



**Installation manual**  
**3.5" suspension system**  
**2011 - 2013 Chevy / GMC**  
**2500HD / 3500HD**  
**With contact overloads**  
**Part # 13090**

sj02212013rev.01

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**With contact overloads**  
**3.5" suspension system**

<u>Part #</u>	<u>Description</u>	<u>Qty.</u>
13085-01	DS & PS Upper control arm	2
13085-02	DS & PS Front upper shock bracket	2
12904-03	Torsion bar key	2
5U-3431416S	3/4" x 3 1/4" x 16" square u-bolt	4
BL101	Rear lifted block	2
13085NB	Hardware bag	1
1308INST	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.**

**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.**

**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:

Tuff Country recommends a 33" x 12.50" tire with a wheel that has a back spacing of 5.5" or less. The stock tires and wheels can be used in conjunction with this lift kit. If a wider tire is installed on the stock wheel, contact with the upper control arm will occur, and is not recommended.

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.

The OE front shocks will not be long enough once this suspension system has been installed but Tuff Country includes a shock relocation bracket for the front shocks. Also, the rear shocks will work once this suspension system has been installed but Tuff Country highly recommends replacing the rear shocks. If you have not already ordered your rear shocks, please contact Tuff Country or your local Tuff Country dealer and order your new rear shocks. Tuff Country recommends install a 30" fully extended nitrogen gas shock.

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.

## Recommended tools selection:

Torque wrench  
Standard socket set  
Standard wrench set  
Metric socket set  
Metric wrench set  
Tape measure  
Hydraulic floor jacks  
Torsion bar removal tool

Hardware bag 13085NB includes:

Description	Quantity
123B (1/2" x 3" bolt)	4
716WA (7/16" USS flat washer)	4
12UN (1/2" unitorque nut)	4
SUW-34 (3/4" u-bolt harden washer)	8
DN-34 (3/4" u-bolt high nut)	8
SERT04 (sert fitting)	4
S10237 (.750" x .625" x 2.250" sleeve)	4
9165B (9/16" x 5" bolt)	4
12WA (1/2" USS flat washer)	8
916UN (9/16" unitorque nut)	4
S10238 (.850" x .630" x 2.560 sleeve)	4
MO2617 (poly bushing)	8

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:

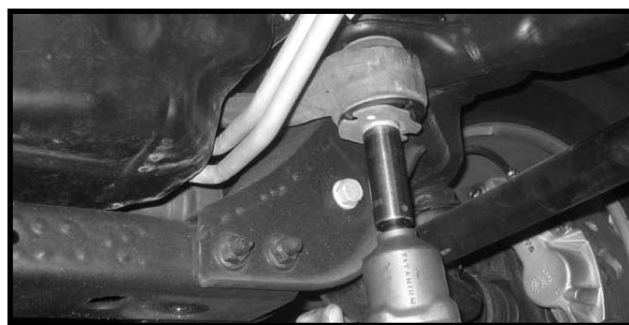
1. To begin installation, block the rear tires of the vehicle so that the vehicle is stable and can't roll backwards. Safely lift the front of the vehicle and support both the driver and passenger side with jack stands. Remove the tires and wheels from both the driver and passenger side.

2. Remove the lower skid plate from the OE location. Save the lower skid plate and hardware for later re-installation.



3. Place a pair of hydraulic floor jacks under the front differential. Place one on the driver side and one on the passenger side.

4. Working on the front differential, remove the hardware attaching all (4) mounting points of the differential the OE mounts. The OE hardware may be discarded.



5. Carefully lower down on the hydraulic floor jacks holding the front differential allowing enough room for the new differential spacers to be installed.

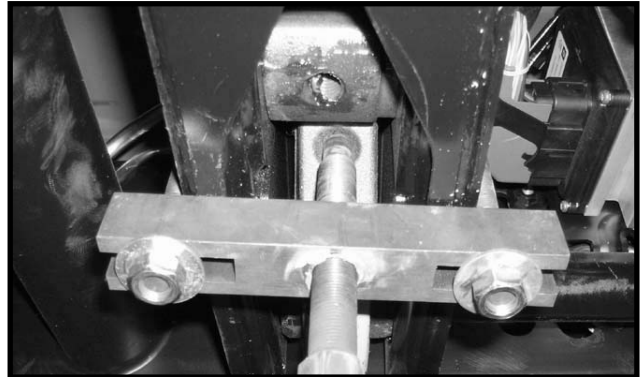
6. Locate (4) S10237 sleeves, (4) 9/16" x 5" bolts, (8) 1/2" USS flat washers and (4) 9/16" unitorque nuts from hardware bag 13085NB. Install the new differential spacer sleeves between the front differential and the OE mounts and secure using the new 9/16" hardware. Make sure to use loctite and torque to **85 ft lbs**. Carefully remove the hydraulic floor jacks holding the front differential.



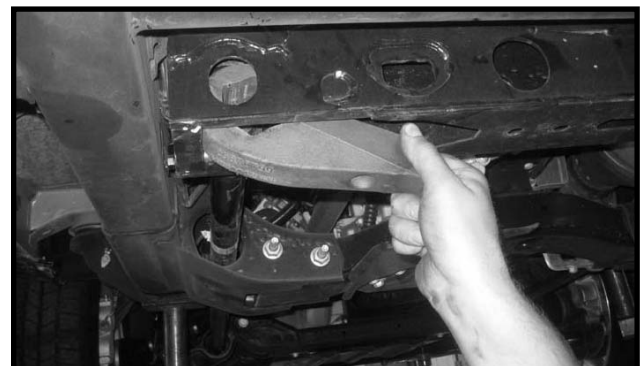
7. Working on the driver side, scribe a mark on the torsion bar and the lower control arm. **Special note: This is done so that the torsion bar can be put back into the same location on the lower control arm once the new torsion bar key has been installed.** Repeat procedure on the passenger side.



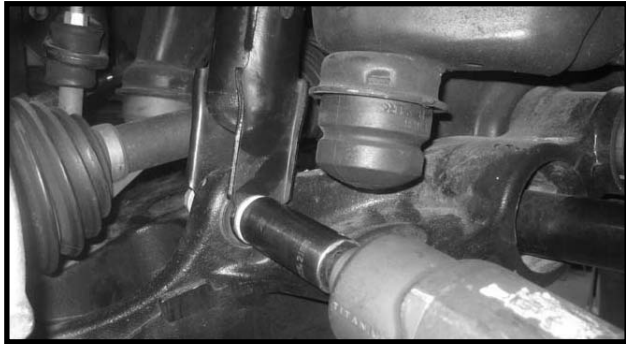
8. Working on the driver side and using a proper torsion bar removal tool. **Special note: Tuff Country EZ-Ride Suspension requires that a proper torsion bar unloading tool be used when performing this installation. If you do not have one, please contact your local GM dealer to purchase one from them.** Carefully remove the stock torsion bar bolt and block. Set the stock torsion bar bolt and block aside. Repeat procedure on the passenger side.



9. Working on the driver side, carefully tap the torsion bar forward until the torsion bar key can be removed. Remove and discard the torsion bar key. Repeat procedure on the passenger side.



10. Working on the driver side, remove the upper shock hardware holding the shock into the upper mounting location. The hardware may be discarded. Remove the lower shock hardware holding the shock to the lower control arm. Save the lower hardware and shock. Repeat procedure on the passenger side.



11. Working on the driver side, place a hydraulic floor jack under the driver side lower control arm and carefully raise up until the hydraulic floor jack comes into contact with the lower control arm. **Special note: Using a tie down strap to hold the lower control arm in place so that the lower control arm does not drop and damage the CV axle is another option.** Repeat procedure on the passenger side.

12. Working on the driver side, remove the hardware attaching the upper control arm to the knuckle. The hardware may be discarded. Repeat procedure on the passenger side.



13. Working on the driver side, separate the upper control arm from the knuckle. **Special note: using a hammer and striking the knuckle will help break the taper.** Repeat procedure on the passenger side.



14. Working on the driver side, remove the hardware attaching the upper control arm into the OE location. Save the hardware. The upper control arm maybe discarded. Repeat procedure on the passenger side.

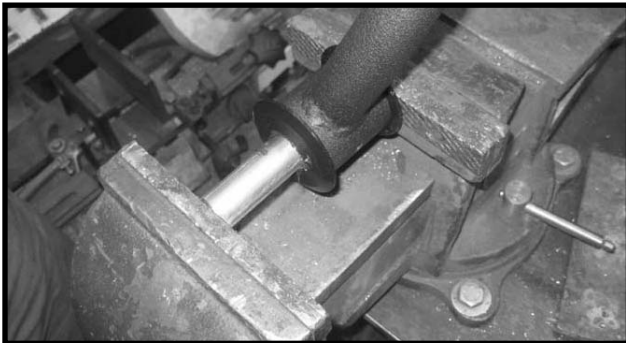






15. Locate the new driver and passenger side upper control arms. Remove and set aside the cotter pin, washer and castle nut from the new upper control arms.

16. Locate (8) MO2617 poly bushings and (4) S10238 sleeves from hardware bag 13085NB. 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.**



17. Locate the new sert fittings from hardware bag 13085NB. Install the new sert fittings into the new upper control arms. **Special note: Make sure not to over tighten and also make sure that the sert fitting is facing towards**

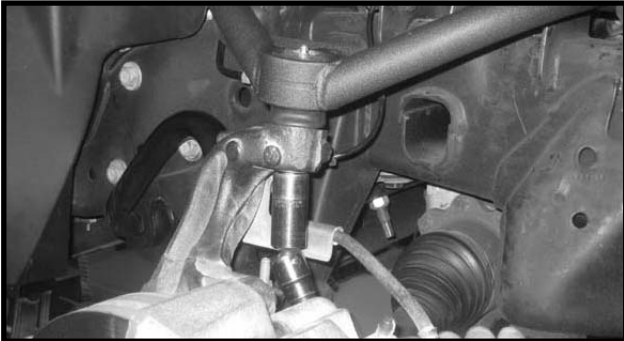
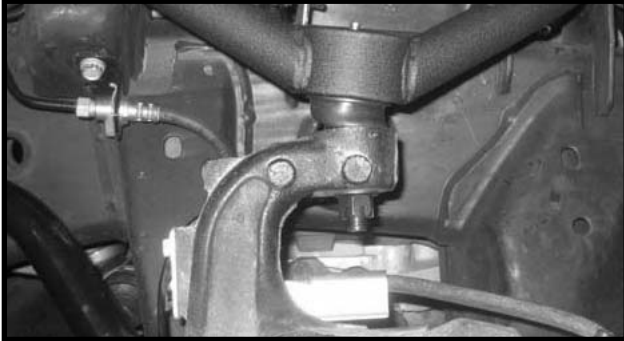
the outside of the vehicle. This will make for easier access when lubing them with a grease gun.



18. Working on the driver side, install the new driver side upper control arm into the OE pockets using the OE hardware. Make sure to use loctite and torque to **95 ft lbs.** Repeat procedure on the passenger side.

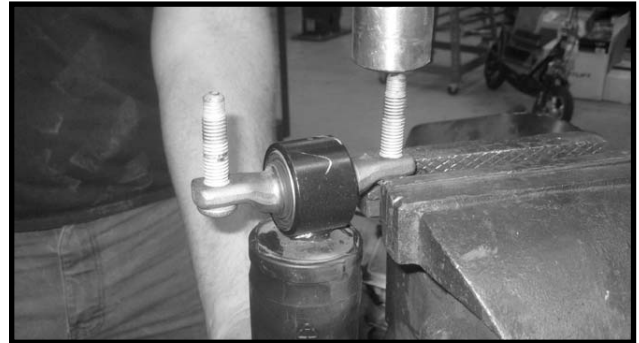


19. Working on the driver side, install the newly installed upper control arm to the knuckle and secure using the ball joint castle nut and washer. **Special note: Do not forget to install the new harden washer before the castle nut is installed. If this washer is not installed, the new upper control arm ball joint will not seat properly and damage will occur.** Torque the castle nut to 70 ft lbs. Install the new cotter pin to the ball joint. **Special note: If you are not able to install the cotter pin because the hole in the ball joint does not line up with the castle nut DO NOT loosen the castle nut but tighten it until the cotter pin can be installed.** Repeat procedure on the passenger side.

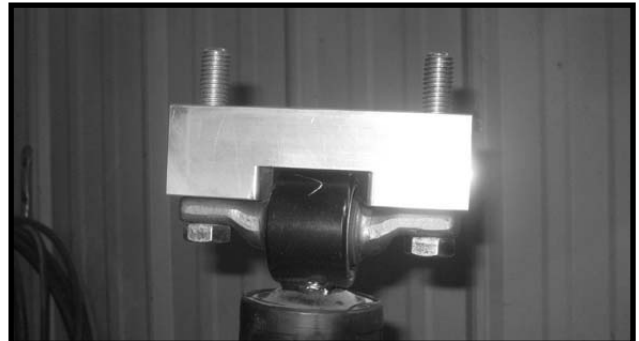


20. Carefully remove the hydraulic floor jacks from under the lower control arm. If you used tie down straps, remove the tie down straps at this time.

21. Locate the OE shocks. Carefully remove the upper pressed in bolts from the shock. The pressed in bolts may be discarded.



22. Locate (4) 1/2" x 3" bolts, (4) 7/16" USS flat washers and (4) 1/2" unitorque nuts from hardware bag 13085NB. Also, locate the new front shock relocation blocks. Working on the driver side, install the new 1/2" bolts and front shock relocation block to the OE shock and install into the upper shock location using the 1/2" hardware. **Do not tighten at this point.** Repeat procedure on the passenger side.



23. Working on the driver side, install the lower mounting point on the shock to the lower control arm and secure using the OE hardware. Make sure to use loctite and torque to 85 ft lbs. Repeat procedure on the passenger side.



24. Working on the driver side, move back to the 1/2" hardware and add some loctite and torque the hardware attaching the upper shock into the OE location to **65 ft lbs.** Repeat procedure on the passenger side.



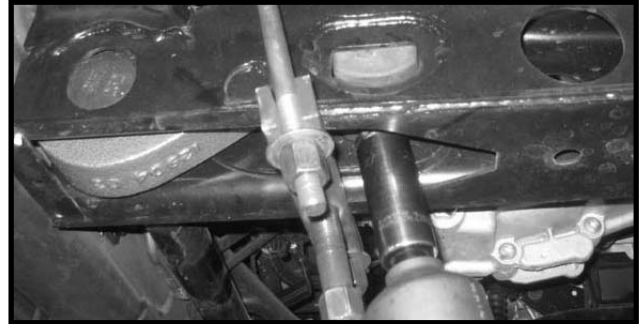
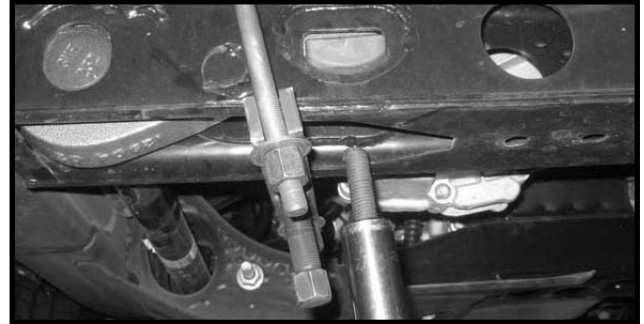
25. Locate the new torsion bar keys. Working on the driver side, install the new torsion bar key back into the cross member and carefully tap the torsion bar into the newly installed key making sure that the line scribed on the torsion bar and the lower control arm match up. Repeat procedure on the passenger side.



26. Working on the driver side, install the torsion bar unloading tool and adjust the new torsion bar key up high enough so that the torsion bar block and bolt can be re-installed.



27. Working on the driver side, install the stock torsion bar bolt into the torsion bar block. For now, set the torsion bar bolt about half way in the block. **Special note: Once the rear end installation is complete and the weight of the vehicle is on the ground, proper adjustment for ride height will occur.** Remove the torsion bar adjusting tool and repeat procedure on the passenger side.



28. Working on the driver side, use a grease gun to grease the newly installed upper control arm bushings. Repeat procedure on the passenger side. **Special note: It is highly recommended to grease these bushings every time you have the oil changed in your vehicle. This will increase the life of the bushing along with helping eliminate squeaking.**

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

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

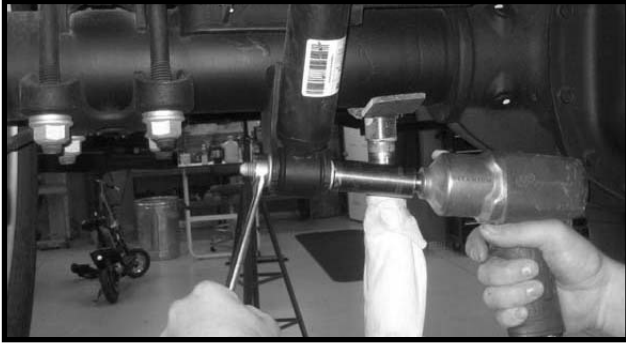
31. To begin installation, carefully block the front tires and wheels so that the vehicle can not roll forward. Safely lift the rear of the vehicle and support the vehicle with a pair of jack stands. Place a jack stand on both the driver and the passenger side. Next, remove the rear wheels and tires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

32. Place a hydraulic floor jack under the driver and passenger side of the rear axle.

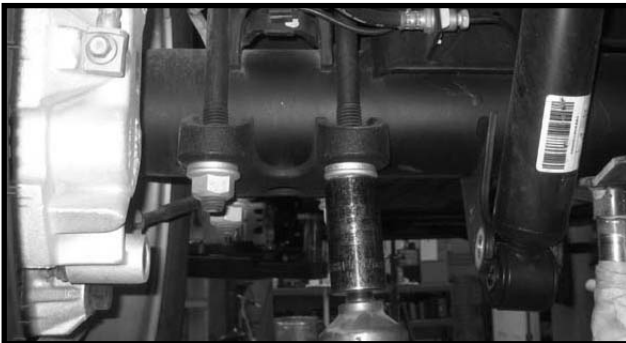
33. Working on the driver side, remove the lower shock hardware attaching the shock to the axle. Save the shock hardware. The upper shock mount does not need to be removed unless you are replacing the rear shock. **Special note: The OE shocks will be long enough once this suspension system has been installed but Tuff Country highly recommends replacing the rear shocks. If you have not already ordered your rear shocks, please contact Tuff Country or your local Tuff Country dealer and order your**



new rear shocks. Tuff Country recommends install a 30" fully extended nitrogen gas shock. Repeat procedure on the passenger side.

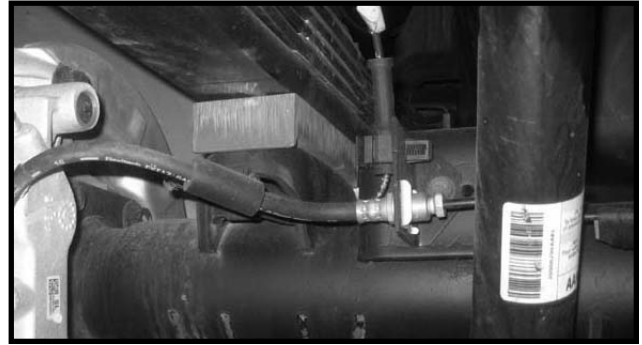


34. Working on the driver side, remove the u-bolts from the OE location and discard the u-bolts and hardware. Set the lower u-bolt plate aside for later re-installation. Repeat procedure on passenger side.



35. Carefully lower down on both hydraulic floor jacks at the same time approximately 2". **Special note: Take special care not to over extend any brake lines and/or hoses.**

36. Locate (2) new 1" lifted blocks. Working on the driver side, install the new 1" lifted block into the stock location. Repeat procedure on the passenger side.



37. Carefully raise up on both hydraulic floor jacks at the same time until the spring assembly sits flush with the newly installed 1" lifted block.

38. Locate (4) 3/4" x 3 1/4" x 16" square u-bolts. Locate (8) 3/4" u-bolt high nuts and (8) 3/4" u-bolt washers from hardware bag 13085NB. Also, locate the lower u-bolt plates. Working on the driver side, install the new u-bolts into the stock location and secure using the new 3/4" high nuts and washers. **Special note: If need be, cut off the excess threads off each leg of the newly installed u-bolts.** Torque to **135 ft lbs.** Repeat procedure on passenger side.



**Special note: The OE shocks will be long enough once this suspension system has been installed but Tuff Country highly recommends replacing the rear shocks. If you have not already ordered your rear shocks, please contact Tuff Country or your local Tuff Country dealer and order your new rear shocks. Tuff Country recommends install a 30" fully extended nitrogen gas shock.**

39. Working on the driver side, install the shock into the lower location using the OE hardware. Make sure to use loc-tite and torque to **85 ft lbs.** Repeat procedure on the passenger side.





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

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

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

43 Move back to the front of the vehicle and working on the driver side, adjust the torsion bar adjusting bolt until your measurement from the lip of the front bump stop to the bump stop landing on the lower control arm reaches 4 1/2". Repeat procedure on the passenger side.



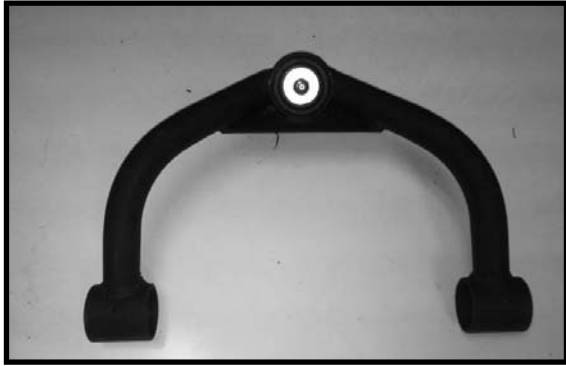
**Congratulations, installation complete!**

**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.**



13085-01 / Qty (2)  
DS & PS Upper Control Arm



13085-02 / Qty (2)  
DS & PS Shock relocation bracket



12904-03 / Qty (2)  
Torsion bar keys