



## EZ - Ride Suspension

### Part # 14058

2007 - 2013 1500 Suburban & Tahoe 4WD

2007 - 2012 1500 Avalanche 4WD

4" suspension system

<u>Part #</u>	<u>Description</u>	<u>Qty.</u>
14056-01	Upper strut spacer	2
14056-02	Rear upper shock bracket	2
14056-03	Skid plate	1
14056-04	DS differential spacer	1
14056-05	PS differential spacer	1
14056-06	DS upper control arm	1
14056-07	PS upper control arm	1
14058-01	Rear coil spring spacer	2
14058-02	Rear coil spring washer	2
SB-01	Rear sway bar end link	2
14056NB	Hardware bag	1
14058NB1	Hardware bag	1
14058INST	Instruction manual	2
MIRRORHANGER	Rear view mirror hanger	1
WARNINGDECAL	Warning decal	1

Congratulations on your selection to purchase a Tuff Country EZ-Ride Suspension System. We at Tuff Country EZ-Ride Suspension are proud to offer a high quality product at the industries most competitive pricing. Thank you for your confidence in us and our product.

If you desire to return your vehicle to stock, it is the customers responsibility to save all stock hardware and components.

The Tuff Country EZ-Ride Suspension product safety label that is included in your kit box must be installed inside the cab in plain view of all occupants.

## Installation manual

### 4" suspension system

2007 - 2013

1500 Suburban & Tahoe 4WD

2007 - 2012

1500 Avalanche 4WD

### Part # 14058

sj01212013rev.01

#### Important customer information:

Tuff Country EZ-Ride Suspension highly recommends that a qualified or a certified mechanic performs this installation.

It is the responsibility of the customer/installer to wear safety glasses at all times when performing this installation.

It is the customers/installers responsibility to read and understand all steps before installation begins. If you have any questions or concerns, please contact our technical department @ (801) 280-2777. Also, the OEM manual should be used as a reference guide.

This vehicles reaction and handling characteristics may differ from standard cars and/or trucks. Modifications to improve and/or enhance off road performance may raise the intended center of gravity. Extreme caution must be utilized when encountering driving conditions which may cause vehicle imbalance or loss of control. **DRIVE SAFELY!** Avoid abrupt maneuvers: such as sudden sharp turns which could cause a roll over, resulting in serious injury or death.

It is the customers responsibility to make sure that a re-torque is performed on all hardware associated with this suspension system after the first 100 miles of installation. It is also the customers responsibility to do a complete re-torque after every 3000 miles or after every off road use.

After the original installation, Tuff Country EZ-Ride Suspension also recommends having the alignment checked every 6 months to ensure proper tracking, proper wear on tires and front end components. Tuff Country EZ-Ride Suspension takes no responsibility for abuse, improper installation or improper suspension maintenance.

### Limited lifetime warranty

Notice to all Tuff Country EZ-Ride Suspension customers: It is your responsibility to keep your original sales receipt! If failure should occur on any Tuff Country EZ-Ride Suspension component, your original sales receipt must accompany the warranted unit to receive warranty. Warranty will be void if the customer can not provide the original sales receipt. Do not install a body lift in conjunction with a suspension system. If a body lift is used in conjunction with any Tuff Country EZ-Ride Suspension product, your Tuff Country EZ-Ride Suspension WARRANTY WILL BE VOID. Tuff Country Inc. ("Tuff Country" ) suspension products are warranted to be free from defects in material and workmanship for life if purchased, installed and maintained on a non-commercial vehicle; otherwise, for a period of twelve (12) months, from the date of purchase and installation on a commercial vehicle, or twelve thousand (12,000) miles (which ever occurs first). Tuff Country does not warrant or make any representations concerning Tuff Country Products when not installed and used strictly in accordance with the manufacturer's instructions for such installation and operation and accordance with good installation and maintenance practices of the automotive industry. This warranty does not apply to the cosmetic finish of Tuff Country products nor to Tuff Country products which have been altered, improperly installed, maintained, used or repaired, or damaged by accident, negligence, misuse or racing. ("Racing is used in its broadest sense, and, for example, without regards to formalities in relation to prizes, competition, etc.) This warranty is void if the product is removed from the original vehicle and re-installed on that or any other vehicle. This warranty is exclusive and is in lieu of any implied warranty of merchantability, fitness for a particular purpose or other warranty of quality, whether express or implied, except the warranty of title. All implied warranties are limited to the duration of this warranty. The remedies set forth in this warranty are exclusive. This warranty excludes all labor charges or other incidental of consequential damages. Any part or product returned for warranty claim must be returned through the dealer of the distributor from whom it was purchased. Tuff Country reserves the right to examine all parts returned to it for warranty claim to determine whether or not any such part has failed because of defect in material or workmanship. The obligation of Tuff Country under this warranty shall be limited to repairing, replacing or crediting, at its option, any part or product found to be so defective. Regardless of whether any part is repaired, replaced or credited under this warranty, shipping and/or transportation charges on the return of such product must be prepaid by the customer under this warranty.

Important information that needs to be read before installation begins:

The design of this kit is to be used with after market wheels. Tuff Country recommends a 33 x 11.50" tire with a wheel that has a back spacing of 4.5" or less. If the stock wheels are used, contact of the new upper control arm will occur.

Tuff Country EZ-Ride Suspension packages (2) sets of instruction sheets with this box kit. (1) is for the installer and (1) is for the customer. The (1) for the customer has some post installation procedure literature and it is the installers responsibility to make sure that the customer receives a copy of the installation manual along with the literature.

Before installation begins, Tuff Country EZ-Ride Suspension highly recommends that the installer performs a test drive on the vehicle. During the test drive, check to see if there are any uncommon sounds or vibrations. If uncommon sounds or vibrations occur on the test drive, uncommon sounds or vibrations will be enhanced once the suspension system has been installed. Tuff Country EZ-Ride Suspension highly recommends notifying the customer prior to installation to inform the customer of these issues if they exist.

Make sure to use loctite on all new and stock hardware associated with the installation of this suspension system.

Special note: Before installation begins, it is the customers/installers responsibility to make sure that all parts are on hand. If any parts are missing, please feel free to call one of our customer service representatives @ (801) 280-2777.

Recommended tools selection:

- Cut off wheel
- Torque wrench
- Standard socket set
- Standard wrench set
- Metric socket set
- Metric wrench set
- Tape measure
- Hydraulic floor jacks
- Air chisel

Hardware bag 14056NB includes:

Bag # 1

Description	Quantity
M1030HWH (10 mm x 30 mm HWH bolt)	3
M1055B (10 mm x 55 mm bolt)	4
M10UN (10 mm unitorque nut)	4
M1235B (12 mm x 35 mm bolt)	4
M1235SHB (12 mm x 35 mm socket head bolt)	1
M1245SHB (12 mm x 45 mm socket head bolt)	1
M1270SHB (12 mm x 70 mm socket head bolt)	1
M1280SHB (12 mm x 80 mm socket head bolt)	1
M12FLN (12 mm flange nut)	2
SERT04 (grease sert)	4

Bag # 2

Description	Quantity
M10WA (10 mm flat washer)	8
M6NLN (6 mm unitorque nut)	2
M6WA (6 mm flat washer)	2
38NLN (3/8" nylon lock nut)	6
516WA (5/16" USS flat washer)	6

Bag # 3

Description	Quantity
M12FW (12 mm fender washer)	2
M12LWA (12 mm lock washer)	4
M12WA (12 mm flat washer)	2
9163B (9/16" x 3" bolt)	2
916UN (9/16" unitorque nut)	2
12WA (1/2" USS flat washer)	4

Hardware bag 14058NB1 includes:

Description	Quantity
SHOCKTIE (zip tie)	4
PB69137 (poly bushing)	8
S10231 (.750" x .563" x 2.170" sleeve)	4
MO2220 (poly bushing)	8
S10026 (.680" x .500" x 1.500")	4
12212B (1/2" x 2 1/2" bolt)	2
716WA (7/16" USS flat washer)	4
12UN (1/2" unitorque nut)	2
383B (3/8" x 3" bolt)	2
516WA (5/16" USS flat washer)	2
38FLN (3/8" flangr lock nut)	2

Please follow instructions carefully:

Before installation begins, measure from the center of the hub, to the bottom of the fender well, and record measurements below.

Pre-installation measurements:

Driver side front: \_\_\_\_\_

Passenger side front: \_\_\_\_\_

Driver side rear: \_\_\_\_\_

Passenger side rear: \_\_\_\_\_

At the end of the installation take the same measurements and compare to the pre-installation measurements.

Post-installation measurements:

Driver side front: \_\_\_\_\_

Passenger side front: \_\_\_\_\_

Driver side rear: \_\_\_\_\_

Passenger side rear: \_\_\_\_\_

Front end installation:

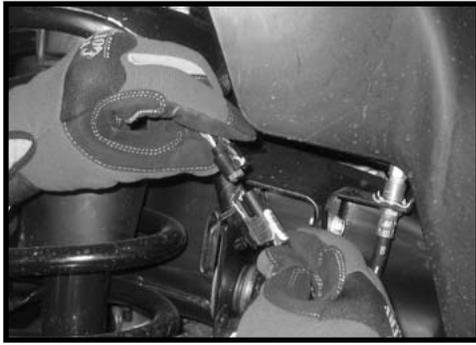
1. To begin installation, block the rear tires of the vehicle so that the vehicle is stable and can't roll backwards. Safely lift the front of the vehicle and support the vehicle with a pair of jack stands. Place a jack stand on both the driver and the passenger side. Next, remove the front wheels and tires from both sides.

2. Remove the OE skid plate, set aside and save the OE hardware.

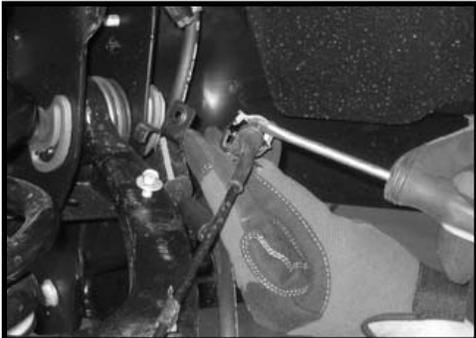
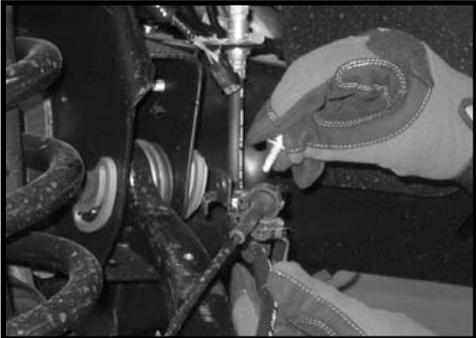
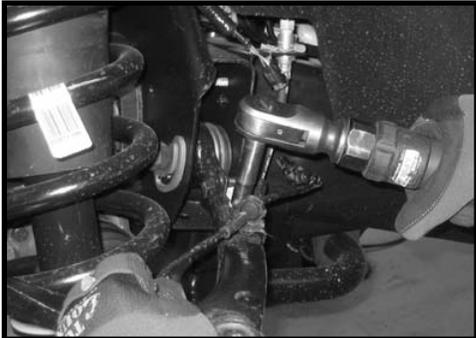


3. Working on the driver side, remove the ABS line from the bracket on the top of the upper control arm pocket. Now disconnect the ABS lines from each other at the quick disconnect. **Special note: Take special care not to damage ABS line during removal.** Repeat procedure on the passenger side.





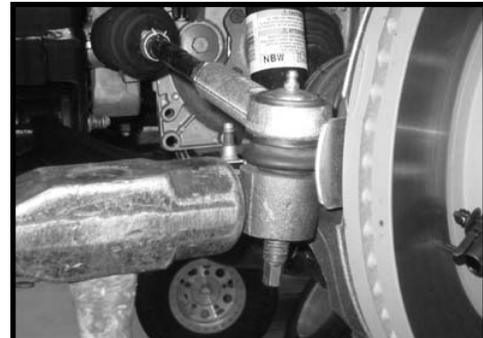
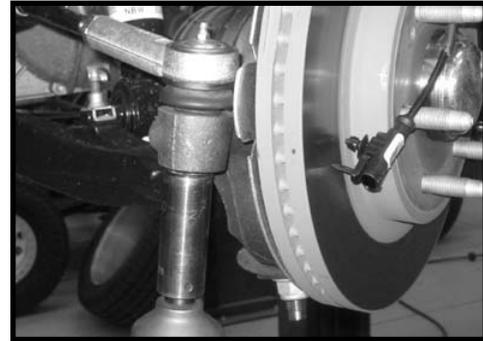
4. Working on the driver side, remove the ABS line from the OE upper control arm. The hardware may be discarded. Carefully remove the bracket from the ABS line and brake line and set aside. Repeat procedure on the passenger side.



5. Working on the driver side, remove the sway bar end link from the sway bar and lower control arm. Save the end link and hardware. Repeat procedure on the passenger side.



6. Working on the driver side, remove the outer tie rod from the OE knuckle. Save the hardware. **Special note: Using a hammer and striking the knuckle will help break the taper. Take special care not to damage the outer tie rod dust boot during removal.** Repeat procedure on the passenger side.



7. Working on the driver side, remove the lower hardware securing the strut to the lower control arm. The hardware may be discarded. Repeat procedure on the passenger side.

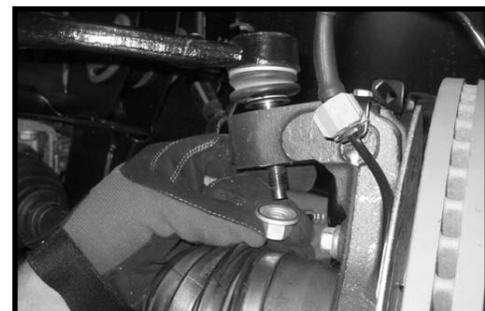
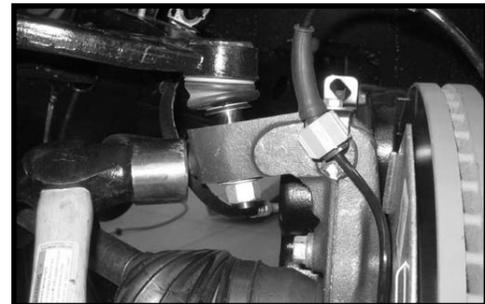
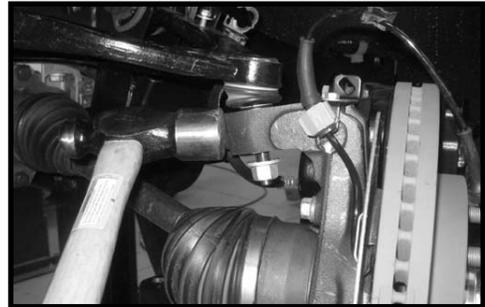
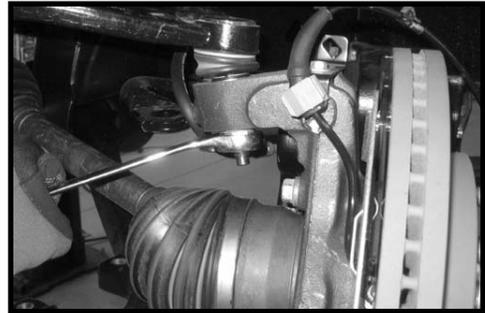


8. Working on the driver side, remove the upper clips off the upper strut studs. Remove the nuts holding the strut into the upper location and save. Remove the strut from the vehicle and remove and discard the lower attaching clips. Set the strut aside. Repeat procedure on the passenger side.

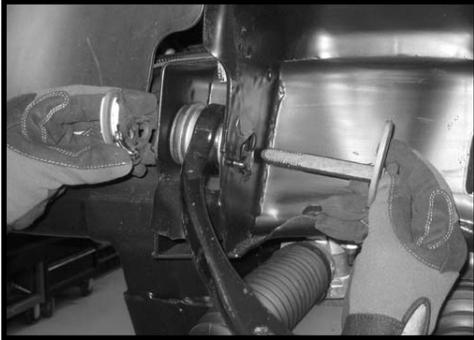


9. Working on the driver side, place a hydraulic floor jack under the lower control arm. Repeat procedure on the passenger side.

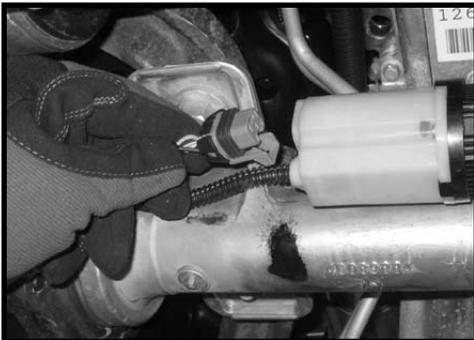
10. Working on the driver side, loosen but do not remove the nut holding the upper control arm ball joint to the knuckle. **Special note: Using a hammer and striking the knuckle will help break the taper.** Once the taper has been broke, remove the nut and upper control arm from the knuckle. The hardware may be discarded. Repeat procedure on the passenger side.



11. Working on the driver side, remove the upper control arm from the upper control arm location. The upper control arm may be discarded but save the upper control arm hardware. Repeat procedure on the passenger side.



12. Working on the passenger side of the front differential, locate the wiring harness that connects the 4WD control panel to the front differential. Disconnect the 4WD wiring harness from the front differential. Tie the 4WD wiring harness up and out of the way. **Special note: Take special care not to kink the wiring.**



13. Carefully remove the front drive line from the front differential. Save the hardware. Carefully tie the front drive line up and out of the way.

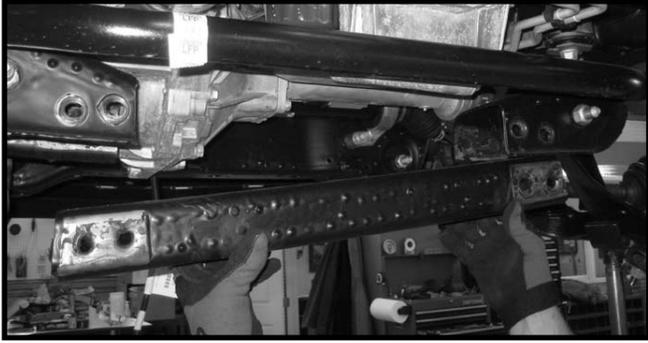


14. Working on the driver side, remove the CV axle from the front differential flange. Save the hardware. Special note: Take special care not to over extend the CV axle during removal. Rest the CV axle on the lower control arm. Repeat procedure on the passenger side.



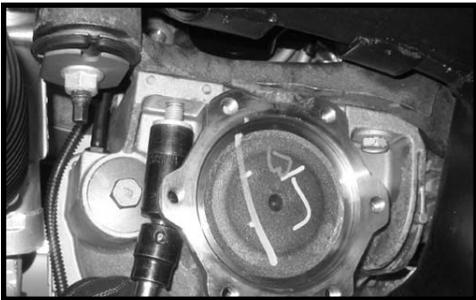
15. Working on the driver side, remove the rear cross member from the OE location. Save the cross member and hardware.





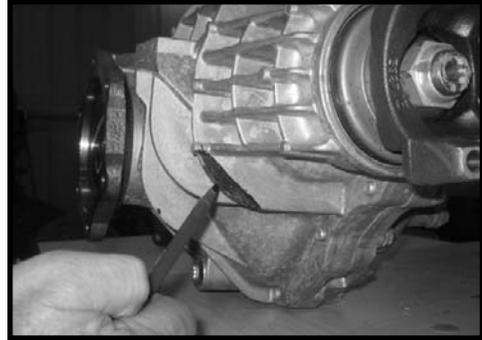
16. Place a pair of hydraulic floor jacks under the front differential. Carefully raise up on both hydraulic floor jacks at the same time until they come into contact with the front differential.

17. Working on the driver side, remove the hardware holding the front differential to the OE mounting location. The OE hardware may be discarded. Repeat procedure on the passenger side.



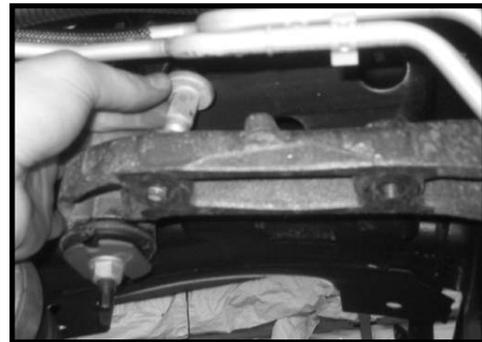
18. With the help from a buddy, carefully remove the front differential from the vehicle and set it on the ground or a work bench.

19. Referring to the following picture, scribe a mark on the driver side rear portion of the front differential. The differential needs to be relieved for clearance once it is installed back into the vehicle.

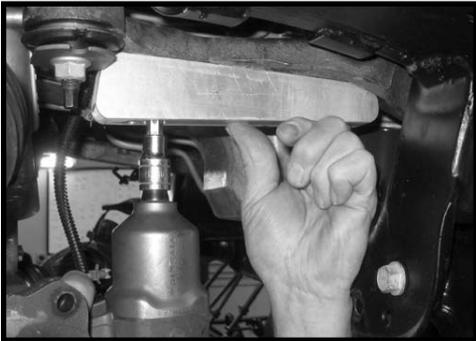


20. Using a die grinder, carefully cut off the shaded area.

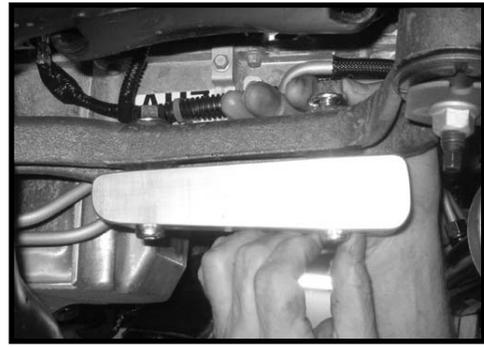
21. Working on the passenger side and using an air chisel, remove the OE bolts located in the passenger side OE differential bracket. The hardware may be discarded. **Special note: If you do not have access to an air chisel, the passenger side OE bracket will need to be removed from the vehicle to have these bolts removed.**



22. Locate the driver side differential spacer. Locate (1) 12 mm x 35 mm socket head bolt and (1) 12 mm x 45 mm socket head bolt from hardware bag 14056NB1. Install the the new spacer to the OE bracket and secure using the new hardware. **Special note: The thicker part of the spacer will be installed towards the front of the vehicle. Also, the new 12 mm x 35 mm socket head bolt will be installed towards the rear of the vehicle and the new 12 mm x 45 mm socket head bolt will be installed towards the front of the vehicle.** Make sure to use loctite and torque to **55 ft lbs.**



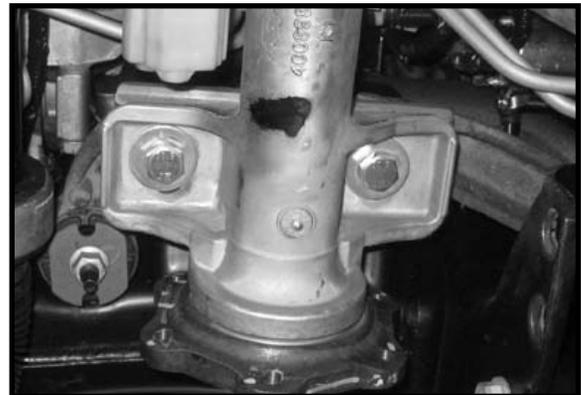
23. Locate the passenger side differential spacer. Locate the (1) 12 mm x 70 mm socket head bolt, (1) 12 mm x 80 mm socket head bolt and (2) 12 mm flange nuts from hardware bag 14056NB1. Install the the new spacer to the OE bracket and secure using the new hardware. **Special note: The thicker part of the spacer will be installed towards the front of the vehicle. Also, the new 12 mm x 70 mm socket head bolt will be installed towards the rear of the vehicle and the new 12 mm x 80 mm socket head bolt will be installed towards the front of the vehicle.** Make sure to use loctite and torque to **55 ft lbs.**



24. Locate (2) 12 mm x 35 mm bolts from hardware bag 14056NB1. Also, locate (2) 12 mm lock washers from hardware bag 14056NB3. With the help from a buddy, carefully lift the modified front differential back onto the pair of hydraulic floor jacks and move the hydraulic floor jacks back underneath the vehicle so that the newly modified front differential can be re-installed. Secure the driver side of the differential to the newly installed driver side differential spacer using the new hardware. Make sure to use loctite and torque to **55 ft lbs.**



25. Locate (4) 12 mm x 35 mm bolts from hardware bag 14056NB1. Also, locate (2) 12 mm lock washers and (2) 12 mm fender washers from hardware bag 14056NB3. Secure the passenger side of the differential to the newly installed passenger side differential spacer using the new hardware. Make sure to use loctite and torque to **55 ft lbs.**





26. Remove the hydraulic floor jacks from under the front differential.

27. Working on the driver side, check and double check to make sure that the rear portion of the front differential does not contact the rear lower control arm pocket. If contact occurs, more of the differential will need to be cut out.



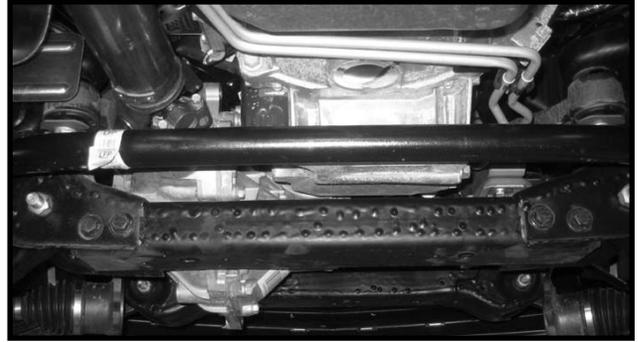
28. Re-connect the 4WD wiring harness back to the front differential. **Special note: Take special care not to kink the wiring and make sure that the harness is tightly secured.**



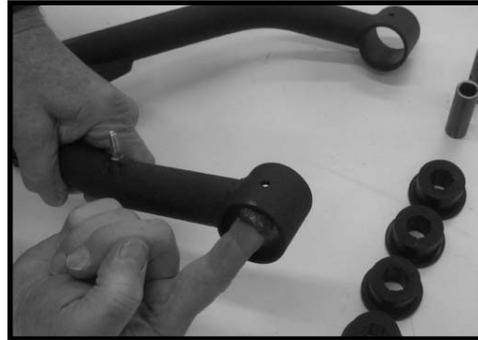
29. Re-install the drive line back to the front differential using the OE hardware. Make sure to use loctite and torque to **35 ft lbs.**



30. Re-install the rear cross member to the driver and passenger side rear lower control arm drop pockets using the OE hardware. Make sure to use loctite and torque to **55 ft lbs.**



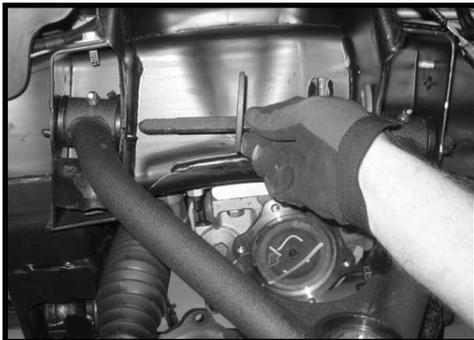
31. Locate the new upper control arms. Locate (8) PB69137 poly bushings and (4) S10231 sleeves from hardware bag 14058NB1. Install the new bushings and sleeves into the new upper control arms. **Special note: Make sure to use a fair amount of lithium or moly base grease before installing the new bushings and sleeves into the control arms. This will increase the life of the bushing as well as help prevent squeaking.**



32. Locate (4) SERT04 from hardware bag 14056NB1. Install the new sert fittings to the new upper control arm. **Special note: Take special care not to cross thread during installation and make sure not to over tighten. Hand tighten with an end wrench. Also, make sure that once installed the sert fitting is facing the outside of the vehicle so it will be easy to access with a grease gun.**

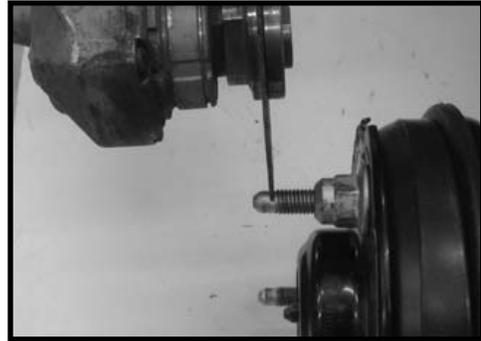


33. Working on the driver side, install the new upper control arm into the OE location using the OE cam bolts. **Do not tighten at this point.** Repeat procedure on the passenger side.



34. Locate the OE struts and upper hardware. Install the OE nuts back to the upper studs of the strut. Using a die grinder, carefully cut off the nipple part of the studs. **Special note: Take special care not to cut into the threads. If by chance you do cut into the threads, once you remove the OE nuts the threads will be fixed.** Once the nipples

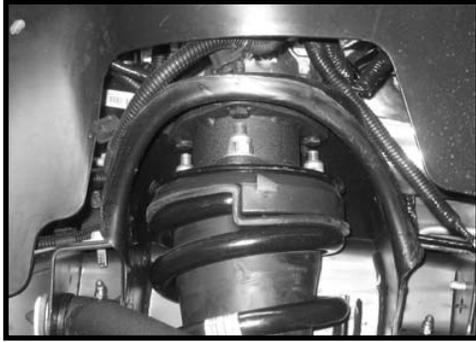
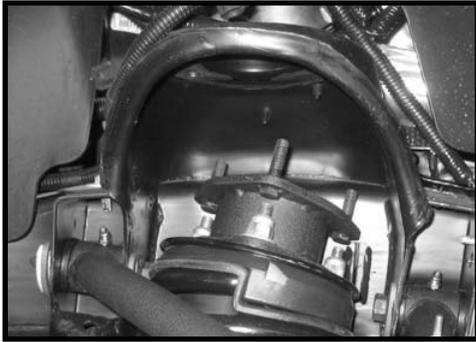
have been cut off, remove the OE nuts from each stud.



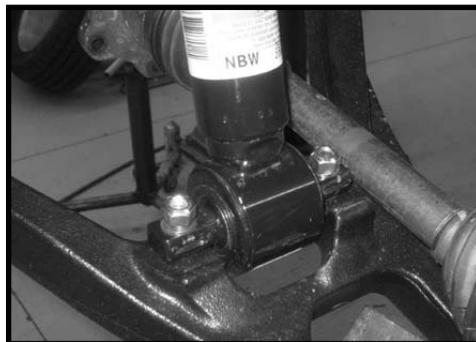
35. Locate the new upper strut spacers. Install the new spacers to the OE struts and secure using the OE hardware. **Make sure to use loctite.**



36. Locate (6) 3/8" nylon lock nuts and (6) 5/16" USS flat washers from hardware bag 14056NB2. Working on the driver side, install the newly modified strut into the upper location and secure using the new hardware. Make sure to use loctite and torque to **35 ft lbs**. Repeat procedure on the passenger side.

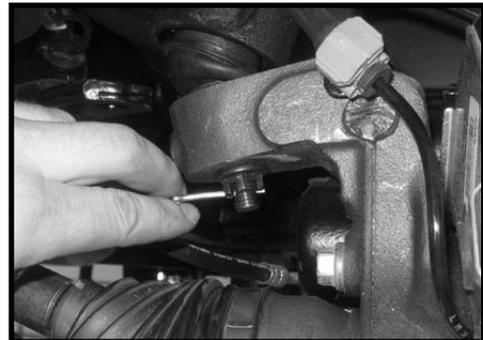
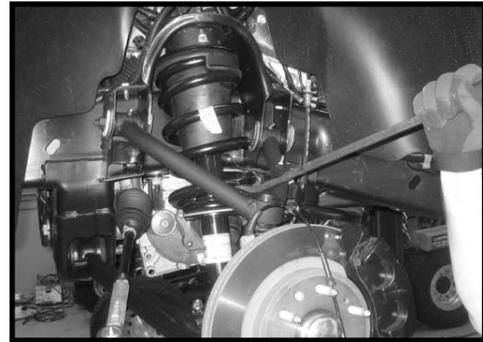


37. Locate (4) 10 mm x 55 mm bolts and (4) 10 mm uni-torque nuts from hardware bag 14056NB1. Locate (8) 10 mm flat washers from hardware bag 14056NB2. Working on the driver side, secure the lower portion of the OE strut to the lower control arm using the new hardware. Make sure to use loctite and torque to **45 ft lbs**. Repeat procedure on the passenger side.



38. Working on the driver side, install the newly installed upper control arm to the OE knuckle and secure using the new castle nut. Make sure to use loctite and torque to **40 ft lbs**. Now install the new cotter pin. **Special note: Using a pry bar to gain leverage will help make installation easier. Also, if the new cotter pin can not be installed because the hole in the new castle nut does not line up with the new ball joint, DO NOT loosen the new castle nut so that the cotter pin can fit, tighten the new castle**

**nut some more so that the new cotter pin can be installed. Repeat procedure on the passenger side.**



39. Working on the driver side, re-install the CV axle to the front differential using the OE hardware. Make sure to use loctite and torque to **45 ft lbs**. Repeat procedure on the passenger side.



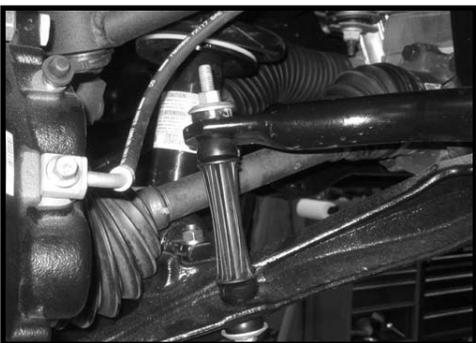
40. Locate (2) 6 mm flat washers and (2) 6 mm unitorque nuts from hardware bag 14056NB2. Working on the driver side, re-connect the ABS lines back together. Install the ABS line and brake line back into the OE bracket then secure the OE bracket to the new 6 mm bolt on the upper control arm using the new hardware. Make sure to use loctite and hand tighten with a wrench. Also, install the ABS line back to the frame rail. Repeat procedure on the passenger side.



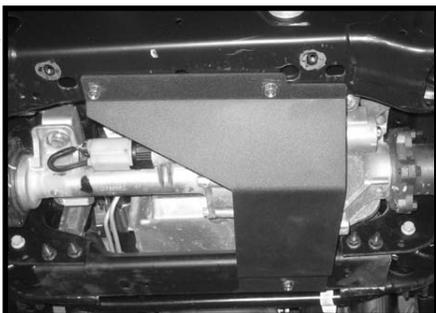
41. Working on the driver side, install the outer tie rod to the OE knuckle using the OE hardware. Make sure to use loctite and torque to **95 ft lbs.** Repeat procedure on the passenger side.



42. Working on the driver side, install the OE end link to the sway bar and lower control arm. Make sure to use loctite and hand tighten.



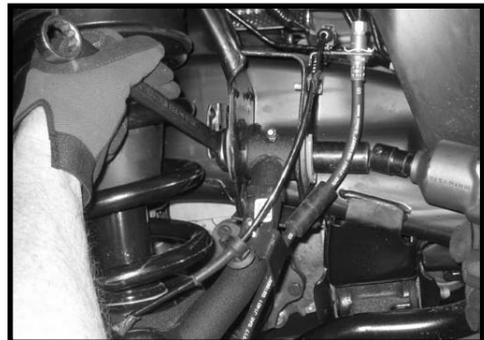
43. Locate the new skid plate and (3) 10 mm x 30 mm HWH bolts from hardware bag 14056NB1. Install the new skid plate to the front and rear cross member and secure using the new hardware. Make sure to use loctite and torque to **40 ft lbs.**



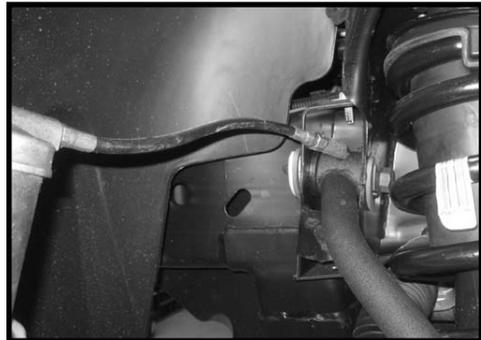
44. Install the OE skid plate using the OE hardware. Make sure to use loctite and torque to **40 ft lbs.**



45. Working on the driver side, center and torque the OE cam bolts to **95 ft lbs.** Repeat procedure on the passenger side.



46. Working on the driver side, grease the upper control arm bushings and ball joint. Repeat procedure on the passenger side. **Special note to the customer: Make sure to have the upper control arm bushings and ball joints greased each time you have the oil changed.**



47. Check and double check and check again to make sure all steps have been performed properly with the front end.

48. Install the tires and wheels and carefully lower the vehicle to the ground.

49. To begin installation, carefully block the front tires and wheels so that the vehicle can not roll forward. Safely lift the rear of the vehicle and support the vehicle with a pair of jack stands. Place a jack stand on both the driver and the passenger side. Next, remove the rear wheels and tires from both sides.

50. Working on the driver side, remove the ABS line from the bottom of the frame rail. Remove the plastic clip and discard. Repeat procedure on the passenger side.

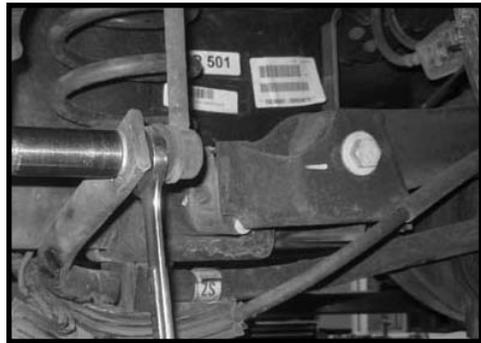


51. Place a pair of hydraulic floor jacks under the rear differential. Carefully raise up on the hydraulic floor jacks until they make contact with the rear differential.

52. Working on the driver side, remove the shock from the upper and lower location. Save the shock and hardware. Repeat procedure on the passenger side.



53. Working on the driver side, remove the end link from the OE mount and sway bar. The sway bar and the lower hardware may be discarded. Save the upper hardware. Repeat procedure on the passenger side.



54. Working on the driver side, remove the track bar from the OE track bar mount. Save the hardware for later re-installation.



55. Carefully lower down both hydraulic floor jacks at the same time approximately 3". **Special note: Take special care not to over extend any brake lines and/or hoses.** Working on the driver side, remove the coil spring and set aside. Repeat procedure on the passenger side.



56. Locate the new coil spring spacer and the coil spring washer. Also, locate (2) 3/8" x 3" bolts, (2) 5/16" USS flat washers and (2) 3/8" flange nuts from hardware bag 14058NB1. Working on the driver side, install the coil spring spacer to the upper coil spring pocket using the coil spring washer on the top of the coil spring pocket and secure using the new 3/8" hardware. Make sure to use loctite and torque to **28 ft lbs**. Repeat procedure on the passenger side.



57. Working on the driver side, locate and install the coil spring back into the vehicle. Install the upper portion to the newly installed coil spring and lower lower portion to the axle. Carefully raise up on the hydraulic floor jack until the coil springs seats properly into the vehicle. Repeat procedure on the passenger side.



58. Locate the new rear shock relocation brackets. Locate (2) 9/16" x 3" bolt's, (4) 1/2" USS flat washers and (2) 9/16" unitorque nuts from hardware bag 14056NB3. Install the new shock relocation brackets to the top of the stock shocks and secure using the new hardware. **Do not tighten at this point.**



59. Working on the driver side, install the modified shock into the upper and lower location using the OE hardware. Make sure to use loctite and torque to **85 ft lbs**. Move back to the new 9/16" hardware and add some loctite and torque to **85 ft lbs**. Repeat procedure on the passenger side.



60. Locate the new zip tie in hardware bag 14058NB1. Working on the driver side, zip tie the ABS line to the OE bump stop bracket. Repeat procedure on the passenger side.



61. Using the OE hardware, re-install the track bar to the driver side track bar bracket. Make sure to use loctite and torque to **85 ft lbs**. **Special note: If you are not able to per-**

form this step, this step will need to be performed once the weight of the vehicle is on the ground.

62. Locate the new sway bar end links. Locate (8) MO2220 bushings and (4) S10026 sleeves from hardware bag 14058NB1. Install the new bushings and sleeves into the new sway bar end links. **Special note: Make sure to use a fair amount of lithium or moly base grease before installing the new bushings and sleeves into the end links. This will increase the life of the bushing as well as help prevent squeaking.**

63. Locate (4) 1/2" x 2 1/2" bolts, (8) 7/16" USS flat washers and (4) 1/2" unitorque nuts from hardware bag 14058NB1. Working on the driver side, install the new end link into the OE upper and secure using the OE hardware. Install the end link to the sway bar and secure using the new 1/2" hardware. Make sure to use loctite on the new and OE hardware and torque both to **45 ft lbs**. Repeat procedure on the passenger side.



64. Carefully remove the (2) hydraulic floor jacks from under the rear differential.

65. Working on the driver side rear frame rail, if needed, carefully bend down on the stock rear brake cable extension bracket to allow for proper brake line clearance.

66. Install the tires and wheels and carefully lower the vehicle to the ground.

**Congratulations, installation complete!**

**Special note: After the completion of the installation, Tuff Country EZ-Ride Suspension recommends taking the vehicle to an alignment shop and having a proper front end alignment performed.**

**Tuff Country EZ-Ride Suspension recommends that a**

complete re-torque is done on all bolts associated with this suspension system. It is the customers responsibility to make sure that a re-torque is performed on all hardware associated with this suspension system after the first 100 miles of installation. It is also the customers responsibility to do a complete re-torque after every 3000 miles or after every off road use. Neglect of following these steps could cause brackets to come loose and cause serious damage to the suspension system and to the vehicle.

Tuff Country EZ-Ride Suspension packages (2) sets of instruction sheets with this box kit. (1) is for the installer and (1) is for the customer. The (1) for the customer has some post installation procedure literature and it is the installers responsibility to make sure that the customer receives a copy of the installation manual along with the literature.

If you have any questions or concerns, please feel free to contact Tuff Country or your local Tuff Country dealer.