



Installation Manual **2011 — 2018 Chevy/GMC** **2500/3500HD** **3.0" Leveling kit** **Part # 13087**

SS04052018

Part # 13087

2011-2018 Chevy/GMC 2500/3500 HD
3.0" leveling kit

Part #	Description	Qty.
13085-01	DS & PS Upper control arm	2
13085-02	DS & PS upper shock bracket	2
13085-03	Limiting strap bracket	2
12904-03	Torsion bar key	2
LS14	Limiting strap	2
S10153	Sleeve	2
12114B	1/2" x 1 1/4" bolt	4
12UN	1/2" unitorque nut	4
716WA	7/16" uss flat washer	8
13087NB	Hardware bag	1
13085NB1	Hardware bag	1
13087INST	Instruction Manual	1

Service parts:

Balljoint-04 replacement balljoint
 91122 replacement bushings and crush sleeves
 for (2) upper control arms.

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.

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.

For a list of parts, please refer to the back of the installation manual for photos of parts that are included in this suspension system.

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

After the completion of the installation, a front end alignment is required.

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.

IMPORTANT!

This kit will NOT work on vehicles equipped with Air Suspension. If your vehicle is equipped with this type of suspension, please contact the company you purchased the lift kit from and arrange for returning the parts.

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 or 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"x12.50" tire with a wheel having 5.5" or less backspacing once part # 13087 has been installed. The OEM 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. Due to different types of tread patterns, some aggressive tires in this size recommendation may require slight trimming of inner fender plastic. **Our tire and wheel fitments are only a guideline. Different production times or tolerances will vary and this size should only be used as a starting point. Each vehicle is different and will need to be treated as such.**

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.

This Suspension kit comes with (1) installation manual and some post installation procedure literature and it is the installers responsibility to make sure that the customer receives the post installation procedure literature. If a customer would like a copy of the installation manual, please have them visit our website at www.tuffcountry.com. Have them go to the customer care section to download these instructions. If you have any questions, please feel free to call us at (801) 280-2777.

Hardware bag 13085NB1 includes:

Description	Quantity
TC-001 poly bushing	8
S10238 Crush sleeve	4
SERT06 Grease fitting	4

Hardware bag 13087 includes:

Description	Quantity
S10237 2.250" x .6250" x .750" sleeve	2
S10330 2.250" x .6250" x .500" sleeve	2
9165B 9/16" x 5" bolt	4
916UN 9/16" unitorque nut	4
123B 1/2" x 3" bolt	4
12UN 1/2" unitorque nut	4
12WA 1/2" flat washer	8
716WA 7/16 flat washer	4

Recommended tool selection:

Level
Drill and assorted bits
Jack stands
Torsion bar removal tool
Torque wrench
Standard socket set
Standard wrench set
Metric socket set
Metric wrench set
Hydraulic floor jacks

Actual Parts may vary slightly from the parts in these photographs.

Please follow instructions carefully:

Before installation begins, we need to measure ride height. Use the image below as a guide. With the truck on a flat, level surface, position a level up against the bottom on the spindle. Once level, measure from the center of the forward lower control arm bolt to the top of the level. Record in the pre-installation measurement space.

Pre Installation measurements:

Driver side front : _____

Passenger side front : _____

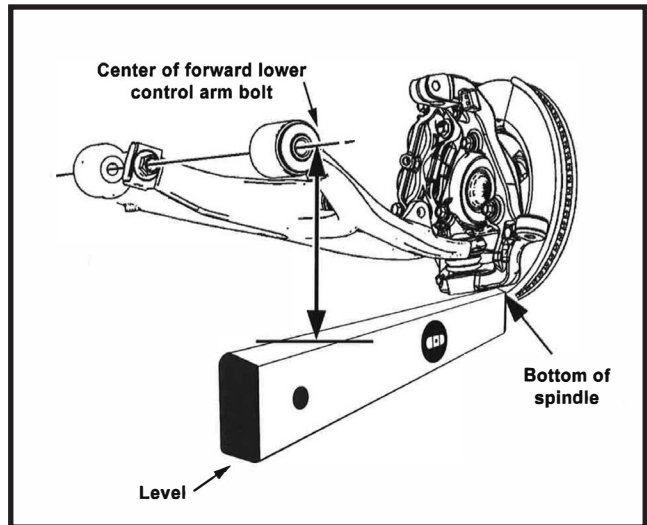
SPECIAL NOTE: Due to different variations of the pre-install measurement height, the actual lift height may vary. Final post installation adjustment should be 7.5" - 8.0".

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 : _____



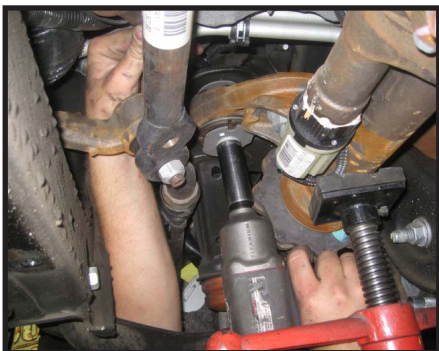
Front end installation:

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 sides.
2. Remove the lower skid plate. Save the 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 OEM hardware may be discarded.



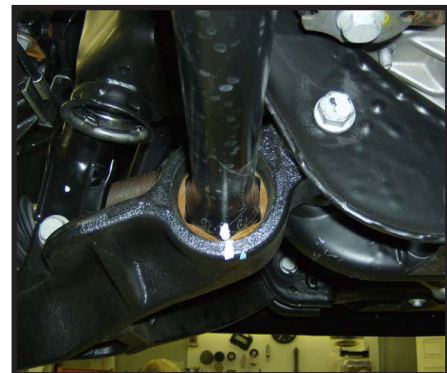


5. Carefully lower down on the hydraulic floor jacks holding the front differential allowing enough room for the new differential spacers to be installed.

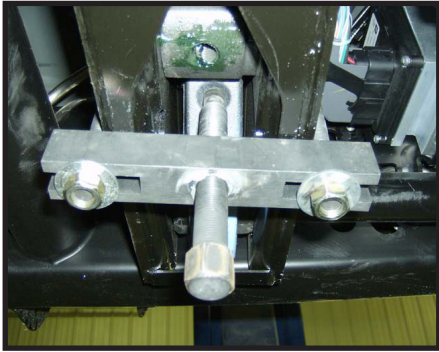
6. Locate (2) S10237 sleeves, (2) S10330 sleeves (4) 9/16" x 5" bolts, (8) 1/2" uss flat washers and (4) 9/16" unitorque nuts from hardware bag 13087NB. Install the S10237 sleeves (thicker of the 4) in between the front differential and the FRONT OE mounts and secure using the new 9/16" hardware. Install the S10330 (thinner of the 4) sleeves in between the front differential and the REAR OE mounts and secure using the new 9/16" hardware. Torque new 9/16" hardware to **85 ft lbs.**



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.



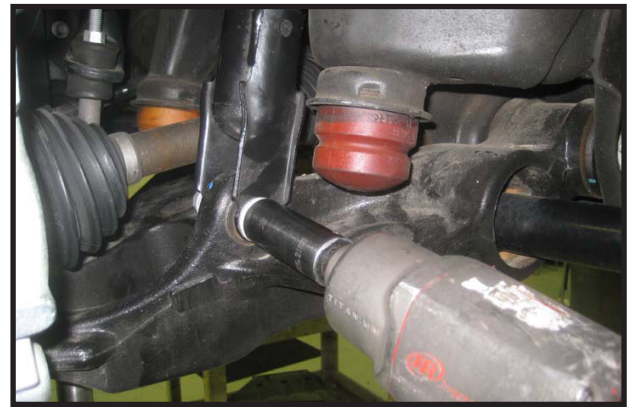
8. Working on the driver side and using a proper torsion bar removal tool. **Special note: Tuff Country Suspension requires that a proper torsion bar unloading tool to be used when performing this installation. If you do not have one, please contact your local GM dealer to purchase one from them.** Carefully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

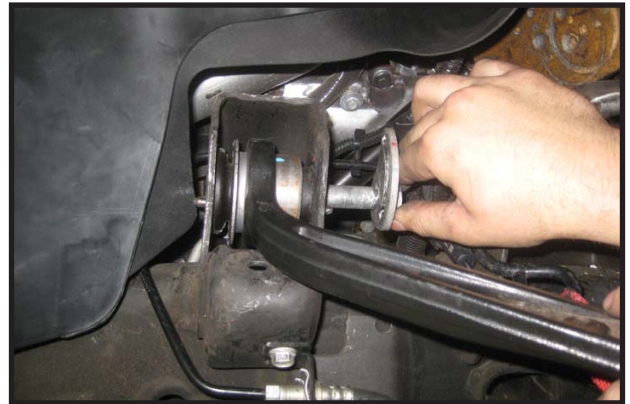
12. Working on the driver side, remove the hardware attaching the upper control arm to the knuckle. The hardware may be discarded. Repeat procedure on the passenger side.



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 upper control arms. Also locate (8) TC-001 poly bushings (4) S10238 sleeves, and (4) SERT06 grease fittings from hardware bag 13085NB1. Install the new bushings and sleeves into the upper control arms. **Special note: Make sure to use a fair amount of lithium or moly base grease before installing the new bushings and**

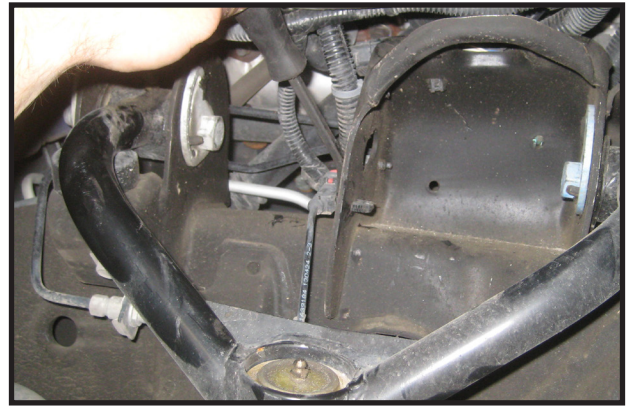
sleeves into the control arms. This will increase the life of the bushing as well as help prevent squeaking.



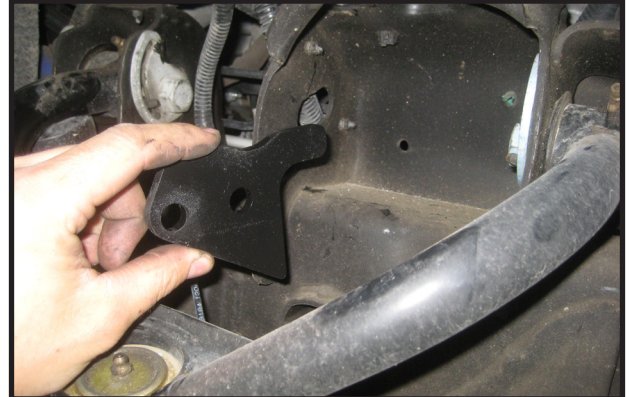
16. Carefully install the new grease fittings making sure to face them outwards of the vehicle to allow proper lubricating. Take care to not over tighten the grease fittings as they are made of soft brass.



17. Working on the driver side, carefully pop the ABS wire connection out of its mounting location from the shock tower



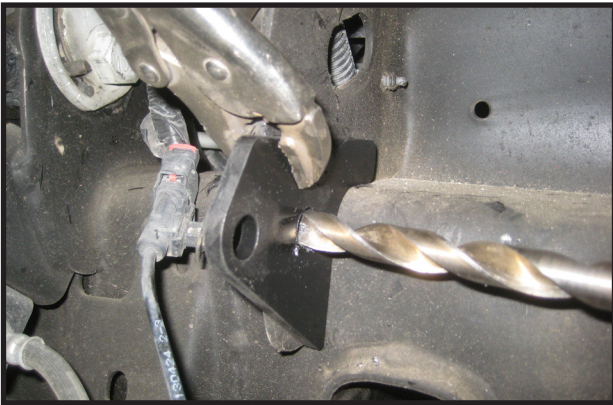
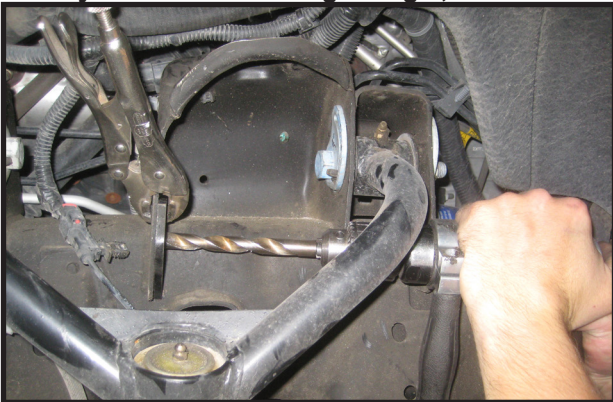
18. Locate the 13085-03 limiting strap brackets and insert them to the inside of the shock towers so that it follows the contour of the frame rail.



19. With the bracket in place, clamp it tightly to the shock tower.



20. Using a 1/2" drill bit, and the existing hole in the limiting strap bracket as a guide, carefully drill through the shock tower. **Special note: Due to tight quarters, this hole will most likely be drilled on a slight angle, and that is fine.**



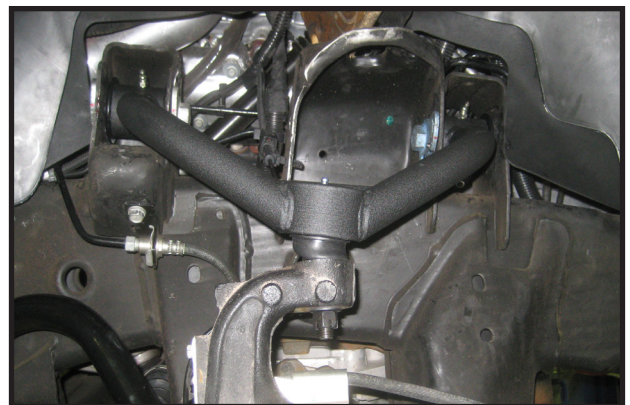
21. Secure the bracket to the shock tower using the new 1/2" x 1 1/4" bolts and hardware. Repeat steps 17 - 21 on the passenger side.



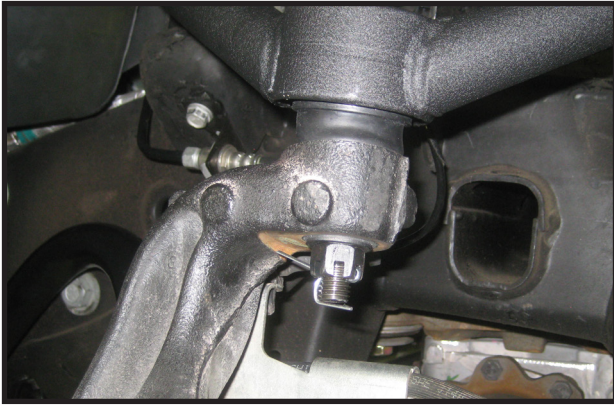
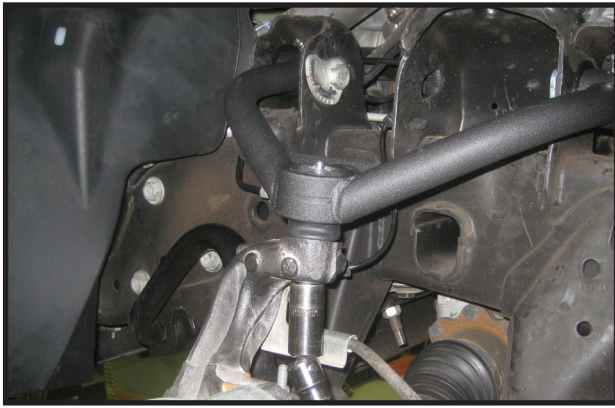
22. Working on the driver side, install a new upper control arm into the OEM mounts, using the OEM hardware. Torque to **95 ft lbs**. Repeat on the passenger side.



23. Working on the driver side, install the upper control arm ball joint into the knuckle and secure using the ball joint castle nut. Torque the castle nut to **70 ft lbs**. Install the cotter pin and bend it over to lock it. **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 to align it, always tighten it until proper alignment is reached.** Repeat on the passenger side.



23.5. Grease both upper ball joints with proper chassis grease. **Special Note; Ball joints come from the factory with assembly lube only, this must be purged with chassis grease upon installation, and as regular maintenance, this will extend the life of the ball joints.**



24. Locate the OEM front shocks, carefully remove the upper pressed in studs from the upper shock mount. The studs may be discarded.



25. Locate (4) 1/2" x 3" bolts, (4) 7/16" flat washers and (4) 1/2" unitorque nuts from hardware bag 13087NB. Also, locate the new front shock relocation blocks. Working on the

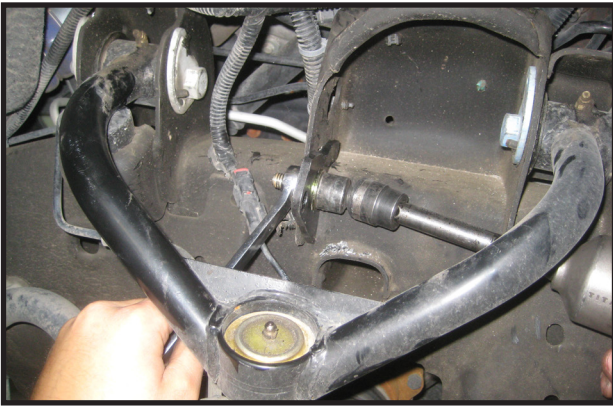
driver side install the new 1/2" bolts and front shock relocation block to the OE shock and install into the upper shock location using the new 1/2" hardware. **Do not tighten at this point.** Repeat procedure on the passenger side.



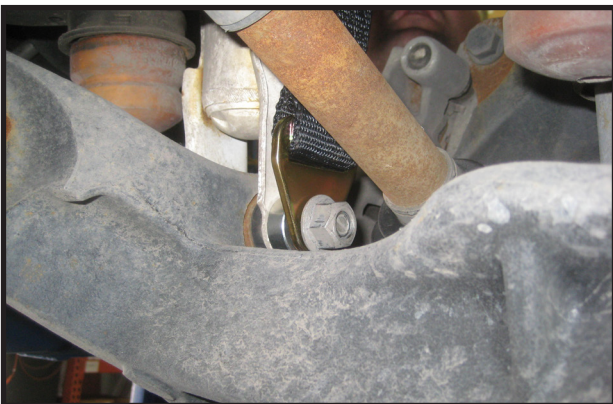
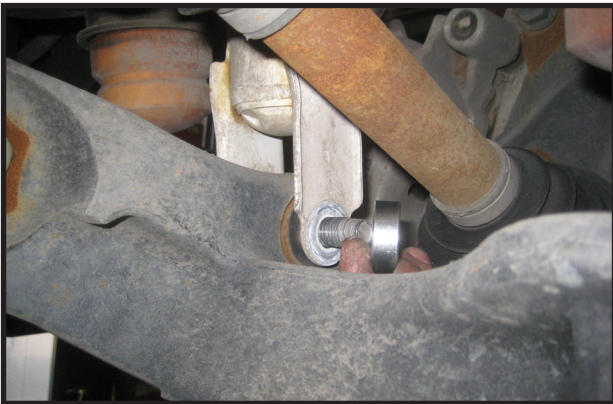
26. Locate (2) S10153 spacer sleeves, (2) LS14 limiting straps, (2) 1/2" x 1 1/4" bolts (2) 1/2" unitorque nuts, and (4) 7/16" flat washers.

27. Using the 1/2" x 1 1/4" bolts and hardware, attach one end of the limiting straps to the previously installed bracket.





28. Using the OE lower shock hardware and the S10153 spacer sleeve, secure the shock and limiting strap using the spacer sleeve to space the strap away from the mount.



29. Re-install the ABS connections to the original location.

30. Move back to the upper shock hardware from step #25 and torque to **65 ft lbs.** Repeat steps 26 - 30 on passenger side.

31. Locate the new torsion bar keys, working on the driver side, install the new torsion bar key into the crossmember and carefully tap the torsion bar into the new key making sure that the reference lines match up. Repeat on the passenger side.



32. 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 installation is complete and the weight of the vehicle is on the ground, proper adjustment for the ride height will occur.** Remove the torsion bar adjusting tool and repeat procedure on the passenger side.

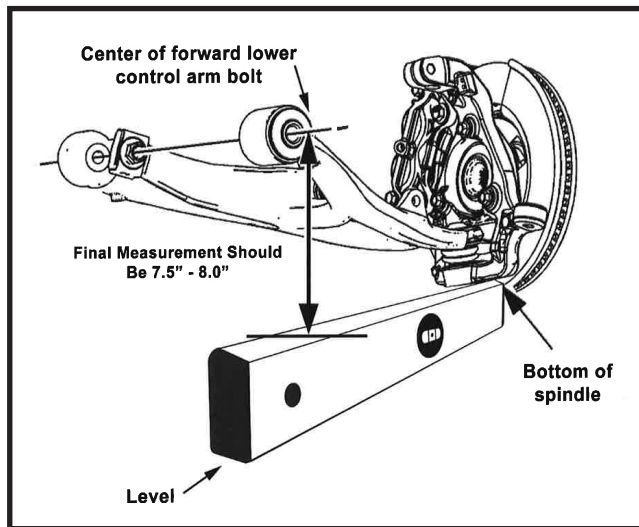
33. Check and double check and check again to make sure all steps have been performed properly.

34. Re-install the tires and wheels and carefully lower the vehicle back onto the ground.

35. At this time loosen both lower control arm pivot bolts and lower shock mounting bolt on each side to relieve bushing preload. **Special note: this step is important to relieve bushing tension, prolong bushing life and allow easier ride height adjustment.**

36. To measure ride height, use the image as a guide that follows this step. With the truck on a flat, level surface, position a level up against the bottom of the spindle. Once level, measure from the center of the forward lower control arm to

the top of the level and adjust torsion bar bolts to achieve specified ride height of 7.5" - 8.0"



could cause brackets to come loose and cause serious damage to the suspension system and to the vehicle.

Special Note: If the stock torsion bar bolt is over adjusted, ride quality issues will occur and over adjusting the bolt is not recommended.

37. Torque the lower control arm pivot bolts and the lower shock mounting bolts to factory specification on both sides.

Special note, the travel limiter straps are needed to limit suspension droop in order to;

Protect ball joint damage from extreme angle due to excessive travel.

Protect tie rod damage from extreme angle due to excessive travel

Protect CV Axles, CV joints, and front Differential from damage due to extreme angle.

Protect shock from damage due to excessive travel.

Protect brake hose and ABS sensor wire from damage due to excessive travel.

Installation Complete!

Retain all discarded parts and hardware to enable future kit removal.

Check and double check to make sure that all steps were performed properly. After the completion of this install, Tuff Country Recommends taking the vehicle in for a complete front end alignment.

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 the system after the first 100 miles of installion. It is also the Customers responsibility to do a complete re-torque after every 3,000 miles or after every off road use. Neglect of following these steps



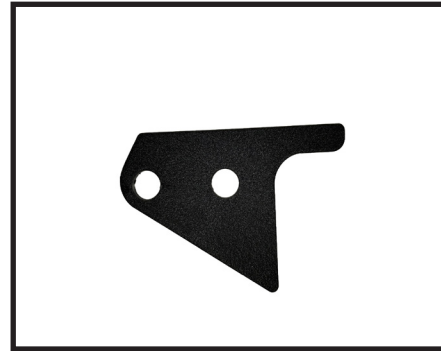
Part # 13086-01 / Qty. 2
DS & PS upper control arm



Part # 13085-02 / Qty. 2
DS & PS shock extension bracket



Part # 12904-03 / Qty. 2
Torsion bar key



Part # 13085-03 / Qty. 2
Limiting strap bracket



Part # LS14 / Qty. 2
Limiting strap