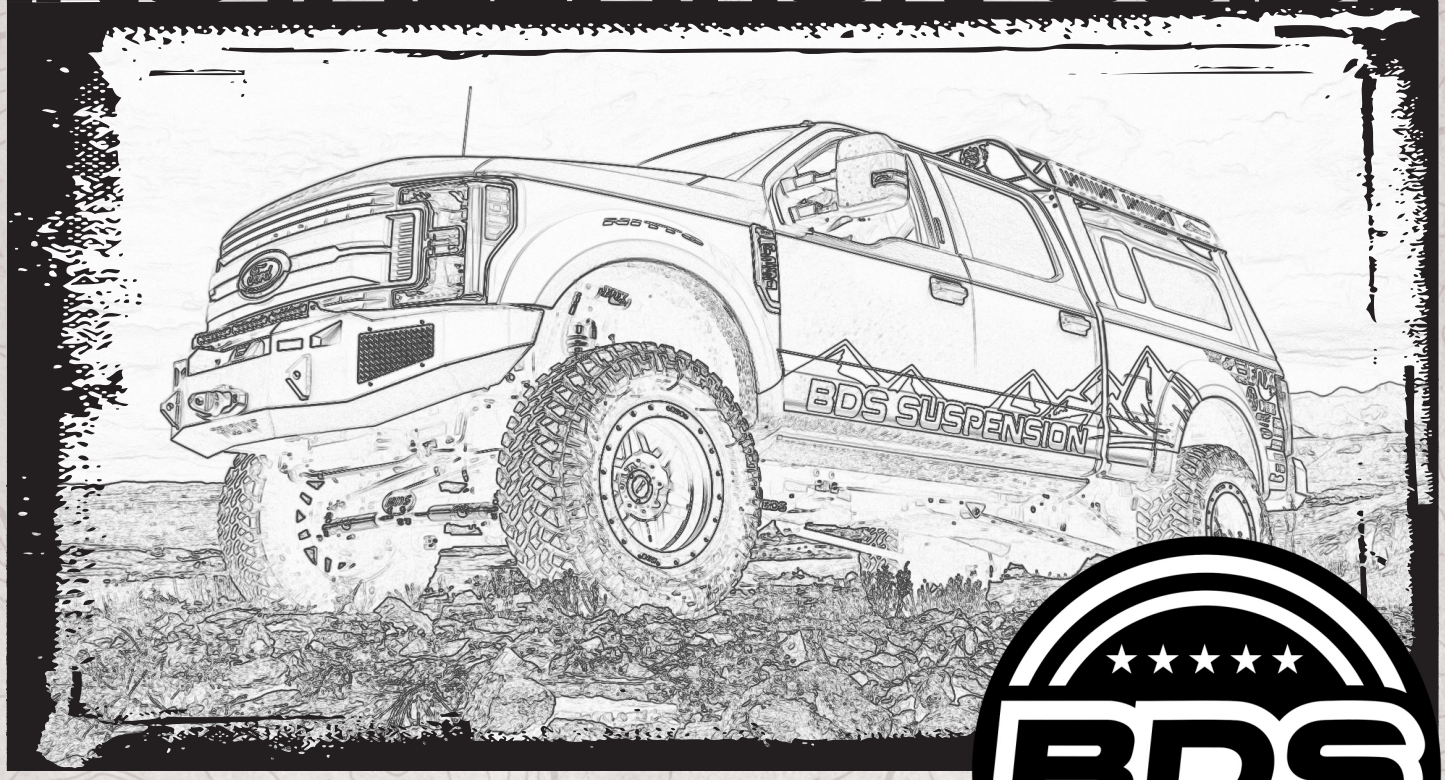
INSTALLATION GUIDE



Part#: 013501, 013701

HARDCORE LIMITED LIFETIME WARRANTY

5" & 7" Four Link Suspension System

Ford Super Duty 4WD | 2023-2024

Rev. 120924

491 W. Garfield Ave., Coldwater, MI 49036 • Phone: 517-279-2135
E-mail: tech-bds@ridefox.com

Read And Understand All Instructions And Warnings Prior To Installation Of System And Operation Of Vehicle.

THANK YOU

Your truck is about to be fitted with the best suspension system on the market today. That means you will be driving the baddest looking truck in the neighborhood, and you'll have the warranty to ensure that it stays that way for years to come. Thank you for choosing BDS Suspension!

BEFORE YOU START

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.

FOR YOUR SAFETY

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.

BEFORE INSTALLATION

- Special literature required: OE Service Manual for model/year of vehicle. Refer to manual for proper disassembly/reassembly procedures of OE and related components.
- Adhere to recommendations when replacement fasteners, retainers and keepers are called out in the OE manual.
- 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.
- 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.
- Secure and properly block vehicle prior to installation of BDS Suspension components. Always wear safety glasses when using power tools.
- If installation is to be performed without a hoist, BDS Suspension Co. recommends rear alterations first.
- 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.

FACTORY PROTECTION PLUS

Visit 560plus.com for more information.

TIRES AND WHEELS

Tire:	38x12.50 (6")
	37x12.50 (4")
Wheel:	9" wide wheel with 4-1/2" Backspacing

BEFORE YOU DRIVE

Check all fasteners for proper torque. Check to ensure for adequate clearance between all rotating, mobile, fixed, and heated members. Verify clearance between exhaust and brake lines, fuel lines, fuel tank, floor boards and wiring harness. Check steering gear for clearance. Test and inspect brake system.

Perform steering sweep to ensure front brake hoses have adequate slack and do not contact any rotating, mobile or heated members. Inspect rear brake hoses at full extension for adequate slack. Failure to perform hose check/ replacement may result in component failure. Longer replacement hoses, if needed can be purchased from a local parts supplier.

Perform head light check and adjustment.

Re-torque all fasteners after 500 miles. Always inspect fasteners and components during routine servicing.

CONTENTS OF YOUR KIT

BDS013502 4 Link Upper Arm Box Kit		
Part #	Qty	Description
05411	2	Upper 4-Link Arm
60107	2	90 degree grease fitting
174	2	0.875" x 0.120" x 2.756" DOM Sleeve
3537BK	4	7/8" ID Bushing
BP1071	1	Bolt Pack - Control Arm Mount
	2	18mm-2.50 Prevailing Torque Nut, Yellow Zinc
	8	3/4 SAE Thru Hard Washer, Yellow Zinc
	2	18mm-2.5 x 150mm Hex Head Bolt, Class 10.9,Yellow Zinc
	2	3/4"-10 x 5" Hex Head Bolt, Grade 8, Yellow Zinc
	2	3/4"-10 Prevailing Torque Nut, Yellow Zinc
	2	5/8"-11 x 4-1/2" Hex Head Bolt, Grade 8, Yellow Zinc
	4	5/8" SAE Washer, Yellow Zinc
	2	5/8"-11 Prevailing Torque Nut, Yellow Zinc
	2	1/4"-20 x 3/4" Hex Head Bolt, Grade 5, Clear Zinc
	4	1/4" SAE Washer, Clear Zinc
	2	1/4"-20 Nylock Hex Nut, Clear Zinc
	2	Wire Clamp (Fastenal #0708759)

BDS013503 4 Link Lower Arm Box Kit		
Part #	Qty	Description
05412	2	Lower 4-Link Arm
60107	2	90 degree grease fitting
7	2	1.000" x 0.120" x 3.25" DOM Sleeve
3527BK	4	1.000" ID Bushing
03422	4	Lower 4-Link Arm Cam Plate

BDS85431 Steering Stabilizer Box Kit		
Part #	Qty	Description
15621	1	Stabilizer
SB58BK	2	Bushing - EB1
45313	1	Narrow Sleeve
P00932	1	P Pack - Stabilizer
01504	1	Stabilizer Bracket
561140200RB	2	5/16" x 1-1/4" x 2" Round U-Bolt
308	1	Bolt Pack - U-Bolts
	4	*1/4" USS Washer, Yellow Zinc*
	4	*5/16"-18 Prevailing Torque Nut, Yellow Zinc*
312	1	Bolt Pack Stabilizer Mounting
	1	*3/8"-16 x 2-1/2" Hex Head Bolt, Grade 5, Yellow Zinc*
	1	*3/8"-16 Prevailing Torque Nut, Yellow Zinc*
	2	*3/8" SAE Washer, Yellow Zinc*

BDS013501 5" Box Kit or BDS013701 7" Box Kit		
Part #	Qty	Description
083404R	1	Pitman Arm
01001	2	Front Bump Stop Extension
03412	1	Track Bar Bracket
01044B	1	Sway Bar Drop - Drviver
01045B	1	Sway Bar Drop - Passenger
05413	1	4-Link Frame Bracket - Drviver
05414	1	4-Link Frame Bracket - Passenger
02449	2	BDS Badge
360	2	Rivet Bolt Packs
02019	2	Track Bar Cam Washer
02998	1	Front Brake Line Bracket (Drv. - 5" Box Kit)
02999	1	Front Brake Line Bracket (Pass. - 5" Box Kit)
03473	1	Front Brake Line Bracket (Drv. - 7" Box Kit)
03474	1	Front Brake Line Bracket (Pass. - 7" Box Kit)
03435	2	U-Hardline Extension (7" Box Kit)
03419	2	4-Link Bracket Nut Tab
B8130G5	2	M8-1.25 x 130mm Bolt
W56SAE	2	5/16" SAE Flat Washer
099000	4	Zip Tie
6865833	1	Drive Shaft Boot Clamp
65077	1	1/8" x 1-1/4" Cotter Pin
05297	2	Carriage Bolt Plate
27031	1	1/2" Bolt Fish Wire
BP1070	1	Bolt Pack - 4-Link Brackets
	2	*1/2"-13 x 1-1/2" Square Neck Carriage Bolt, Grade 8, Yellow Zinc*
	2	*1/2"-13 x 1-1/4" Hex Head Bolt, Grade 8, Yellow Zinc*
	2	*12mm-1.75 x 150mm Bolt, Class 10.9, Yellow Zinc*
	2	*12mm-1.75 Prevailing Torque or Nylock Nut, Yellow Zinc*
	10	*1/2" USS Washer, Yellow Zinc*
	4	*1/2"-13 Prevailing Torque or Nylock Nut, Yellow Zinc*
	10	*1/2" SAE Washer, Yellow Zinc*
341	1	Bolt Pack - ABS Wire Clamp (5" Box Kit)
	1	*1/4" x 0.28" ID wire coated clamp*
	1	*1/4"-20 x 3/4" Hex Head Bolt, Grade 5, Clear Zinc*
	1	*1/4"-20 Serrated Edge Flange Nut, CLear Zinc*
	1	*1/4" SAE Washer , Clear Zinc*
422	1	Bolt Pack - Sway Bar Drop Bracket
	4	*3/8"-16 x 1-1/4" Hex Head Bolt, Grade 8, Yellow Zinc*
	4	*3/8"-16 Prevailing Torque Nut , Yellow Zinc*
	8	*3/8" USS Washer, Yellow Zinc*

BDS013516 " Rear Block Box Kit		
Part #	Qty	Description
03410	1	5" Tapered Super Duty Block - Driver
03411	1	5" Tapered Super Duty Block - Passenger
583181900SB	4	5/8" x 3-1/8" x 19" Semi-Round U-bolt
W58SB	8	5/8" Washer
N58FHB	8	5/8" High Nut

BDS013606 6" Rear Block Box Kit		
Part #	Qty	Description
03971	1	6-1/2" Tapered Superduty Block - Driver
03972	1	6-1/2" Tapered Superduty Block - Passenger
583181900SB	4	5/8" x 3-1/8" x 19" Semi-Round U-bolt
03428	1	E-Brake Relocation
03429	1	E-Brake Clamp Bracket
W58SB	8	5/8" Washer
N58FHB	8	5/8" High Nut
989	1	E-Brake Relocation Bolt Pack
	2	Wire Clamp (Fastenal #0708779)
	1	1/2"-13 x 1-1/4" Bolt, Grade 5 -Clear Zinc
	1	1/2"-13 Prevailing Torque Nut, Clear Zinc
	2	1/2" SAE Washer, Clear Zinc
	2	5/16"-18 x 1-1/4" Bolt, Grade 5, Clear Zinc
	2	5/16"-18 Prevailing Torque Nut, Clear Zinc
	4	1/4" USS Washer, Clear Zinc

BDS013438 5" Replacement Rear Leaf Spring Box Kit		
Part #	Qty	Description
583181100SB	4	5/8" x 3-1/8" x 11" Semi-Round U-Bolt
W78SB	4	7/8" Washer
03428	1	E-Brake Relocation Bracket
03429	1	E-Brake Relocation Clamp Bracket
989	1	Bolt Pack - E-Brake Relocation
W58SB	8	5/8" Washer
N58FHB	8	5/8" High Nut
760400FCP	2	7/16" x 4" Center Pin with Nut

BDS013617 6" Replacement Leaf Spring Box Kit		
Part #	Qty	Description
583181400SB	4	5/8" x 3-1/8" x 14" Semi-Round U-bolt
760400FCP	2	7/16" x 4" Center Pin with Nut
03428	1	E-Brake Relocation
03429	1	E-Brake Clamp Bracket
W78SB	4	7/8" Washer
W58SB	8	5/8" Washer
N58FHB	8	5/8" High Nut
989	1	E-Brake Relocation Bolt Pack

TROUBLESHOOTING INFORMATION FOR YOUR VEHICLE

TECH TIPS

1. Ford recommends replacement of the pitman arm nut after each time it has been removed.
2. Use a small pitman arm puller to remove the drag link joint and steering stabilizer taper.
3. If your truck is equipped with a factory rear sway bar add: BDS123808
4. If equipped with a 2-piece rear driveshaft, a Carrier Bearing Drop Kit may be required: BDS123402
5. Due to taller factory ride height, Tremor models will not net full advertised lift height. Final ride height will be same as standard models.
6. Larger tires on stock wheels are not recommended due to brake line clearance required. Use recommended specifications listed in tire and wheel fitment section.
7. The factory front track bar bolt requires 405 ft-lbs of torque to be installed properly. Be sure you have the means of removing and installing this hardware properly. It is possible to install the hardware and torque to a more modest range (200 ft-lbs or so) and take the vehicle to a shop with the means to torque the hardware properly immediately after the installation is complete.
8. 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. Recommended to lift the front of the vehicle from the front body mount (An extension may be needed).
9. If replacement leaf springs are install the fuel tank will need to be dropped/ shifted towards the passenger's side of the vehicle. For ease of movement it is recommended to have the fuel tank low on fuel to reduce the weight when moving it.
10. When Needed: Ensure the proper rear box kit is ordered for either a 2 or 3 leaf factory main pack when applicable. See example below of a 2 leaf main pack.

IMPORTANT

It is required that ride height measurements be taken before and after installation. Measure from the **WHEEL AXLE CENTER** up to the **FENDER LIP** of the wheel opening. Do this for all 4 wheels. Record measurements below.**

BEFORE

*Left Front*_____ *Right Front*_____

*Left Rear*_____ *Right Rear*_____

AFTER

*Left Front*_____ *Right Front*_____

*Left Rear*_____ *Right Rear*_____

***These ride heights will be required if you have any ride height concerns after installation. Please be prepared to provide these to Technical Support.*

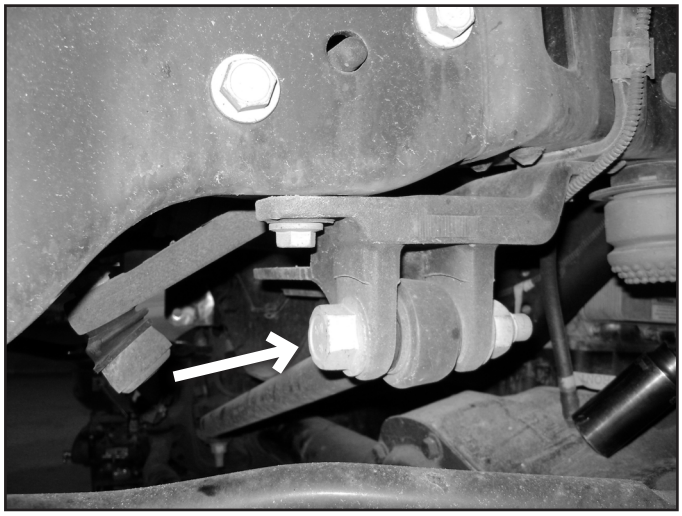
FRONT INSTALLATION

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. (Fig 1)

SPECIAL TOOLS

Large Pitman Arm Puller
Small Pitman Arm Puller
30mm (1-3/16") Socket
46mm (1-13/16") Socket
Large Torque Wrench, ability to torque to 405 ft-lbs.
CV Boot Clamp Pliers
Rivet Gun

FIGURE 1



3. Raise the front of the vehicle and support under the frame rails with jack stands.

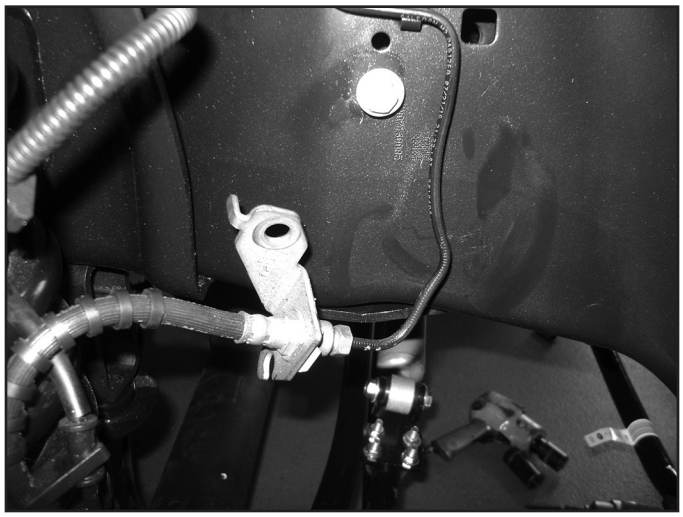
Tip *As a result of the location of the long radius arm suspension, support locations are limited. Use your best judgment while supporting the vehicle with sufficient strength stands at appropriate locations. The radius arms will need to move freely during this installation.*

4. Remove the front wheels.
5. Support the front axle with a hydraulic jack.
6. Disconnect the front brake line brackets from the axle (Fig 2). Retain hardware.

FIGURE 2

7. Remove the bolts attaching the front brake lines brackets to the frame and save the hardware (Fig. 3). Attempt to not bend the brake lines as much as possible. Remove the ABS line from the brake line bracket.

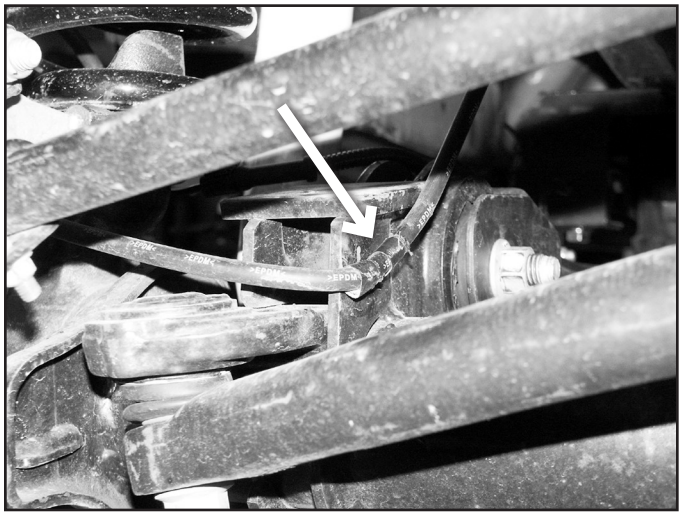
FIGURE 3



8. Free the hub vacuum lines from the axle/ radius arm to allow for adequate droop (Fig. 4A & 4B).

FIGURE 4A

FIGURE 4B



9. Disconnect the upper sway bar end links from the sway bar. Push the sway bar up out of the way. Retain hardware.
10. Remove the lower OE shock hardware at this time (leave upper attached). Retain lower mounting hardware.
11. 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. Once coils are removed, reattach the axle to the shocks.

! Caution *Do not over extend the brake lines. Once the coil springs are removed, hook the front shocks back up by reinstalling the bolt, do not install the nut. This is a safety measure to hold the axle in place while the replacement radius arms are installed.*

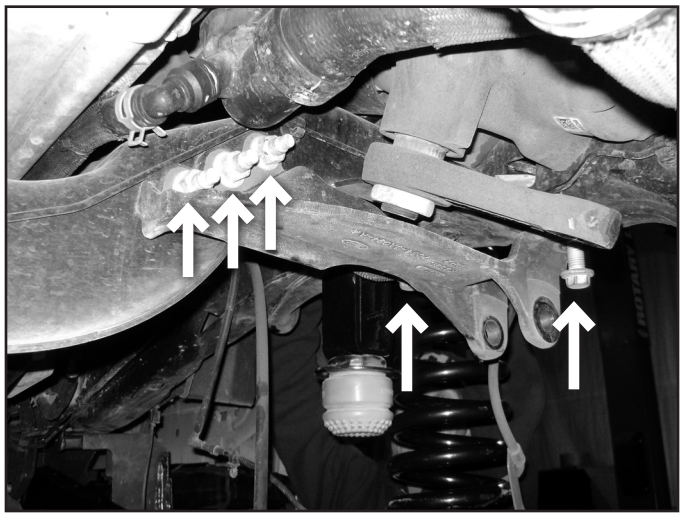
STEERING

12. Disconnect the OE steering stabilizer from the frame mount. The factory frame mount can be removed or remain on the frame. Disconnect the stabilizer from the factory drag link.

Tip *It is easiest to get the taper to break free from the drag link by using a small pitman arm puller. Stock stabilizer will not be reused.*

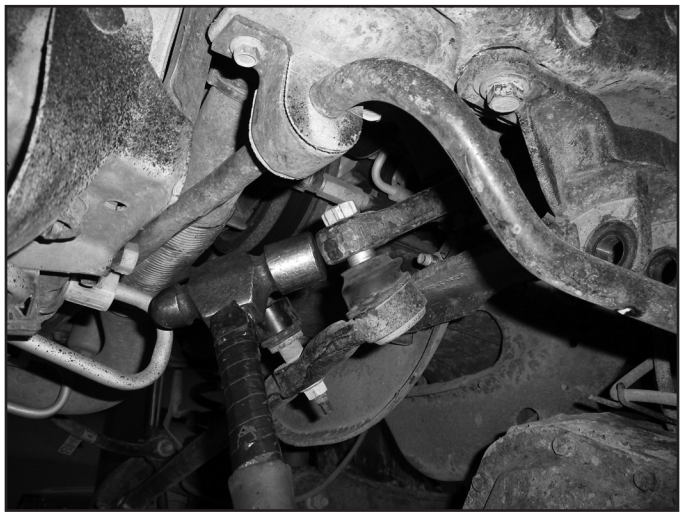
13. Disconnect the (5) bolts mounting the OE track bar bracket to the frame (Fig. 5). Remove bracket and retain hardware.

FIGURE 5



14. Disconnect the steering drag link from the pitman arm. Remove the cotter pin and castellated nut cap. Remove the nut and thread back on by hand a couple turns. Strike the end of the pitman arm near the drag link end to dislodge the taper from the pitman arm (Fig. 6). Remove the nut and the drag link from the pitman arm. Retain hardware.

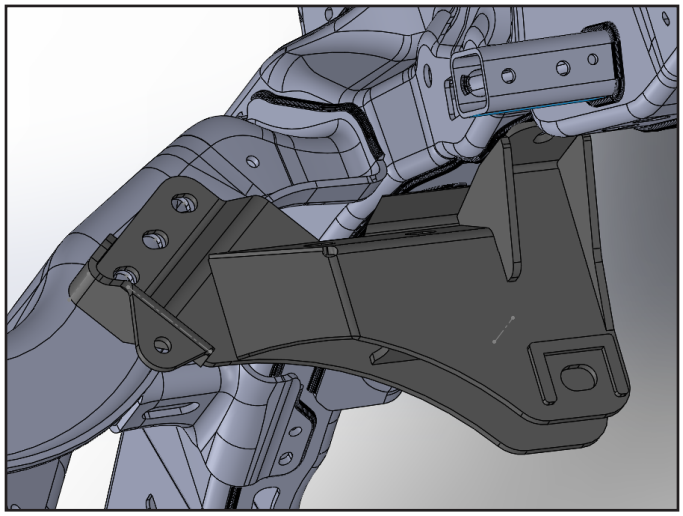
FIGURE 6



Tip *The same small pitman arm puller works well.*

15. 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.
16. Remove all of the dry-lock compound on the threads of the pitman arm nut and steering sector shafts. This is important to ensure that the new thread lock compound will adhere properly.
17. Apply a bead of the supplied thread lock all the way around the threads of the pitman arm nut.
18. Install the new pitman arm (indexed the same as the OE) and fasten with the pitman arm nut. Torque the nut to 350 ft-lbs.
19. Install the new track bar bracket (03412) using the stock mounting hardware as it was removed. Torque all (5) mounting bolts to 129 ft-lbs. It may be necessary to form the stock hard line slightly to clear the new track bar bracket. Do not install track bar at this time, it will be installed once the vehicle is on the ground. (Fig 7)

FIGURE 7



BUMP STOP MODIFICATION

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

FIGURE 8

21. Position the cup on the provided bump stop extension. (01001) The alignment tab on the bump stop cup will fit in the second hole in the extension
22. Install a provided 8mm x 130mm bolt and 5/16" SAE washer through the cup extension and attach to the frame in the original hole. Use Thread locker on the threads and torque to 20 ft-lbs (Fig 9 A & 9B).

FIGURE 9A

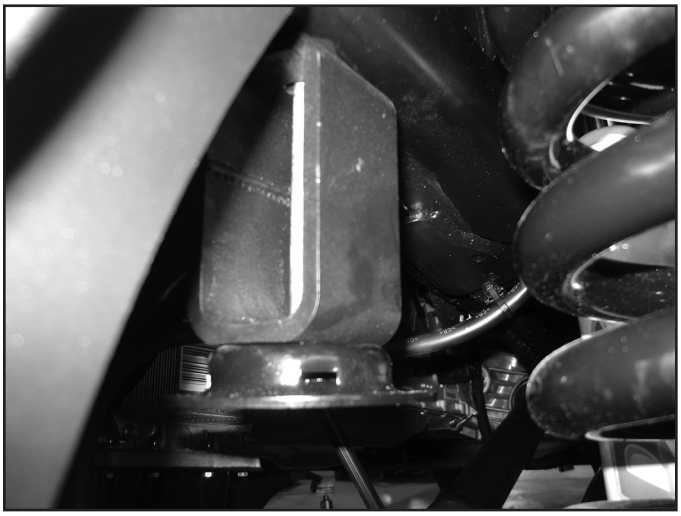


FIGURE 9B

INDEXING RING INSTALLATION (REQUIRED ON 6" LIFT, OPTIONAL ON 4" LIFT)

23. Refer to the provided instructions in the Indexing Ring Box Kit at this time.

FOUR LINK INSTALLATION

24. Working on one side of the vehicle at a time, loosen the four radius arm-to-axle mounting bolts but do not remove. Once again, ensure that the front axle is well supported and the front drive shaft is disconnected. Failure to disconnect the front drive shaft will damage the front drive shaft CV joint at the transfer case output.
25. Starting with the driver's side, remove the radius arm hardware and save hardware. Remove the radius arm from the vehicle. It may be necessary to remove one of the passenger's side axle bolts to allow the axle to rotate to hook up the four link arm completely.
26. Support the new transfer case cross member and remove the factory 12mm bolts on the driver's side used to support it.

    Note: If the four link brackets are installed with the factory transfer case cross member on a 4" kit, the transfer case cross member will have to be removed to install the four link brackets. Support the transmission with a jack and block of wood to not damage the oil plan. Remove the (4) 12mm bolts and the center (2) nuts attaching the transfer case isolator.

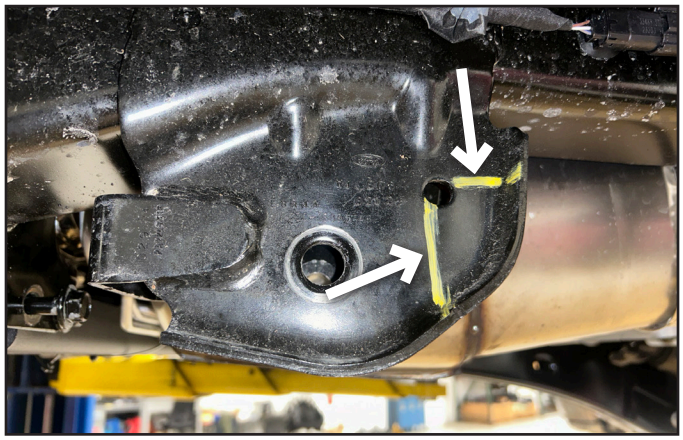
27. The wiring harness near the radius arm mount will need to be re-routed up and over the frame. the plastic support bracket can be removed. The harness can be secured in place using the provided zip ties (Fig 10A & 10B).

FIGURE 10A

FIGURE 10B

28. The OE radius arm bracket will need to be trimmed for upper arm clearance. Use the forward hole as a reference and draw a horizontal and vertical line. Cut along the marked lines to remove the forward section of the OE radius arm mount. Perform this same cut on the inside surface of the radius arm mount as well. (Fig 11)

FIGURE 11

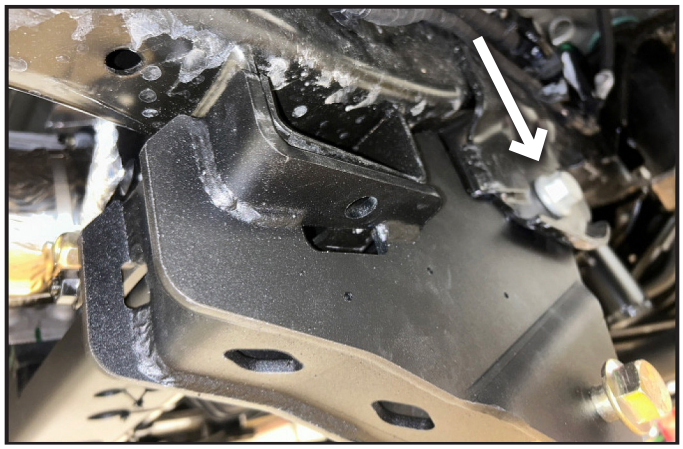


29. Clean up the sharp edges and paint the raw exposed metal. The bracket should look as picutred below. (Fig. 12)

FIGURE 12

30. Install the four link bracket to the factory radius arm bracket on the frame and around the transfer case cross member mounts on the frame. The bracket will mount into the same hole as the factory radius arm. Insert a 3/4" bolt and washer from Bolt Pack BP1070 through the same hole in the radius arm bracket on the frame and through the four link bracket. Attach using the 3/4" nut and washer, leave hardware loose. *Note: The factory hole for the radius arm on the frame may need clearance to fit the 3/4" hardware.* (Fig. 13)

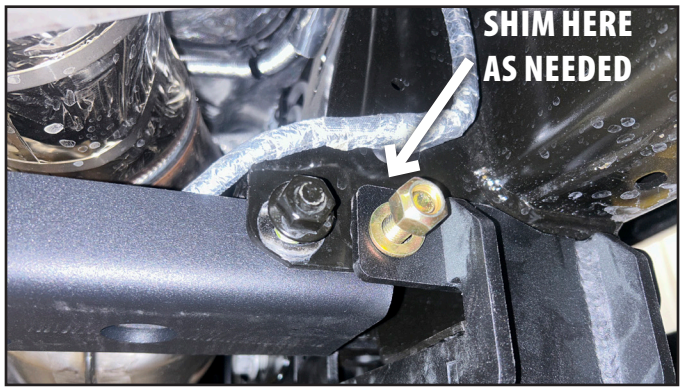
FIGURE 13



31. Install the provided 12mm x 150mm bolts and washer from Bolt Pack BP1070 through the four link bracket, frame mounts, and the new cross member running the bolt back to front. Attach using the provided 12mm prevailing torque nut and 1/2" SAE washer to the 12mm bolt. Leave all hardware loose (Fig. 12). Use the extra provided 1/2" USS Washer in BP1070 as shims in between the 4-link bracket and crossmember mount as needed. This will help take up any factory variation of the crossmember mount brackets on the frame. (Fig. 14)

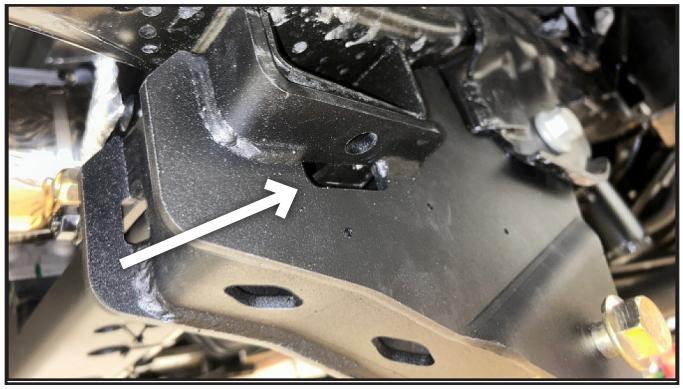
    Note: If the four link brackets are installed with the factory transfer case cross member on a 5" kit, install the factory cross member along with the (2) new 12mm hardware.

FIGURE 14



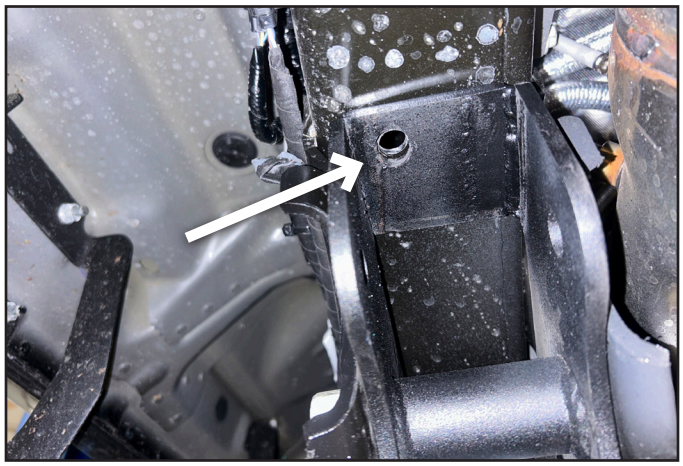
32. Drill a 9/16" hole in the frame through the hole in the side of the four link bracket. Paint the raw exposed metal. Insert the 1/2" x 1-1/4" bolt and 1/2" SAE washer from Bolt Pack BP1070 through the hole and attach using the provided 1/2" prevailing torque nut and 1/2" SAE washer. Leave hardware loose. (Fig. 15)

FIGURE 15



33. Mark and drill out to 9/16" the upper frame mount hole in the frame mount bracket. Paint the raw exposed metal. (Fig. 16)

FIGURE 16



34. *OE radius arm bracket positioning relative to the OE frame has been noticed to cause gaps on some vehicles for the 4-link brackets.* Check for any gaps between the frame and the 4-link bracket near the newly drilled hole. Use the provided 1/2" USS washers as shims as needed to take up this gap.
35. Back feed the provided fish wire through the 4-link bracket, 1/2" USS Washer shims if used, and newly drilled hole frame hole and out the large frame side hole near the body mount. (Fig. 17A, 17B, 17C)

FIGURE 17A

FIGURE 17B

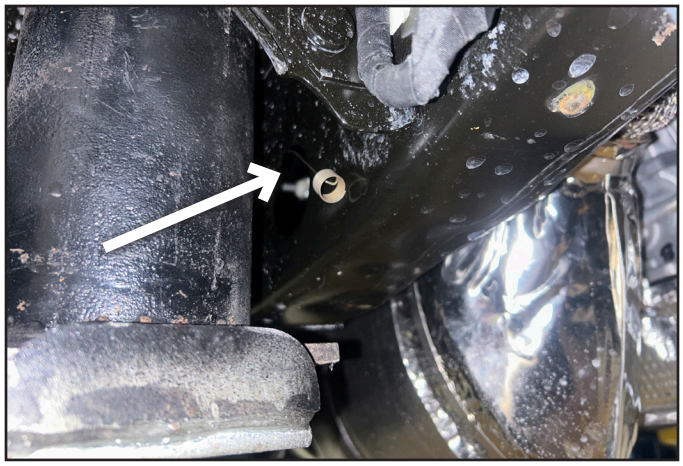
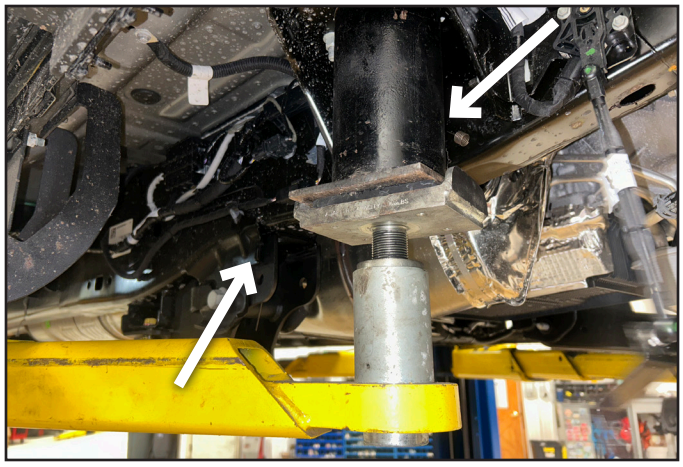


FIGURE 17C



36. Insert a carraige bolt plate onto the fish wire and then thread a 1/2" carriage bolt onto the fish wire. Feed the carraige bolt plate into the frame and pull the fish wire with carriage bolt through until the threads are exposed. Unthread the fish wire from the carriage bolt. Lightly install a 1/2" SAE Washer and 1/2" previaling torque nut onto the threads being careful not to push the bolt into the vehicle's frame rail. (Fig.. 18A, 18B)

FIGURE 18A

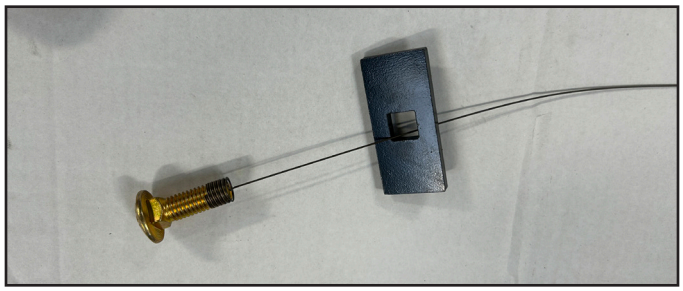
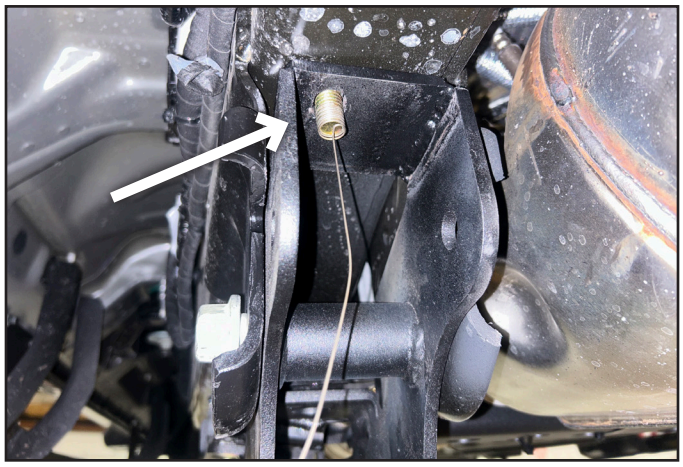


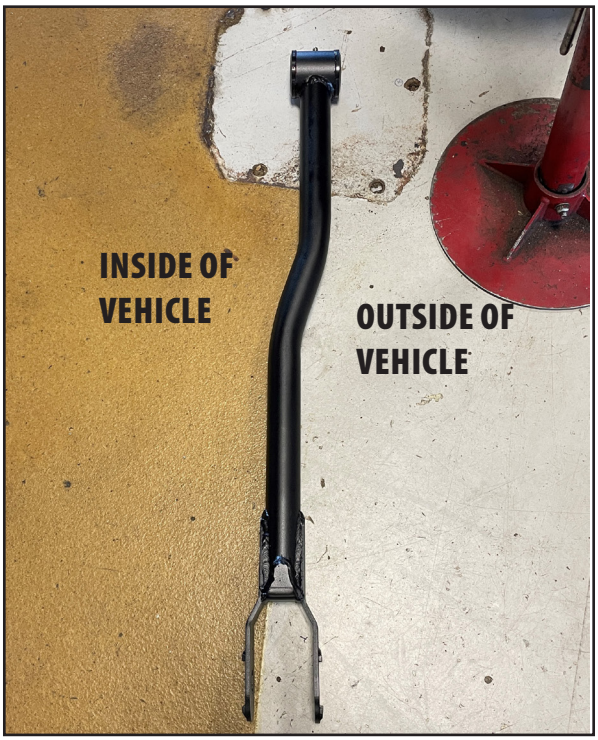
FIGURE 18B



37. Lightly grease and install the provided bushings (3537BK) and sleeves (174) into the two upper control arms. Lightly grease and install the provided bushings (3527BK) and sleeves (7) into the two lower control arms.
38. 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.
39. Using a 5/8" x 4-1/2" bolt, 5/8" SAE Washer, and 5/8" prevailing torque nut from Bolt Pack BP1071, install the assembled upper control arm (shorter of the two arms) into the upper hole on the 4-link bracket (Fig. 19). Install the arm so that the grease fitting is down and the offset is towards the inside of the vehicle. Attach the upper control arm to the axle using a factory 18mm bolt along with a factory 18mm nut. Leave hardware loose.

    Note: The upper mount on the driver's side factory radius arm will have a captive nut. Use one of the left-over 18mm lower factory nuts for the upper bolt.

FIGURE 19



40. Using a 3/4" x 5" bolt, 3/4" SAE Washer, and 3/4" prevailing torque nut from Bolt Pack BP1071, install the lower control arm into the lower hole on the 4-link bracket. Install the arm so that the grease fitting is down and the offset is towards the inside of the vehicle. (Fig 20A). Attach the lower control arm to the axle using the provided 18mm x 150mm bolt, 3/4" SAE washer, 18mm prevailing torque nut from bolt pack BP 1071 and cam plates. Index the cam plates so they are facing towards the rear of the vehicle in the cam slot on the lower control arm. Leave hardware loose (Fig 20B).

FIGURE 20A

FIGURE 20B

41. Use the provided 1/4" bolt, 1/4" SAE washers, and 1/4" nut with wire clamp from Bolt Pack BP1071 to attach the hub actuator hose to the upper control arm in order to keep it away from the bump pad on the axle. Torque this hardware to 76 in-lbs.
42. Tighten the hardware for **only** the four link bracket (do not tighten the control arms at this time) in the following order: 12mm hardware to 50 ft-lbs, 1/2" hardware to 80 ft-lbs, 18mm OE hardware to 150 ft-lbs. The control arm bolts at the frame and axle will be tightened when the vehicle is on the ground.
43. Repeat the frame bracket and control arm installation procedure on the passenger's side of the vehicle.

    Note: If the nuts for the center mounted transfer case isolator are still disconnected from the transfer case cross member, reattach them now and torque to factory specifications.

COIL SPRING INSTALLATION (COILOVER INSTALLATION SEE SEPARATE INSTRUCTION SHEET)

44. Remove the front shocks from the vehicle completely at this time.
45. Lower the axle enough to allow the coils to be installed. Do not over extend the brake lines. Check ABS, brake, and vacuum lines to ensure they are not overstretched.
46. Install new coils with factory isolators. Rotate the springs so that they seat in the bottom coil perch properly. Raise the axle to seat the coil springs into the correct mounts.
47. Grease and install sleeves and bushings into the shocks.
48. BDS (Silver / non-Fox) shocks will require the lower mount to be modified. The sharp, non-formed edge will need to be ground to match the formed profile. Grind this and coat with paint. (Fig 21A, 21B)

FIGURE 21A

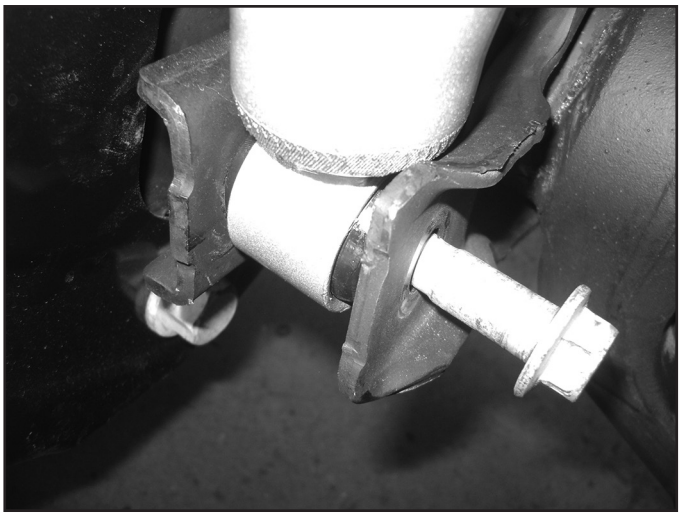
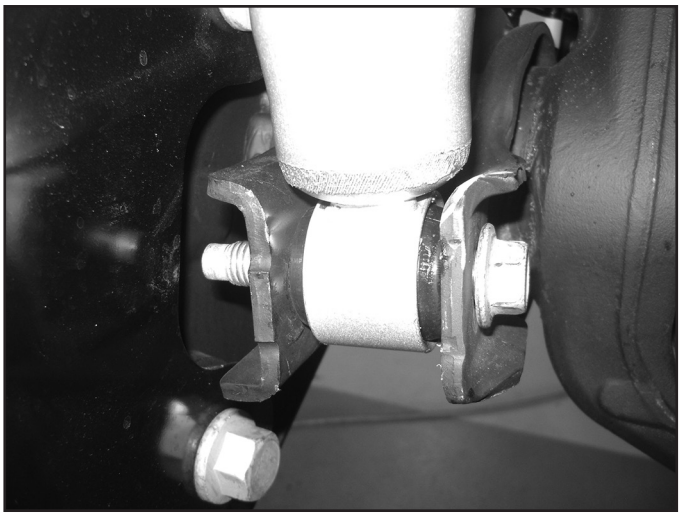


FIGURE 21B

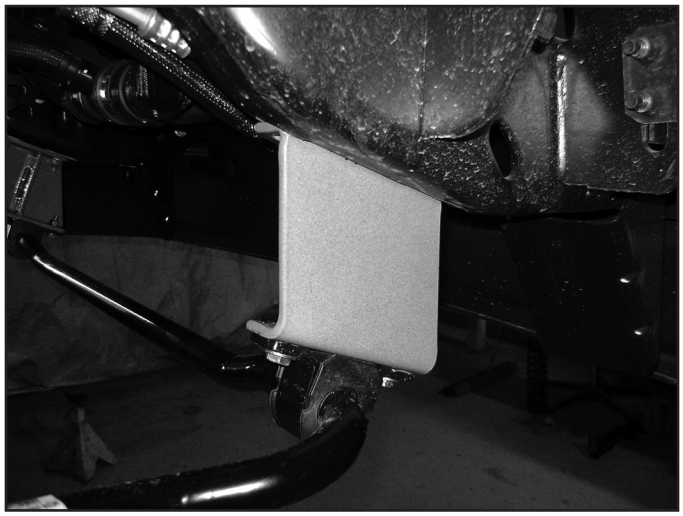


49. Compress the coils slightly by using a hydraulic jack on the axle. Install new shocks with factory lower hardware and stem washers, bushings, and 1/2" fine thread nut on the upper mount. Tighten the upper mount until the bushings begin to swell. Tighten lower mount to 50 ft-lbs.
50. Reattach the factory brake line brackets to the lower coil seat with factory hardware and thread locker at this time.

SWAY BAR RELOCATION

51. 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.
52. 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. Leave hardware loose.
53. Attach the sway bar to the new drop brackets in the correct orientation with the 3/8" hardware from Bolt Pack #422. Torque the 3/8" and factory hardware to 30 ft-lbs (Fig 22). Center the bolts in the slots in the sway bar drop bracket. The position of the bracket may need to be adjusted for sway bar link to drag link clearance.

FIGURE 22



54. Install the sway bar link ends to the sway bar and secure with the OE hardware. Torque to 90 ft-lbs.

BRAKE LINE / ABS / VACUUM

55. Reattach all vacuum lines. Use provided zip ties where needed.
56. **6" Kit Only:** Install the provided brake line brackets with the factory hardware. The driver's side will be a straight drop (Fig. 23A) and the passenger's side will be angled back towards the rear of the vehicle (Fig. 23B).

FIGURE 23A

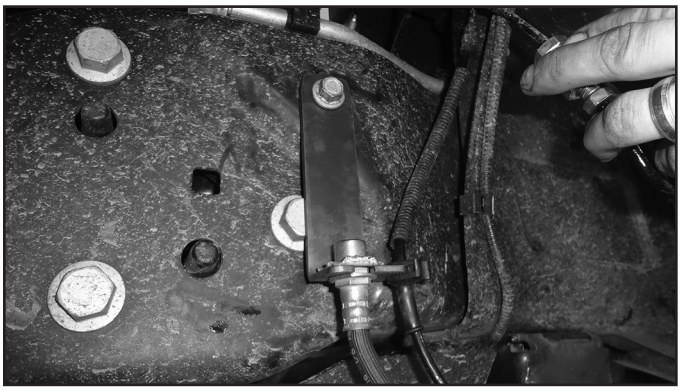


FIGURE 23B

57. **6" Kit Only:**Remove the clip holding the brake line to the factory bracket. Save the clip for later installation.
58. **6" Kit Only:** Warning: The next three steps must be performed quickly to ensure minimal brake fluid loss. Un-thread the factory soft brake line from the hard brake line.
59. **6" Kit Only:** Remove the factory brake line bracket from the brake line. Discard the bracket it will not be reused.
60. **6" Kit Only:** Thread the provided U-brake line with the union first onto the factory hard brake line, followed by threading the U-brake line onto the factory soft brake line. Check to make sure all connections are tight and no brake fluid is leaking.

61. **6" Kit Only:** Attach the factory soft brake line to the brake line bracket on the frame with the clip removed in the previous step. The brake line should be facing down towards the axle.

Note: The factory soft brake line may need to be rotated so that it will line up with the notches on the new brake line bracket on the frame. Break free the U-brake line from the soft line and rotate as needed.

62. **6" Kit Only:** Make sure the brake lines are close to the frame in order to provide clearance to the tires, but are not rubbing on the frame. The brake line junctions can be loosened and turned to provide clearance where needed (Fig. 24C & 24D).

FIGURE 24C

FIGURE 24D

63. **6" Kit Only:** Attach the ABS wire to the new brake line bracket. The rubber grommet may need to be slid up the ABS line, use silicone spray to help aid in moving the rubber grommet. (Fig. 25)

FIGURE 25

64. **4" Kit Only:** Install the new brake line brackets, the brackets are side specific. Brake lines will need to be reformed to reach the new mounting position. It may be necessary to slightly twist the brake line fittings in relation to the hard line to get adequate clearance to the frame / wheel and tire. Attach the ABS wire to the driver's side with 1/4" hardware and cable clamp in Bolt Pack 341 (Fig 26A, 26B)

FIGURE 26A

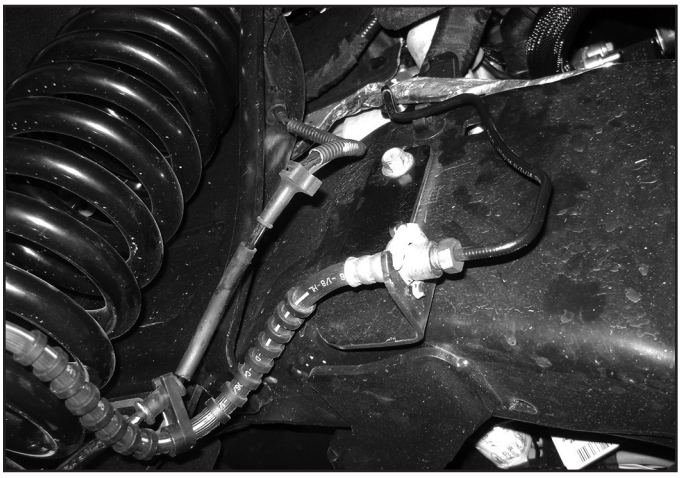
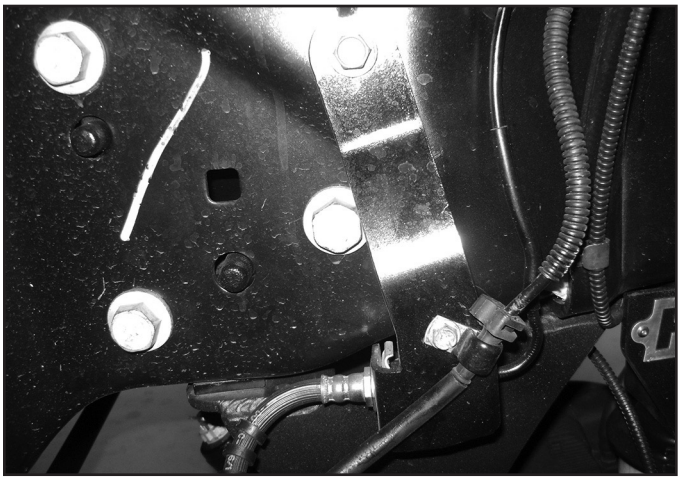


FIGURE 26B



STEERING STABILIZER INSTALLATION

65. Reattach the steering drag link to the pitman arm. Torque nut to 148 ft-lbs. Install the original castellated nut cap and new 1/8" cotter pin.

66. Skip this step if a dual steering stabilizer will be used. Center the steering wheel. Extend the steering stabilizer 4-1/2" to 4-3/4" and attach to the frame end with stud pack in the stabilizer box kit. Attach stabilizer bracket to the drag link with the included u-bolts, washers, and nuts. Attach stabilizer to bracket with 3/8" hardware. Tighten 5/16" hardware to 15 ft-lbs, 3/8" to 35 ft-lbs, 7/16" Stud nut to 45 ft-lbs, and 1/2" stud nut to 65 ft-lbs. (Fig 27A & 27B)

FIGURE 27A

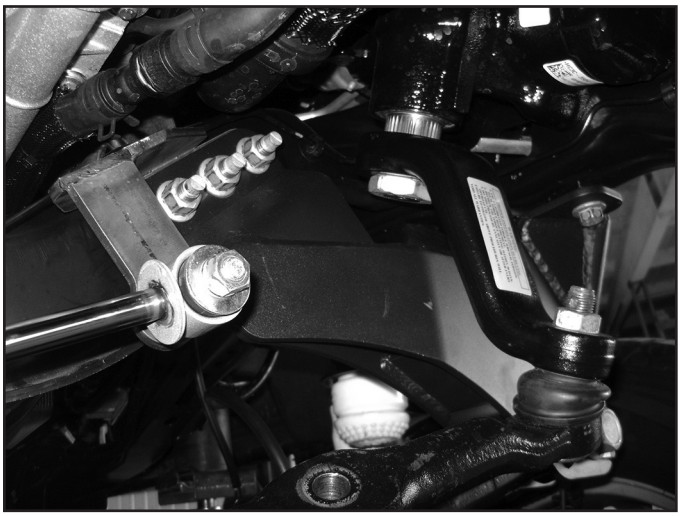
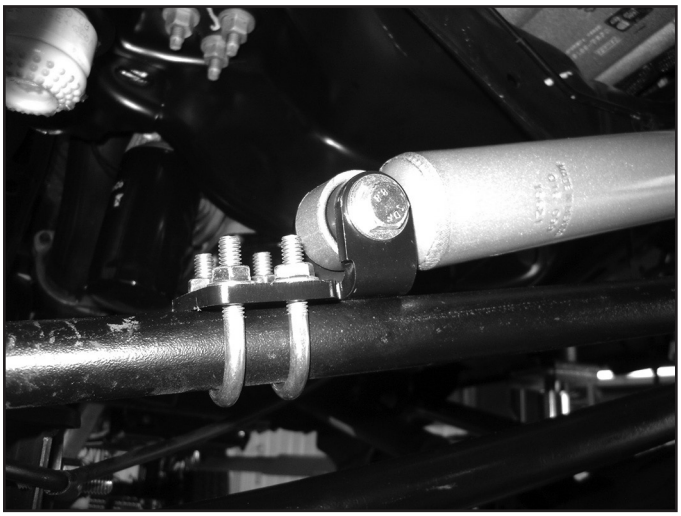


FIGURE 27B

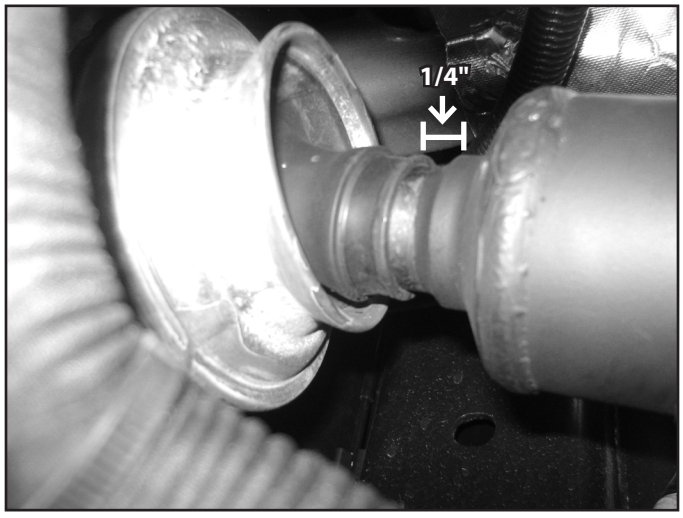


67. Properly bleed the brake system of air and top off the brake fluid reservoir with the proper type of fluid (see owners manual).

68. Remove the factory CV joint clamp at the front transfer case output on the drive shaft. Slide the end of the boot up approximately 1/4" and re-clamp with new CV joint boot clamp. Use the CV Boot Clamp Pliers to compress the CV joint boot clamp to the front drive shaft (Fig 28).

69. Reattach the front drive shaft to the front differential with factory hardware. Tighten to 26 ft-lbs.

FIGURE 28

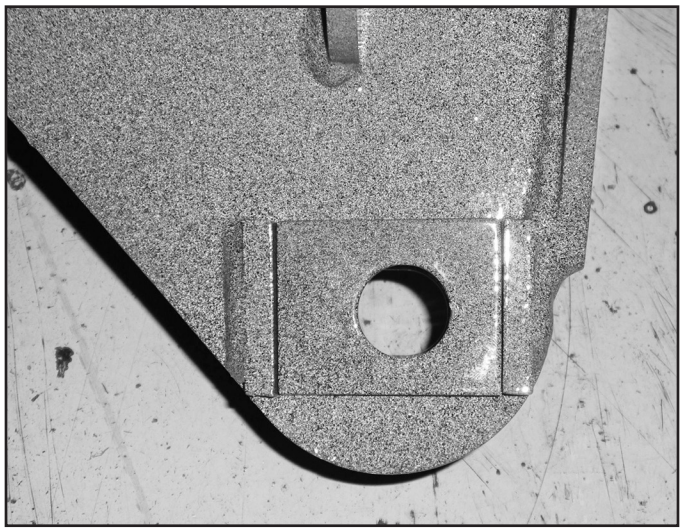


70. Install the front wheels and lower the vehicle to the ground. Torque lug nuts to 165 ft-lbs.

71. 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. Position the cam washers so that the hole is closer to the driver's side for 4" kits. (Figure 29) The hole should be closer to the passenger's side for 6" kits. Torque hardware to 406 ft-lbs.

Tip *Due to variations in trucks, it may be necessary to rotate the cams 180 degrees to have the axle more centered.*

FIGURE 29 - 4" OFFSET TOWARDS DRIVER'S SIDE



72. Bounce the front of the vehicle to settle the suspension. Torque all 3/4" or 18mm 4-link hardware to 220 ft-lbs. Torque 5/8" upper 4-link hardware to 159 ft-lbs.
73. The badge can now be riveted on to the 4-link brackets using the provided 1/8" rivets. Any residue on the badge can be cleaned up using alcohol or brake cleaner before install. With the badge not installed it can be painted to what ever color you desire, or left raw as a stainless steel badge.
74. Check all hardware for proper torque.

REAR INSTALLATION

75. Raise the rear of the vehicle and support with jack stands under the frame rails just ahead of the spring hangers.
76. Remove the wheels.
77. Support the axle with a hydraulic jack.
78. Remove the OE shocks. Retain all mounting hardware.

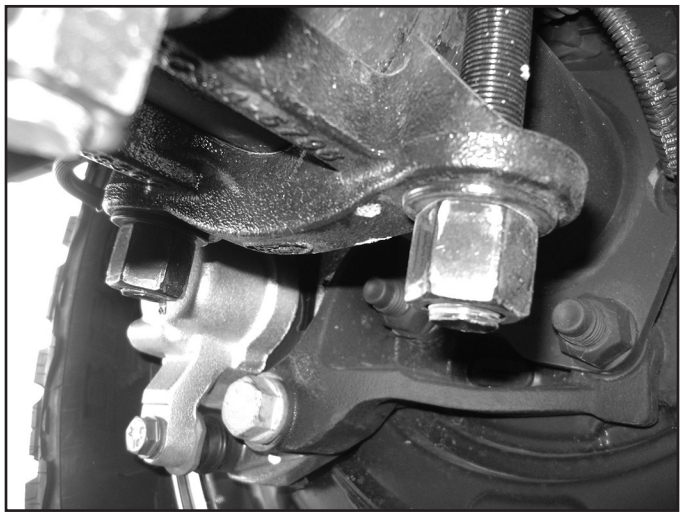
4" AND 6" BLOCK KITS ONLY

79. Support the rear axle with a hydraulic jack. Disconnect the passenger's side spring u-bolts. Loosen the driver's side to allow the axle to droop out.
80. Lower the axle and remove the factory lift block. It will not be reused.
81. Lower the axle enough to place the provided lift block between the axle and the leaf spring. Position the block so the bump stop wing faces inward, and the small side of the block faces forward. (Fig 1)

FIGURE 1

82. Raise the axle to engage the block spring alignment pins. Fasten the entire assembly with the provided u-bolts, washers, and nuts. Snug but do not torque the u-bolts at this time. (Fig 2)

FIGURE 2



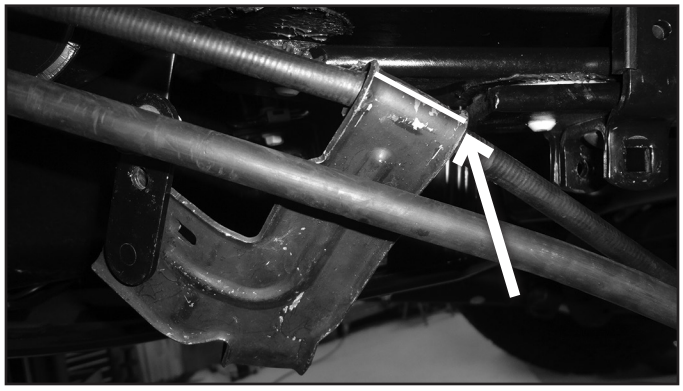
Tip *Ensure all u-bolts have equal thread exposed below the nut.*

83. Repeat block installation of the driver's side. Take care not to over extend the brake lines.
84. If more parking brake cable slack is needed, remove the cable from the rear-most retaining bracket on the frame.

E-BRAKE CABLE RELOCATION PART 1 (4" REPLACEMENT LEAF SPRING AND ALL 6" KITS)

85. Gain slack from the E-Brake cable on the driver's side. It is easiest to pull on the cable and use a pair of vise grips to hold the cable, be careful not to damage the cable.
86. Cut the bracket for the E-brake cable that is going to the passenger side of the vehicle in order to release the cable from the bracket. See (Fig. 3) for which bracket and where to cut. It is easiest to cut most of the way through the steel and then bend the flange up to release the cable from the bracket. Be careful not to cut the E-brake cable!

FIGURE 3



87. Depress the tabs and remove the passenger side E-brake cable from the mount on the frame.
88. Once the passenger side E-brake cable is free, remove the bolt and J-nut attaching the bracket to the frame.
89. Remove the driver side E-brake cable from the bracket and discard the bracket and hardware.
90. Remove the bolt and J-nut for smaller E-brake cable bracket. The E-brake cable relocation bracket will be reinstalled after the new leaf

4" AND 6" REPLACEMENT LEAF SPRING ONLY

91. Disconnect the passenger's side u-bolts and lower the axle from the spring.
92. **4" Kit ONLY:** Discard OE block, new leaf springs will install directly to the axle.

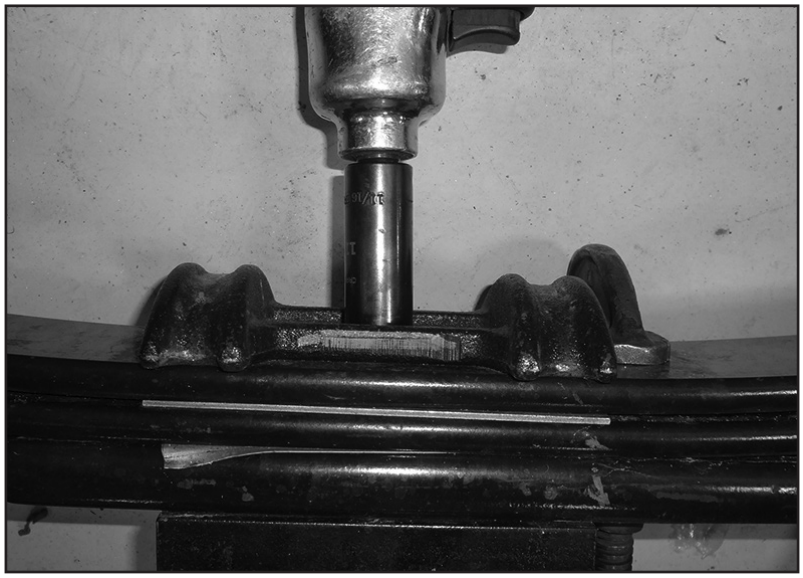
93. 6" Kit ONLY: Retain the OE block, to be installed with the new leaf springs.

94. Loosen and remove the front spring-to-frame and rear shackle-to-frame bolts and remove the spring from the vehicle. *Note: When installing the driver's side leaf spring the fuel tank may have to be shifted towards the passenger's side of the vehicle to remove the front spring-to-frame bolt. Support the fuel tank and loosen the bolts for the fuel tank hanger. Shift the fuel tank towards the passenger's side of the vehicle to remove the leaf spring bolt.*

95. 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").

96. Using a pair of clamps, clamp the top and bottom of the factory leaf next to the OE upper U-bolt mount. Remove the OE upper U-bolt mount from the center pin on the top of the OE leaf spring in order to be installed on the new spring. Reassemble the OE leaf spring with the OE center pin and remove the clamps (Fig. 4).

FIGURE 4



97. The OE upper U-bolt mount will be installed on the new leaf springs. Clamp the top and bottom of the new leaf springs near the center pin, but still allowing enough room to install the OE upper U-bolt mount. Remove the center pin from the new leaf springs and attach the OE upper U-bolt mount to the new leaf springs with the center pin. A pair of new center pins are provided incase the center pins in the new leaf springs strip out. (Fig. 5)

FIGURE 5

98. Install the new spring in the vehicle with the OE bolts. Use the provided 7/8" SAE Washers as spacers as needed for the front leaf spring bushing (use one on each side of the leaf spring bushing). Leave hardware loose. All of the spring pivot bolts will be torqued with the weight of the vehicle on the springs.

99. Remove all dirt and corrosion from the axle spring pad and raise the axle to the spring while aligning the center pins with the center pin holes. Fasten the spring with the provided u-bolts, 5/8" washers, 5/8" high nut, and OE lower u-bolt plate. Snug but do not torque u-bolts at this time. *Note: The U-bolts may need to be cut shorter for the socket to tighten the nuts*

100. Repeat the procedure on the driver's side. Take care not to over extend the brake lines.

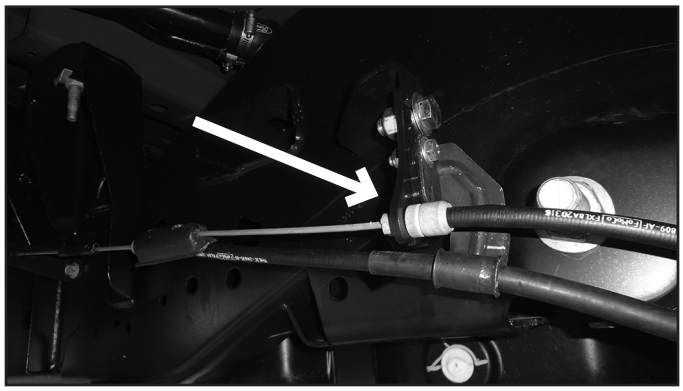
E-BRAKE CABLE RELOCATION PART 2 (4" REPLACEMENT LEAF SPRING AND ALL 6" KITS)

101. Install the new E-brake cable bracket with the provided 1/2" hardware and 5/16" hardware from bolt pack 989 as shown in Figure 39. The smaller driver side E-brake cable bracket will be installed in the same position as it was from the factory, but attached with the 5/16" hardware (Fig. 6).

FIGURE 6

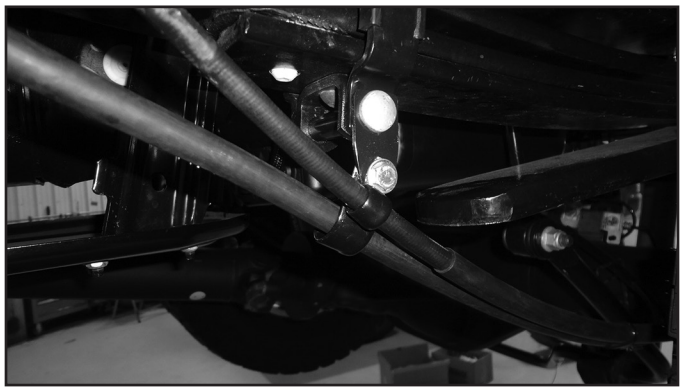
102. Install the passenger side E-brake cable into the bracket, make sure the tabs on the cable lock the cable into place. (Fig. 7)

FIGURE 7



103. Remove the 3/8" bolt on the front leaf springs clamp. Install the E-brake clamp bracket with the new provided 3/8" bolt and nut from bolt pack 998 through the leaf spring clamp. Make sure the E-brake clamp bracket is towards the outside of the leaf spring. Tighten the 3/8" hardware with the spacer tube in between to 25 ft-lbs (Fig. 8).

FIGURE 8



104. Use the two provided wire clips from bolt pack 989 to secure both E-brake cables to the E-brake clamp bracket with the provided 5/16" hardware from bolt pack 989.

ALL REAR KITS

105. Install the new shocks with the original mounting hardware.

106. Retain ABS wires and vacuum lines with included zip ties. Ensure there is adequate slack at droop and no interference.
107. Install wheels, cycle steering to check for brake line, ABS wire, ETC to tire clearance. With clearance verified lower the vehicle to the ground.
108. With the weight of the vehicle on the axle, torque the u-bolts to 130-150 ft-lbs.
109. Check all hardware for proper torque.
110. Cycle steering to check for brake line, ABS wire, ETC to tire clearance, rotate the driver's side brake line on the hard line if necessary.
111. Adjust steering wheel with adjustment on the drag link, do NOT drive the vehicle with the steering wheel off-center or adverse traction control affects may arise. Rotate the clamps once the steering wheel is straight as shown. (Fig 9A - incorrect, clamps will interfere with sway bar, Fig 9B - correct clearance

FIGURE 9A *INCORRECT*

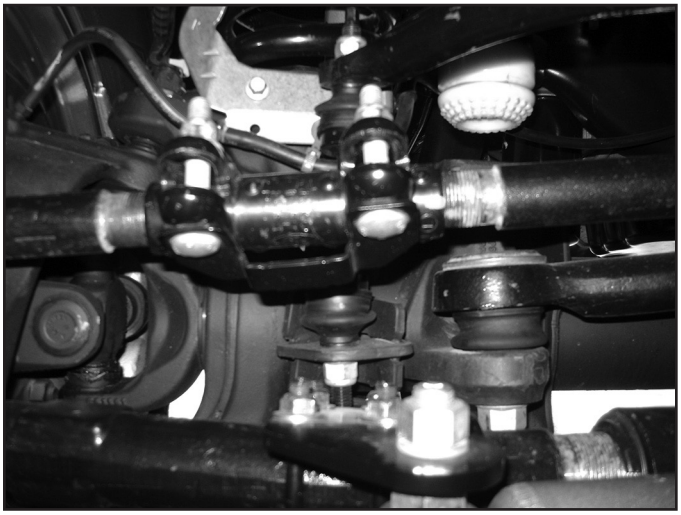
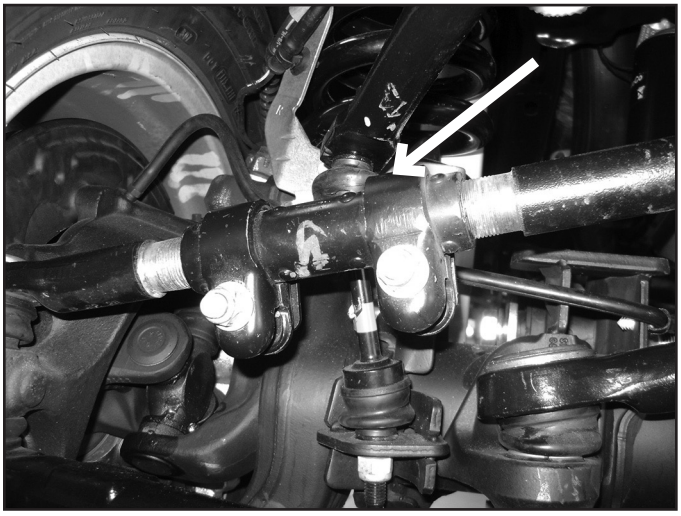


FIGURE 9B *CORRECT*



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112. An alignment is recommended, but not necessary. BDS recommends running caster at or above the maximum specification for improved handling / driving purposes.
113. Adjust headlights
114. Check hardware after 500 miles.

WE WANT TO SEE YOUR RIDE!

Grab photos of your BDS-equipped truck in action and send them in for a chance to be featured. Send it in to our Bad Ass Rides customer gallery at bds-suspension.com/bar and post them on the BDS Fan Page on Facebook at facebook.com/BDSSuspensions. Don't forget about your BDS swag! BDS offers t-shirts, hoodies, decals and more available on the BDS website or through your local BDS distributor.

TIME TO HAVE SOME FUN

Thank you for choosing BDS Suspension.

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