

## 2007 Hummer H3

2007 SUSPENSION Rear Suspension - H3

### 2007 SUSPENSION

#### Rear Suspension - H3

## SPECIFICATIONS

### FASTENER TIGHTENING SPECIFICATIONS

#### Fastener Tightening Specifications

Application	Specification	
	Metric	English
Leaf Spring to Front Bracket Nut	125 N.m	92 lb ft
Leaf Spring U-Bolt Nuts	76 N.m	56 lb ft
Spring Shackle to Frame Nut	85 N.m	63 lb ft
Spring Shackle to Leaf Spring Nut	85 N.m	63 lb ft
Shock Absorber Lower Bolt	95 N.m	70 lb ft
Shock Absorber Upper Bolts	35 N.m	26 lb ft
Stabilizer Bar Lower Link Nut	80 N.m	59 lb ft
Stabilizer Bar Upper Link to Frame Nut	80 N.m	59 lb ft
Stabilizer Clamp Bolts	50 N.m	37 lb ft

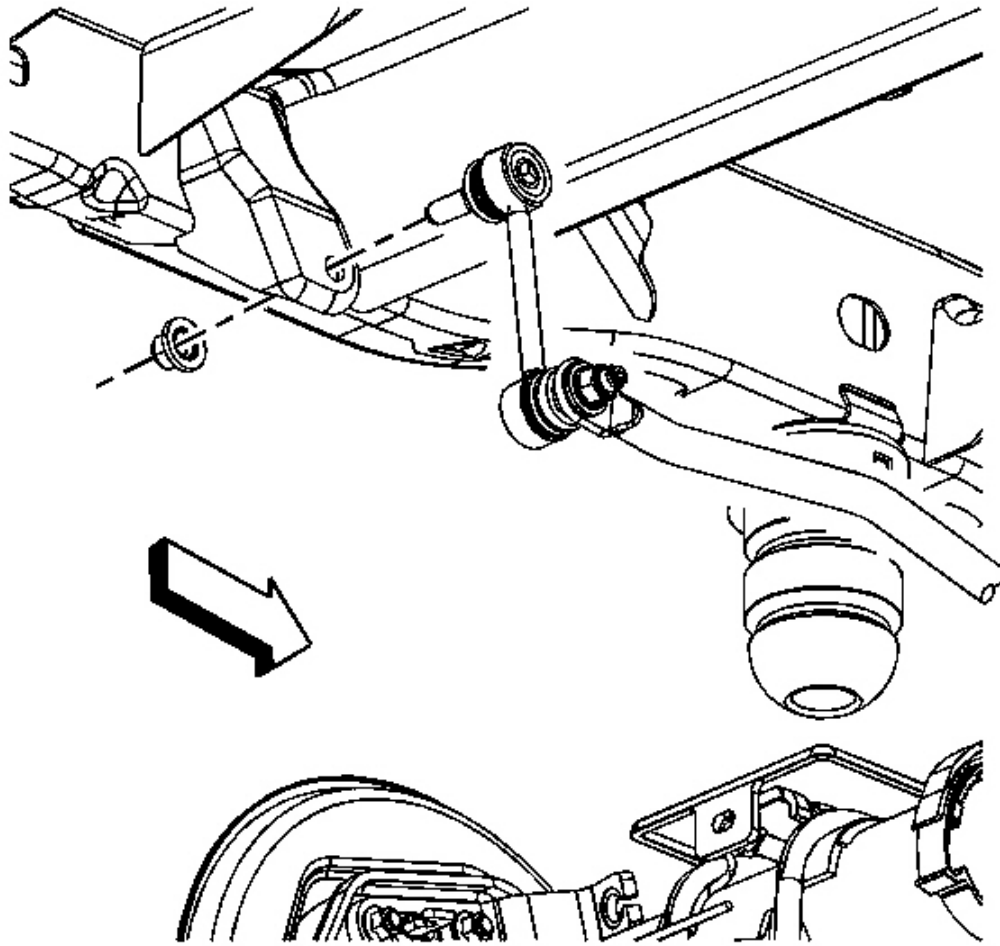
## REPAIR INSTRUCTIONS

### STABILIZER SHAFT REPLACEMENT

#### Removal Procedure

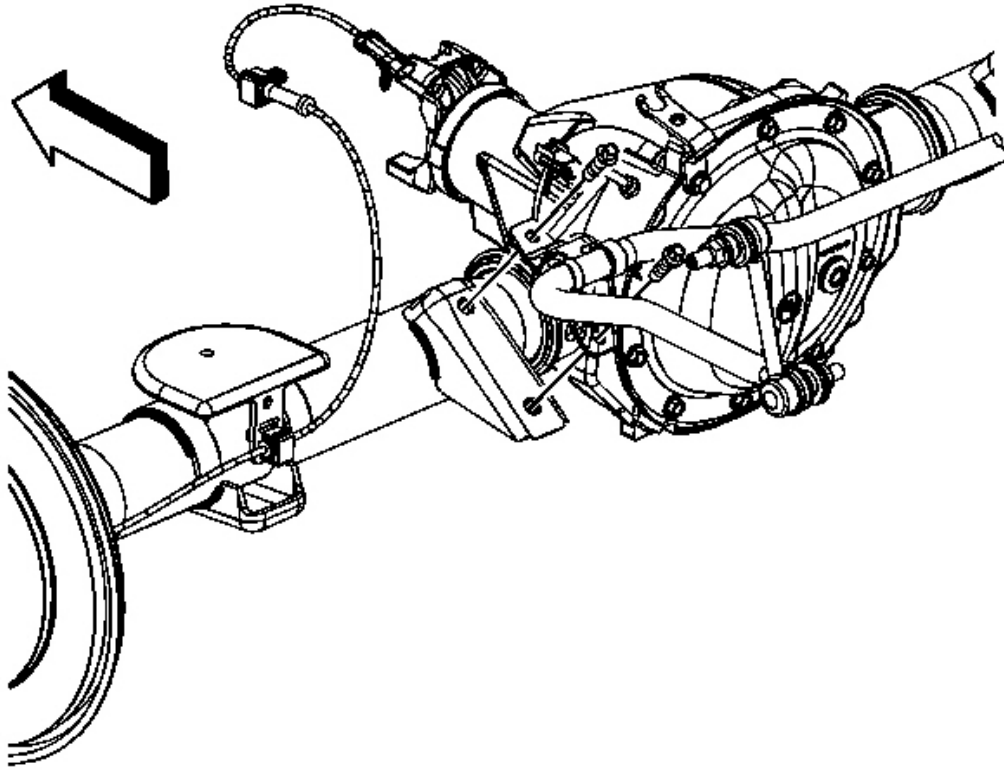
1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle .
2. Support the rear axle at curb height.

**IMPORTANT:** Do not attempt to hold the stabilizer shaft link near the boot. Use the hex feature on the end of the stud. Failure to do so could damage the boot.



**Fig. 1: Removing/Installing Stabilizer Shaft-To-Link Nut**  
Courtesy of GENERAL MOTORS CORP.

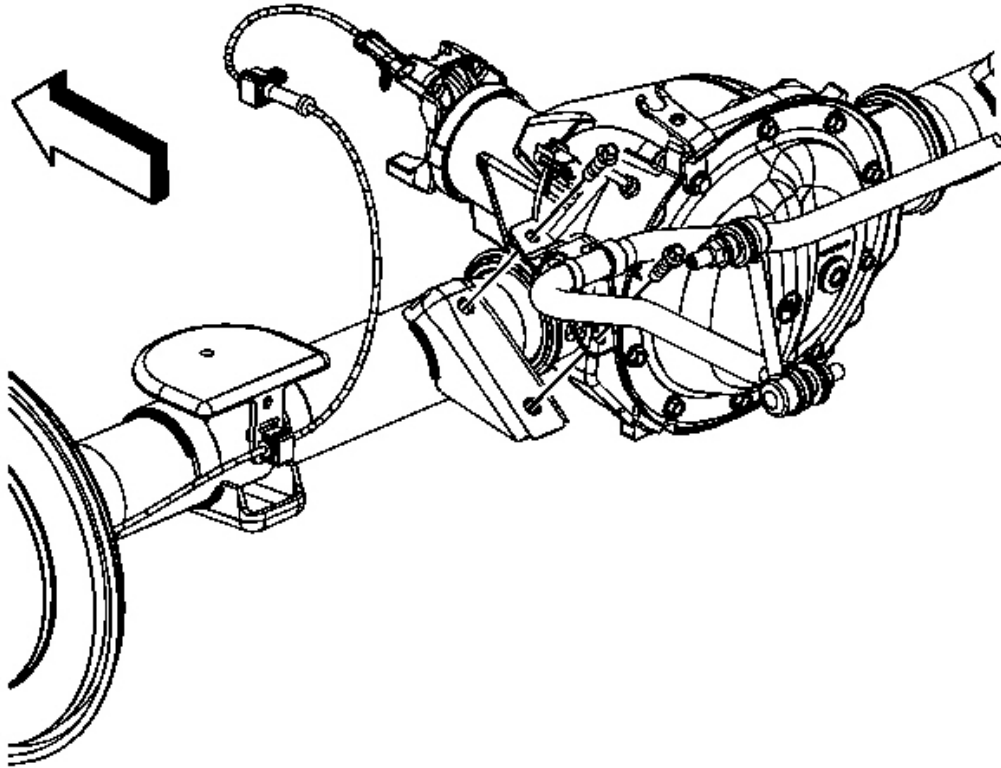
3. Remove the stabilizer shaft to link nut.



**Fig. 2: Stabilizer Shaft Insulator Bracket Mounting Bolts**  
Courtesy of GENERAL MOTORS CORP.

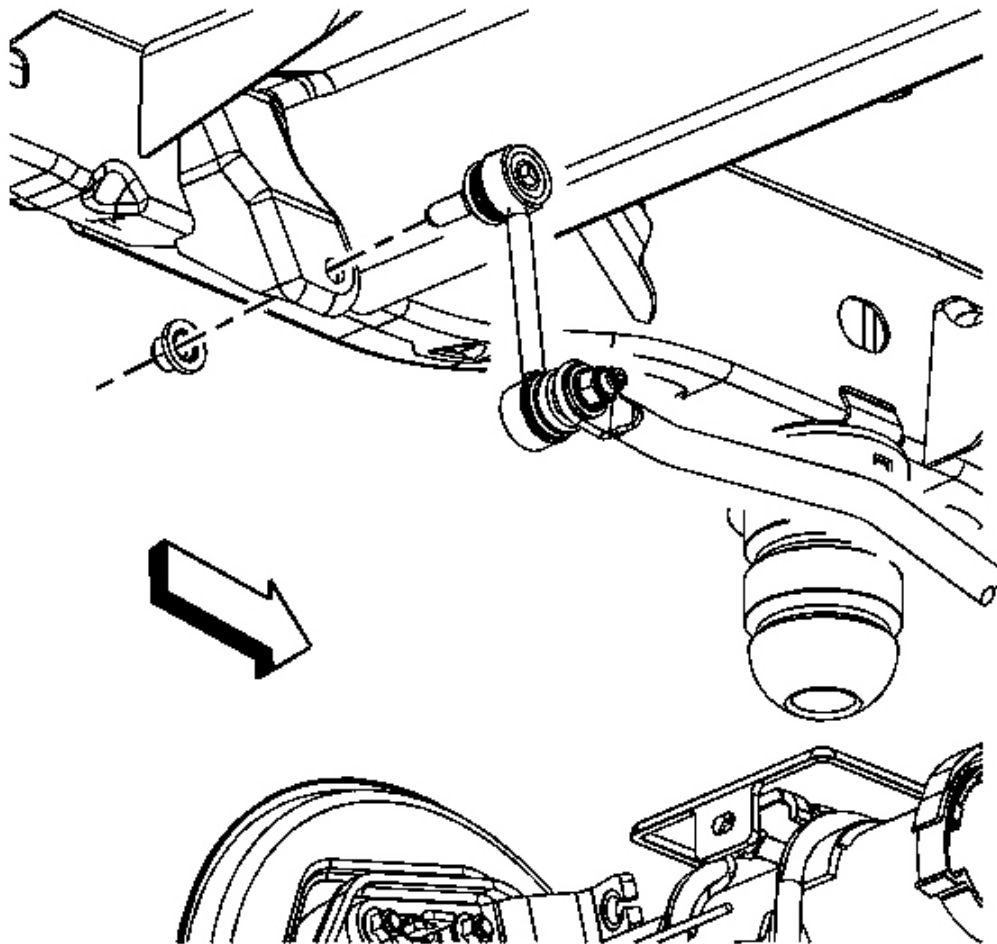
4. Remove the stabilizer shaft insulator bracket mounting bolts.
5. Remove the stabilizer shaft.
6. Remove the stabilizer shaft insulator brackets.
7. Remove the stabilizer shaft insulators.

**Installation Procedure**



**Fig. 3: Stabilizer Shaft Insulator Bracket Mounting Bolts**  
Courtesy of GENERAL MOTORS CORP.

1. Install the stabilizer shaft insulators to the stabilizer shaft.
2. Install the stabilizer shaft.
3. Install the stabilizer shaft insulator brackets to the rear axle.
4. Install the stabilizer shaft bracket mounting bolts.



**Fig. 4: Removing/Installing Stabilizer Shaft-To-Link Nut**  
Courtesy of GENERAL MOTORS CORP.

**NOTE:** Refer to Fastener Notice .

**IMPORTANT:** Do not attempt to hold the stabilizer shaft link near the boot.  
Use the hex feature on the end of the stud. Failure to do so  
could damage the boot.

5. Install the stabilizer shaft to link nut.

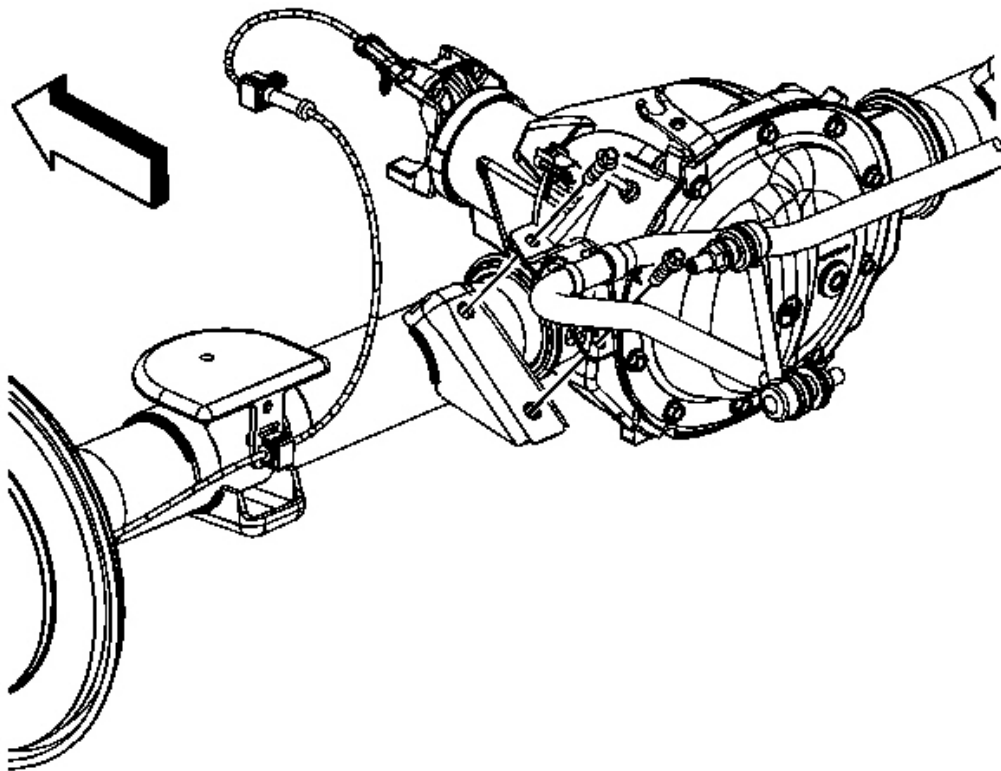
**Tighten:**

1. Tighten the stabilizer bar link nut to 80 N.m (59 lb ft).
  2. Tighten the insulator bracket bolts to 50 N.m (37 lb ft).
- 
6. Remove the rear axle support.
  7. Lower the vehicle.

**STABILIZER SHAFT INSULATOR REPLACEMENT**

**Removal Procedure**

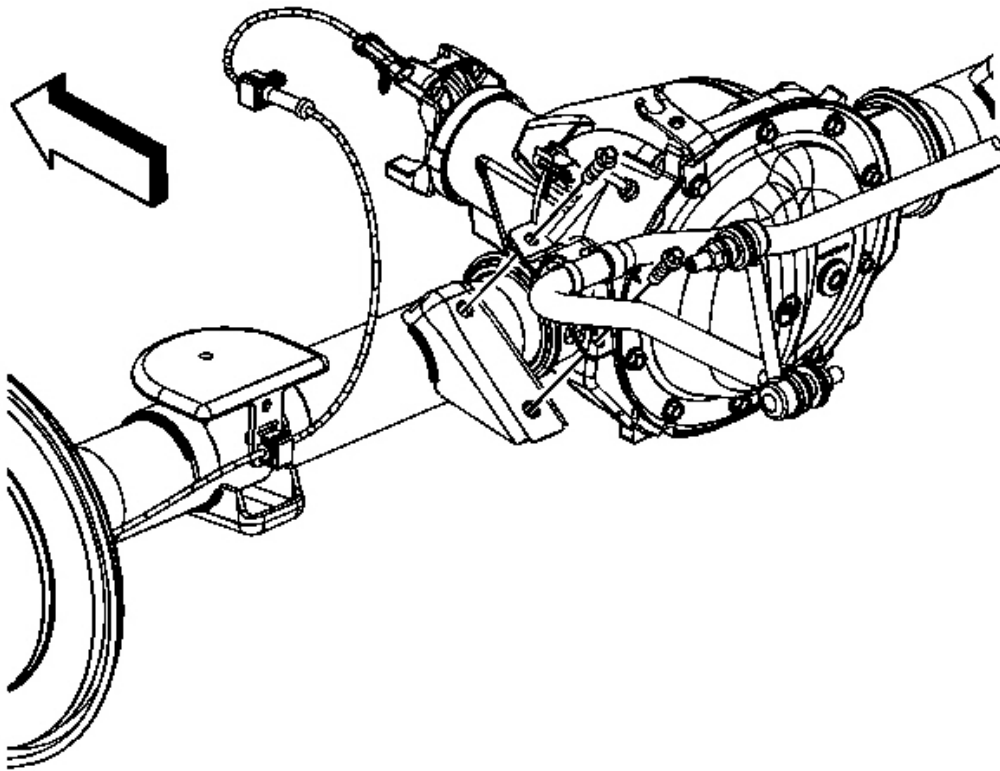
1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle .
2. Support the rear axle at curb height.



**Fig. 5: Stabilizer Shaft Insulator Bracket Mounting Bolts**  
Courtesy of GENERAL MOTORS CORP.

3. Remove the stabilizer shaft insulator bracket mounting bolts.
4. Remove the stabilizer shaft insulator brackets.
5. Remove the stabilizer shaft insulators.

**Installation Procedure**



**Fig. 6: Stabilizer Shaft Insulator Bracket Mounting Bolts**  
Courtesy of GENERAL MOTORS CORP.

1. Install the stabilizer shaft insulators to the stabilizer shaft.
2. Install the stabilizer shaft insulator brackets to the rear axle.

**NOTE:** Refer to Fastener Notice .

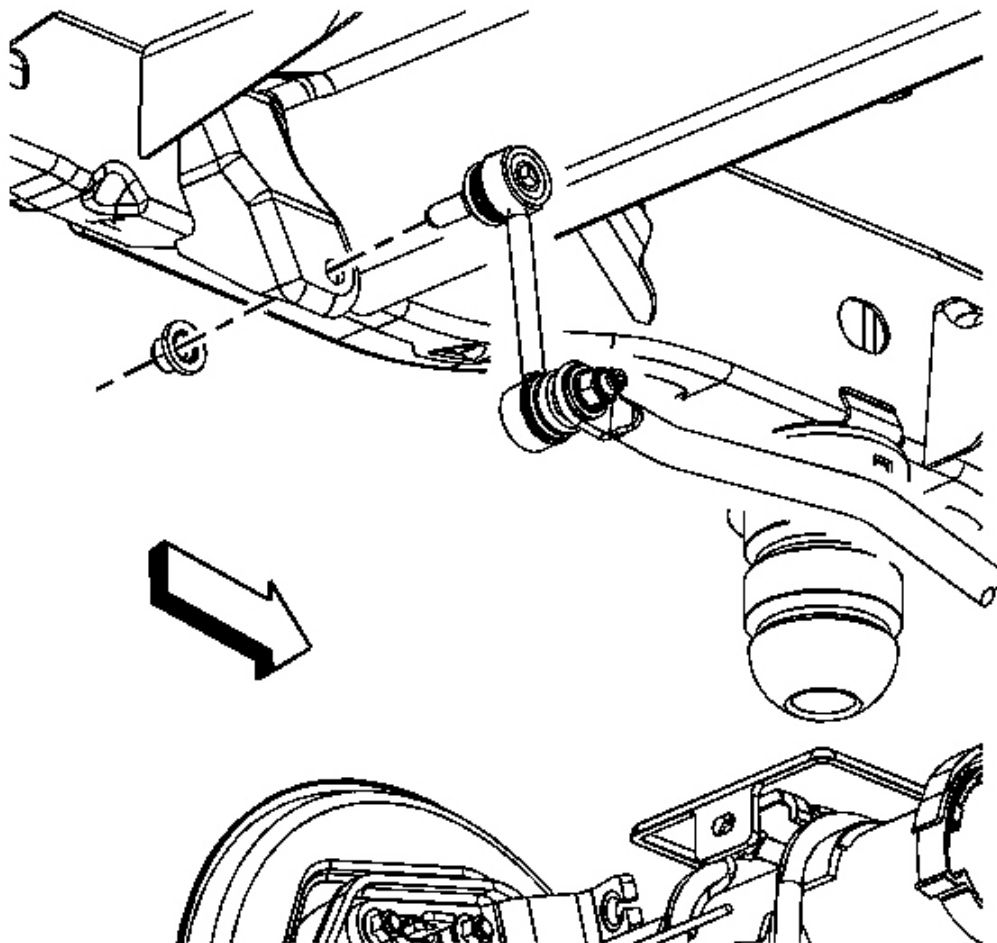
3. Install the stabilizer shaft bracket mounting bolts.

**Tighten:** Tighten the bolts to 50 N.m (37 lb ft).

4. Remove the rear axle support.
5. Lower the vehicle.

### STABILIZER SHAFT LINK REPLACEMENT

#### Removal Procedure



**Fig. 7: Removing/Installing Stabilizer Shaft-To-Link Nut**  
Courtesy of GENERAL MOTORS CORP.



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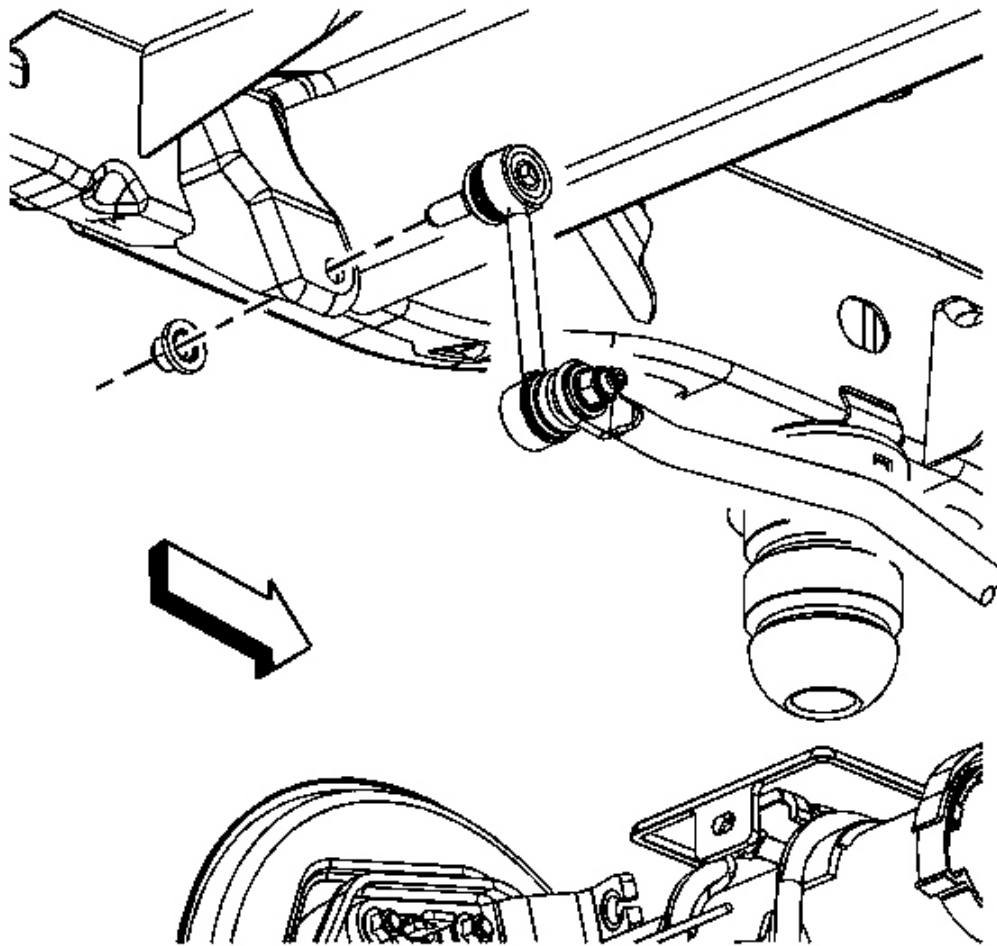
### 2007 SUSPENSION Rear Suspension - H3

1. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle** .
2. Support the rear axle at ride height.

**IMPORTANT: Do not attempt to hold the stabilizer shaft link near the boot. Use the hex feature on the end of the stud. Failure to do so could damage the boot.**

3. Remove the stabilizer shaft link upper nut.
4. Remove the stabilizer shaft link lower nut.
5. Remove the stabilizer shaft link.

#### **Installation Procedure**



**Fig. 8: Removing/Installing Stabilizer Shaft-To-Link Nut**  
Courtesy of GENERAL MOTORS CORP.

**IMPORTANT:** Do not attempt to hold the stabilizer shaft link near the boot. Use the hex feature on the end of the stud. Failure to do so could damage the boot.

1. Install the stabilizer shaft link.

**NOTE:** Refer to Fastener Notice .

2. Install the stabilizer shaft link mounting nuts.

**Tighten:**

- Tighten the stabilizer bar link lower mounting nut to 80 N.m (59 lb ft).
- Tighten the stabilizer bar link upper mounting nut to 80 N.m (59 lb ft).

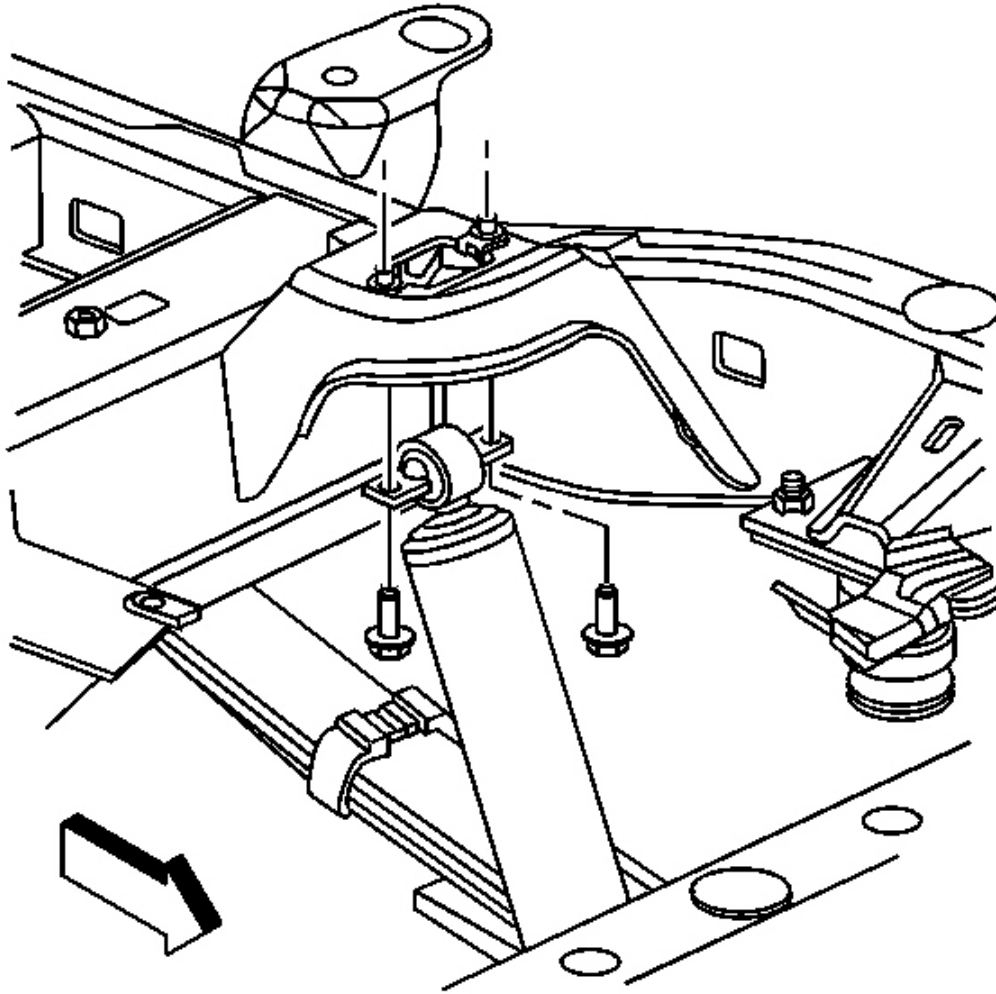
3. Remove the axle support.
4. Lower the vehicle.

## SHOCK ABSORBER REPLACEMENT

### Removal Procedure

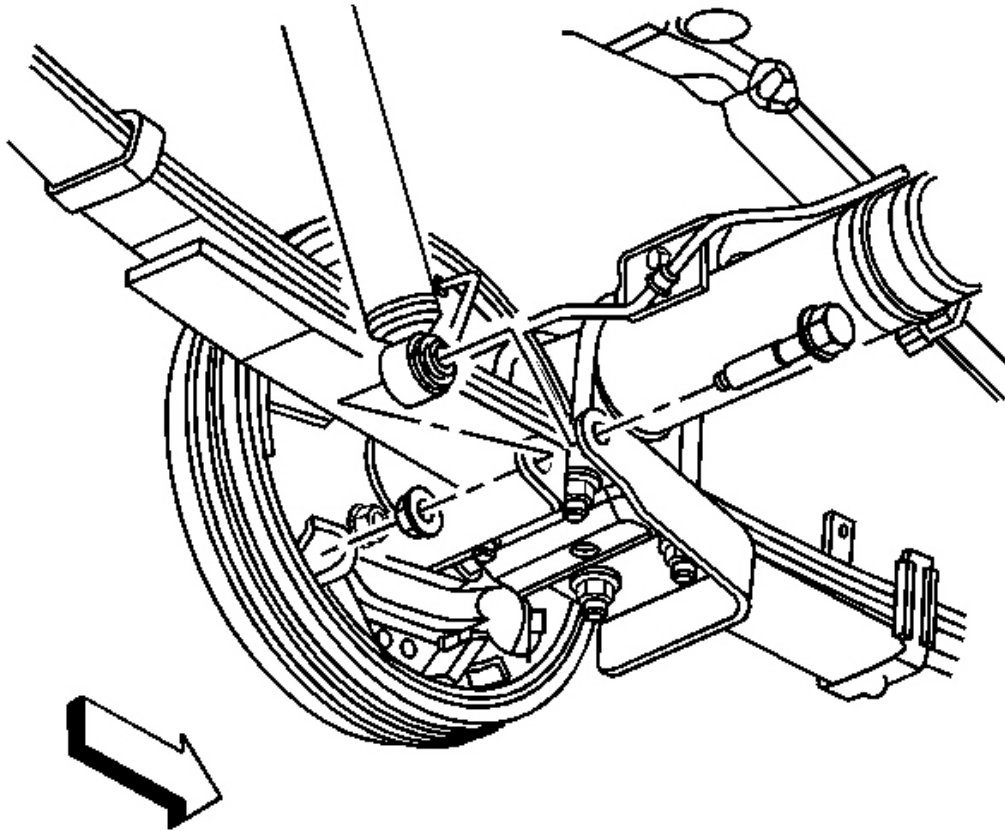
**NOTE:** The front shock absorbers of the vehicle are multifunctional. In addition to contributing to a smooth ride they also provide the only stop to the front suspension when fully extended. Therefore, when servicing the shock absorber, service replacement shock absorbers must be equivalent to original shock absorbers in both extended length and strength. Use of shocks not complying to original equipment or strength could result in suspension over-travel or shock breakage. Suspension over-travel may result in suspension component breakage.

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle .
2. Support the rear axle at ride height.



**Fig. 9: View Of Upper Absorber Bolts**  
**Courtesy of GENERAL MOTORS CORP.**

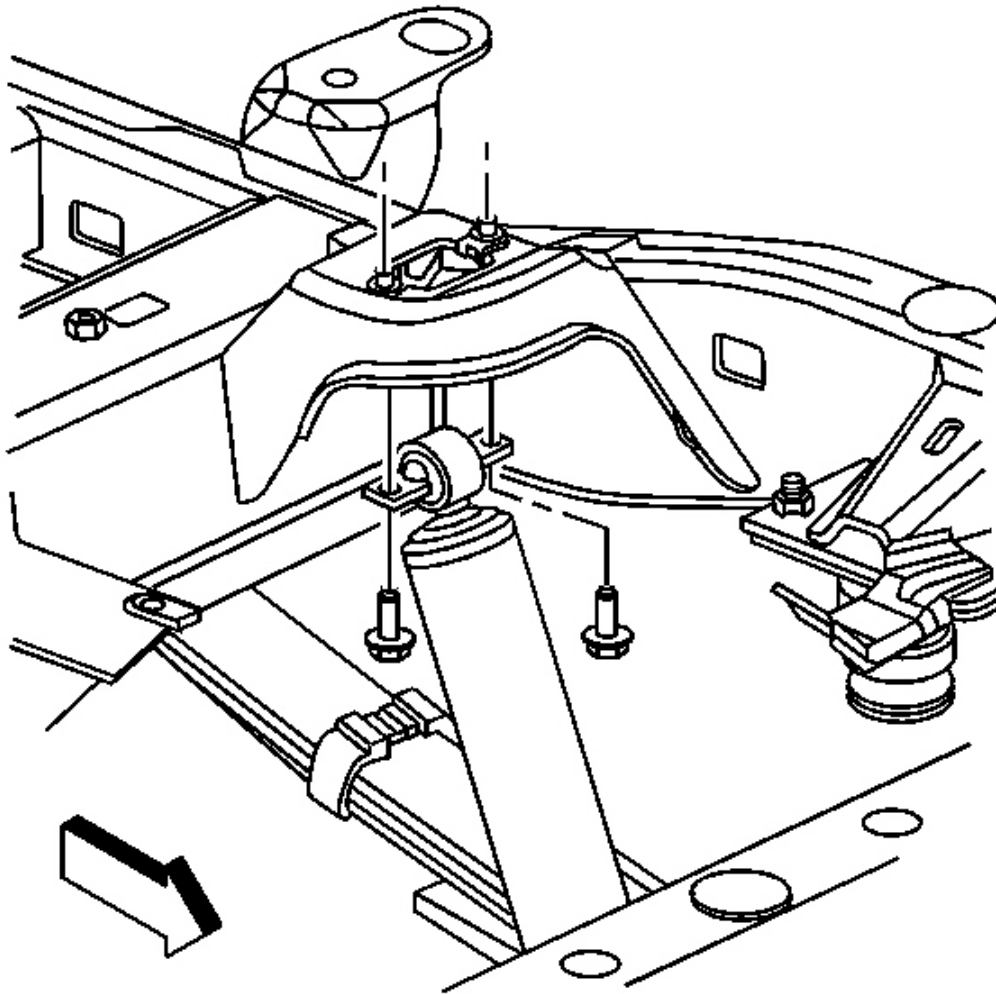
3. Remove the upper absorber bolts.



**Fig. 10: View Of Lower Shock Absorber Mounting Bolt & Nut**  
**Courtesy of GENERAL MOTORS CORP.**

4. Remove the lower absorber nut and the bolt.
5. Remove the absorber.

**Installation Procedure**



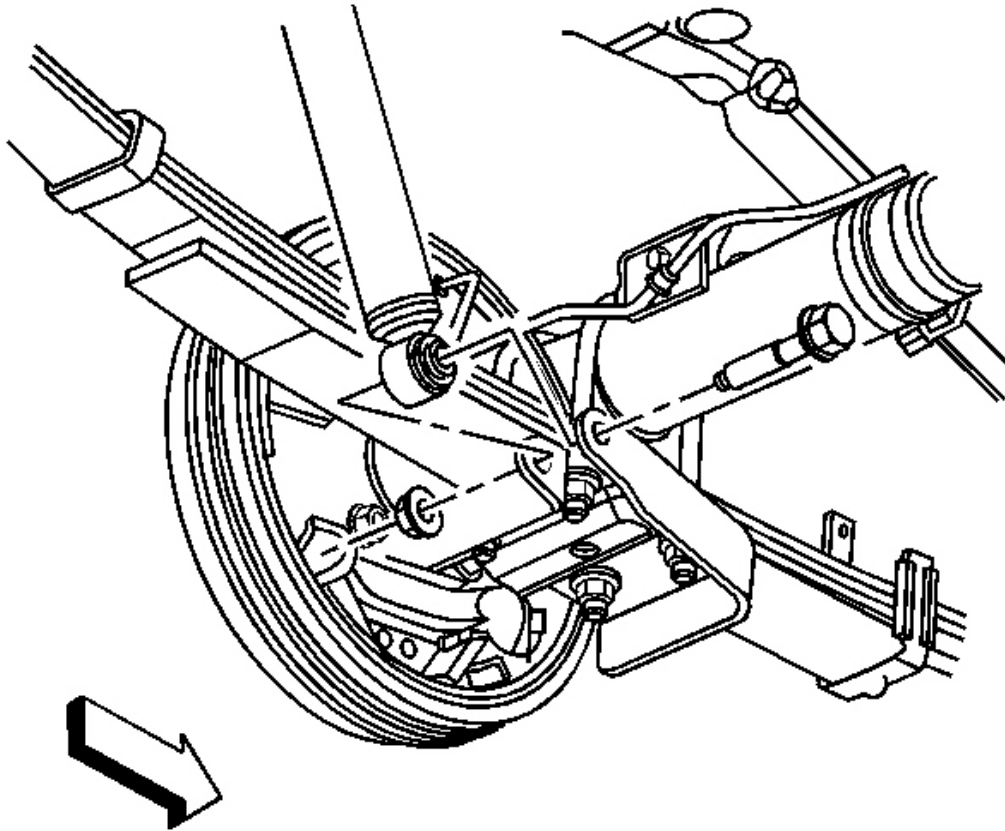
**Fig. 11: View Of Upper Absorber Bolts**  
Courtesy of GENERAL MOTORS CORP.

1. Install the absorber.

**NOTE:** Refer to Fastener Notice .

2. Install the upper absorber bolts.

**Tighten:** Tighten the bolts to 35 N.m (26 lb ft).



**Fig. 12: View Of Lower Shock Absorber Mounting Bolt & Nut**  
Courtesy of GENERAL MOTORS CORP.

3. Install the lower absorber bolt and nut.

**Tighten:** Tighten the nut to 95 N.m (70 lb ft).

4. Remove the rear axle support.
5. Lower the vehicle.

#### SHOCK ABSORBER DISPOSAL

**CAUTION:** Gas charged shock absorbers contain high pressure gas. Do not remove the snap ring from inside the top of the tube. If the

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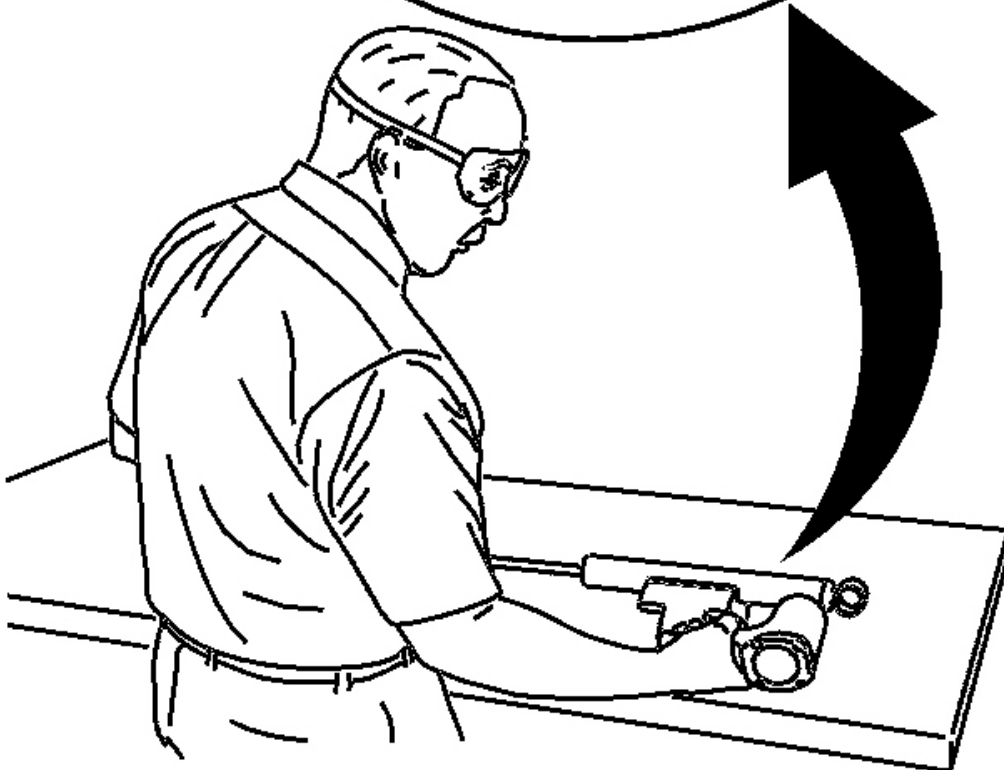
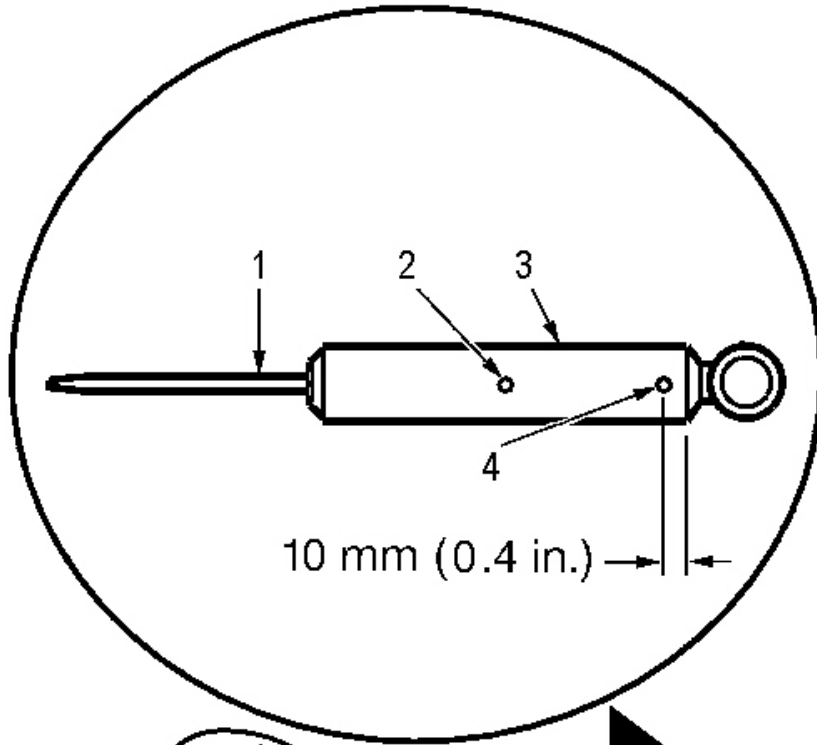
**snap ring is removed, the contents of the shock absorber will come out with extreme force which may result in personal injury.**

**CAUTION: To prevent personal injury, wear safety glasses when centerpunching and drilling the shock absorber. Use care not to puncture the shock absorber tube with the centerpunch.**



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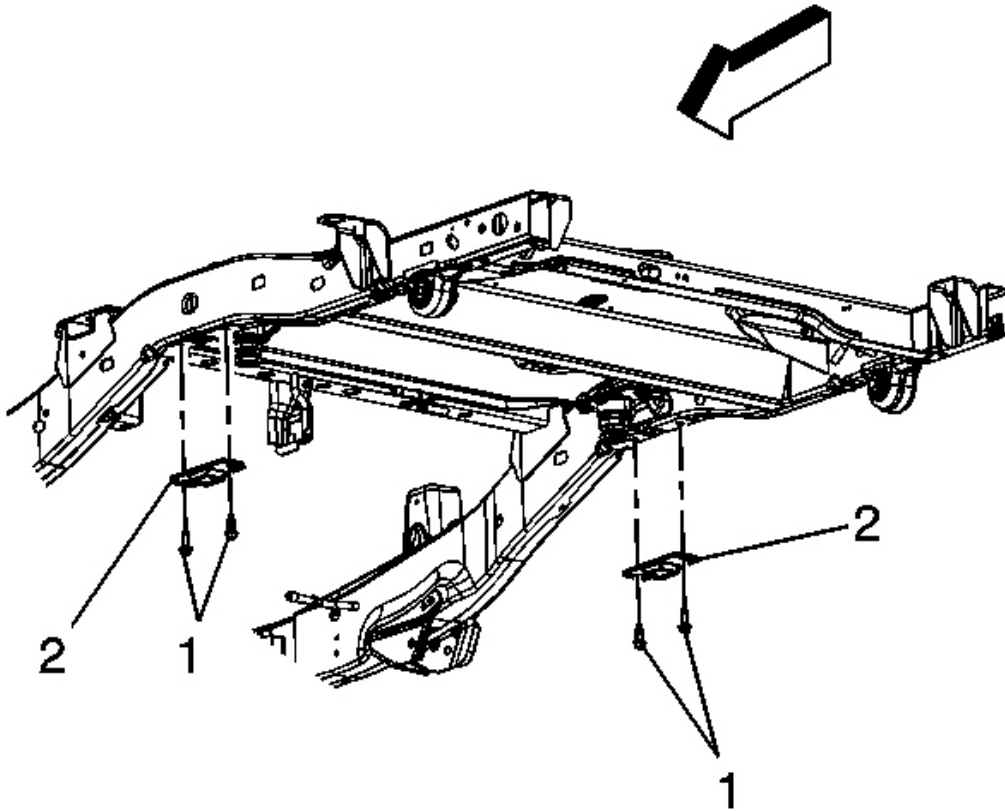
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**Fig. 13: Drilling Hole In Shock Absorber At Centerpunched Locations**  
**Courtesy of GENERAL MOTORS CORP.**

1. Make an indentation 10 mm (0.4 in) from the bottom (4) of the tube (3) using a centerpunch.
2. Clamp the shock absorber in a vise horizontally with the shock absorber rod (1) completely extended.
3. Drill a hole in the shock absorber at the centerpunch (4) using a 5 mm (3/16 in) drill bit. Gas or a gas/oil mixture will exhaust when the drill bit penetrates the shock absorber. Use shop towels in order to contain the escaping oil.
4. Make an indentation in the middle (2) of the tube (3) with a centerpunch.
5. Drill a second hole in the shock absorber at the centerpunch (2) using a 5 mm (3/16 in) drill bit. Oil will exhaust when the drill bit penetrates the shock absorber. Use shop towels in order to contain the escaping oil.
6. Remove the shock absorber from the vise. Hold the shock absorber over a drain pan horizontally with the holes down. Move the rod (1) in and out of the tube (3) to completely drain the oil from the shock absorber.

**SPRING JOUNCE BUMPER REPLACEMENT**



**Fig. 14: Spring Jounce Bumper Replacement**  
 Courtesy of GENERAL MOTORS CORP.

**Spring Jounce Bumper Replacement**

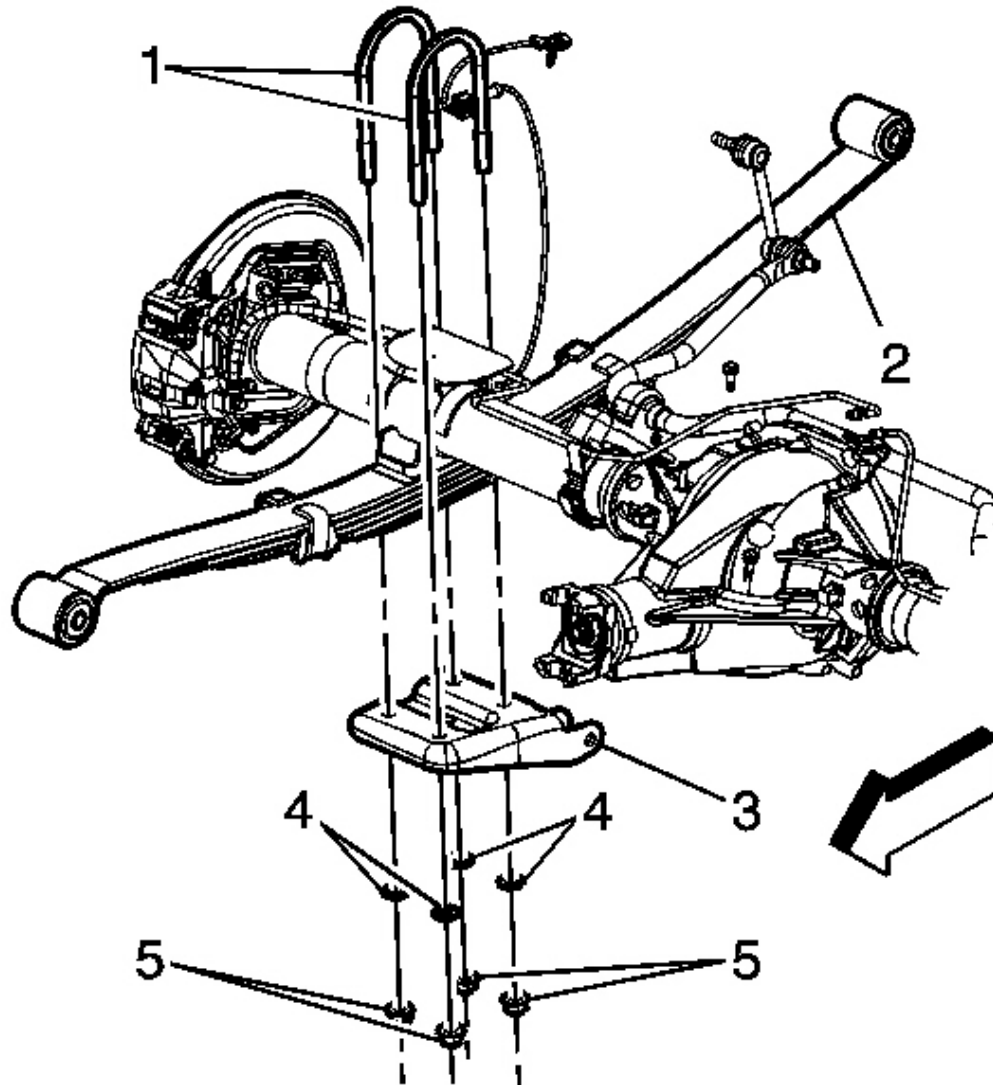
Callout	Component Name
<p><b>NOTE:</b>                      Refer to <u>Fastener Notice</u> .</p> <p><b>Fastener Tightening Specifications:</b> Refer to <u>Fastener Tightening Specifications</u>.  <b>Preliminary Procedure:</b> Remove the rear tire and wheel. Refer to <u>Tire and Wheel Removal and Installation</u> .</p>	
1	Rear Jounce Bumper Mounting Bolts (Qty: 4) <b>Tighten:</b> 30 N.m (22 lb ft)

2 Rear Jounce Bumper (Qty: 2)

## LEAF SPRING REPLACEMENT

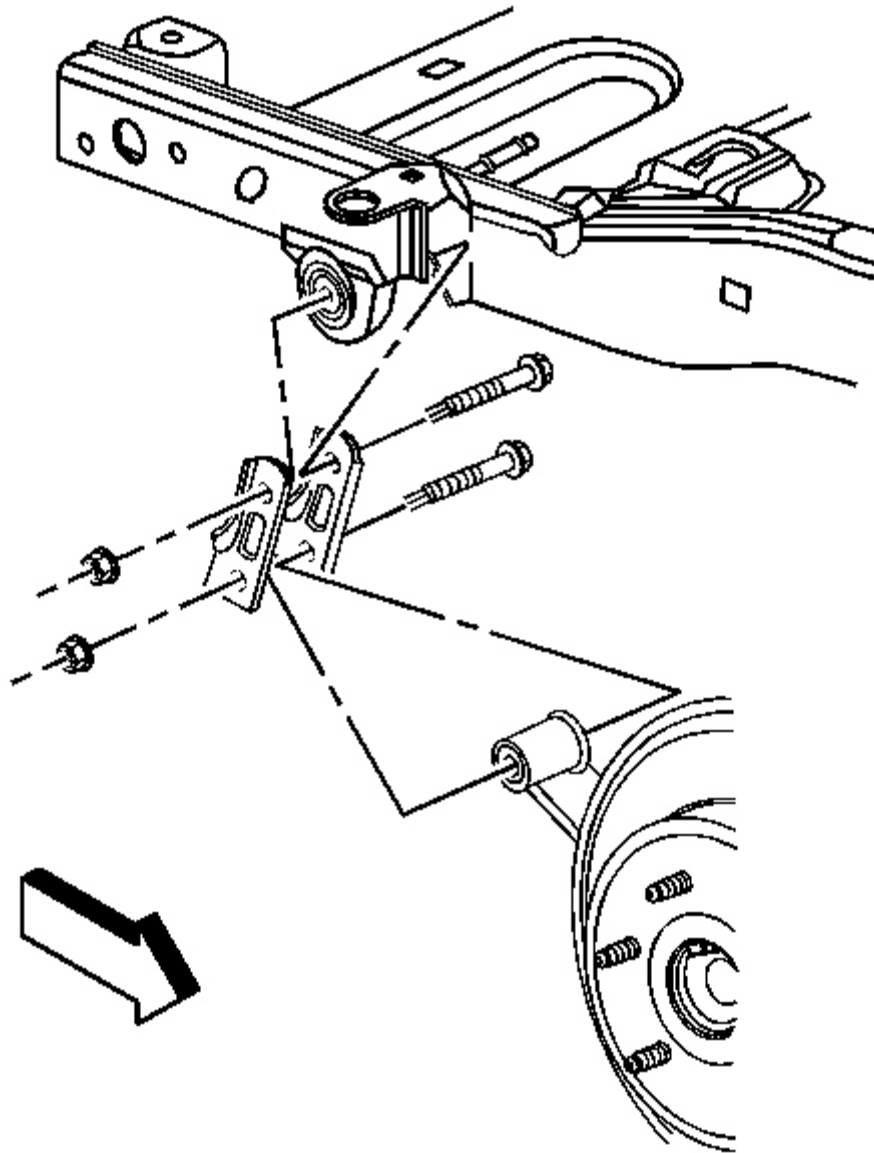
### Removal Procedure

1. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle** .
2. Support the rear axle independently in order to relieve the tension on the leaf springs.
3. Disconnect the rear park brake cable. Refer to **Parking Brake Rear Cable Replacement - Left Side** or to **Parking Brake Rear Cable Replacement - Right Side** .
4. Remove the absorber lower mounting nut and bolt. Refer to **Shock Absorber Replacement**.
5. Remove the trailer hitch if equipped. Refer to **Trailer Hitch Replacement** .



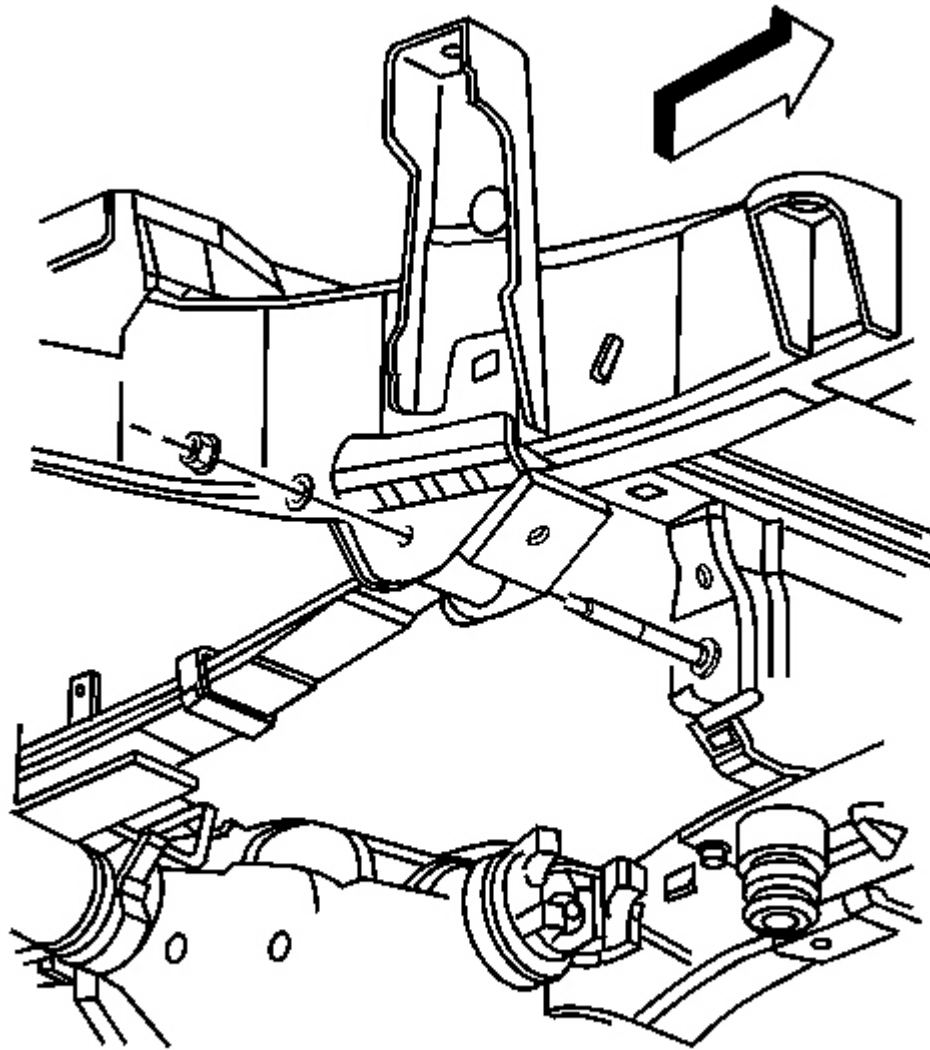
**Fig. 15: Removing/Installing U-Bolt Nuts & Washers**  
**Courtesy of GENERAL MOTORS CORP.**

6. Remove the U-bolt nuts (5) and washers (4).
7. Remove the anchor plate (3).
8. Remove the U-bolts (1).



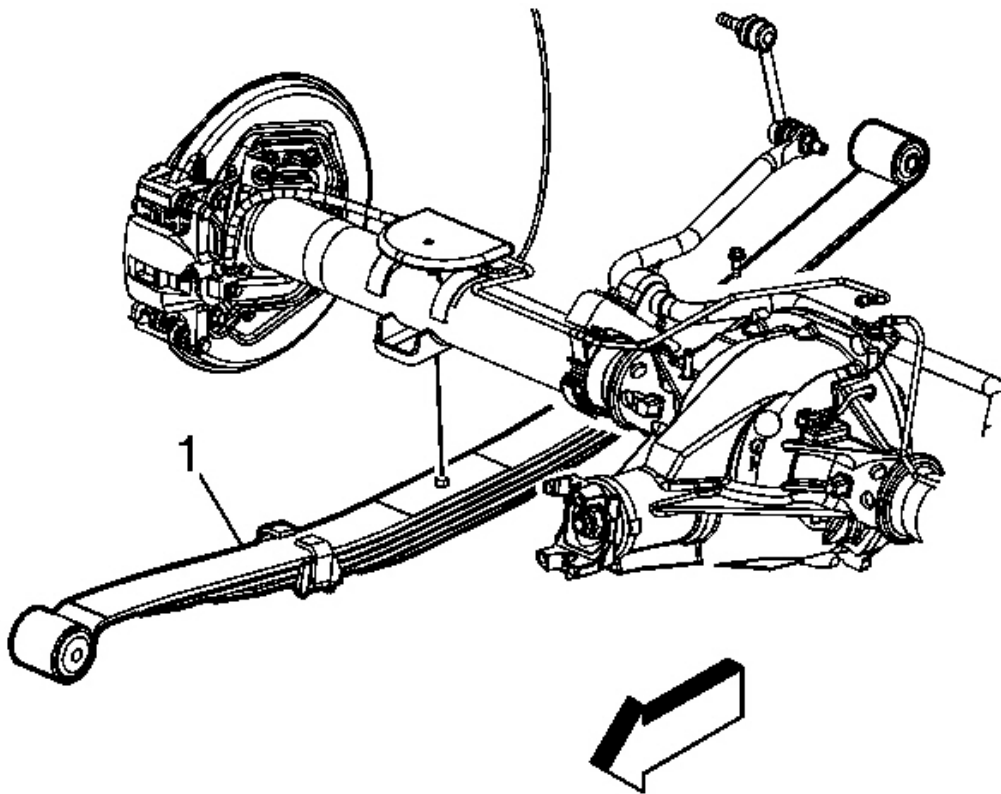
**Fig. 16: Removing/Installing Rear Spring Hanger Bracket Bolt**  
Courtesy of GENERAL MOTORS CORP.

9. Remove the rear spring hanger bracket nut and bolt.



**Fig. 17: View Of Front Spring Bracket Bolt**  
**Courtesy of GENERAL MOTORS CORP.**

10. Remove the front spring bracket bolt.

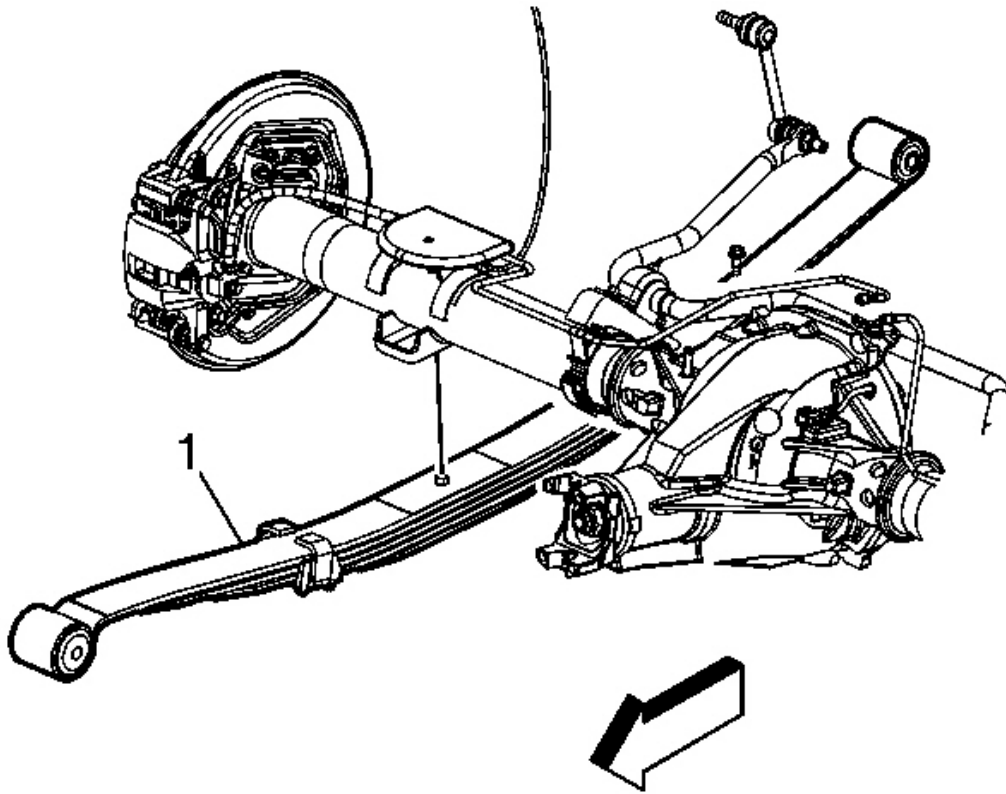


**Fig. 18: Removing/Installing Leaf Spring Assembly**  
**Courtesy of GENERAL MOTORS CORP.**

11. Remove the leaf spring assembly (1) from the vehicle.

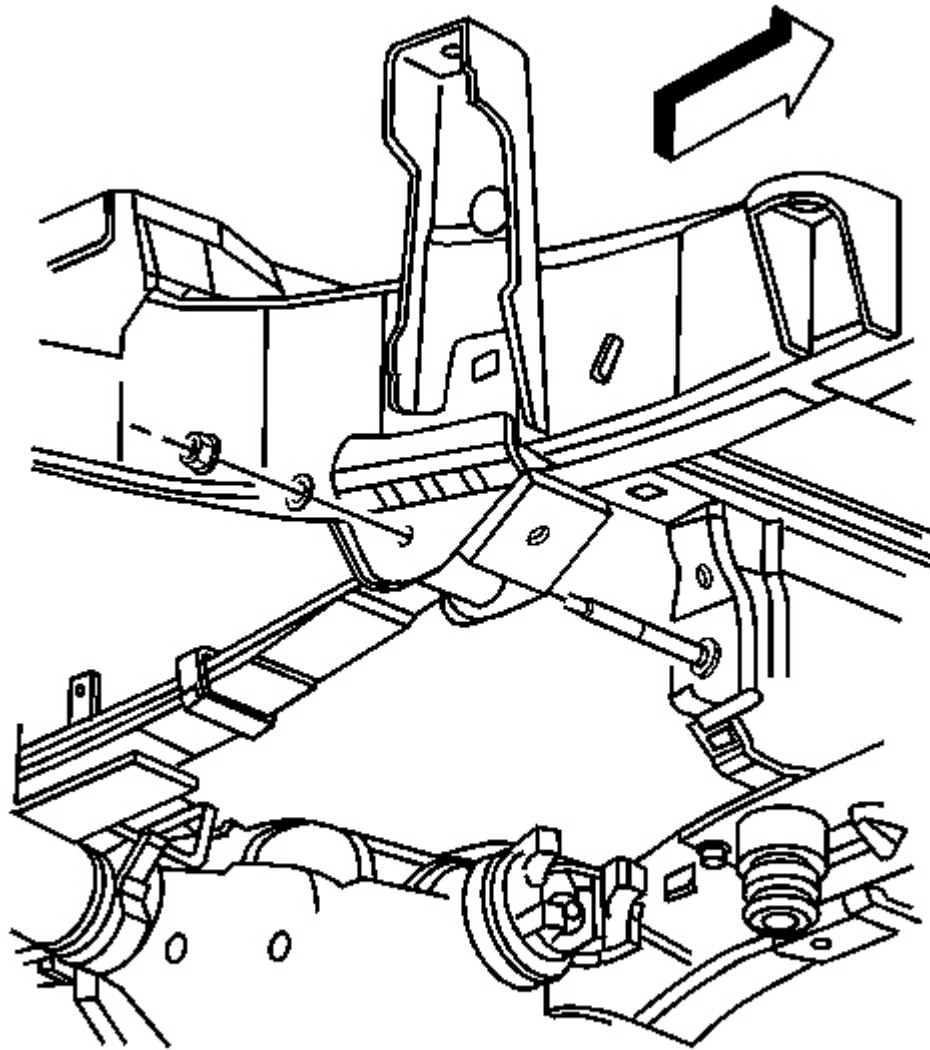
**Installation Procedure**





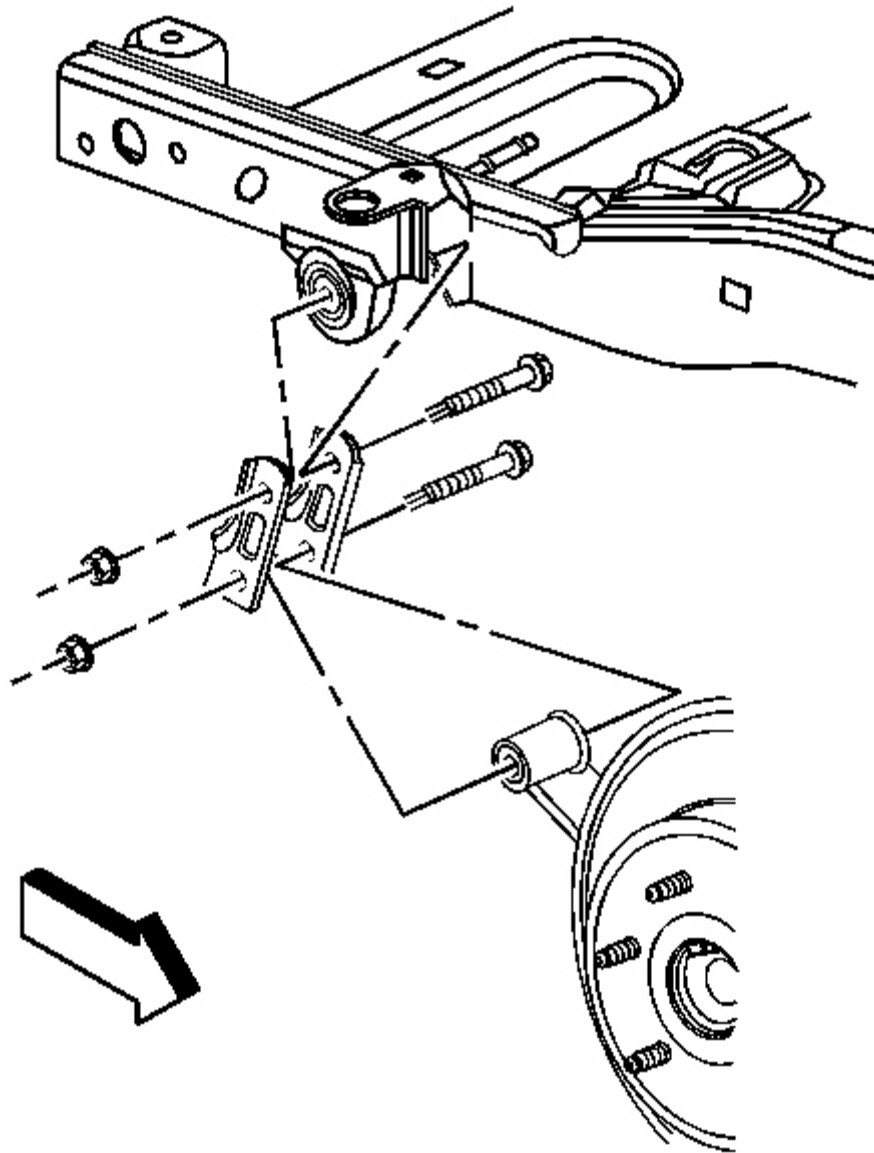
**Fig. 19: Removing/Installing Leaf Spring Assembly**  
**Courtesy of GENERAL MOTORS CORP.**

1. Install the leaf spring assembly (1) to the vehicle.



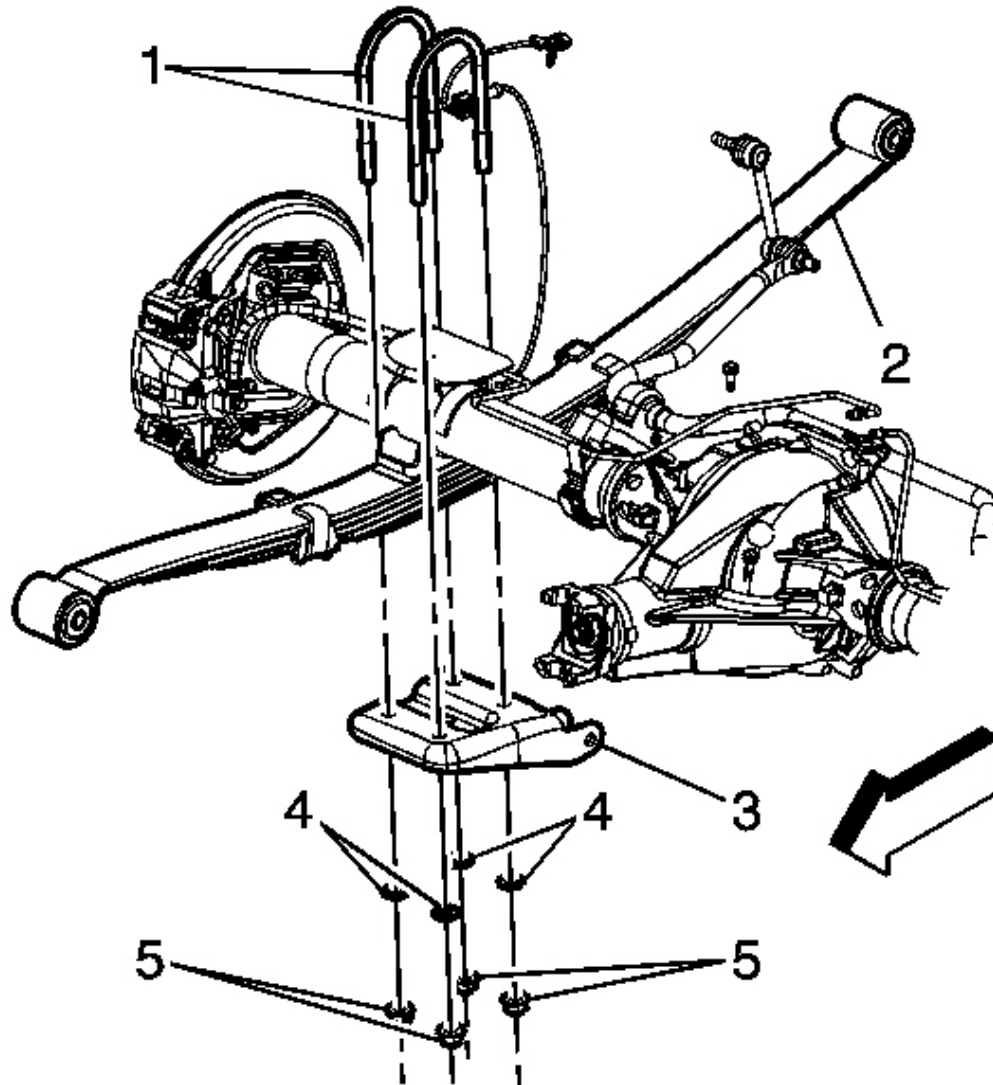
**Fig. 20: View Of Front Spring Bracket Bolt**  
**Courtesy of GENERAL MOTORS CORP.**

2. Install the front spring hanger bracket bolt.
3. Install the front spring hanger bracket nut.



**Fig. 21: Removing/Installing Rear Spring Hanger Bracket Bolt**  
Courtesy of GENERAL MOTORS CORP.

4. Install the rear spring hanger bracket bolt.
5. Install the rear spring hanger bracket nut.



**Fig. 22: Removing/Installing U-Bolt Nuts & Washers**  
Courtesy of GENERAL MOTORS CORP.

**IMPORTANT: Do not reuse the U-bolts.**

6. Install the new U-bolts (1).
7. Install the anchor plate (3).

**NOTE:** Refer to Fastener Notice .

8. Install the U-bolt washers (4) and nuts (5).

**Tighten:** Tighten the U-bolt nuts to 76 N.m (56 lb ft).

9. Install the absorber lower mounting nut and bolt. Refer to Shock Absorber Replacement.
10. Install the trailer hitch, if equipped. Refer to Trailer Hitch Replacement .
11. Connect the rear park brake cable. Refer to Parking Brake Rear Cable Replacement - Left Side or to Parking Brake Rear Cable Replacement - Right Side .
12. Remove the rear axle support.
13. Lower the vehicle.
14. With the vehicle at trim height, tighten the front leaf spring to frame nut and the rear leaf spring shackle nuts.

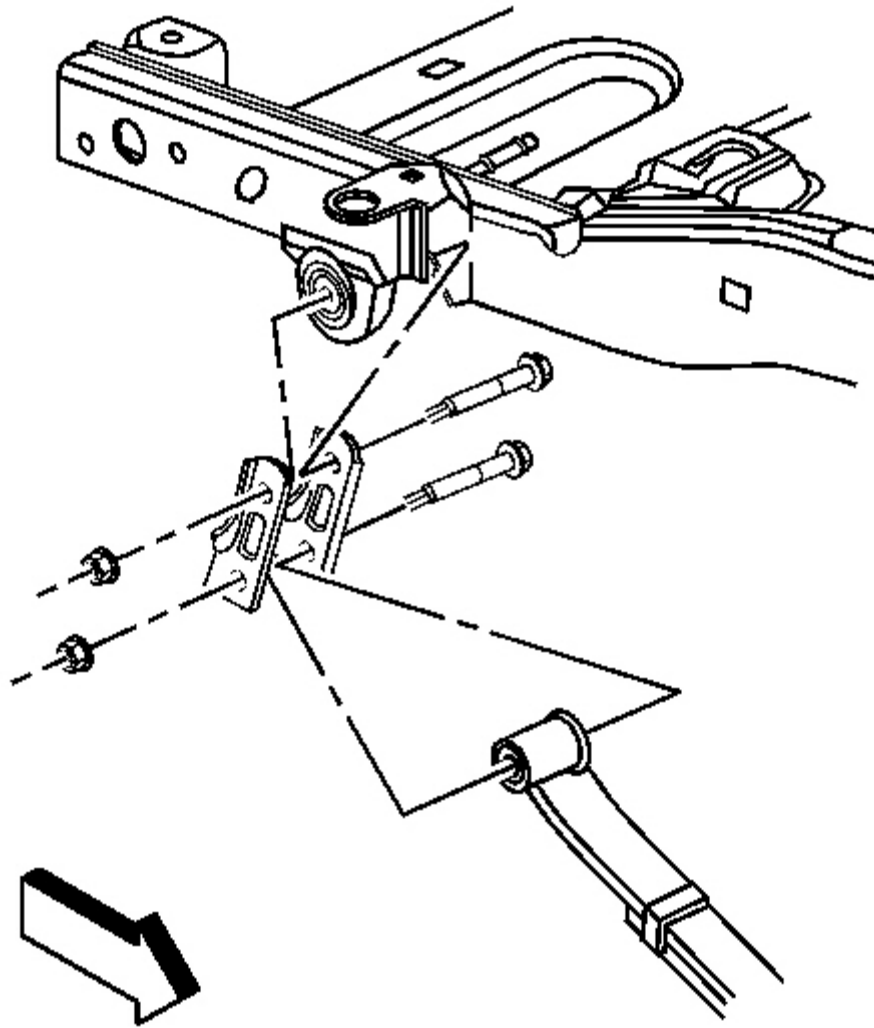
**Tighten:**

- Tighten the front leaf spring nut to 125 N.m (92 lb ft).
- Tighten the rear leaf spring shackle nuts to 85 N.m (63 lb ft).

## SPRING SHACKLE REPLACEMENT

### Removal Procedure

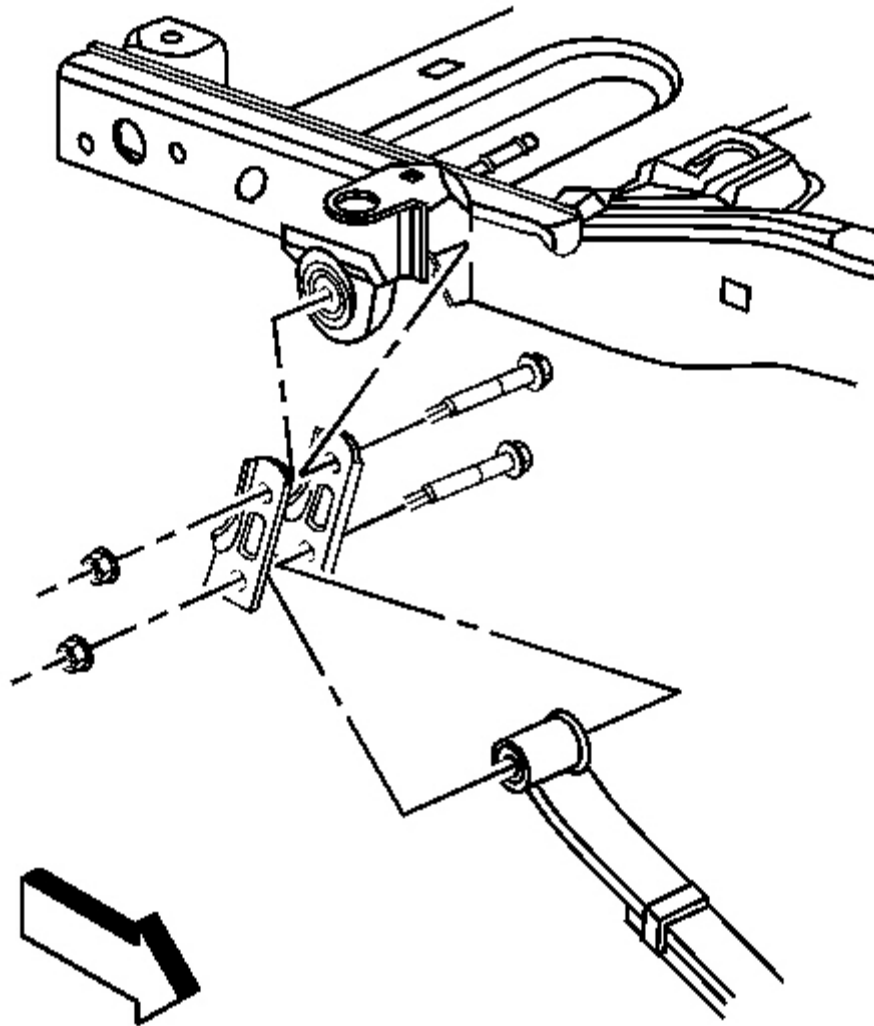
1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle .



**Fig. 23: Removing/Installing Shackle Nut & Bolt**  
Courtesy of GENERAL MOTORS CORP.

2. Support the rear axle at ride height.
3. Remove the shackle nut and the bolt from the frame.
4. Remove the shackle nut and the bolt from the spring.
5. Remove the shackle assembly from the vehicle.

Installation Procedure



**Fig. 24: Removing/Installing Shackle Nut & Bolt**  
**Courtesy of GENERAL MOTORS CORP.**

1. Install the shackle assembly to the spring.

**NOTE:** Refer to Fastener Notice .

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2. Install the shackle nut and bolt to the spring. Do not tighten.
3. Install the shackle nut and bolt to the frame. Do not tighten.
4. Remove the rear axle support.
5. Lower the vehicle.
6. With the vehicle at trim height, tighten the rear shackle nuts.

**Tighten:** Tighten the rear shackle nuts to 85 N.m (63 lb ft).

### SHACKLE BUSHING REPLACEMENT

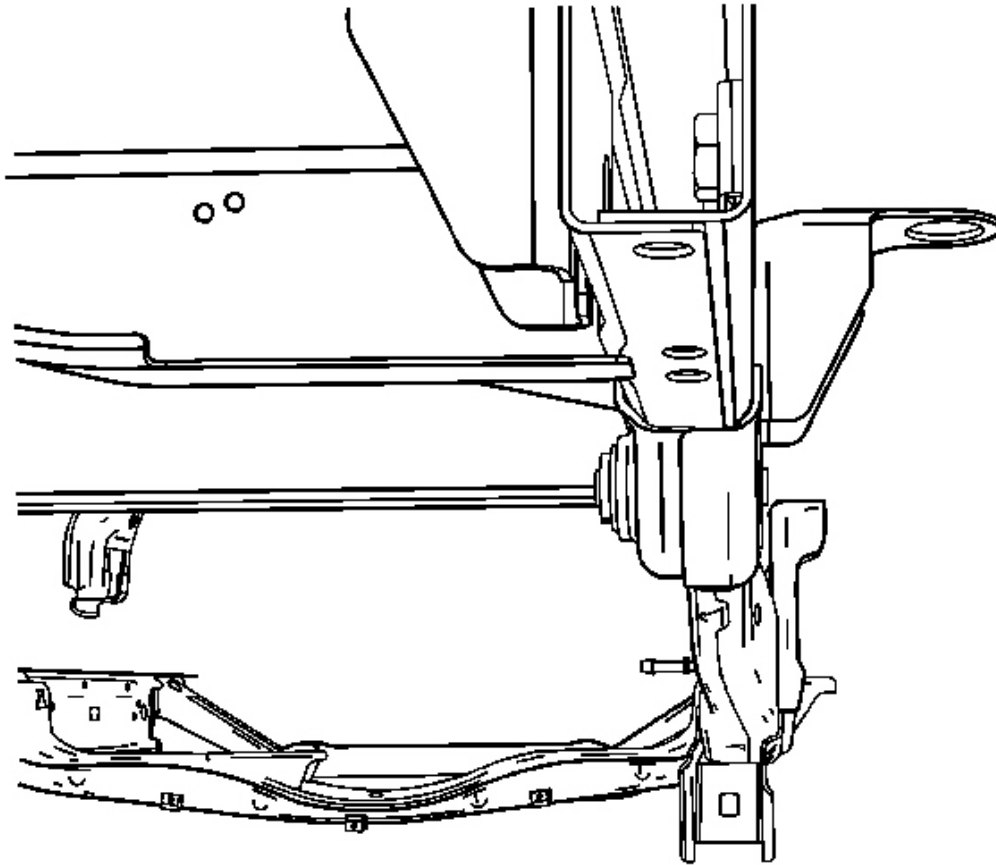
#### Tools Required

**J 21474-01** Control Arm Bushing Service Kit

#### Removal Procedure

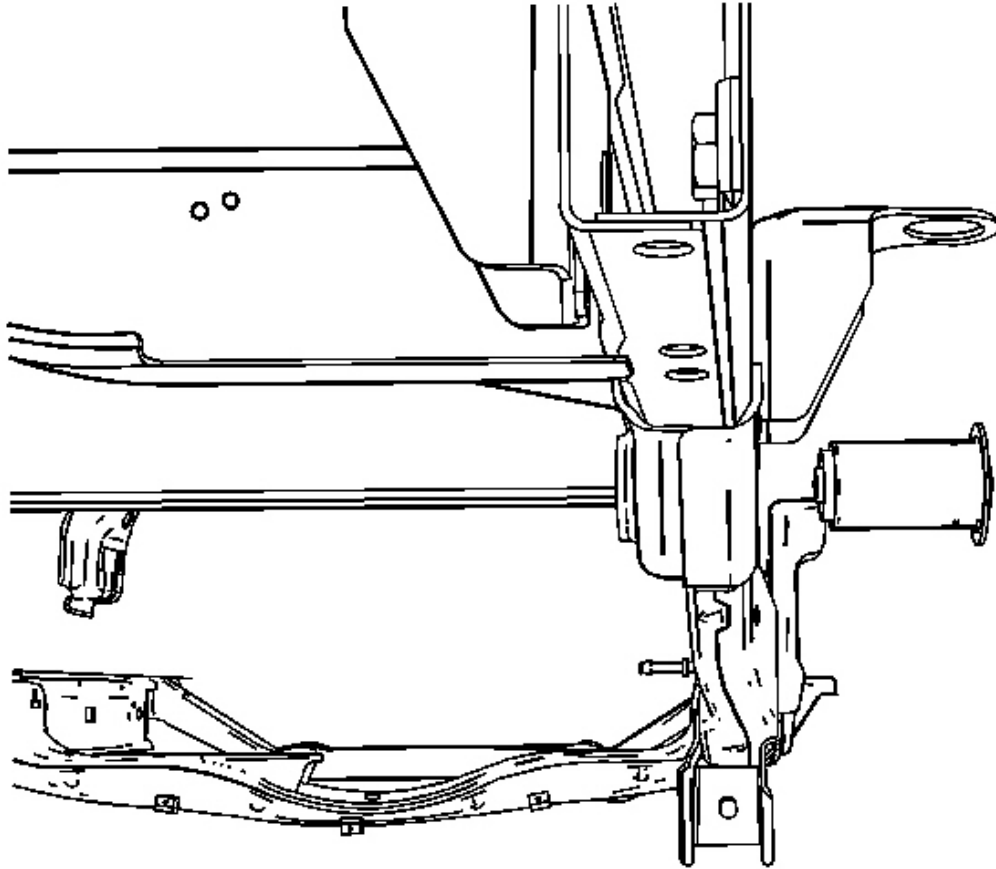
1. Remove the spring shackle. Refer to **Spring Shackle Replacement**.
2. Remove the spare tire when servicing the left side bushing.





**Fig. 25: View Of Bushing Flange**  
**Courtesy of GENERAL MOTORS CORP.**

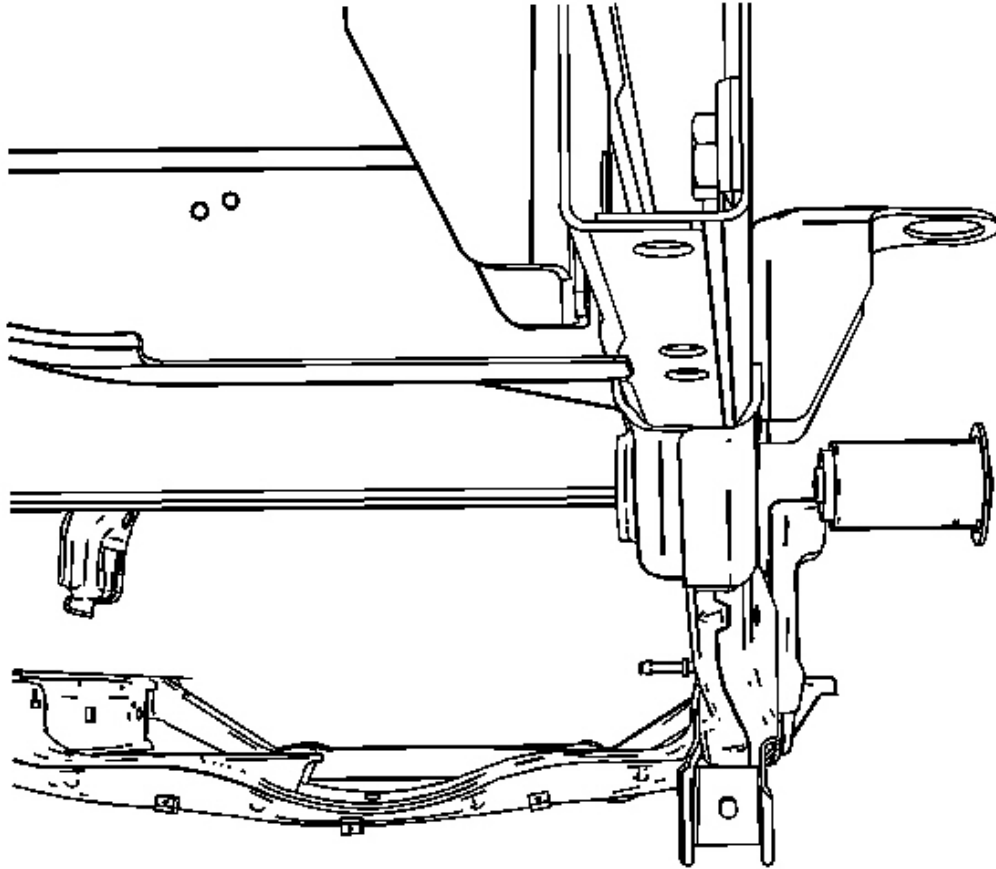
3. Use a blunt punch to straighten out the bushing flange that comes through the inner frame.



**Fig. 26: Using J 21474-01**  
**Courtesy of GENERAL MOTORS CORP.**

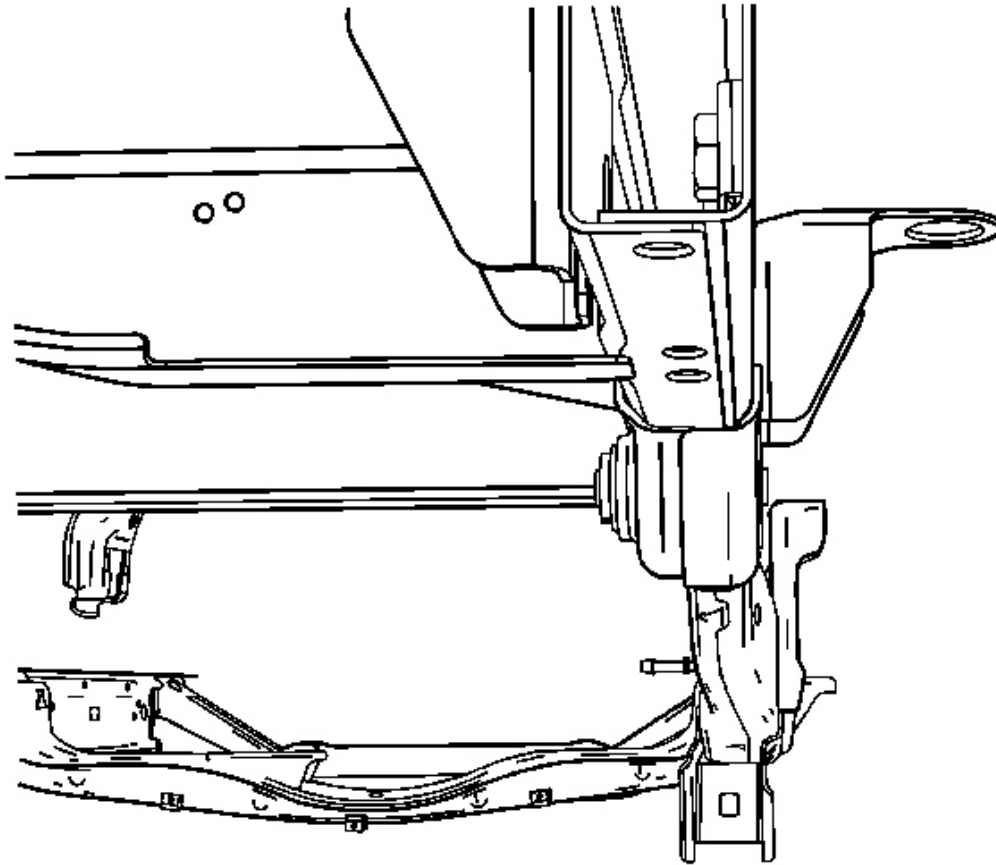
4. Remove the spring shackle bushing using J 21474-01 .

**Installation Procedure**



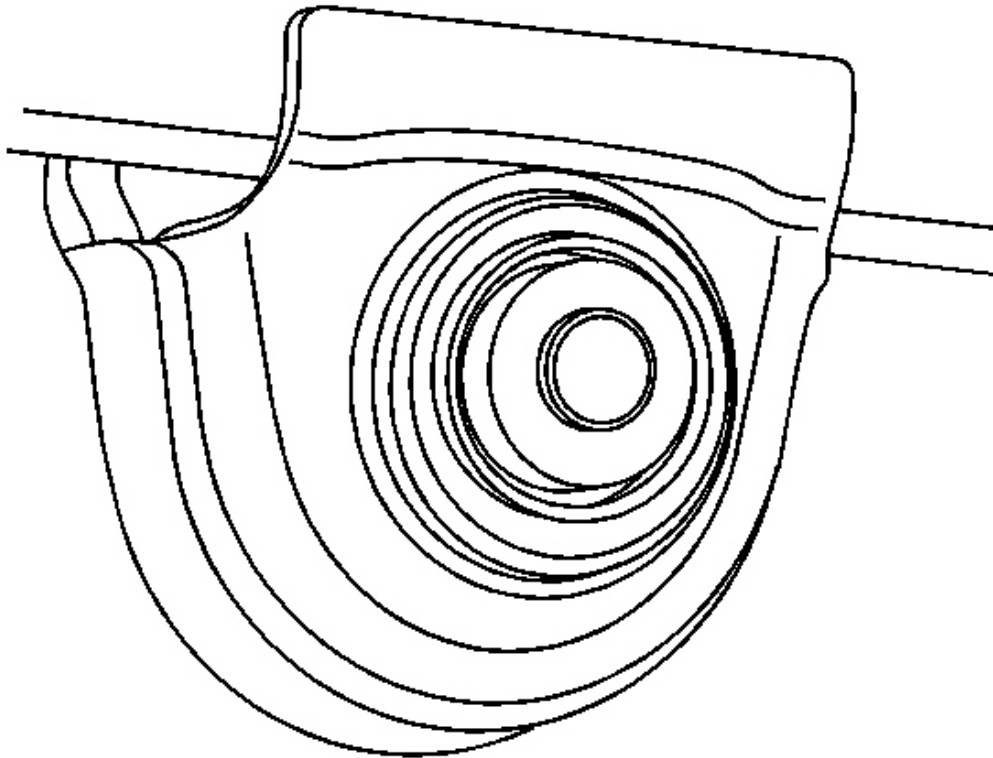
**Fig. 27: Using J 21474-01**  
**Courtesy of GENERAL MOTORS CORP.**

1. Install the new spring shackle bushing using **J 21474-01** .



**Fig. 28: View Of Bushing Flange**  
**Courtesy of GENERAL MOTORS CORP.**

2. Pull the spring shackle bushing into the frame rail until the flanged portion of the spring shackle bushing is flush with the rail.



**Fig. 29: View Of Spring Shackle Bushing Inner Flange**  
Courtesy of GENERAL MOTORS CORP.

3. Use a blunt punch to stake or flare the spring shackle bushing inner flange.
4. Install the spare tire when servicing the left side bushing.
5. Install the spring shackle. Refer to **Spring Shackle Replacement**.

## WHEEL STUD REPLACEMENT

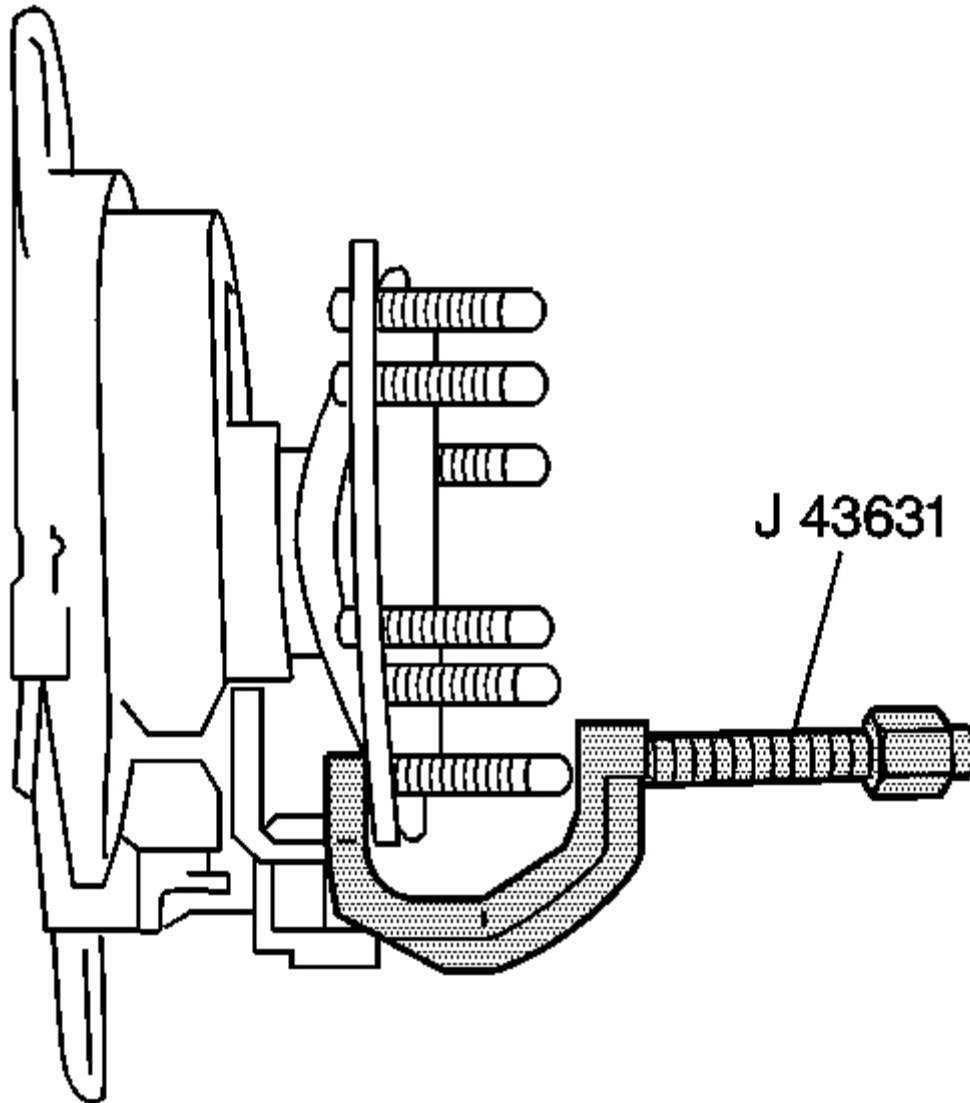
### Tools Required

**J 43631** Ball Joint Remover

### Removal Procedure

1. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle** .

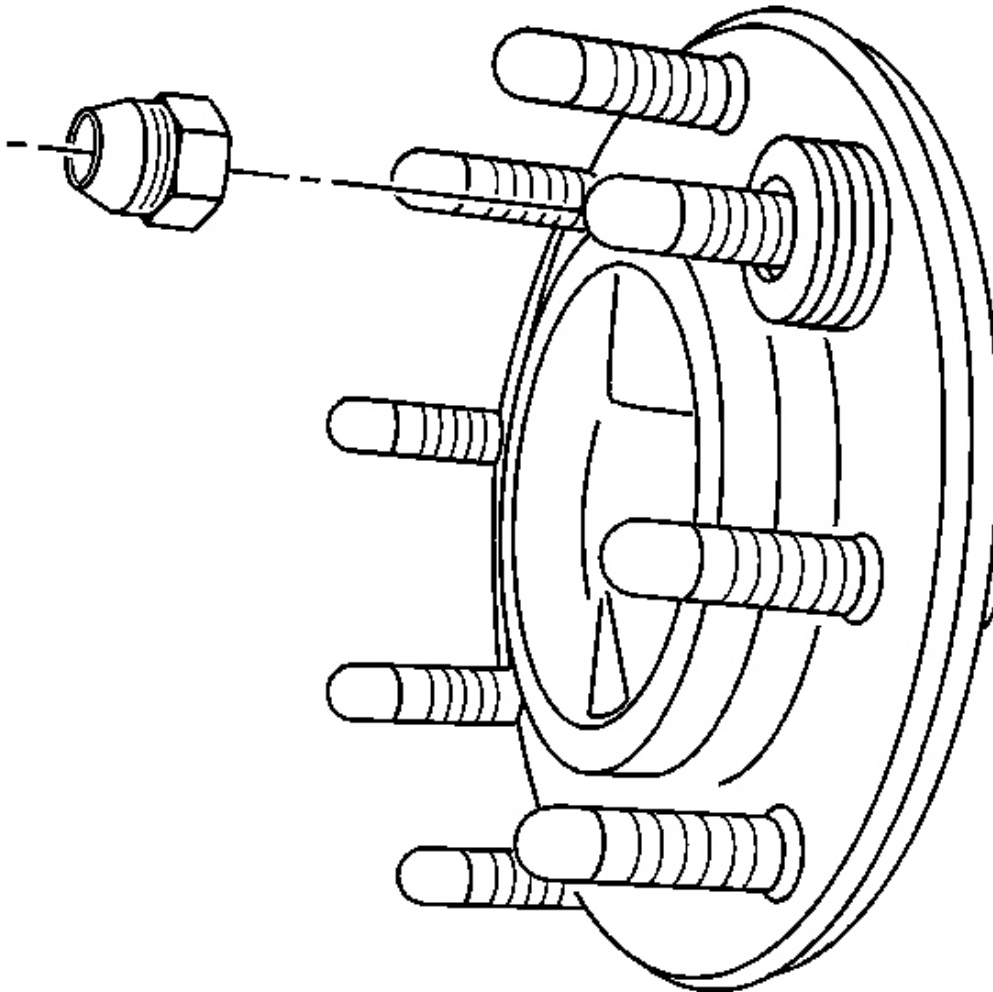
2. Remove the tire and wheel. Refer to Tire and Wheel Removal and Installation .
3. Remove the brake rotor. Refer to Rear Brake Rotor Replacement .



**Fig. 30: Removing Wheel Stud From Hub Flange**  
Courtesy of GENERAL MOTORS CORP.

4. Remove the wheel stud from the hub flange using the **J 43631** .
5. Remove the wheel stud from the hub flange.

**Installation Procedure**



**Fig. 31: View Of Wheel Studs, Hub & Rotor Assembly - Rear (W/Dual Wheels)**  
**Courtesy of GENERAL MOTORS CORP.**

1. Install the new stud into the hub flange hole using firm hand pressure.
2. Install 4 washers to the new wheel stud.

3. Thread a wheel nut onto the new stud with the flat side facing the front hub flange.
4. Tighten the lug nut until the stud contacts the back of the hub flange.
5. Remove the wheel nut.
6. Remove the washers.
7. Install the brake rotor. Refer to **Rear Brake Rotor Replacement** .
8. Install the tire and wheel. Refer to **Tire and Wheel Removal and Installation** .
9. Remove the safety stands.
10. Lower the vehicle.

## DESCRIPTION AND OPERATION

### GENERAL DESCRIPTION

These vehicles use a leaf spring and a solid rear axle suspension system.

The rear axle assembly is attached to multi-leaf springs with U-bolts. The front ends of the springs are attached to the frame at the front hangers with bolts and are isolated utilizing rubber bushings. The rear ends of the springs are attached to the frame with bolts at the shackles. The shackles also utilize rubber bushings for isolation. Shackles allow the springs to change position while the vehicle is in motion.

Two direct double-acting shock absorbers provide ride control. The shock absorbers are angle-mounted between the frame. The shock absorbers are attached to the anchor plate.

The rear spring steel stabilizing shaft helps minimize body roll and sway during cornering. The rear stabilizer shaft is connected to the rear axle and the frame with the following components:

- The rubber insulators
- The clamps
- The link assemblies

## SPECIAL TOOLS AND EQUIPMENT

### SPECIAL TOOLS

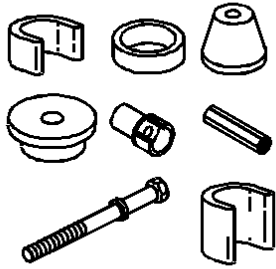
#### Special Tools

Illustration	Tool Number/Description

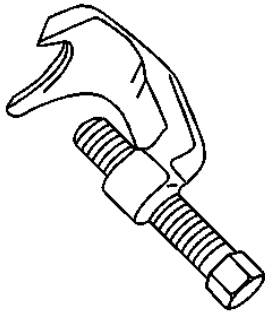


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J 21474-01  
Control Arm Bushing Set



J 43631  
Ball Joint Remover