



Installation manual
Long arm upgrade kit 2" - 4.5" of lift
April 1999-2001 Dodge Ram 1500
April 1999-2002 Dodge Ram 2500/3500
Part # 30946
 sj03052012rev.01

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 Long arm upgrade kit / 2" - 4.5" of lift

| <u>Part #</u> | <u>Description</u> | <u>Qty.</u> |
|---------------|----------------------------------|-------------|
| 30945-01 | Upper control arms | 2 |
| 30945-02 | DS and PS frame bracket | 2 |
| 30940-12 | Driver side lower control arm | 1 |
| 30940-13 | Passenger side lower control arm | 1 |
| HEIM-01 | Large heim joint | 2 |
| HEIM-02 | Small heim joint | 2 |
| 30945NB | Hardware bag | 1 |
| 30946NB1 | Hardware bag | 1 |
| 30946INST | Instruction manual | 2 |
| MIRRORHANGER | Rear view mirror hanger | 1 |
| WARNINGDECAL | Warning decal | 1 |

Special note: The stock lower control arm mounting points will be cut off during this installation and the stock brackets would need to be welded back to the frame if you desire to return your vehicle back to stock. If you do not want to cut off the stock brackets, please box up the kit and return it to whom you purchased it from.

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.

Please see the end of the installation manual for a picture of the hard parts that are included in this suspension system.

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:

This kit will work on vehicles with 2" - 4.5" of Suspension lift.

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.

Hardware bag 30945NB includes:

| <u>Description</u> | <u>Quantity</u> |
|-------------------------------|-----------------|
| 125B (1/2" x 5" bolt) | 4 |
| 12112B (1/2" x 1 1/2" bolt) | 4 |
| 716WA (7/16" USS flat washer) | 12 |
| 12UN (1/2" unitorque nut) | 8 |
| 9164B (9/16" x 4" bolt) | 2 |
| 916312B (9/16" x 3 1/2" bolt) | 2 |
| 12WA (1/2" USS flat washer) | 8 |
| 916UN (9/16" unitorque nut) | 4 |

Hardware bag 30946NB1 includes:

| <u>Description</u> | <u>Quantity</u> |
|---------------------------------|-----------------|
| MO2617 (poly bushing) | 8 |
| 30945-03 (Frame washers) | 2 |
| S10043 (.875" x .635" x 2.760") | 2 |
| S10059 (.875" x .550" x 2.370") | 2 |

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

Please follow instructions carefully:

Long arm installation:

1. Working on the driver side, remove the sway bar from the sway bar end link. Save the sway bar end link hardware for later re-installation. Repeat the procedure on the passenger side. Now remove the sway from the end links and let the sway bar hang.

Step # 1 needs to be performed with weight of the vehicle on the ground. If this step is not performed with the weight of the vehicle on the ground, damage will occur to the stock sway bar end links.

2. 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.

3. Place a pair of hydraulic floor jacks under the front differential. Place one on the driver side and one on the passenger side. Carefully raise up on both hydraulic floor jacks until they make contact with the front differential.

4. Place a hydraulic floor jack under the transfer case cross member. Carefully raise up on the hydraulic floor jack until it makes contact with the cross member.

5. Working on the driver side, remove and discard the OE hardware holding the transfer case cross member to the OE frame rail. Repeat procedure on the passenger side.



6. Working on the driver side and using the frame rail as a guide, carefully drill a 1/2" hole through the frame rail and the transfer case cross member. Make sure to drill out both the front and rear hole.



7. Locate the new driver and passenger side frame bracket. Locate (4) 1/2" x 5" bolts, (4) 7/16" USS flat washers and (4) 1/2" unitorque nuts from hardware bag 30945NB. Also, locate (2) 30945-03 spacer washers from hardware bag 30946NB1. Working on the driver side, install the new spacer washer over the front welded sleeve on the new frame bracket then install to the frame and secure using the new 1/2" x 5" bolt and hardware. **Special note: The head of the bolt will not receive a washer. Do not tighten at this point.** Repeat procedure on the passenger side.





8. Working on driver side and using the newly installed frame bracket as a guide, carefully drill (2) 1/2" holes into the transfer case cross member. Repeat procedure on the passenger side.



9. Locate (4) 1/2" x 1 1/2" bolts, (8) 7/16" USS flat washers and (4) 1/2" unitorque nuts from hardware bag 30945NB. Working on the driver side, secure the newly installed frame bracket to the transfer case cross member using the new 1/2" hardware. **Do not tighten at this point.** Repeat procedure on the passenger side.



10. Working on the driver side move back to the new 1/2" hardware and add some loctite and torque all 4 bolts to **75 ft lbs.** Repeat procedure on the passenger side.



11. Working on the driver side, remove the upper and lower control arms. The control arms and frame mounting hardware may be discarded but save the axle mounting hardware. Repeat procedure on the passenger side.

Special note: The stock lower control arm mounting points will be cut off during this installation and the stock brackets would need to be welded back to the frame if you desire to return your vehicle back to stock. If you do not want to cut off the stock brackets, please box up the kit and return it to whom you purchased it from.

12. Working on the driver side, refer to the photo below and scribe a mark on the lower control arm mounting bracket. Repeat procedure on the passenger side.



13. Working on the driver side carefully cut off the stock lower control arm rear bracket. **Special note: Make sure not to cut into the stock frame rail. Also, Tuff Country does not recommend using a torch when making this cut. Using a die grinder works best for this step.** Once the bracket has been cut away, clean and dress up any exposed metal. Repeat procedure on the passenger side.



14. Locate the new driver and passenger side longer lower control arms and the larger heim joints. Install the new heim joints into the ends of the new longer lower control arms. **Special note: Make sure to use a fair amount of anti-seize on the threads. If this is not done, the new long arm will not perform properly.**

15. Locate (4) MO2617 poly bushings and (2) S10043 sleeves from hardware bag 30946NB1. Install the new bushings and sleeves into the new longer lower 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 front main eyelets. This will increase the life of the bushing as well as help prevent squeaking.**

16. Set the measurement on the new longer lower control arms from the center of the fixed eye to the center of the heim joint to 38 1/2". **Special note: The 38 1/2" measurement will be a guide and can be adjusted if need be during the alignment process. Also, make sure to use a fair amount of anti-seize on the threads. If this is not done, the new long arms will not perform properly. Also, make sure that the sert fitting on the heim joint is in the upward position when installed in the vehicle.**



17. Locate (2) 9/16" x 4" bolts, (4) 1/2" USS flat washers and (2) 9/16" unitorque nuts from hardware bag 30945NB. Working on the driver side, install the new longer lower control arm to the newly installed frame bracket and secure using the new 9/16" x 4" bolt and hardware. **Do not tighten at this point.** Repeat procedure on the passenger side. **Special note: Also, make sure that the sert fitting on the**

heim joint is in the upward position. Swing the newly installed longer lower control arm up and install to the front axle. Secure using the stock cam bolt. Add some loctite, center the cam bolt and torque to **90 ft lbs.** Move back to the newly installed 9/16" hardware securing the new lower control arm to the frame bracket and add some loctite and torque to **85 ft lbs.** Repeat procedure on the passenger side.



18. Locate the new driver and passenger side upper control arms and the smaller heim joints. Install the new heim joints into the ends of the new upper control arms. **Special note: Make sure to use a fair amount of anti-seize on the threads. If this is not done, the new long arm will not perform properly. Also, make sure that the sert fitting on the heim joint is in the upward position when installed in the vehicle.**

19. Locate (4) MO2617 poly bushings and (2) S10059 sleeves from hardware bag 30946NB1. Install the new bushings and sleeves into the new longer lower 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 front main eyelets. This will increase the life of the bushing as well as help prevent squeaking.**

20. Set the measurement on the new upper control arms from the center of the fixed eye to the center of the heim joint to 14 1/2". **Special note: The 14 1/2" measurement will be a guide and can be adjusted if need be during the alignment process. Also, make sure to use a fair amount of anti-seize on the threads. If this is not done, the new upper control arms will not perform properly. Also, make sure that the sert fitting on the heim joint is in the upward position when installed in the vehicle.**



21. Working on the driver side, install the upper control arm to the front axle using the OE hardware. **Do not tighten at this point.** Repeat procedure on the passenger side.

22. Locate (2) 9/16" x 3 1/2" bolts, (4) 1/2" USS flat washers and (2) 9/16" unitorque nuts from hardware bag 30945NB. Working on the driver side, install the upper control arm to the newly installed longer lower control arm and secure using the new 9/16" x 3 1/2" bolt and hardware. **Special note: Also, make sure that the sert fitting on the heim joint is in the upward position.** Add some loctite to the new 9/16" hardware and torque to **85 ft lbs.** Move back to the OE hardware holding the upper control arm to the front and axle and add some loctite and torque to **65 ft lbs.** Repeat procedure on the passenger side.



23. Working on the driver side, move back to the larger and smaller heim joints and tighten the locking nut on both. Repeat procedure on the passenger side.

24. Carefully remove the hydraulic floor jacks from under the front differential and the transfer case cross member.

25. Check and double check to make sure that all steps were performed properly and check again.

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

27. Working on the driver side, re-install the sway bar end link to the sway bar using the OE hardware. Make sure to us loctite and torque to **25 ft lbs.** 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. If the alignment shop has any questions on the alignment, please tell them to call our Tech Department.

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.

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



30945-01 / Qty. 2
Upper control arm



30945-02 / Qty. 2
DS & PS frame mounts



30940-12 / Qty. 1
DS lower control arm



30940-13 / Qty. 1
PS lower control arm



HEIM-01 / Qty. 2
HEIM-02 / Qty. 2
Large and small Heim joints