TUFF COUNTRY

EZ-RIDE SUSPENSION

INSTALLATION MANUAL

1999 - 2001 FORD SUPER DUTY
3.5" SPRING SUSPENSION SYSTEM
NEW PART # 23950
OLD PART # F2350B

SJ010401

WARNING: TUFF COUNTRY EZ-RIDE SUSPENSION HIGHLY RECOMMENDS THAT A CERTIFIED MECHANIC PERFORMS THIS INSTALLATION.

NEW PART # 23950 / OLD PART # F2350B
FORD SUPER DUTY 3.5"
SUSPENSION SYSTEM
PARTS LIST:

Qty.	Description	Part No.
4	9/16" x 3" x 10" Semi Round U-bolt	5U-230SR
1	9/16" High Nuts and Washers	916NW
1	Upper Driver Side Track Bar Bracket	F2355-06
1	Reducing Sleeve	S10018
1	9/16" X 3 1/2" Cam Bolt	CAM-01
2	Cam Washers	CAM-02
1	9/16" Unitorque Nut	916UN
2	Sway Bar Endlinks	F2355-02
2	Sway Bar Endlinks	F2355-04M
1	Instruction Sheet	F2306TBINS

Congratulations on your selection to purchase a Tuff Country 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.

***Important Notes:** Please read before beginning installation. OEM Manual should be used as a reference.

TUFF COUNTRY SUSPENSION highly recommends a qualified and or certified mechanic to perform this installation.

Check off parts list to be sure all parts are on hand. If any part is missing, you may call Tuff Country at:
(800) 288-2190.

Read and understand all sections of instruction manual.

Use locktite on all bolts associated with this installation.

Product safety label must be installed inside the cab in plain view of all occupants.

Torque Specifications

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"	75-90 ft. lbs	5/8"	85-110 ft. lbs.
3/4"	105-125 ft. lbs.		

WARNING

If you desire to return vehicle to stock make sure to save all stock components.

IMPORTANT CUSTOMER INFORMATION

This vehicle's 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 customer's responsibility to make sure a re-torque is performed on all hardware associated with this suspension system after the first 100 miles of installation. It is also the customer's responsibility to do a complete re-torque after every 1000 miles or after every off road use.

After the original installation, Tuff Country also recommends having the alignment checked every 6 months to ensure proper tracking, proper wear on tires and front end components. Tuff Country takes no responsibility for abuse, improper installation, or improper suspension maintenance.

IMPORTANT NOTICE

DO NOT install a body lift in combination with a suspension system. If a body lift is used in conjunction with any Tuff Country Suspension product, your Tuff Country WARRANTY WILL BE VOID.

NOTICE

It is the responibilty of the customer or the mechanic to wear safety glasses at all times when working with air tools.

Special Note: Ford Super Duties come with two different size rear stock blocks. if the vehicle that you have or are working on has a 1 5/8" rear stock block, a rear lift is going to be need with this suspension system. Part # R21 (Rear Add-A-leaf) is going to have to be installed, if you have not already done so you must contact Tuff Country or your local Tuff Country dealer and order the rear add-a-leaf. If the vehicle that you have or are working on has a 3 5/8" rear stock block, a rear lift is not going to be need with this suspension system.

Please Follow Instruction Carefully

Before installation begins, drive and check to make sure there are not any uncommon sounds and or frame damage. Also at this time measure from the center of the hub to the bottom of 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 Measurement:

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 the frame with jack stands. Place jack stands on both the driver and the passenger side. Next remove the wheels and tires from both sides.

2. Using a pair of hydraulic floor jacks, support the front axle on the driver and passenger side. Remove the stock shock absorbers and save hardware for later re-installation. Stock shocks may be discarded. Longer shocks are going to be needed.

3. Working on the driver side, disconnect the front anti-sway bar end link from the stock frame location and stock sway bar location and discard stock end links and hardware. Repeat procedure on passenger side.

4. Working on the driver side, remove the stock sway bar from the front axle location and save hardware for later re-installation. Repeat procedure on passenger side.

5. On the driver side, remove the stock bolt that connects the stock brakeline bracket to the inner frame rail and save hardware for later re-installation. Repeat procedure on passenger side.

6. Locate the stock front track bar bracket located on the driver side of vehicle. Remove the stock bolt that holds the stock track bar into the stock track bar bracket.
Discard the stock bolt. Next, remove the (3) stock bolts that hold the stock track bar bracket to the frame. **Special Note: Do not use any air tools when working with the (3) stock bolts that hold the stock track bar bracket to the frame. Save hardware for later re-installation.** Remove and discard the stock track bar bracket. A new track bar bracket will be used.

See Illustration # 1

7. On the driver side, remove the stock U-bolts and discard. Place the stock U-bolt plate aside for later re-installation. New U-bolts are provided with this suspension system. Repeat procedure on passenger side. Lower down on both hydraulic floor jacks at the same time approximately 3". This is done so that the new spring packs can be installed. **Special Note: Take special care not to kink or over extend stock brake line.**

8. On the driver side, remove both the front and rear spring eye bolts from the front spring and save hardware for later re-installation. The stock spring may be discarded. Repeat procedure on passenger side.

9. Locate the front springs. **Special Note: If you have a gas engine the TCI-F2354 springs will be used. If you have a diesel engine the TCI-F2355 springs will be used. Before installation of springs the sleeves from each end of the springs need to be removed. Also remove the two piece bushings from each end of the spring. Make sure to use a lithium or moly base grease prior to inserting bushings back into springs. This will increase the life of the bushing, prevent squeaking, allow springs to flex and give the spring the best ride possible. If lithium or moly base grease is not used, problems will occur in the ride of the spring. Next, install the spring eye sleeves back into each end of the new spring. There are two different size sleeves for each spring, make sure that the large ID sleeve is installed in the front spring eye of the new spring. Their is an off set centering bolt on the new spring, the longer end of the springs needs to be installed towards the front of the vehicle.**

10. Working on the driver side, install the new front spring into the stock spring location and secure using stock hardware. Torque the front spring hanger bolt to **135 ft. lbs. Do not tighten the rear shackle bolt at this time.** Repeat procedure on passenger side.

See Illustration # 2

11. Raise up on both jack stands at the same time until the stock axle perch seats properly into the newly installed front spring packs.

12. Locate (2) new 9/16" x 3" x 10" long front U-bolt's, (4) 9/16" U-bolt high nuts and (4) 9/16" U-bolt washers. On the driver side, re-install the upper U-bolt plate/lower shock bracket and install new U-bolts into stock location and secure using new 9/16" U-bolts and hardware. **Torque to 90 ft. lbs.** Repeat procedure on passenger side.

See Illustration # 3

13. Locate the new upper driver side track bar bracket. Install the new upper driver side track bar bracket into the driver side stock location and secure using the stock hardware. **Special Note: Do not use any air tools when working with the (3) stock bolt that hold the new track bar bracket to the stock location. If air tools are used the stock hardware may strip. Make sure to use locktite and torque to 70 ft lbs.**

See Illustration # 4

Special Note:

If the vehicle that you are working on was manufactured pre March of 1999 follow step # 14

If the vehicle that you are working on was manufactured post March of 1999 follow step # 15

14. Locate (1) 9/16" x 3 1/2" cam bolt, (2) cam washers and (1) 9/16" unitorque nut. Install the stock track bar into the newly installed track bar bracket and secure using new 9/16" cam bolt and hardware. Center the new cam washers and torque to **90 ft lbs. Special Note: If you are not able to install the stock track bar into the newly installed track bar bracket you will need to perform this step once the weight of the vehicle is on the ground.**

See Illustration # 5

15. Locate (1) 9/16" x 3 1/2" cam bolt, (2) cam washers, (1) 9/16" unitorque nut and (1) track bar reducing sleeve. Install the track bar reducing sleeve into the driver side of the stock track bar. **Special Note: Before installing new reducing sleeve into stock track bar place a little locktite on the outside of the new reducing sleeve.** This is done so that the new 9/16" cam bolt can be assembled. Install the stock track bar into the newly installed track bar bracket and secure using new 9/16" cam bolt and hardware. Center the new cam washers and torque to **90 ft lbs. Special Note: If you are not able to install the stock track bar into the newly installed track bar bracket you will need to perform this step once the weight of the vehicle is on the ground.**

See Illustration # 5

16. Re-install the stock sway bar to the driver and passenger side stock location on the axle and secure using the hardware that was removed in step # 4.

Special Note:
If your vehicle is a 1999 Super Duty please follow step # 17
If your vehicle is a 2000 Super Duty please follow step # 18

17. Locate (2) new sway bar end links that measure out at 12" long, (1) SBPL, (4) 1/2" x 3" bolts, (8) 1/2" flat washers and (4) 1/2" unitorque nuts from hardware bag marked F2350B-NB. Install the new poly bushings and sleeves into each end on the new sway bar end links. **Special Note: Make sure to use a lithium or moly base grease prior to inserting the new poly bushings into the new sway bar end links. This will increase the life of the bushings and also help prevent squeaking.** Install the new sway bar end links into the stock location and secure using the new 1/2" x 3" bolts and hardware. **Special Note: The stock sway bar and the upper stock sway bar mounting points may need to be enlarged to a 1/2" hole.**

18. Locate (2) new sway bar end links that measure out at 16" long, (1) SBPL, (2) 1/2" x 4 1/2" bolts, (2) 1/2" x 3" bolts, (8) 1/2" flat washers and (4) 1/2" unitorque nuts from hardware bag marked F2350B-NB. Install the new poly bushings and sleeves into each end on the new sway bar end links. **Special Note: Make sure to use a lithium or moly base grease prior to inserting the new poly bushings into the new sway bar end links. This will increase the life of the bushings and also help prevent squeaking.** Install the new sway bar end links into the upper stock location and secure using the new 1/2" x 4 1/2" bolts and hardware. Secure the new end links to stock sway bar using the new 1/2" x 3" bolts and hardware.**Special Note: The stock sway bar and the upper stock sway bar mounting points may need to be enlarged to a 1/2" hole.**

19. Working on the driver side, re-install the stock brake line bracket to the stock brake line bracket location and secure using stock hardware. Repeat procedure on passenger side.

Longer shocks will be needed with this suspension system. The shocks are not included in this kit. Tuff Country recommends a 26" fully extended gas shock with this system. Also Tuff Country offers a multiple shock system for the front. If you would like to purchase one please feel free to contact us at (800) 288-2190. Part number would be DSFF.

20. Install the new shocks into the stock location and secure using stock hardware. **Special Note: With a gas pressurized shock you must install the shock with the body of the shock at the bottom. This is done so that the gas in the shock can work properly. If a shock is installed in the upside down position the shock is not going to work properly and the shock is not warrantable.**

21.Check and double check to make sure that all steps were performed properly. Re-install the tires and wheels. Safely lower the vehicle to the ground.

If you were not able to install the stock track bar into the newly installed track bar bracket in step # 14 and # 15, perform this part of the installation once the weight of the vehicle is on the ground.

Also at this time, with the weight of the vehicle on the ground, torque the rear spring shackle bolt to 35 - 40 ft lbs. If the the rear spring shackle bolt is torqued to tight, ride problems will occur.

Front End Installation Complete:

If the vehicle that you are working on has a 3 5/8" stock rear block installation is complete and you must take your vehicle to an alignment shop for proper alignment.

If the vehicle that you are working on has a 1 5/8" stock block a rear add-a-leaf needs to be installed. Please follow step 22-29.

Rear End Installation

22. 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 jack stands. Place jack stands on both the driver and the passenger side. Next remove the wheels and tires from both sides.

23. Using a pair of hydraulic floor jacks, support the rear axle on the driver and passenger side. Remove the stock shock absorbers and save hardware for later re-installation. Stock shocks will be long enough with this suspension system. If you desire to install new rear shocks the stock shocks may be discarded.

24. Working on the driver side, remove the anti-sway bar end link from the stock location, if so equipped. Save hardware for later re-installation. Repeat procedure on passenger side.

25.Working on the driver side, remove the stock U-bolts and U-bolt plate and set aside for later re-installation. Repeat procedure on passenger side. Lower down on both hydraulic floor jacks at the same time approximately 4". **Take special care not to over extended stock brake hose.**

26. Locate the new rear add-a-leaf, (part # TCI-R21) new 7/16" centering bolt and nuts. Working on the driver side place a pair of "C" clamps around the stock rear spring assembly about 2" from the spring clamps. Safely remove stock centering bolt and discard. Install new add-a-leaf to stock spring assembly. **Special Note:The rear add-a-leaf that is being installed has an off set centering bolt hole, the longer end of the add-a-leaf needs to be installed towards the rear of the vehicle. Install the new rear add-a-leaf into stock spring assembly from shortest to longest, make sure not to install the new rear add-a-leaf under the stock over load. The stock over load is usually the un-arch spring at the bottom of the spring pack.** Secure new add-a-leaf to stock spring assembly with new centering bolt and nut. Torque new centering bolt to 65 ft. lbs. **Special Note: Do not use an impact wrench on the new centering bolt, if an impact wrench is used, the new centering bolt may strip.** Remove the "C" clamps and cut off the excess thread with a suitable cutting tool. Repeat procedure on passenger side.

See Illustration # 6

27. Working on the driver side, re-install the stock U-bolts, U-bolt nuts and washers and torque to 135 ft. lbs. Repeat procedure on passenger side.

Stock shocks will be long enough for this suspension system. If you desire to install new shocks **Tuff Country recommends a 30" fully extended gas shock with this system.**

28. Working on the driver side, install the rear shock into the stock location and secure using stock hardware. **Special Note: With a gas pressurized shock you must install the shock with the body of the shock at the bottom. This is done so that the gas in the shock can work properly. If a shock is installed in the upside down position the shock is not going to work properly and the shock is not warrantable.** Repeat procedure on passenger side.

29. Re-install anti-sway bar, if so equipped. Install the tires and wheels and safely lower the vehicle to the ground. Check and double check to make sure that rear installation was performed properly.

Rear End Installation Complete.

Take vehicle directly to an alignment shop for proper alignment

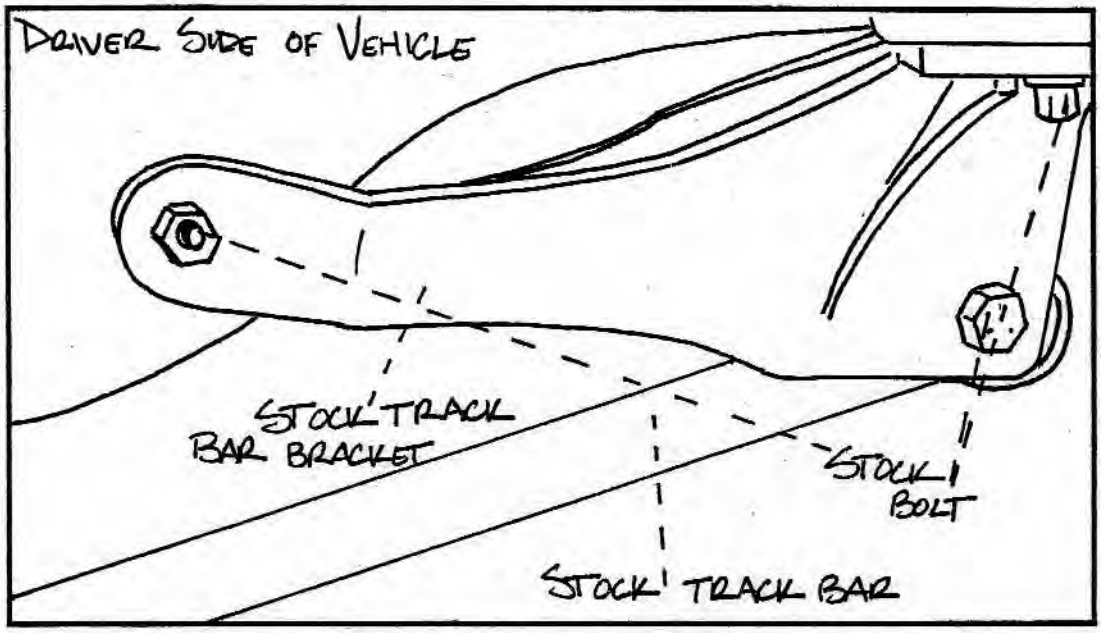
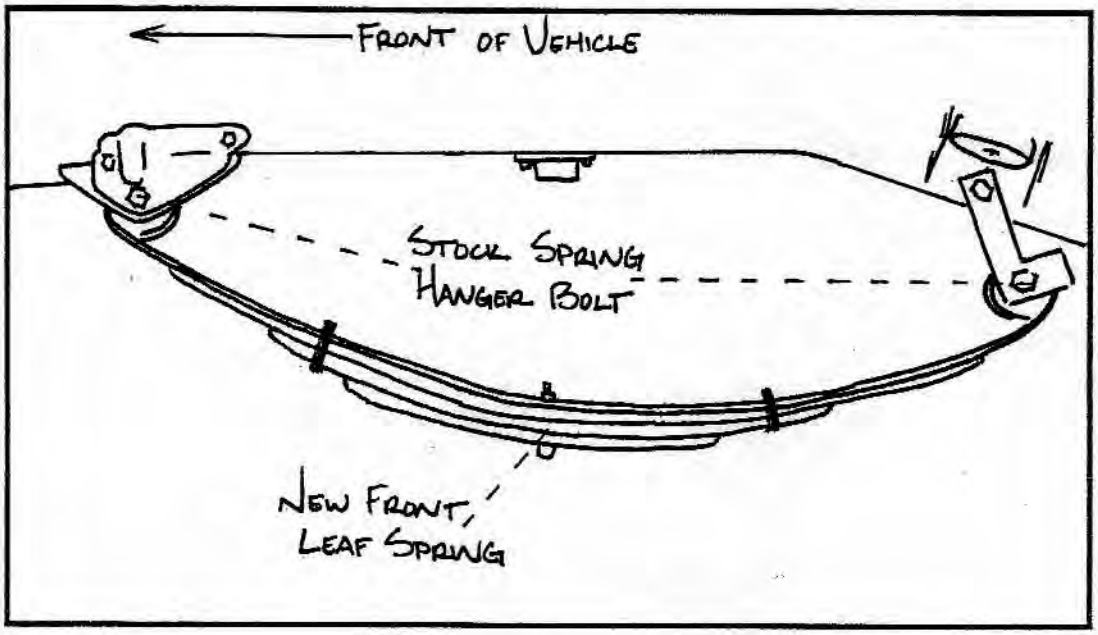


ILLUSTRATION # 1



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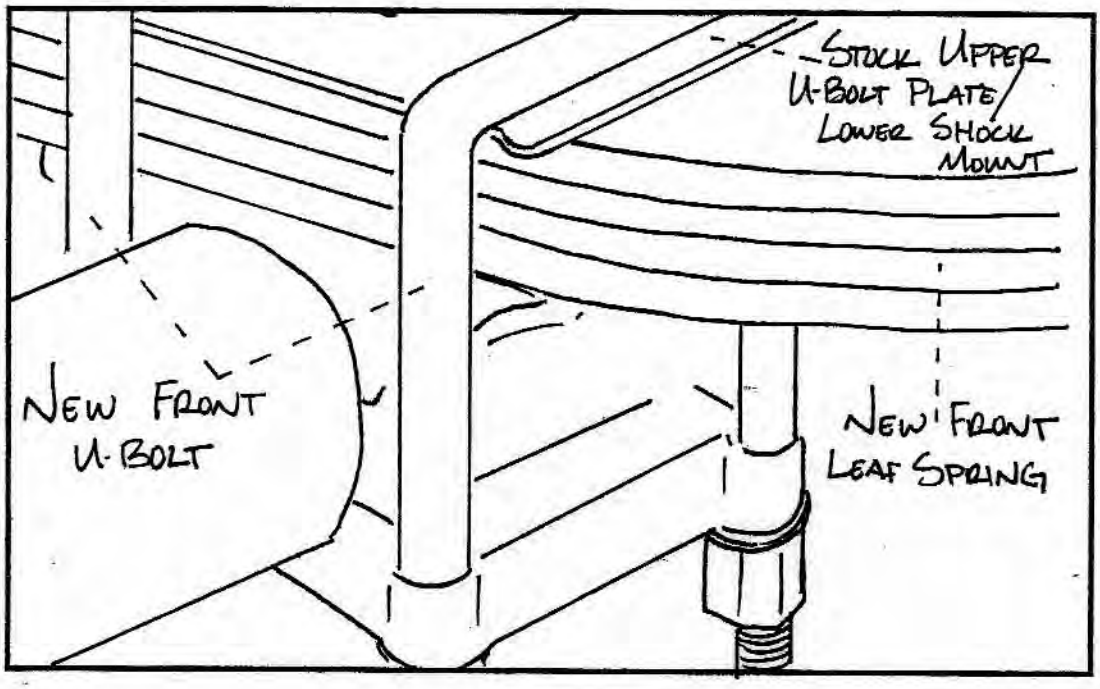

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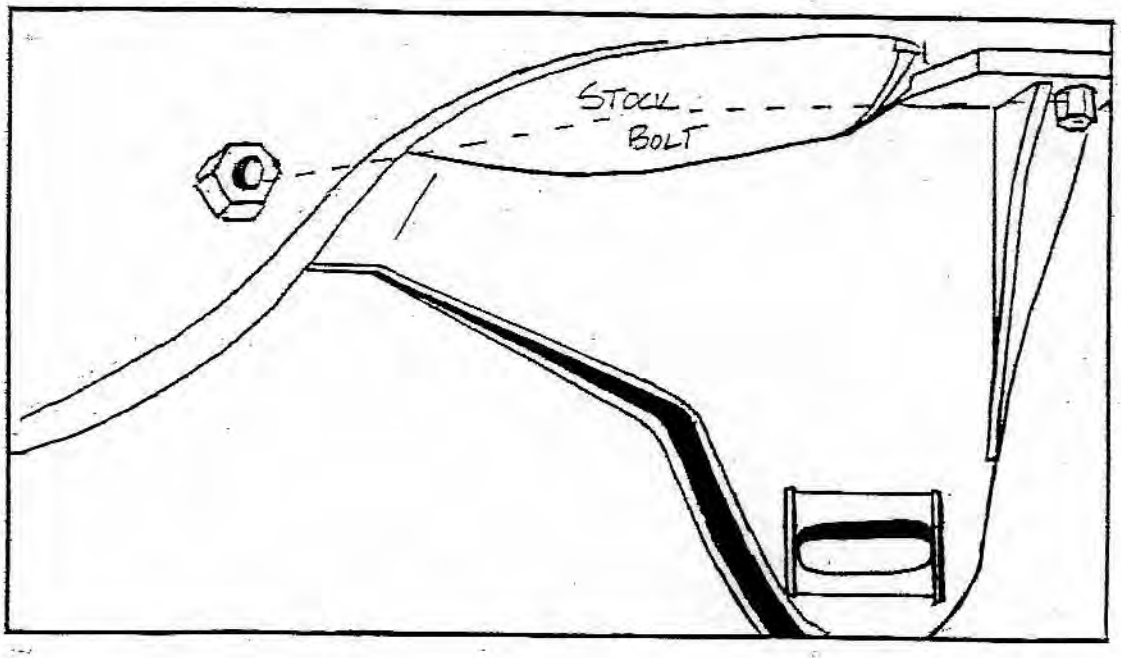

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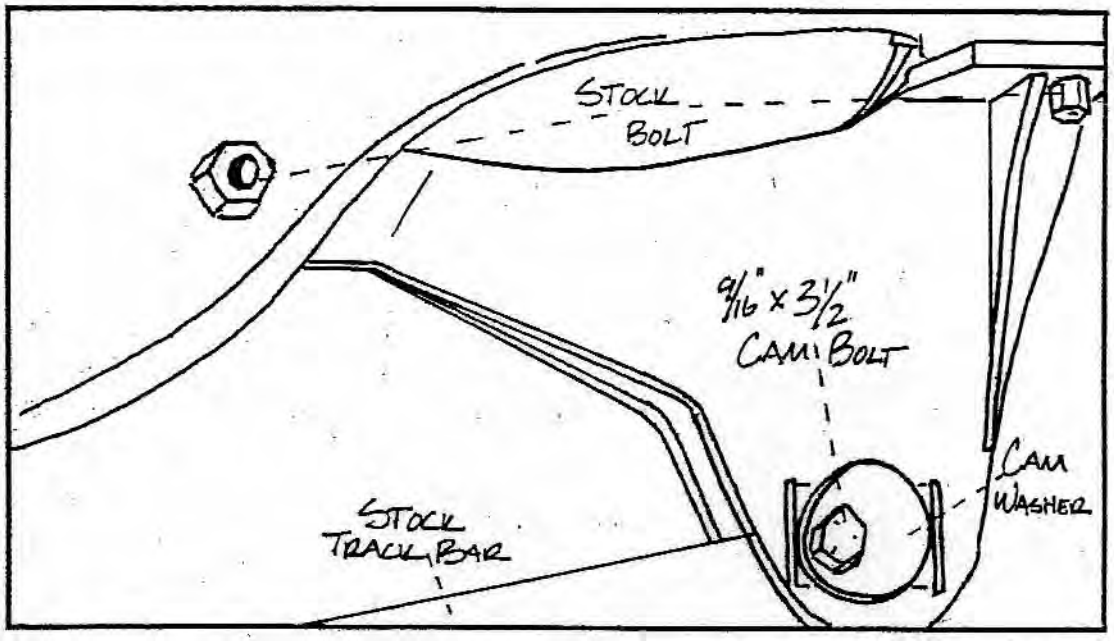

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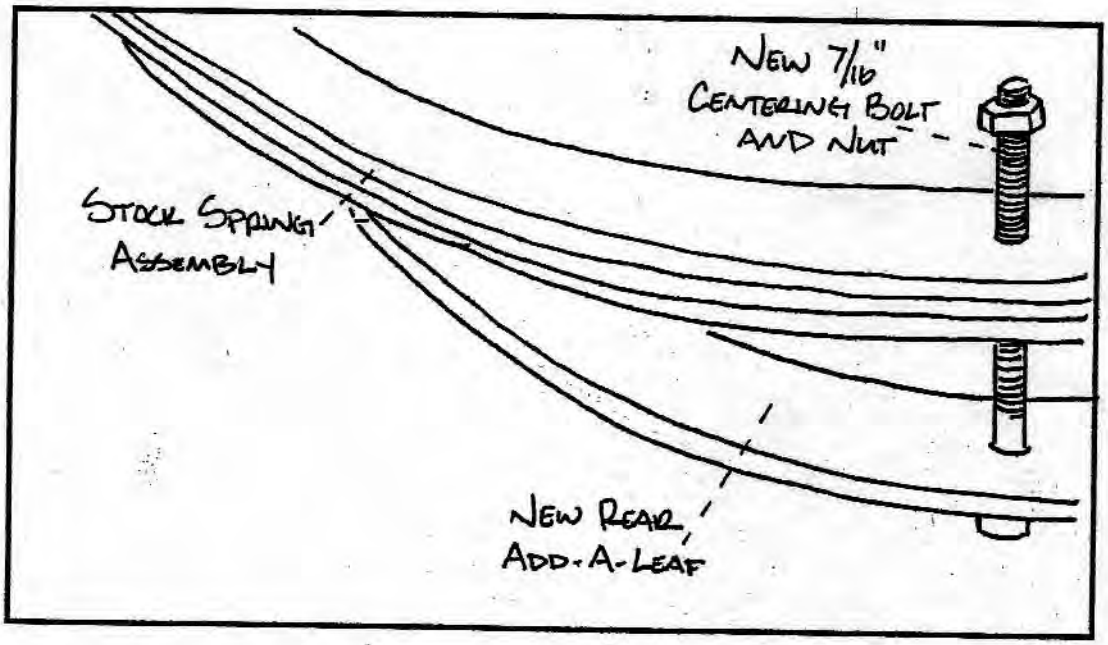

ILLUSTRATION # 6