# TUFF COUNTRY™

## EZ - Ride Suspension

# Installation manual
# 6" Suspension system
# Chevy Suburban / Yukon
# (with 5 link rear end)
# Part # 16965

sj090805rev.01

**Part # : 16965**
**2000 — 2003 Suburban with rear coil springs**
**6" Suspension system**

**Parts contained in Box 1 of 3**

| Part # | Description | Qty. |
|---|---|---|
| 16955-03 | One piece lower sub frame | 1 |
| 16955-10 | Lateral compression arms | 2 |
| 16965NB | Hardware bag | 1 |

**Parts contained in Box 2 of 3**

| Part # | Description | Qty. |
|---|---|---|
| 16955-06 | Passenger side differential drop bracket | 1 |
| 16955-11 | Rear lateral compression arm mounts | 2 |
| DSDIFF-01 | DS differential relocation bracket | 1 |
| 16965-05 | DS front shock relocation bracket | 1 |
| 16965-06 | PS front shock relocation bracket | 1 |
| 16965-12 | Rear coil spring spacers | 2 |
| 16965-13 | DS & PS rear shock relocation bracket | 2 |
| 14965-27 | DS & PS torsion bar drop plates | 4 |
| 14965-29 | Rear track bar relocation bracket | 1 |
| SB-03 | Rear sway bar end links | 2 |
| 16965PL | Poly bushing bag | 1 |
| 16965SL | Sleeve bag | 1 |
| 9804 | 1" axle spacers | 2 |
| 16965INST | Instruction sheet | 2 |
| MIRRORHANGER | Post installation instructions | 1 |
| WARNINGDECAL | Warning decal | 1 |
| DECAL | Window sticker | 1 |

**Parts contained in Box 3 of 3**

| Part # | Description | Qty. |
|---|---|---|
| 16955-01M | Driver side spindle | 1 |
| 16955-02M | Passenger side spindle | 1 |

**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.**

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

**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 procedure.**

## IMPORTANT CUSTOMER INFORMATION

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

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

**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.**

**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.**

**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 all parts, please refer to the Parts Description Page, at the end of the Installation Manual.**

## 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:

Chevy Suburban and Yukon XL came with two different shock options. One with Air Ride Load Sensor Shocks and one with out. Part # 16965 will work on both. If the vehicle that you are working on DOES NOT have the Air Ride Load Sensor Shocks, the stock shocks will be re-installed in conjunction with the new shock relocation brackets.

Tuff Country EZ-Ride Suspension recommends using a 4.5" back spacing on the tire and wheel combination. The stock wheels will not work in combination with the new spindle design.

If you would like to install an aftermarket lower skid plate, please contact Tuff Country or your local Tuff Country dealer and order part # 90085.

If you would like to install an aftermarket pre-runner style skid plate, please contact Tuff Country or your local Tuff Country dealer and order part # 90056.

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 16965PL Includes:

| Description | Quantity |
|---|---|
| PBBS1 (poly bump stops) | 2 |
| PB2408 (poly bushings) | 10 |
| PB4902 (poly bushings) | 12 |
| PB8016 (sway bar end link bushings) | 8 |
| S10049 (sway bar end link washers) | 8 |
| BLR01 (rear brake line ext. bracket) | 1 |
| LUBE (poly lube pack) | 2 |

Hardware Bag 16965SL Includes:

| Description | Quantity |
|---|---|
| S10019 (.750" x .563" x 1.190" sleeve) | 2 |
| S10020 (.750" x .563" x 1.800" sleeve) | 2 |
| S10024 (.563" x .380" x 9.500" sleeve) | 2 |
| S10026 (.680" x .500" x 1.500" sleeve) | 4 |
| S10058 (.875" x .500" x 2.080" sleeve) | 4 |
| S10074 (.700" x .563" x 1.500" sleeve) | 2 |
| S10082 (.875" x .563" x 2.080" sleeve) | 1 |

Hardware Bag 16965NB Includes:

Bag # 1

| Description | Quantity |
|---|---|
| 3/8" x 13" bolts | 2 |
| 5/16" USS flat washers | 2 |
| 3/8" unitorque nuts | 4 |
| 3/8" x 3/4" self threading bolts | 10 |
| 5/16" x 1" bolt | 1 |
| 1/4" USS flat washer | 2 |
| 5/16" unitorque nut | 1 |
| 10 mm x 55 mm bolts | 12 |
| 10 mm lock washers | 16 |
| 10 mm x 60 mm bolts | 4 |
| 10-24 x 4.792 all thread | 2 |

Bag # 2

| Description | Quantity |
|---|---|
| 7/16" x 1 1/4" bolts | 2 |
| 7/16" x 1 1/2" bolts | 2 |
| 7/16" x 3" bolts | 1 |
| 7/16" unitorque nuts | 5 |
| 3/8" USS flat washers | 10 |

Bag # 3

| Description | Quantity |
|---|---|
| 1/2" x 1 1/2" bolts | 1 |
| 1/2" x 2 1/2" bolts | 4 |
| 1/2" x 3 1/2" bolts | 4 |
| 1/2" unitorque nuts | 9 |
| 7/16" USS flat washers | 18 |

Bag # 4

| Description | Quantity |
|---|---|
| 9/16" x 1 3/4" bolts | 2 |
| 9/16" x 3" bolts | 4 |
| 9/16" x 3 1/2" bolts | 5 |
| 9/16" unitorque nuts | 11 |
| 1/2" USS flat washers | 26 |

Bag # 5

| Description | Quantity |
|---|---|
| 5/8" x 4 1/2" bolts | 2 |
| 5/8" x 5 1/2" bolts | 2 |
| 5/8" unitorque nuts | 4 |
| 9/16" USS flat washers | 8 |

Special Note: 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.

Special post installation procedure: Tuff Country EZ-Ride Suspension highly recommends adding a minimum of 1 pint, but no more that 1 1/2 pints, of proper front differential fluid into the front differential. To achieve this, you may have to fill the differential with it on its side or you may have to insert the fluid through the vend tube opening. On occasion, the customer may find burping of fluid coming out of the front vent tube.

**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 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. Next, remove the wheels and tires from both sides.

2. Remove the stock lower skid plate and discard the stock lower skid plate and hardware.

3. Remove the stock front upper plate. If you are going to re-install the stock upper skid plate back into the stock location, save the (3) stock upper bolts, (2) stock lower bolts and the stock front upper skid plate for later re-installation. If you are not going to re-install the stock front upper skid plate, discard the (3) stock upper bolts and the stock front upper skid plate, but keep the (2) stock lower bolts for later re-installation.

4. Remove the stock front driveline from the stock location, and save the stock driveline and hardware for later re-installation.

**If the vehicle that you are working on is equipped with Air Ride Load Sensor Shocks, please follow step # 5**

**If the vehicle that you are working on is not equipped with Air Ride Load Sensor Shocks, please follow step # 6**

5. Working on the driver side, carefully remove the load sensor valve located at the top of the stock shock. **Special note: Take special care not to damage during removal.** Remove the stock hardware on the top of the stock shock and save the hardware for later re-installation. Remove the stock hardware on the lower stock shock mounting point and save the stock hardware for later re-installation. Save the stock shock for later re-installation. Repeat procedure on the passenger side.

6. Working on the driver side, remove the stock hardware on the top of the stock shock and save the stock hardware for later re-installation. Remove the stock hardware on the lower shock mounting point and save the stock hardware for later re-installation. If you desire to re-install the stock shock, save the stock shock for later re-installation. If you desire to install a new after market shock, the stock shock may be discarded. Repeat procedure on the passenger side.

**If the vehicle that you are working on is equipped with the Air Ride Load Sensor Shocks, please follow step # 7**

**If the vehicle that you are working on is not equipped with Air Ride Load Sensor Shocks, please skip to step # 8**

7. Working on the driver side, carefully remove the stock actuator rod and set aside for later re-installation. Repeat procedure on the passenger side.

8. Measure exposed threads on the stock torsion bar adjustment bolt and record measurement here for a later reference.
Record Driver Side measurement here:_____
Record Passenger Side measurement here:_____

**Photo # 1**

9. Working on the driver side, attach the torsion bar removing tool to the stock torsion bar cross member, making sure that the unloading bolt in the center of the torsion bar removing tool is in the small divot of the stock torsion bar key. Adjust the torsion bar key up high enough so that the stock small metal adjusting block and bolt can be removed. Set the stock torsion bar block and hardware aside for later re-installation. Repeat procedure on passenger side.

10. Mark both torsion bars before removal so that they can be re-installed back into the same location. **Example: Driver vs. Passenger and front vs. rear.** Tap the stock torsion bars forward until the stock torsion bar cross member can be removed. Once you tap the stock torsion bar out of the stock torsion bar cross member, the stock torsion bar key will fall out. Set the stock torsion bar key aside for later re-installation. Repeat procedure on the passenger side.

11. Working on the driver side, remove the stock bolt that connects the stock torsion bar cross member to the stock mounting point. The stock hardware may be discarded.

**Special note: The stock mounting point is on the inside of the stock frame rail.** Repeat procedure on the passenger side. Remove the stock torsion bar cross member from the stock location and set aside for later re-installation.

12. Working on the driver side, slide the stock torsion bar out of the stock rear lower control arm and set aside for later re-installation. Repeat procedure on passenger side.

13. Working on the driver side, remove the stock sway bar end link from the stock sway bar and the stock lower control arm. The stock sway bar end link and the stock hardware may discarded. Repeat procedure on the passenger side.

14. Working on the driver side, remove the stock nut that connects the stock outer tie rod ball joint to the stock steering knuckle. Set the stock nut aside for later re-installation. Carefully break the stock taper on the stock outer tie rod ball joint and remove the stock outer tie rod from the stock knuckle. **Special note: Take special care not to rip or tear the stock outer tie rod ball joint dust boot.**

**Photo # 2**

15. Working on the driver side, remove the stock brake line bracket that connects to the top of the stock steering knuckle and save the stock hardware. Also, remove the stock bolt that connects the stock brake line bracket to the stock upper control arm and save the stock hardware for later re-installation.

**Photo # 3**

16. Working on the driver side, locate the quick release for the ABS line and disconnect the ABS lines from each other. Also, disconnect the ABS line from any other attaching points.

17. Working on the driver side, remove the (2) stock bolts that connect the stock brake caliper to the stock knuckle. Save the stock hardware for later re-installation. Using a bungee cord, carefully tie the stock brake caliper up and out of the way in the fender well. **Special note: Take special care not to kink or over extend the stock brake line.**

18. Working on the driver side, remove the stock rotor and set aside for later re-installation.

19. Working on the driver side, remove the stock cap right in the middle of the stock hub assembly. Set the stock cap aside for later re-installation.

**Photo # 4**

20. Working on the driver side, remove the stock nut that connects the stock axle to the stock hub assembly. Save the stock nut for later re-installation.

21. Working on the driver side, scribe a mark on the CV plate and another directly across to the stock differential. This will allow you to re-install the stock CV back into the stock location at a later step.

**Photo # 5**

22. Working on the driver side, remove the (6) stock bolts holding the inner CV axle to the stock front differential. Discard the stock hardware. Carefully remove the stock CV axle from the stock location and set the stock CV axle aside for later re-installation. **Special note: During the removal of the stock CV axle, take special care not to damage the threads of the CV axle or the CV axle dust boot.**

23. Working on the driver side, loosen but do not remove the stock nut that connects the stock upper control arm ball joint to the stock steering knuckle. Carefully break the stock taper by striking the stock knuckle with a hammer. **Special note: Take special care not to damaged the stock upper control arm ball joint or rip the stock upper control arm ball joint dust boot.** For now, leave the stock upper control arm attached to the stock knuckle. We want to just break the stock taper for now.

24. Working on the driver side, loosen but do not remove the stock nut that connects the stock lower control arm ball joint to the stock steering knuckle. Carefully break the stock taper by striking the stock knuckle with a hammer. **Special note: Take special care not to damaged the stock lower control arm ball joint or rip the stock lower control arm ball joint dust boot.** For now, leave the stock lower control arm attached to the stock knuckle. We want to just break the stock taper for now.

25. Working on the driver side, move back to the stock nuts holding the stock upper control arm ball joint and the stock lower control arm ball joint to the stock steering knuckle and remove completely. Save the stock hardware for later re-installation. Carefully remove the stock hub assembly and the stock steering knuckle from the stock location and set aside for later re-installation.

26. Working on the driver side stock hub assembly, remove the (3) stock bolts that connect the stock hub assembly to the stock steering knuckle. Save the stock hardware and stock hub assembly for later re-installation. A new steering knuckle is used, the stock steering knuckle can be discarded.

**Photo # 6**

27. Locate the new driver side steering knuckle. Using the stock hardware that was removed from step # 26, secure the new driver side steering knuckle to the stock hub assembly. **Torque to 92 ft lbs. Special note: Make sure to use thread locker or lock tite.** Set the new driver side steering knuckle and stock hub assembly aside for later re-installation.

**Photo # 7**

28. Working on the driver side, remove the stock front and rear hardware that connects the stock lower control arm to the stock location. Set the stock hardware and the stock lower control arm aside for later re-installation.

29. Repeat steps 14 - 28 on the passenger side.

30. Working on the driver side, remove the stock bolt that connects the lower rear portion of the stock front differential to the stock rear cross member. Save the stock hardware for later re-installation.

**Photo # 8**

31. Working on the passenger side, remove the (2) stock bolts and hardware that connects the stock rear cross member to the stock passenger side rear lower control arm bracket. The (2) stock bolts and hardware may be discarded.

**Photo # 9**

32. Working on the driver side, measure **2 1/8"** towards the inside of the vehicle from the center of the stock rear lower control arm mounting point, scribe a mark on the stock rear cross member. Using a hacksaw or suitable cutting tool, carefully cut off the stock rear cross member along the line that was scribed earlier in this step. The stock rear cross member may be discarded. **Special note: When making this cut, make sure that you cut all the way through the stock rear lower control arm mounting point. If this cut is not performed properly, the stock front differential will not seat properly when the front differential is lowered into the new one piece lower sub frame. Also, Tuff Country EZ-Ride Suspension highly recommends not using a cutting torch when performing this step. After the cut has been made, clean and dress up any exposed metal.**

**Photo # 10**

33. Working on the driver side, carefully cut flush, the remainder of the stock rear cross member that is located on the rear portion of the stock rear lower control arm mounting bracket. **Special note: Take special care not to cut into the stock rear lower control arm mounting bracket. Tuff Country EZ-Ride Suspension highly recommends not using a cutting torch when performing step # 33. Clean and dress up any exposed metal.**

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

35. Locate the wiring harness that connects the 4WD control panel to the front differential. Disconnect the 4WD wiring harness from the front differential. Tie the 4WD wiring harness up and out of the way. **Special note: Take special care not to kink any wiring.**

**Photo # 11**

36. Disconnect any other vent hoses and/or wiring that is connected to the front differential.

37. Working on the driver side, remove the stock hardware that connects the upper driver side tab of the stock front differential to the stock location. Save the stock hardware for later re-installation.

38. Working on the passenger side, remove the (2) stock nuts that connect the passenger side of the stock front differential to the stock location and save the stock hardware for later re-installation.

39. Carefully lower down on both hydraulic floor jacks at the same allowing enough room to remove the front differential completely from the vehicle. With the help from a buddy, carefully remove the front differential completely from underneath the vehicle and set the stock front differential on the ground or on a work bench.

40. Working on the driver side of the stock front differential upper tab, measure 2" from the stock mounting point and scribe a mark on the front differential. Using a sawzall, carefully cut the upper tab off of the stock front differential and discard.

**Photo # 12 / side view**
**Photo # 13 / pre cut view**
**Photo # 14 / nose cut off of front differential**

41. Locate the new driver side differential relocation bracket. Locate (2) PB2408 poly bushings from hardware bag 16965PL and (1) S10082 crush sleeve from hardware bag 16965SL. Install the new poly bushings and crush sleeve into the new driver side differential relocation bracket. **Special note: Make sure to use a lithium or moly base grease prior to inserting the new bushings into the new driver side differential relocation bracket. This will increase the life of the bushing as well as prevent squeaking.**

42. Locate (1) 7/16" X 3" bolt, (1) 7/16" unitorque nut and (2) 3/8" USS flat washers from hardware bag 16965NB2. Locate (4) 10 mm x 60 mm bolts and (4) 10 mm lock washers from hardware bag 16965NB1. Referring to photo # 16, remove the (4) stock differential mounting bolts that connect to two halves of the front differential together. The stock hardware may be discarded. Secure the new driver side differential relocation bracket to the stock front differential using the new 10 mm x 60 mm bolts and hardware. **Special note: Get all (4) new 10 mm x 60 mm bolts started but do not tighten at this point and make sure to use thread locker or lock tite.** Secure the lower portion of the new driver side differential relocation bracket to the stock front differential using the new 7/16" x 3" bolt and hardware. Torque to **34 ft. lbs.** Go back to the (4) new 10 mm x 60 mm bolts that hold the new driver side differential relocation bracket to the stock front differential and torque to **34 ft lbs. Special note: Make sure not to over tighten the stock and new hardware associated with the front differential. If**

**bolts are over tightened, the stock front differential could crack.**

**Photo # 15**

43. Locate the new passenger side differential drop bracket and the stock hardware that was removed from step # 38. Following the instructions on the sticker that is placed on the new passenger side differential relocation bracket, install the new passenger side differential relocation bracket into the stock upper location and secure using the stock hardware. **Special note: Make sure to use thread locker or lock tite and do not tighten at this point. If you are standing on the passenger side wheel well looking at the new passenger side differential relocation bracket, you should not be able to see the mounting hardware. This will help you make sure that the bracket is installed properly.**

**Photo # 16**

44. With the help from a buddy, carefully lift the modified front differential back onto a pair of hydraulic floor jacks and move the hydraulic floor jacks back underneath the vehicle where the modified front differential can be re-installed back into the vehicle.

45. Locate (2) 9/16" x 1 3/4" bolts, (4) 1/2" USS flat washers and (2) 9/16" unitorque nuts from hardware bag 16965NB4. Carefully install the passenger side of the stock front differential to the previously installed passenger side differential drop bracket. Secure using the new 9/16" x 1 3/4" bolts and hardware. **Do not tighten at this point and make sure to use thread locker or lock tite.**

**Photo # 17 / inside view**

46. Working on the driver side, using a tie down strap or bungee cord, carefully tie the driver side of the stock front differential up and out of the way so that the new one piece lower sub frame can be installed. Once the driver side of the front differential is tied up and out of the way, remove the hydraulic floor jacks from under the front differential.

**Photo # 18**

47. Locate the new one piece lower sub frame and the stock lower control arm mounting hardware that was removed from step # 28. On the driver side, install the front and rear part of the new one piece lower sub frame into the stock front and rear lower control arm mounting points using the stock hardware. **Do not tighten at this point and make sure to use thread locker or lock tite.** Repeat procedure on passenger side.

48. Carefully remove the tie down strap or the bungee cord that is holding the driver side of the front differential up and out of the way. Let the stock front differential rest on the newly installed one piece lower sub frame.

49. Locate the stock hardware that was removed from step # 30. Install the rear portion of the front differential into the tab on the rear portion of the new one piece lower sub frame. Secure using the stock hardware. **Do not tighten at this point and make sure to use thread locker or lock tite.**

**Photo # 19**

50. Locate the stock hardware that was removed from step # 37. Secure the newly installed front differential relocation bracket to the front portion of the new one piece lower sub frame. Secure using the stock hardware. **Do not tighten at this point and make sure to use thread locker or lock tite.**

**Photo # 20**

**Note: If you are going to re-install the stock front upper skid plate, please follow step #'s 51 - 53**

**Note: If you are not going to install the stock front upper skid plate please skip to step # 54**

51. Locate the stock front upper skid plate and the mounting hardware that was removed from step # 3. Secure the stock front upper skid plate to the upper stock location using the (3) stock bolts. **Do not tighten at this point and make sure to use thread locker or lock tite.**

52. Install the lower portion of the stock front skid plate between the newly installed one piece lower sub frame and the stock front cross member. Using a pair of hydraulic floor jacks, carefully raise up on the front portion on the one piece lower sub frame, and smash the stock upper skid plate between the stock front cross member and front portion of the newly installed one piece sub frame.

53. Locate (2) stock upper skid plate lower bolts that were removed from step # 3. Working on the driver side, secure the newly installed one piece lower sub frame to the stock front cross member using the stock hardware. Torque to **38 ft lbs. Special note: Make sure to use thread locker or lock tite. Also, make sure that the bolts secure the lower portion of the stock upper skid plate into the stock location.** Repeat procedure on the passenger side. Move back to the (3) stock upper bolts and torque to **38 ft lbs.** Carefully remove both hydraulic floor jacks from under the front portion of the one piece lower sub frame.

**Photo # 21**

**Note: If you installed the stock front upper skid plate, please skip to step # 56**

54. Using a pair of hydraulic floor jacks, carefully raise up on the front portion on the one piece lower sub frame until the one piece lower sub frame sits flush with the stock front cross member.

55. Locate (2) stock upper skid plate lower bolts that were removed from step # 3. Working on the driver side,

secure the newly installed one piece sub frame to the stock front cross member using the stock hardware. Torque to **38 ft lbs. Special note: Make sure to use thread locker or lock tite.** Repeat procedure on the passenger side. Carefully remove both hydraulic floor jacks from under the front portion of the one piece lower sub frame.

**Photo # 21**

56. Working in this order, torque the following stock and new hardware to proper torque specifications. First, on the driver side of the vehicle, torque the stock hardware that connects the rear portion of the stock front differential into the rear pocket of the new one piece lower sub frame to **75 ft lbs**. Next, working on the passenger side, torque the stock hardware that connects the new passenger side differential drop bracket to the stock location to **75 ft lbs.** Next, working on the passenger side, torque the new hardware that connects the stock front differential to the new passenger side differential drop bracket to **85 ft lbs**. Next, working on the driver side, torque the stock hardware that connects the new driver side differential relocation bracket to the front tabs located on the front portion of the new one piece lower sub frame to **75 ft lbs**. Next, working on the driver side, torque the stock hardware that connects the new one piece lower sub frame to the stock front and rear lower control arm pockets to **105 ft lbs**. Finally, working on the passenger side, torque the stock hardware that connects the new one piece lower sub frame to the stock front and rear lower control arm pockets to **105 ft lbs**.

57. Reconnect the 4WD wiring to the front differential. Also, reconnect any other vent hoses and/or wiring that was connected to the stock front differential.

58. Locate (2) poly bump stops from hardware bag 16965PL. Also, locate (2) 3/8" unitorque nuts, (2) 5/16" USS flat washers from hardware bag 16965NB1. Working on the driver side rear pocket of the newly installed one piece lower sub frame, secure the new poly bump stop using the new 3/8" hardware. Torque to **28 ft lbs.** Repeat procedure on the passenger side. **Make sure to use thread locker or lock tite.**

**Photo # 22**

59. Locate (2) 5/8" x 4 1/2" bolts, (2) 5/8" x 5 1/2" bolts, (8) 9/16" USS flat washers and (4) 5/8" unitorque nuts from hardware bag 16965NB5. Also locate the stock lower control arms that were removed from step # 28. Working on the driver side, install the stock lower control arm into the newly installed one piece lower sub frame's front location and secure using the new 5/8" x 4 1/2" bolt and hardware. **Do not tighten at this point and make sure to use thread locker or lock tite.** Install the stock lower control arm into the newly installed one piece lower sub frame's rear location and secure using the new 5/8" x 5 1/2" bolt and hardware. **Do not tighten at this point and make sure to use thread locker or lock tite.** Repeat procedure on the passenger side.

**Photo # 23**

60. Locate the new driver side steering knuckle and the stock hub assembly. Also, locate the stock hardware for the upper control arm ball joint and the lower control arm ball joint that was removed in step # 25 . Using the stock hardware, secure the new driver side steering knuckle and stock hub assembly to the stock upper control arm ball joint and the stock lower control arm ball joint using the stock hardware. Torque the stock hardware on the upper and lower ball joints to **85 ft lbs. Make sure to use thread locker or lock tite.** Repeat procedure on the passenger side using the passenger side steering knuckle.

61. Locate the stock CV axles that were removed from step # 22. Working on the driver side, carefully install the stock CV axle back into the stock hub assembly. Repeat procedure on the passenger side.

62. Locate (2) axle half shaft spacers, (12) 10 mm x 55 mm hex bolts and (12) 10 mm lock washers from hardware bag 16965NB1. Working on the driver side, install (1) new axle spacer between the stock front differential and the stock CV axle. Secure using the new 10 mm x 55 mm bolts. Torque to **65 ft. lbs. Make sure to use thread locker or lock tite. Special note: Make sure that the stock axle is re-installed back into the stock location on the stock front differential. Refer to the scribe mark that was made in step # 21.** Repeat on the passenger side.

**Photo # 24**

63. Locate the stock hardware that connects the stock front axle to the stock hub assembly that was removed in step # 20. Working on the driver side, secure the stock front axle to the stock hub assembly using the stock hardware. Torque to **112 ft. lbs. Make sure to use thread locker or lock tite. Also, re-install the hub assembly center cap that was removed from step # 19.** Repeat procedure on the passenger side.

64. Working on the driver side, reconnect the stock ABS lines back together. Also reconnect all other stock mounting points on the stock ABS line. Repeat procedure on the passenger side.

65. Locate the stock rotors that were removed in step # 18. Working on the driver side, install the stock rotor into the stock location. Repeat procedure on the passenger side.

66. Locate the stock brake caliper hardware that was removed in step # 17. Working on the driver side, re-install the stock brake caliper to the newly installed knuckle and secure using the stock hardware. Torque to **76 ft. lbs. Make sure to use thread locker or lock tite.** Repeat procedure on the passenger side.

67. Locate the stock brake line hardware that was removed in step # 15. Working on the inside of the newly installed driver side knuckle, reconnect the stock brake

line bracket to the new driver side knuckle. Secure using the stock hardware. Torque to **18 ft lbs. Make sure to use thread locker or lock tite.** Also reconnect the stock brake line bracket to the stock upper control arm using the stock hardware. Torque to **18 ft lbs. Make sure to use thread locker or lock tite.** Repeat procedure on the passenger side. **Special note: If need be, the stock bracket line bracket that wraps around the stock brake line may need to be opened up so that the brake line does not get kinked.**

68. Locate the new driver and passenger side front shock relocation bracket, (2) PB4902 poly bushings from hardware bag 16965PL. Locate (2) S10074 crush sleeves from hardware bag 16965SL. Install the new poly bushings and crush sleeves into the new driver and passenger side front shock relocation brackets. **Special note: Make sure to use a lithium or moly base grease prior to inserting the new bushings and sleeves into the new driver side and passenger side front shock relocation brackets. This will increase the life of the bushing as well as prevent squeaking.**

69. Locate the stock lower shock hardware that was removed in step # 5 or step # 6, depending on whether the vehicle that you are working on is equipped with Air Ride Load Sensor Shocks or not. Locate (4) 1/2" USS flat washers, from hardware bag 16965NB4. Also, locate (2) 7/16" x 1 1/2" bolt, (4) 3/8" USS flat washers and (2) 7/16" unitorque nuts from hardware bag 16965NB2. Working on the driver side, install the new driver side shock relocation bracket to the stock location and secure using the stock hardware. **Do not tighten at this point. Special note: When installing the new shock relocation bracket, make sure to use (2) 1/2" USS flat washers as spacers on the front lower portion of the new shock relocation bracket and the stock location.** Using the driver side front shock relocation bracket as a guide, carefully drill a 7/16" hole into the stock lower control arm bump stop location. Secure the new driver side bracket to the stock lower control arm using the new 7/16" x 1 1/2" bolt and hardware. Torque to **42 ft lbs.** Torque the stock lower bolt to **110 ft lbs.** Repeat procedure on the passenger side.

**Photo # 25**

70. Working on the driver side, using a die grinder, carefully cut off the front corner of the stock front bump stop. This will allow clearance so the stock front shock does not contact the front corner of the stock front bump stop. **Special note: Make sure to check that there is clearance once the stock shock is installed. If contact occurs, carefully cut more out of the front corner of the stock front bump stop.** Repeat procedure on the passenger side.

**If the vehicle that you are working on is equipped with the Air Ride Load Sensor Shocks, please follow steps # 71 — 72**

**If the vehicle that you are working on is not equipped with Air Ride Load Sensor Shocks, please follow step # 73**

71. Locate the stock load sensor shocks and the stock upper mounting hardware that was removed in step # 5. Locate (2) 9/16" x 3" bolts, (4) 1/2" USS flat washers and (2) 9/16" unitorque nuts from hardware bag 16965NB4. Working on the driver side, re-install the lower mount on the stock load sensor shock to the newly installed relocation bracket and secure using the new 9/16" x 3" bolt and hardware. **Make sure to use thread locker or lock tite and do not tighten at this point.** Secure the upper mount on the stock load sensor shock to the stock location, and secure using the stock hardware. Torque the upper hardware to **18 ft lbs.** Torque the lower stock mount to **95 ft lbs.** Next, reconnect the load sensor valve bracket back on the top of the stock shock. Repeat procedure on the passenger side. **Special note: After the installation of the stock load sensor shock, check to make sure that there is proper clearance between the stock load sensor shock and the stock bump stop bracket. If there is contact between the stock load sensor shock and the stock bump stop bracket, carefully cut off the corner of the stock bump stop bracket for proper shock clearance.**

**Photo # 26**

72. Locate the stock actuator rods that were removed from step # 7. Working on the driver side, install the stock actuator rod into the stock upper and lower location. Repeat procedure on the passenger side.

**Photo # 27**

**If the vehicle that you are working on is equipped with the Air Ride Load Sensor Shocks, please skip to step # 74**

73. Locate the stock shock and the stock upper shock hardware that was removed from step # 6. Locate (2) 9/16" x 3" bolts, (4) 1/2" USS flat washers and (2) 9/16" unitorque nuts from hardware bag 16965NB4. Working on the driver side, re-install the stock shock to the newly installed shock relocation bracket and secure using the new 9/16" x 3" bolt and hardware. **Make sure to use thread locker or lock tite and do not tighten at this point.** Secure the upper mount of the stock shock into the stock location and secure using the stock hardware. Torque the upper hardware to **18 ft lbs.** Torque the lower stock mount to **95 ft lbs.** Repeat procedure on the passenger side. **Special note: After the installation of the stock shock, check to make sure that there is proper clearance between the stock shock and the stock bump stop bracket. If there is contact between the stock shock and the stock bump stop bracket, carefully cut off the corner of the stock bump stop bracket for proper shock clearance.**

**Photo # 26**

74. Locate (4) new torsion bar drop plates. Locate (2)

9/16" x 3 1/2" bolts, (4) 1/2" USS flat washers and (2) 9/16" unitorque nuts from hardware bag 16965NB4. Working on the driver side, install the new torsion bar drop plates to the stock torsion bar cross member location and secure using the new 9/16" x 3 1/2" bolt and hardware. **Do not tighten at this point and make sure to use thread locker or lock tite.** Repeat procedure on the passenger side. **Special note: When installing these brackets, the bend of the bracket will go towards the inside of the vehicle then out towards the outside of the vehicle.**

75. Locate the stock torsion bars that were removed from step # 12. Refer to the marks that were made in step # 10. This will allow you to re-install the stock torsion bars back into the stock location. **Example: Driver vs. Passenger and Front vs. Rear.** Working on the driver side, slide the stock torsion bar back into the stock rear lower control arm. Slide the stock torsion bar far enough forward so that the stock torsion bar cross member can be re-installed. Repeat procedure on the passenger side.

76. Locate the stock torsion bar cross member that was removed in step # 11. Working on the stock torsion bar cross member, remove the stock nut that is tack welded to the back side of the torsion bar cross member. Make sure to remove from both the driver and the passenger side. Set the torsion bar cross member aside for later re-installation.

77. Locate (2) 9/16" x 3 1/2" bolt, (4) 1/2" USS flat washers and (2) 9/16" unitorque nuts from hardware bag 16965NB4. Locate (2) S10020 crush sleeves from hardware bag 16965SL. Also, locate the newly modified stock torsion bar cross member. Working on the driver side, install the stock torsion bar cross member to the newly installed torsion bar drop plates and secure using the new 9/16" x 3 1/2" bolt, hardware and crush sleeve. **Special Note: Do not tighten at this point and make sure to use thread locker or lock tite. On the rear tab of the stock torsion bar cross member, you will notice that this hole is larger in diameter than the front hole, the new crush sleeve outside diameter will be small enough for the tab of the stock torsion bar cross member to slide over the sleeve.** Repeat procedure on the passenger side. Torque the upper and lower mounting bolt to **95 ft lbs.**

**Photo # 28**

78. Locate the stock torsion bar keys that were removed from step # 10. Working on the driver side, install the stock torsion bar key back into the stock location in the stock torsion bar cross member. Slide the stock torsion bar back into the previously installed stock torsion bar key. Repeat procedure on the passenger side.

79. Locate the torsion bar adjusting blocks and hardware that was removed from step # 9. Working on the driver side, attach the torsion bar removing tool to the stock torsion bar cross member, making sure that the unloading bolt in the center of the torsion bar removing tool is in the small divot of the stock torsion bar key. Adjust the torsion bar key up high enough so that the stock small metal adjusting block and bolt can be re-installed back into the stock location. Refer back to the measurements that were made in step # 8 and set to the stock setting. Repeat procedure on the passenger side. Remove the torsion bar removing tool from the stock torsion bar cross member.

80. Locate (2) 3/8" x 13" bolts and (2) 3/8" unitorque nuts from hardware bag # 16965NB1. Locate (2) S10024 from hardware bag 16965SL. Also, locate (8) sway bar end link bushings and (8) sway bar end link washers from hardware bag 16965PL. Working on the driver side, install the new sway bar end link and hardware into the stock upper and lower location. **Special note: Make sure to use thread locker or lock tite and do not tighten at this point.** Repeat procedure on passenger side.

**Photo # 29**

81. Locate the stock outer tie rod ball joint hardware that was removed from step # 14. Working on the driver side, install the stock outer tie rod to the new steering knuckle using the stock hardware. Make sure to use thread locker or lock tite and torque to **53 ft. lbs. Special note: The new steering knuckle has a reverse taper on it where the stock outer tie rod mounts to it, make sure to install the outer tie rod the proper way. The stock outer tie rod nut will now be installed on the bottom side of the new steering knuckle.**

**Photo # 30 / stock location**
**Photo # 31 / new location**

82. Locate the stock front drive line and hardware that was removed from step # 4. Re-install the stock front drive line back into the stock location and secure using the stock hardware.

83. Locate (2) front lateral compression arms. Locate (8) PB2408 poly bushings from hardware bag 16965PL. Also, locate (4) S10058 crush sleeves from hardware bag 16965SL. Install the new poly bushings into each end of the new front lateral compression arms. Next, install the new crush sleeve into the newly installed poly bushings. **Special note: Make sure to use a lithium or moly base grease prior to inserting the new bushings and sleeves into the new front lateral compression arms. This will increase the life of the bushing as well as prevent squeaking.**

**If the vehicle that you are working on has the stock transfer case bolted to the bottom of the stock frame rail, please follow steps 84 — 89**

**If the vehicle that you are working on has the stock transfer case bolted to brackets that are welded to the inside of the stock frame rail, please follow steps 90 — 94**

84. Locate (2) 1/2" x 3 1/2" bolts, (4) 7/16" USS flat

washers and (2) 1/2" unitorque nuts from hardware bag 16965NB3. Working on the driver side, install the new lateral compression arm into the lateral compression arm mounts located on the previously installed one piece lower sub frame. Secure using the new 1/2" x 3 1/2" bolts and hardware. **Special note: Do not tighten at this point and make sure to use thread locker and lock tite.** Let the new lateral compression arm hang. Repeat procedure on the passenger side.

85. Working on the driver side, remove and discard the stock bolt and hardware that connects the stock transfer case cross member to the stock transfer case cross member frame support bracket.

86. Locate (2) new rear lateral compression arm mounts. Locate (2) 1/2" x 2 1/2" bolts, (4) 7/16" USS flat washers and (2) 1/2" unitorque nuts from hardware bag 16965NB3. Working on the driver side, secure the new lateral compression arm mount to the stock transfer case cross member using the new 1/2" x 2 1/2" bolt and hardware. The mount will be located where you removed the stock bolt in step # 85. **Special note: Make sure that the new rear lateral compression mount is parallel to the stock frame rail. Lift the new lateral compression arm up to see if it will be able to mount to the new rear lateral compression arm mount, if the hole lines up, torque to 70 ft lbs. If the holes do not line up, slide the new rear lateral compression arm mount forward or rearward so that the new lateral compression arm will mount up to the new rear lateral compression arm mount. Make sure to use thread locker or lock tite.** Repeat procedure on the passenger side. **Special note: The passenger side rear lateral compression arm mount will be mounted opposite of the driver side rear lateral compression arm mount.**

**Photo # 32 / driver side shown**

87. Working on the driver side, using the newly installed rear lateral compression arm bracket as a guide, carefully drill a 5/16" hole into the stock cross member. **Special note: There are (2) 3/8" holes in the new rear lateral compression arm mounting bracket, use the rear hole as a guide. The stock transfer case cross member is boxed in, so you only need to drill through the bottom wall of the cross member. Make sure not to drill all the way through the stock transfer case cross member.** Repeat procedure on the passenger side, using the rear hole in the new rear lateral compression arm bracket as a guide.

**Photo # 32 / driver side shown**

88. Locate (2) 3/8" x 3/4" self threading bolt from hardware bag 16965NB1. Working on the driver side, install the new 3/8" x 3/4" self threading bolt into the previously drilled 5/16" hole. Torque to **28 ft lbs. Make sure to sure thread locker or lock tite.** Repeat procedure on the passenger side.

89. Locate (2) 1/2" x 3 1/2" bolts, (4) 7/16" USS flat washers and (2) 1/2" unitorque nuts from hardware bag 16965NB3. Working on the driver side, install the new lateral compression arm to the previously installed rear lateral compression arm mount and secure using the new 1/2" x 3 1/2" bolts and hardware. **Make sure to use thread locker or lock tite.** Torque to **85 ft lbs.** Also, at this point, torque the front mounting hardware to **85 ft lbs.**

**Photo # 33 / front location**
**Photo # 34 / driver side rear location**
**Photo # 35 / passenger side rear location**

**If the vehicle that you are working on has the stock transfer case bolted to the bottom of the stock frame rail, please skip to step # 95**

90. Locate (2) 1/2" x 3 1/2" bolts, (4) 7/16" USS flat washers and (2) 1/2" unitorque nuts from hardware bag 16965NB3. Working on the driver side, install the new lateral compression arm into the lateral compression arm mounts located on the previously installed one piece lower sub frame. Secure using the new 1/2" x 3 1/2" bolts and hardware. **Special note: Do not tighten at this point and make sure to use thread locker or lock tite.** Let the new lateral compression arm hang. Repeat procedure on the passenger side.

91. Locate (2) new rear lateral compression arm mounts. Also, locate (2) 1/2" x 3 1/2" bolts from hardware bag 16965NB3. Working on the driver side, secure the previously installed lateral compression arm to the new rear lateral compression arm bracket using the 1/2" x 3 1/2" bolt. For now, just use the bolt to hold the bracket to the lateral compression arm. Swing the lateral compression arm back towards the rear of the vehicle until the new rear lateral compression arm bracket can be mounted to the stock transfer case cross member. **Special note: Once the new rear lateral compression arm bracket is attached to the stock transfer case cross member and the new lateral compression arm is secured to the new rear lateral compression arm bracket, the new lateral compression arm should be parallel to the stock frame rail.** Holding the new rear lateral compression arm bracket to the bottom side of stock transfer case cross member, remove the new 1/2" x 3 1/2" bolt that is holding the lateral compression arm to the new rear lateral compression arm bracket. Set the 1/2" x 3 1/2" bolt aside for later re-installation. Let the new lateral compression arm hang. Using the round holes in the new rear lateral compression arm mount as guides, scribe 2 marks on the bottom side of the stock transfer case cross member. Repeat procedure on the passenger side. Set the new rear lateral compression arm mount brackets aside for later re-installation.

92. Working on the driver side, carefully drill (2) 5/16" holes into the bottom side of the stock transfer case cross member. Repeat procedure on the passenger side.

93. Locate the new rear lateral compression arm bracket. Also, locate (4) 3/8" x 3/4" self threading bolts from hardware bag 16965NB1. Working on the driver side, secure the new rear lateral compression arm brackets to the bottom side of the stock transfer case cross member using the new 3/8" x 3/4" self threading bolts. Torque to **28 ft lbs. Make sure to use thread locker or lock tite.** Repeat procedure on the passenger side.

**Photo # 36 / Driver side shown**

94. Locate the (2) 1/2" x 3 1/2" bolts that were used in step # 91. Also, locate (4) 7/16" USS flat washers and (2) 1/2" unitorque nuts from hardware bag 16965NB3. Working on the driver side, install the new lateral compression arm to the previously installed rear lateral compression arm mount and secure using the new 1/2" x 3 1/2" bolts and hardware. **Make sure to use thread locker or lock tite.** Torque to **85 ft lbs.** Also, at this point torque the front mounting hardware to **85 ft lbs.**

**Photo # 33 / front location**
**Photo # 37 / driver side rear location**
**Photo # 38 / passenger side rear location**

**Special note: Tuff Country EZ-Ride Suspension recommends using a 4.5" back spacing on the tire and wheel combination. The stock wheels will not work in combination with the new knuckle design.**

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

96. With the weight of the vehicle on the ground, working on the driver side, move back to the new 5/8" hardware attaching the stock lower control arms to the newly installed one piece lower sub frame and torque to **125 ft lbs.** Repeat procedure on the passenger side.

97. With the weight of the vehicle on the ground, working on the driver side, move back to the new front sway bar end link hardware and torque to **32 ft lbs.** Repeat procedure on the passenger side.

98. Check and double check to make sure that all steps were performed properly. Check and double check to make sure that all new and stock hardware has been torqued to proper torque specifications. Refer to the torque specification sheet at the end of the installation manual.

**Congratulations, front end installation complete**

**Rear end installation:**

99. 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.

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

101. Remove the stock rear brake line bracket from the stock rear differential cover. Save the stock hardware for later re-installation.

102. Working on the driver side, remove the stock hardware that connects the stock sway bar end link to the stock upper and lower location. Save the stock upper hardware for later re-installation. The stock lower hardware and the stock end link may be discarded. Repeat procedure on the passenger side.

103. Working on the passenger side, remove the stock emergency brake cable bracket that connects to the stock frame rail and discard. Also, remove the stock emergency brake cable clips that connect the emergency brake cable to the stock rear track bar. Save the stock emergency brake cable clips for later re-installation.

**If the vehicle that you are working on is equipped with Air Ride Load Sensor Shocks please follow steps 104 — 124**

**If the vehicle that you are working on is not equipped with Air Ride Load Sensor Shocks, please follow steps 125 — 143**

104. Working on the driver side, carefully remove the ball joint coupler from the stock shock actuator rod. Carefully remove the stock actuator rod from the top and bottom ball joint caps. The rear stock actuator may be discarded. Repeat procedure on the passenger side.

105. Working on the driver side, remove the stock rear lower shock mounting hardware from the stock rear location and save the stock hardware for later re-installation. **Special note: The stock shock will be re-installed. The stock upper mounting point does not need be removed, let the stock shock hang.** Repeat procedure on passenger side.

106. Working on the driver side, remove the stock hardware that connects the stock rear track bar to the stock rear track bar location. Save the stock hardware for later re-installation.

107. Working on the driver side, scribe a mark on the stock rear coil spring and another directly across on the stock coil spring pocket. **This will allow you to re-install the stock coil spring back into the stock location.** Repeat procedure on passenger side. Carefully lower down on both hydraulic floor jacks at the same time about 5 1/2" - 6". **Special note: Take special care not to kink or over extend any brake lines and/or hoses.** Remove the stock driver and passenger side coil springs and set aside for later re-installation.

108. Locate (2) rear coil spring spacers. Working on the driver side, hold the new coil spring spacer into the upper coil spring pocket. With a marker, using the new rear coil spring spacer as a guide, scribe (3) marks on the stock upper coil spring pocket. Remove the new coil spring spacer and set aside for later re-installation. Repeat procedure on the passenger side.

109. Working on the driver side, carefully drill (3) 5/16" holes into the stock upper coil spring pocket where the marks were scribed in step # 108.

110. Locate (6) 3/8" x 3/4" self threading bolts from hardware bag 16965NB1. Working on the driver side, install the new coil spring spacer into the stock upper pocket and secure using the new 3/8" x 3/4" self threading bolts. **Make sure to use thread locker or lock tite.** Torque to **28 ft lbs.** Repeat procedure on the passenger side.

111. Locate the new rear track bar relocation bracket, (1) 9/16" x 3 1/2" bolt, (2) 1/2" USS flat washers and (1) 9/16" unitorque nut from hardware bag 16965NB4. Also, locate (1) 1/2" x 1 1/2" bolt, (2) 7/16" USS flat washers and (1) 1/2" unitorque nut from hardware bag 16965NB3. Install the new track bar relocation bracket into the stock track bar location and secure using the new 9/16" x 3 1/2" bolt and hardware**. Do not tighten at this point and make sure to use thread locker or lock tite.** Make sure that the new track bar relocation bracket is sitting square in the stock pocket. Using the new track bar relocation bracket as a guide, carefully drill a 1/2" hole into the stock track bar bracket. Secure the new track bar relocation bracket to the stock track bar bracket using the new 1/2" x 1 1/2" bolt and hardware. **Make sure to use thread locker or lock tite.** Torque the new 1/2" bolt to **85 ft lbs.** Also, torque the new 9/16" bolt to **112 ft lbs.**

112. Locate (2) new rear shock relocation brackets. Locate (2) 9/16" x 3" bolts, (4) 1/2" USS flat washer and (2) 9/16" unitorque nuts from hardware bag 16965NB4. Locate (2) 7/16" x 1 1/4" bolt, (4) 3/8" USS flat washers and (2) 7/16" unitorque nuts from hardware bag 16965NB2. Also, locate (2) S10019 crush sleeves from hardware bag 16965SL. Working on the driver side, install the new shock relocation bracket into the stock location and secure using the new 9/16" x 3" bolt, hardware and (1) S10019 crush sleeve. **Do not tighten at this point and make sure to use thread locker or lock tite.** Make sure that the new rear shock relocation bracket is sitting flush with the stock shock bracket, carefully drill a 7/16" hole in the bottom of the stock shock bracket and the newly installed shock relocation bracket. Secure the shock relocation bracket to the stock shock bracket using the new 7/16" x 1 1/4" bolt and hardware. Torque the 7/16" hardware to **35 ft lbs.** Also, torque the 9/16" hardware to **112 ft lbs.** Repeat procedure on the passenger side.

**Photo # 39**

113. Locate the stock rear coil springs that were removed from step # 107. Working on the driver side, re-install the stock rear coil spring into the stock lower coil spring pocket. Repeat procedure on the passenger side. **Special note: Make sure to re-install the stock coil spring back into the stock location, refer to the marks that were scribed in step # 107.** Carefully raise up on both hydraulic floor jacks at the same time until the stock coil springs seats properly with the newly installed upper coil spring spacers.

114. Locate the stock lower shock mounting hardware that was removed from step # 105. Working on the driver side, install the lower portion of the stock shock into the newly installed lower shock relocation bracket. Secure using the stock hardware. Torque to **112 ft. lbs. Make sure to use thread locker or lock tite.** Repeat procedure on the passenger side.

**Photo # 40 / passenger side shown**

115. Carefully remove both hydraulic floor jacks from under the rear axle.

116. Locate (2) new actuator rods from hardware bag 16965NB1. Working on the driver side, carefully install the new actuator rod into the stock rear location by inserting the actuator rod into the bottom ball joint cap and then into the top. Repeat procedure on the passenger side.

**Photo # 41**

117. Locate (2) new rear sway bar end links. Locate (8) PB4902 poly bushings from hardware bag 16965PL. Locate (4) S10026 crush sleeves from hardware bag 16965SL. Install the new poly bushings and sleeves into each end of the new rear sway bar end link. **Special note: Make sure to use a lithium or moly base grease prior to inserting the new bushings and sleeves into the new rear sway bar end links. This will increase the life of the bushing as well as prevent squeaking.**

118. Locate the stock upper sway bar hardware that was removed in step # 102. Working on the driver side, install the new sway bar end link into the stock upper location and secure using the stock hardware. **Do not tighten at this point and make sure to use thread locker or lock tite.** Repeat procedure on the passenger side.

**Photo # 42**

119. Locate (2) 1/2" x 2 1/2" bolts, (4) 7/16" USS flat washers and (2) 1/2" unitorque nuts from hardware bag 16965NB3. Working on the driver side, secure the new sway bar end link to the stock rear sway bar using the new 1/2" x 2 1/2" bolts and hardware. **Make sure to use thread locker or lock tite.** Repeat procedure on the passenger side. Torque the stock upper sway bar end link hardware to **60 ft lbs** and the new lower sway bar end link hardware to **80 ft lbs.**

**Photo # 43**

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

121. Locate the stock rear track bar hardware that was removed from step # 106. Secure the stock track bar to the newly installed track bar relocation bracket and secure using the stock hardware. **Make sure to use thread locker or lock tite.** Torque the stock hardware to **108 ft lbs.**

**Photo # 44**

122. Locate the stock emergency brake cable clips that connected the stock emergency brake cable to the stock rear track bar that was removed in step # 103.. Secure the stock emergency brake cable to the stock rear track bar using the stock emergency brake cable clips.

**Photo # 45**

123. Locate the new rear brake line extension bracket from hardware bag 16965PL. Also, locate the stock brake line bracket hardware that was removed in step # 101. Install the new brake line relocation bracket to the stock rear differential cover and secure using the stock hardware. **Do not tighten at this point and make sure to use thread locker or lock tite.**

124. Locate (1) 5/16" x 1" bolt, (2) 1/4" USS flat washers and (1) 5/16" unitorque nut from hardware bag 16965NB1. Install the stock brake line bracket to the newly installed brake line relocation bracket and secure using the new 5/16" x 1" bolt and hardware. **Make sure to use thread locker or lock tite.** Torque the new 5/16" x 1" bolt, hardware and the stock differential cover hardware to **18 ft lbs.**

**Photo # 45**

**If the vehicle that you are working on is equipped with Air Ride Load Sensor Shocks please skip to step # 144**

125. Working on the driver side, remove the stock rear lower shock mounting hardware from the stock rear location and save the stock hardware for later re-installation. **Special note: The stock shock will be re-installed. The stock upper mounting point does not need be removed, let the stock shock hang.** Repeat procedure on passenger side.

126. Working on the driver side, remove the stock hardware that connects the stock rear track bar to the stock rear track bar location. Save the stock hardware for later re-installation.

127. Working on the driver side, scribe a mark on the stock rear coil spring and another directly across on the stock coil spring pocket. **This will allow you to re-install the stock coil spring back into the stock location.** Repeat procedure on passenger side. Carefully lower down on both hydraulic floor jacks at the same time about 5 1/2" - 6". **Special note: Take special care not to kink or over extend any brake lines and/or hoses.** Remove the stock driver and passenger side coil springs and set a side for later re-installation.

128. Locate (2) rear coil spring spacer. Working on the driver side, hold the new coil spring spacer into the upper coil spring pocket. With a marker, using the new rear coil spring spacer as a guide, scribe (3) marks on the stock upper coil spring pocket. Remove the new coil spring spacer and set aside for later re-installation. Repeat procedure on the passenger side.

129. Working on the driver side, carefully drill (3) 5/16" holes into the stock upper coil spring pocket where the marks were scribe in step # 128.

130. Locate (6) 3/8" x 3/4" self threading bolts from hardware bag 16965NB1. Working on the driver side, install the new coil spring spacer into the stock upper pocket and secure using the new 3/8" x 3/4" self threading bolts. **Make sure to use thread locker or lock tite.** Torque to **32 ft lbs.** Repeat procedure on the passenger side.

131. Locate the new rear track bar relocation bracket, (1) 9/16" x 3 1/2" bolt, (2) 1/2" USS flat washers and (1) 9/16" unitorque nut from hardware bag 16965NB4. Also, locate (1) 1/2" x 1 1/2" bolt, (2) 7/16" USS flat washers and (1) 1/2" unitorque nut from hardware bag 16965NB3. Install the new track bar relocation bracket into the stock track bar location and secure using the new 9/16" x 3 1/2" bolt and hardware. **Do not tighten at this point and make sure to use thread locker or lock tite.** Make sure that the new track bar relocation bracket is sitting square in the stock pocket. Using the new track bar relocation bracket as a guide, carefully drill a 1/2" hole into the stock track bar bracket. Secure the new track bar relocation bracket to the stock track bar bracket using the new 1/2" x 1 1/2" bolt and hardware. **Make sure to use thread locker or lock tite.** Torque the new 1/2" bolt to **85 ft lbs.** Also, torque the new 9/16" bolt to **112 ft lbs.**

132. Locate (2) new rear shock relocation brackets. Locate (2) 9/16" x 3" bolts, (4) 1/2" USS flat washer and (2) 9/16" unitorque nuts from hardware bag 16965NB4. Locate (2) 7/16" x 1 1/4" bolt, (4) 3/8" USS flat washers and (2) 7/16" unitorque nuts from hardware bag 16965NB2. Also, locate (2) S10019 crush sleeves from hardware bag 16965SL. Working on the driver side, install the new shock relocation bracket into the stock location and secure using the new 9/16" x 3" bolt, hardware and (1) S10019 crush sleeve. **Do not tighten at this point and make sure to use thread locker or lock tite.** Make sure that the new rear shock relocation bracket is sitting flush with the stock shock bracket, carefully drill a 7/16" hole in the bottom of the stock shock bracket and the newly installed shock relocation bracket. Secure the shock relocation bracket to the stock shock bracket using the new 7/16" x 1 1/4" bolt and hardware. Torque the 7/16" hardware to **35 ft lbs.** Also, torque the

9/16" hardware to **112 ft lbs.** Repeat procedure on the passenger side.

**Photo # 39**

133. Locate the stock rear coil springs that were removed from step # 127. Working on the driver side, re-install the stock rear coil spring into the stock lower coil spring pocket. Repeat procedure on the passenger side. **Special note: Make sure to re-install the stock coil spring back into the stock location, refer to the marks that were scribed in step # 107.** Carefully raise up on both hydraulic floor jacks at the same time until the stock coil springs seats properly with the newly installed upper coil spring spacers.

134. Locate the stock lower shock mounting hardware that was removed from step # 125. Working on the driver side, install the lower portion of the stock shock into the newly installed lower shock relocation bracket. Secure using the stock hardware. Torque to **112 ft. lbs. Make sure to use thread locker or lock tite.** Repeat procedure on the passenger side.

**Photo # 40 / passenger side shown**

135. Carefully remove both hydraulic floor jacks from under the rear axle.

136. Locate (2) new rear sway bar end links. Locate (8) PB4902 poly bushings from hardware bag 16965PL. Locate (4) S10026 crush sleeves from hardware bag 16965SL. Install the new poly bushings and sleeves into each end of the new rear sway bar end link. **Special note: Make sure to use a lithium or moly base grease prior to inserting the new bushings and sleeves into the new rear sway bar end links. This will increase the life of the bushing as well as prevent squeaking.**

137. Locate the stock upper sway bar hardware that was removed in step # 102. Working on the driver side, install the new sway bar end link into the stock upper location and secure using the stock hardware. **Do not tighten at this point and make sure to use thread locker or lock tite.** Repeat procedure on the passenger side.

**Photo # 42**

138. Locate (2) 1/2" x 2 1/2" bolts, (4) 7/16" USS flat washers and (2) 1/2" unitorque nuts from hardware bag 16965NB3. Working on the driver side, secure the new sway bar end link to the stock rear sway bar using the new 1/2" x 2 1/2" bolts and hardware. **Make sure to use thread locker or lock tite.** Repeat procedure on the passenger side. Torque the stock upper sway bar end link hardware to **60 ft lbs** and the new lower sway bar end link hardware to **80 ft lbs.**

**Photo # 43**

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

140. Locate the stock rear track bar hardware that was removed from step # 126. Secure the stock track bar to the newly installed track bar relocation bracket and secure using the stock hardware. **Make sure to use thread locker or lock tite.** Torque the stock hardware to **108 ft lbs.**

**Photo # 44**

141. Locate the stock emergency brake cable clips that connected the stock emergency brake cable to the stock rear track bar that was removed in step # 103. Secure the stock emergency brake cable to the stock rear track bar using the stock emergency brake cable clips.

**Photo # 45**

142. Locate the new rear brake line extension bracket. Also, locate the stock brake line bracket hardware that was removed in step # 101. Install the new brake line relocation bracket to the stock rear differential cover and secure using the stock hardware. **Do not tighten at this point and make sure to use thread locker or lock tite.**

143. Locate (1) 5/16" x 1" bolt, (2) 1/4" USS flat washers and (1) 5/16" unitorque nuts from hardware bag 16965NB1. Install the stock brake line bracket to the newly installed brake line relocation bracket and secure using the new 5/16" x 1" bolt and hardware. **Make sure to use thread locker or lock tite.** Torque the new 5/16" x 1" bolt, hardware and the stock differential cover hardware to **18 ft lbs.**

**Photo # 45**

144. Check and double check to make sure that all steps were performed properly. And then check again. Check and make sure that all new and stock hardware has been torqued to proper torque specification. Refer to the torque specification at the end of the installation manual.

145. Take the vehicle directly to an alignment shop for a proper front end alignment.

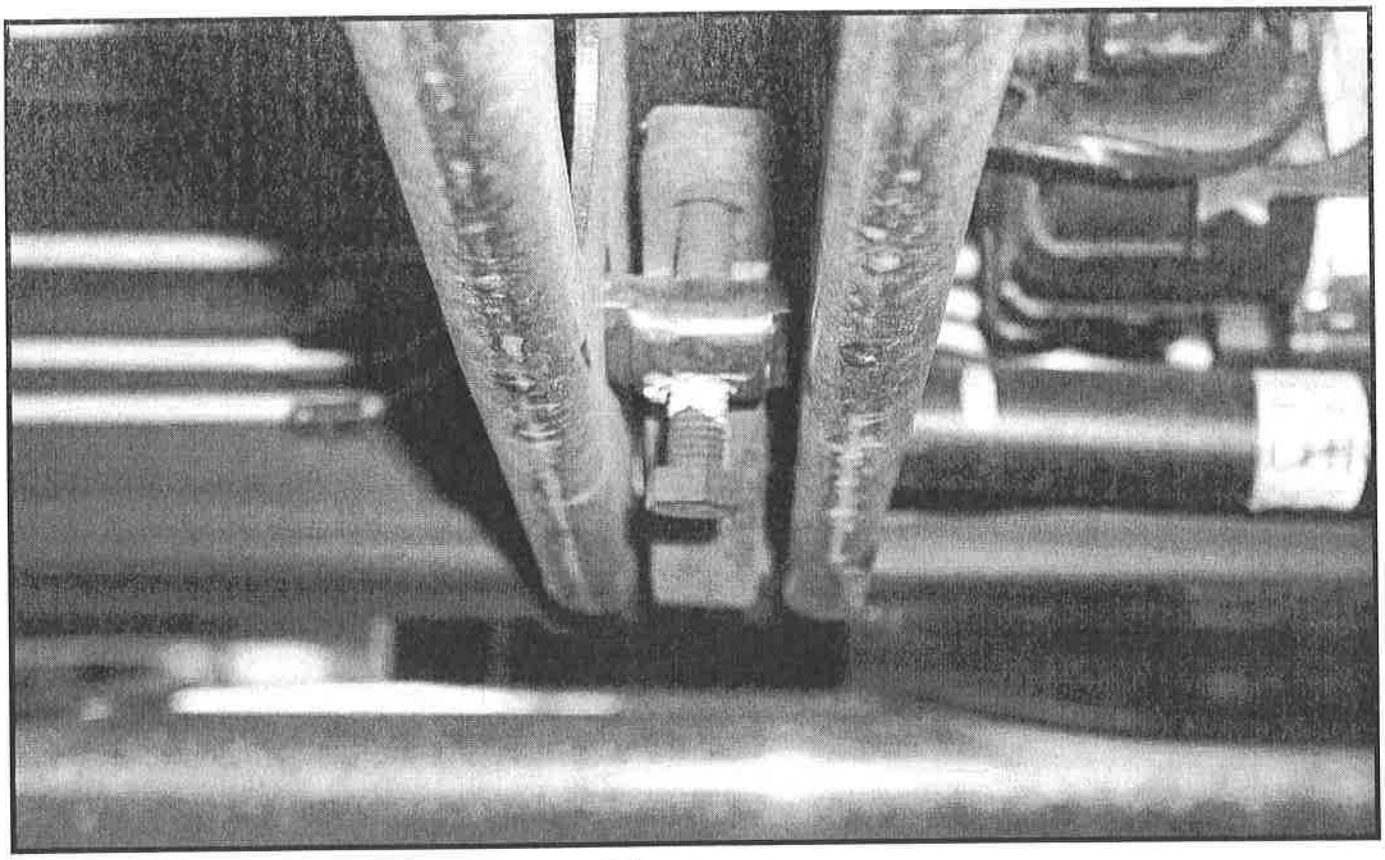
**If you have any questions regarding the installation, please contact the technical department @ Tuff Country. (801) 280-2777**

**Congratulations installation complete**

## 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.** |

**Also refer to the Vehicle owners manual for proper torque specifications on any stock hardware.**



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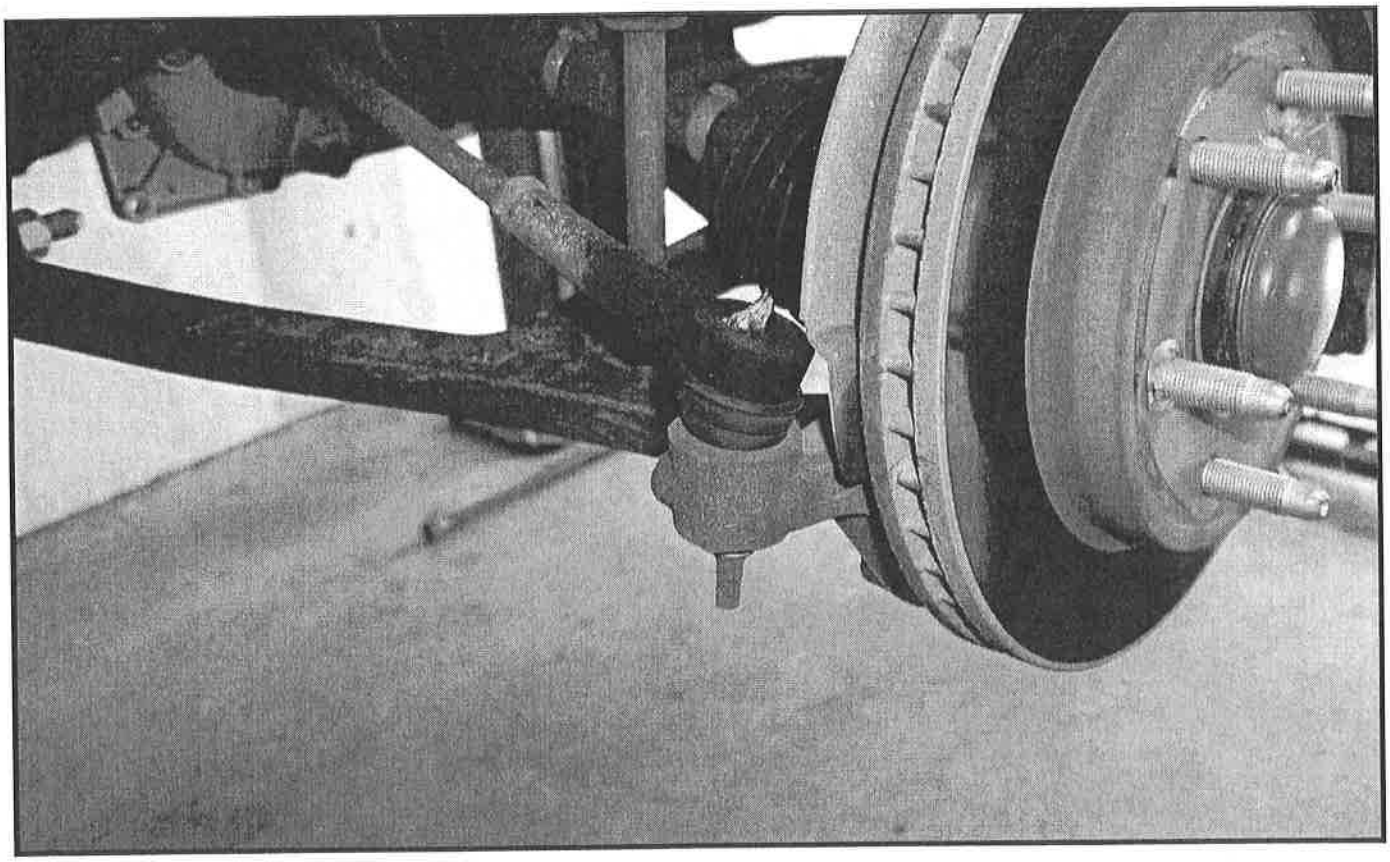

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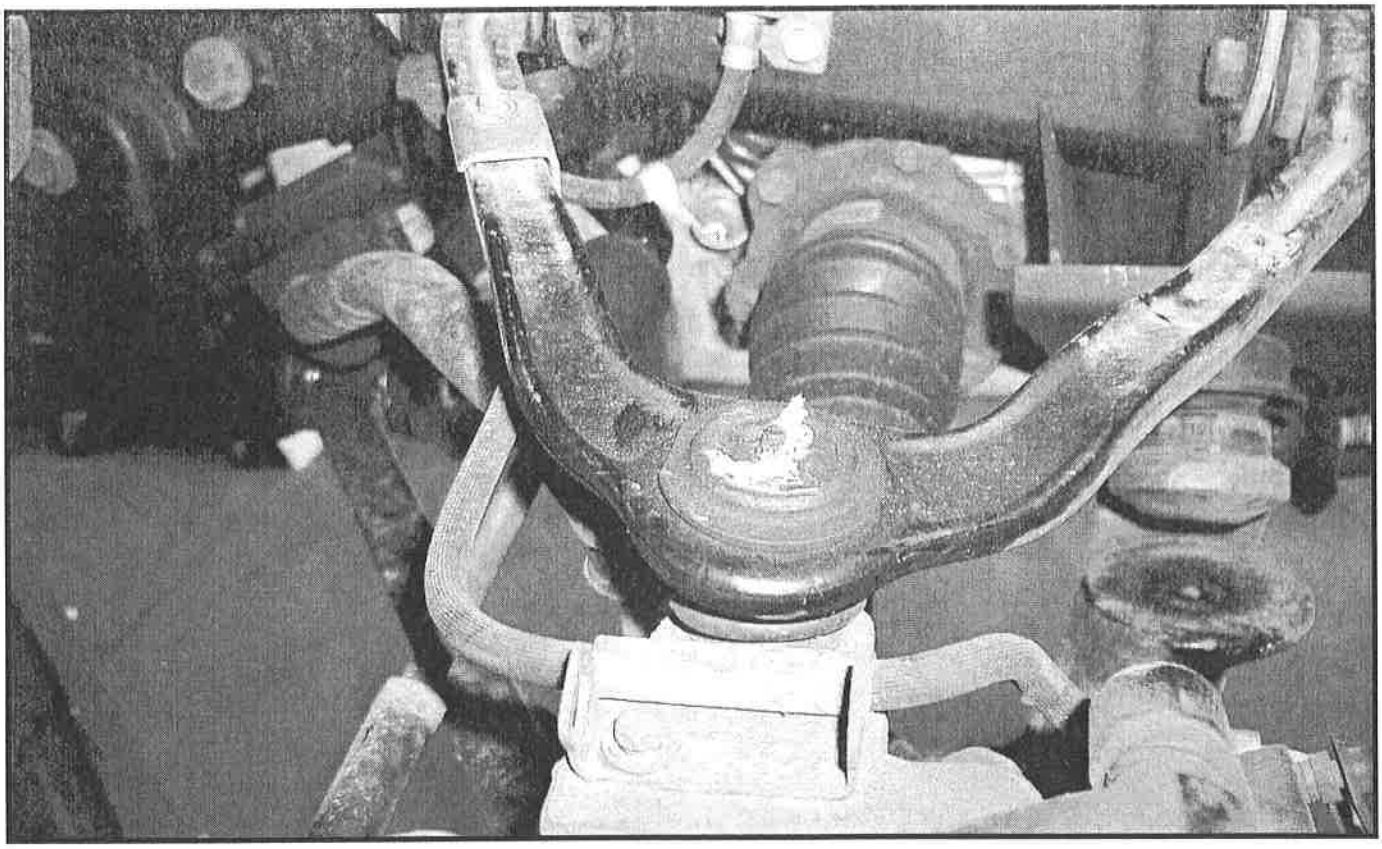

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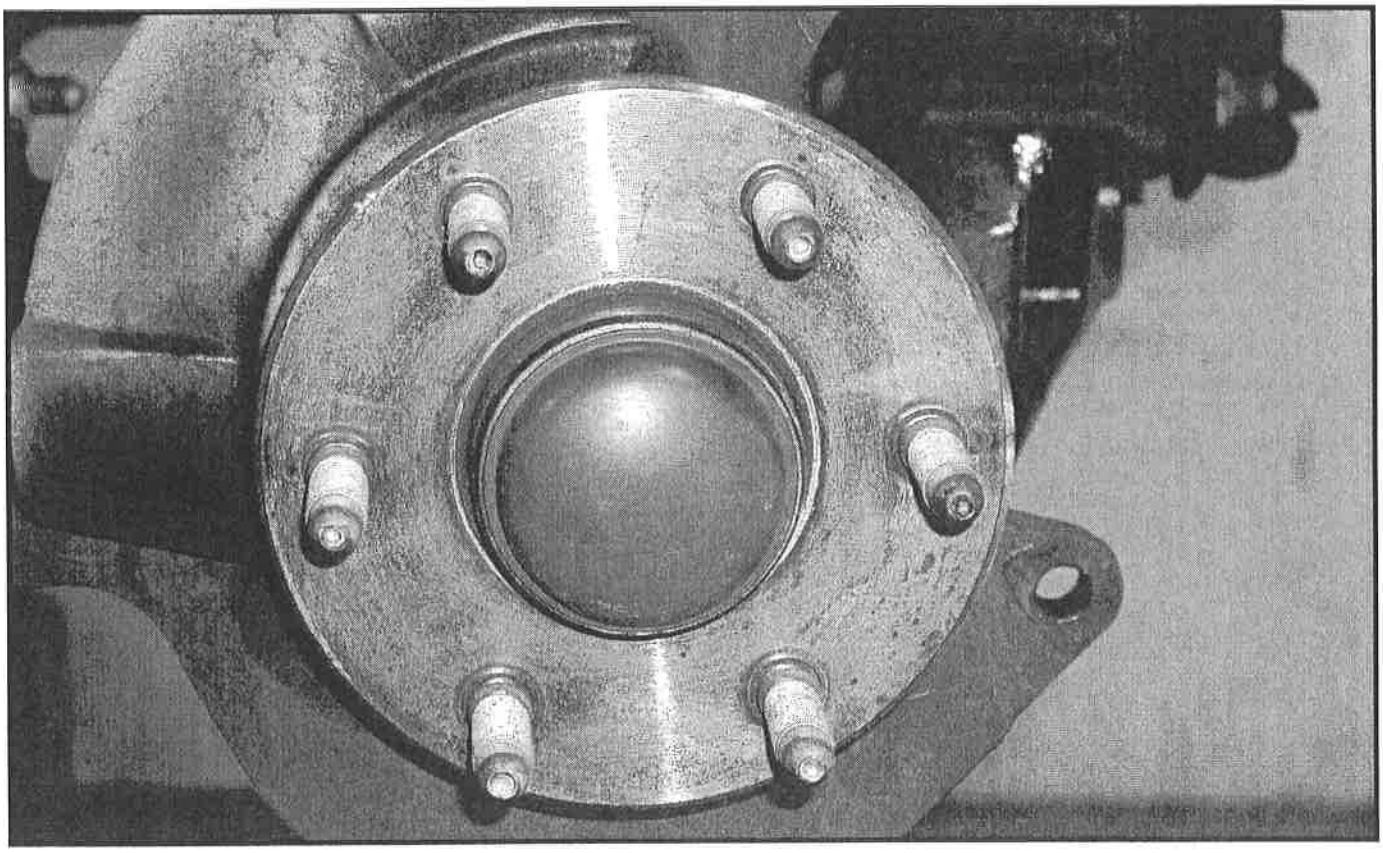

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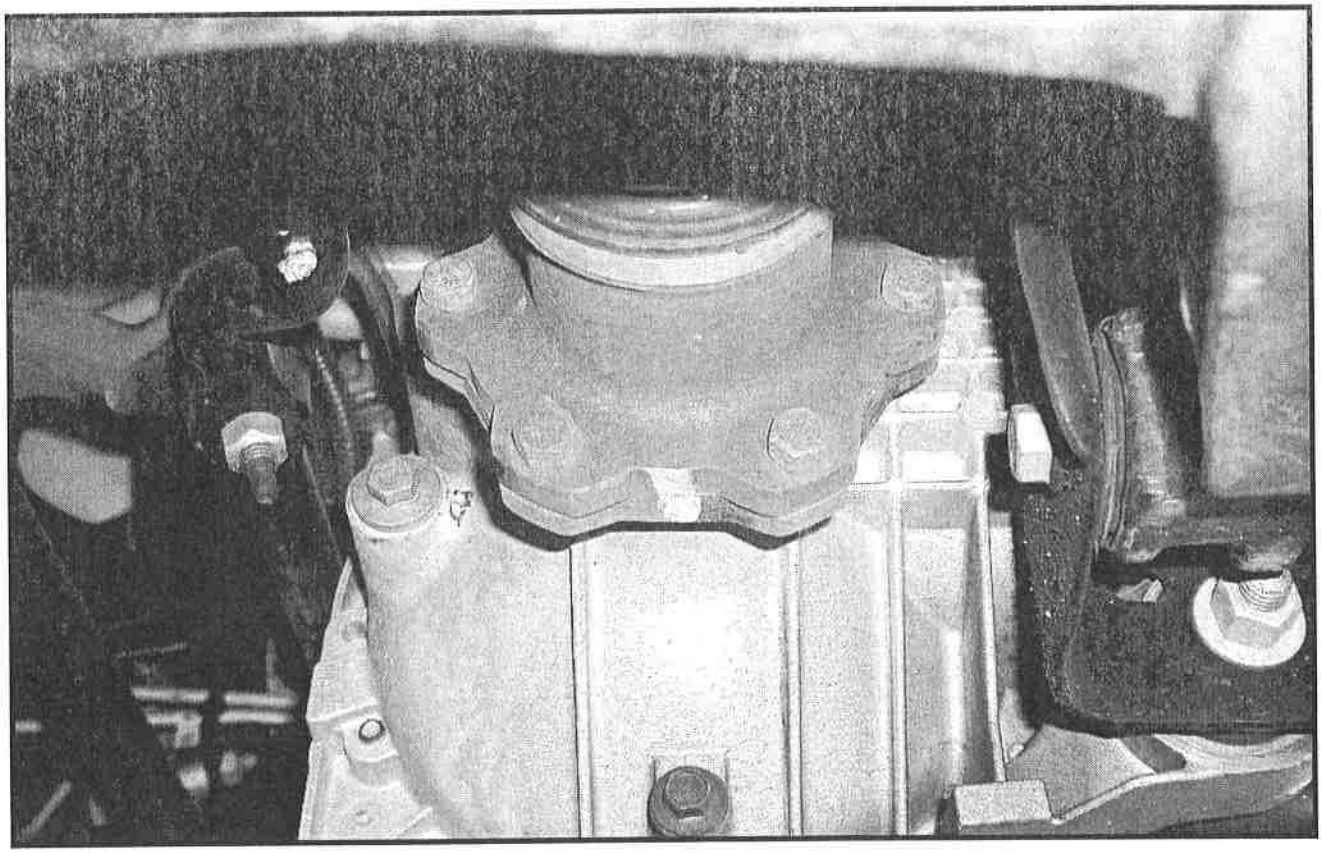

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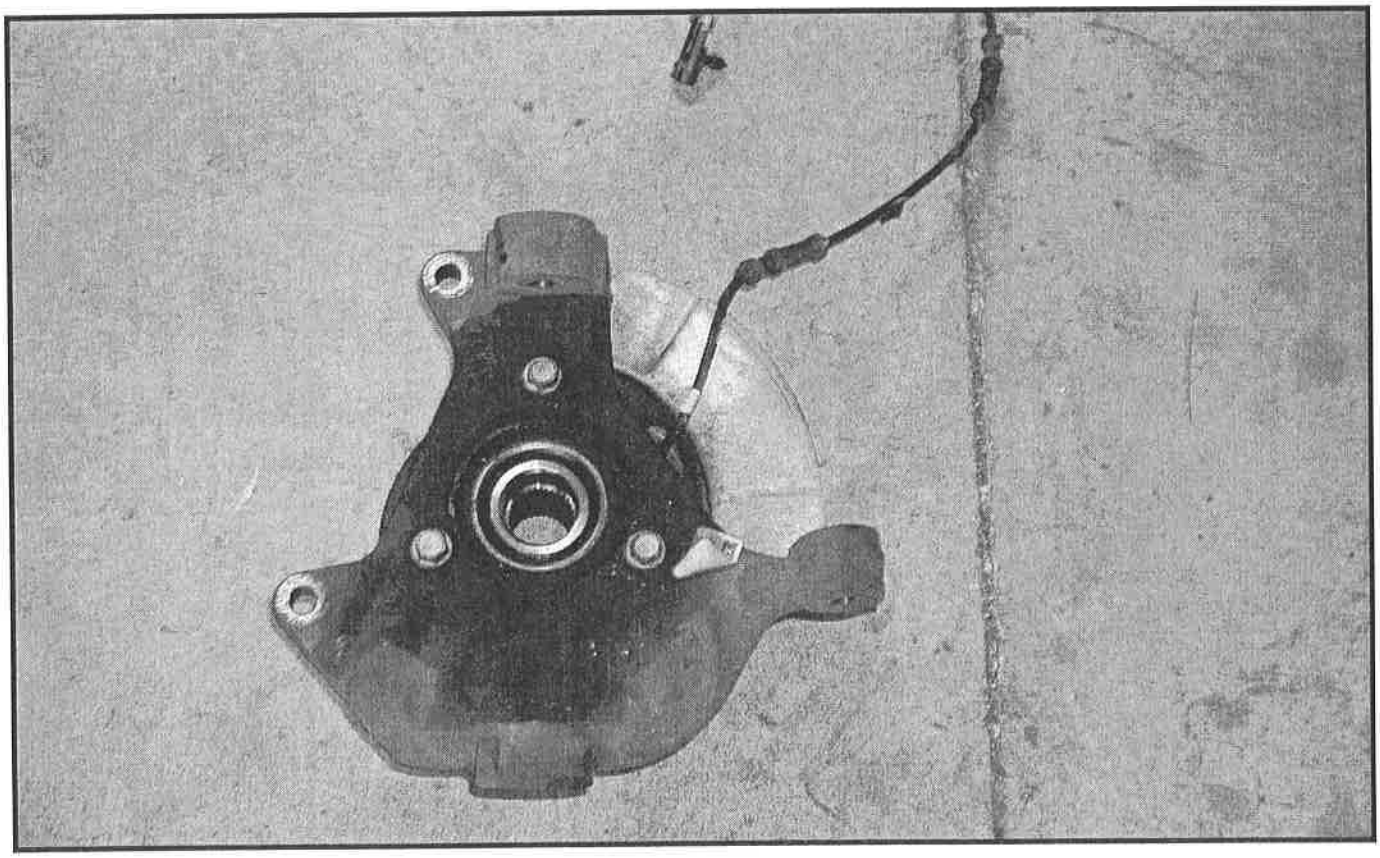

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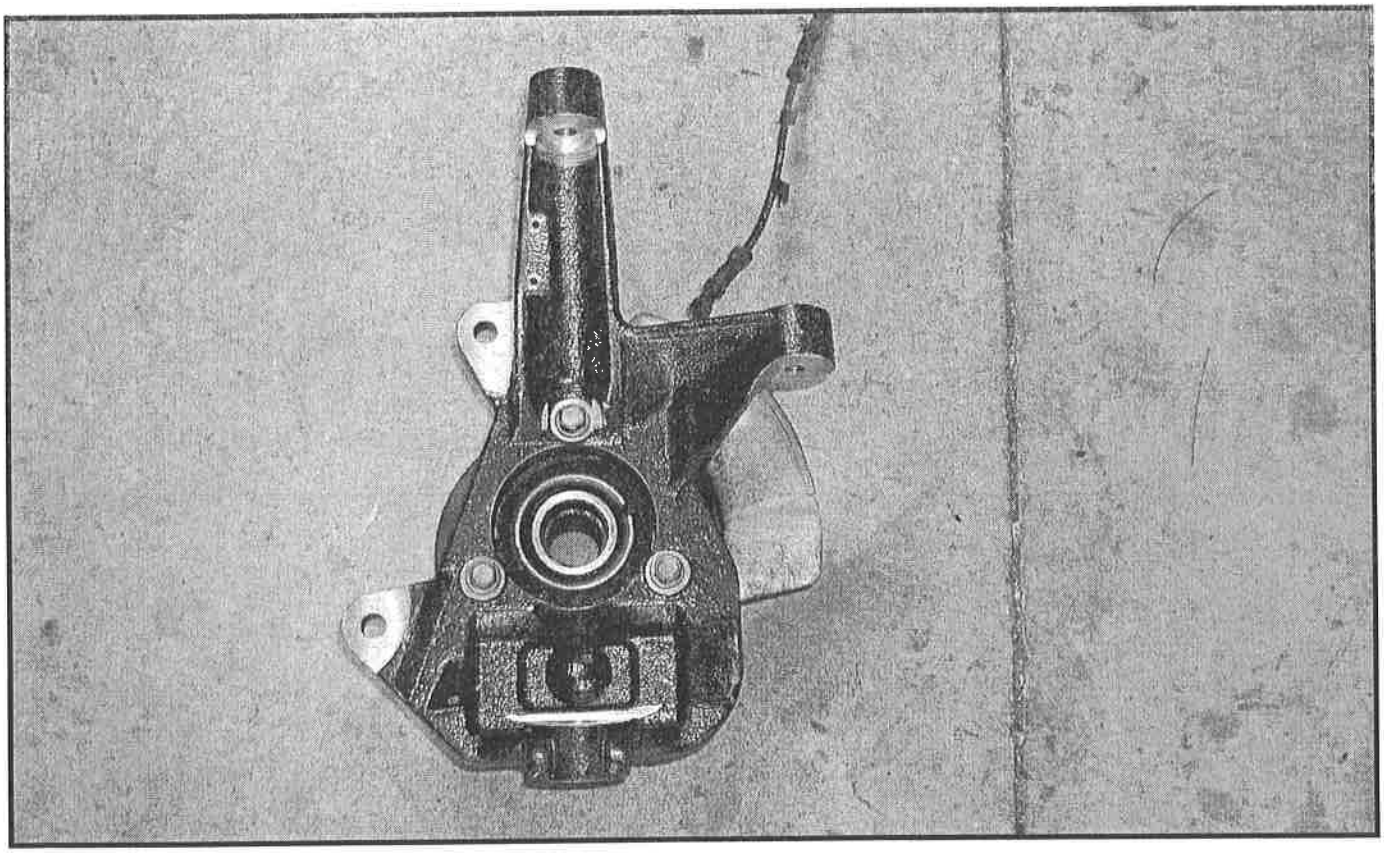

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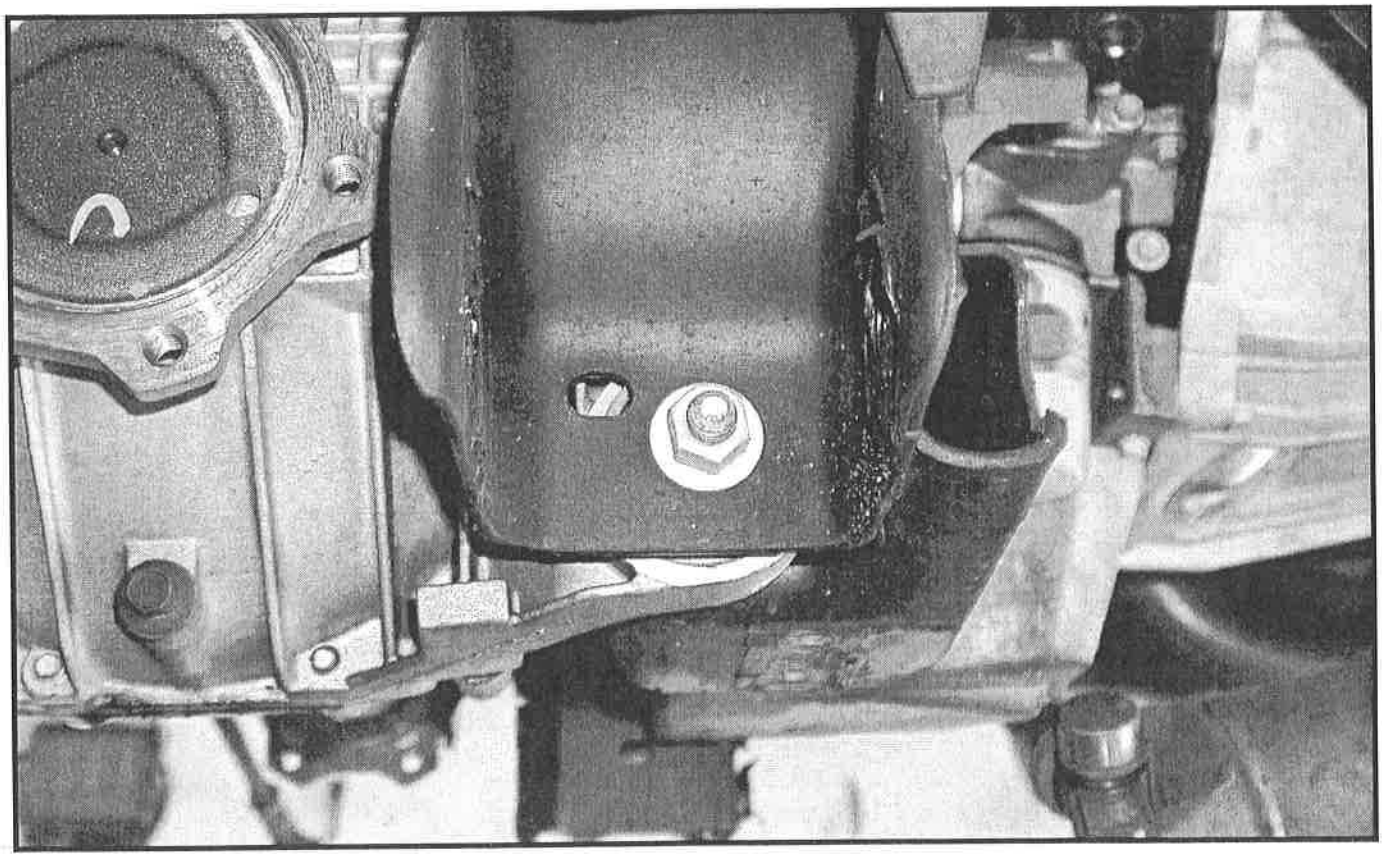

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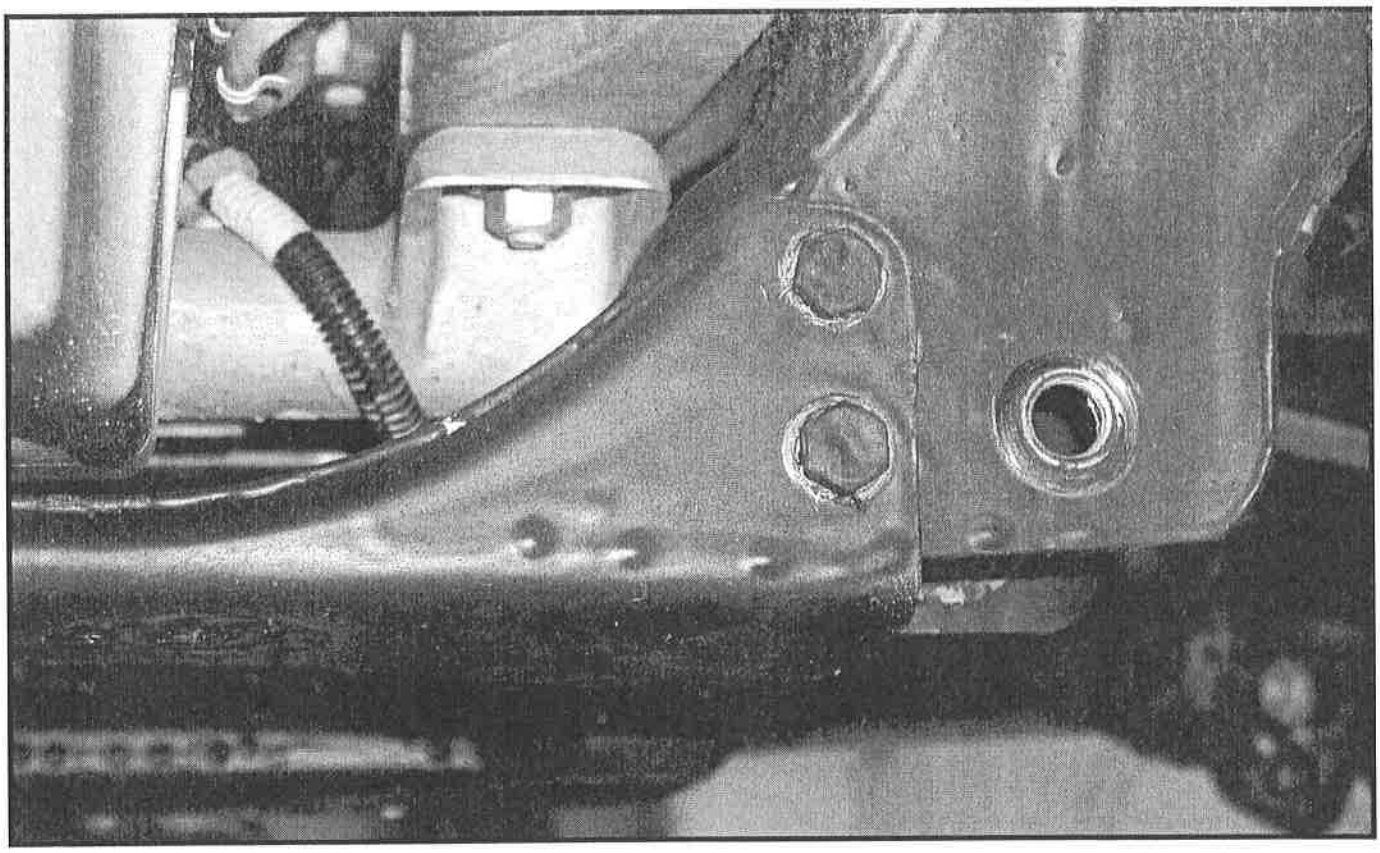

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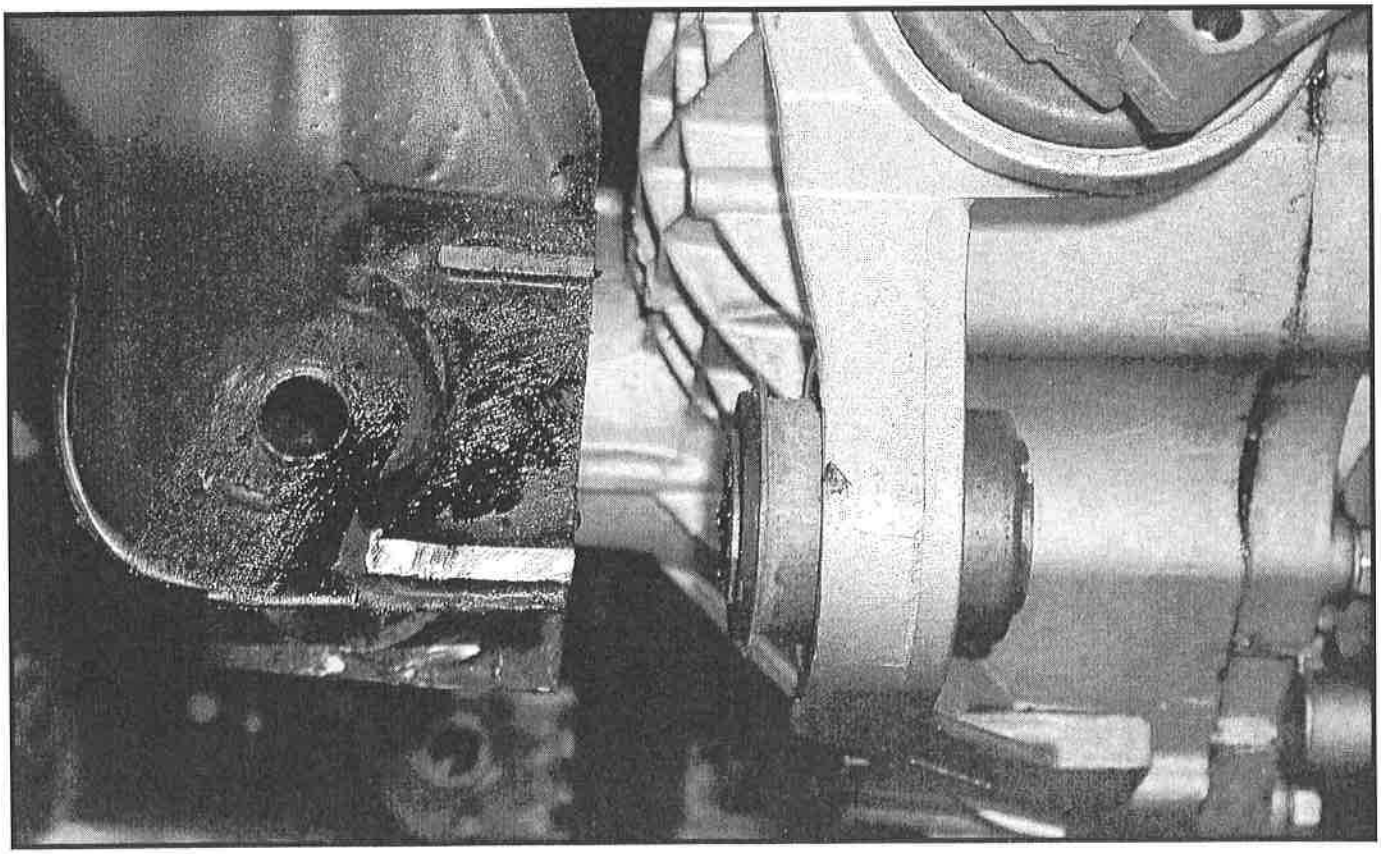

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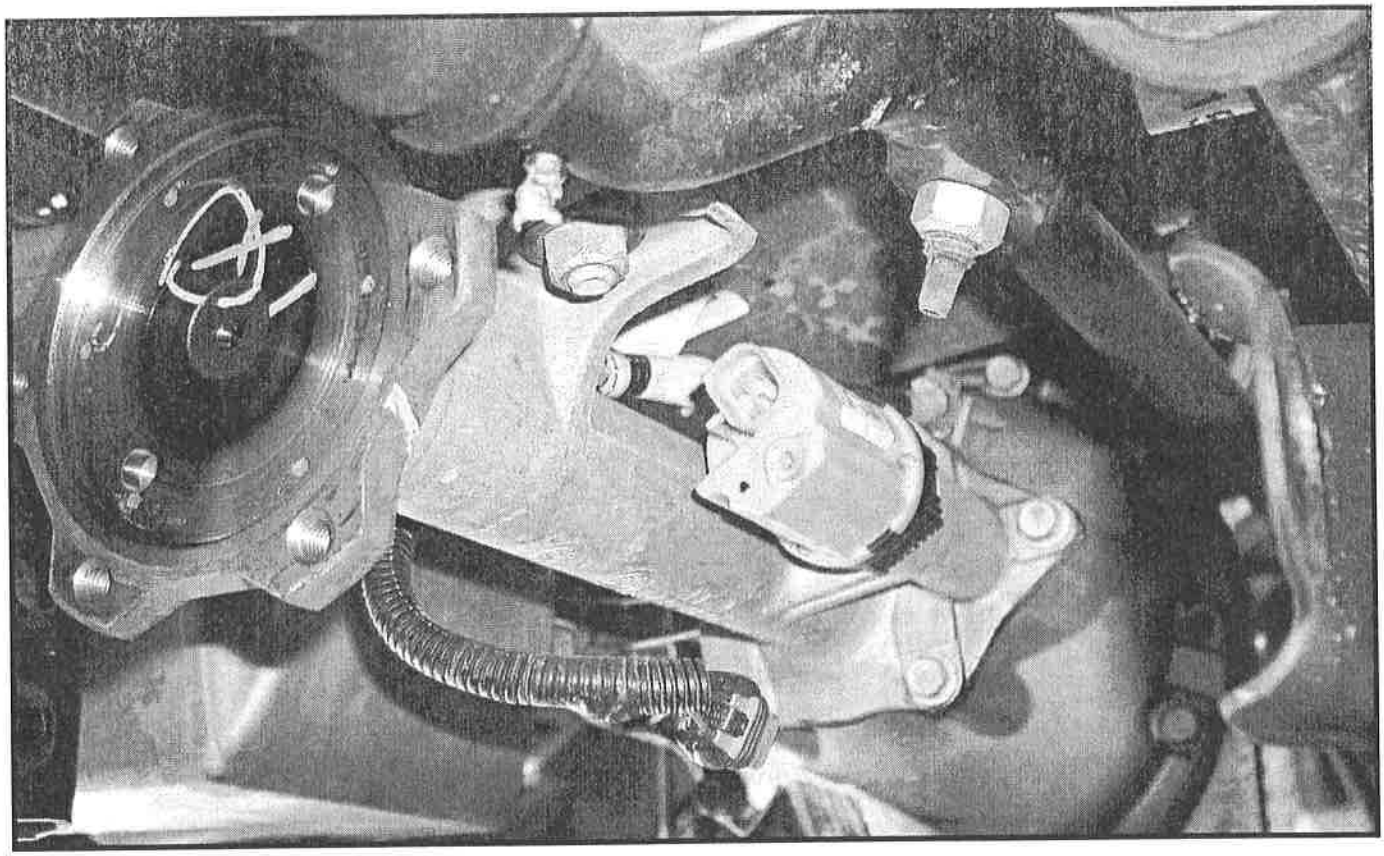

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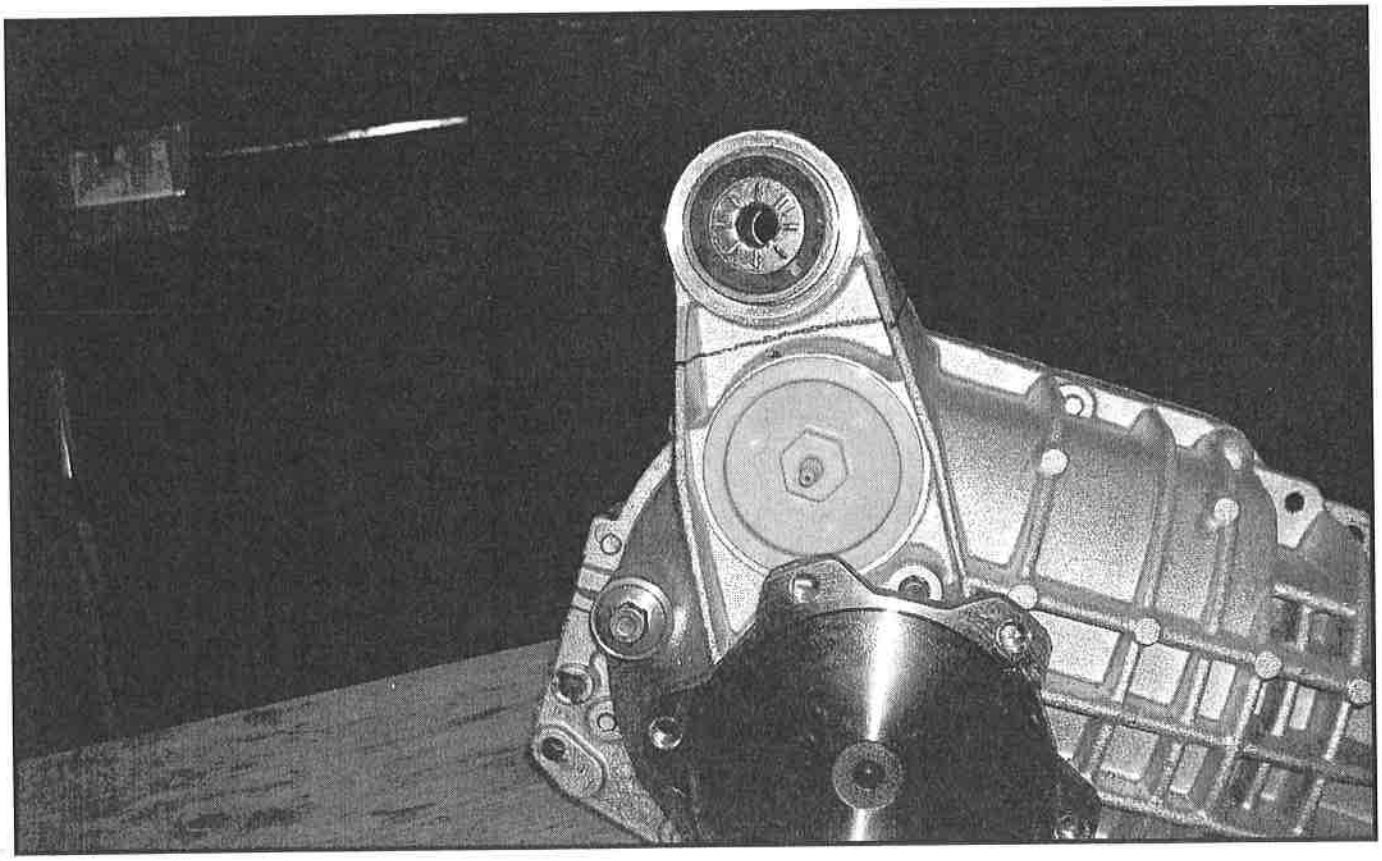

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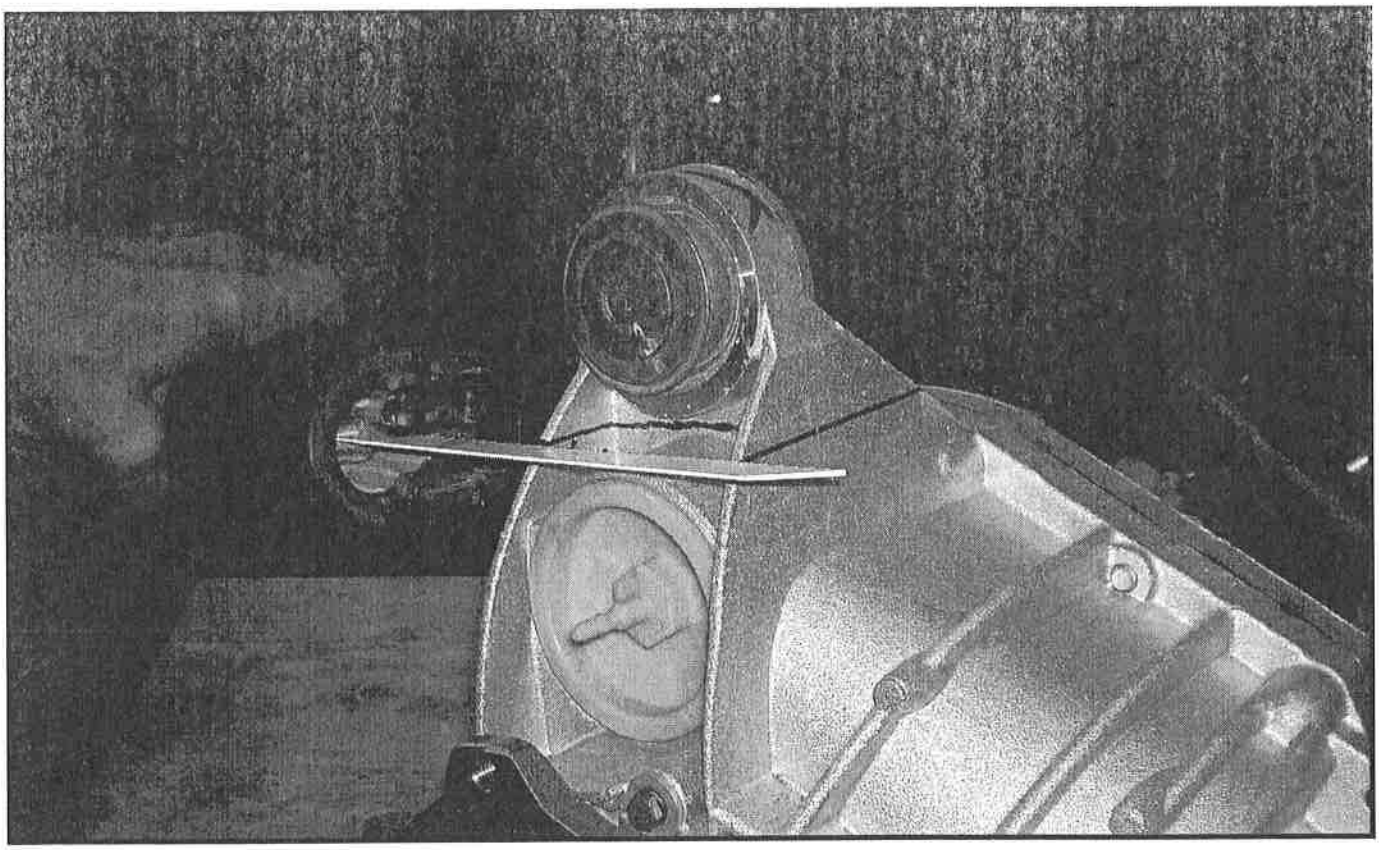

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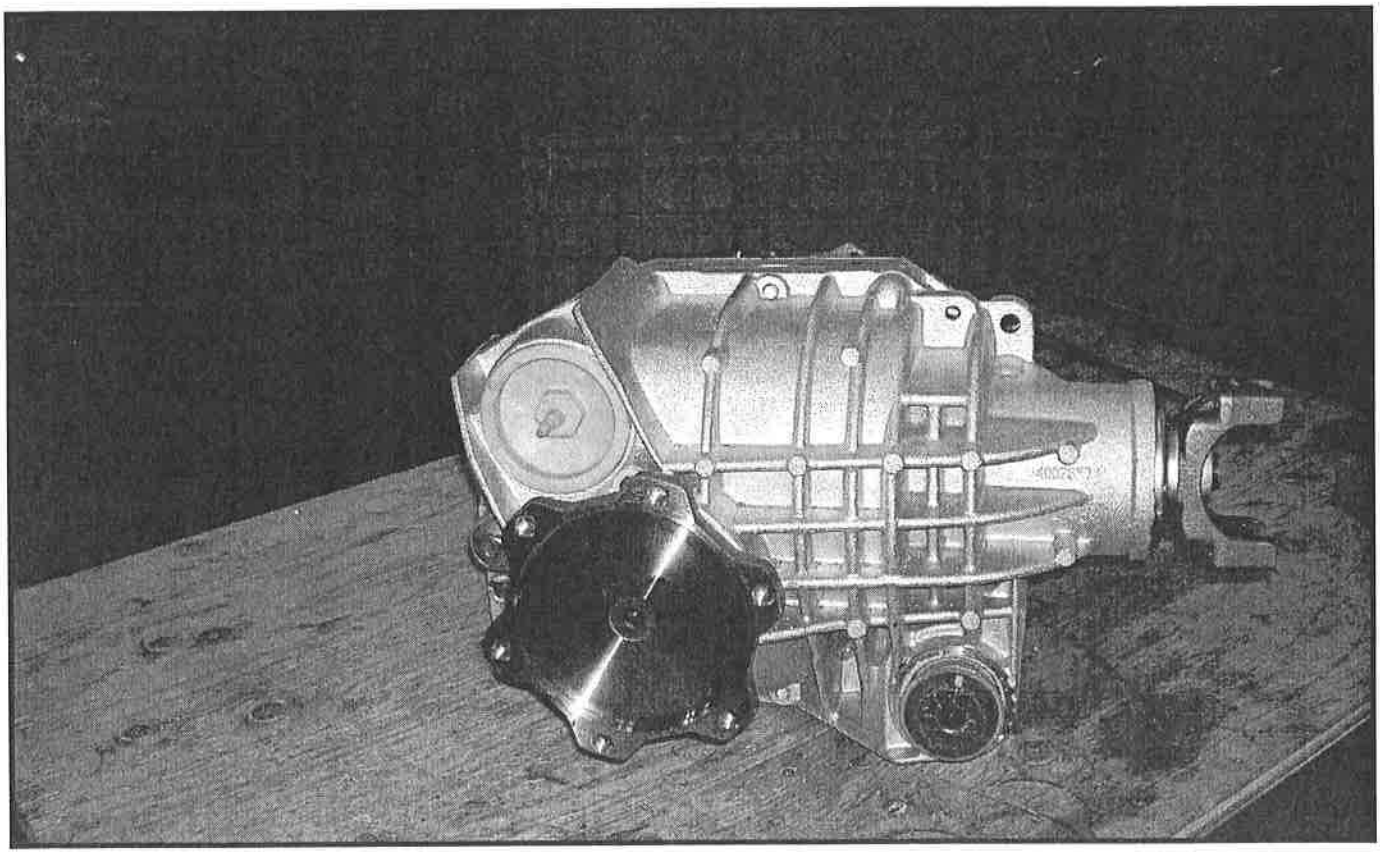

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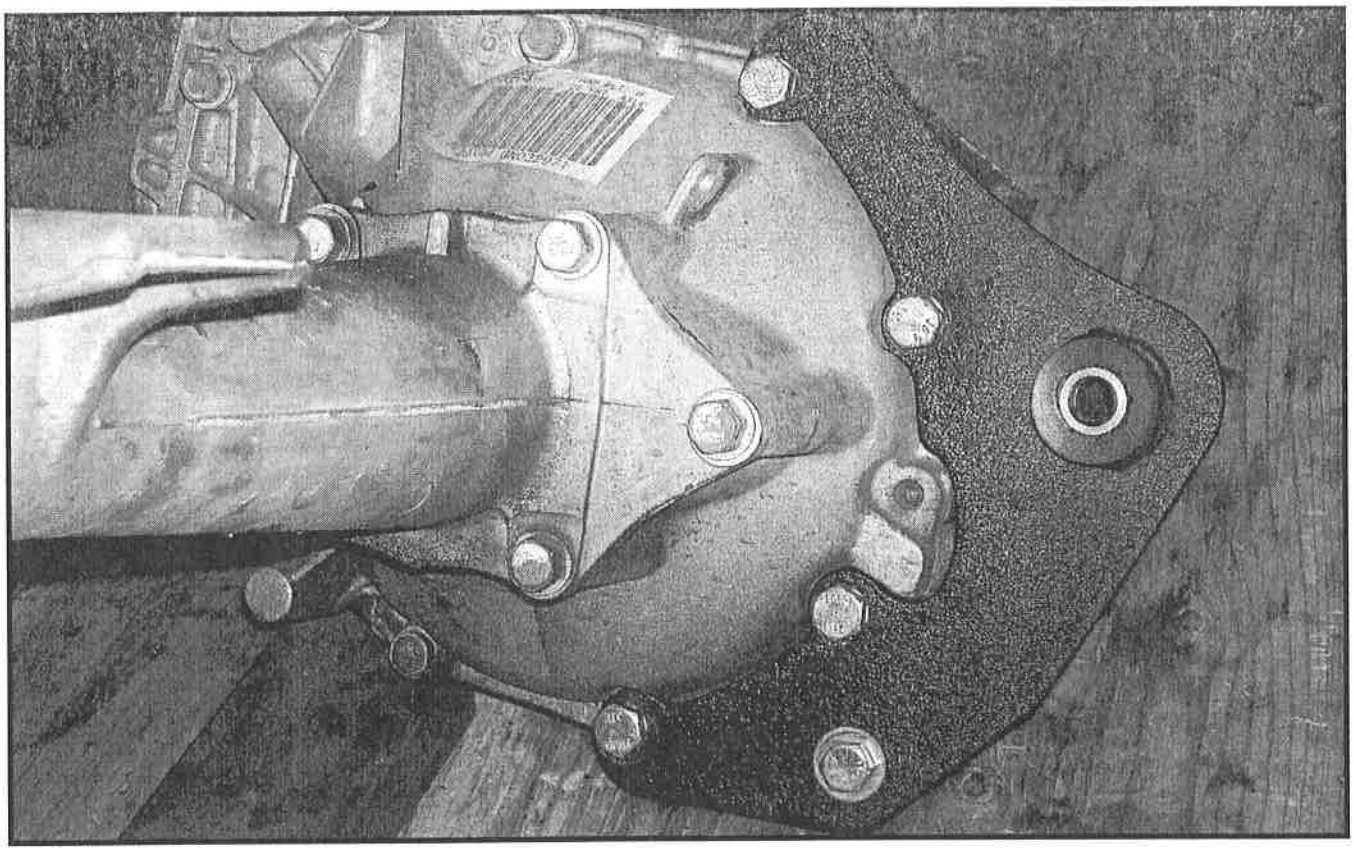

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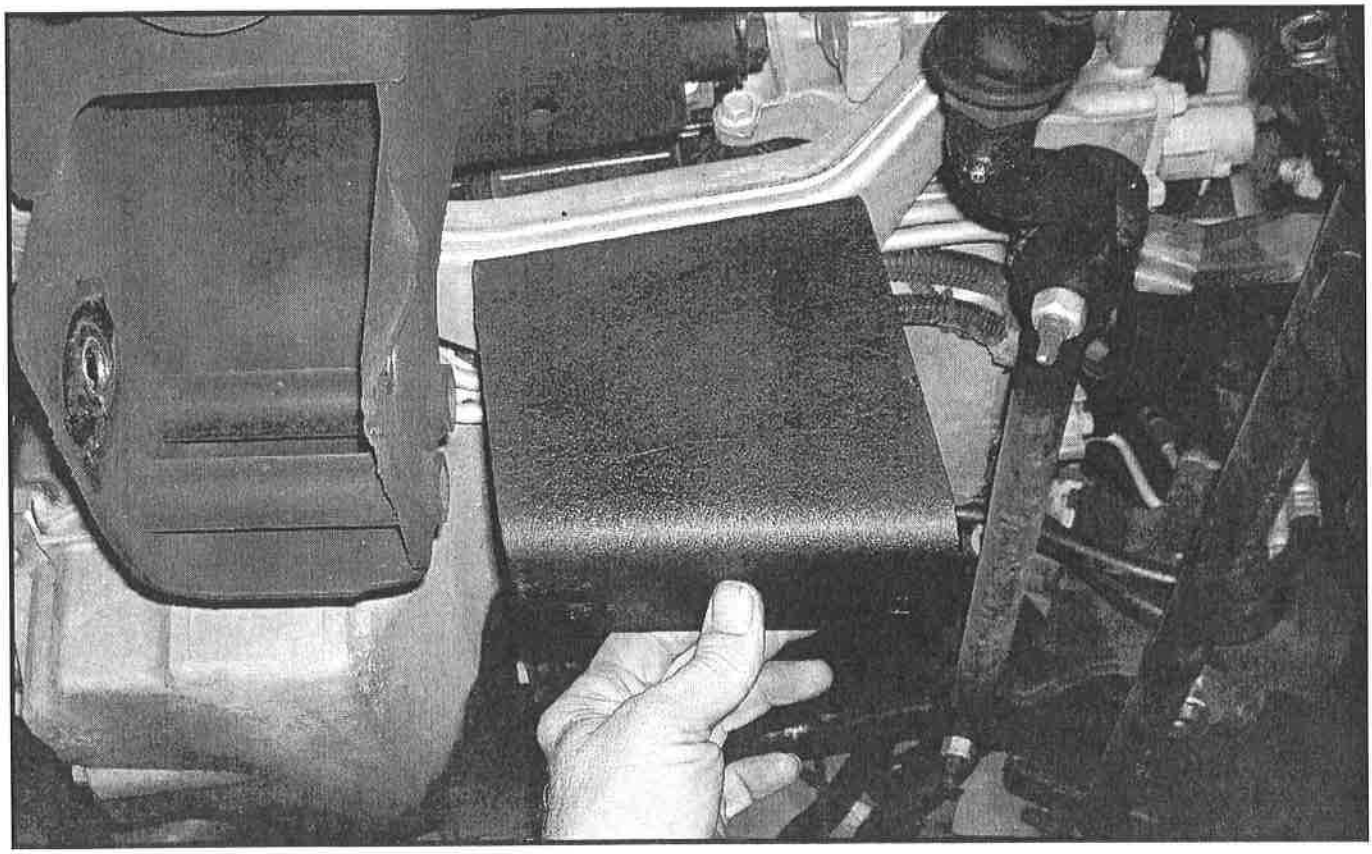

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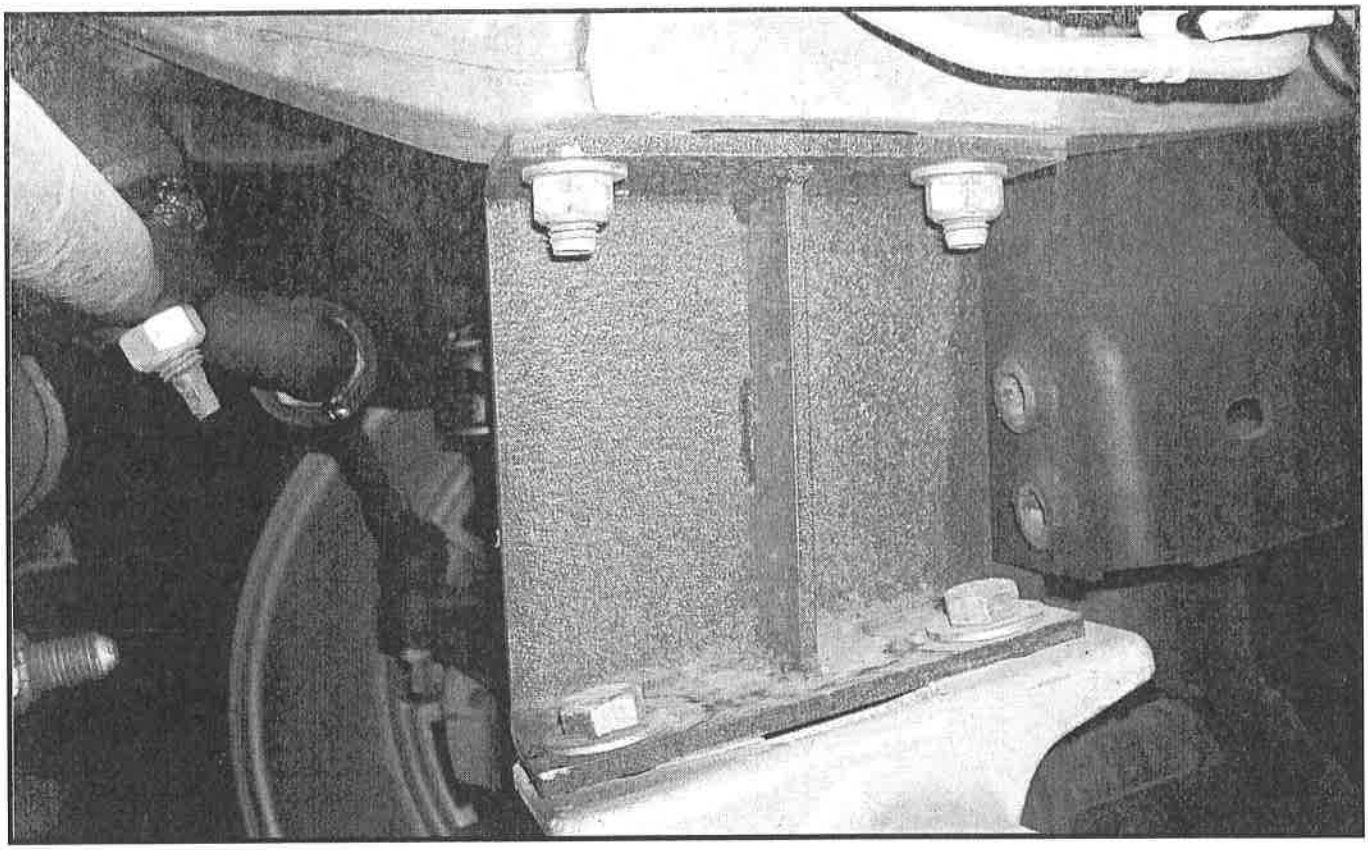

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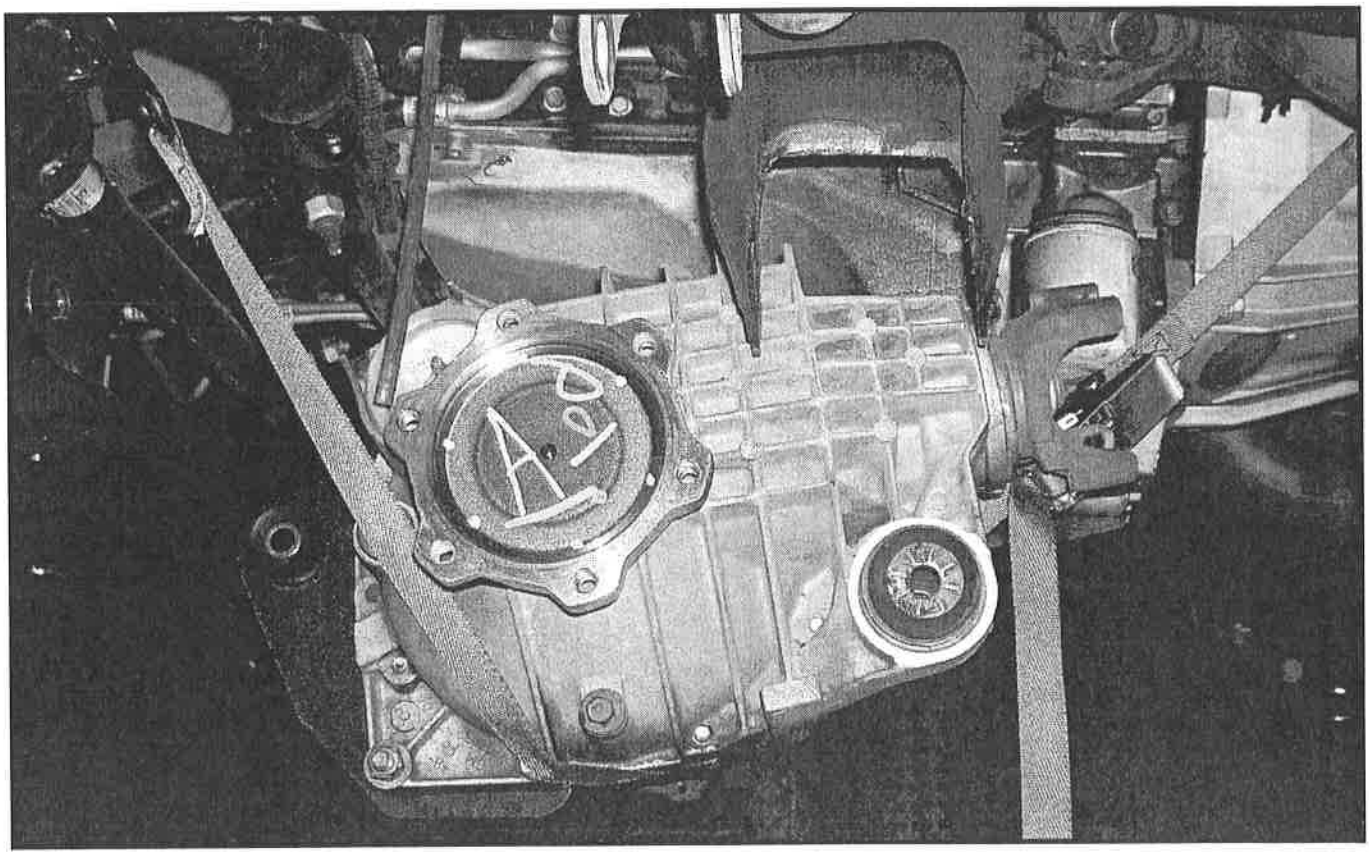

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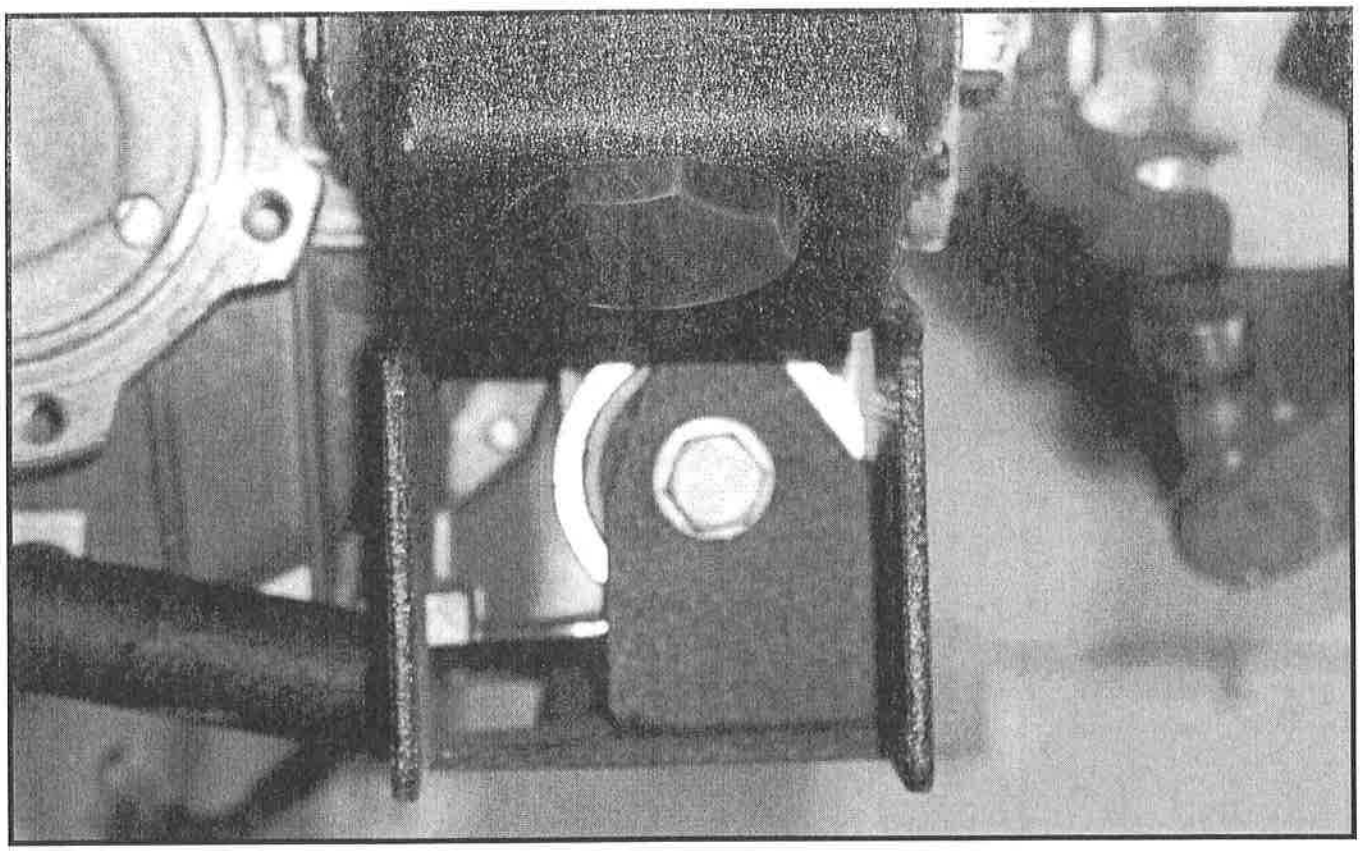

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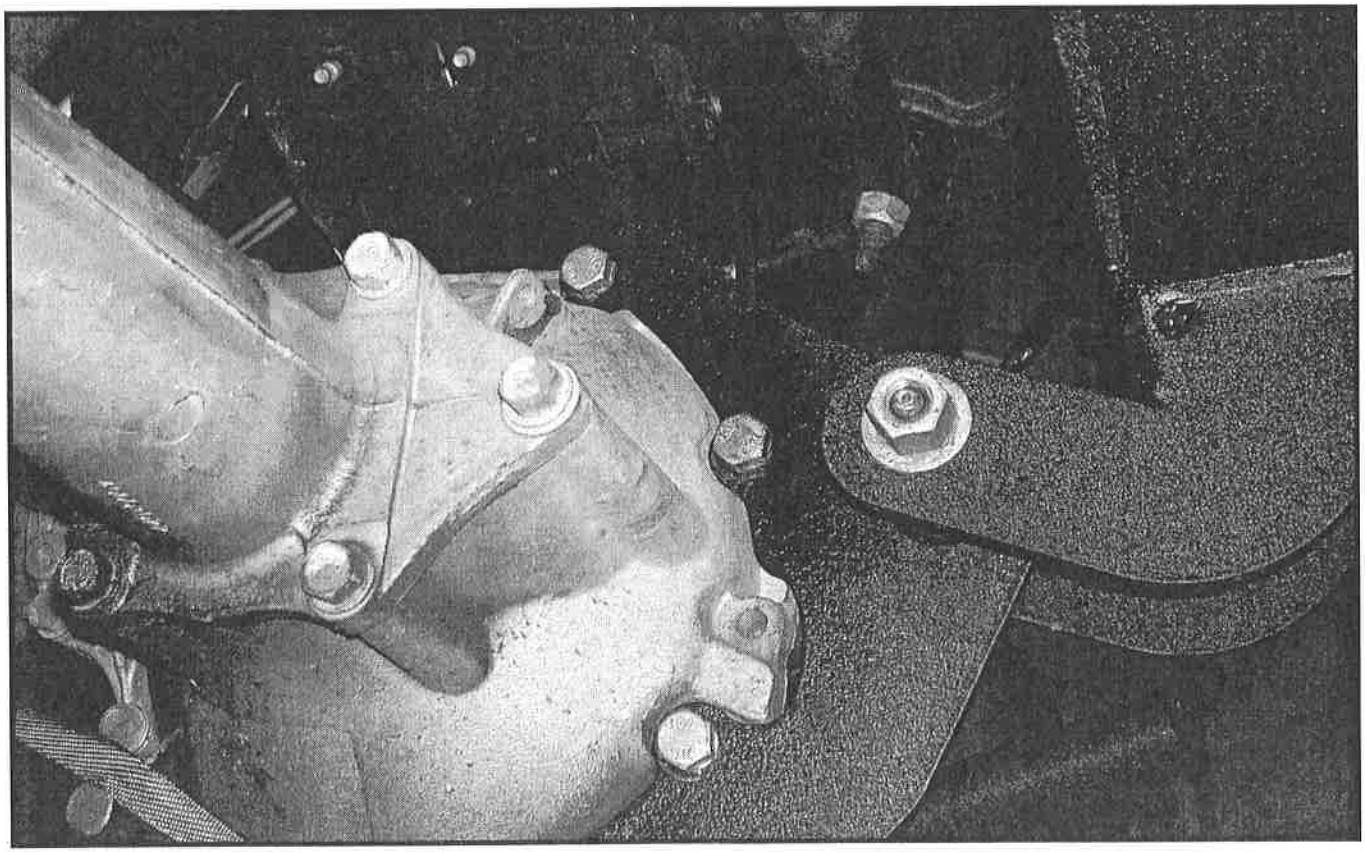

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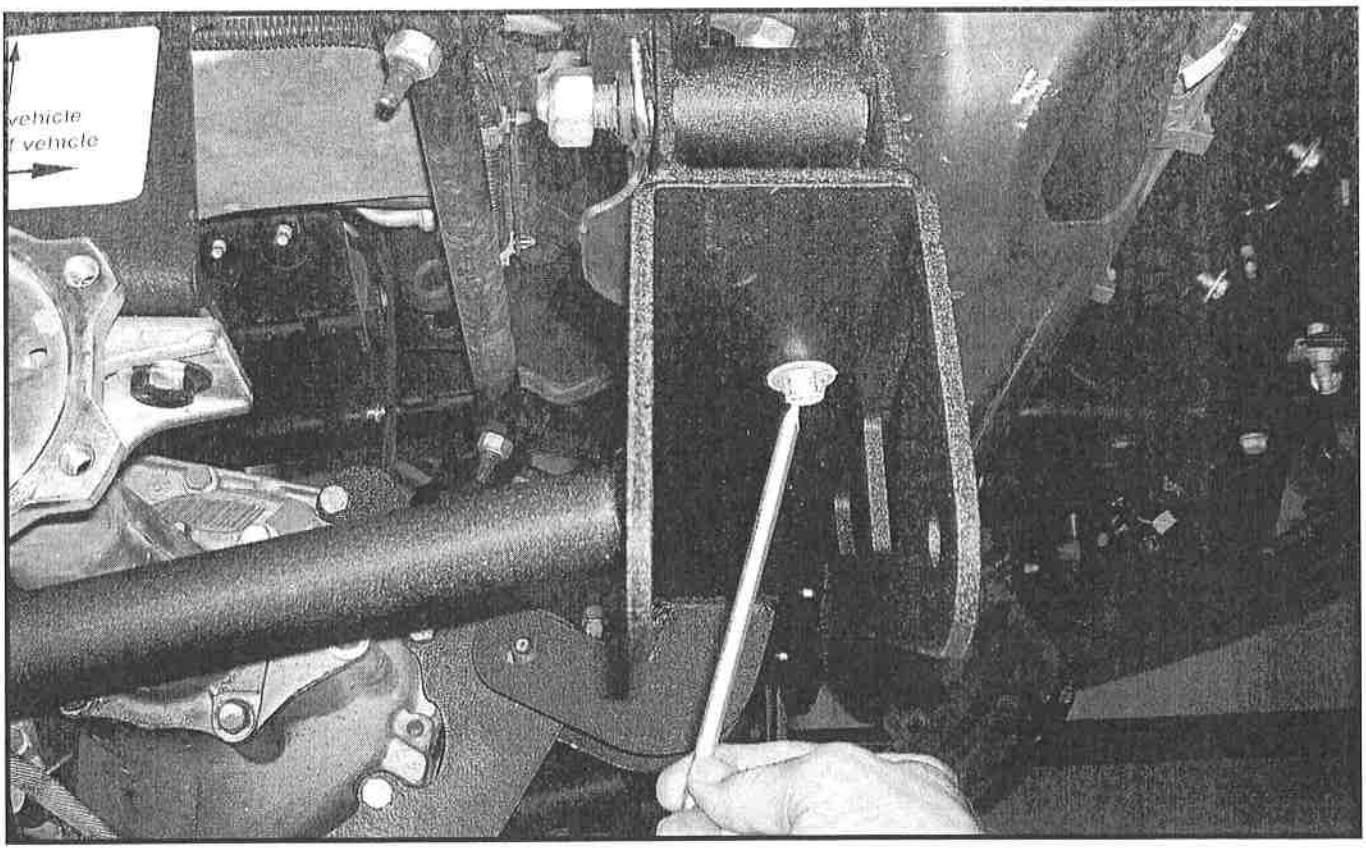


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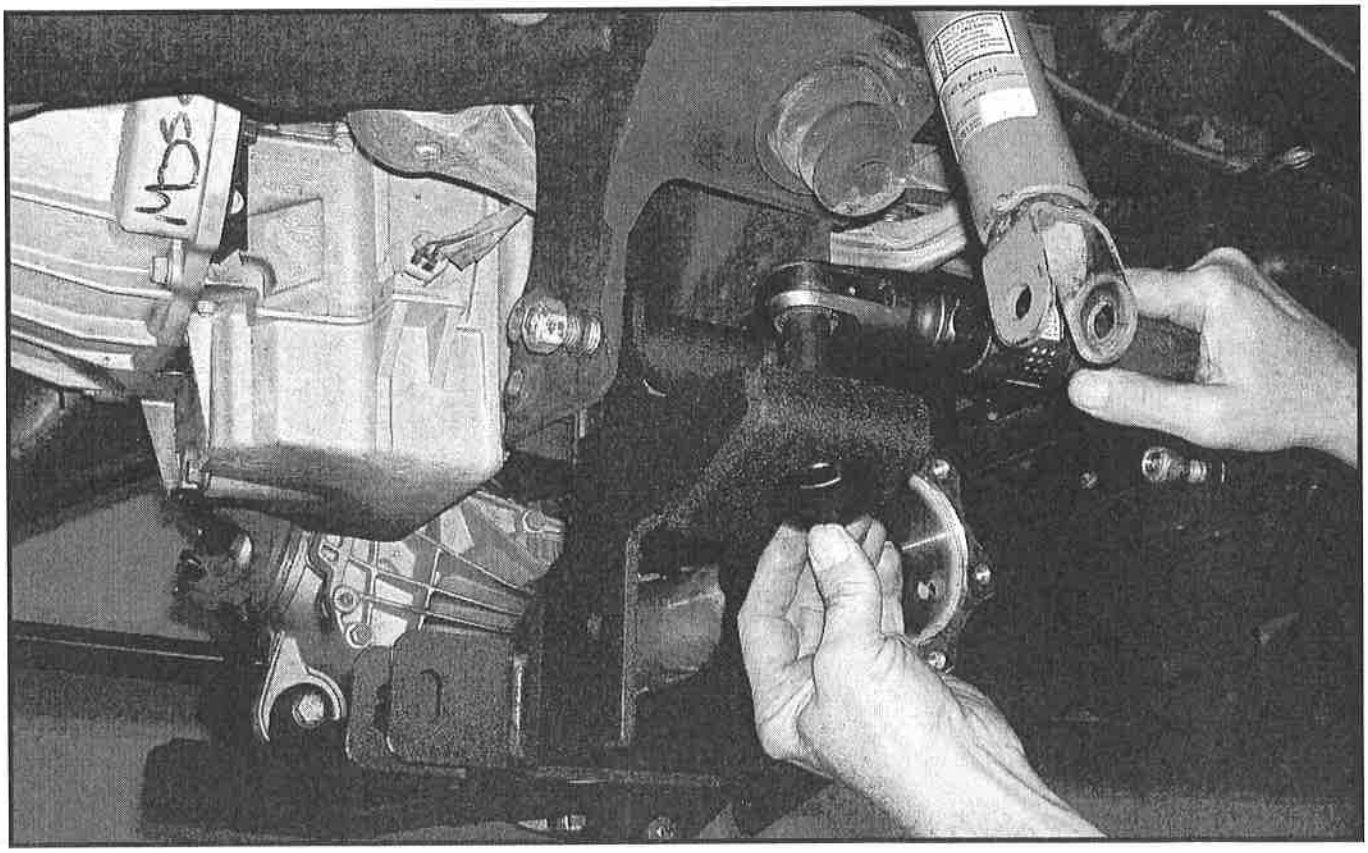

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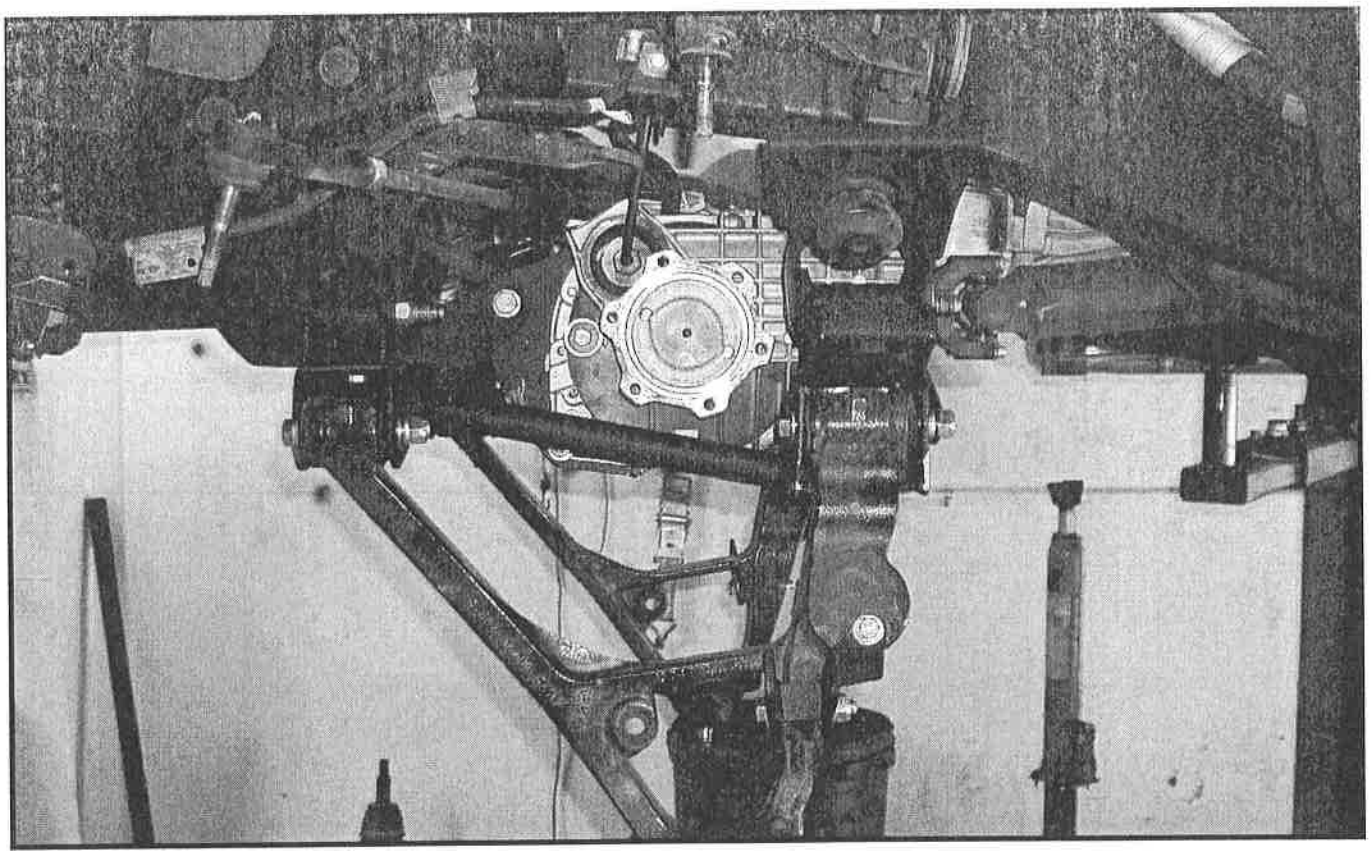

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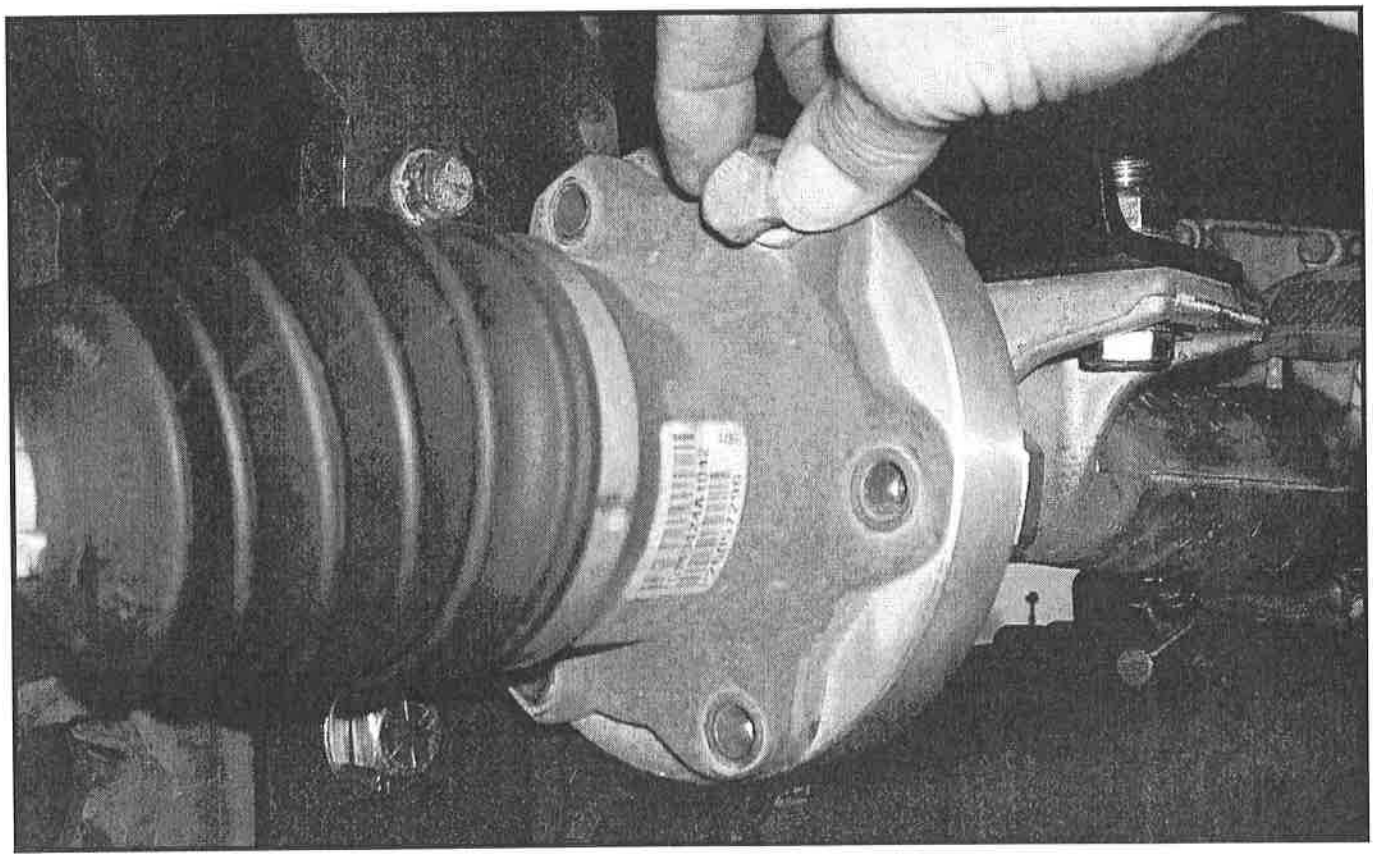

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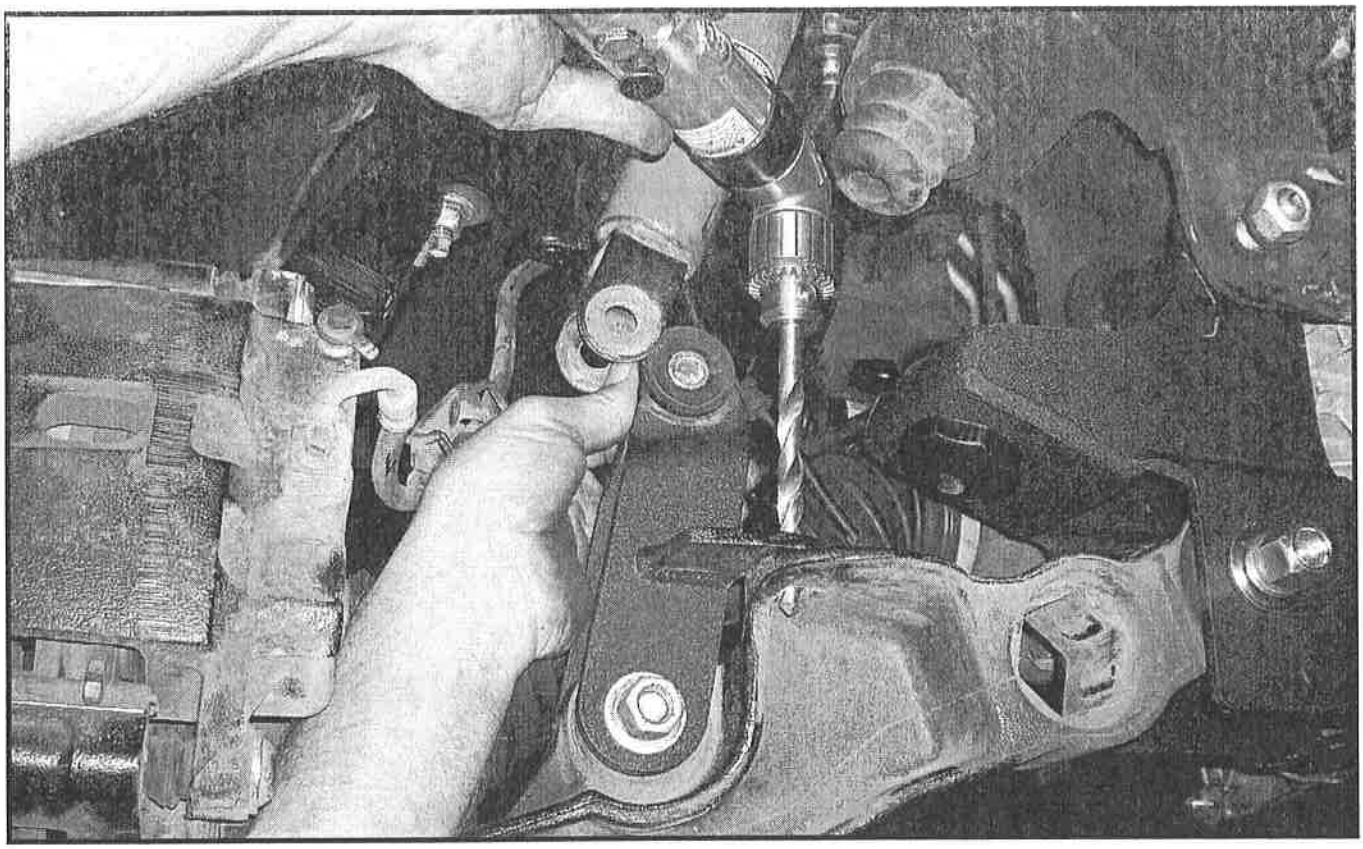

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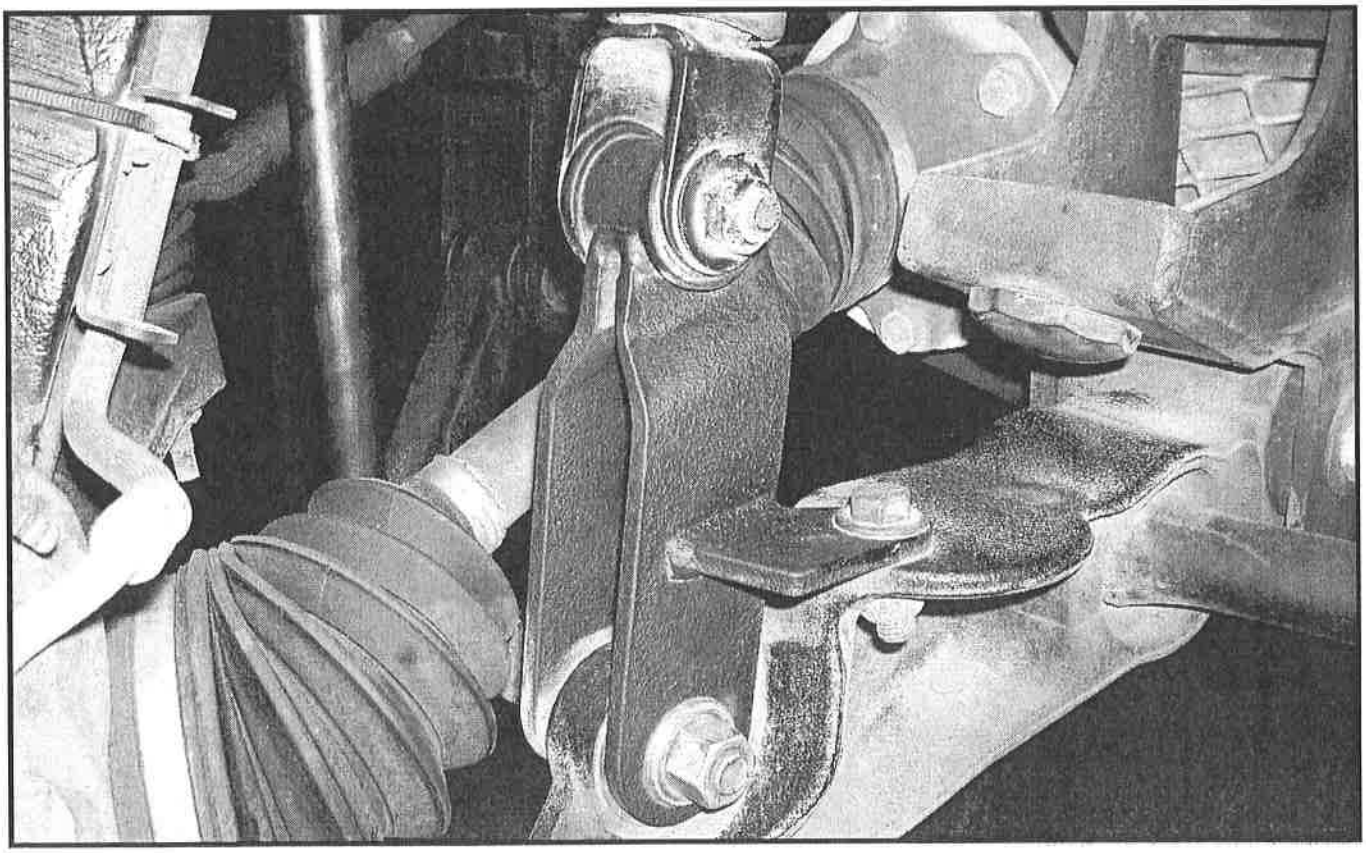

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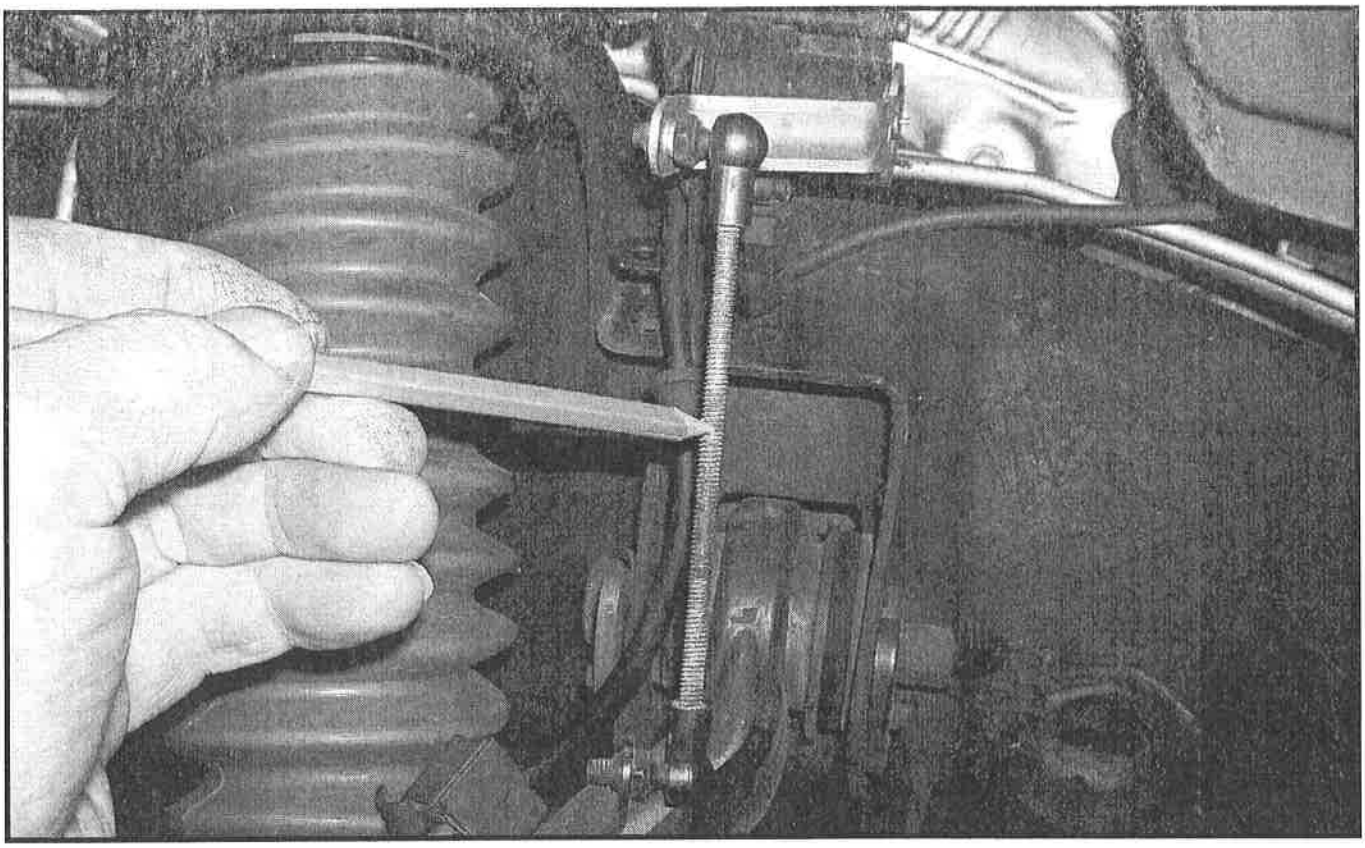

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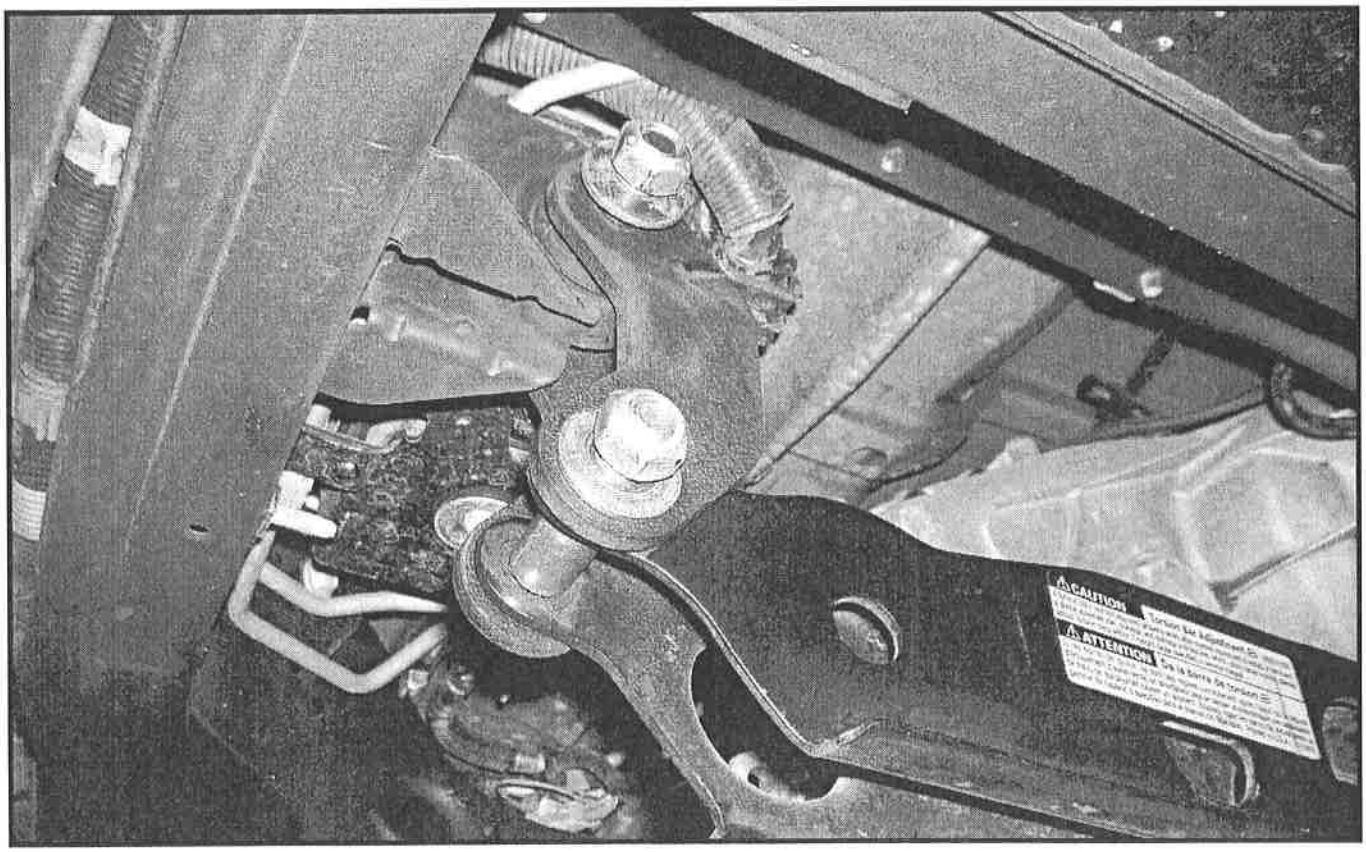


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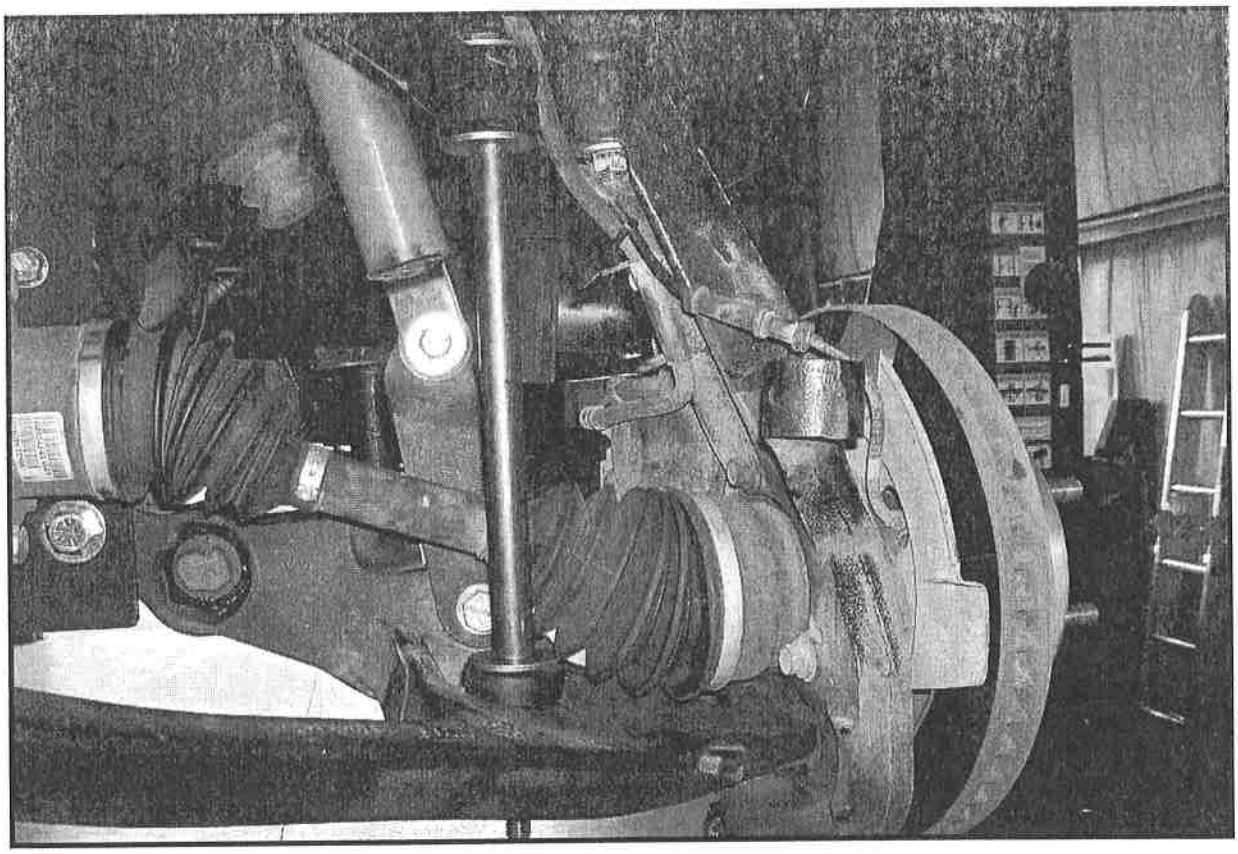

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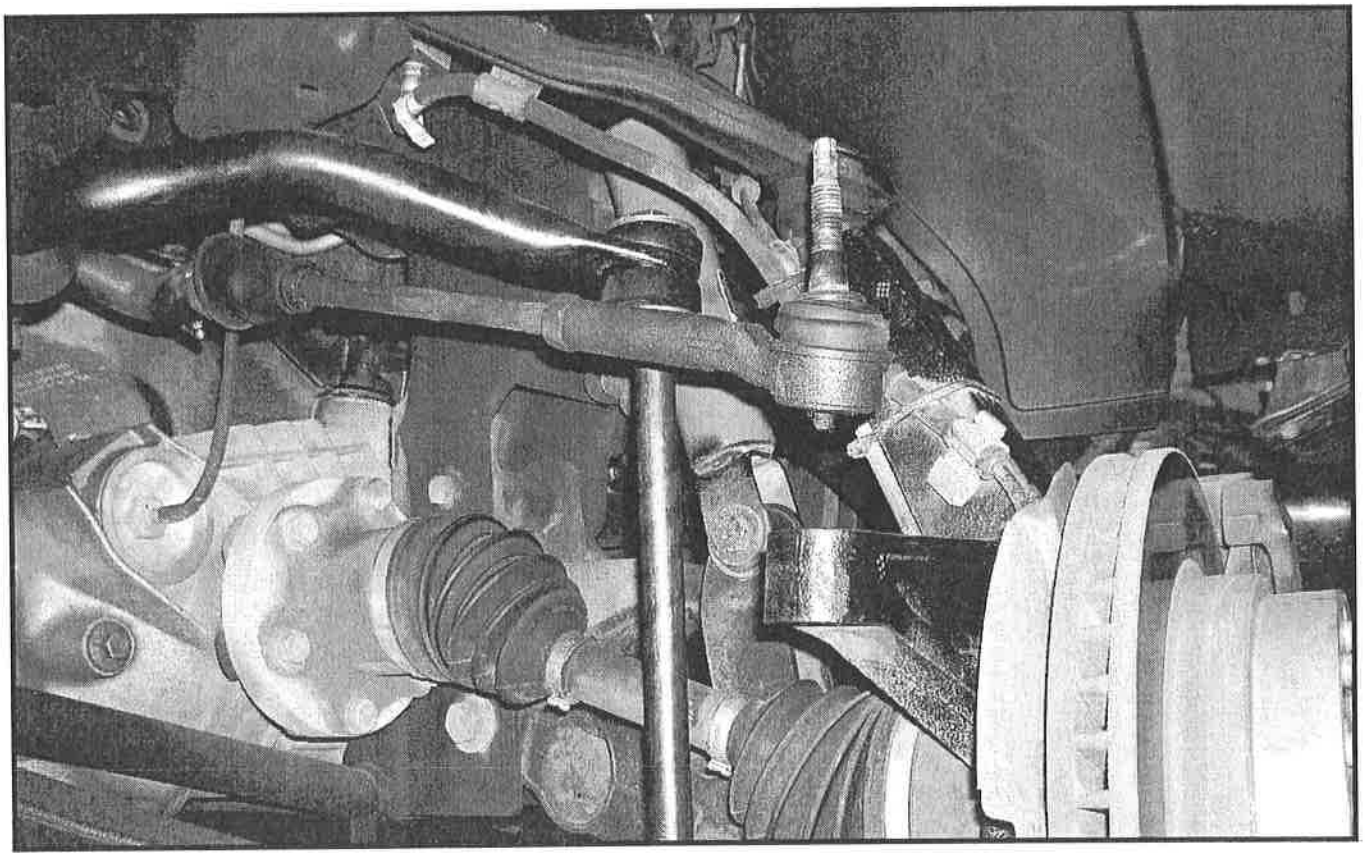

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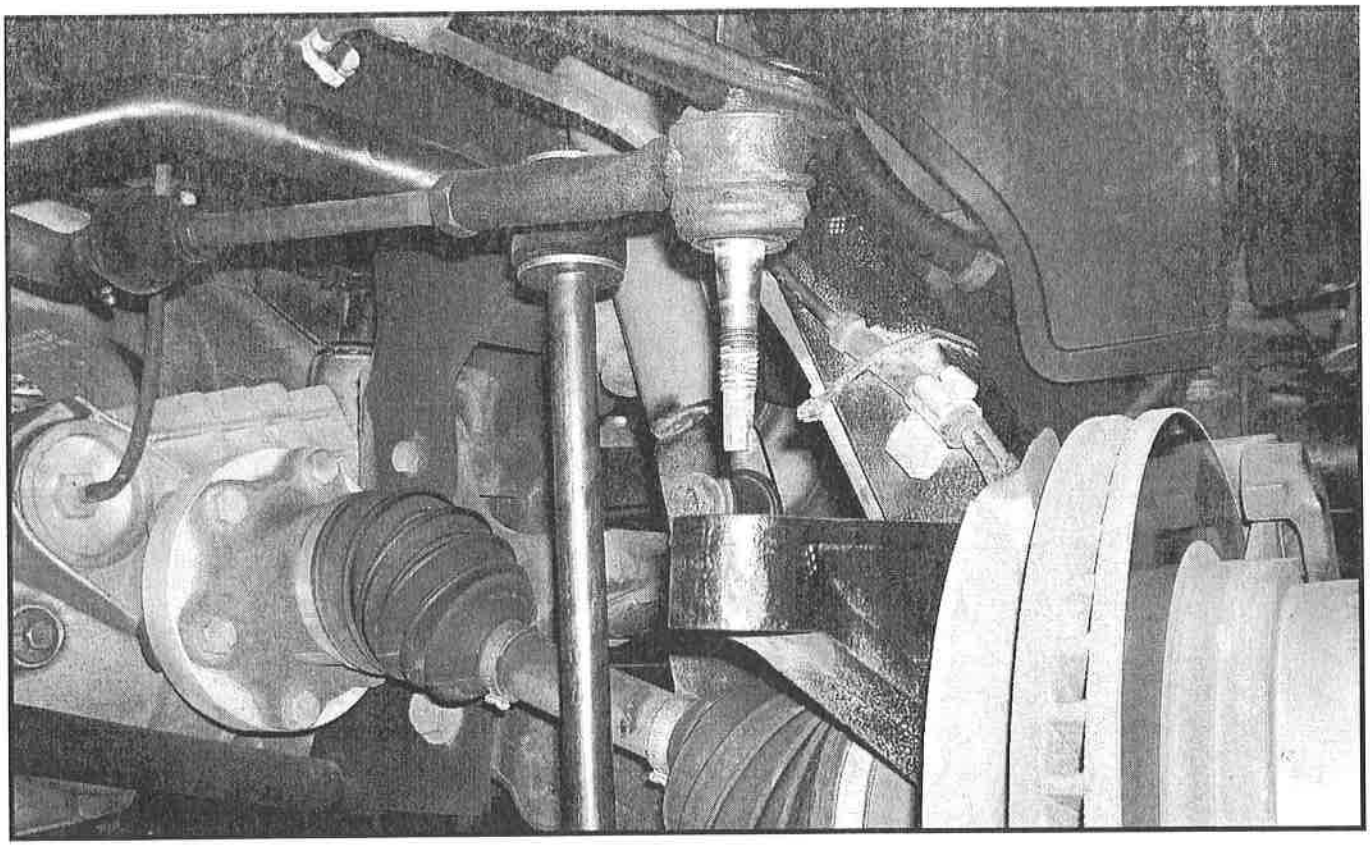

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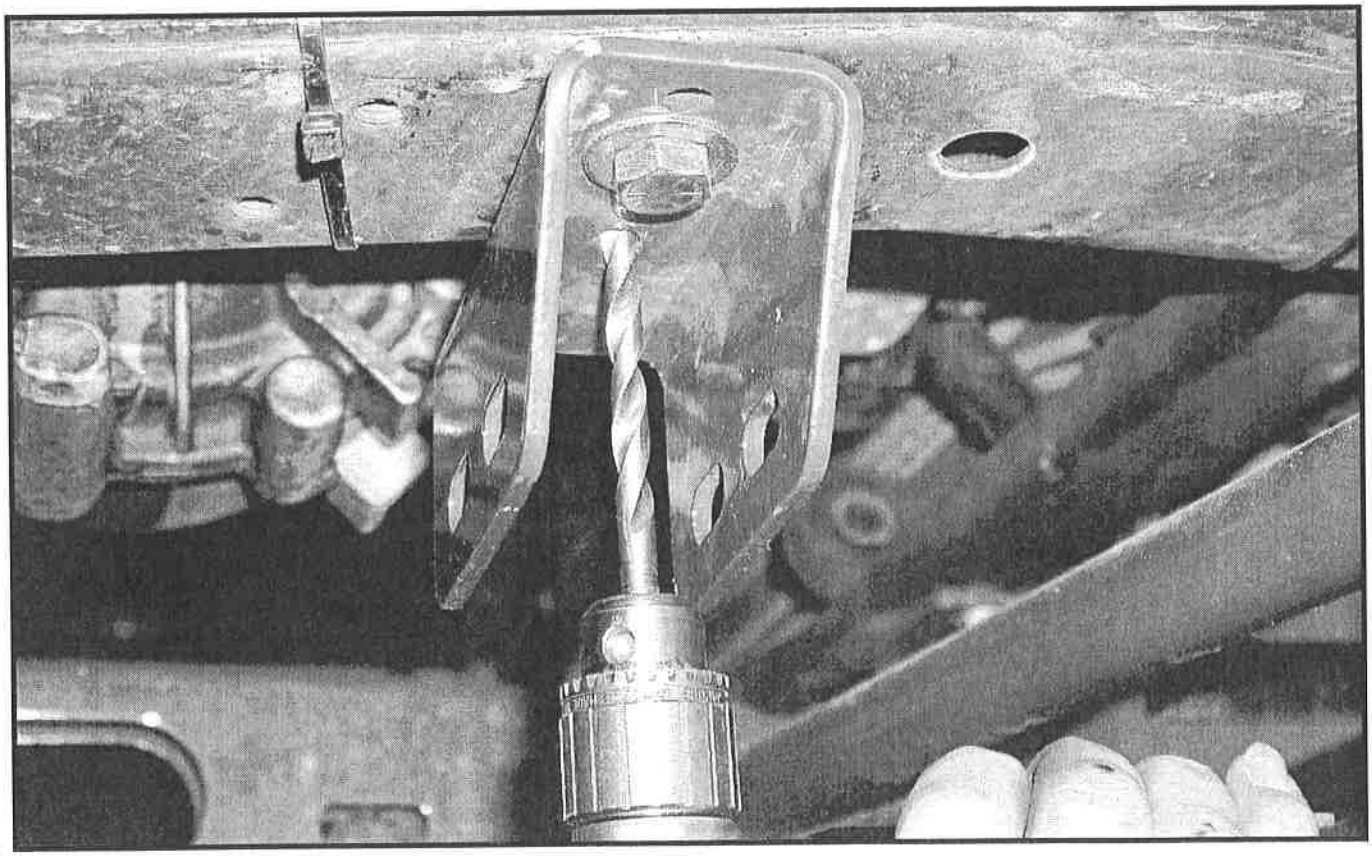

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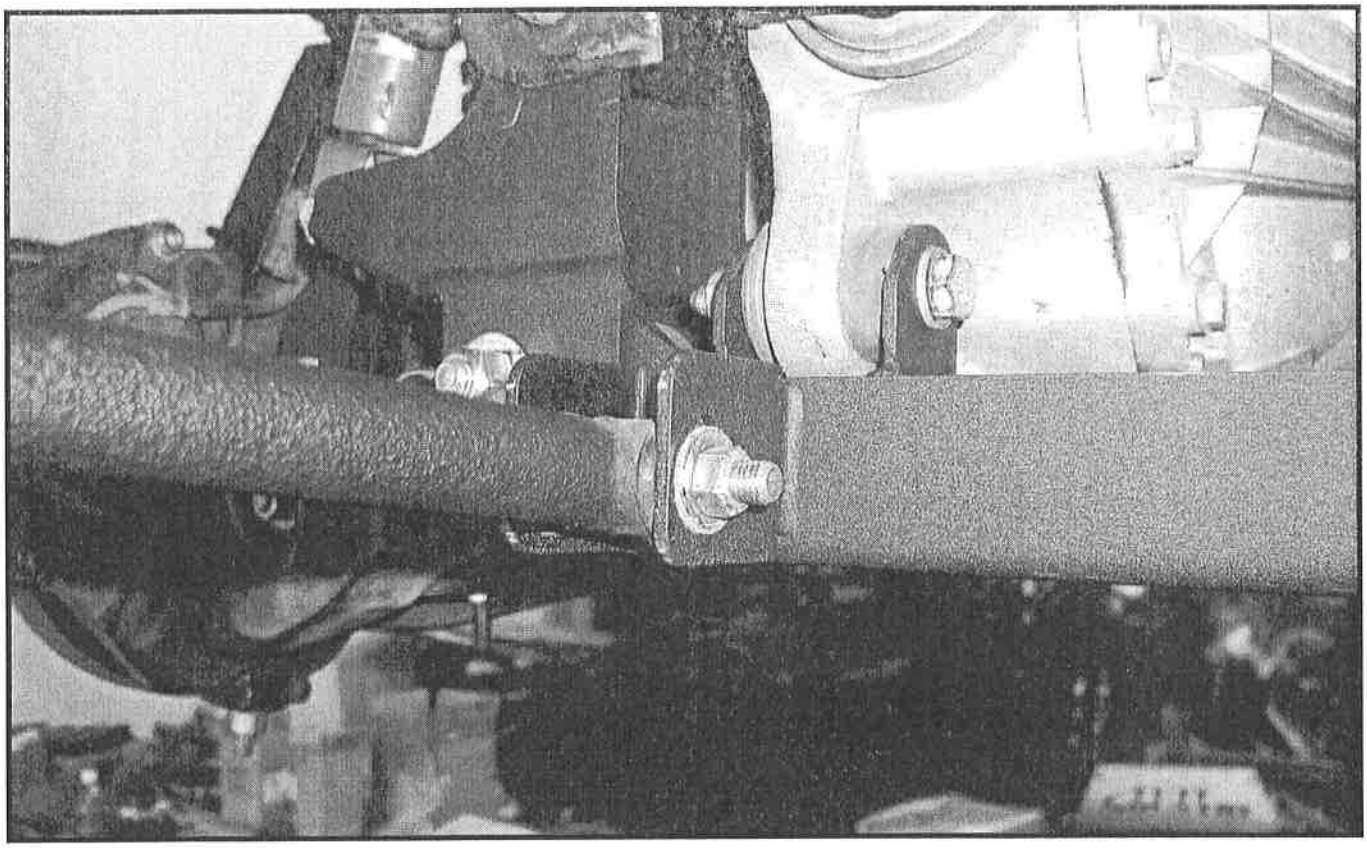

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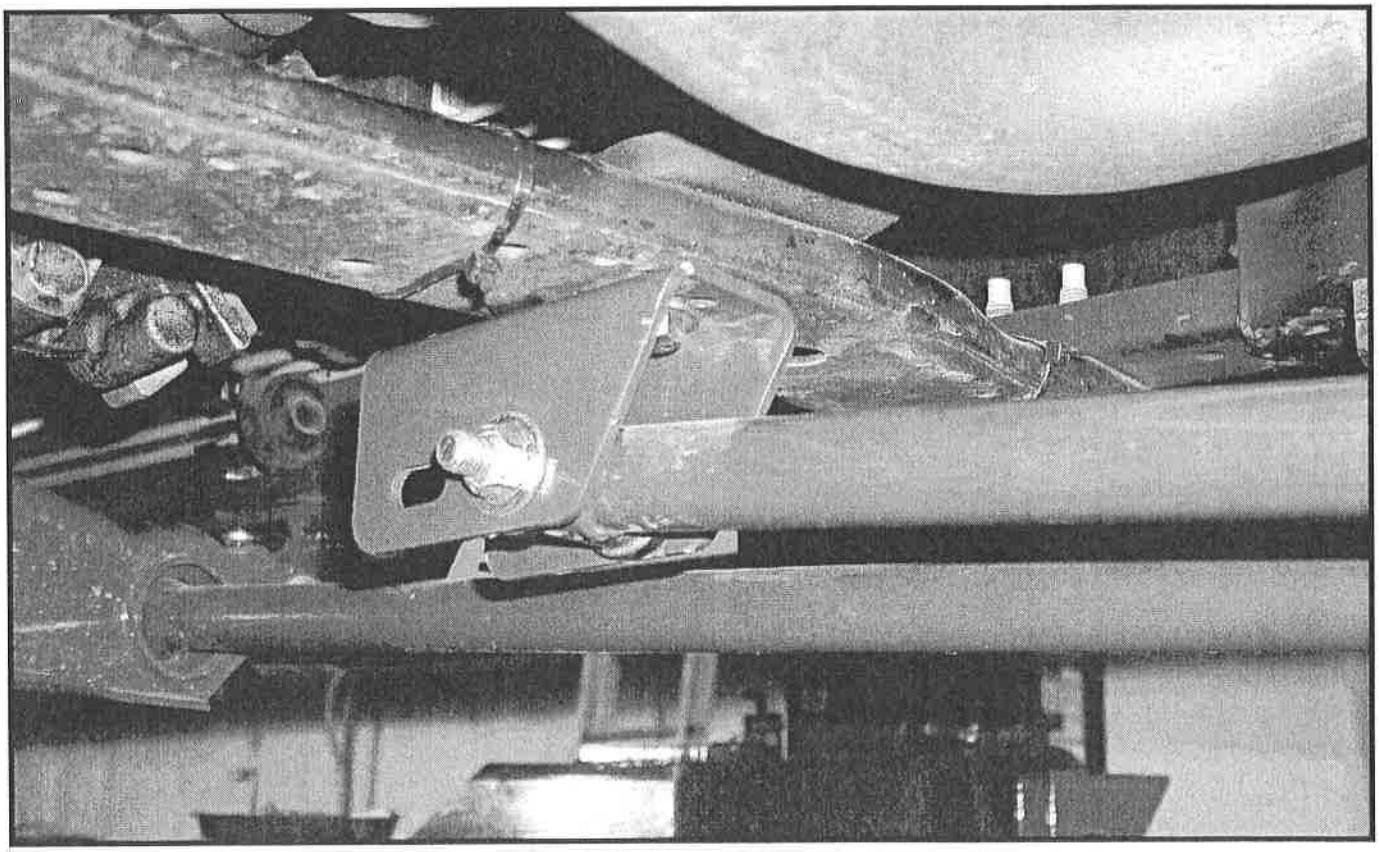

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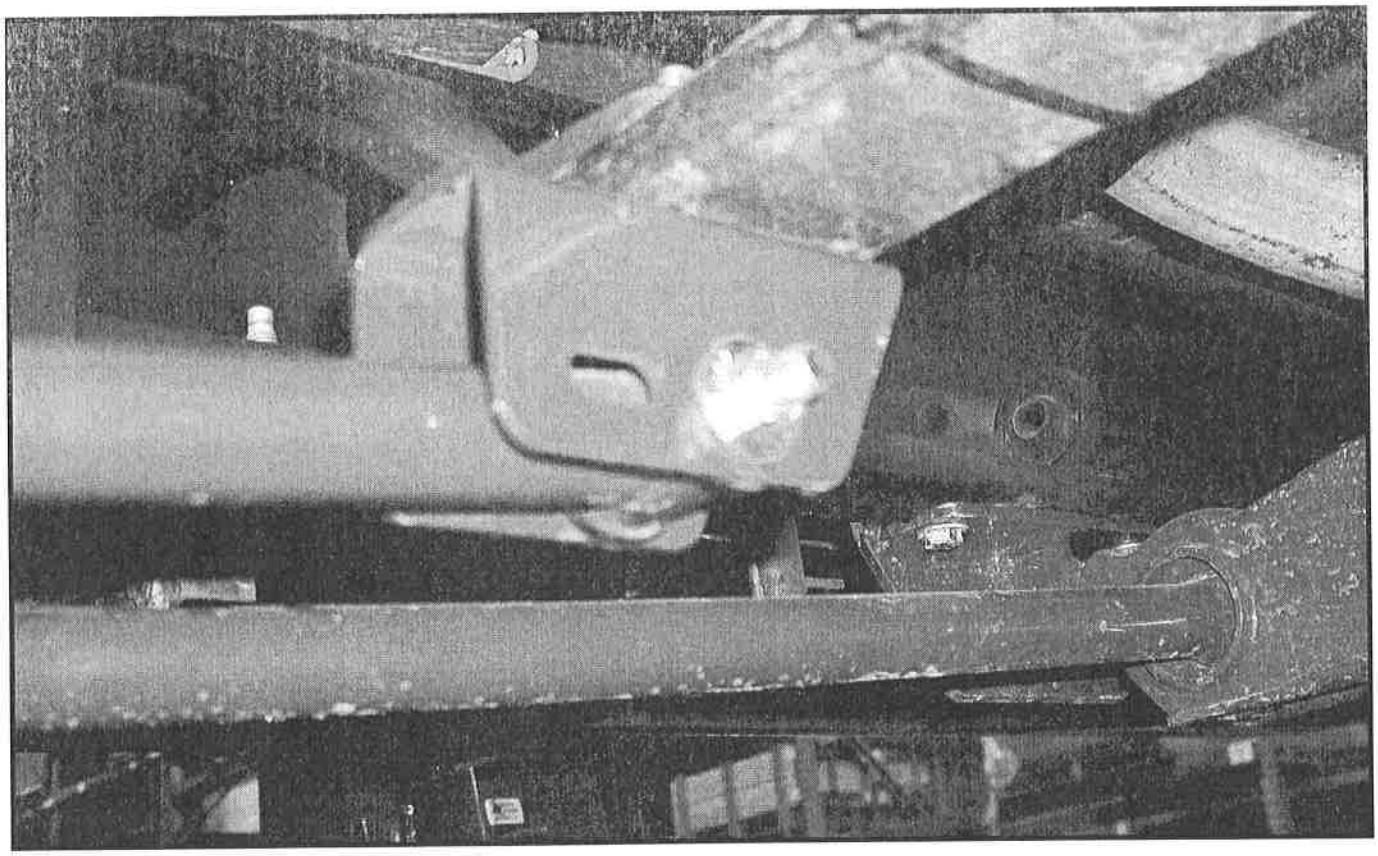

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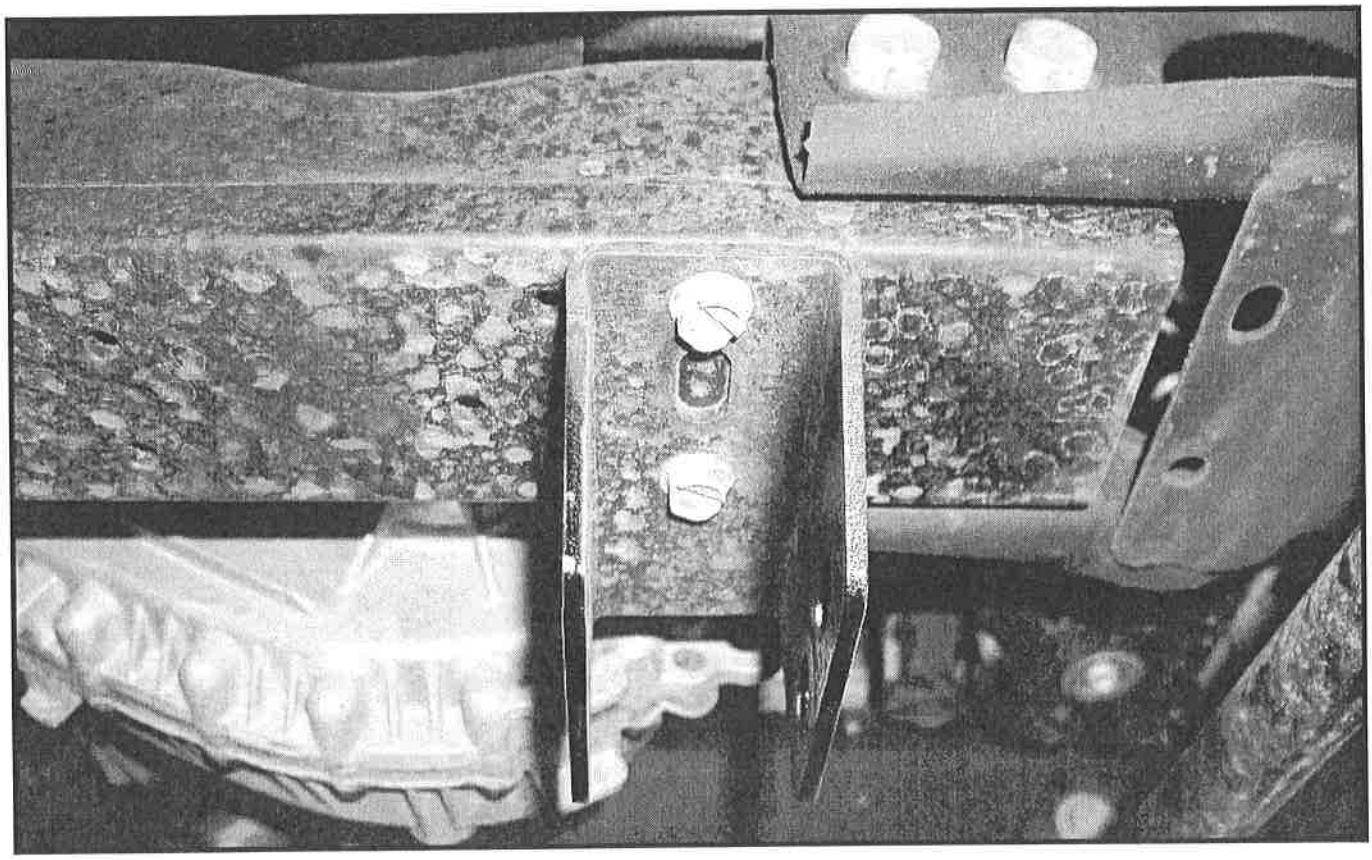

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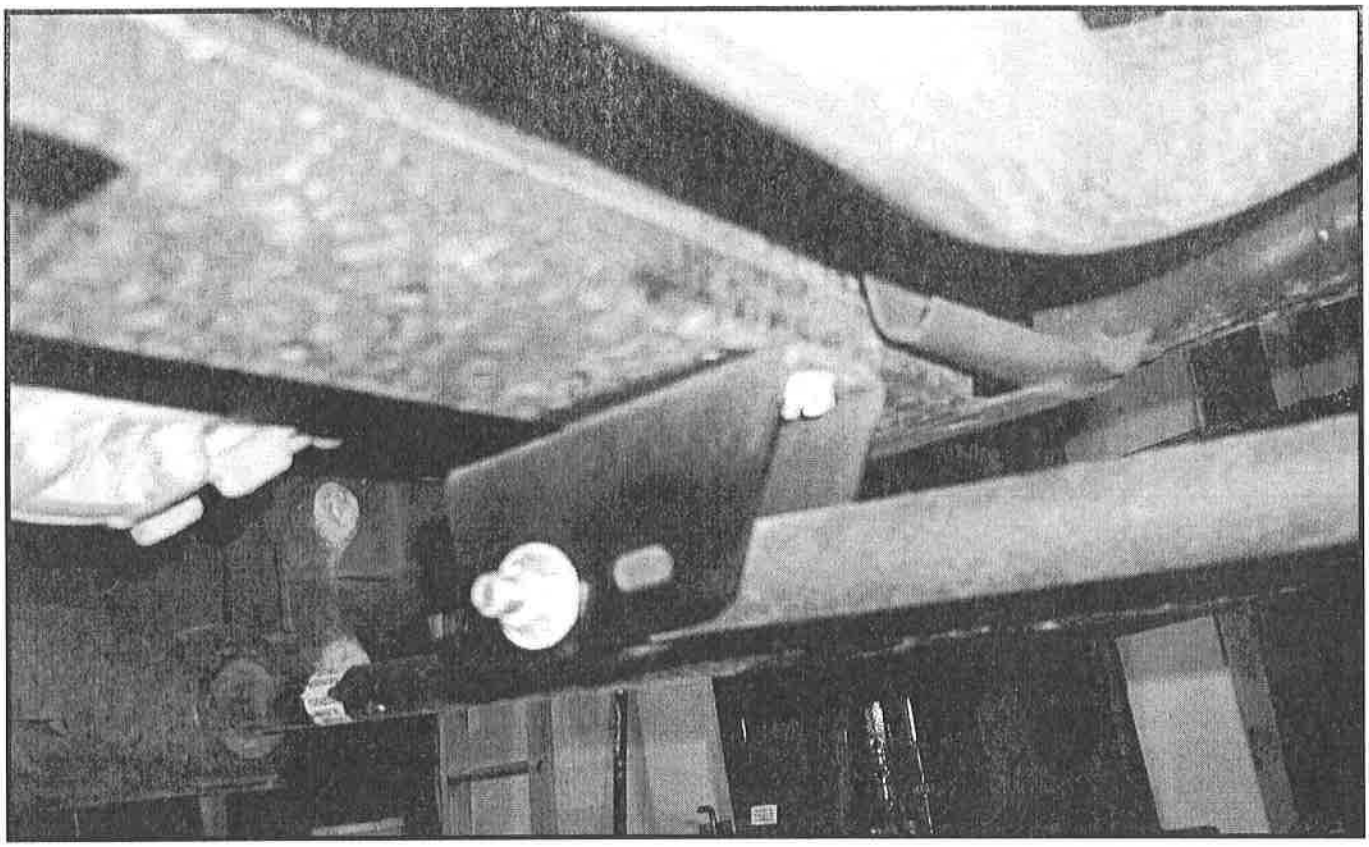

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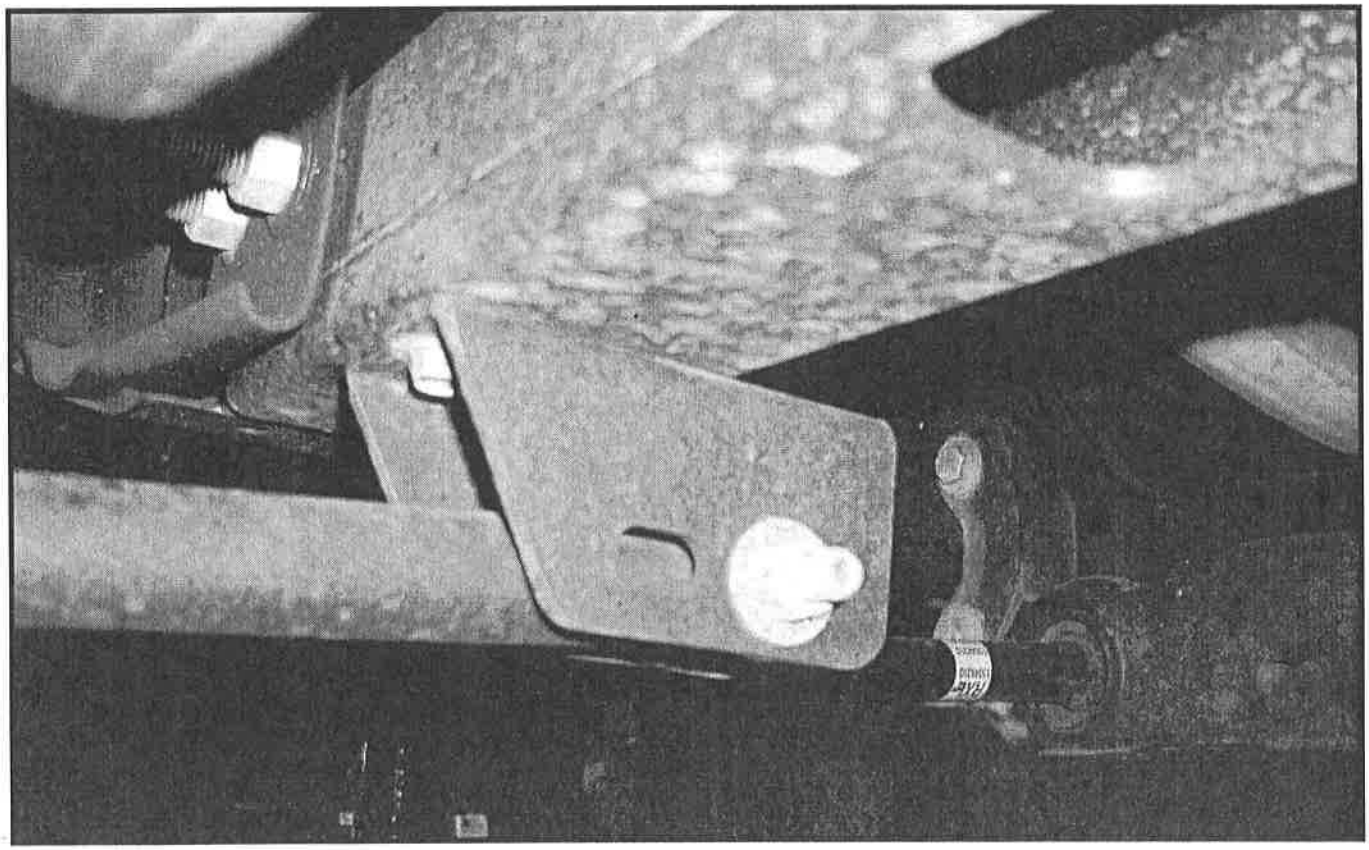

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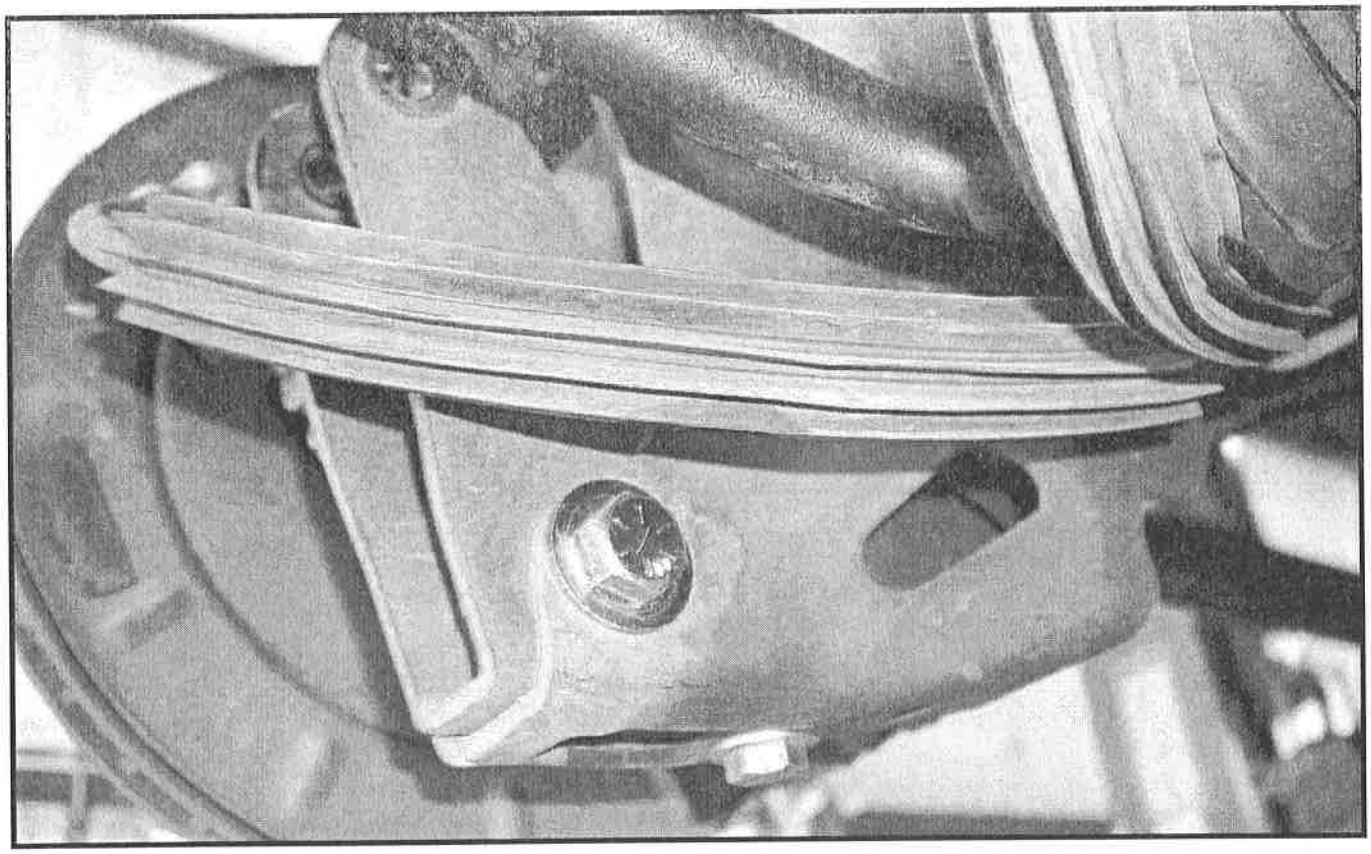

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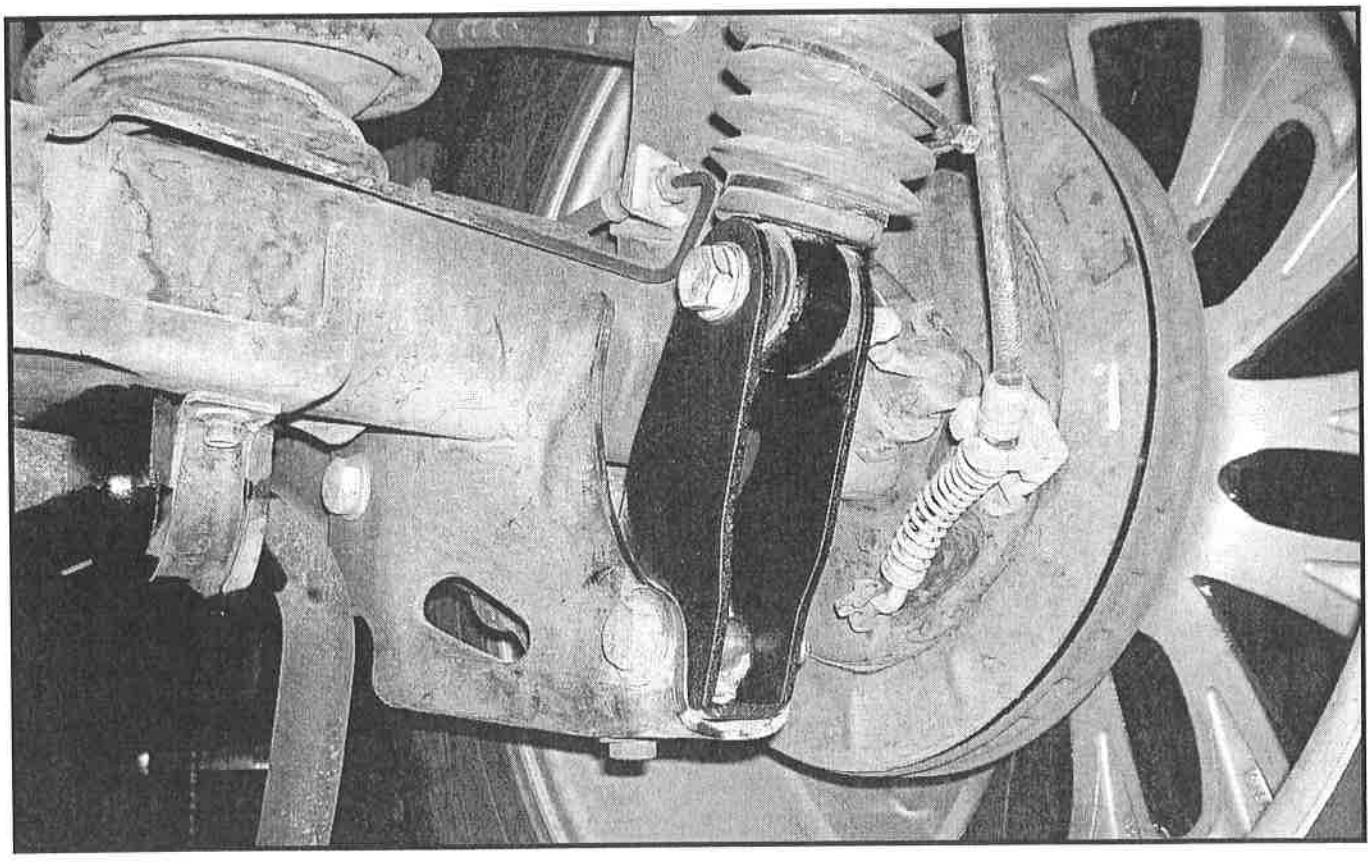

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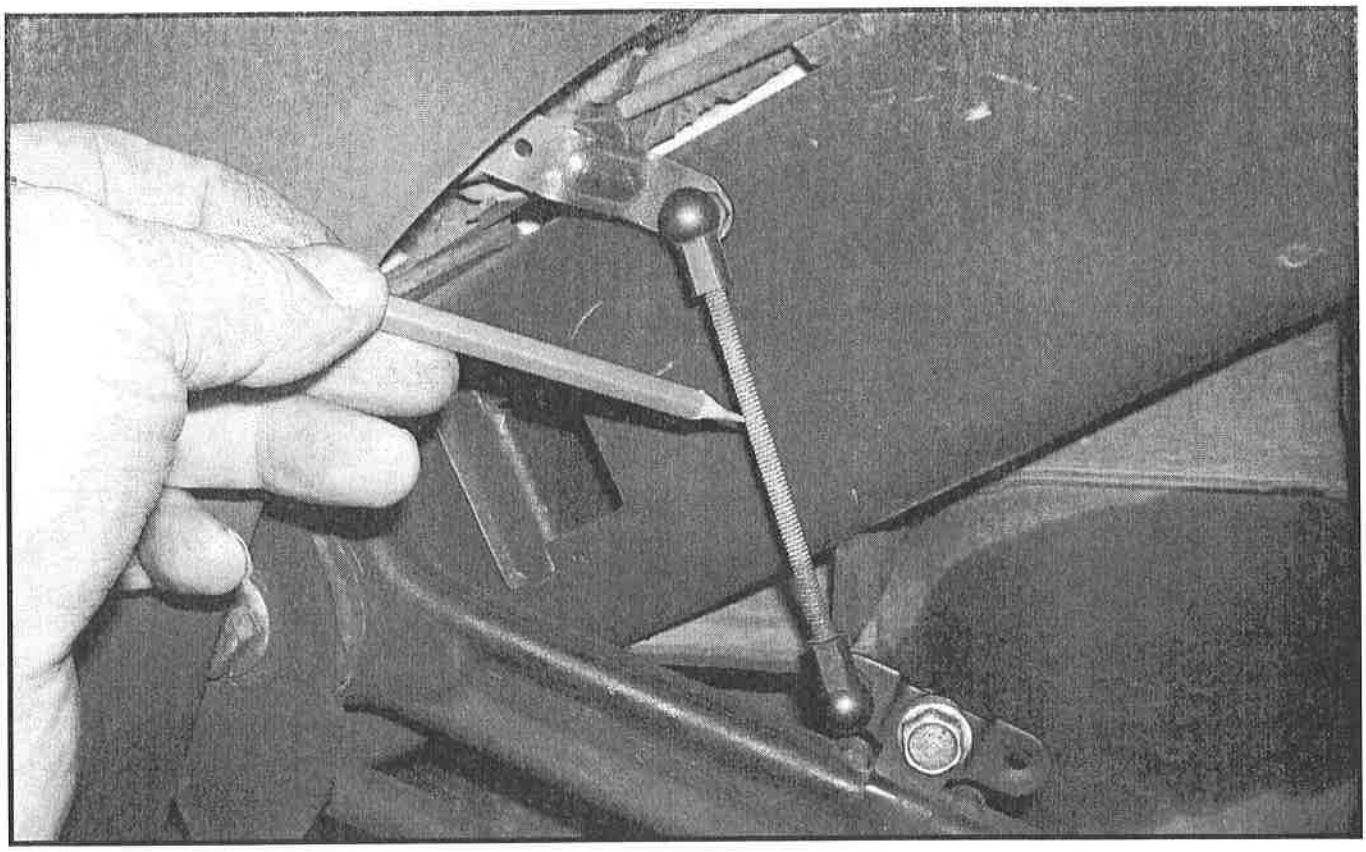

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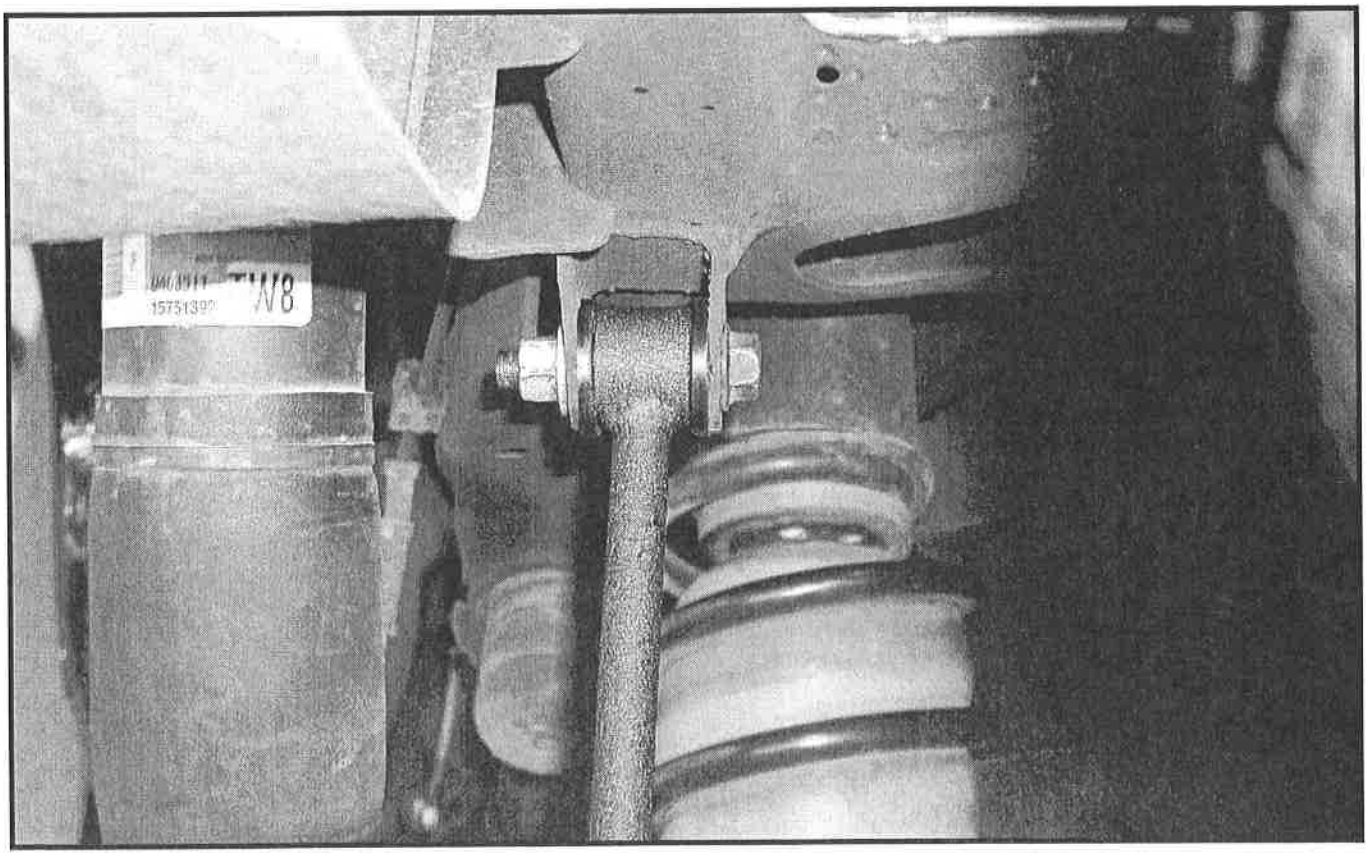

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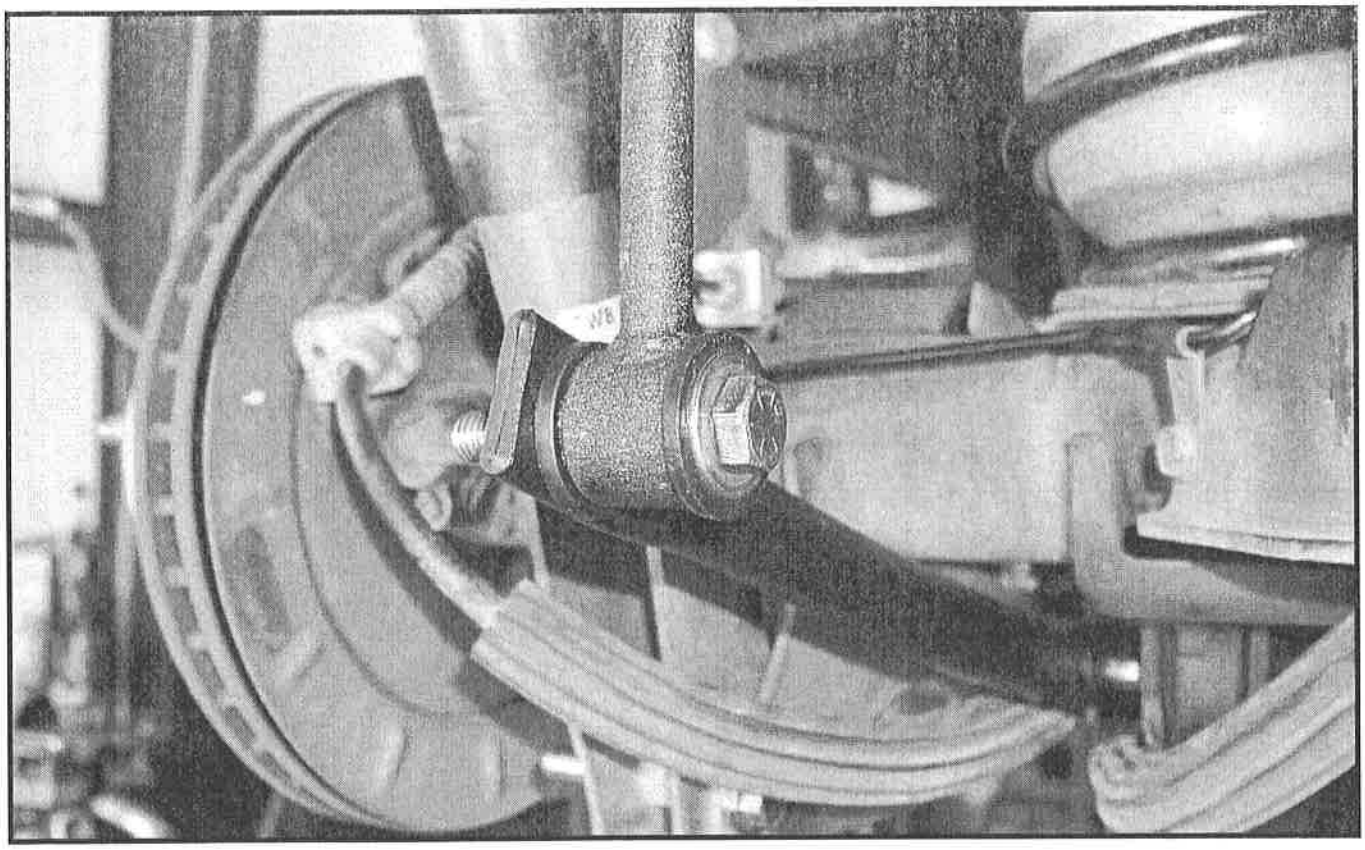

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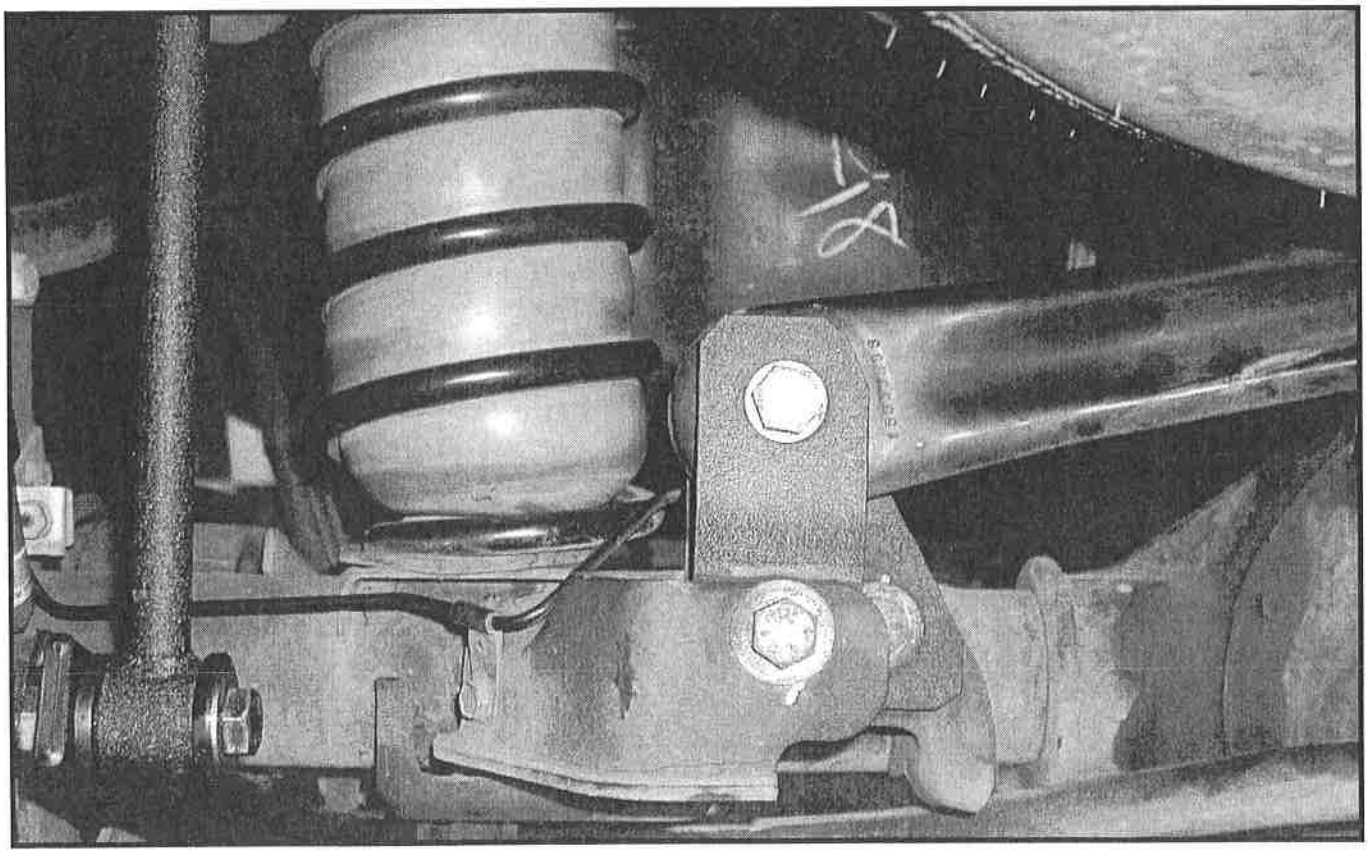

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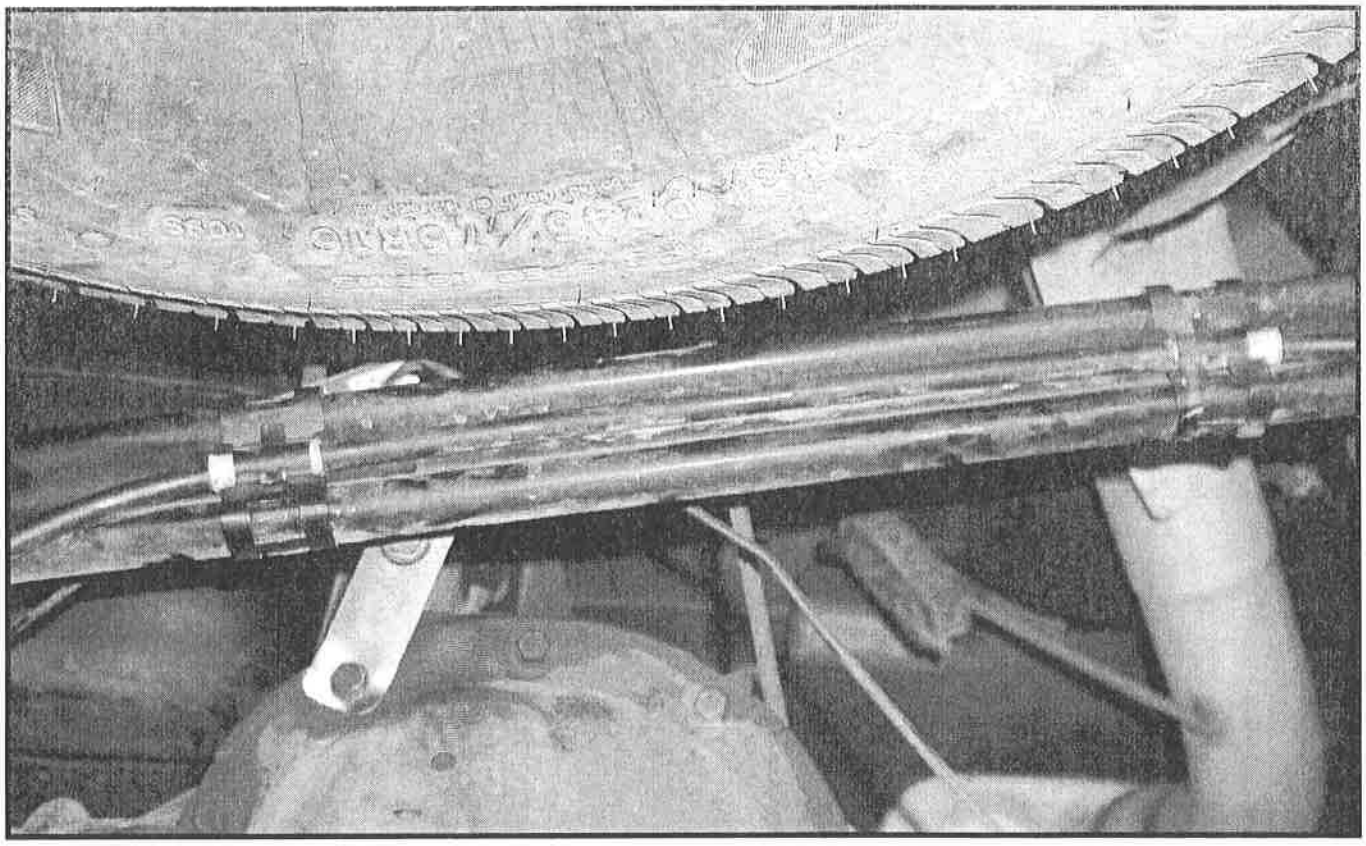

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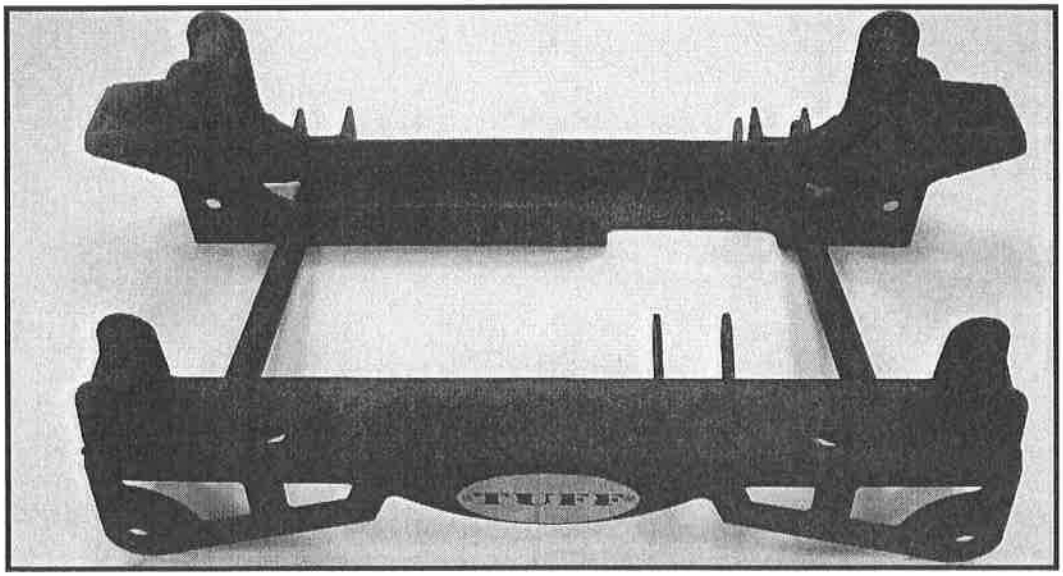

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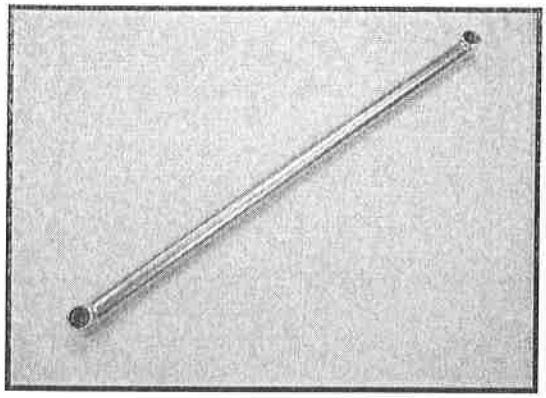
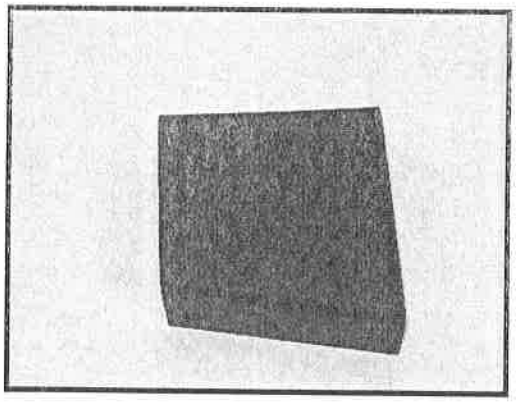
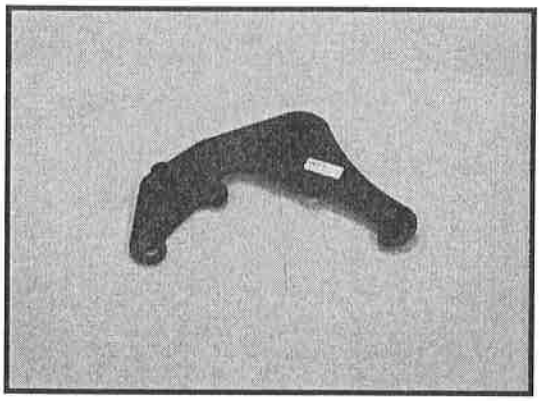
**One piece lower sub frame**



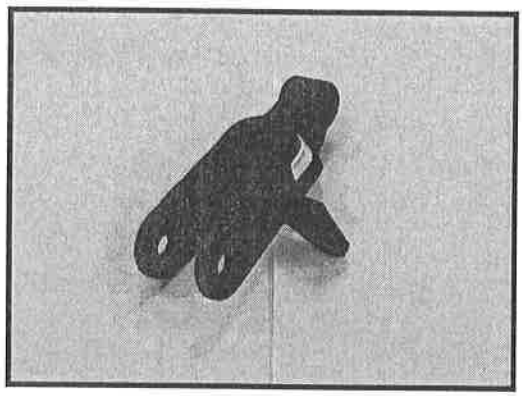
16955-10 (qty. 2)
Lateral compression arms



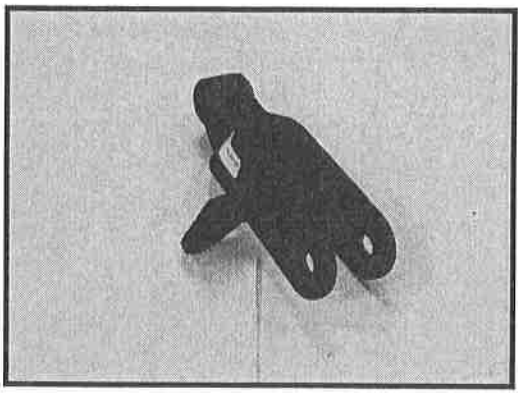
16955-06 (qty. 1)
Passenger side differential relocation bracket



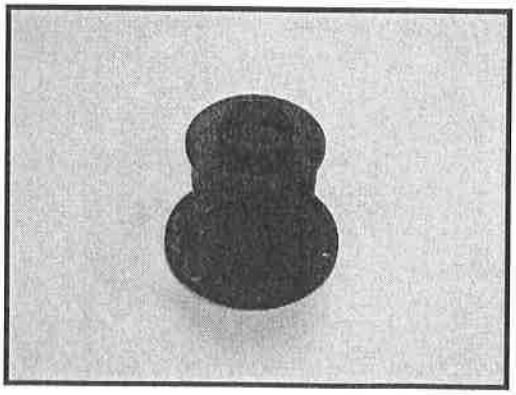
DSDIFF-01 (qty. 1)
Driver side differential relocation bracket



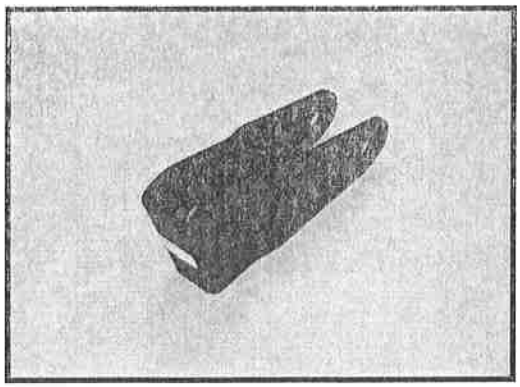
16965-05 (qty. 1)
Driver side front shock relocation bracket



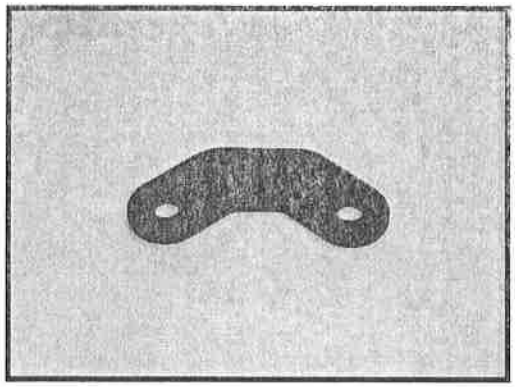
16965-06 (qty. 1)
Passenger side front shock relocation bracket



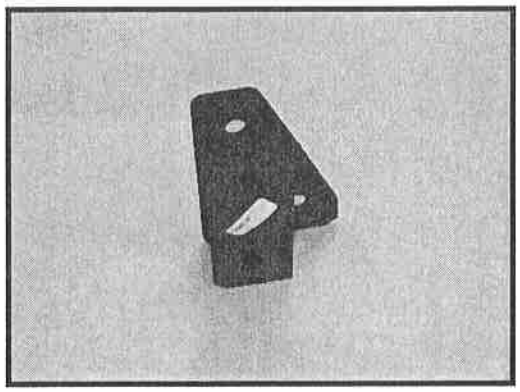
16965-12 (qty. 2)
Rear coil spring spacers



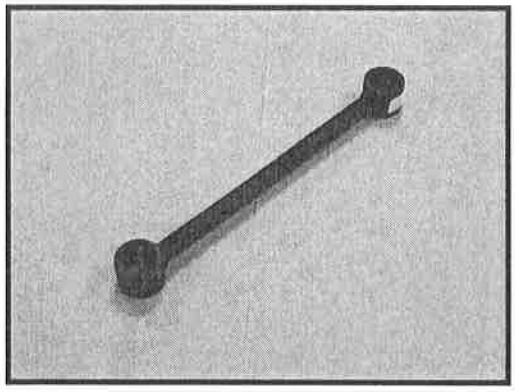
16965-13 (qty. 2)
Driver side & passenger side
rear shock relocation
bracket



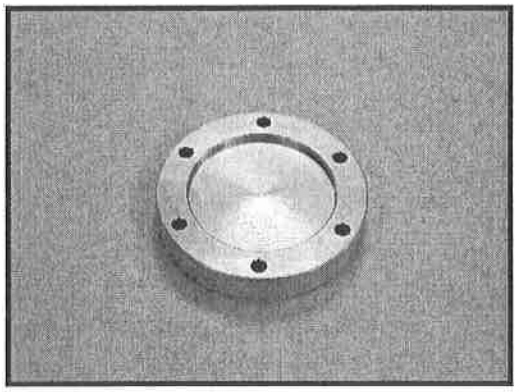
14965-27 (qty. 4)
Driver side & passenger side
torsion bar drop plates



14965-29 (qty. 1)
Rear track bar
relocation bracket



SB-03 (qty. 2)
Rear sway bar end link



9804 (qty. 2)
1" axle spacers