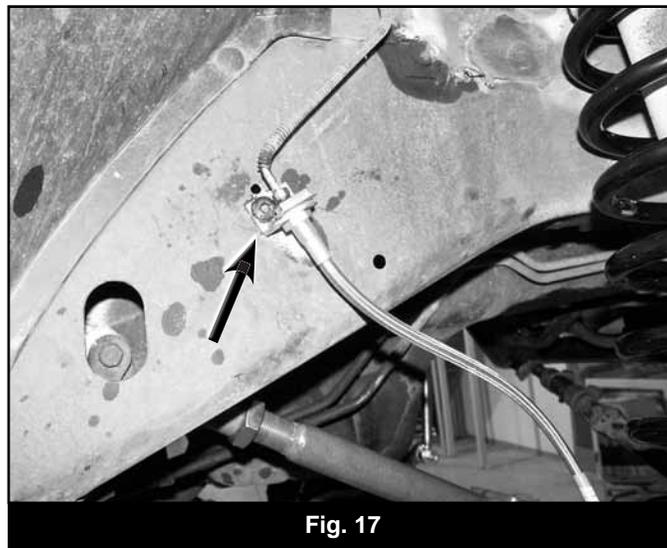


Fig. 17

47. Install lower portion with provided new crush washers and original banjo bolt.

ⓘ *Note: One washer is required on EACH side of the fitting. Brake line must face up after installation. Torque bolt to 20 ft lbs (Fig 18).*

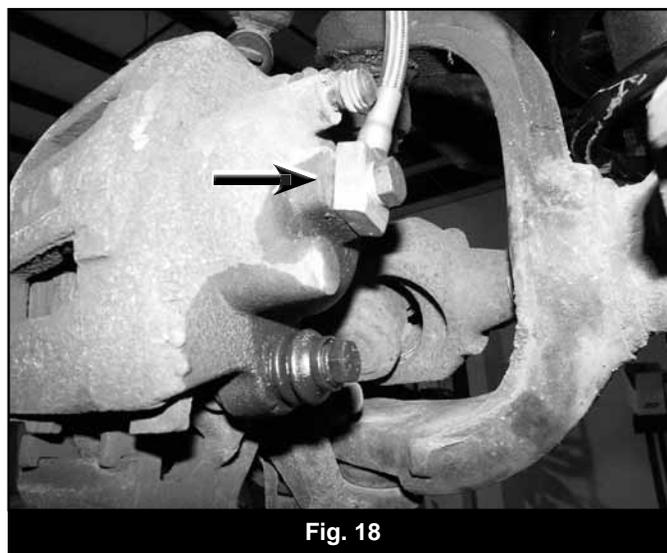
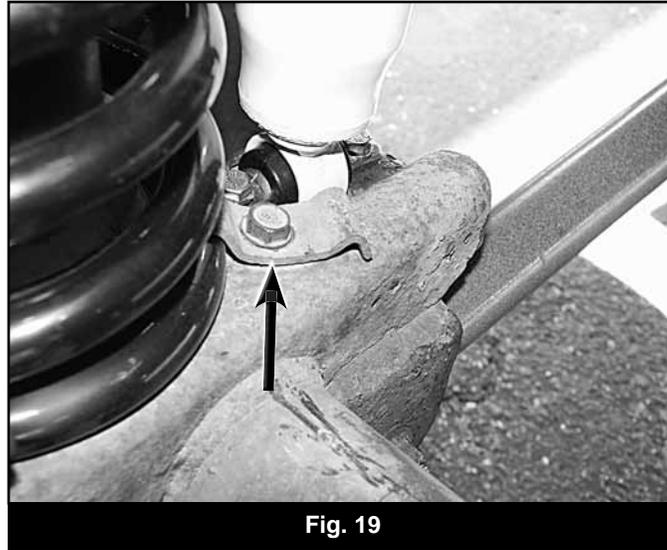


Fig. 18

48. Repeat brake line installation for driver's side.

49. If equipped, remove the lower coil spring retainer clips from the axle (Fig 19). Retain clips and bolts.

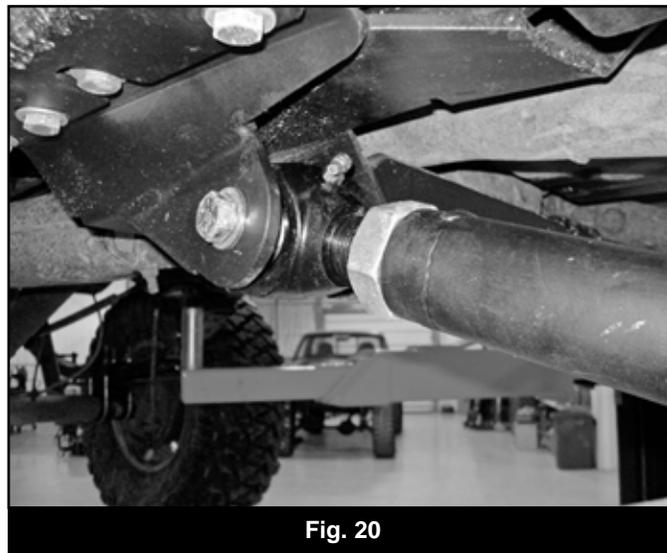


50. Lower the front axle and remove the front coil springs from the vehicle.

51. Locate the lower control arms (A191) and adjust the length of the control arm to 32-3/4" center of eye to center of eye.

52. Locate the preassembled upper control arms (A190). Adjust the length of the control arms to 28-1/8" from center of eye to center of clevis (slide a bolt through the clevis to get this measurement).

53. Install the adjustable end of the lower control arms into the new lower control arm pockets in the crossmember (Fig 20). Loosely fasten the arms with 9/16" x 4-1/2" bolts, nuts and 9/16" SAE washers (BP 715).



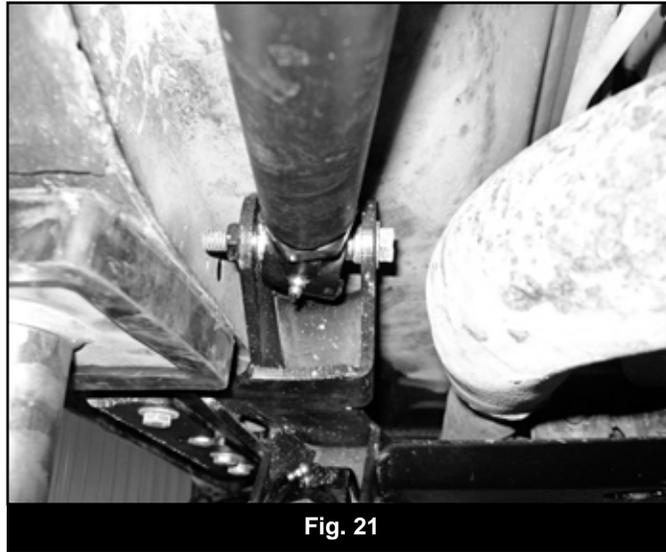
54. Loosen but do not remove all the OE upper and lower control arm mounting bolts.

55. With the front axle properly supported, remove the lower control arms from the frame and the axle. Retain the axle mount hardware.

56. Install the new lower control arms in the axle mounts and loosely fasten with the OE hardware.

57. Install the new upper control arms into the new upper control arm pockets in the crossmember (Fig 21). Fasten the arms with 7/16" x 3-1/2" bolts and 7/16" SAE washers (BP 715) into the welded nut on the crossmember. Use Loctite® on the bolt threads.

ⓘ *Note: In some cases it may be necessary to loosen the exhaust to gain clearance for installing the passenger's side control arm bolt. Torque the 7/16" bolts to 50 ft-lbs.*



**Fig. 21**

58. Attach the clevis end of the upper control arms to the front axle mounts (Fig 22). The clevis end will angle in toward the center of the vehicle. Fasten the arms to the axle with 10mm x 80mm bolts, nuts and 3/8" SAE washers (BP 715). Leave hardware loose.



**Fig. 22**

59. Using a provided zip tie, attach the differential breather tube to the driver's side upper control arm.
60. Locate the center of the coil mount on the axle and drill a 11/32 or T size drill (Fig 23). Use a provided 3/8" self-tapping bolt to cut the threads for the bump stop extension (3396). Remove the bolt.



Fig. 23

61. Remove the front OE rubber bump stops and replace with the provided longer ones (3528 or 3529). Apply a small amount of grease to the bump stop and push it into the mounting cup.
62. Locate the top of the original stabilizer mount on the passenger's side of the axle. Remove any rust, oil, etc. from the top of the stabilizer mount to promote good welds. Make a mark a 1/4" from the front edge on the top of the bracket (Fig 24). Make a line along the top of the bracket, parallel to the front face at the 1/4" marked distance. This will be a reference line for installing the new stabilizer mount/support gusset.

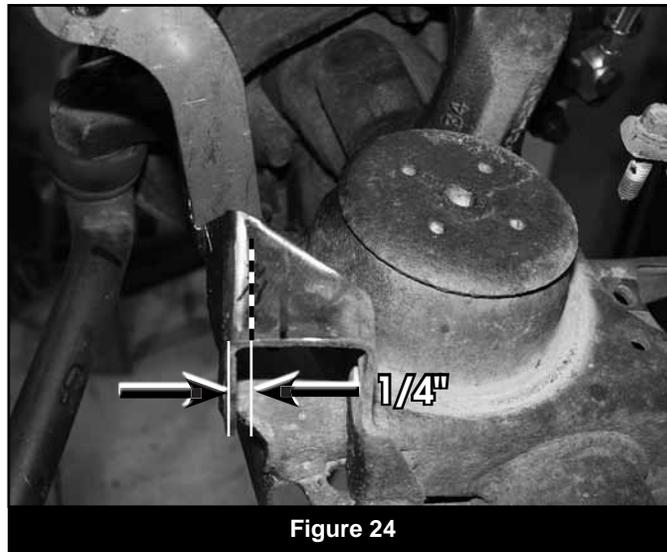


Figure 24

63. Position the new provided stabilizer mount (01565) on the top of the original mount so that the hole is to the driver's side and the front surface is aligned to the line marked on the top of the OE bracket (Fig 25). The stabilizer will butt up to the passenger's side sway bar link mount.

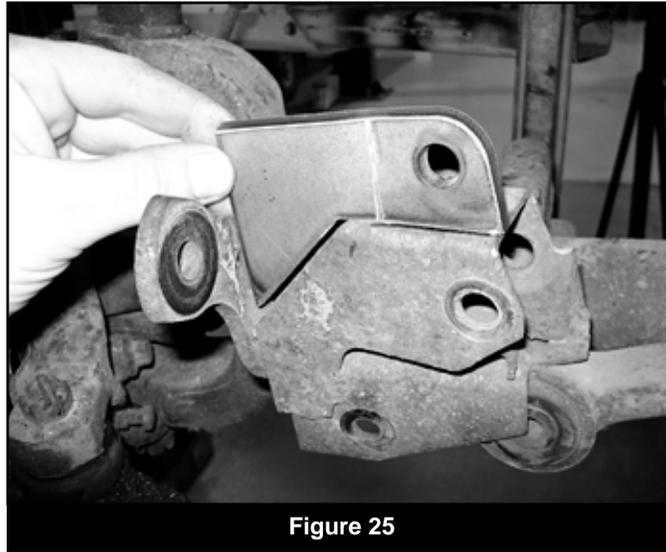


Figure 25

64. Check that the stabilizer mount is perpendicular to the top of the OE mount and position against the link mount and tack weld in place to the stab mount only. This will help align the new sway bar mount next. Do not finish weld, this will be done once the sway bar relocation brackets are installed. Note: Be sure to disconnect the battery before welding.

**⚠ Important Installation Note:** A certified welder should perform all welding operations. This step can be skipped until the vehicle is complete and can be driven to a local welding shop if need be. Always keep a fire extinguisher near by when welding. Disconnect both the positive and negative battery cables before welding. With all welding complete allow the brackets to cool and then paint any raw metal to prevent corrosion.

65. The front sway bar link axle mounts must be cut off to provide proper steering linkage clearance through full suspension travel. Starting on the driver's side, make a cut mark on the axle link mount that is  $7/16$ " above the top surface of the axle coil mount. This mark will be approximately  $2-3/16$ " from the top point of the OE link mount (Fig 26).

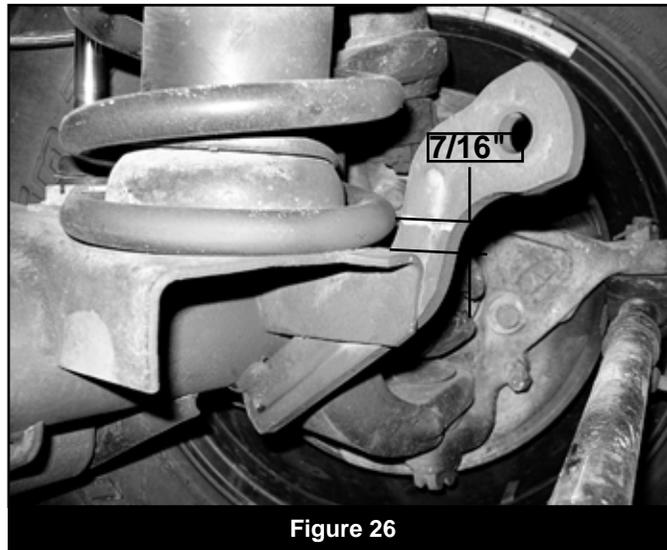


Figure 26

66. Cut the link mount along the cut line with a reciprocating saw or cut off wheel. Take care to make the cut as straight and square as possible. The top portion that is cut from the driver's side mount will be used as a template for the passenger's side. Also, making a square cut here will help with setting up the welding process.

67. With the driver's side link mount removed, use the cut portion as a template by aligning the hole and the profile of the cut piece with the passenger's side mount. Mark the cut line on the passenger's mount (Fig 27). Note: A  $1/2$ " bolt can be inserted in the mounting holes of the ends to aid in alignment.

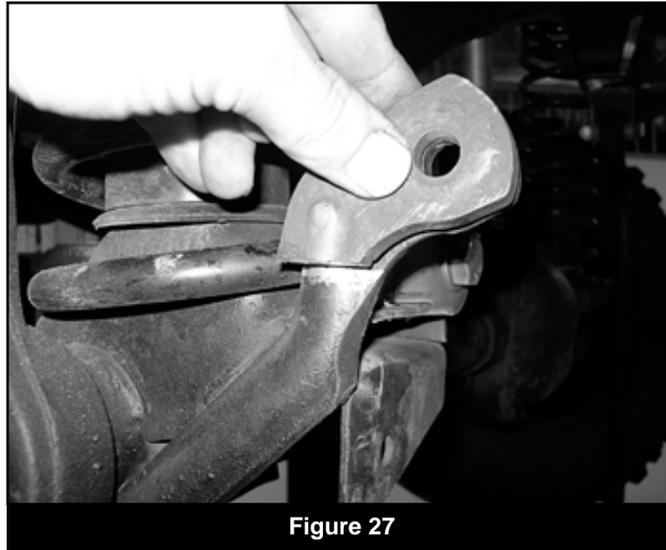


Figure 27

68. Cut the passenger side link based on the cut line in the same fashion as the drivers side.
69. With the link mounts cut, remove any rust, oil, etc. from the remaining portion of the OE link mounts to promote quality welds.
70. Position a new link mount (01360) on the cut surface of the original driver's side mount. The front edge and inside surface of the new mount should be flush with the front cut edge of the old mount. Tack weld the new link mount in place. Double check to see that the new mount is square with the original. Note: It is recommended to grind a bevel in the edge of the new link mount (outside where it meets the original mount) to promote good weld penetration of both pieces of material.
71. Repeat the link setup procedure on the passenger's side of the vehicle . With both pieces tacked in place check the relationship between the two mounts to see that they are the same. Measure the inside distance between the tops of the links and the bottoms of the links to see that they are the same (approximately 38-5/8").
72. With the links positioned correctly, locate the provided formed side gussets (01361). Position the gussets so that they are parallel to the front surface of the original link mount and flush to the outside surface of the new link mount. Once they are in the desired position, tack weld the gussets in place.

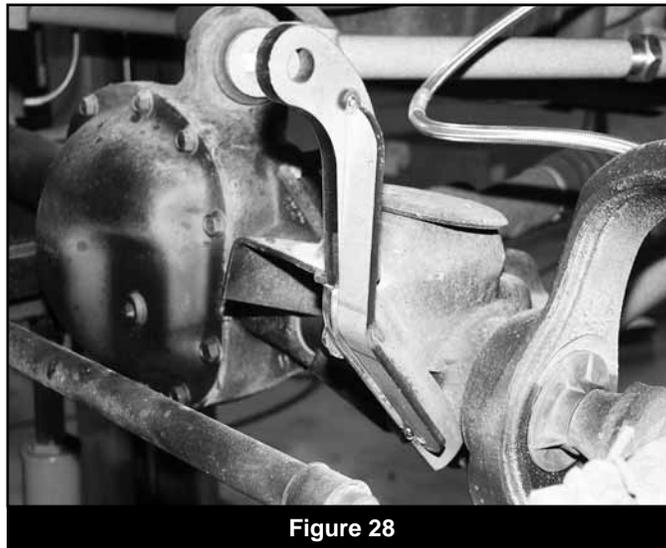
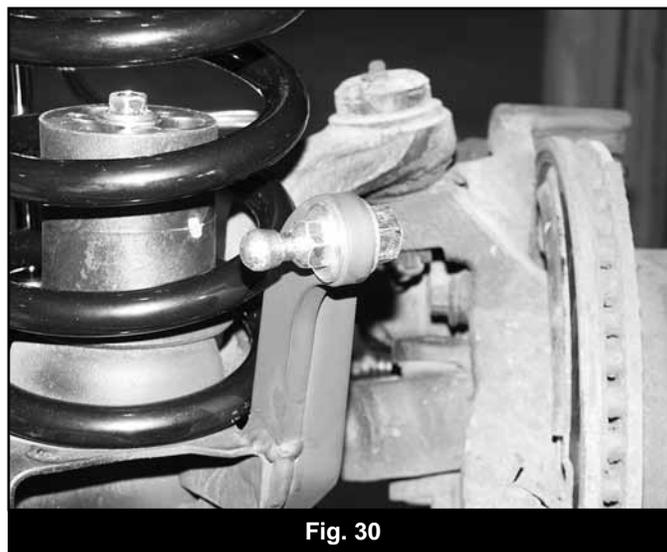


Figure 28

73. With the link mount parts correctly in place finish weld the both the sway bar mounts and stabilizer mount to the axle. Weld all around the point where the original sway bar mount meets the new mounts as well as the full length of the gusset where it meets the new and original link mounts (Fig 29). Note: Weld the back side of the gusset for best weld penetration and aesthetics.



74. With all welding complete allow the brackets to cool and then paint any raw metal to prevent corrosion.
75. When the paint is dry on the new link mounts, install the new BDS coils (034852) with the provided lower bump stop (3396) inside the spring. Rotate the spring until the ends are seated correctly in the axle mount.
76. If equipped, install the OE coil retainer clips with the original bolts. Torque to 25 ft-lbs.
77. Attach the bump stop extension with the provided 3/8" x 3-1/2" bolt and 3/8" USS washer (BP #438). Torque to approximately 30 ft-lbs.
78. Install the new BDS shocks in the vehicle with the provided upper stem bushings/washers/nuts. Attach the shock to the axle with the OE hardware. Torque upper nut until the bushings begin to swell and install the jam nut. Torque the lower OE hardware to 25 ft-lbs.
79. Install the provided disconnect ball studs (01302) in the mounts so that the ball portion points toward the center of the vehicle (Fig 30). Install the stud with a 1/2" lock nut and two 1/2" SAE washers (BP 718), one on each side of the mount. Torque stud to 60 ft-lbs.



80. Install the provided upper u-bracket (01325) to the sway bar using the original link mounting hole with a 7/16" x 1-1/2" bolt, nut, 7/16" SAE and 7/16" USS washers (BP 718). Install the bolt up through the u-bracket with an SAE washer into the sway bar. Fasten with the nut and USS washer. Position the bracket so that the thru-holes are parallel with the stud on the axle (Fig 31). Torque to 50 ft-lbs.

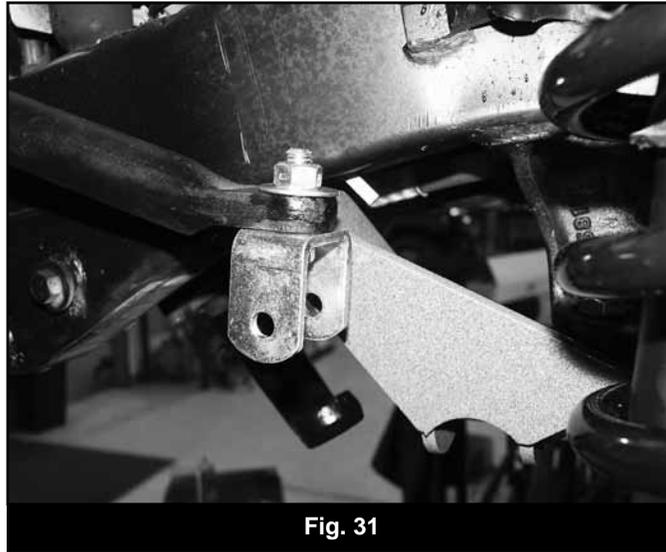


Fig. 31

81. Locate the new provided sway bar disconnect assemblies (A110). Lightly grease and install the provided sleeves (45313) in the bushings.
82. Attach the sway bar link assembly to the upper u-bracket with the provided 3/8" x 2-1/2" bolt, nut and 3/8" SAE washers (BP 718), running from the inside out. Torque bolt to 30 ft-lbs. Leave the sway bar links disconnected at this time.
83. Install the provided new track bar bracket (01398) to the driver's side frame with the original hardware. Torque the factory hardware to 60 ft-lbs starting with the lower bolts. (Fig 32)



Fig. 32

84. Grease and install the provided track bar bushings (M02888BK) and sleeve (133) in the new track bar assembly (A161B). The exact length will be adjusted at the end of the installation. Install the provided grease fitting (516) in the adjustable end of the track bar.
85. Install the new track bar assembly to the original steering stabilizer axle mount with a 1/2" x 2-1/2" bolt, nut and washers (BP 440) so the track bar runs up toward the new frame mount. Leave hardware loose. The frame end will be attached at the end of the installation.
86. Attach the drag link to the pitman arm with the original castellated nut and new provided cotter pin (BP 715). Torque nut to 50 ft-lbs. Do not loosen the nut to install the cotter pin, only tighten.
87. Attach the loose end of the steering stabilizer to the new mount with the OE hardware. Run the bolt from forward to back and torque to 60 ft-lbs.
88. Use zip ties to fasten brake lines clear of any rotating or heated components.
89. Install wheels, remove the jack stands and lower the vehicle to the ground.

90. Bounce the front of the vehicle to settle the suspension. Visually check to see that the front axle is centered under the vehicle. Turn the steering wheel back and forth to help center.
91. Adjust the track bar until the proper length is set so the track bar end will mount into the new frame bracket. Fasten in the mount with a 12mm x 80mm bolt, nut and 1/2" SAE washers. Torque hardware to 65 ft-lbs.
92. Check that the track bar end is square in the frame mount and lock off the jam nut securely.
93. Torque the track bar axle mount hardware to 65 ft-lbs.
94. Lock off upper and lower control arm jam nuts securely. Ensure the flex ends are square to the pockets before tightening. Torque the lower control arm bolts to 95 ft-lbs. Torque the upper control arm bolts at the axle to 45 ft-lbs.
95. Ensure the vehicle setting level on the ground. Pull the spring collar up of the disconnect ends and attach them to the ball studs on the axle. Make sure the disconnect end stud is square with the ball stud and tighten the jam nut against the disconnect end. These disconnects allow for 1/2" adjustment (1/2" longer from full-bottomed out).
96. Check the jam nuts to be sure they are securely locked off. Disconnect both end links and fold them up against the sway bar. Clip the provided lanyard/clip assembly around the sway bar/end link and find the best position for mounting the lanyard. This position will vary from vehicle to vehicle. Use your best judgment. Use the provided self-drilling screws to mount the lanyard to the body/frame.
97. With the lanyards installed, reconnect the sway bar links to the axle. The lanyards can be reattached to themselves so that they remain out of the way of moving parts when not in use.

### Front Lower Control Arm Pockets

 *Note: This suspension system does not require the removal of the OE lower control arm pockets. Under normal driving conditions and offroad use the new lower control arms will not contact the OE lower control arm pockets. However, heavy impacts (such as jumping) can potentially cause contact between the arms and the pockets. Also, if the front bump stops are not installed per these instructions, contact can occur under compression. Use your best judgment on whether the pockets should be removed or not. These pockets are no longer needed once this install is complete. Some individuals will remove the pockets purely for appearance purposes.*

1. Mark a cut line on the two lower control arm pockets that follow the contour of the frame (Fig 33). Using a reciprocating saw or cut-off wheel remove the pocket from the frame. Take care not to cut into the frame.
2. Grind the cut edges smooth. Paint all exposed metal to prevent corrosion.

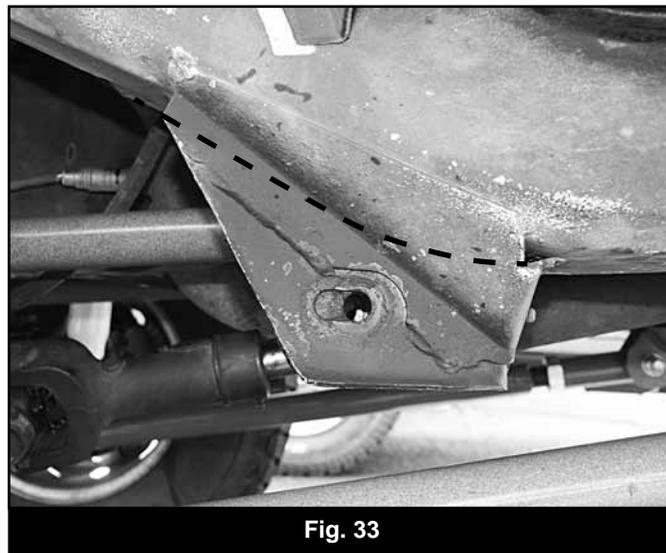


Fig. 33

### 6.5" & 8.5" REAR INSTALLATION

1. Block the front wheels. Safely raise the rear of the vehicle and support with jack stands for safety.
2. Remove wheels.
3. Place a floor jack under the rear axle for support and remove the rear shocks. Retain the upper mounting hardware. Note: The upper shock mount bolts are prone to corrosion. Take care in removing the bolts as they can break easily. Use plenty of quality penetrating oil on the threads prior to disassembly.
4. Remove sway bar mounts from the body.

5. Remove retaining clip holding brakeline to driver's side frame.
  6. Disconnect rubber brake line from hard line at retaining clip location.
  7. Disconnect hardlines from brake line junction block on axle.
  8. Unbolt brake line junction block from axle. Retain bolts.
  9. Install new BDS rear brake line (22512) in place. Torque to 25 ft-lbs.
  10. Reattach axle breather.
  11. Install new retaining clip.
  12. Apply a small amount of grease to bushings (3533BK) and install bushings, sleeves (52) and grease zerks into the new shackles (01312).
  13. Grease and install bushings into leaf spring eyes (M02402RB & M02403RB) then install sleeves (52 & 51). Note: The longer sleeves (51) go in the large spring eye bushings.
  14. With the rear differential supported, remove the passenger side spring mounting bolts, u-bolts, shackle, and springs. Save leaf spring and shackle mounting bolts for later installation.
- ⓘ *Note: Once all of the u-bolts are removed, the sway bar can be disconnected from the frame and removed from the vehicle. It will not be reused.*
15. Locate the bumper bolt that is protruding into the shackle pocket (Fig 34). This bolt will contact the new larger shackle through suspension travel. The bolt can either be cut off flush with the welded nut on the body or removed.

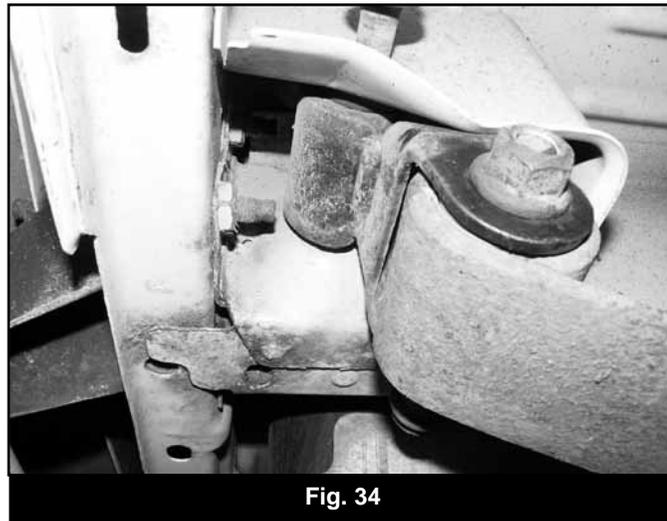


Fig. 34

16. Install the new spring and shackle in the OE locations with the original hardware. Leave the spring and shackle bolts loose at this time. The shackle grease fittings should be toward the front of the vehicle.
- ⓘ *Note: The system is designed to be use with a slip yoke eliminator kit and new CV style drive shaft. The shims installed on the leaf springs are set to provide the appropriate drive line angles for most slip yoke/CV driveshaft setups. If additional/different shims are required, they can be purchased separately from BDS.*

## 6.5" KIT REAR INSTALLATION

- ⓘ *Note: Follow steps 17-23 for 6.5" systems. For 8.5" systems follow steps 24-38.*
17. Install new u-bolts and hardware. Snug hardware (Note: Do not torque to specification until vehicle is on the ground.)
  18. Repeat for driver's side.
  19. Install the provided upper shock bar pin eliminator brackets (01350) with the original upper shock mounting hardware (Fig 35). Torque to 20 ft-lbs

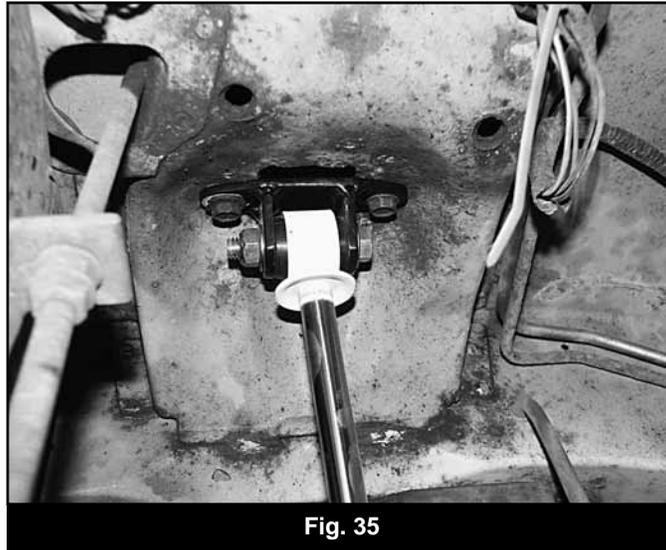


Fig. 35

20. Install new shocks with the OE lower nuts and the provided 2-1/2" bolts, nuts and 1/2" SAE washers (BP 322) at the new top mount. Torque shock hardware to 55 ft-lbs.
21. Install wheels, remove jack stands and lower vehicle to the ground. Bounce vehicle to normalize the rear suspension. The shackles will now be in their intended position.
22. Torque shackle and leaf spring bolts to 95 ft-lbs.
23. Torque u-bolts to 75-90 ft-lbs.

## 8.5" KIT REAR INSTALLATION

 *Note: Follow steps 17-23 for 6.5" systems. For 8.5" systems follow steps 24-38.*

24. Position the provided 2" tapered block between the axle and leaf spring by align the center pins/holes. The short end of the taper should go toward the front of the vehicle. Install the new provided u-bolts and hardware. Snug hardware. Notes: Do not torque to specification until vehicle is on the ground. In some cases it might be necessary to slightly clearance the holes in the OE spring plate to allow the u-bolts to install smoothly.
25. Repeat for driver's side.
26. Remove the two bolts mounting the parking brake bracket from the driver's side frame (Fig 36). Allow it to hang free.

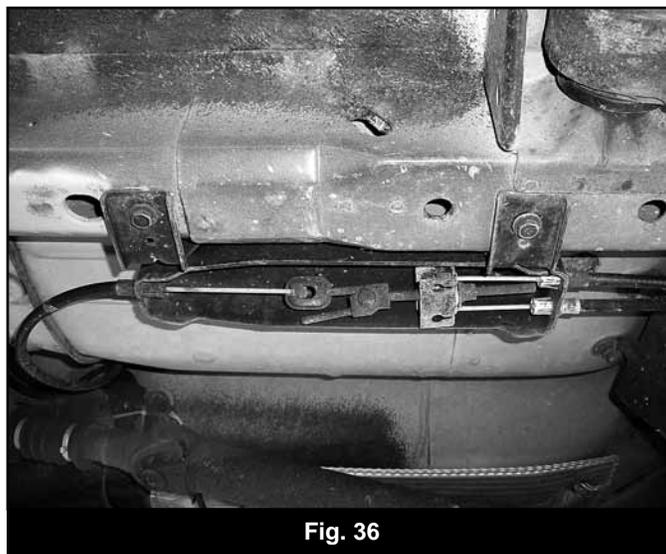


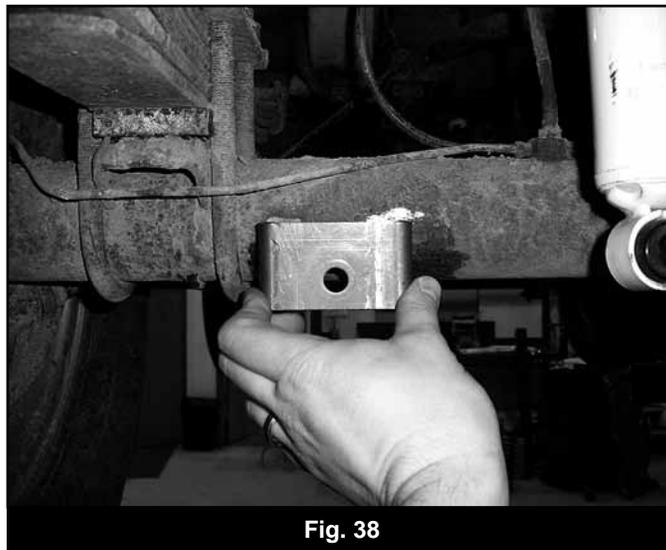
Fig. 36

27. Measure back 3-1/2" from each of the two bracket mounting holes and mark. Drill a 1/4" hole at each mark. This will be the new mounting location for the bracket. It will be reattached at the end of the installation with the new provided 5/16" x 1" self-tapping bolts.

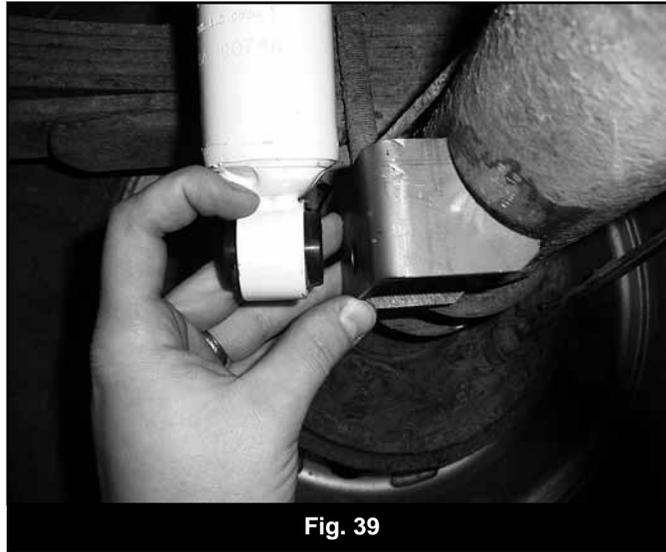
28. Locate the factory lower shock mounts on the axle. These must be removed from the axle tube completely to make room for the new high-clearance shock mounts. Carefully cut the brackets off of the axle tube (Fig 37). Take care not to cut into the axle tube. Grind axle surface smooth. The new mounts will be installed at the end of the installation.



29. Install the new provided shocks to the upper shocks mounts with the original hardware. Torque to 20 ft-lbs. Leave the lower portion of the shock hanging at this time.
30. Reattach the parking brake bracket to the driver's side frame using the provided 5/16" x 1" self-tapping bolts in the newly drilled holes. Torque bolts to approximately 15 ft-lbs.
31. Install wheels, remove jack stands and lower vehicle to the ground. Bounce vehicle to normalize the rear suspension. The shackles will now be in their intended position.
32. Torque shackle and leaf spring bolts to 95 ft-lbs.
33. Torque u-bolts to 75-90 ft-lbs.
34. Locate the new lower shock mount brackets (01475). The new mounts should be positioned on the lower half of the axle just inside of the leaf spring u-bolt (Fig 38). Leave enough room between the u-bolt and the bracket to weld (about 1/2" - 3/4"). Note: The driver's side mounts to the back side of the axle and the passenger's side to the front.

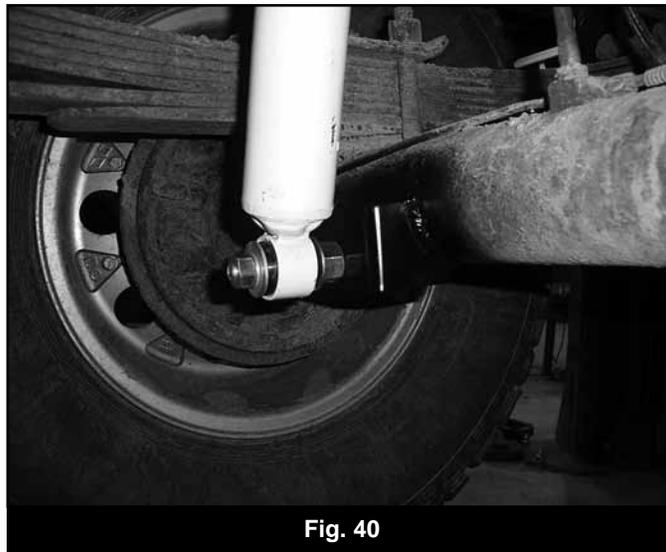


35. Position the new shock mounts so the flat shock mount surface is parallel to the centerline of the shock (Fig 39). This will ensure that the shock bushing will run square in the shock eye at ride height. Tack the brackets into position.



**Fig. 39**

36. With the brackets in position go back and fully weld them to the axle tube. Allow the brackets/axle to cool and paint all exposed metal to prevent corrosion.
37. Install the provided shock stud (P00932) on the bracket with the provided hardware. Torque nut to 55 ft-lbs.
38. Install the shock on the new stud and fasten with the provided hardware (Fig 40). Torque hardware to 40 ft-lbs.



**Fig. 40**

## **POST-INSTALLATION**

1. Bleed brakes starting with the wheel furthest away from master cylinder.
2. Go back through and grease all new greasable components (control arms, track bar, shackles). These components should be serviced regularly and after off-road use.
3. Double-check all fasteners for proper torque.
4. Check all moving parts for clearance.
5. Complete a full radius turning check to ensure that no interference occurs. Adjust front wheel toe-in and center steering wheel.
6. Reconnect the positive and negative battery cables.
7. Align headlights.

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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:**