



## D1402 Installation Instructions 2013-14 Ram 3500, 2014 Ram 2500 4.5" Replacement Radius Arm Suspension Lift

### Read and understand all instructions and warnings prior to installation of product and operation of vehicle.

Zone Offroad Products 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. Minimum tool requirements include the following: Assorted metric and standard wrenches, hammer, hydraulic floor jack and a set of jack stands. See the "Special Tools Required" section for additional tools needed to complete this installation properly and safely.

#### » PRODUCT SAFETY WARNING

Certain Zone 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. Zone Offroad Products 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.

#### » TECHNICAL SUPPORT

*Live Chat* provides instant communication with Zone tech support. Anyone can access live chat through a link on [www.zoneoffroad.com](http://www.zoneoffroad.com).

[www.zoneoffroad.com](http://www.zoneoffroad.com) may have additional information about this product including the latest instructions, videos, photos, etc.

Send an e-mail to [tech@zoneoffroad.com](mailto:tech@zoneoffroad.com) detailing your issue for a quick response.

**888.998.ZONE** Call to speak directly with Zone tech support.

#### » 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 Zone Offroad Products. Always wear safety glasses when using power tools.
6. If installation is to be performed without a hoist, Zone Offroad Products 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.

#### Difficulty Level

easy 1 2 3 **4** 5 difficult

Estimated installation: 6 hours

#### Special Tools Required

Pitman Arm Puller

#### Tire/Wheel Fitment

37x12.50 w/5-1/2" Backspacing

35x1250 w/ 4-1/2" Backspacing

**\*Important\* Verify you have all of the kit components before beginning installation.**

## D1401 Kit Contents

### Qty Part

1	DRV Coil	2	Brakeline L Bracket
1	PASS Coil	2	5/16"-18 x 1" self threading bolt - clear zinc - hex head
2	Bump Stop	1	Loctite
1	Pitman Arm	2	Zip Tie
1	4" Zone Track Bar Bracket	4	1/2" Bolt Tab
1	Fish Wire	1	Radius Arm - DRV
1	1/2" Bolt Tab	1	Radius Arm - PASS
1	1/4" Track Bar Spacer	4	Large bushings
1	Bolt Pack	2	90 degree grease zerk
	1 1/2"-13 x 1-3/4" bolt - grade 8 - yellow zinc	2	Radius arm sleeve
	1 1/2"-13 Prevailing torque nut - yellow zinc		
	1 1/2"-13 Nut (non locking) - yellow zinc		
	3 1/2"-13 USS Washer - yellow zinc		
	1 18mm-2.50 x 80mm bolt - class 10.9 clear zinc		
	1 18mm-2.50 Prevailing torque nut - clear zinc		
	2 3/4" SAE Washers - Clear zinc		

### Important—measure before starting!

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

LF \_\_\_\_\_ RF \_\_\_\_\_

LR \_\_\_\_\_ RR \_\_\_\_\_

## » PRE-INSTALL NOTES

*Note: In vary rare circumstances, a transfer case indexing ring kit may be needed for high speed 4wd driving. This kit is available separately, D5613 for 6 bolt transfer cases and D5813 for 8 bolt (Aisin Transmission).*

## INSTALLATION INSTRUCTIONS

1. Park vehicle on clean, flat, and level surface. Block the rear wheels for safety.
2. Remove the front trackbar bolt from the frame rail. Retain all hardware. **Figure 1**



Figure 1

3. Raise the front of the vehicle and support the frame rails with jackstands. Do not support on the radius arms, they will be removed during the installation.
4. Support the front axle with a hydraulic jack.

5. Remove the factory wheels, remove the retaining clips that hold the rotor on and may interfere with aftermarket wheels.
6. Break the jam nuts loose on the adjusting collar of the drag link. **Figure 2**



Figure 2

7. Disconnect the tie rod from the pitman arm, do not damage the tie rod boot. Mark the orientation of the pitman arm and remove the pitman arm from the sector shaft. **Figure 3**

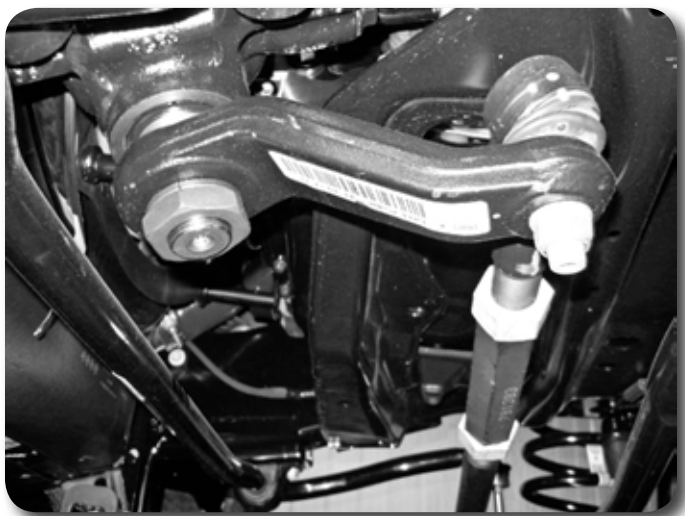


Figure 3

8. Disconnect the sway bar links from the sway bar. Keep the nuts. **Figure 4**



Figure 4

9. Disconnect the brake line bracket from the top of the radius arm mount on the axle, retain bolt, discard bracket. Figure 5

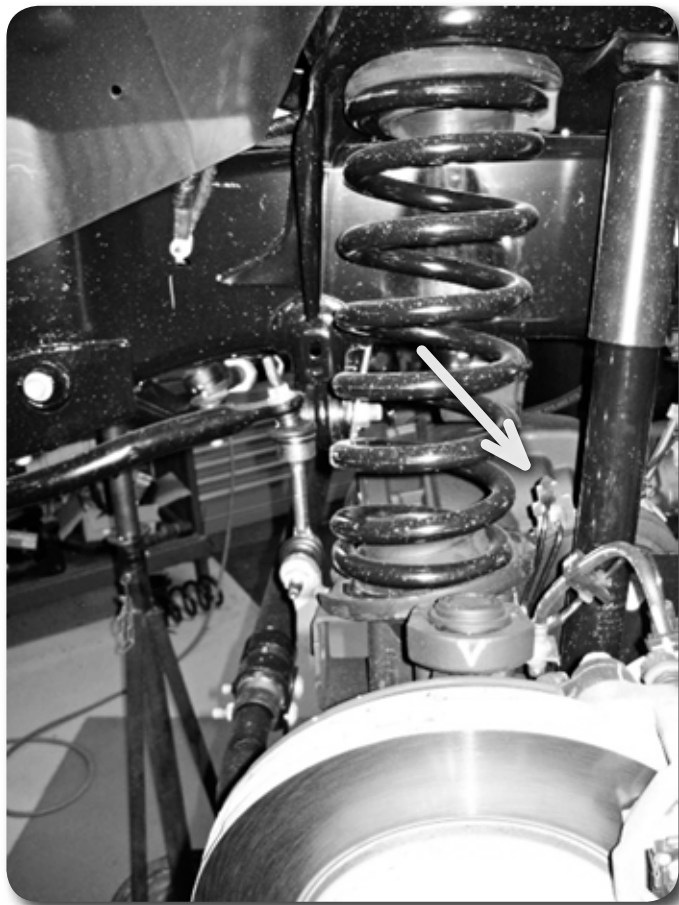


Figure 5

10. Disconnect the factory shock from the lower shock mount. Figure 6 Lower the front axle and remove the coil springs.

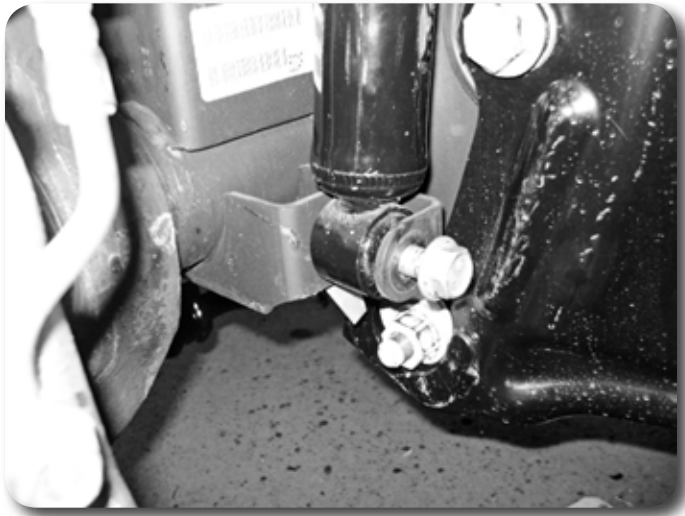


Figure 6

11. Raise the front axle and reattach stock shocks with factory bolt. It is not necessary to put the nut tab back on. The shocks will be there to keep the axle secure. Keep a jack under the axle for extra support.
12. Grease bushings and sleeves, install into the new replacement radius arm. Thread grease fitting into eye with grease fitting facing down. **Figure 7**

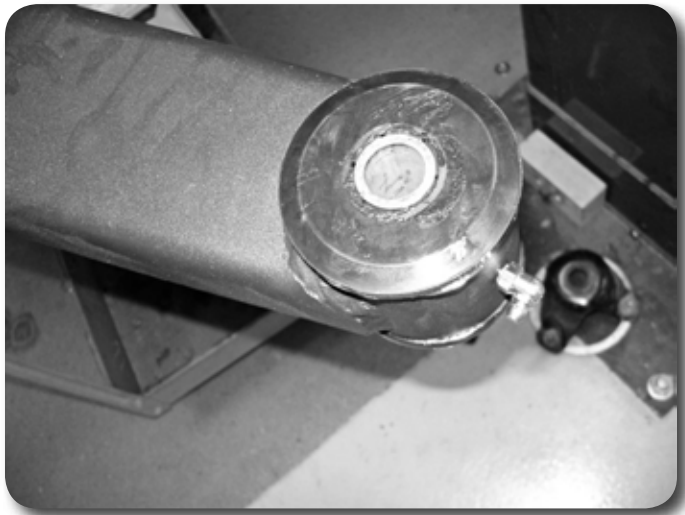


Figure 7

13. Remove the passenger's side radius arm. Retain all hardware. It will be necessary to remove the shock bolt and move the shock out of the way to get the upper hardware out.
14. Install new radius arm with the offset facing out towards the wheel for additional clearance when turning. It may be difficult to hookup all of the hardware at this time. Hook up the upper radius arm bolt at the axle and the frame first. Reattach the front shock for safety. **Figure 8 & 9**

**Step #14 Note:**

Radius arm is designed to clear the tire at full lock. Offset will be closest to the tire.

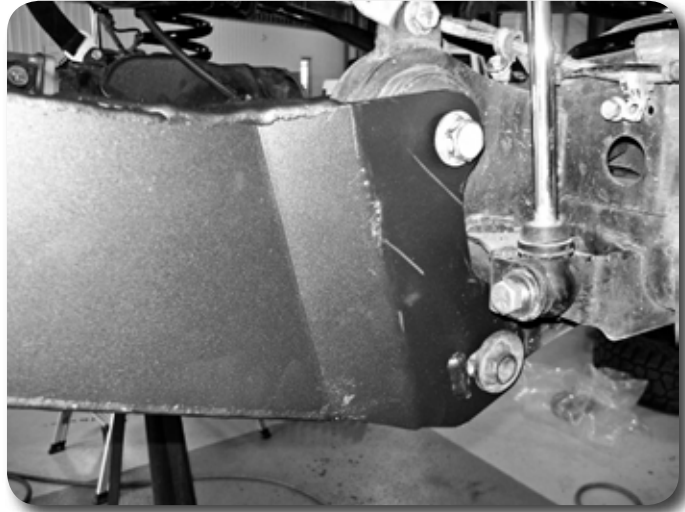


Figure 8

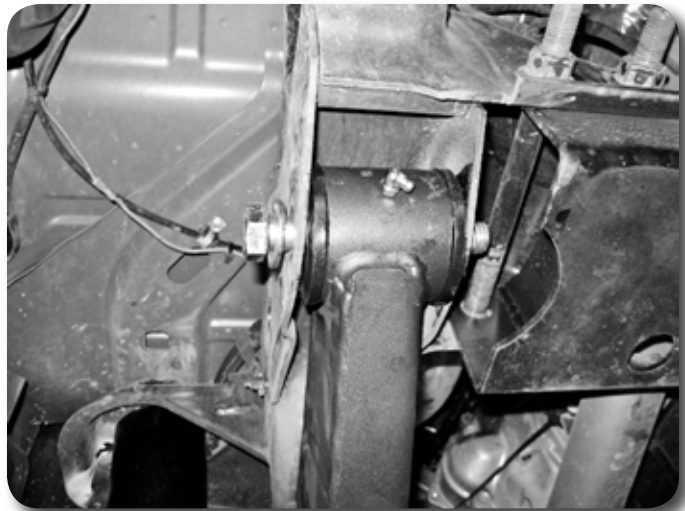


Figure 9

15. Support the pinion, disconnect the driver's side radius arm hardware and remove the stock arm.
16. Install the lower cam bolt on the passenger's side if it was unable to be installed in the previous step.
17. Install new driver's side arm with factory hardware. Reattach the factory shock for safety.
18. Adjust the cam so the bolt head is as far forward as possible (same as Pass side). Tighten radius arm hardware at the axle to 200 ft-lbs. Leave radius arm pivot hardware loose at the relocation brackets.
19. Remove the factory bump stops, it is easiest to hit them from side with a hammer to pop them out. **Figure 10**



Figure 10

20. Grease new replacement bump stops and raise axle with hydraulic jack to press the bump stops into position. These will be a tight fit. Figure 11



Figure 11

21. Install the trackbar bracket with factory bolt through the original trackbar hole, do not tighten.
22. Clearance the factory hole on the frame crossmember where the trackbar bracket meets to 9/16".
23. The upper slot in the trackbar bracket will align with the hole in the factory trackbar bracket. These holes have variations in their position, and minor grinding of the factory hole may be required. Clearance the hole so 1/2" hardware will fit through it. Figure 12

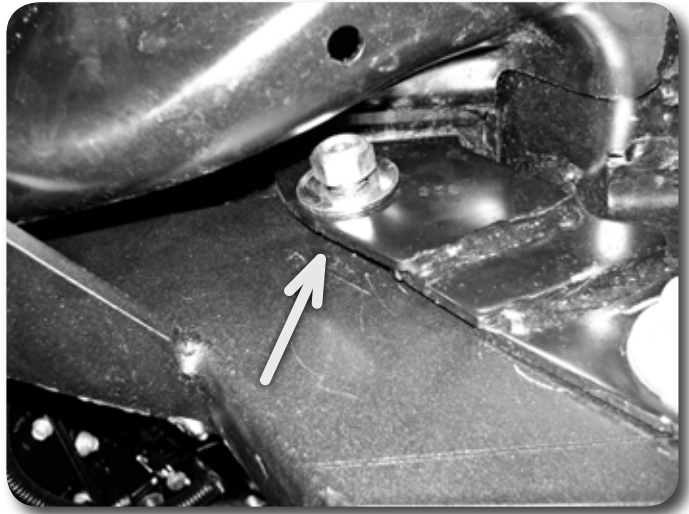


Figure 12

24. Fish the bolt tab through the frame rail with the included bolt wire and attach to the trackbar bracket with  $\frac{1}{2}$ " USS washer and regular nut. Attach the upper hole with  $\frac{1}{2}$ " x 1-1/2" bolt with spacer washer as shown. Figure 13, 14, 15



Figure 13





Figure 14

**Fig 14 Note:**

Use fish wire to thread the bolt tab through the frame



Figure 15

25. Tighten ½" trackbar hardware to 65 ft-lbs. Tighten 18mm factory bolt to 250 ft-lbs.
26. Support front axle and remove the stock shocks. Retain the lower hardware, discard shocks and upper hardware.
27. Lower the axle and install the new coils with factory isolator. The coils are side specific to reduce the amount of bow. There may be a slight amount of bow in the coils, this is due to the radius arm design and the caster change through wheel travel along with the offset coil mounts.

### Step #28 Note:

Due to radius arm design - hook up the lower shock mount first for easiest installation

### Fig 16-17 Note:

Cut the tab from the tie rod and drag link

28. Grease and install bushings and sleeves into the shocks. Attach the lower shock with factory hardware. Tighten hardware to 65 ft-lbs.
29. Attach shocks with new cup washers, bushings, and ½” nut at the top mount. Tighten the nut until the bushings begin to swell.
30. Disassemble the drag link. Trim the tab from the tie rod end flush with the end of the threads **Figure 16, 17** Trim the end of the tab on the drag link flush with the threads as well **Figure 18**

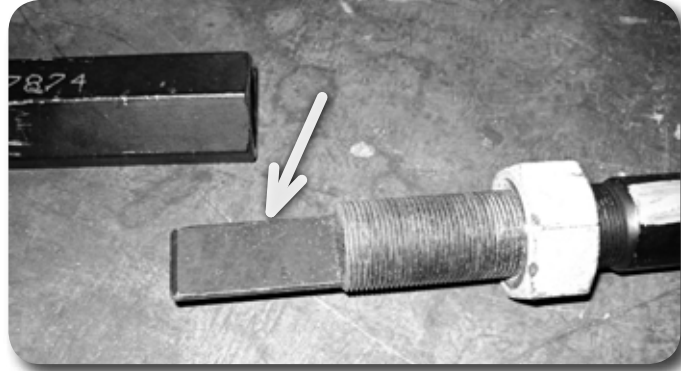


Figure16

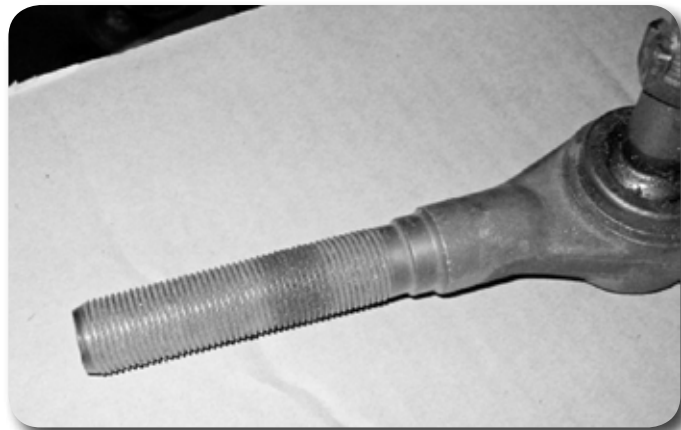


Figure 17



Figure 18

31. Reassemble the drag link, adjust so that there is approximately ¾”~7/8” of thread exposed past the jam nuts and that the tie rod end faces up. This is a starting point and will need to be adjusted after the installation is complete. **Figure 19**

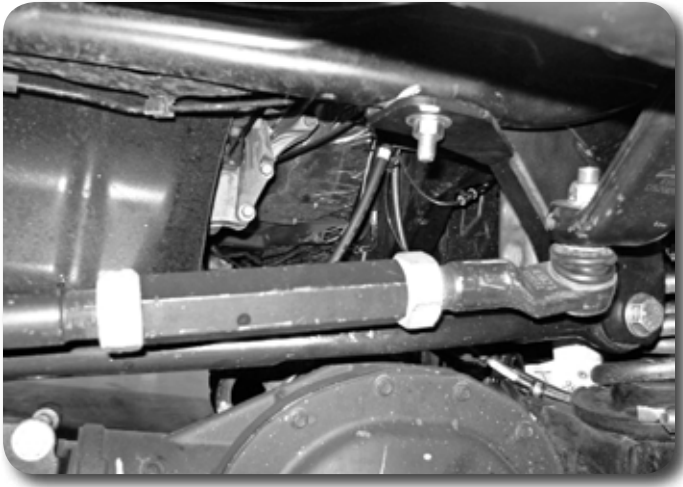


Figure 19

32. Install new pitman arm, use alignment mark made earlier. Loctite factory nut and install with lock washer tighten nut to 225 ft-lbs.
33. Attach drag link to pitman arm with factory nut. Tighten to 65 ft-lbs. Figure 20

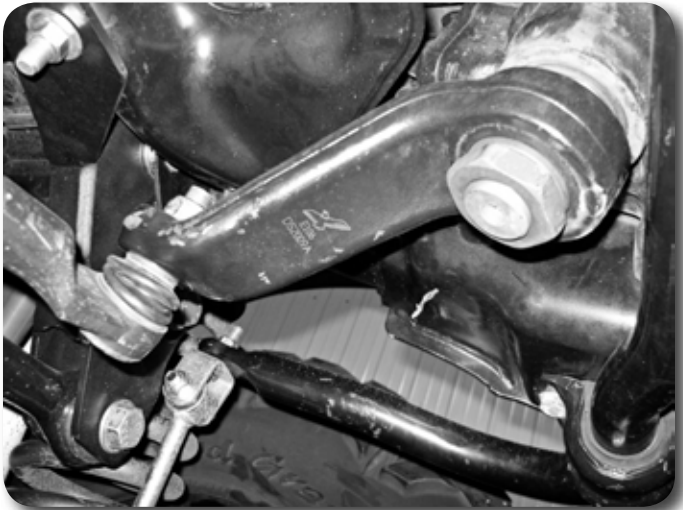


Figure 20

34. Attach brake line relocation brackets to the top side of the axle with the factory bolt and 5/16" self threading bolt into the original locating tab hole. The brake lines will need to have the fittings loosened so they can be rotated and pointed up. Attach the brake line to the bracket with retaining clip. Figure 21



Figure 21

35. Spin the front driveshaft. At full droop if there is interference within the dual cardan it must be cleared to allow the driveshaft to spin freely. Remove the sharp edge from the driveshaft to allow for clearance. Use a rotary die grinder to remove material, not much material is required to be removed for clearance. Figure 23

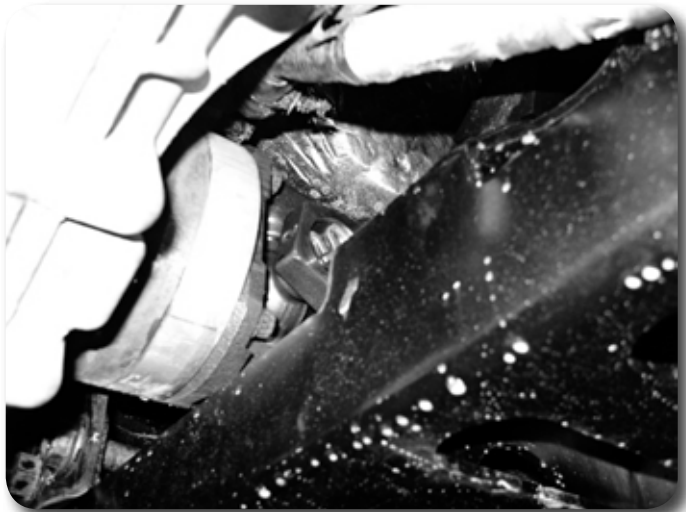


Figure 23

36. Install wheels and tighten lug nuts to factory specifications. Lower the vehicle to the ground.
37. Tighten radius arm hardware to 200 ft-lbs.
38. Turn the steering wheel to get the trackbar sleeve to align with the hole in the bracket. Install new 18mm bolt tighten to 250 ft-lbs.

### **3500 Model Trucks w/ Leaf Springs**

#### **Rear Installation (2500 Trucks see separate instruction sheet):**

39. Raise the rear of the vehicle, block the front wheels for safety. Support the frame rails with jackstands.
40. Disconnect e-brake cable and reroute the line below the front leaf spring eye mount to give adequate slack in the cable at full droop, reattach once routed for extra slack. Figure 24, 25

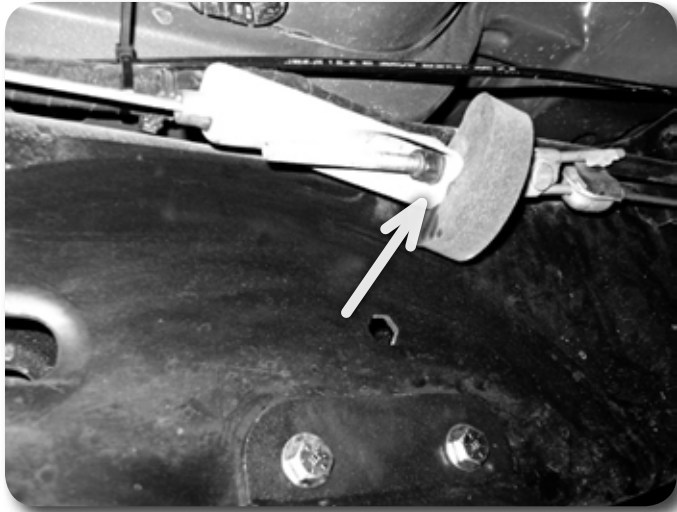


Figure 24



Figure 25

**Fig 25 Note:**

Route the e-brake cable below the factory bracket.

41. Remove the factory shocks, retain all mounting hardware.
42. Support the rear axle with a hydraulic jack. Remove the u-bolts and plates from one side of the vehicle only. Loosen the u-bolts, but do not remove the opposite side.
43. Lower the axle and remove the stock plastic center pin. Replace the center pin with new metal pin. It will be a tight fit. It may be necessary to cleanace the hole in the factory leaf pack to get the pin to press in. It must be a tight fit to keep the pin in place. **Figure 26**

## 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 100 miles. Always inspect fasteners and components during routine servicing.



Figure 26

44. Install new lift block with the small side facing forward (pinion rotates up slightly). Install new u-bolts and install the nuts/washers, but do not tighten at this time.
45. Repeat block and u-bolt installation on opposite side of the vehicle.
46. Tighten u-bolts snugly at this time, do not torque until the vehicle is on the ground.
47. Grease bushings and sleeves, install them into both ends of the shocks. Install new shocks with factory hardware. Tighten to 65 ft-lbs.
48. Install optional carrier bearing drop (mega cab / crew cab long bed models only). This part is available separately and is not included with the kit.
49. Reinstall wheels, torque lug nuts to factory specifications.
50. Lower vehicle to the ground. Torque U-bolts to 120 ft-lbs.
51. Recheck all hardware, check again at 500 miles, and again at regularly scheduled maintenance intervals.
52. Straighten the wheels, adjust the steering wheel to center. Do not drive the vehicle with the wheel off center or adverse traction control events may occur. An alignment is recommended at this time. The caster will be out of specification on the high side (6-7 degrees) with the cams all the way forward, this is acceptable to keep the caster from going negative during full droop incidences. If 4wd driveline or driving characteristics are not ideal, the caster can be lowered, however it is recommended to run as much as possible.
53. Test drive the vehicle. As noted before the installation, if a 4wd vibration is present an indexing ring kit must be purchased separately, this is a vary rare occurrence.