



## EZ - Ride Suspension

# Installation manual

## 2" Suspension System

### 1999 - 2006

### Chevy or GMC 1500

### Part # 12935

sj2202012rev.01

Part # 12935  
1999 - 2006 Chevy/GMC 1500  
2" Suspension System

<u>Part #</u>	<u>Description</u>	<u>Qty.</u>
12903-01	Torsion bar keys	2
TCI-R31	Rear add-a-leaf	2
CB38	Hardware bag	1
10970-01	Front shock relocation bracket	2
10970NB	Hardware bag	1
14WA	1/4" USS flat washer	2
12935INST	Instruction manual	2
WARNINGDECAL	Warning decal	1
MIRRORHANGER	Rear view mirror hanger	1

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

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.

It is the customers/installers responsibility to read and understand all steps before installation begins. OEM manual should be used as a reference guide.

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

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.

#### Important customer information:

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

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

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.

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

### 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 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.

Tuff Country recommends NOT installing the Torsion Bar Keys in conjunction with another aftermarket lifted suspension system. If the Torsion Bar Keys are installed with another aftermarket lifted suspension system your Warranty will be void.

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.

Hardware bag CB38 includes:

<u>Description</u>	<u>Quantity</u>
CB381 (3/8" x 6" centering bolt)	2
38FN (3/8" fine nut)	2

Hardware bag 10970NB includes:

<u>Description</u>	<u>Quantity</u>
916212B (9/16" x 2 1/2" bolt)	2
12WA (1/2" USS flat washers)	4
916UN (9/16" unitorque nuts)	2

Torque settings:

5/16"	15—18 ft lbs.
3/8"	28—32 ft lbs.
7/16"	30—35 ft lbs.
1/2"	65—85 ft lbs.
9/16"	85—120 ft lbs.
5/8"	95—130 ft lbs.
3/4"	100—140 ft lbs.

Recommended tools selection:

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

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: \_\_\_\_\_

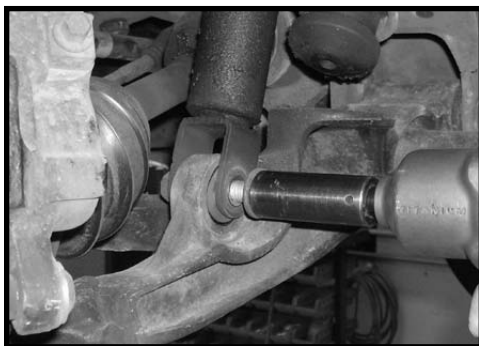
Passenger side front: \_\_\_\_\_

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

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

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 frame with a pair of jack stands. Place a jack stand on both the driver and passenger side.

2. Working on the driver side, remove the shock from the OE lower location only. Save the hardware. Let the shock hang.



3. Working on the driver side, scribe a mark on the lower control arm and one directly across to the torsion bar. This will ensure that the torsion bar gets installed properly back into the OE location.



4. Working on the driver side and using a proper torsion bar removal tool. Carefully remove the torsion bar bolt and block. Set the torsion bar bolt and block aside. Remove the stock torsion bar unloading tool from the stock cross member. **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.**



5. Working on the driver side, tap the torsion bar forward until the torsion bar key can be removed. Remove and discard the torsion bar key.

6. Locate the new torsion bar key. Working on the driver side, install the new key into the OE location. Tap the torsion bar back into the torsion bar cross member until it seats properly into the new torsion bar key. **Special note: Make sure that the marks that were scribed earlier on the lower control arm and the torsion bar line up with each other.**



7. Using the torsion bar unloading tool, adjust the new torsion bar key up high enough so that the torsion bar block and bolt can be re-installed.

8. Locate the torsion bar bolt and block and install into the OE location. Adjust the bolt so that there is at least a 1/4" of thread past the torsion bar block. After the completion of the installation, if more height is needed, adjust the bolt to achieve the proper height. **Special note: For each 1/4" of adjustment on the stock bolt equals 1" of height.**

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

9. Working on the driver side, measure from the stock bump stop to the stock lower control arm. This measurement should not exceed 1/2". If you have more than a 1/2", the stock torsion bar bolt will need to be lowered until our measurement is less than a 1/2".

10. Locate the new shock relocation brackets. Working on the driver side, install the new bracket to the lower OE location and secure using the OE hardware. **Do not tighten at this point.**

11. Locate the new 9/16" hardware from hardware bag 10970NB. Working on the driver side, install the OE shock into the newly installed shock relocation bracket and secure using the 9/16" hardware. Make sure to use loctite and torque to **85 ft lbs.** Move back to the OE hardware and add some loctite and torque to **85 ft lbs.**



**Repeat step # 2 - 11 on the passenger side.**

12. Carefully lower the vehicle to the ground.

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

14. Working on the driver side, remove the shock from the OE location and save the hardware for later re-installation. The stock shock may be discarded. **Special note: New longer rear shocks are recommended, if you have not already ordered shocks, please contact Tuff Country or your local Tuff Country dealer and order the proper shocks. Tuff Country recommends using a 30" fully extended nitrogen gas shock.** Repeat procedure on the passenger side.

15. Working on the driver side rear shock bracket, remove the brake line bracket from the driver side rear shock bracket. Set the stock hardware aside for later re-installation.

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

17. Working on the driver side, remove the u-bolts from the OE location and save the u-bolts and hardware. Set the upper and lower u-bolt plates aside for later re-installation. Repeat procedure on passenger side.

18. Carefully lower down both hydraulic floor jacks at the same time approximately 4". **Special note: Take special care not to over extend any brake lines and/or hoses.**

19. Working on the driver side, place a pair of "C" clamp vise grips on each side of the centering bolt. Carefully remove the centering bolt and nut and discard. Carefully remove the "C" clamp vise grips that are holding the springs together. **Special note: Be very carefully when removing the "C" clamps, the springs are under tension and can be dangerous.** Repeat procedure on passenger side.

20. Locate (2) new rear add-a-leaf and (2) 3/8" x 6" centering bolt and (2) 3/8" fine nut from hardware bag CB38. Install the new rear add-a-leaf into the spring assembly. Secure the new rear add-a-leaf to the spring assembly using the new 3/8" center bolt and nut. Torque to **28 ft. lbs.** **Special note: If the new add-a-leaf that you are installing into the stock spring assembly has an offset center hole location, place the longest side of the add-a-leaf towards the rear of the vehicle. Also the new add-a-leaf should be installed into the stock spring assembly in progression in order, from longest to shortest. The new add-a-leaf should be installed between the stock overload and the stock spring pack. The stock overload is usually the un-arched spring at the bottom of the stock leaf pack. Also, Tuff Country EZ-Ride Suspension recommends not**

using any air tools when installing the new add-a-leafs into the stock spring assembly. If air tools are used the centering bolt may strip, causing the stock spring assembly to come apart. With a suitable cutting tool, cut off the extra thread from the new centering bolt. Repeat procedure on passenger side.

21. Carefully raise up on both hydraulic floor jacks at the same time until the spring assembly sits flush with the stock block.

22. Working on the driver side, install the OE u-bolts into the OE location and secure using the OE hardware. **Special note: Make sure to re-install the upper and lower u-bolt plates into the OE location.** Torque to **120 ft lbs.** Repeat procedure on passenger side.

23. Locate the new rear shocks. **Special note: New longer rear shocks are recommended, if you have not already ordered shocks, please contact Tuff Country or your local Tuff Country dealer and order the proper shocks. Tuff Country recommends using a 30" fully extended nitrogen gas shock.** Locate and install the new upper and lower poly bushings and proper shock sleeves that are packaged with the new shocks into the upper and lower eyelet of the new shocks. **Special note: Make sure to use a lithium or moly base grease prior to inserting the new lower shock bushings and sleeves into the new lower shock eyelet. This will increase the life of the bushing as well as prevent squeaking.** Working on the driver side, install the new rear shock into the upper and lower location and secure using the OE hardware. Make sure to use loctite and torque to **80 ft lbs.** Repeat procedure on passenger side. **Tuff Country EZ-Ride Suspension highly recommends that the shocks are installed with shock boots. If shock boots are not installed, damaged may occur to the piston of the new shock.**

24. Locate the (2) 1/4" USS flat washers that are packaged with the installer copy of the installation manual. Working on the driver side rear shock bracket, re-install the stock bracket line bracket to the rear shock bracket using the OE hardware and the 1/4" USS washers as spacers. This will ensure that the shank of the bolt will not rub on the new shock.

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

26. 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.

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

28. Check and double check to make sure that all steps were performed properly. And then check them again.

## **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.**