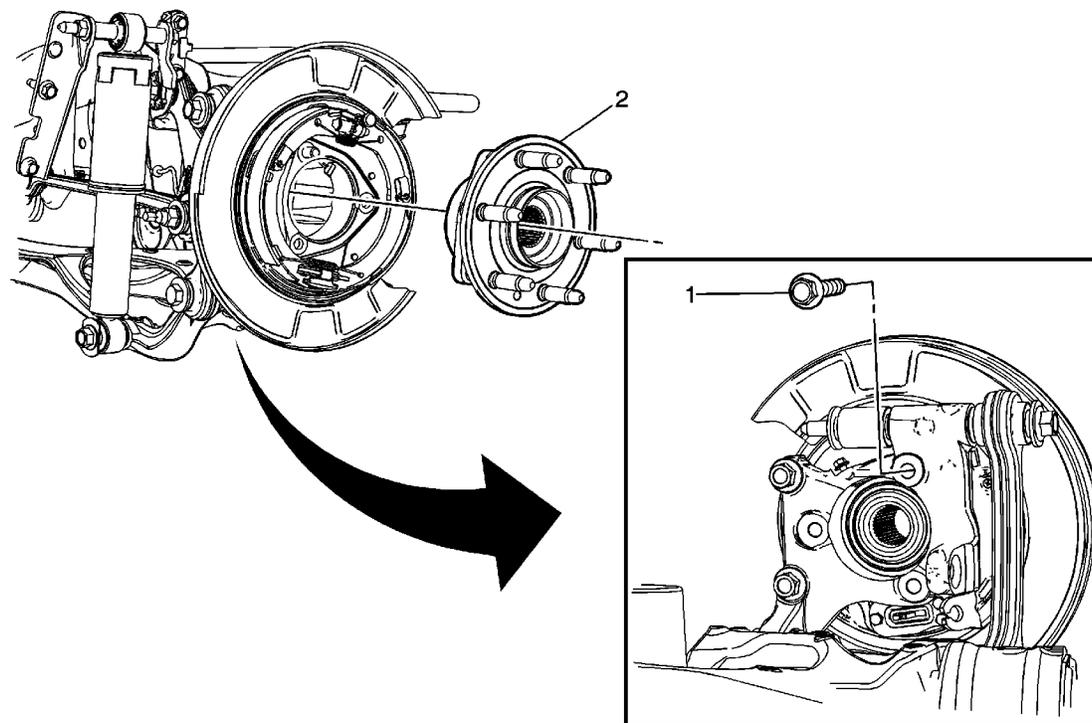


## Fastener Tightening Specifications

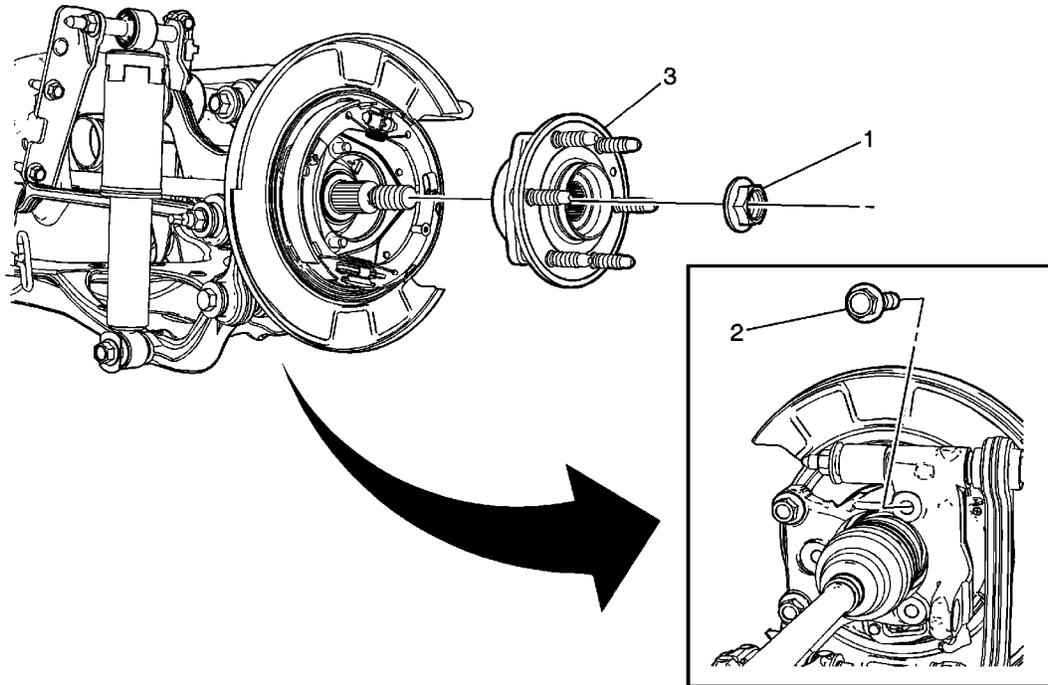
Application	Specification	
	Metric	English
Adjuster Link to Knuckle Nut		
First Pass	75 N·m	55 lb ft
Final Pass	+ 60 degrees	
Adjuster Link to Crossmember Nuts		
	140 N·m	103 lb ft
Lower Control Arm to Knuckle Bolt		
First Pass	100 N·m	74 lb ft
Final Pass	+ 60 degrees	
Lower Control Arm to Crossmember Nuts - Front		
First Pass	110 N·m	81 lb ft
Final Pass	+ 45 degrees	
Lower Control Arm to Crossmember Nuts - Rear		
First Pass	120 N·m	89 lb ft
Final Pass	+ 60 degrees	
Upper Rear Shock Absorber Nuts		
	70 N·m	52 lb ft
Rear Shock Absorber to Lower Control Arm Bolts		
First Pass	100 N·m	74 lb ft
Final Pass	+ 60 degrees	
Rear Wheel Bearing and Hub to Knuckle Bolts		
	140 N·m	103 lb ft
Stabilizer Shaft Clamp to Crossmember Bolts		
	50 N·m	37 lb ft
Stabilizer Shaft Link Nuts		
	22 N·m	16 lb ft
Upper Control Arm to Knuckle Bolts		
First Pass	100 N·m	74 lb ft
Final Pass	+ 90 degrees	
Upper Control Arm to Crossmember Nuts		
	140 N·m	103 lb ft
Wheel Drive Shaft Nut		
	205 N·m	151 lb ft

## Rear Wheel Bearing and Hub Replacement (FWD)



Callout	Component Name
<p><b>Caution:</b> The wheel bearing and hub assembly includes a magnetic encoder with built-in permanent magnets that the wheel speed sensor senses. Any contact with another magnet will damage the encoder magnets. The damage will cause a diagnostic trouble code to be set and will require wheel bearing and hub replacement.</p> <p><b>Preliminary Procedure</b></p> <ol style="list-style-type: none"> <li>1. Raise and support the vehicle. Refer to <a href="#">Lifting and Jacking the Vehicle</a>.</li> <li>2. Remove the rear brake rotor. Refer to <a href="#">Rear Brake Rotor Replacement</a>.</li> </ol>	
1	<p>Rear Wheel Bearing and Hub Bolt (Qty: 3)</p> <p><b>Caution:</b> Refer to <a href="#">Fastener Caution</a> in the Preface section.</p> <p><b>Tighten</b> 140 N·m (103 lb ft)</p>
2	Rear Wheel Bearing and Hub

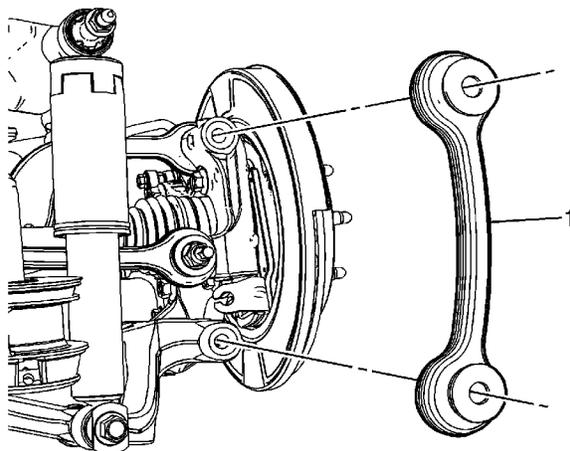
## Rear Wheel Bearing and Hub Replacement (AWD)



Callout	Component Name
<p><b>Caution:</b> The wheel bearing and hub assembly includes a magnetic encoder with built-in permanent magnets that the wheel speed sensor senses. Any contact with another magnet will damage the encoder magnets. The damage will cause a diagnostic trouble code to be set and will require wheel bearing and hub replacement.</p>	
<p><b>Preliminary Procedures</b></p>	
<ol style="list-style-type: none"> <li>1. Raise and support the vehicle. Refer to <a href="#">Lifting and Jacking the Vehicle</a>.</li> <li>2. Remove the rear brake rotor. Refer to <a href="#">Rear Brake Rotor Replacement</a>.</li> </ol>	
<p>1</p>	<p>Wheel Drive Shaft Nut</p> <p><b>Caution:</b> Refer to <a href="#">Fastener Caution</a> in the Preface section.</p> <p><b>Tighten</b> 205 N·m (151 lb ft)</p>
	<p>Wheel Bearing and Hub Bolt (Qty: 3)</p> <p><b>Procedure</b></p>

2	<p>Using the <a href="#">J 42129</a> , separate the front wheel hub and bearing from the wheel drive shaft.</p> <p><b>Tighten</b> 140 N·m (103 lb ft).</p> <p><b>Special Tools</b></p> <p><a href="#">J 42129</a> Front/Rear Spindle Remover</p>
3	Rear Wheel Bearing and Hub Assembly

## Rear Suspension Link Replacement - Upper to Lower Control Arm

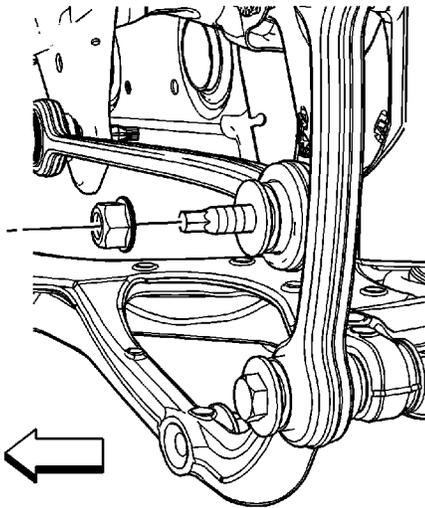


Callout	Component Name
<p><b>Important:</b> The following procedure indicates servicing the left side of the vehicle. The right side of the vehicle is similar.</p>	
<p><b>Preliminary Procedure</b></p>	
<ol style="list-style-type: none"> <li>1. Raise and support the vehicle. Refer to <a href="#">Lifting and Jacking the Vehicle</a>.</li> <li>2. Remove the rear tire and wheel. Refer to <a href="#">Tire and Wheel Removal and Installation</a></li> </ol>	
<p>1</p>	<p>Rear Lateral Link</p> <p><b>Procedure</b></p> <ol style="list-style-type: none"> <li>1. Remove the upper control arm bolt. Refer to <a href="#">Upper Control Arm Replacement</a>.</li> <li>2. Remove the lower control arm bolt. Refer to <a href="#">Lower Control Arm Replacement</a>.</li> </ol> <p><b>Tip</b> Support the lower control arm with a jack stand.</p>

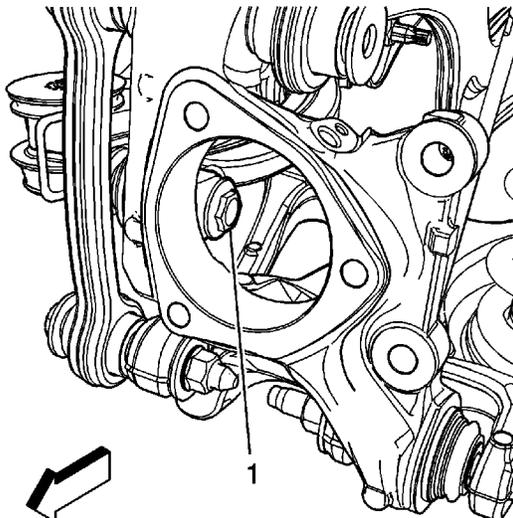
## Knuckle Replacement

### Removal Procedure

1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
2. Remove the rear wheel bearing and hub. Refer to [Rear Wheel Bearing and Hub Replacement](#).
3. Remove the park brake backing plate assembly. Refer to [Rear Parking Brake Anchor Backing Plate Replacement](#).
4. Remove the rear wheel drive shaft. Refer to [Rear Wheel Drive Shaft and Rear Axle Shaft Seal Replacement](#).
5. Position a jack stand under the lower control arm.



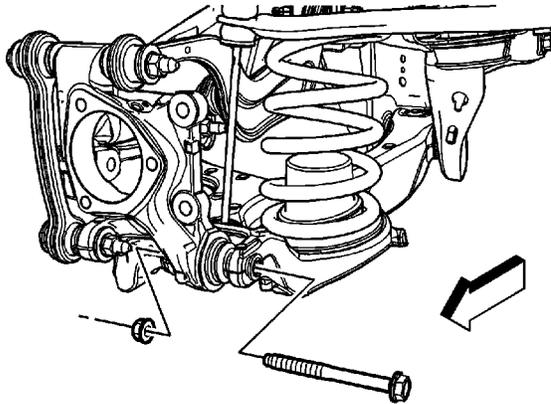
6. Remove the nut from the bolt from the knuckle to the adjuster link.



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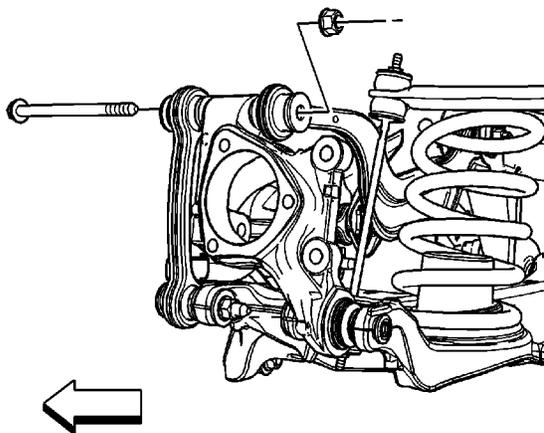


7. Remove the bolt (1) from the knuckle to the adjuster link.

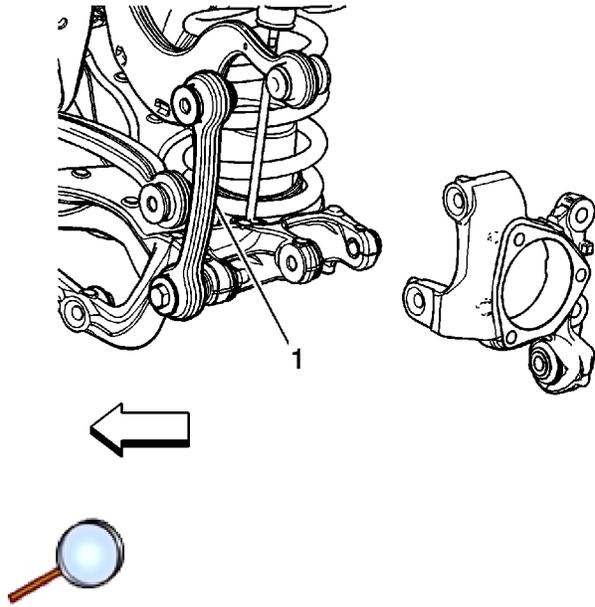


**Note:** If removing the lower nut and bolt in step 8 or the upper nut and bolt in step 9, to service other suspension components, it is not necessary to remove the knuckle.

8. Remove the lower knuckle to lower control arm nut and bolt.



9. Remove the bolt and nut from the upper control arm to the knuckle.

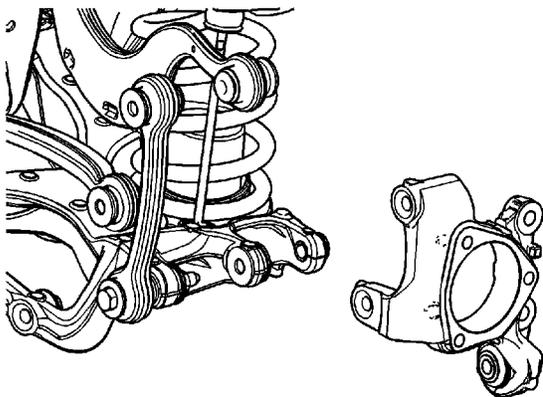


**Note:** In the following service procedure, it is not necessary to remove the rear suspension link from the lower control arm. The link (1) can remain attached to the lower control arm.

10. Remove the knuckle from the upper and lower control arms.

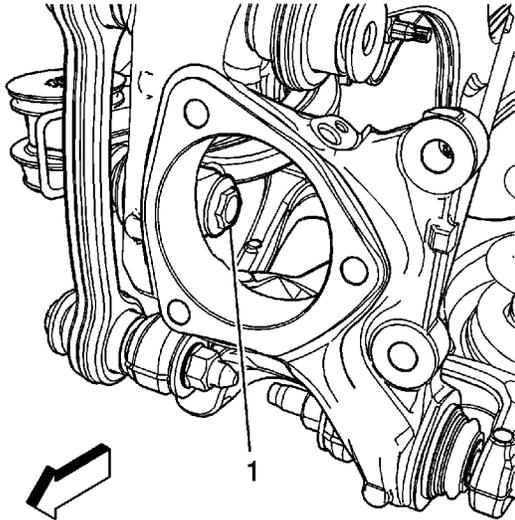
## Installation Procedure

**Note:** In steps 2-5, ensure that all the fasteners are installed loose in order to allow movement in the knuckle to allow for alignment all the mounting holes. After all the fasteners have been installed, then the proper torque specifications can be applied.



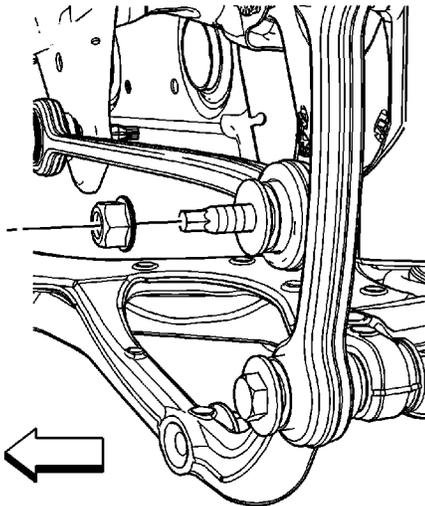


1. Position the knuckle in the upper and lower control arms.

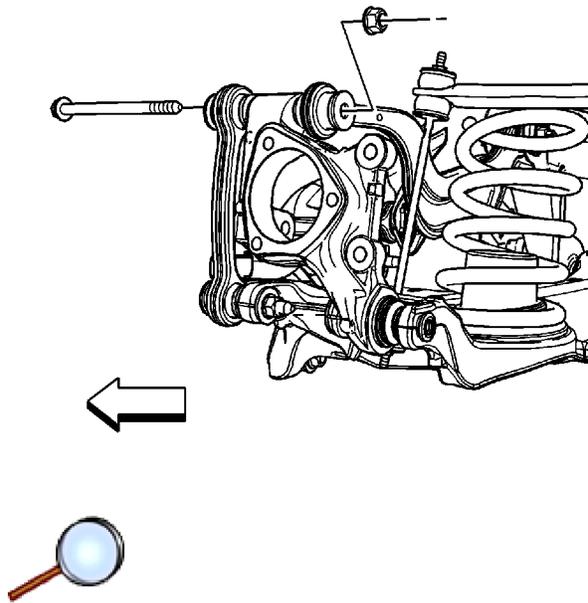


2. Install the bolt (1) from the knuckle to the adjuster link.

**Caution:** Refer to [Fastener Caution](#) in the Preface section.

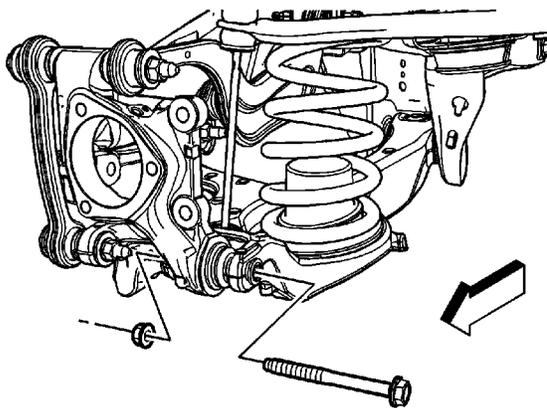


3. Tighten the nut for the bolt from the knuckle to the adjuster link to **75 N·m (55 lb ft) plus 60 degrees**.



**Note:** In steps 4 and 5, finger tighten the bolts. This will allow the alignment of the mounting holes in the control arms and the knuckle.

4. Install the bolt from the upper control arm to the knuckle and tighten to **100 N·m (74 lb ft) plus 90 degrees**.



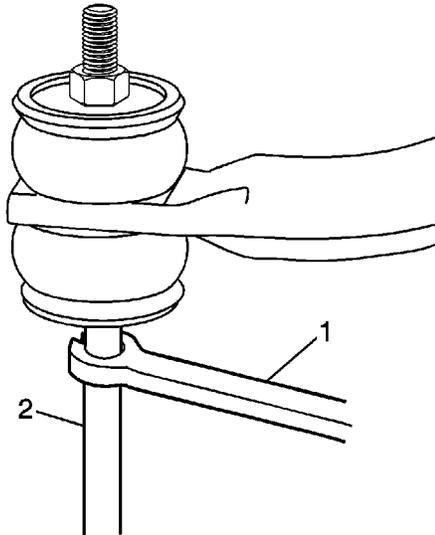
5. Install the bolt from the lower control arm to the knuckle and tighten to **100 N·m (74 lb ft) plus 90 degrees**.
6. Remove the jack stand from under the lower control arm.
7. Install the rear wheel drive shaft. Refer to [Rear Wheel Drive Shaft and Rear Axle Shaft Seal Replacement](#).
8. Install the park brake backing plate assembly. Refer to [Rear Parking Brake Anchor Backing Plate Replacement](#).

9. Install the rear wheel bearing and hub. Refer to [Rear Wheel Bearing and Hub Replacement](#).
10. Remove the support and lower the vehicle.

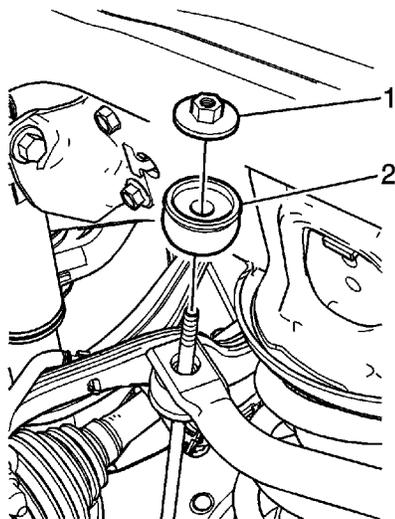
## Stabilizer Shaft Replacement

### Removal Procedure

1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
2. Remove the rear tires and wheels. Refer to [Tire and Wheel Removal and Installation](#).
3. Remove the spare tire.

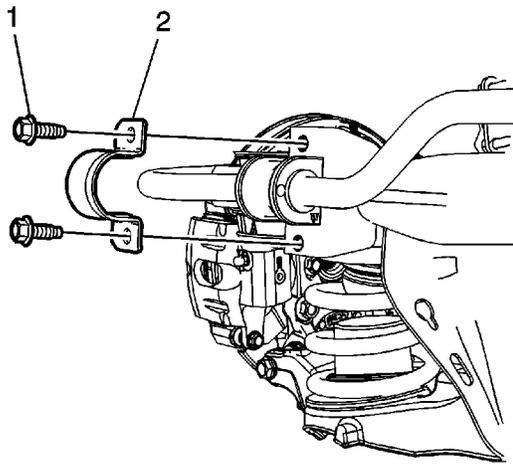


4. Insert a wrench (1) on the stabilizer shaft link (2) so as not to allow the stabilizer shaft link to rotate when removing or installing the retaining nut.

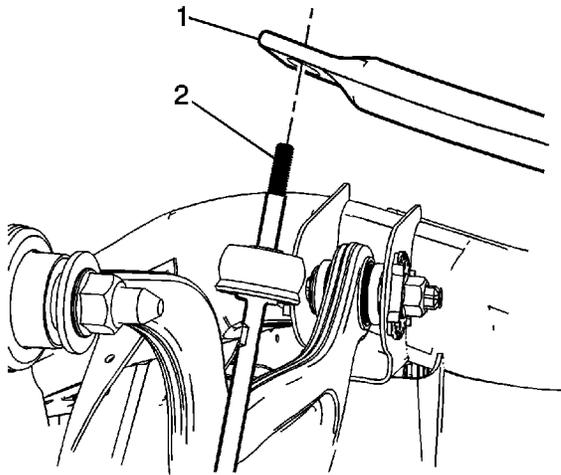


**Note:** It maybe necessary to apply a small amount of penetrating oil to the stabilizer shaft link retaining nut prior to removal.

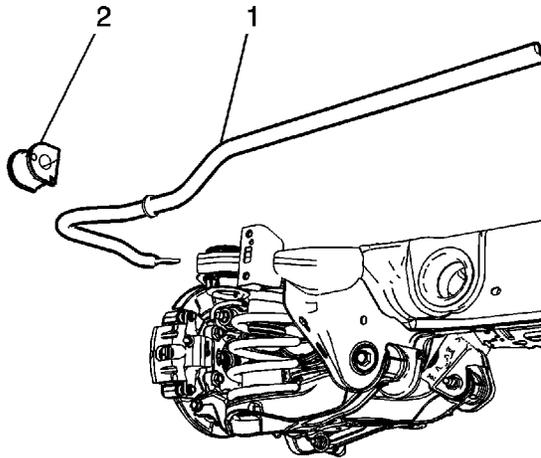
5. Remove the upper stabilizer shaft link retaining nut with washer (1) and bushing (2).



6. Remove the stabilizer shaft clamp bolt (1) and the clamp (2).



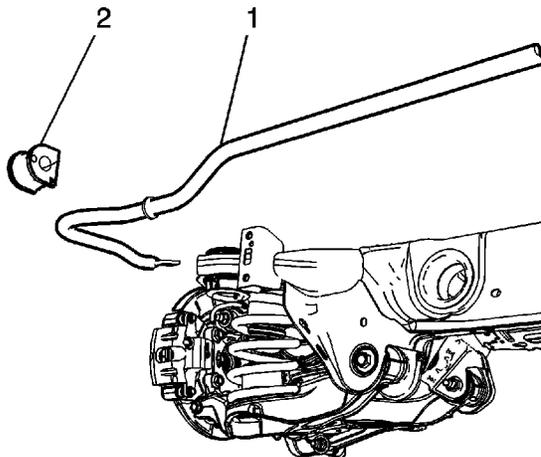
7. Remove the stabilizer shaft (1) from the stabilizer shaft link (2).



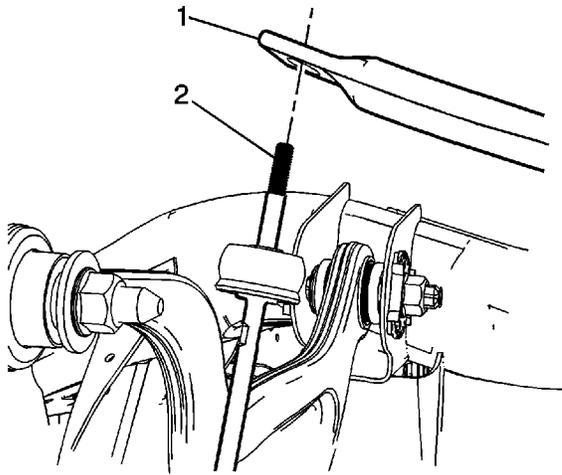
**Note:** It maybe necessary to maneuver the stabilizer shaft in such away to remove it from the vehicle.

8. Remove the stabilizer shaft (1) and bushing (2) from the vehicle.

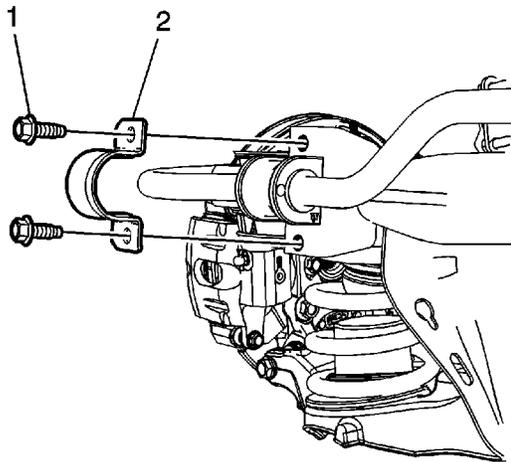
## Installation Procedure



1. Install the bushing (2) on the stabilizer shaft (1).
2. Maneuver the stabilizer shaft in such away to properly install it on the frame.

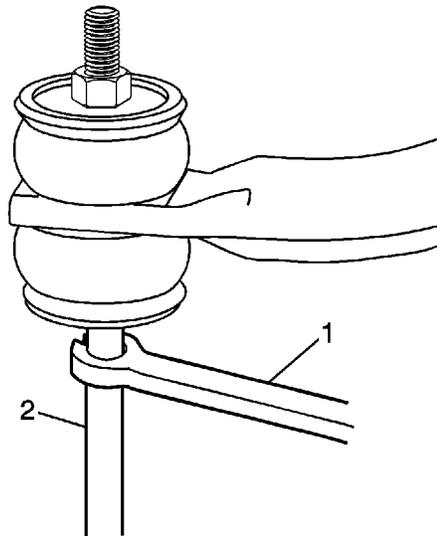


3. Install the stabilizer shaft (1) on the stabilizer shaft link (2).



**Note:** In steps 4 and 5, DO NOT tighten the bolts or nuts to specifications. Leave the bolts and nut loose.

4. Install the stabilizer shaft clamp (2) and the bolts (1).
5. Install the bushing (2) and the upper stabilizer shaft link retaining nut with washer (1).



6. Insert a wrench (1) on the stabilizer shaft link (2) so as not to allow the stabilizer shaft link to rotate when removing or installing the retaining nut.

**Caution:** Refer to [Fastener Caution](#) in the Preface section.

7. Tighten the upper stabilizer shaft link retaining nut.

**Tighten**

Tighten the retaining nut to 22 N·m (16 lb ft).

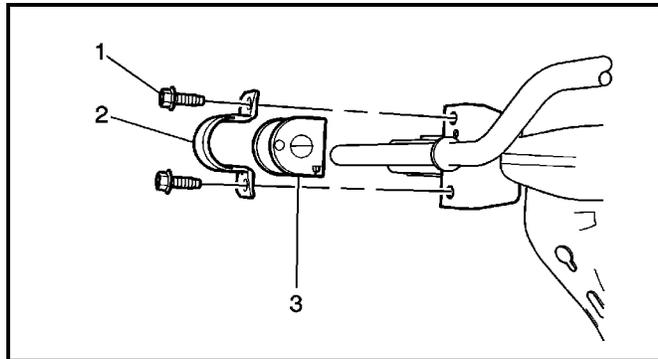
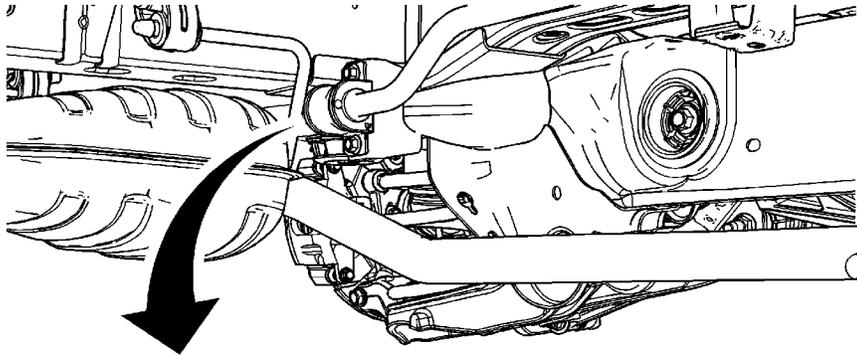
8. Tighten the stabilizer shaft clamp bolts.

**Tighten**

Tighten the clamp bolts nut to 50 N·m (16 lb ft).

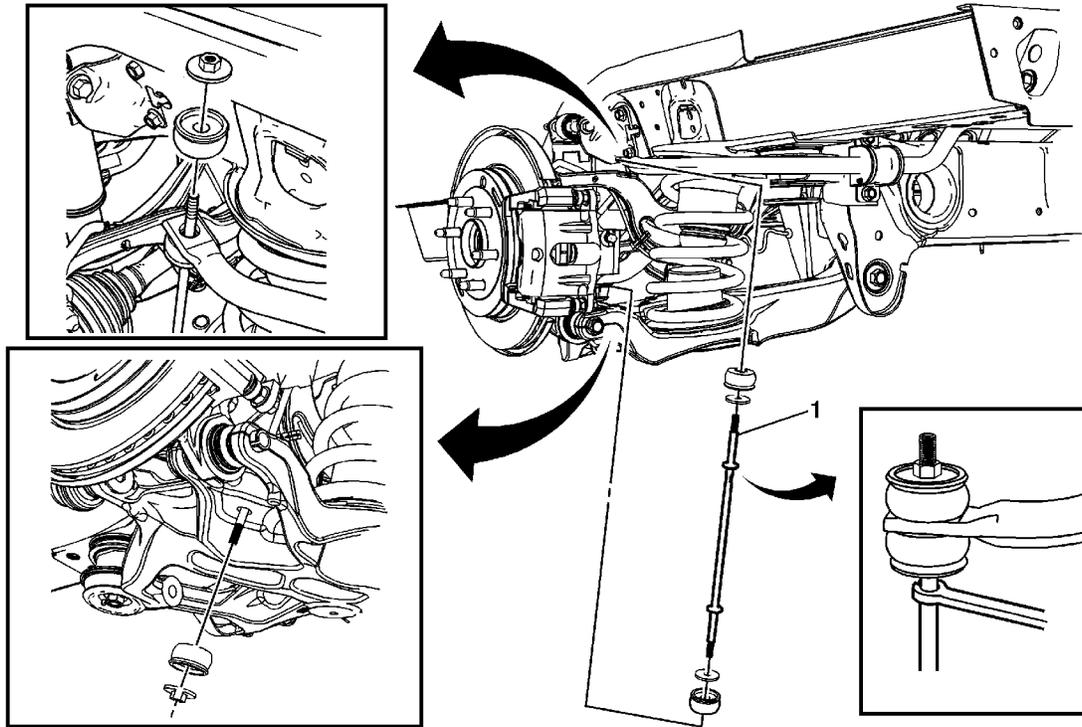
9. Install the spare tire.
10. Install the rear tires and wheels. Refer to [Tire and Wheel Removal and Installation](#).
11. Remove the support and lower the vehicle.

## Stabilizer Shaft Insulator Replacement



Callout	Component Name
<p><b>Note:</b> The following service procedure indicates the left side of the vehicle. The right side of the vehicle is similar.</p>	
<p><b>Preliminary Procedure</b></p>	
<p>Raise and support the vehicle. Refer to <a href="#">Lifting and Jacking the Vehicle</a>.</p>	
<p>1</p>	<p>Stabilizer Shaft Clamp Bolt (Qty: 2)</p> <p><b>Caution:</b> Refer to <a href="#">Fastener Caution</a> in the Preface section.</p> <p><b>Tighten</b> 50 N·m (37 lb ft)</p>
<p>2</p>	<p>Stabilizer Shaft Clamp</p>
<p>3</p>	<p>Stabilizer Shaft Insulator</p>

## Stabilizer Shaft Link Replacement



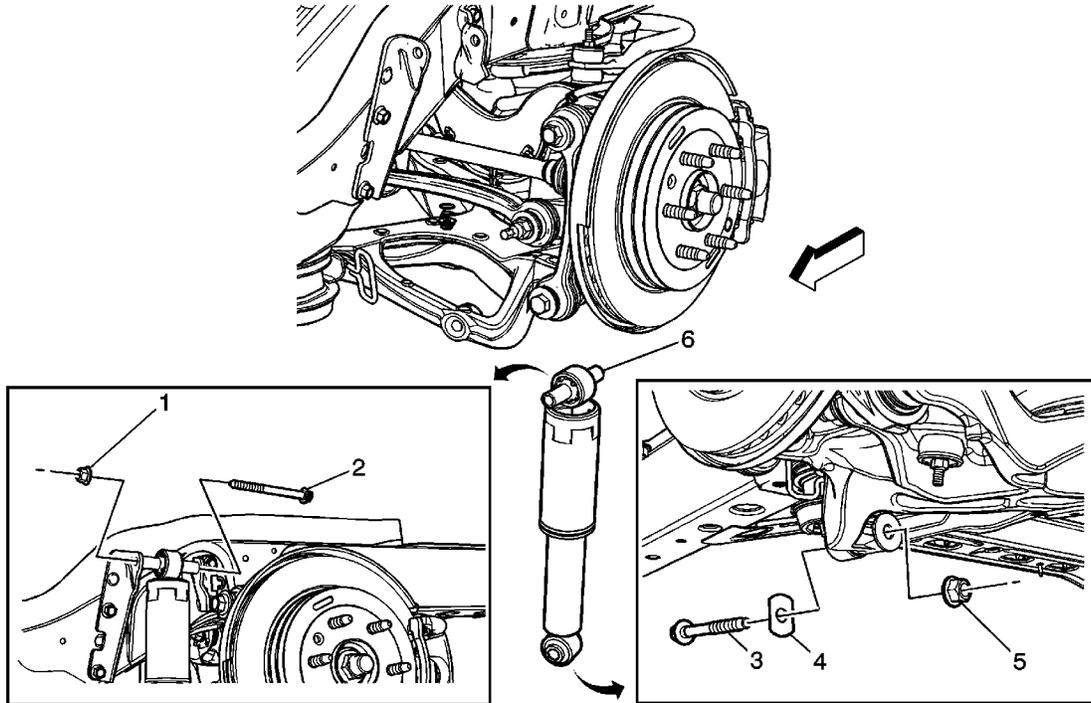
Callout	Component Name
<b>Preliminary Procedures</b>	
<ol style="list-style-type: none"> <li>1. Raise and support the vehicle. Refer to <a href="#">Lifting and Jacking the Vehicle</a>.</li> <li>2. Remove the tire and wheel. Refer to <a href="#">Tire and Wheel Removal and Installation</a>.</li> </ol>	
1	<p>Stabilizer Shaft Link</p> <p><b>Caution:</b> Refer to <a href="#">Fastener Caution</a> in the Preface section.</p> <p><b>Procedure</b></p> <ol style="list-style-type: none"> <li>1. Use a wrench to keep the stabilizer shaft link from rotating.</li> <li>2. Remove the upper stabilizer shaft link retaining nut, washer and bushing.</li> <li>3. Repeat the previous steps on the lower stabilizer shaft retaining nut, washer and bushing.</li> <li>4. Remove the stabilizer shaft link from the vehicle. Left side shown, right side similar.</li> </ol> <p><b>Tip</b> Apply a small amount of penetrating oil on the treads of the stabilizer shaft link prior to removing the retaining nuts.</p>

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**Tighten**

22 N·m (16 lb ft)

# Shock Absorber Replacement

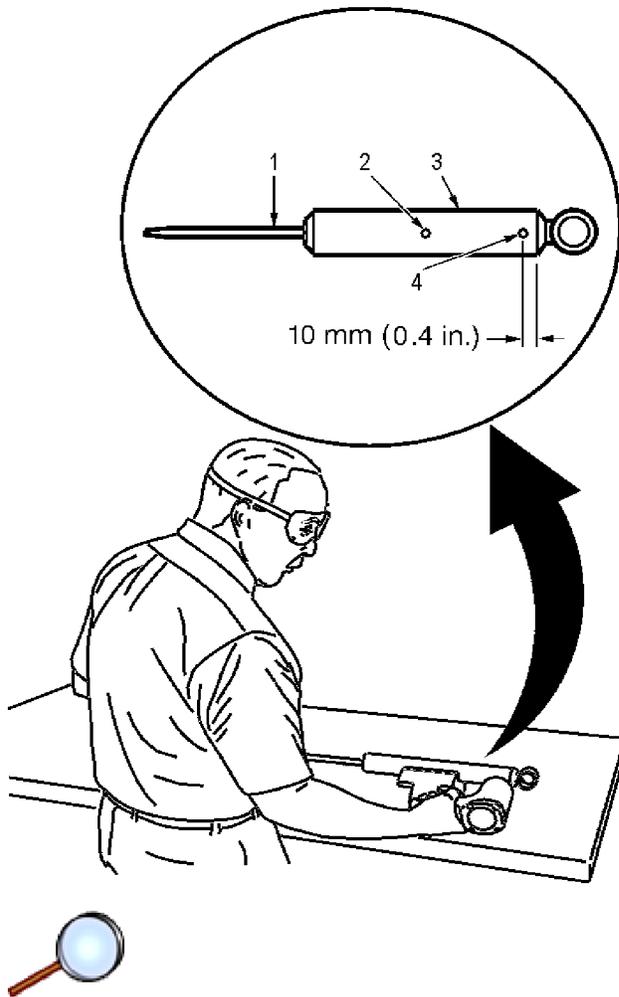


Callout	Component Name
<b>Preliminary Procedures</b>	
1. Raise and support the vehicle. Refer to <a href="#">Lifting and Jacking the Vehicle</a> . 2. Remove the rear tire and wheel. Refer to <a href="#">Tire and Wheel Removal and Installation</a> .	
1	Upper Rear Shock Absorber Nut <b>Caution:</b> Refer to <a href="#">Fastener Caution</a> in the Preface section. <b>Tighten</b> 70 N·m (52 lb ft)
2	Upper Shock Absorber Bolt
3	Lower Rear Shock Absorber Bolt <b>Procedure</b> <ol style="list-style-type: none"> <li>1. Position a jack stand under the lower control arm.</li> <li>2. Raise or lower the jack stand to aid in the installation of the lower shock absorber bolt.</li> </ol>

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	<b>Tighten</b> 100 N·m (74 lb ft) plus 60 degrees
4	Lower Shock Absorber Washer
5	Lower Shock Absorber Nut
6	Rear Shock Absorber

## Shock Absorber Disposal



**Warning:** Gas charged shock absorbers contain high pressure gas. Do not remove the snap ring from inside the top of the tube. If the snap ring is removed, the contents of the shock absorber will come out with extreme force which may result in personal injury.

**Warning:** 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.

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

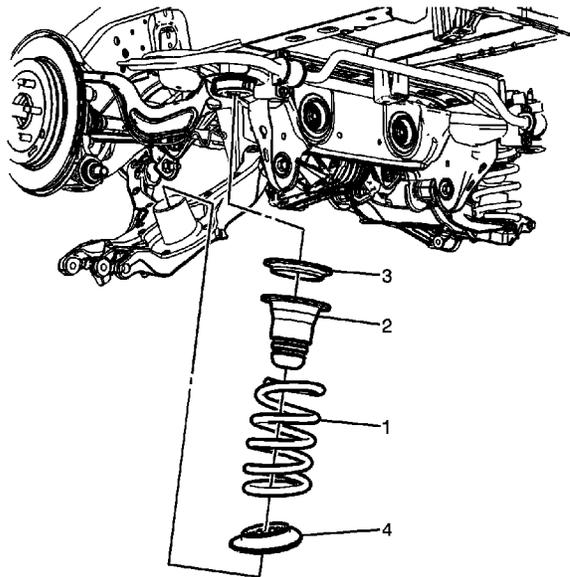
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to contain the escaping oil.

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.

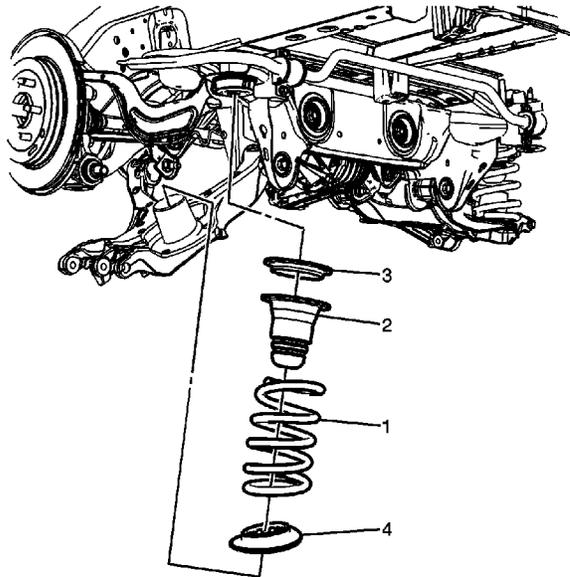
## Rear Spring, Insulator, and Jounce Bumper Replacement

### Removal Procedure



1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#) .
2. Remove the rear tire and wheel. Refer to [Tire and Wheel Removal and Installation](#) .
3. Position an adjustable jack stand under the lower control arm .
4. Remove the lower stabilizer shaft link bushing and nut. Refer to [Stabilizer Shaft Link Replacement](#) .
5. Remove the lower shock absorber bolt. Refer to [Shock Absorber Replacement](#) .
6. Remove the lower bolts from the knuckle. Refer to [Knuckle Replacement](#) .
7. Using the adjustable jack stand, slowly lower the vehicle until the rear spring (1), insulator (4), jounce bumper (2), and the spring seat (3) can be removed.

### Installation Procedure



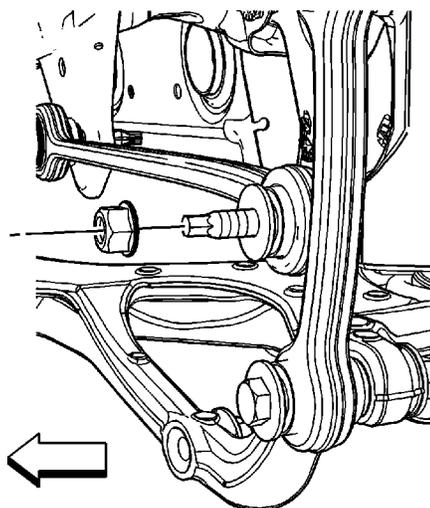
1. Position the spring seat (3), jounce bumper (2), rear spring (1), and the insulator (4) on the lower control arm.
2. Using the adjustable jack stand, raise the lower control arm until the lower bolts for the knuckle can be installed. Refer to [Knuckle Replacement](#) .
3. Remove the adjustable jack stand.
4. Install the lower stabilizer shaft link bushing and nut. Refer to [Stabilizer Shaft Link Replacement](#) .
5. Install the lower shock absorber bolt. Refer to [Shock Absorber Replacement](#) .
6. Install the rear tire and wheels. Refer to [Tire and Wheel Removal and Installation](#) .
7. Remove the support and lower the vehicle.

## Adjust Link Replacement

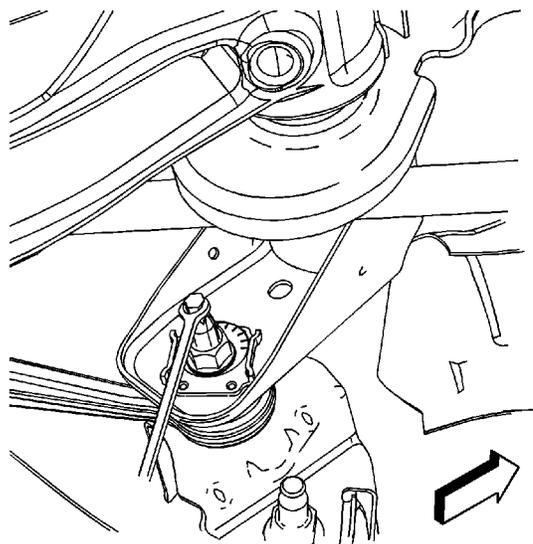
### Removal Procedure

**Note:** The following procedure indicates servicing the left side of the vehicle. Servicing the right side of the vehicle is similar.

1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
2. Remove the rear shock absorber. Refer to [Shock Absorber Replacement](#).

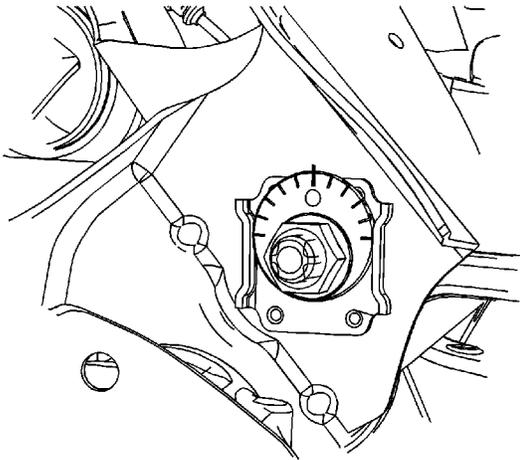


3. Remove the retaining nut from the adjuster link to the knuckle.



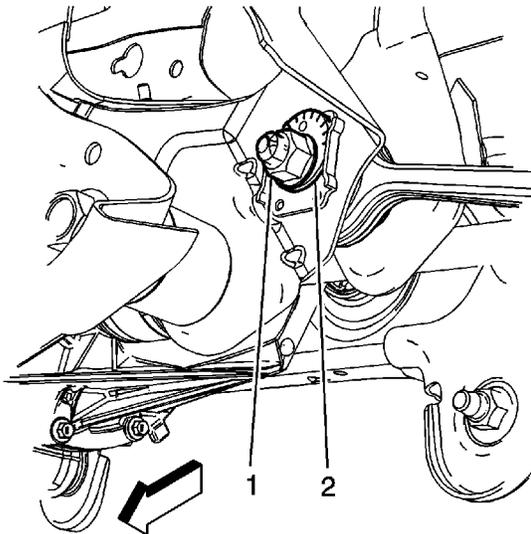


4. Install a wrench to hold the adjuster cam bolt.

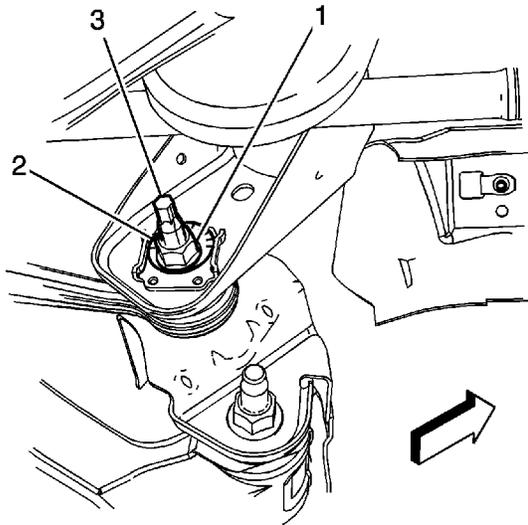


**Note:** In steps 5 and 6, if servicing other suspension components, mark the relationship of the adjuster cams to the mounting brackets to aid in the re-installation of the adjustment link.

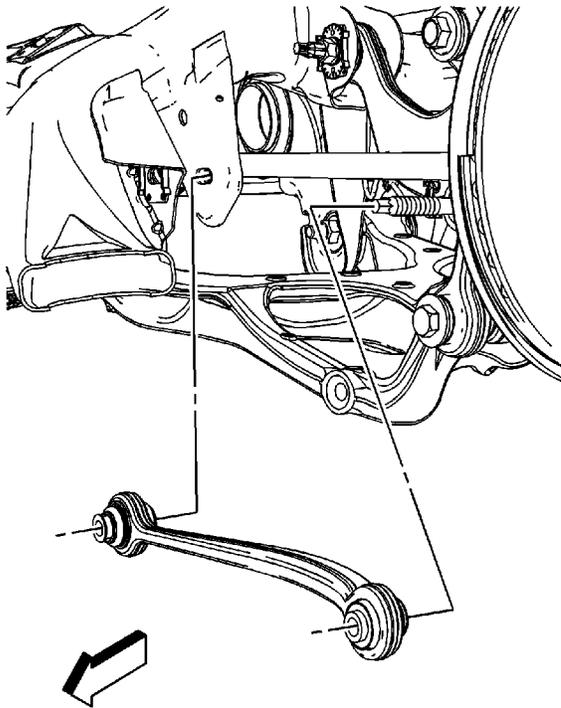
5. Mark a point of reference on the adjuster cam and the mounting bracket.



6. Remove the front adjuster nut (1) and the adjuster cam (2).

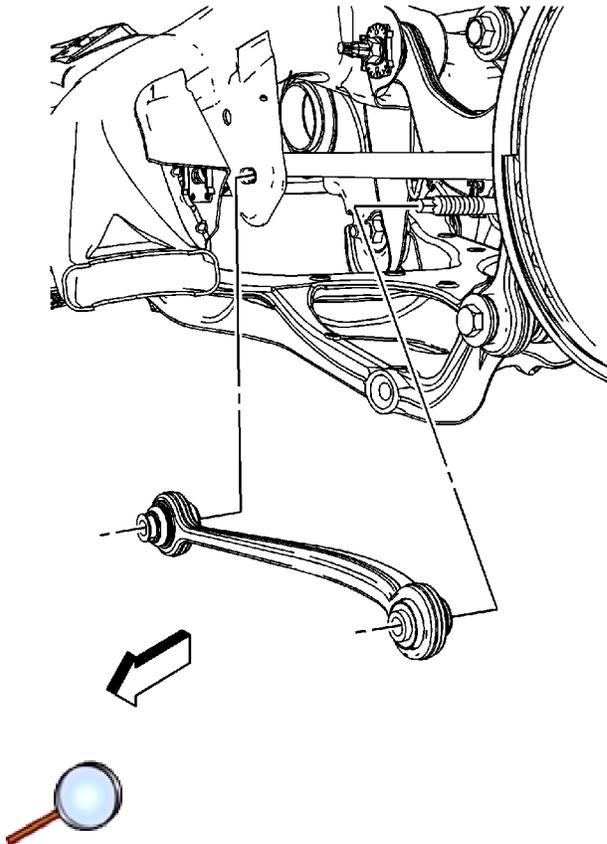


7. Remove the rear adjuster nut (1), adjuster cam (2).
8. Maneuver the adjuster bolt (3) so as to remove it from the mounting bracket.

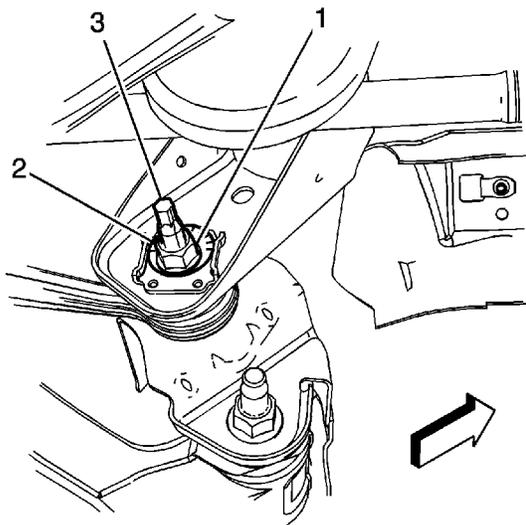


9. Remove the adjuster link from the knuckle and the mounting bracket,

## Installation Procedure

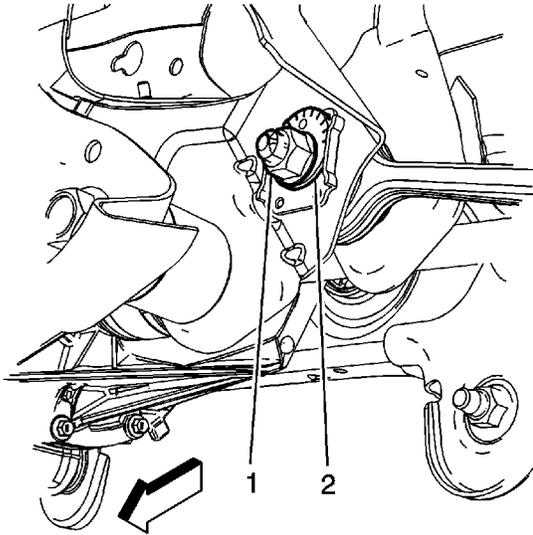


1. Install the adjuster link on the knuckle and in the mounting bracket.



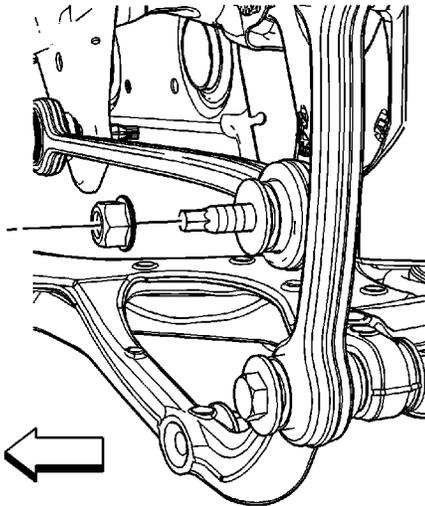


2. Install the adjuster bolt (3) in the mounting bracket and adjuster link.
3. Install the rear adjuster cam (2) and adjuster nut (1). Finger tighten the nut at this time.



4. Install the front adjuster cam (2) and the adjuster nut (1). Finger tighten the nut at this time.

**Caution:** Refer to [Fastener Caution](#) in the Preface section.

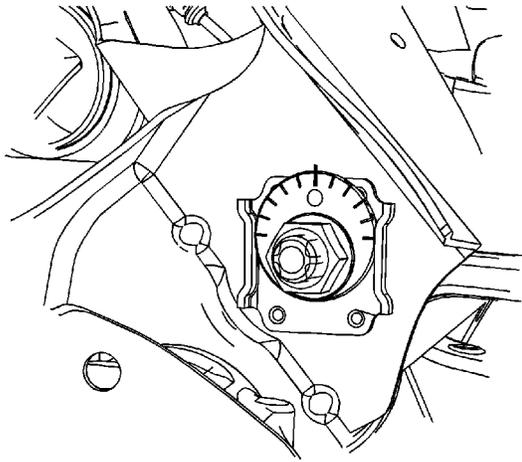


5. Install the retaining nut for the adjuster link.

**Tighten**

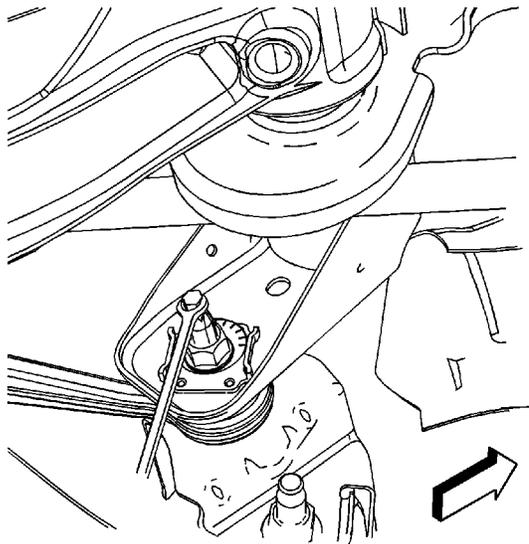
Tighten the retaining nut to 75 N·m (55 lb ft) plus 60 degrees.

6. Install the rear shock absorber. Refer to [Shock Absorber Replacement](#).



**Note:** If servicing other suspension components, align the relationship marks on the adjuster cam and the mounting brackets to aid in the re-installation of the adjustment link.

7. Align the reference marks on the adjuster cam and the mounting bracket.



8. Install a wrench to hold the adjuster cam bolt.
9. Tighten the adjuster cam nuts.

**Tighten**

Tighten the adjuster cam nuts to 140 N·m (103 lb ft).

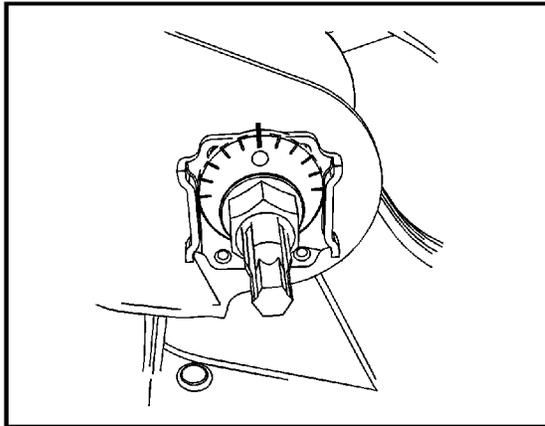
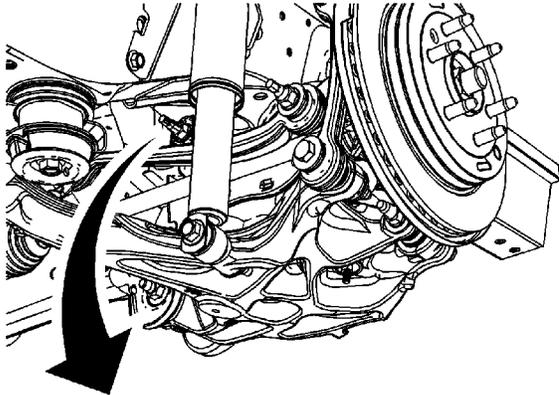
10. Remove the support and lower the vehicle.
11. Align the rear suspension. Refer to [Wheel Alignment Specifications](#).

## Upper Control Arm Replacement

### Removal Procedure

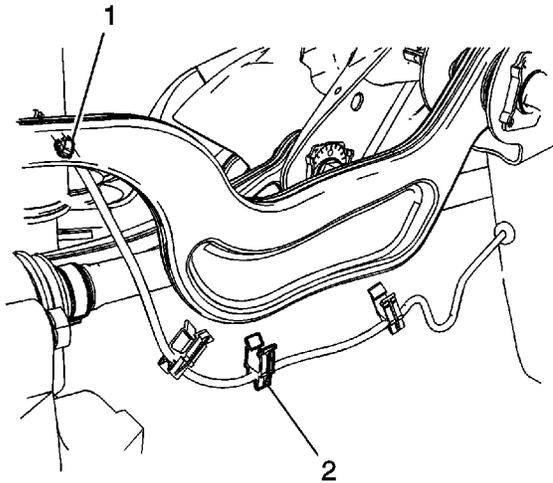
**Note:** In the following service procedures, the left side is shown, the right side is similar.

1. Remove the tire and wheel assembly. Refer to [Tire and Wheel Removal and Installation](#).

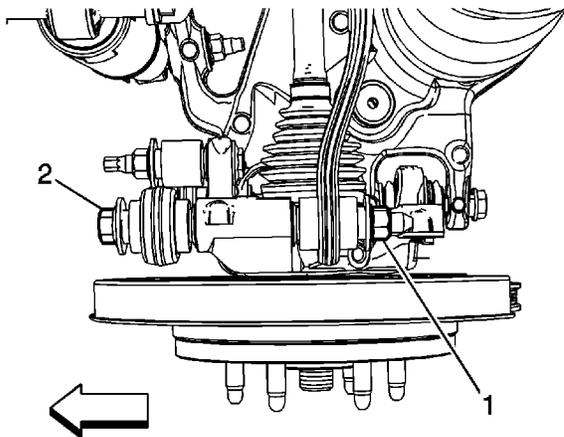


**Note:** If removing the upper control arm to service scribe a line on the front adjuster cam to aid in the realignment of the control arm.

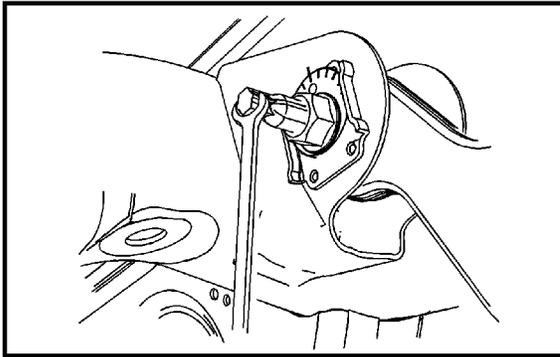
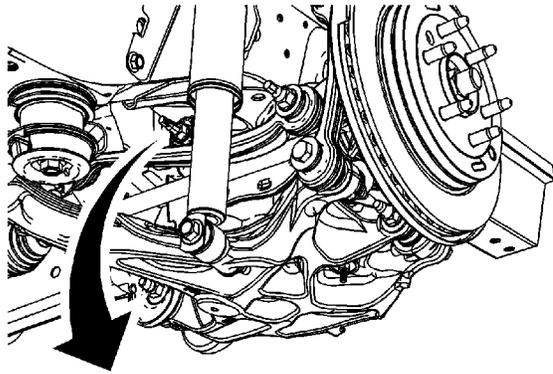
2. Scribe a reference mark on the adjuster cam and the bracket to aid in installing the upper control arm.



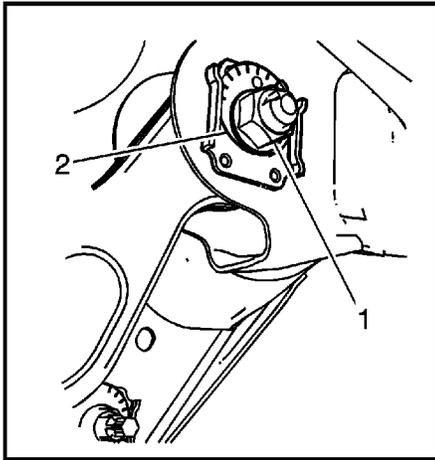
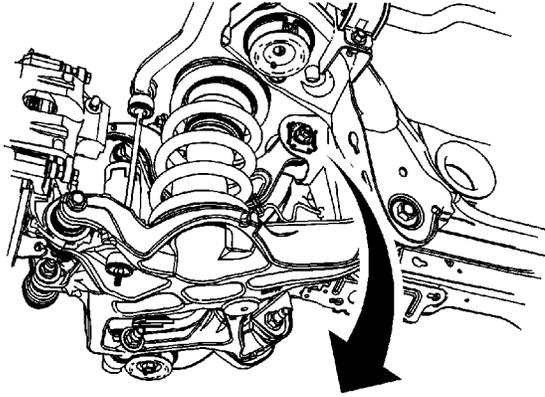
3. Remove the speed sensor wiring harness retaining clips (1) and (2) from the upper control arm.
4. Position a jack stand under the lower control arm.



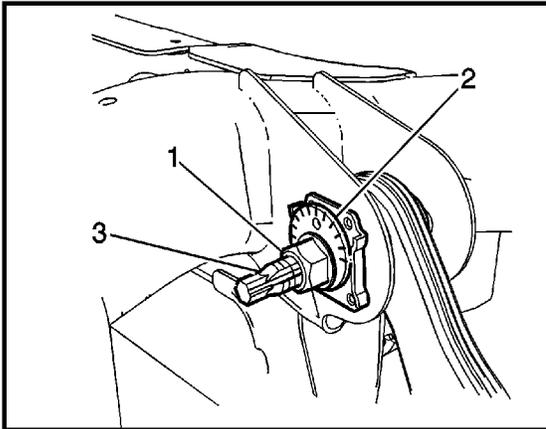
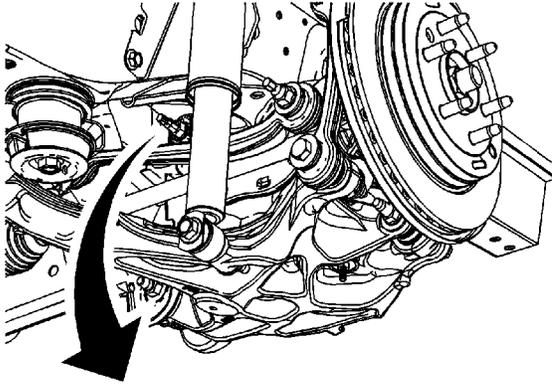
5. Remove the upper control arm mounting nut (1) and bolt (2).



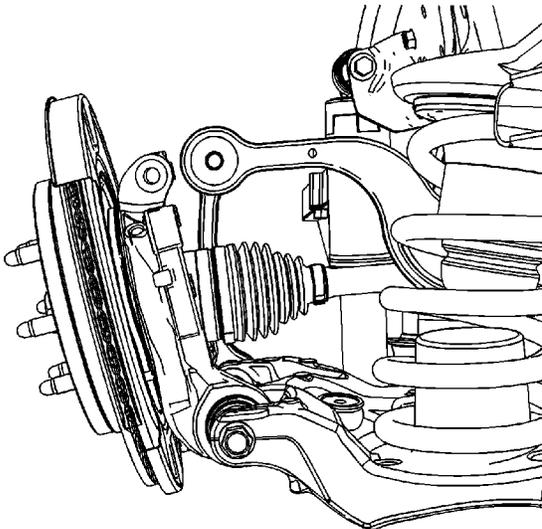
6. Use a wrench to hold the adjuster cam bolt.



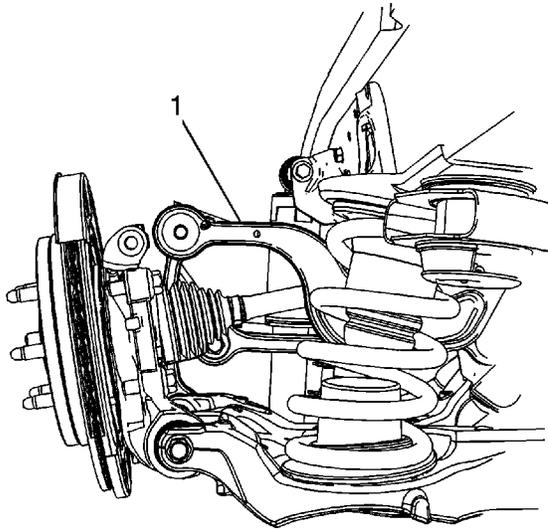
7. Remove the rear upper adjuster cam bolt (1).
8. Remove the rear upper adjuster cam (2).



9. Remove front the adjuster cam nut (1).
10. Remove the adjuster cam (2).
11. Remove the adjuster cam bolt (3).

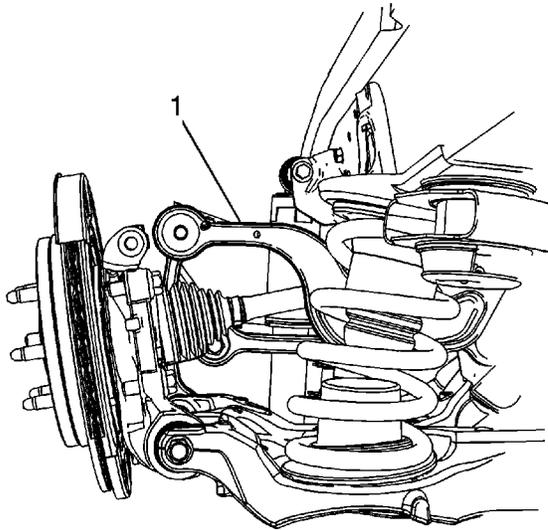


12. Rotate the rear knuckle down to gain removal clearance for the upper control arm.

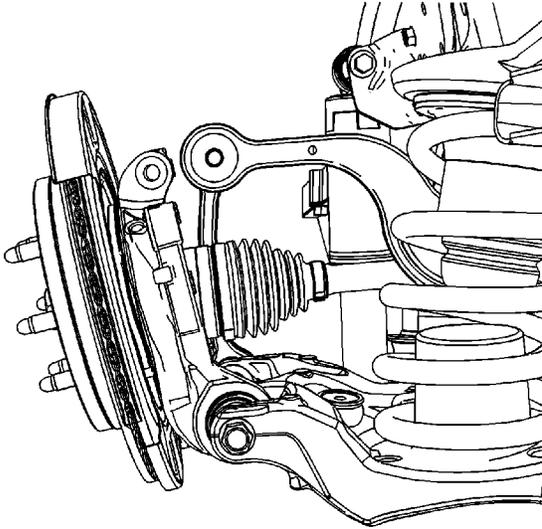


13. Remove the upper control arm (1).

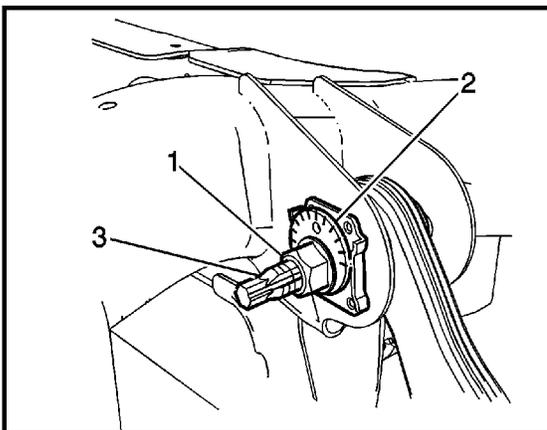
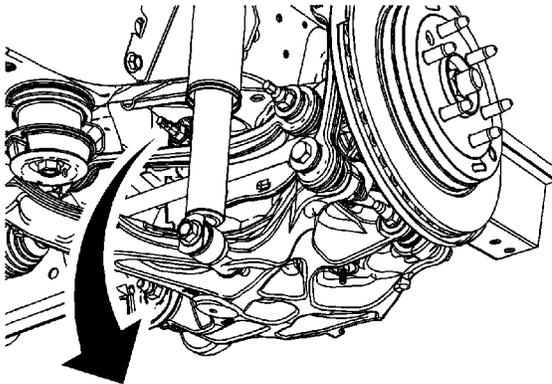
## **Installation Procedure**



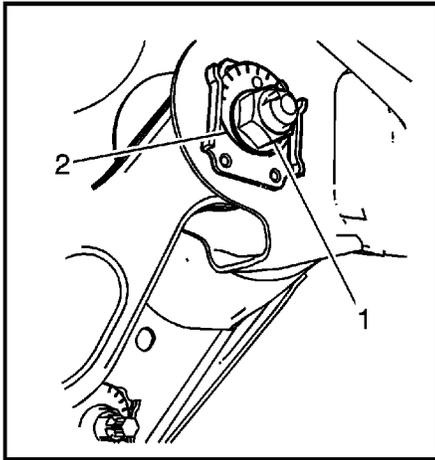
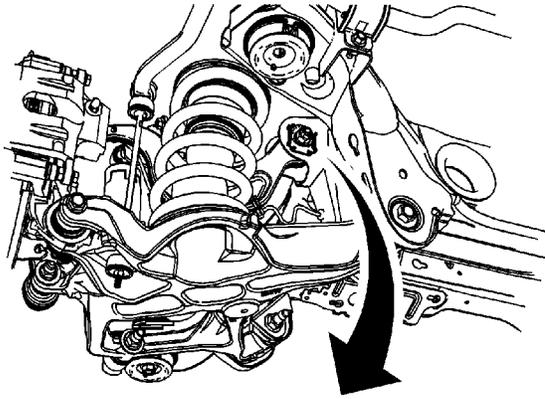
1. Install the upper control arm (1) in the mounting bracket.



2. Rotate the knuckle assembly back into the proper position.

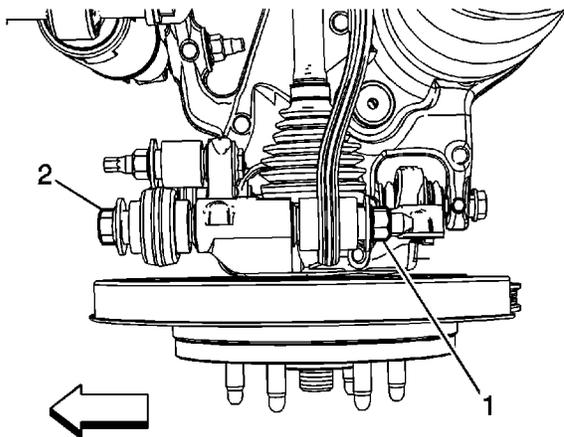


3. Position the front adjuster cam (2) in the mounting bracket.
4. Install the adjuster cam bolt (3).
5. Finger tighten the front adjuster cam nut (1).



6. Position the rear adjuster cam (2) in the mounting bracket.
7. Finger tighten the rear adjuster cam nut (1).

**Caution:** Refer to [Fastener Caution](#) in the Preface section.



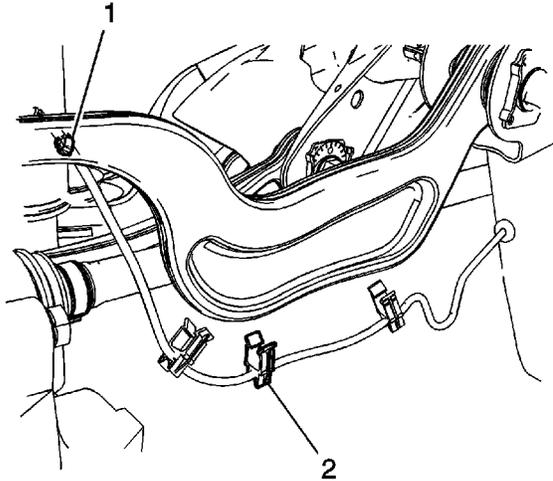


8. Install the upper control arm bolt (2) and nut (1).

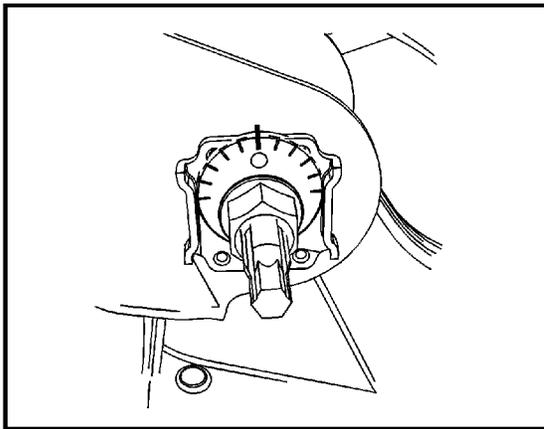
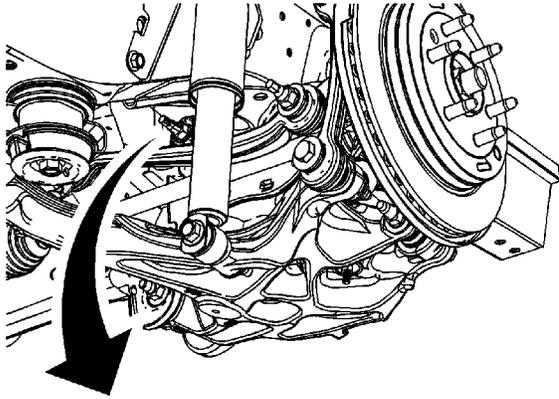
**Tighten**

Tighten the bolt to 100 N·m (74 lb ft) plus 90 degrees.

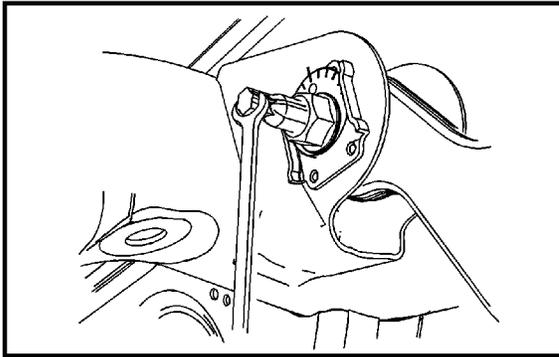
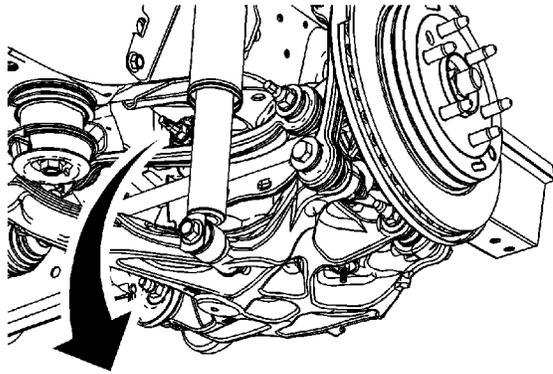
9. Remove the jack stand from under the lower control arm.



10. Install the speed sensor wiring harness retaining clips (1) and (2) on the upper control arm.



11. Align the reference marks on the adjuster cam and bracket.



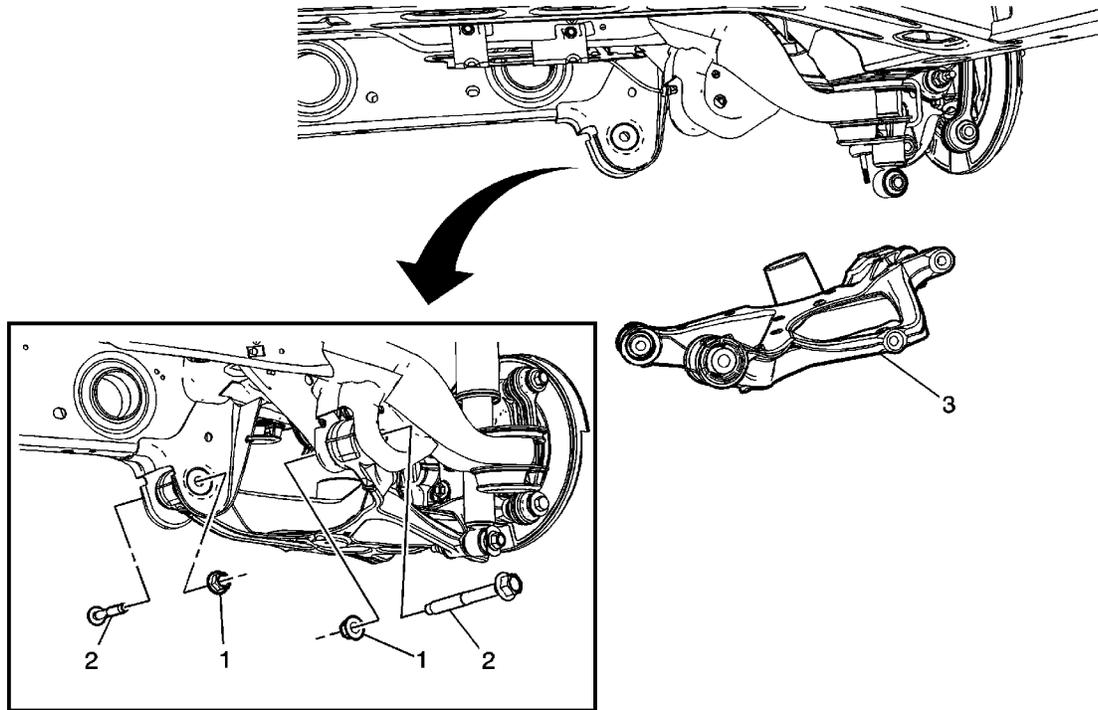
12. Using a wrench to hold the adjuster cam bolt in place, tighten all the adjuster cam nuts.

**Tighten**

Tighten the nuts to 140 N·m (103 lb ft).

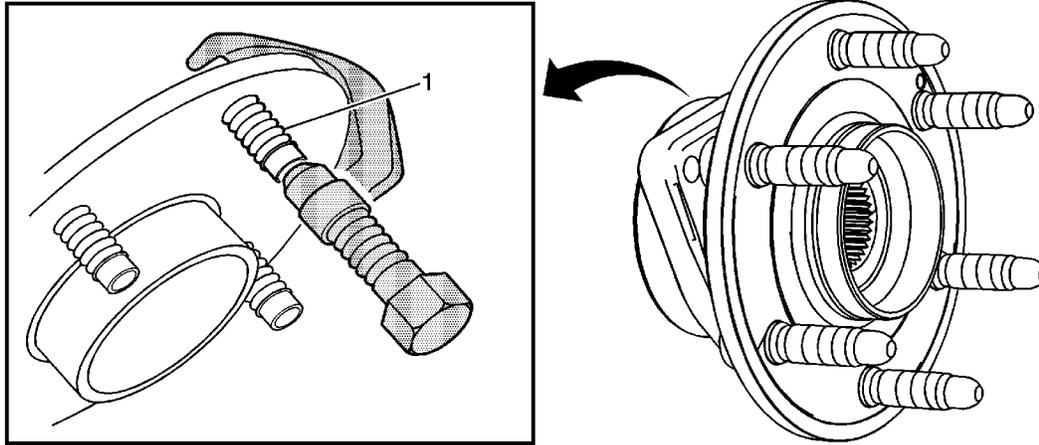
13. Install the tire and wheel assembly. Refer to [Tire and Wheel Removal and Installation](#).
14. Verify wheel alignment. Refer to [Wheel Alignment Specifications](#).

## Lower Control Arm Replacement



Callout	Component Name
<b>Preliminary Procedure</b>	
Remove the rear coil spring and related parts. Refer to <a href="#">Rear Spring, Insulator, and Jounce Bumper Replacement</a> .	
1	Rear Lower Control Arm Nut (Qty: 2)
2	Rear Lower Control Arm Bolt (Qty: 2) <b>Caution:</b> Refer to <a href="#">Fastener Caution</a> in the Preface section. <b>Tighten</b> <ul style="list-style-type: none"> <li>• Tighten the front control nut to 110 N·m (81 lb ft) plus 45 degrees</li> <li>• Tighten the rear control nut to 120 N·m (89 lb ft) plus 60 degrees</li> </ul>
3	Rear Lower Control Arm

## Wheel Stud Replacement



Callout	Component Name
<p><b>Preliminary Procedure</b></p>	
<p>Remove the rear wheel bearing/hub assembly. Refer to <a href="#">Rear Wheel Bearing and Hub Replacement</a>.</p>	
<p>1</p>	<p>Wheel Stud (Qty: 6)</p> <p><b>Procedure</b></p> <ol style="list-style-type: none"> <li>1. Use either an old lug nut or a nut that will fit the wheel stud.</li> <li>2. Tighten the lug nut/nut until the wheel stud is seated against the wheel hub.</li> </ol> <p><b>Tip</b> Ensure that the washers being used, the center hole is larger than the wheel stud.</p> <p><b>Special Tools</b></p> <p><a href="#">J 43631</a> Ball Joint Remover</p>