



EZ - Ride Suspension

Installation manual 3" shackle relocation kit 2000 - 2004 Ford Super Duty F250 - F350 Old part # F2355RS New part # 23955

sj091306rev.01

Old part # F2355RS
New part # 23955
2000 — 2004 F250 / F350 Super Duty
3" shackle relocation kit

Parts list:

| <u>Part #</u> | <u>Description</u> | <u>Qty.</u> |
|---------------|-------------------------------------|-------------|
| 23955-01 | DS & PS shackle relocation bracket | 2 |
| 23955-02 | DS & PS hanger relocation bracket | 2 |
| 23955-04 | DS & PS bump stop spacer | 2 |
| F2355-02 | Front sway bar end links (12" long) | 2 |
| F2355-04 | Front sway bar end links (15" long) | 2 |
| F2355-08 | Front track bar relocation bracket | 1 |
| 23955NB | Hardware bag | 1 |
| SBPL | Hardware bag | 1 |
| 23955INST | Instruction sheet (customer copy) | 1 |
| 23955INST | Instruction sheet (installer copy) | 1 |
| MIRRORHANGER | Rear view mirror hanger | 1 |
| WARNINGDECAL | Warning decal | 1 |
| DECAL | Window sticker | 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 @ (800) 288-2190.

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

It is the responsibility of the installers to make sure that the rear view mirror hanger is hung from the rear view mirror. The rear view mirror hanger has instructions on proper post installation procedures.

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.

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

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:

Before installation begins, check to see if the vehicle that you are working on has a stock front shackle cross member. If the vehicle that you are working on has this cross member, the stock cross member will not work in conjunction with the new shackle relocation kit. Please contact Tuff Country or your local Tuff Country dealer and order part # 20915 (after market shackle cross member)

This box will not fit on the Ford Super Duties manufactured before 2000. If the vehicle that you are working on was manufactured before 2000, please box the kit up and send it back the company that you purchased it from.

It has recently come to Tuff Country's attention that Ford Motor Company has once again made a change to their front track bar for the Super Duty 4WD truck and Excursion. Ford Super Duty 4WD trucks and Excursions have had problems with the stock track bar on these vehicles breaking off in the STOCK form. We know of at least 3 different changes to this part since the first vehicles in 1998. The most recent change that has been made to the front track bar is that they have reduced the diameter of the bar from 1" to $\frac{3}{4}$ ". By doing this, Tuff Country feels that this is weakening a very important part of the vehicle and could cause serious damage if an after market lifted suspension system is installed.

Before any Tuff Country parts are installed on the vehicle listed above, it is highly recommended that a visual inspection be done on the vehicle to make sure that the vehicle does not have the $\frac{3}{4}$ " diameter stock track bar. If the vehicle that you are working on does have the $\frac{3}{4}$ " diameter stock track bar and you still want to install any Tuff Country parts, you must order Part # 20950 from your local Tuff Country Suspension dealer. Part # 20950 is an after market 1" diameter track bar. If any Tuff Country parts are installed on a vehicle with a $\frac{3}{4}$ " track bar, Tuff Country claims no liability nor does Tuff Country's warranty apply to any vehicle that is lifted with the $\frac{3}{4}$ " diameter track bar.

If the vehicle that you are working on has a 2.5" stock rear block, the 2.5" leveling system is not going to level the vehicle. Too much height is going to be gained in the front end. To level the vehicle, new rear add-a-leafs are needed to be installed. If this is the case with the vehicle that you are working on, please contact Tuff Country or your local Tuff Country dealer and order part # 82150.

DO NOT install any after market lifted leaf springs or add-a-leafs in conjunction with the shackle relocation kit. If these after market parts are installed the Tuff Country Warranty will be VOID.

Hardware bag 23955NB includes:

| <u>Description</u> | <u>Quantity</u> |
|------------------------|-----------------|
| 7/16" x 1 1/2" bolts | 8 |
| 3/8" USS flat washers | 16 |
| 7/16" unitorque nuts | 8 |
| 1/2" x 3 1/2" bolts | 2 |
| 1/2" x 4 1/2" bolts | 2 |
| 7/16" USS flat washers | 8 |
| 1/2" unitorque nuts | 4 |

Hardware bag SBPL includes:

| <u>Description</u> | <u>Quantity</u> |
|-----------------------|-----------------|
| PB4902 (poly bushing) | 8 |
| S10026 (sleeve) | 4 |
| LUBE (poly lube pack) | 2 |

Recommended tools:

Torque wrench
Standard socket set
Standard wrench set
Metric socket set
Metric wrench set
Tape measure
Hydraulic floor jacks
Hammer

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 make installation easier, Tuff Country recommends to remove the front bumper from the stock location. If you desire to remove the front bumper, take special care during removal due to a wiring sensor that controls the Air bag system. Once the front bumper is removed, set all the stock hardware and bumper aside until the shackle relocation kit has been installed.

2. 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 the passenger side. Next, remove the front wheels and tires from both sides.

3. Working on the driver side, remove the stock shock from the stock upper and lower mounting point and save the stock hardware for later re-installation. The stock shock may be discarded. **Special note: New longer front shocks are needed, 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 23" fully extended nitrogen gas shock.** Repeat procedure on the passenger side.

4. Working on the driver side, disconnect the stock brake line bracket from the stock frame mount location. Save the stock hardware and let the stock brake line bracket hang. Repeat procedure on the passenger side.

5. Place a pair of hydraulic floor jacks under the front axle. Place one hydraulic floor jack on the driver side and one on the passenger side.

6. Working on the driver side, remove the stock sway bar end link from the stock frame mount and stock sway bar mounting locations. The stock end link and stock hardware may be discarded. Repeat procedure on the passenger side. Let the stock sway bar hang.

7. Locate the stock front track bar bracket located on the driver side of the vehicle. Remove the stock bolt that connects the stock track bar to the stock track bar bracket and save the bolt and hardware for later re-installation. Next, remove the (3) stock bolts that connect the stock track bar bracket to the stock frame rail and the stock cross member. **Special note: Do not use any air tools when working with the 3 stock bolts that hold the stock track bar bracket to the stock location. Also, if need be, carefully heat up the (2) stock bolts that hold the stock track bar bracket to the stock frame rail location. This will help melt the thread locker or lock tite that is on the stock bolts.** Save the stock hardware for later re-installation. Remove and discard the stock track bar bracket.

8. Working on the driver side, remove the stock u-bolts from the stock location. Set the stock u-bolts and hardware aside for later re-installation. Place the stock upper and lower u-bolt plates aside for later re-installation. Repeat procedure on the passenger side. **Special note: There is not a stock lower u-bolt plate on the passenger side, it is welded to the stock front axle.**

9. Carefully lower down on both hydraulic floor jacks at the same time about 4" - 4 1/2". **Special note: Take special care not to kink or over extend the stock brake line.**

10. Working on the driver side, remove the stock spring from the stock front and rear location. Set the stock hardware and the stock spring aside for later re-installation.

11. Working on the driver side, remove the stock front spring hanger from the stock location. Save the stock hardware for later re-installation. The stock front spring hanger may be discarded. **Special note: If the vehicle that you are working on has a stock front cross member, this will be discarded at this time. If the vehicle that you are working on has this cross member, the stock cross member will not work in conjunction with the new shackle relocation kit. Please contact Tuff Country or your local Tuff Country dealer and order part # 20915 (after market shackle cross member).**

Illustration # 1

12. Locate the new front springs hangers. Also, locate the stock front spring hanger hardware that was removed in step # 11. Working on the driver side, secure the new front spring hanger into the stock location and secure using the stock hardware. **Make sure to sue thread locker or lock tite and torque to 48 ft lbs. Special note: (7) bolts were used to secure the stock spring hanger to the stock location. The new bracket is only going to use (6), (5) will secure the new bracket to the bottom of the stock**

frame rail and (1) to the side of the stock frame rail. Repeat procedure on the passenger side.

Illustration # 2

13. Working on the driver side, remove the stock hardware that connects the rear shackle to the stock location. Save the stock hardware for later re-installation. Repeat procedure on the passenger side.

14. Working on the driver side, remove the stock shackle bushing bracket from the inside of the stock frame rail. Save the stock hardware for later re-installation. **Special note: The stock shackle bushing bracket is attached to the side of the stock frame rail by (2) bolts and the bottom of the stock frame rail by (2) bolts.** Repeat procedure on the passenger side.

Illustration # 3

15. Working on the driver side, install the stock shackle bushing bracket in the upside down position on the bottom of the stock frame rail. Secure using the (2) stock bolts that were removed in step # 14. **Make sure to use thread locker or lock tite and torque to 40 ft.** Repeat procedure on the passenger side.

Illustration # 4

16. Locate the new rear shackle relocation brackets. Also, locate (4) 7/16" x 1 1/2" bolts, (8) 3/8" USS flat washers and (4) 7/16" unitorque nuts from hardware bag 23955NB. Working on the driver side, install the new rear shackle relocation bracket to the outside of the stock frame rail. Secure the (2) top holes using the new 7/16" x 1 1/2" bolts and hardware. **Do not tighten at this point.** Secure the (2) bottom holes on the new rear shackle relocation bracket to the stock shackle bushing bracket that was previously installed and secure using the stock hardware that was removed in step # 14. Add some thread locker or lock tite to the stock hardware and the new 7/16" x 1 1/2" bolts and torque to **40 ft lbs.**

Illustration # 5

17. Locate the stock rear shackle hardware and the stock rear shackles that were removed in step # 13. Working on the driver side, install the stock rear shackle to the previously installed stock shackle bushing bracket and secure using the stock hardware. **Do not tighten at this point.** Repeat procedure on the passenger side.

Illustration # 6

18. Working on the driver side, remove the (2) stock bolts that connect the stock bump stop bracket to the bottom side of the stock frame rail. Save the stock hardware and stock bump stop bracket for later re-installation. Repeat procedure on the passenger side.

Illustration # 7

19. Locate (2) new bump stop relocation brackets. Locate (4) 7/16" x 1 1/2" bolts, (8) 3/8" USS flat washers and (4) 7/16" unitorque nuts from hardware bag 23955NB. Install the bump stops to the new bump stop relocation brackets

and secure using the new 7/16" x 1 1/2" bolts and hardware. **Make sure to use thread locker or lock tite and torque to 40 ft lbs.** Working on the driver side, secure the new bump stop relocation bracket to the bottom of the stock frame rail using the stock hardware that was removed in step # 18. Make sure to use thread locker or lock tite and torque to 40 ft lbs. Repeat procedure on the passenger side.

Illustration # 8

20. Locate the stock front and rear spring eye bolts and the stock springs that were removed in step # 10. Working on the driver side, install the stock spring to the newly installed front spring hanger and the relocated rear shackle and secure using the stock hardware. Add some thread locker or lock tite on the stock front hardware that connects the stock spring to the newly installed front spring hanger and torque to **125 ft lbs. Do not tighten the rear spring shackle hardware at this point.** Repeat procedure on the passenger side.

Illustration # 9

21. Carefully raise up on both hydraulic floor jacks at the same time until the stock axle comes into contact with the newly installed stock springs. **Special note: Make sure that the stock center bolts seat properly into the stock spring perch.**

22. Locate the stock u-bolts, u-bolt hardware and the stock upper and lower u-bolt plates that were removed in step # 8. **Special note: There is not a stock lower u-bolt plate on the passenger side, it is welded to the stock front axle.** Working on the driver side, install the stock u-bolts into the stock location and secure using the stock u-bolt hardware. **Do not tighten at this point.** Repeat procedure on the passenger side. **Special note: Make sure to install the stock upper and lower u-bolt plates. There is not a stock lower u-bolt plate on the passenger side, it is welded to the stock front axle.** Torque the stock u-bolts on the driver and passenger side to **85 ft lbs.**

23. Locate the new front sway bar end links. Also, locate (8) PB4902 poly bushings, (4) S10026 sleeves and (2) Poly lube packs from hardware bag SBPL. Install the new poly bushings and sleeves into each end of the new front sway bar end links. **Special note: Make sure to use the poly lube packs on the poly bushings before they are installed into the new front sway bar end links. This will increase the life of the bushings as well as prevent squeaking.**

24. Locate (2) 1/2" x 4 1/2" bolts, (2) 1/2" x 3 1/2" bolts, (8) 7/16" USS flat washers and (4) 1/2" unitorque nuts from hardware bag 23955NB. Working on the driver side, install the new front sway bar end link to the upper stock location and secure using the new 1/2" x 4 1/2" bolt and hardware. **Do not tighten at this point.** Next, secure the stock sway bar to the newly installed front sway bar end link and secure using the new 1/2" x 3 1/2" bolt and hardware.

Repeat procedure on the passenger side. Torque the new upper and lower front sway bar end link hardware to **70 ft lbs. Special note: If you are not able to install the stock sway bar to the newly installed front sway bar end links, this step may need to be performed once the weight of the vehicle is on the ground.**

Illustration # 10

25. Locate the new upper driver side track bar relocation bracket and the stock hardware that was removed from step # 7. Install the new upper driver side track bar relocation bracket to the stock location on the bottom side of the stock frame rail and secure using the stock hardware. **Do not tighten at this point. Make sure to use thread locker or lock tite.** Next, secure the ear of the new track bar relocation bracket to the back side of the stock cross member and secure using the stock hardware. **Make sure to use thread locker or lock tite. Special note: The stock track bar relocation bracket was installed towards the front of the stock cross member, the new track bar relocation bracket is going to be installed towards the rear of the stock cross member.** Torque the stock bolt to the stock cross member to **80 ft lbs.** Torque the stock bolts that hold the new track bar relocation bracket to the bottom side of the stock frame to **68 ft lbs. Special note: Do not use any air tools when working with the (3) stock bolts that hold the new track bar bracket into the new location. If air tools are used, the stock hardware may strip. Also make sure to use lock tite.**

26. Locate the stock track bar hardware that was removed in step # 7. Install the stock track bar to the previously installed track bar relocation bracket and secure using the stock hardware. Make sure to use thread locker or lock tite and torque to **135 ft lbs. Special note: If you are not able to install the stock track bar into the newly installed track bar relocation bracket, you may need to perform this step once the weight of the vehicle is on the ground.**

Photo # 11

27. Locate the new front shocks. **Special note: New longer front shocks are needed, 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 23" fully extended nitrogen gas shock.** Working on the new shocks, install the new shock bushing and sleeves into the upper and lower eyelets of the new shocks. **Special note: Make sure to use a lithium or moly base grease prior to inserting the new shock bushings and sleeves into the new shock eyelets. This will increase the life of the bushing as well as prevent squeaking.** Working on the driver side, install the new shock into the stock upper and lower location and secure using the stock hardware that was removed in step # 3. **Special note: Make sure to use thread locker or lock tite and torque the upper hardware to 18 ft lbs and the lower stock mounting**

hardware to **65 ft lbs**. Repeat procedure on the passenger side. **Special note: Tuff Country EZ-Ride Suspension highly recommends that the shocks are installed with shock boots. If shock boots are not installed, damaged my occur to the piston of the new shock.**

28. Carefully remove the hydraulic floor jacks from under the vehicle.

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

30. With the weight of the vehicle on the ground and working on the driver side, add some thread locker or lock tite to the stock upper and lower rear shackle hardware on the front spring and torque to **40 ft lbs**. Repeat procedure on the passenger side.

31. If you were not able to install the stock sway bar to the new front sway bar end links in step # 24, perform step # 24 no that the weight of the vehicle is on the ground.

32. If you were not able to install the stock track bar to the new track bar relocation bracket in step # 26, perform step # 26 now that the weight of the vehicle is on the ground.

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

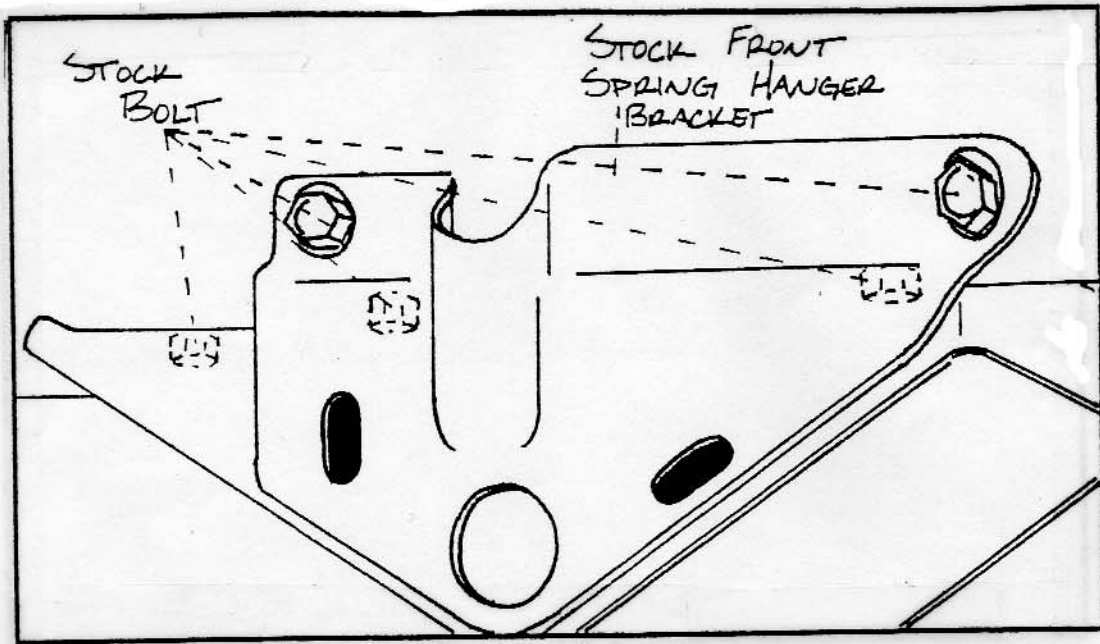


Illustration # 1

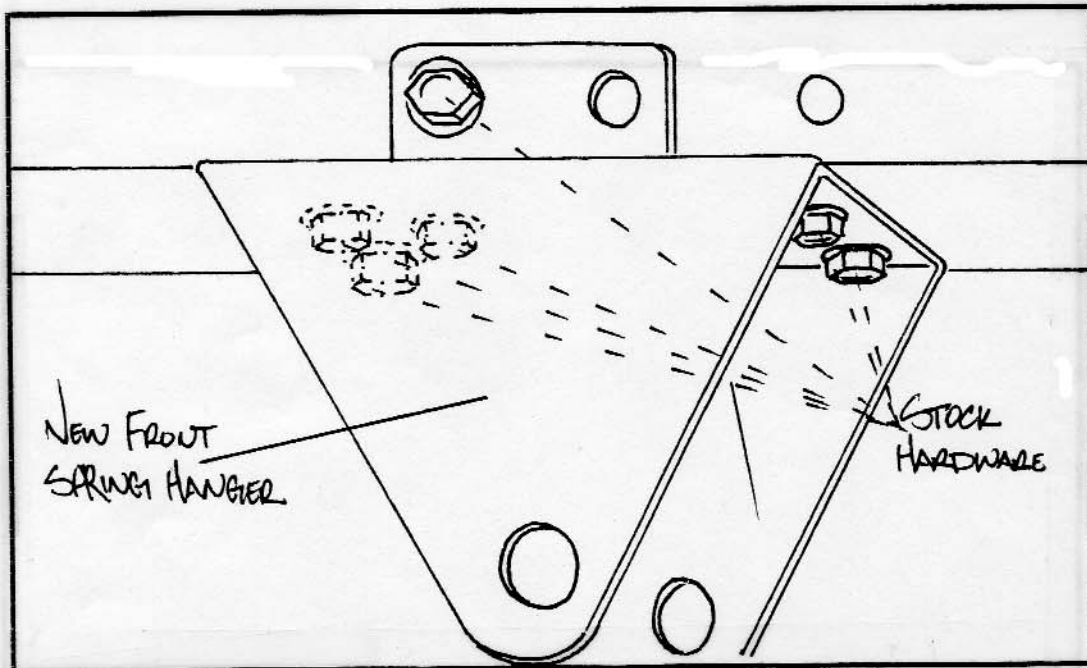


Illustration # 2

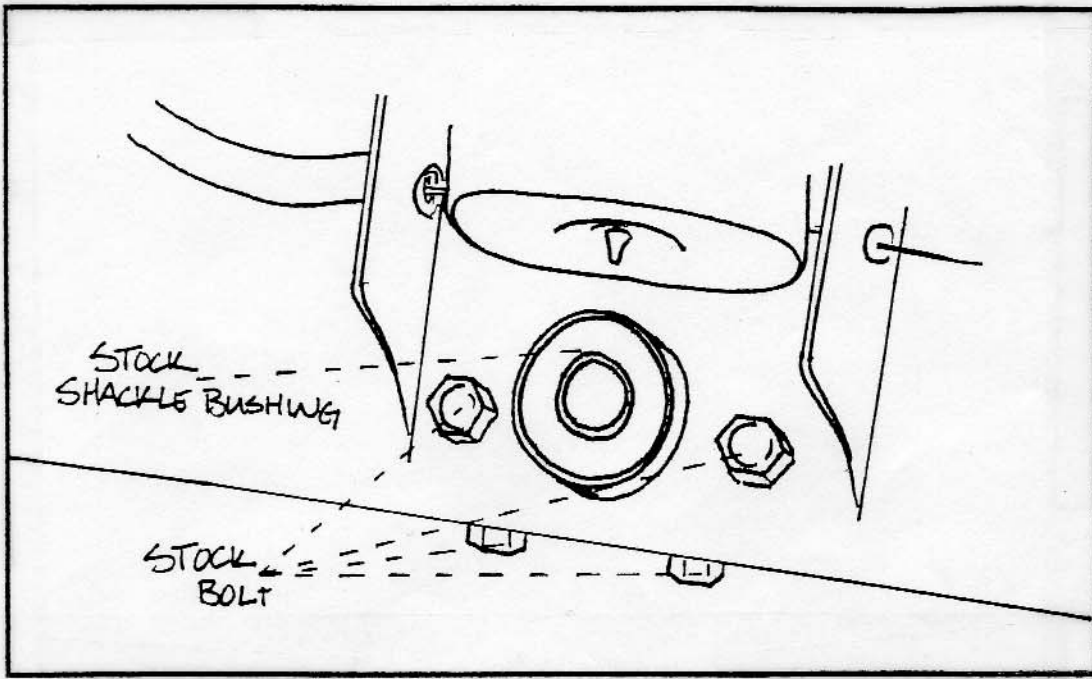


Illustration # 3

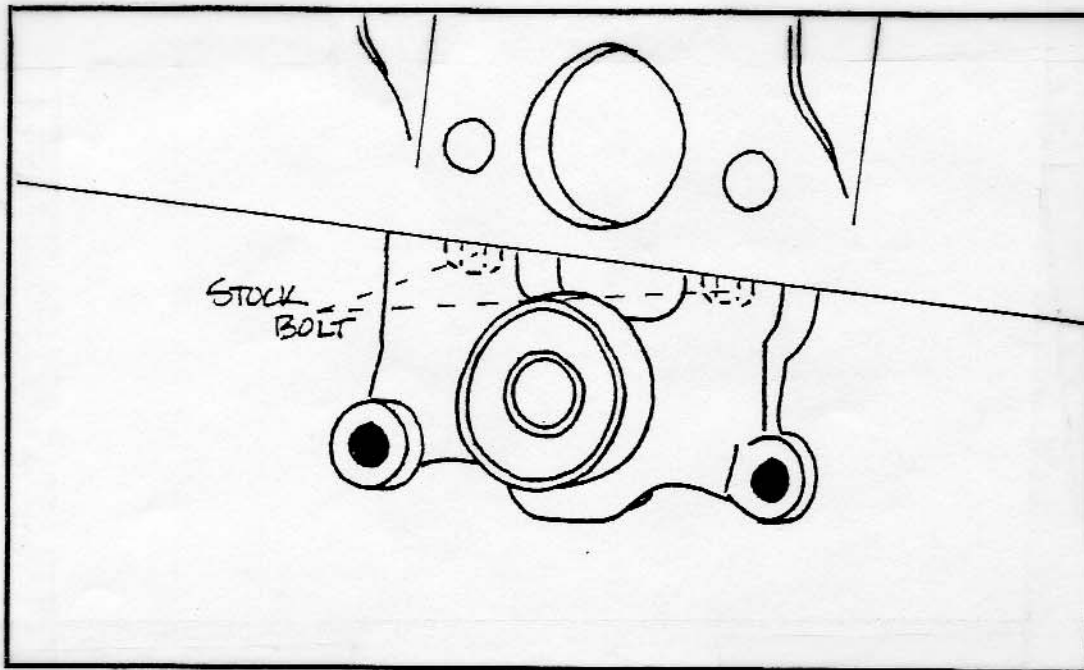


Illustration # 4

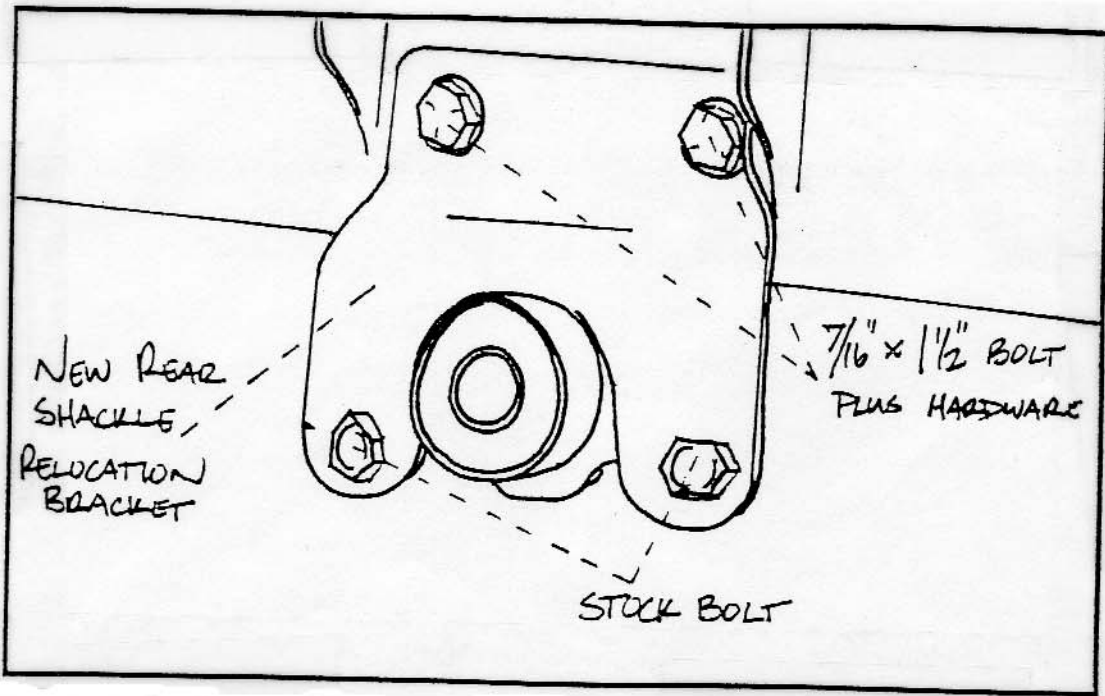


Illustration # 5

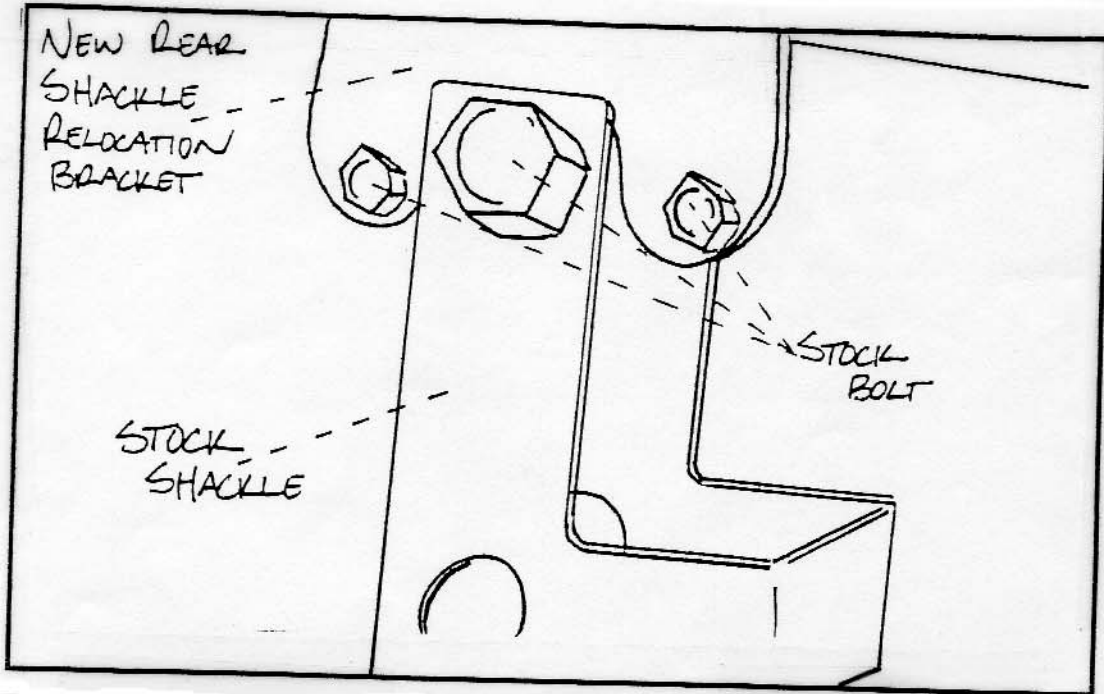


Illustration # 6

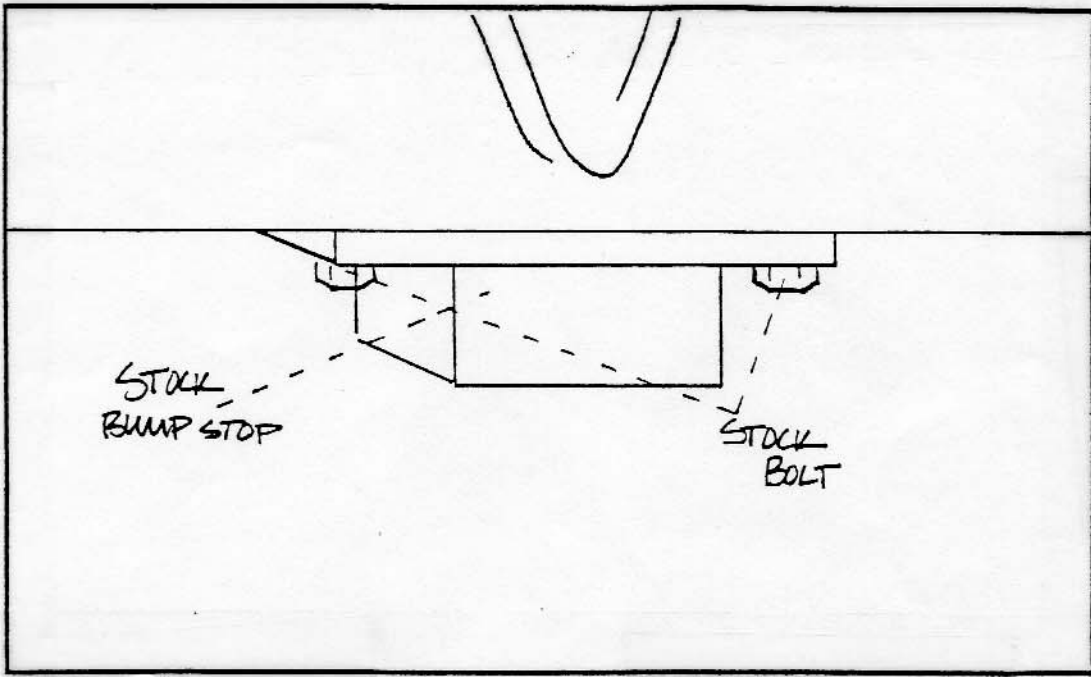


Illustration # 7

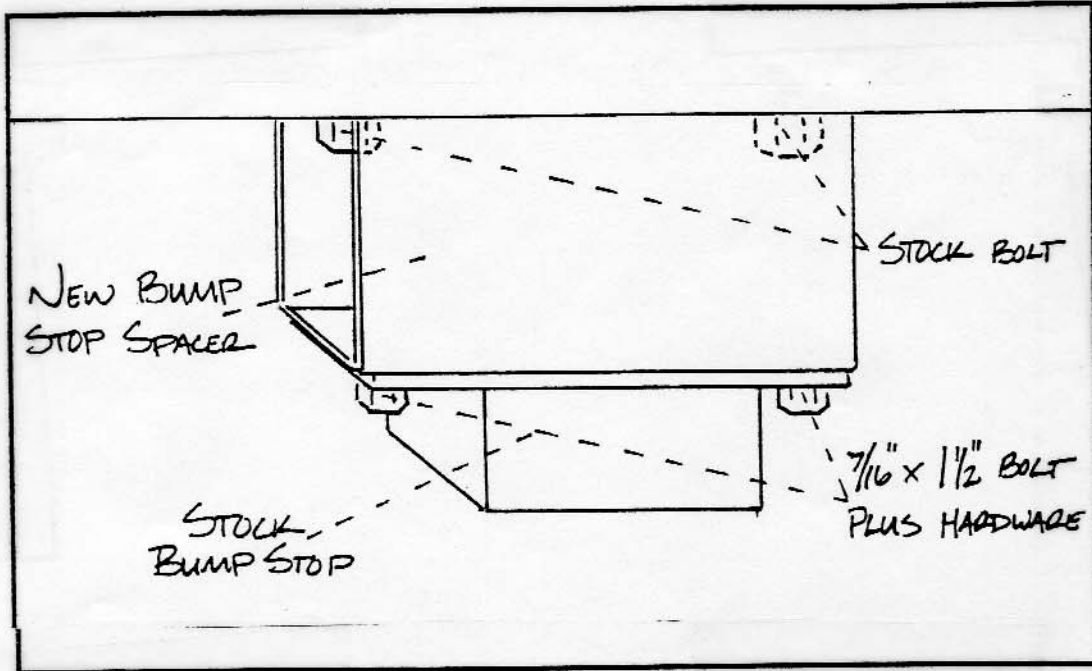


Illustration # 8

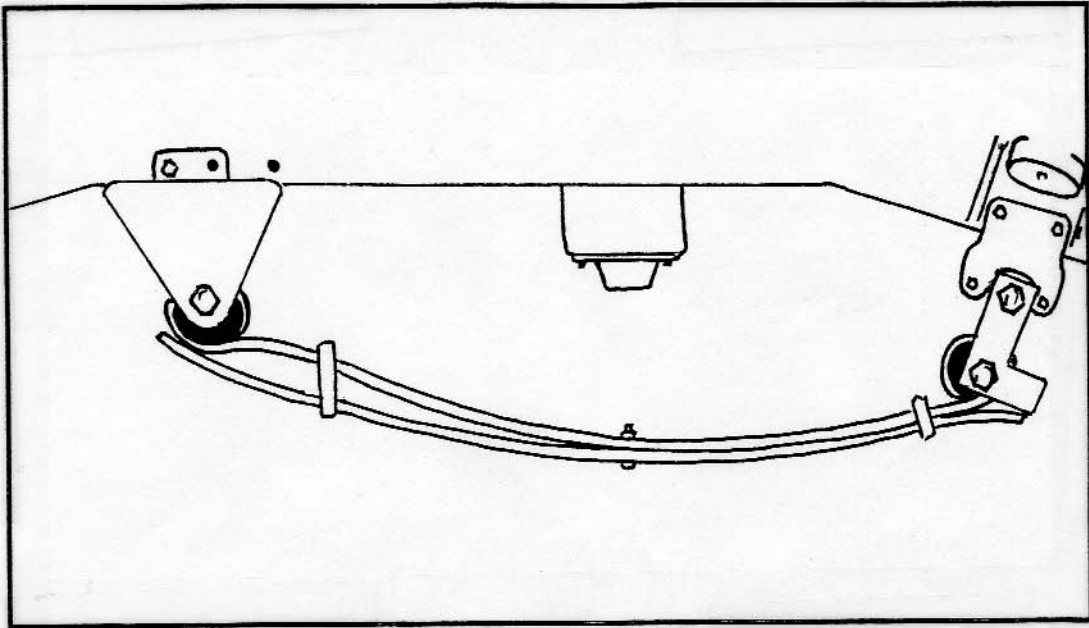


Illustration # 9

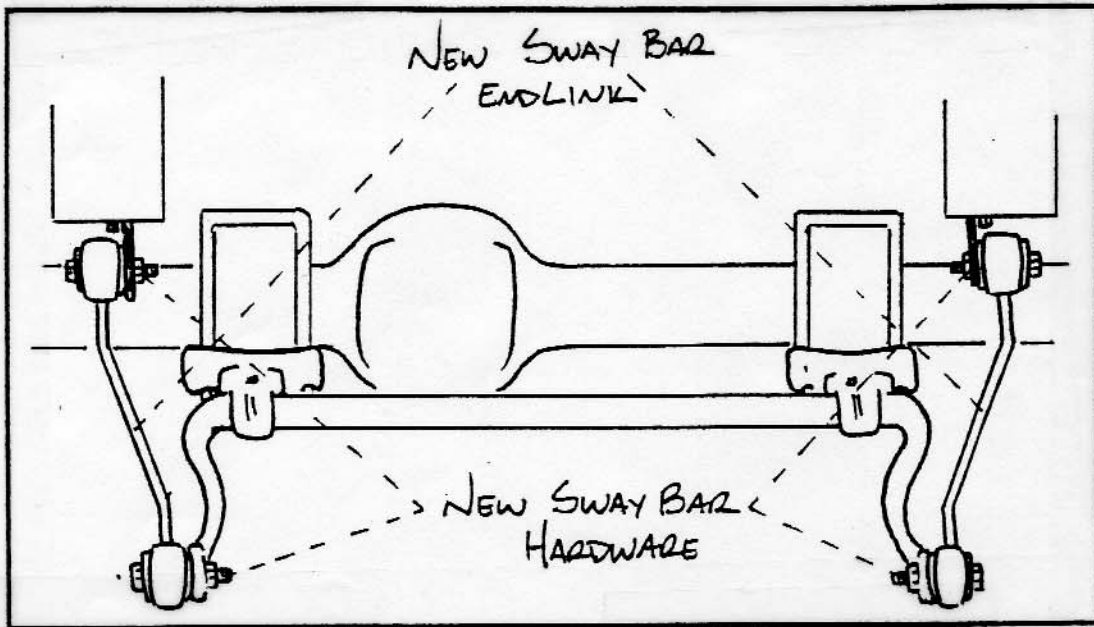


Illustration # 10



Photo # 11