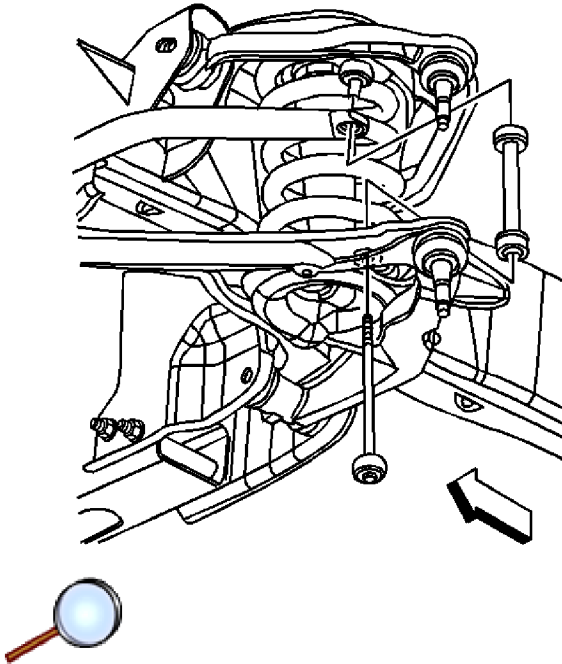


## Fastener Tightening Specifications

Application	Specification	
	Metric	English
Brake Hose Bracket to Steering Knuckle Bolt	10 N·m	88 lb in
Brake Hose Bracket to Upper Control Arm Bolt	10 N·m	88 lb in
Hub and Bearing to Steering Knuckle Mounting Bolts	180 N·m	133 lb ft
Lower Ball Joint Retaining Nut	100 N·m	74 lb ft
Lower Control Arm to Frame Mounting Nuts		
W/O 14050/12300GVW	155 N·m	114 lb ft
With 14050/12300GVW	120 N·m + 175°	89 lb ft + 175°
With Diesel Engine	120 N·m + 175°	89 lb ft + 175°
Outer Tie Rod Retaining Nut	63 N·m	47 lb ft
Shock Absorber Lower Retaining Bolts		
Rear Wheel Drive	25 N·m	18 lb ft
4 Wheel Drive	80 N·m	59 lb ft
Shock Absorber Upper Retaining Nut	22 N·m	16 lb ft
Stabilizer Shaft Insulator Clamp		
1500 and 2500 Series W/7300 GVW Bolts	25 N·m	18 lb ft
2500 Series W/8500/8600 GVW and 3500 Series Nuts	50 N·m	37 lb ft
2500 Series W/8500/8600 GVW and 3500 Series Studs	25 N·m	18 lb ft
Stabilizer Shaft Link Bolt	11 N·m	97 lb in
Torsion Bar Support Mounting Bolts	95 N·m	70 lb ft
Upper Ball Joint Retaining Nut	50 N·m	37 lb ft
Upper Control Arm Mounting Nuts	175 N·m	129 lb ft
Wheel Drive Shaft Nut	210 N·m	155 lb ft
Wheel Speed Sensor Retaining Bolt	18 N·m	13 lb ft

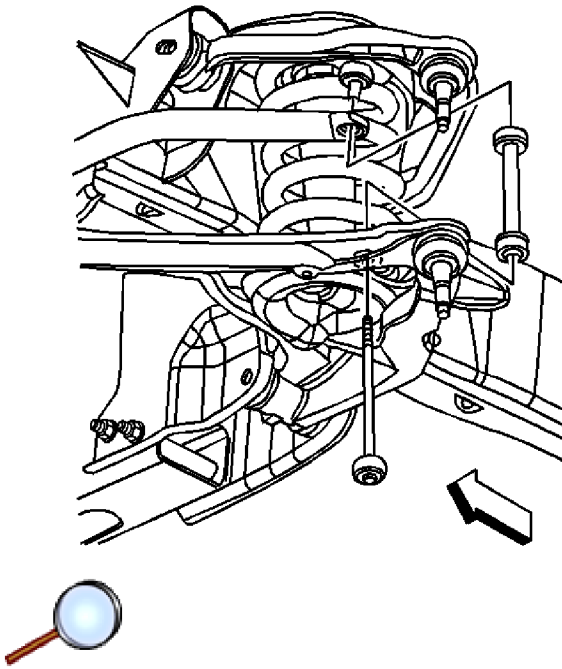
## Stabilizer Shaft Link Replacement

### Removal Procedure



1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
2. Remove the stabilizer shaft nut from the link bolt.
3. Remove the stabilizer shaft link bolt.
4. Remove the stabilizer shaft link insulators and spacers.
5. Inspect all of the parts for wear and damage.

### Installation Procedure



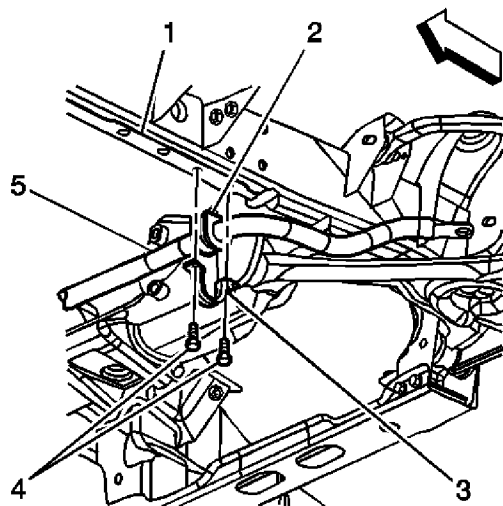
1. Install the stabilizer shaft link insulators and spacers.
2. Perform the following procedure before installing the stabilizer shaft link bolts.
  - Remove all traces of the original adhesive patch.
  - Apply Threadlocker GM P/N 12345382 or BLUE LOCTITE™ #242 on the threads of the bolts.
3. Install the stabilizer shaft link bolts.

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

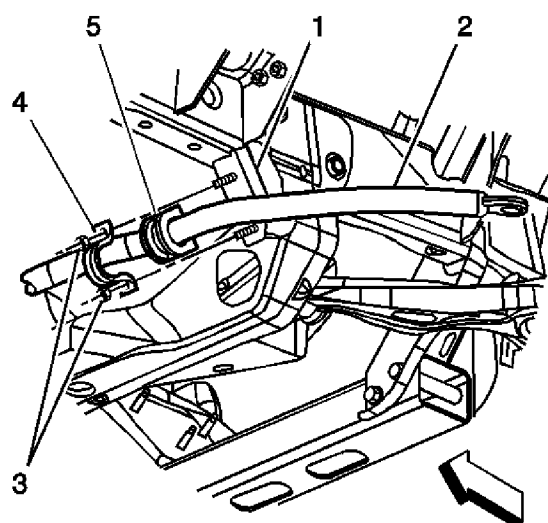
4. Install the stabilizer shaft nut to the link bolt and tighten to **11 N·m (97 lb in)**.
5. Remove the safety stands.
6. Lower the vehicle.

## Stabilizer Shaft Insulator Replacement

### Removal Procedure



1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
2. Remove the stabilizer shaft insulator clamps mounting bolts (4) (1500 and 2500 series w/7300 GVW).
3. Remove the stabilizer shaft insulator clamps (3) from the stabilizer shaft insulator (2) (1500 and 2500 series w/7300 GVW).
4. Lower the stabilizer shaft (5) and remove the stabilizer shaft insulator (2) (1500 and 2500 series w/7300 GVW).



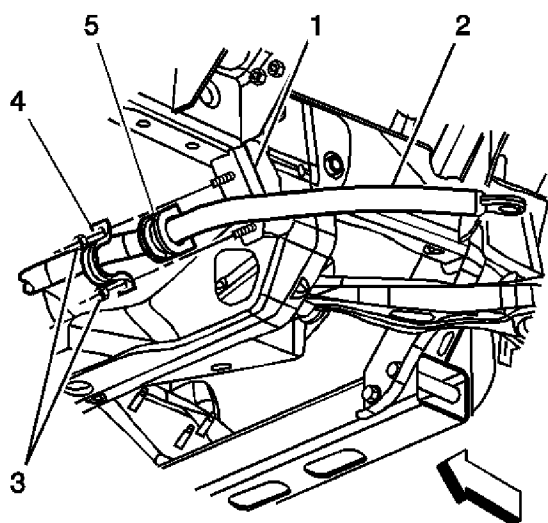


**Note:** The stabilizer shaft insulator stud may come out of the frame when removing stabilizer shaft insulator mounting nuts.

5. Remove the stabilizer shaft insulator clamps nuts (3) and/or studs (2500 series w/8500 and 8600 GVW and 3500 series).
6. Remove the stabilizer shaft clamps (4) (2500 series w/8500 and 8600 GVW and 3500 series).
7. Lower the stabilizer shaft (2) and remove the stabilizer shaft insulators (5) (2500 series w/8500 and 8600 GVW and 3500 series).
8. Inspect all of the parts for wear and damage.

## Installation Procedure

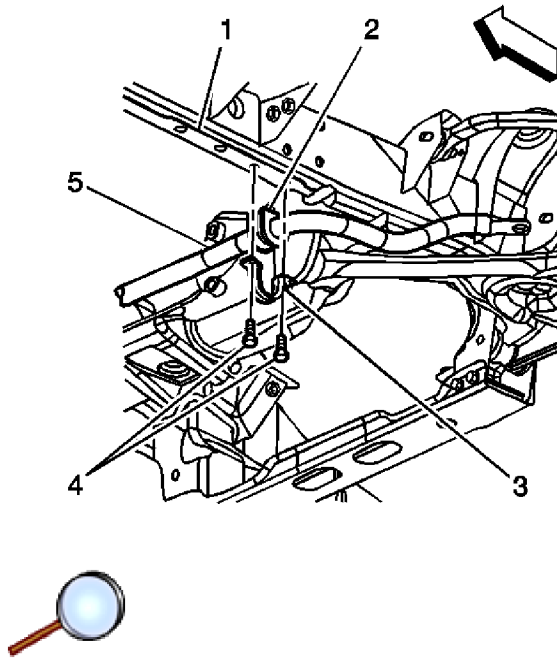
**Caution:** Refer to [Fastener Caution](#) in the Preface section.



1. Install the stabilizer shaft insulator clamp studs, if removed (2500 series w/8500 and 8600 GVW and 3500 series). Tighten the studs to **25 N·m (18 lb ft)**.

**Note:** Place the stabilizer shaft insulators on the stabilizer shaft with the slits facing toward the front of the vehicle.

2. Install the stabilizer shaft insulators (5) to the stabilizer shaft (2) (2500 series w/8500 and 8600 GVW and 3500 series).
3. Install the stabilizer shaft clamps (4) over the insulators and the stabilizer shaft (2) (2500 series w/8500 and 8600 GVW and 3500 series).
4. Install stabilizer shaft insulator clamps nuts (3) (2500 series w/8500 and 8600 GVW and 3500 series) and tighten to **46 N·m (34 lb ft)**.



**Note:** Place the stabilizer shaft insulators on the stabilizer shaft with the slits facing toward the front of the vehicle.

5. Install the stabilizer shaft insulator (2) to stabilizer shaft (5) (1500 and 2500 series w/7300 GVW).
6. Install the stabilizer shaft insulator clamps (3) to the stabilizer shaft insulator (2) (1500 and 2500 series w/7300 GVW).
7. Install the stabilizer shaft insulator clamps mounting bolts (4) (1500 and 2500 series w/7300 GVW) and tighten to **25 N·m (18 lb ft)**.
8. Lower the vehicle.

## Lower Control Arm Ball Joint Replacement

### 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 lower control arm. Refer to [Lower Control Arm Replacement](#) .
4. Place the lower control arm in a bench vice.
5. Using a chisel, remove the 4 securing crimps from the ball joint body.
6. Using a press, remove the ball joint from the lower control arm.

### Installation Procedure

**Important:** Use the outer flange of the ball joint in order to press the ball joint into place.

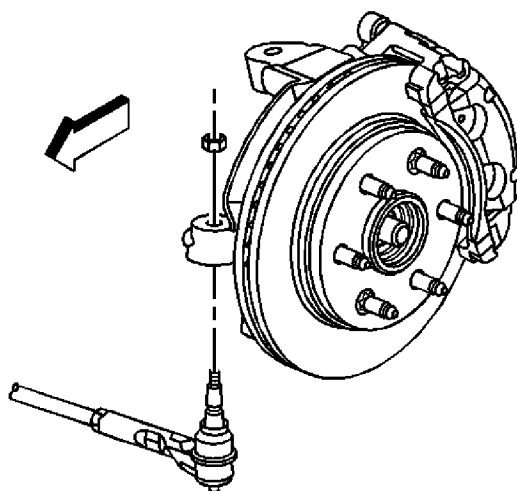
1. Install the new ball joint using a press.
2. Place the lower control arm in a bench vice.
3. Using a punch, install 4 crimps to the ball joint. Use the replaced ball joint as a reference.
4. Install the lower control arm. Refer to [Lower Control Arm Replacement](#) .
5. Install the tire and wheel. Refer to [Tire and Wheel Removal and Installation](#) .
6. Lower the vehicle.
7. Check the wheel alignment. Refer to [Wheel Alignment Measurement](#) .

## Steering Knuckle Replacement (RWD)

### Special Tools

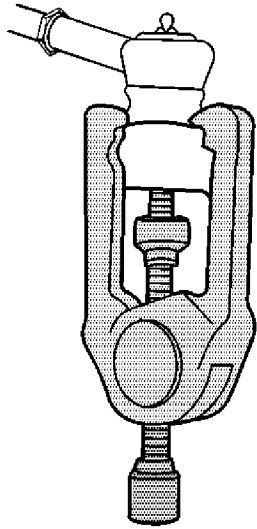
- [J 24319-B](#) Steering Linkage and Tie Rod Puller
- [J 43631](#) Ball Joint Remover
- [J 45851](#) Ball Joint Separator Protector Adapters

### Removal Procedure

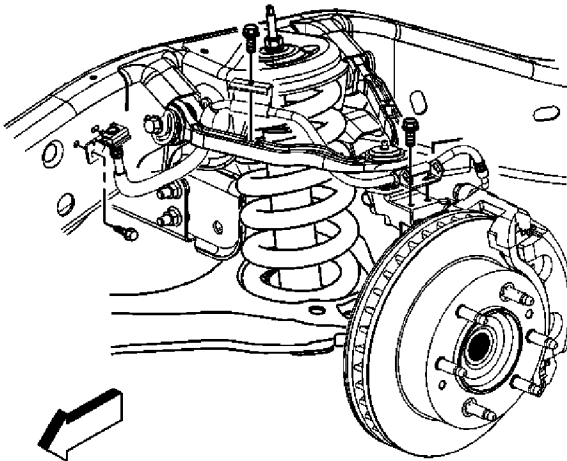


1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
2. Remove the tire and wheel. Refer to [Tire and Wheel Removal and Installation](#).
3. Remove the wheel hub and bearing. Refer to [Front Wheel Hub, Bearing, and Seal Replacement](#).
4. Remove the outer tie rod to steering knuckle retaining nut.

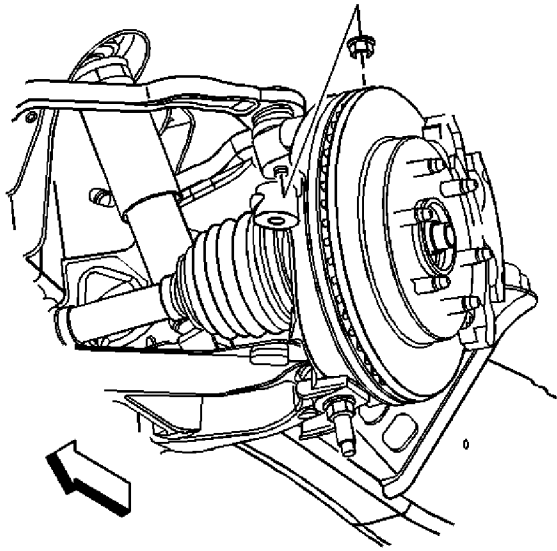




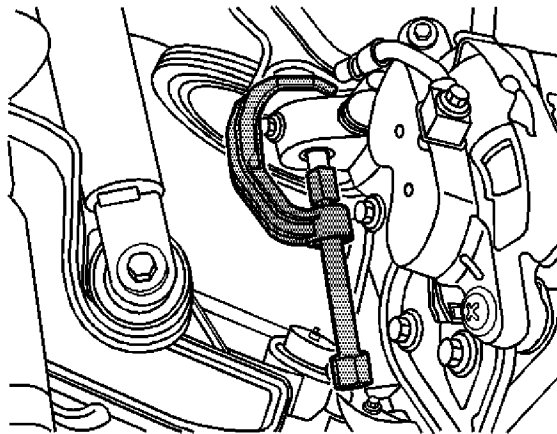
5. Disconnect the outer tie rod from the steering knuckle using [J 24319-B](#).



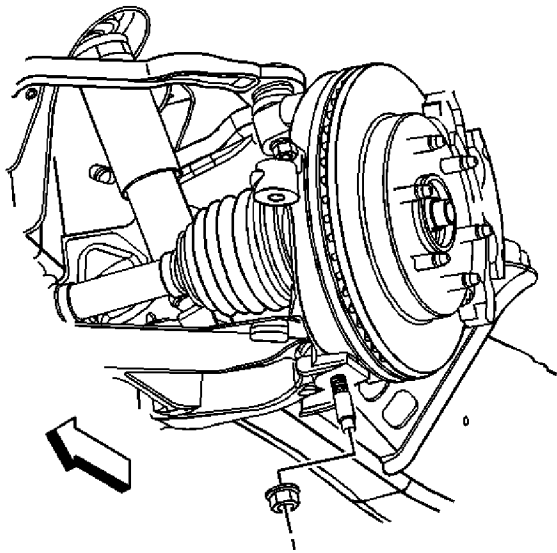
6. Remove the brake hose bracket retaining bolt from the steering knuckle.



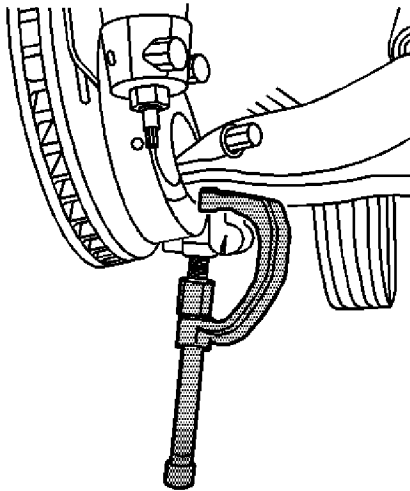
7. Support the lower control arm with a suitable jack.
8. Remove the upper ball joint retaining nut.



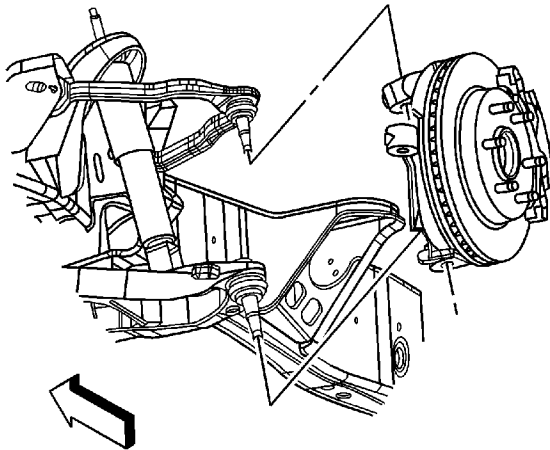
9. Disconnect the upper ball joint from the steering knuckle using the [J 43631](#) and [J 45851](#).



10. Remove the lower ball joint retaining nut.

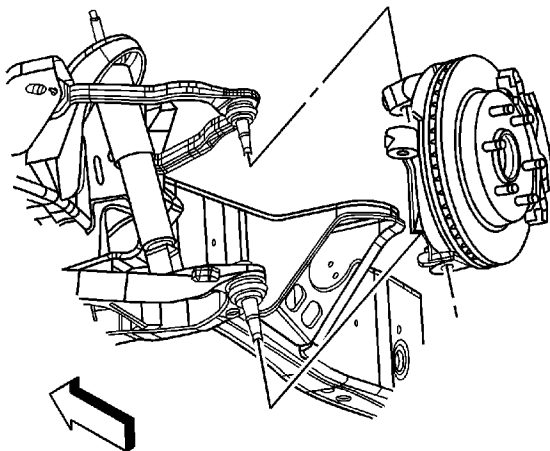


11. Disconnect the lower ball joint from the steering knuckle using the [J 43631](#) and [J 45851](#) .



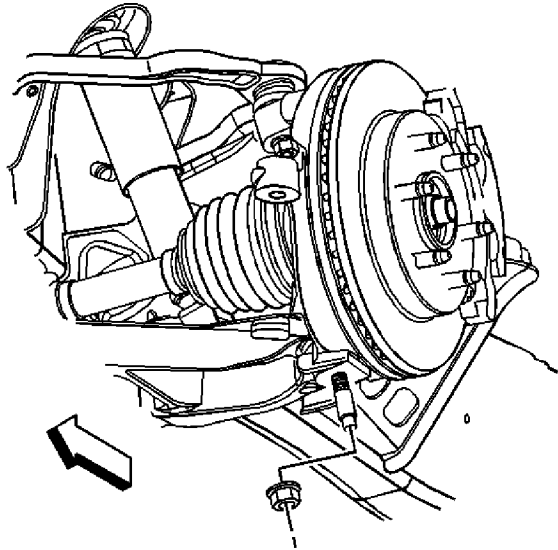
12. Remove the steering knuckle.

## Installation Procedure

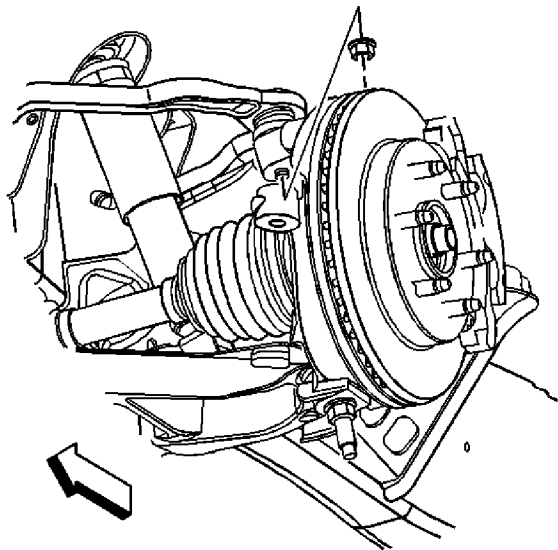


1. Clean all grease and contaminants from the tapered section and the threads of the upper ball joint, the lower ball joint, and the tie rod end.
2. Clean and inspect the taper holes and the mounting surfaces of the steering knuckle. If any of the tapered holes are elongated, out of round, or damaged, the replace the steering knuckle.
3. Install the steering knuckle.

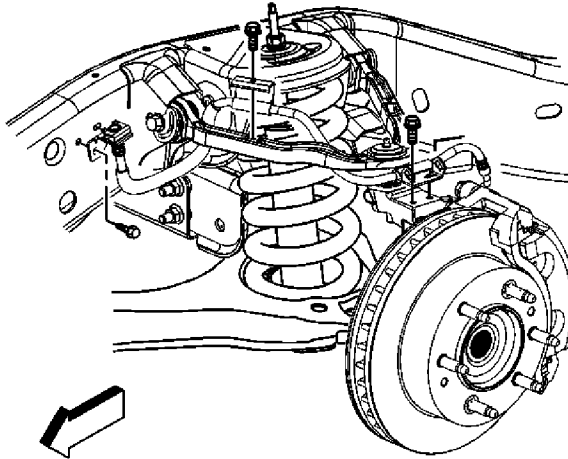
**Caution:** Refer to [Fastener Caution](#) in the Preface section.



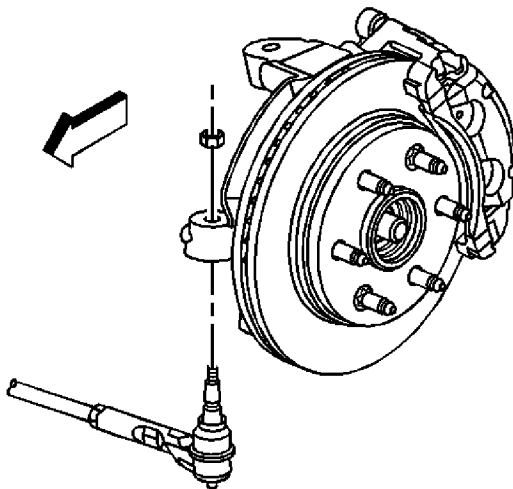
4. Install the lower ball joint to steering knuckle retaining nut and tighten to **100 N·m (74 lb ft)**.



5. Install the upper ball joint to steering knuckle retaining nut and tighten to **50 N·m (37 lb ft)**.



6. Install the brake hose bracket retaining bolt to the knuckle and tighten to **10 N·m (88 lb in)**.



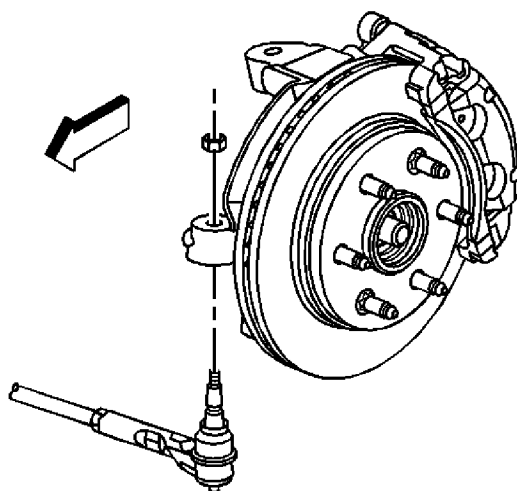
7. Connect the outer tie rod to the steering knuckle.
8. Install the outer tie rod to the steering knuckle retaining nut and tighten to **63 N·m (47 lb ft)**.
9. Remove the safety stand.
10. Install the wheel hub and bearing. Refer to [Front Wheel Hub, Bearing, and Seal Replacement](#).
11. Install the tire and wheel. Refer to [Tire and Wheel Removal and Installation](#).
12. Lower the vehicle.

## Steering Knuckle Replacement (4WD)

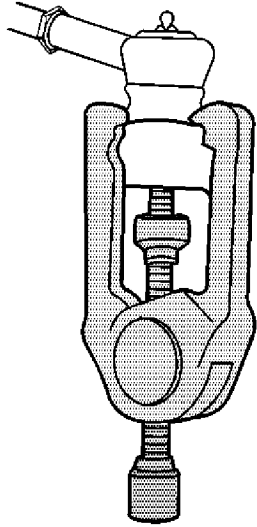
### Special Tools

- [J 24319-B](#) Steering Linkage and Tie Rod Puller
- [J 43631](#) Ball Joint Remover
- [J 45851](#) Ball Joint Separator Protector Adapters

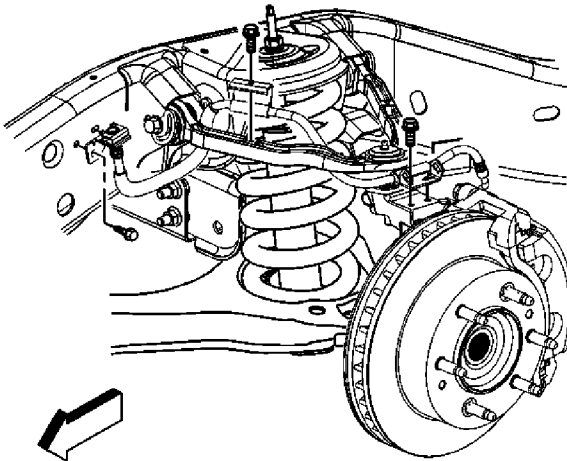
### Removal Procedure



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. Unload the torsion bars. Refer to [Torsion Bar and Support Assembly Replacement](#).
4. Remove the wheel drive shaft. Refer to [Wheel Drive Shaft Replacement](#).
5. Remove the wheel hub and bearing. Refer to [Front Wheel Hub, Bearing, and Seal Replacement](#).
6. Remove the outer tie rod to steering knuckle retaining nut.

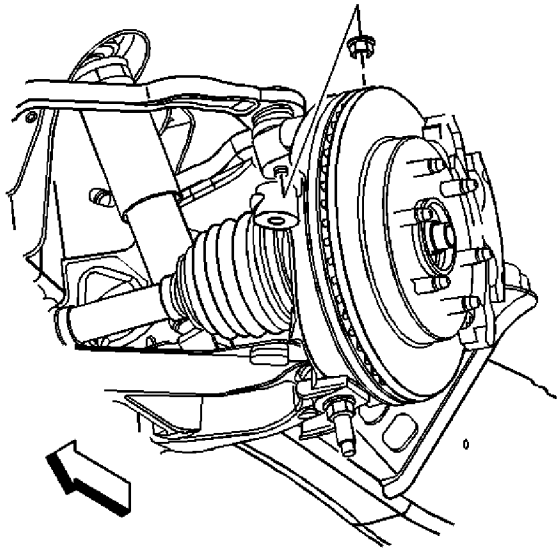


7. Disconnect the outer tie rod from the steering knuckle using [J 24319-B](#).

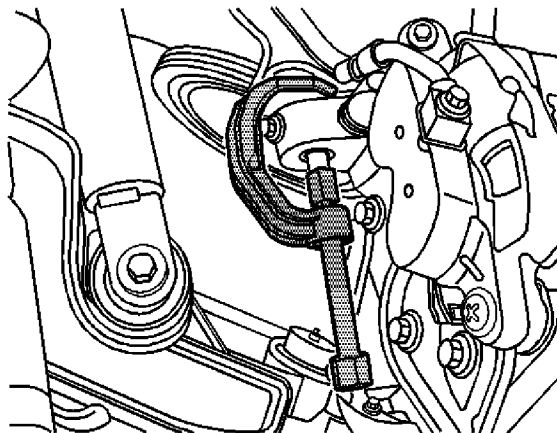


8. Remove the brake hose bracket retaining bolt from the steering knuckle.

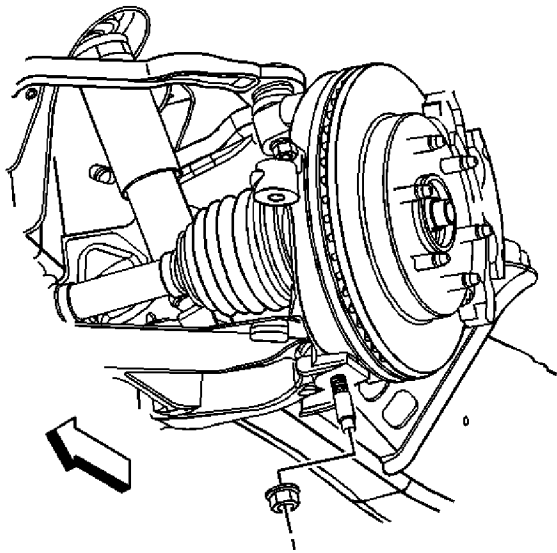




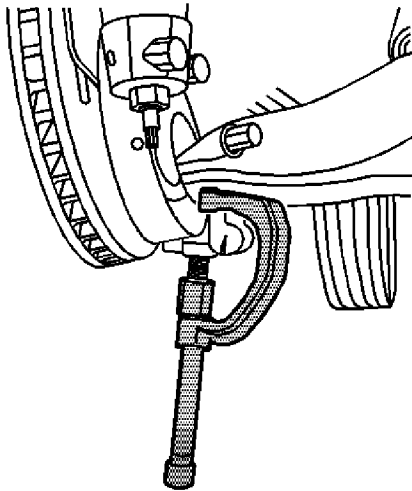
9. Remove the upper ball joint retaining nut.



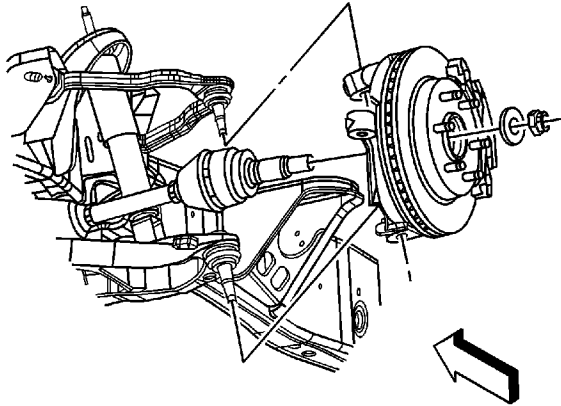
10. Disconnect the upper ball joint from the steering knuckle using the [J 43631](#) and [J 45851](#).



11. Remove the lower control arm retaining nut.

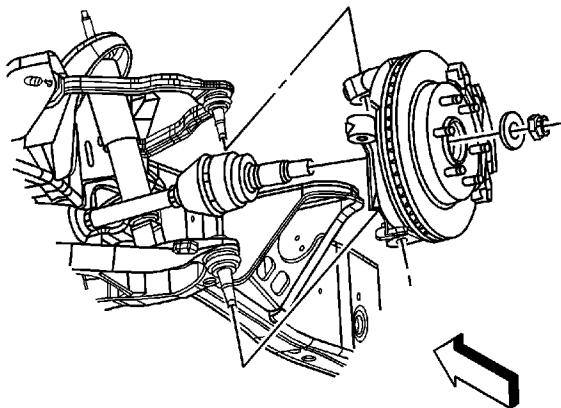


12. Disconnect the lower ball joint from the steering knuckle using the [J 43631](#) and [J 45851](#) .



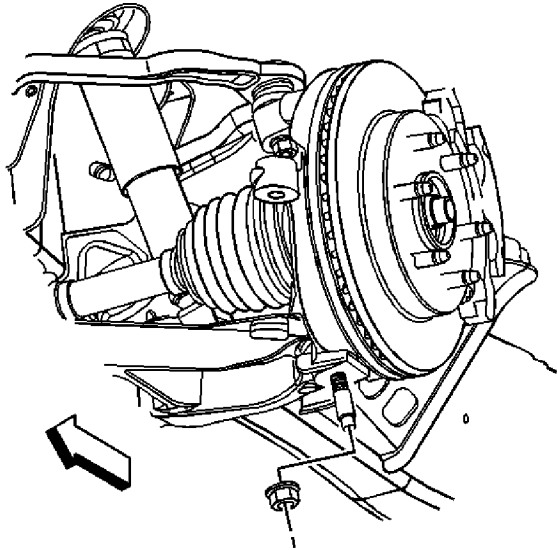
13. Remove the steering knuckle.

## Installation Procedure

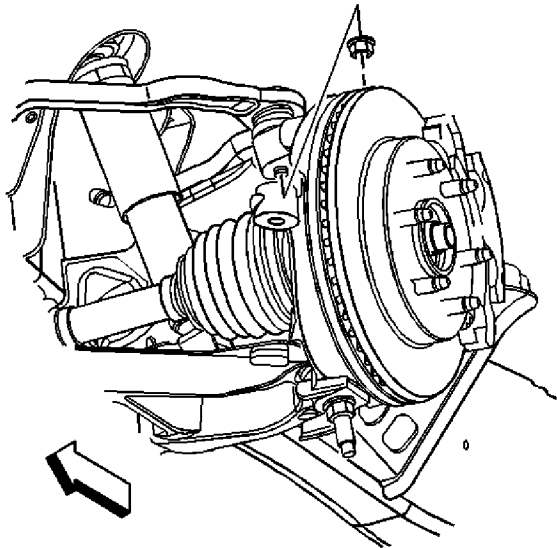


1. Clean all grease and contaminants from the tapered section and the threads of the upper ball joint, the lower ball joint, and the tie rod end.
2. Clean and inspect the taper holes and the mounting surfaces of the steering knuckle. If any of the tapered holes are elongated, out of round, or damaged, replace the steering knuckle.
3. Install the steering knuckle.

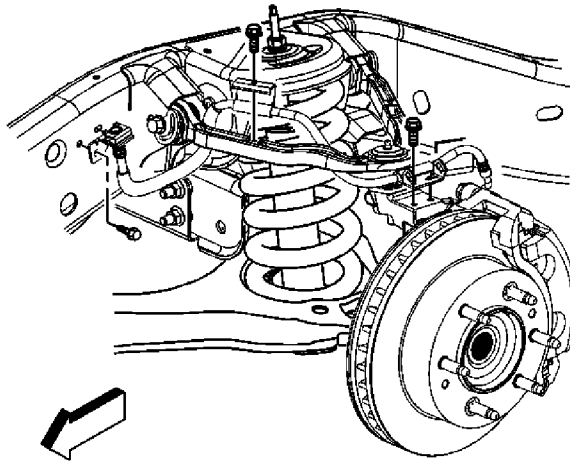
**Caution:** Refer to [Fastener Caution](#) in the Preface section.



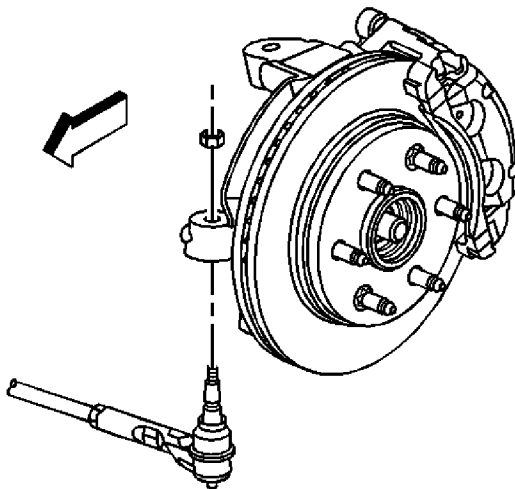
4. Install the lower ball joint retaining nut and tighten to **100 N·m (74 lb ft)**.



5. Install the upper ball joint retaining nut and tighten to **50 N·m (37 lb ft)**.



6. Install the brake hose bracket to steering knuckle retaining bolt and tighten to **10 N·m (88 lb in.)**.



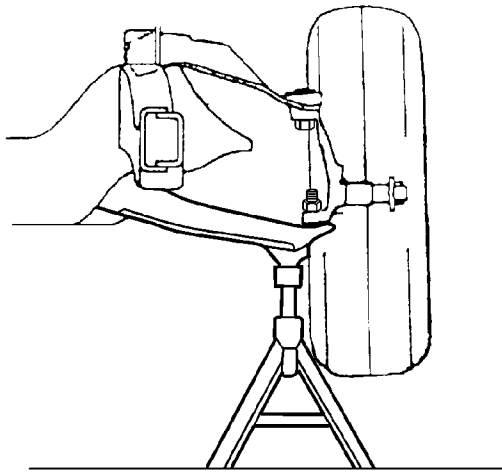
7. Connect the outer tie rod to the steering knuckle.
8. Install the outer tie rod retaining nut and tighten to **63 N·m (47 lb in.)**.
9. Install the wheel hub and bearing. Refer to [Front Wheel Hub, Bearing, and Seal Replacement](#).
10. Install the wheel drive shaft. Refer to [Wheel Drive Shaft Replacement](#).
11. Install the tire and wheel. Refer to [Tire and Wheel Removal and Installation](#).
12. Load the torsion bars. Refer to [Torsion Bar and Support Assembly Replacement](#).
13. Lower the vehicle.
14. Align the vehicle. Refer to [Wheel Alignment Measurement](#).

## Upper Control Arm Replacement

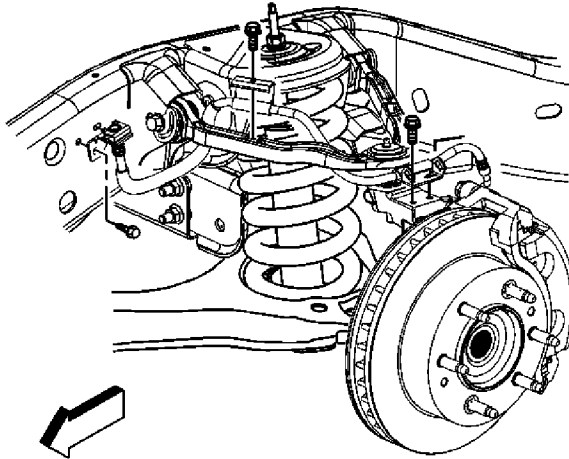
### Special Tools

- [J 43631](#) Ball Joint Remover
- [J 45851](#) Ball Joint Separator Protector Adapters

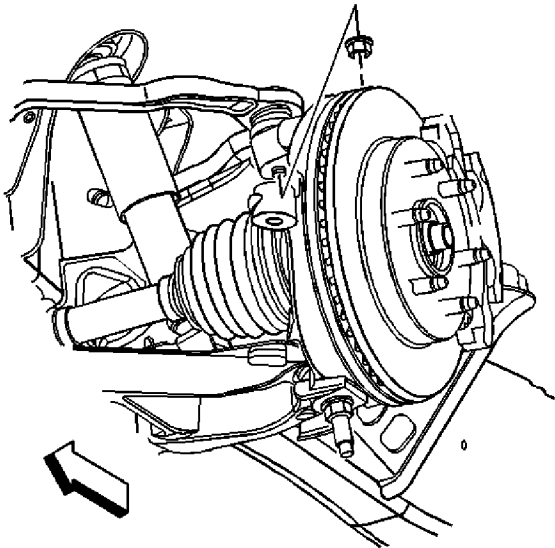
### Removal Procedure



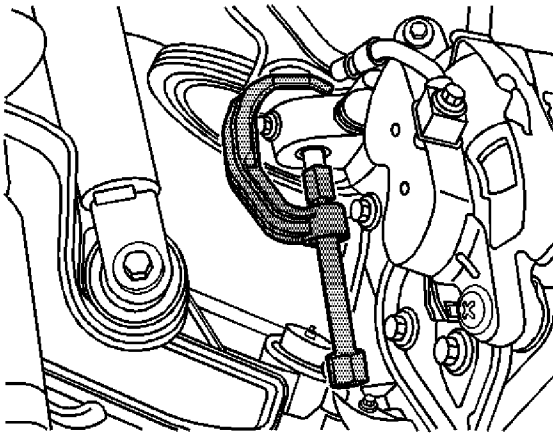
1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
2. Support lower control arm with a jack stand.



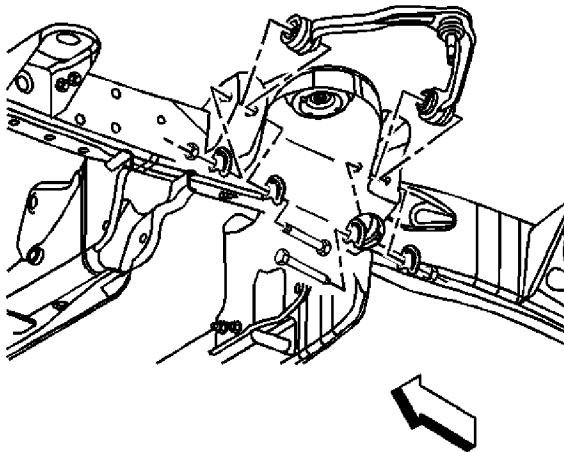
3. Remove the tire and wheel. Refer to [Tire and Wheel Removal and Installation](#).
4. Remove the retaining bolts for the brake hose and the wheel speed sensor brackets.



5. Remove the wheel drive shaft (4WD only). Refer to [Wheel Drive Shaft Replacement](#).
6. Remove and discard the upper ball joint retaining nut.



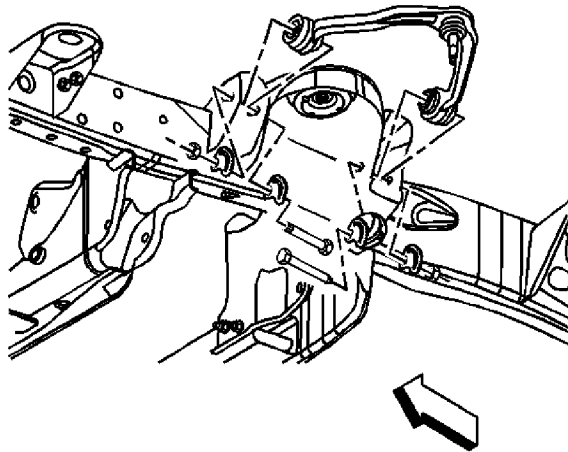
7. Disconnect the upper control arm from the steering knuckle using the [J 43631](#) and [J 45851](#) .



8. Remove the upper control arm nuts and the adjustment cams.
9. Remove the upper control arm bolts.
10. Remove the upper control arm.

## Installation Procedure

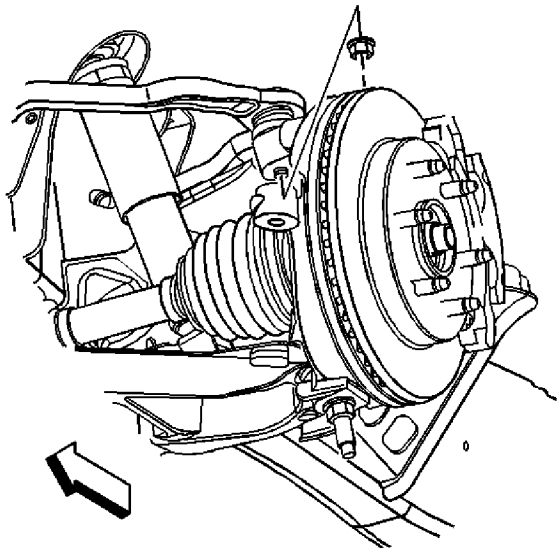




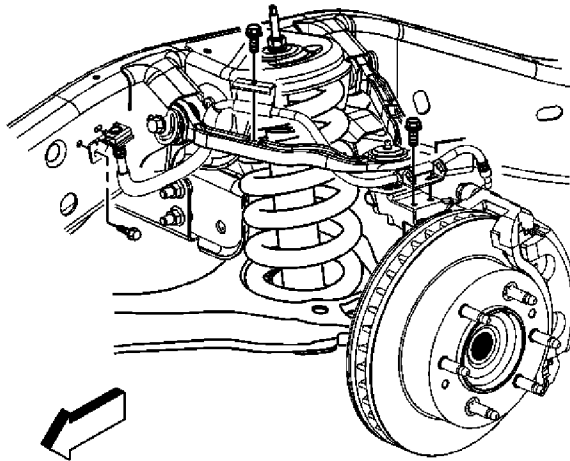
1. Install the upper control arm.
2. Install the upper control arm bolts.

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

3. Install the upper control arm nuts and the adjustment cams and tighten to **175 N·m (129 lb ft)**.



4. Connect the upper control arm to the steering knuckle.
5. Install the new upper ball joint retaining nut and tighten to **50 N·m (37 lb ft)**.
6. Install the wheel drive shaft (4WD only). Refer to [Wheel Drive Shaft Replacement](#).



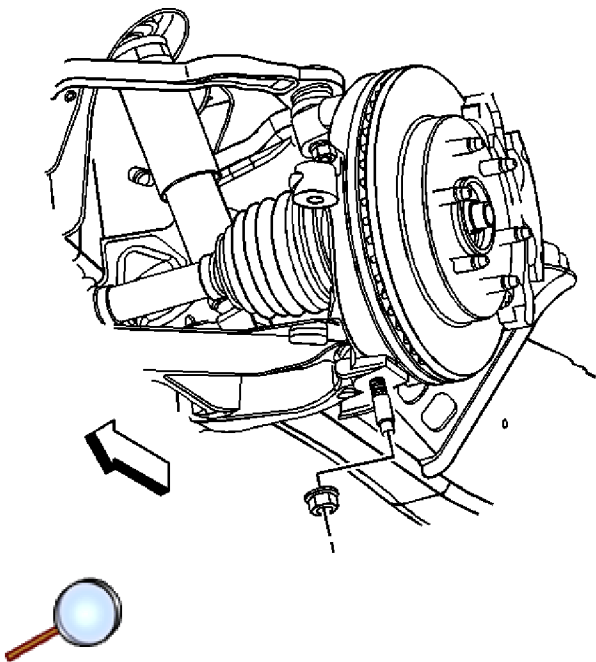
7. Install the retaining bolts for the brake hose and wheel speed sensor brackets.
  - Tighten the brake hose bracket to steering knuckle bolt to **10 N·m (88 lb in)**.
  - Tighten the brake hose bracket to upper control arm bolt to **10 N·m (88 lb in)**.
8. Install the tire and wheel. Refer to [Tire and Wheel Removal and Installation](#).
9. Remove the safety stands.
10. Lower the vehicle.
11. Check the wheel alignment. Refer to [Wheel Alignment Measurement](#).

## Lower Control Arm Replacement (RWD)

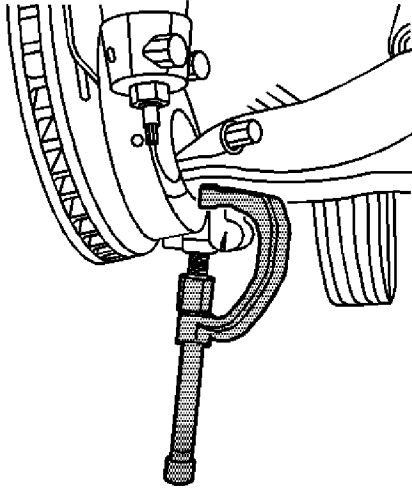
### Special Tools

- [J 43631](#) Ball Joint Remover
- [J 45851](#) Ball Joint Separator Protector Adapters

### Removal Procedure

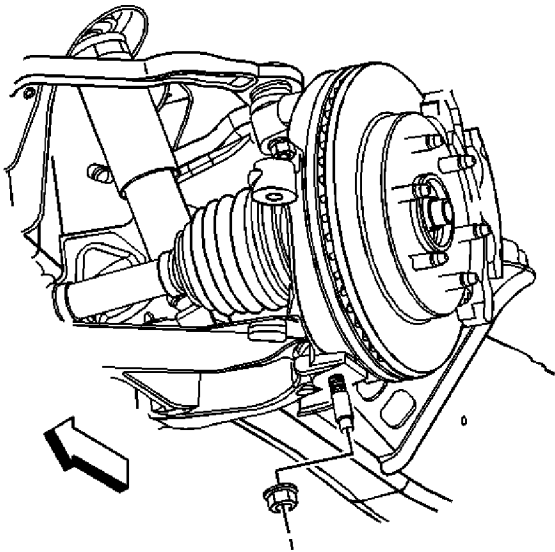


1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
2. Remove the tire and wheel. Refer to [Tire and Wheel Removal and Installation](#).
3. Remove the front coil spring. Refer to [Front Coil Springs Replacement](#).
4. Remove and discard the lower ball joint retaining nut.



5. Disconnect the lower ball joint from the steering knuckle using [J 43631](#) and [J 45851](#).
6. Remove the lower control arm.

## Installation Procedure



1. Install the lower control arm.
2. Connect the lower ball joint to the steering knuckle.

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

3. Install the new lower ball joint retaining nut and tighten to **100 N·m (74 lb ft)**.

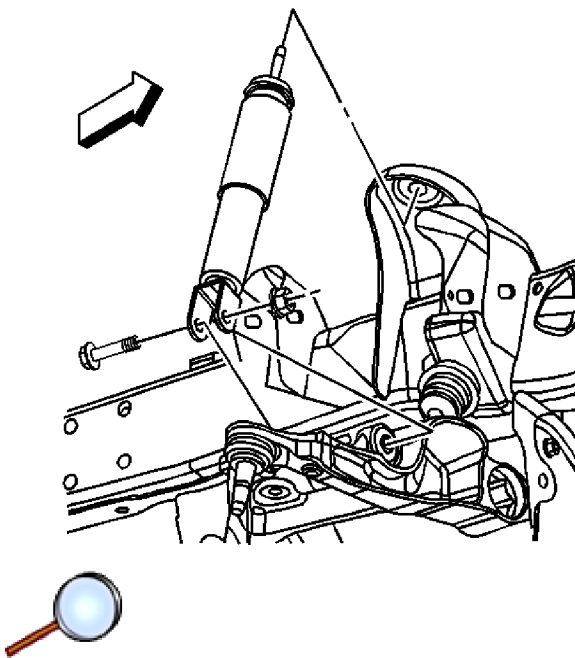
4. Install the front coil spring. Refer to [Front Coil Springs Replacement](#).
5. Install the tire and wheel. Refer to [Tire and Wheel Removal and Installation](#).
6. Lower the vehicle.
7. Check the wheel alignment. Refer to [Wheel Alignment Measurement](#).

## Lower Control Arm Replacement (4 Wheel Drive)

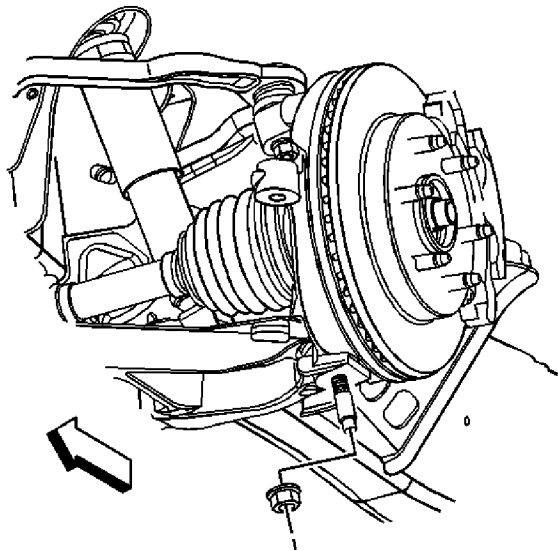
### Special Tools

- *J 43631* Ball Joint Remover
- *J 45851* Ball Joint Separator Protector Adapters

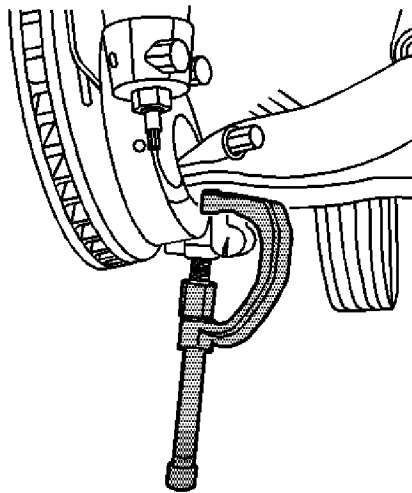
### Removal Procedure



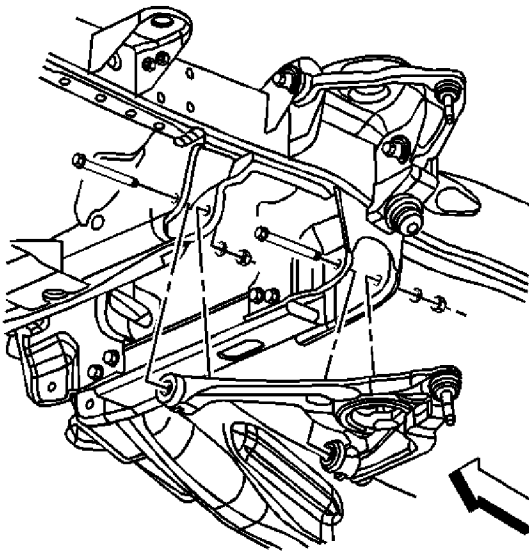
1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
2. Remove the tire and wheel. Refer to [Tire and Wheel Removal and Installation](#).
3. Remove the torsion bar. Refer to [Torsion Bar and Support Assembly Replacement](#).
4. Remove the stabilizer link. Refer to [Stabilizer Shaft Link Replacement](#).
5. Remove the wheel drive shaft. Refer to [Wheel Drive Shaft Replacement](#).
6. Remove the shock absorber lower retaining nut and bolt. Refer to [Shock Absorber Replacement](#).



7. Remove and discard the lower ball joint retaining nut.

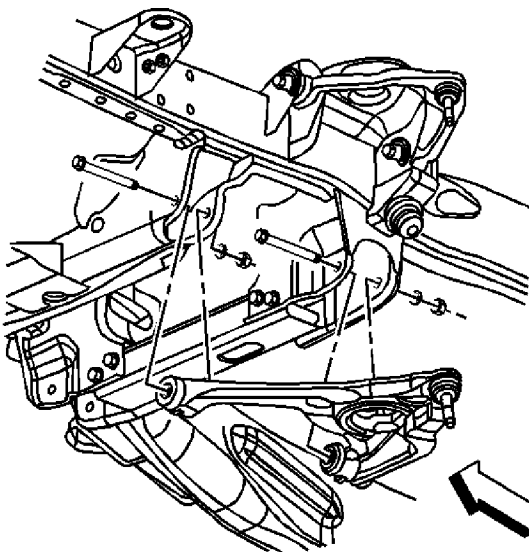


8. Using the *J 43631* remover and the *J 45851* adapters , remove the lower ball joint from the steering knuckle.



9. Remove the lower control arm nuts and the washers.
10. Remove the lower control arm bolts.
11. Remove the lower control arm.

## Installation Procedure

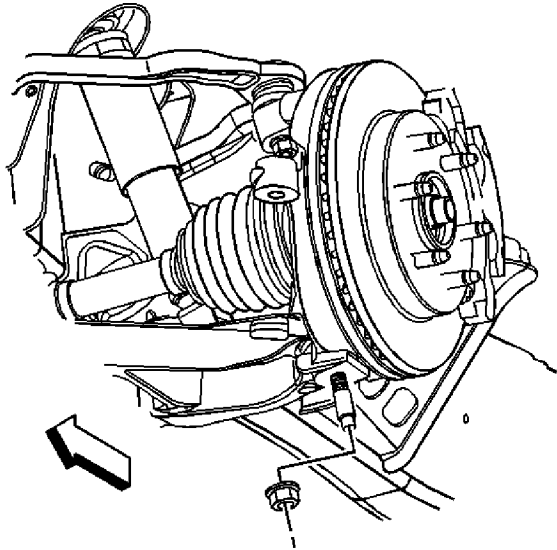


1. Install the lower control arm.
2. Connect the lower ball joint to the steering knuckle.
3. Install the lower control arm mounting bolts.

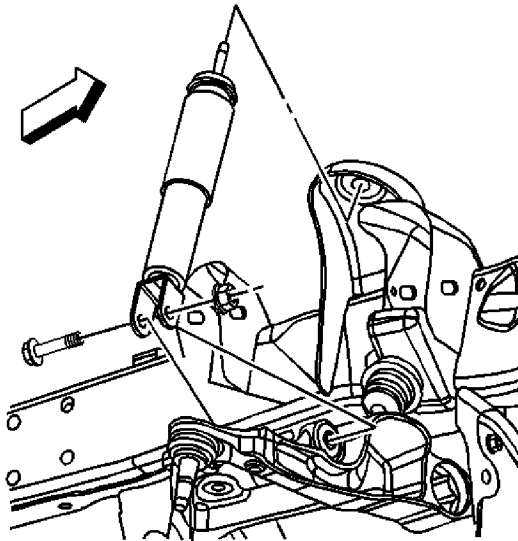
**Caution:** Refer to [Fastener Caution](#) in the Preface section.



4. Install the lower control arm mounting nuts and the washers.
  - W/O 14050/12300 GVW, tighten the nuts to **155 N·m (114 lb ft)**.
  - With 14050/12300 GVW, tighten the nuts to **120 N·m (89 lb ft) +175°**.
  - With Diesel Engine, tighten the nuts to **120 N·m (89 lb ft) +175°**.



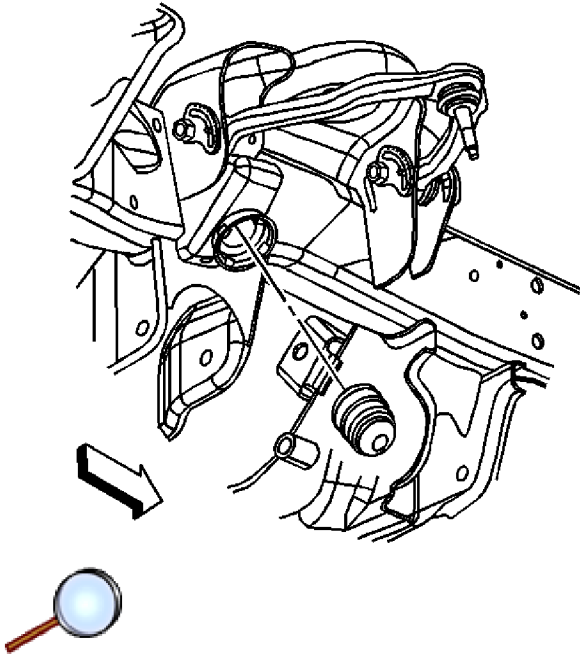
5. Install the new lower ball joint retaining nut and tighten to **100 N·m (74 lb ft)**.



6. Install the shock absorber in the lower control arm. Refer to [Shock Absorber Replacement](#).
7. Install the wheel drive shaft. Refer to [Wheel Drive Shaft Replacement](#).
8. Install the stabilizer link. Refer to [Stabilizer Shaft Link Replacement](#).
9. Install the torsion bar. Refer to [Torsion Bar and Support Assembly Replacement](#).
10. Install the tire and wheel. Refer to [Tire and Wheel Removal and Installation](#).
11. Remove the support and lower the vehicle.
12. Check the wheel alignment. Refer to [Wheel Alignment Measurement](#).

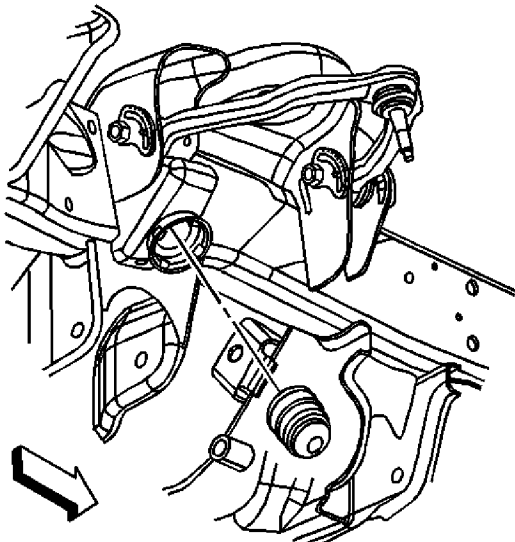
## Spring Bumper Replacement

### Removal Procedure



1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#) .
2. Unsnap the jounce bumper from the mounting cup.

### Installation Procedure



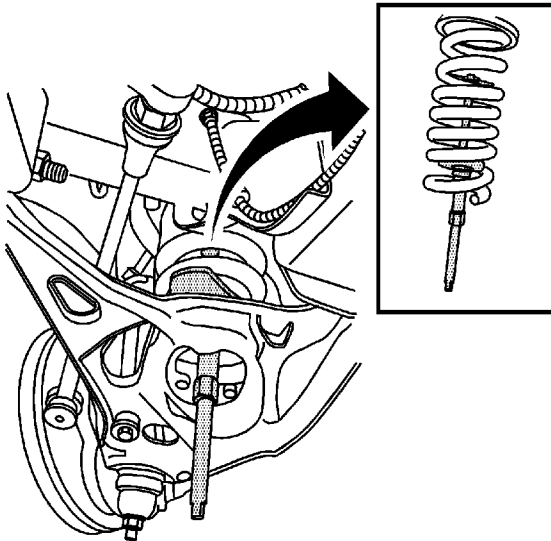
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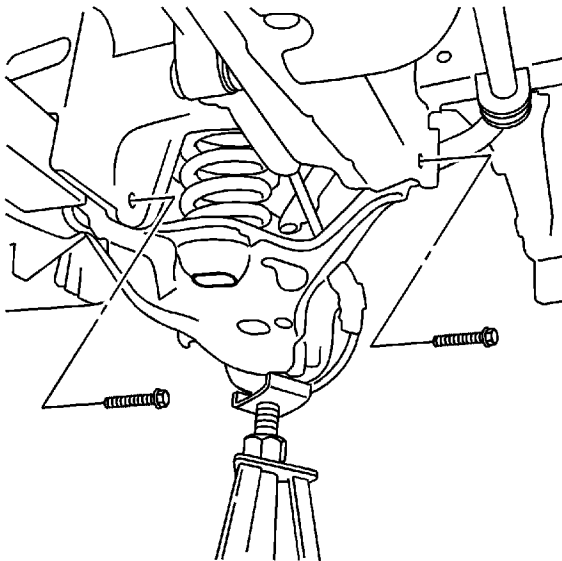
1. Snap the jounce bumper to the mounting cup.
2. Lower the vehicle.

## Front Coil Springs Replacement

### Removal Procedure

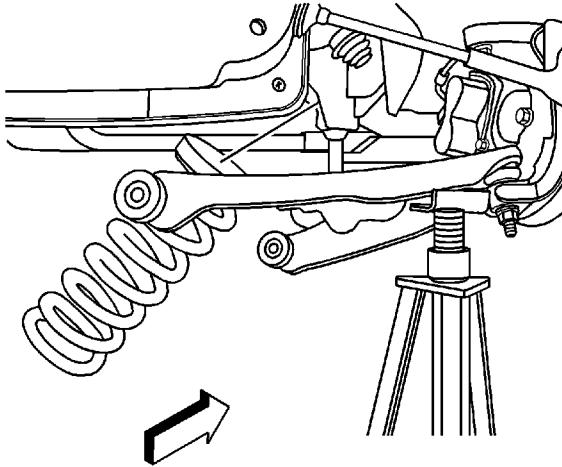


1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
2. Remove the tire and wheel. Refer to [Tire and Wheel Removal and Installation](#).
3. Remove the shock absorber. Refer to [Shock Absorber Replacement](#).
4. Remove the front stabilizer shaft link. Refer to [Stabilizer Shaft Replacement](#).
5. Support the lower control arm near the lower ball joint with a suitable safety jack.
6. Using the appropriate tool, remove all tension from the lower control arm.



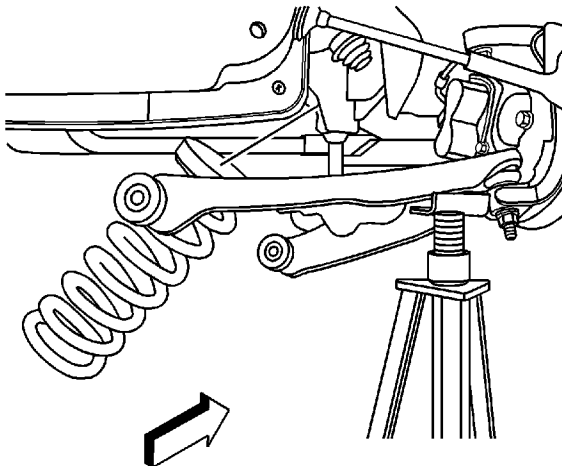


7. Remove the lower control arm pivot bolt retaining nuts and washers.
8. Remove the rear pivot bolt.
9. Remove the front pivot bolt.



10. Lower the lower control arm and remove the coil spring and insulator.
11. Remove spring compressor tool from the coil spring.
12. Remove the coil spring insulator from the coil spring.

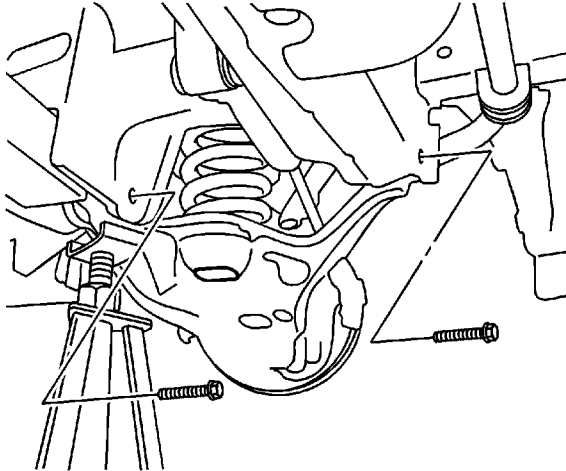
## Installation Procedure



1. Install the coil spring insulator to the coil spring.
2. Using the appropriate tool, compress the coil spring.

**Note:** The flat end of the coil spring and the upper insulator goes up into the shock tower and the pointed end of the coil spring goes on the lower control arm. Align coil spring so that end of the coil spring is seated in the pocket in the lower control arm.

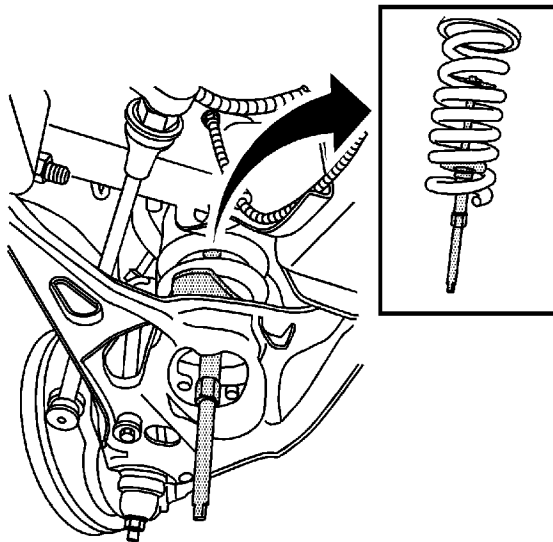
3. Install the coil spring and insulator to the lower control arm.
4. Raise the lower control arm into position and place a suitable safety jack under the lower control arm rear leg near the bushing.



5. Install the rear pivot bolt.
6. Install the front pivot bolt.

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

7. Install the lower control arm pivot bolt retaining nuts and washers.
  - W/O 14050/12300 GVW, tighten the nuts to **155 N·m (114 lb ft)**.
  - With 14050/12300 GVW, tighten the nuts to **120 N·m (89 lb ft) plus an additional 175°**.
  - With Diesel Engine, tighten the nuts to **120 N·m (89 lb ft) plus an additional 175°**.



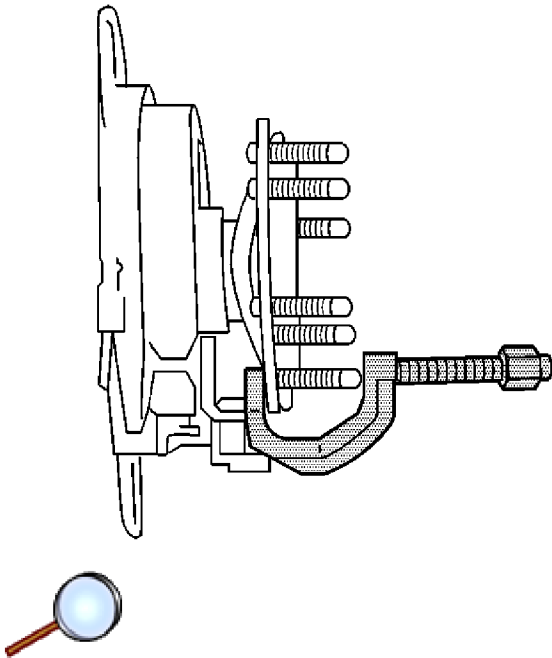
8. Remove the coil spring compressor tool from the coil spring.
9. Install the front stabilizer shaft link. Refer to [Stabilizer Shaft Replacement](#).
10. Install the shock absorber. Refer to [Shock Absorber Replacement](#).
11. Install the tire and wheel. Refer to [Tire and Wheel Removal and Installation](#).
12. Remove the support and lower the vehicle.

# Wheel Stud Replacement

## Tools Required

[J 43631](#) Ball Joint Remover

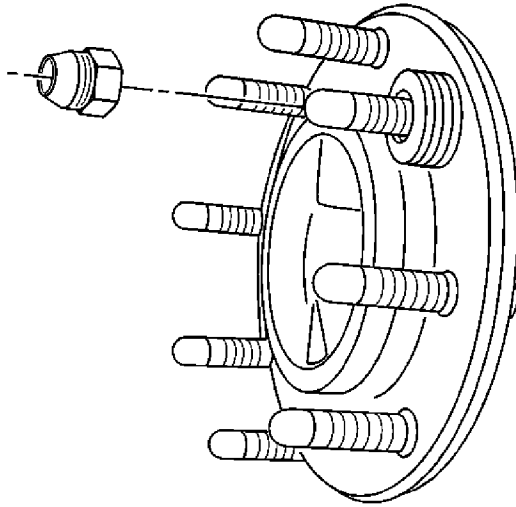
## Removal Procedure



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 wheel stud from the hub flange using the [J 43631](#) .
4. Remove the wheel stud from the hub flange.

## Installation Procedure

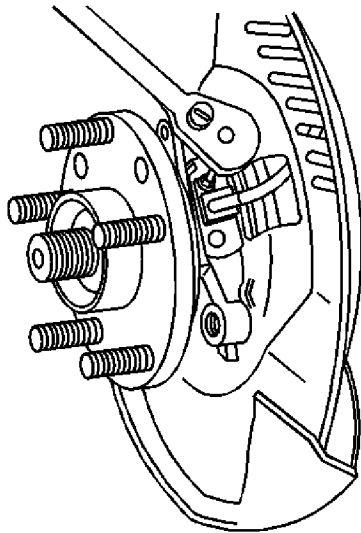




1. Install the new stud into the hub flange hole using firm hand pressure.
2. Install 4 washers to the new wheel stud.
3. Thread a wheel nut onto the new stud with the flat side facing the front hub flange .
4. Tighten the lug nut until the stud contacts the back of the hub flange.
5. Remove the wheel nut.
6. Remove the washers.
7. Install the tire and wheel. Refer to [Tire and Wheel Removal and Installation](#) .
8. Lower the vehicle.

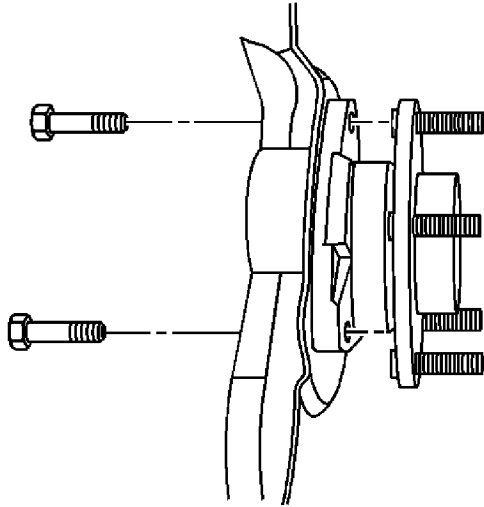
## Front Wheel Hub, Bearing, and Seal Replacement (RWD)

### Removal Procedure

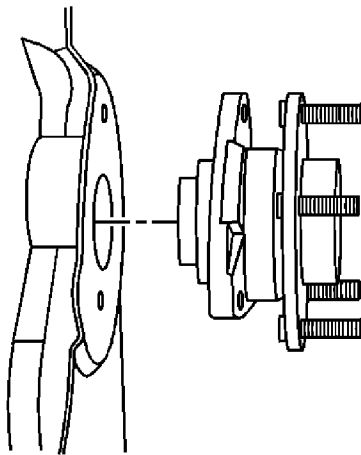


**Caution:** Never place vehicle on the ground with the halfshaft removed or the halfshaft nut torqued improperly. Otherwise, bearing seals may become dislodged causing premature wear and/or damage to the hub and bearing assembly.

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 rotor. Refer to [Front Brake Rotor Replacement](#).
4. Remove the wheel speed sensor mounting bolt.
5. Remove the wheel speed sensor from the wheel hub and bearing.

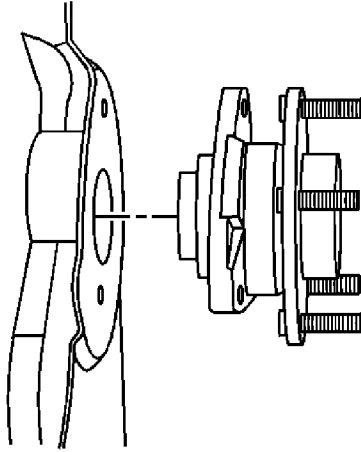


6. Remove the wheel hub and bearing mounting bolts.



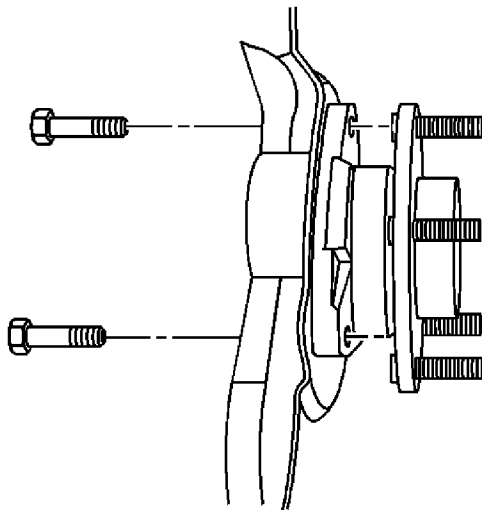
7. Remove the wheel hub and bearing and splash shield from the steering knuckle.

## Installation Procedure

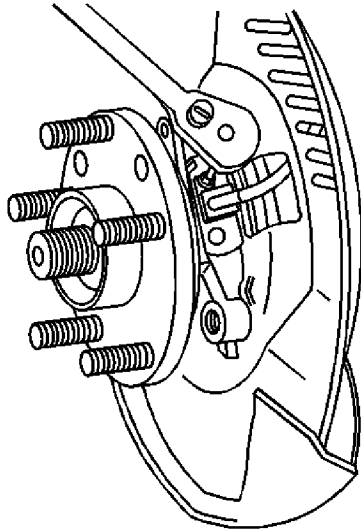


1. Clean all corrosion or contaminants from the steering knuckle bore and the hub and bearing.
2. Lubricate the steering knuckle bore with wheel bearing grease or the equivalent.
3. Install the wheel hub and bearing and splash shield to the steering knuckle.

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



4. Install the wheel hub and bearing mounting bolts and tighten to **180 N·m (133 lb ft)**.



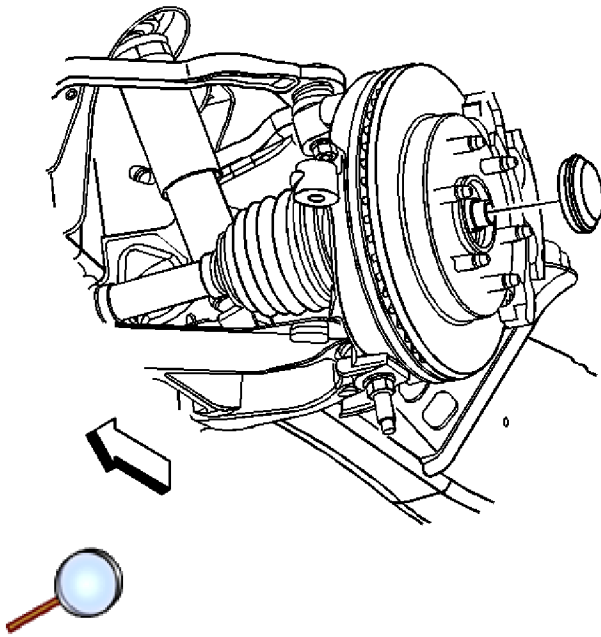
5. Install the wheel speed sensor to the wheel hub and bearing.
6. Install the wheel speed sensor retaining bolt and tighten to **18 N·m (13 lb ft)**.
7. Install the rotor. Refer to [Front Brake Rotor Replacement](#).
8. Install the tire and wheel. Refer to [Tire and Wheel Removal and Installation](#).
9. Lower the vehicle.

## Front Wheel Hub, Bearing, and Seal Replacement (4WD)

### Special Tools

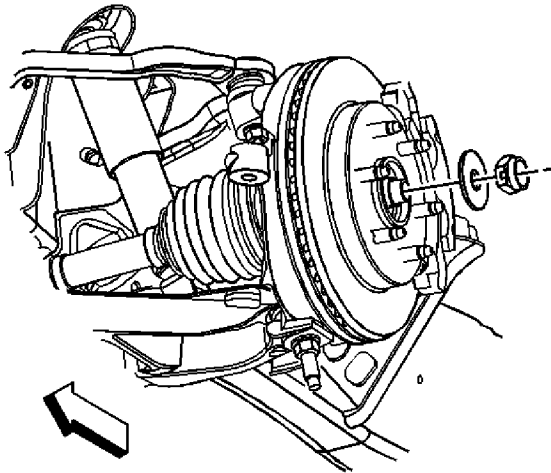
[J 45859](#) Axle Remover

### Removal Procedure

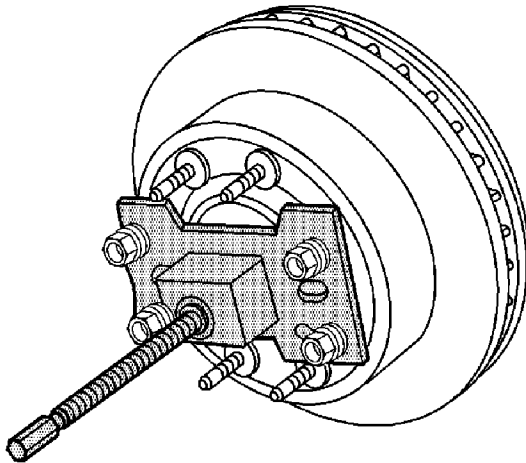


**Caution:** Never place vehicle on the ground with the halfshaft removed or the halfshaft nut torqued improperly. Otherwise, bearing seals may become dislodged causing premature wear and/or damage to the hub and bearing assembly.

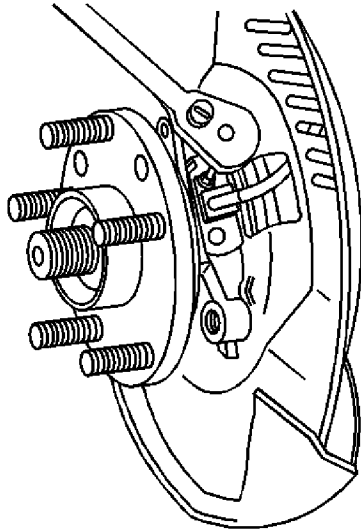
1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
2. Remove the tire and wheel. Refer to [Tire and Wheel Removal and Installation](#).
3. Remove the rotor. Refer to [Front Brake Rotor Replacement](#).
4. Remove the front axle hub cap.



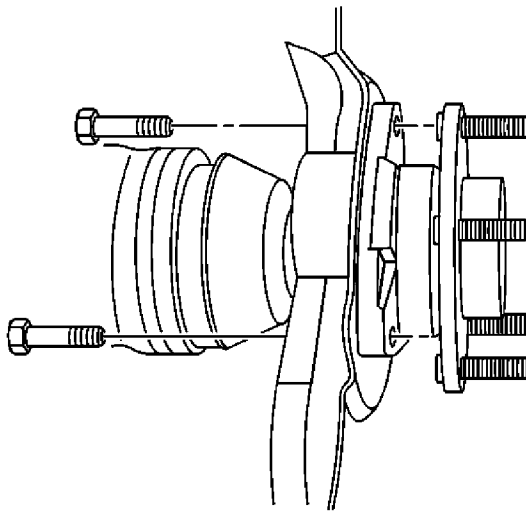
5. Remove the wheel driveshaft retaining nut and washer from the wheel driveshaft.



6. Using the [J 45859](#) or equivalent, disengage the wheel driveshaft from the hub and bearing.

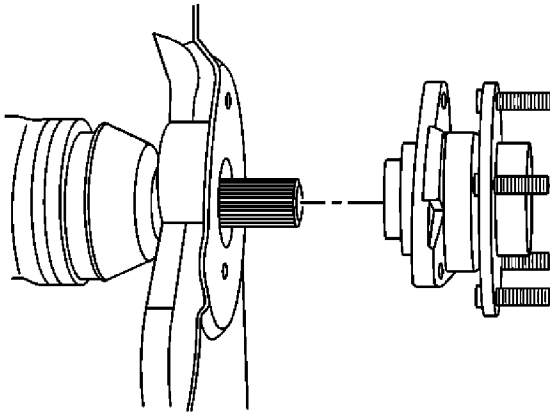


7. Remove the wheel speed sensor mounting bolt from the wheel hub and bearing.
8. Remove the wheel speed sensor from the wheel hub and bearing.



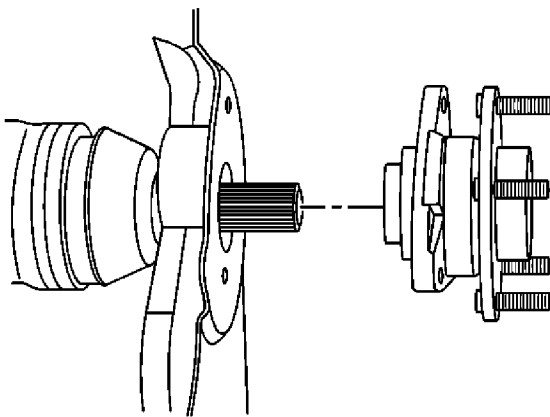
9. Remove the wheel hub and bearing mounting bolts.





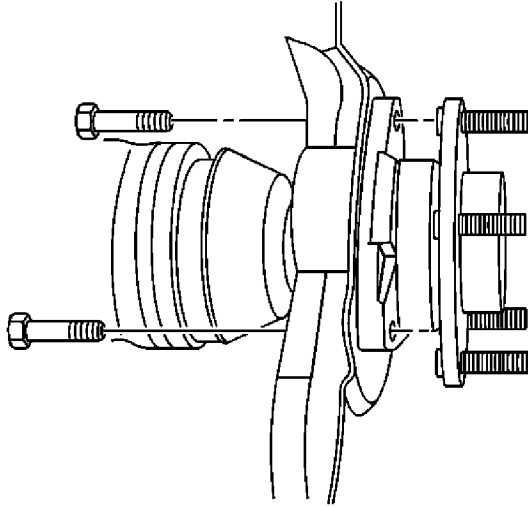
10. Remove the wheel hub and bearing and splash shield from the steering knuckle.

## Installation Procedure

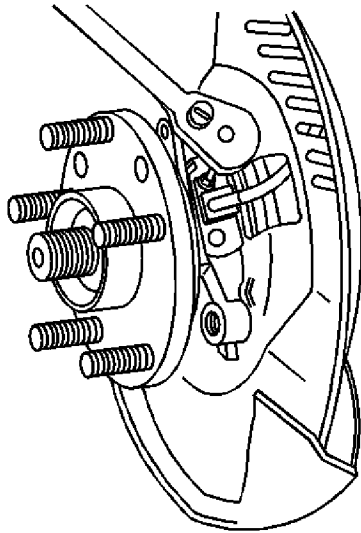


1. Clean all corrosion or contaminants from the steering knuckle bore and the hub and bearing.
2. Lubricate the steering knuckle bore with wheel bearing grease or the equivalent.
3. Install the wheel hub and bearing and splash shield to the steering.

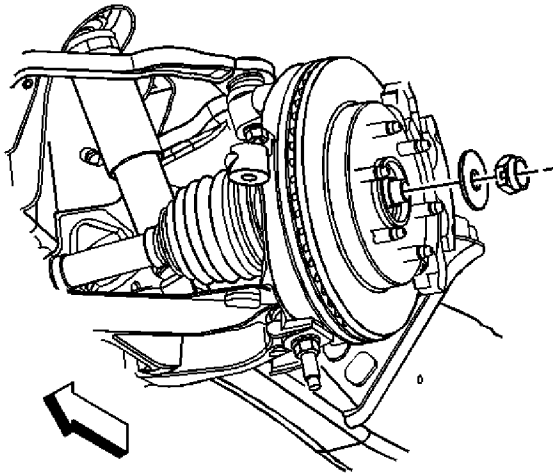
**Caution:** Refer to [Fastener Caution](#) in the Preface section.



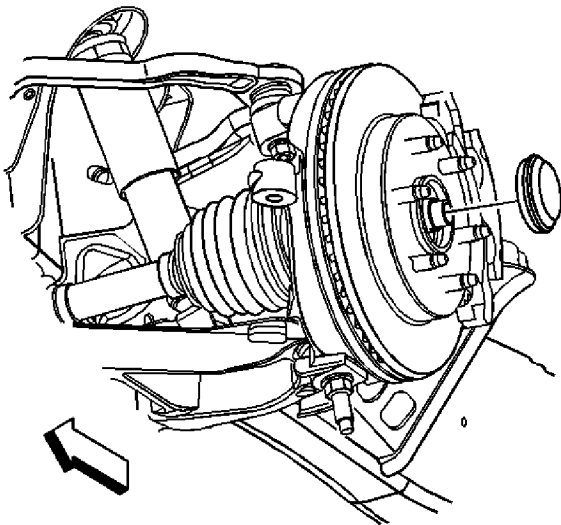
4. Install the wheel hub and bearing mounting bolts and tighten to **180 N·m (133 lb ft)**.



5. Install the wheel speed sensor to the wheel hub and bearing.
6. Install the wheel speed sensor mounting bolt to the wheel hub and bearing and tighten to **18 N·m (13 lb ft)**.



7. Install the wheel driveshaft retaining nut and washer and tighten to **210 N·m (155 lb ft)**.



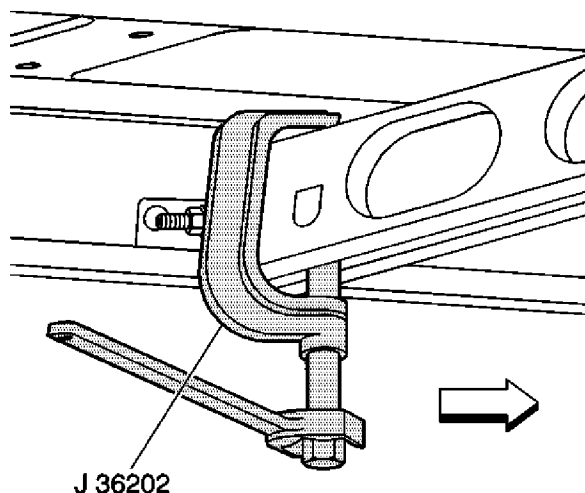
8. Install the front axle hub cap.
9. Install the rotor. Refer to [Front Brake Rotor Replacement](#).
10. Install the tire and wheel. Refer to [Tire and Wheel Removal and Installation](#).
11. Lower the vehicle.

## Torsion Bar and Support Assembly Replacement

### Special Tools

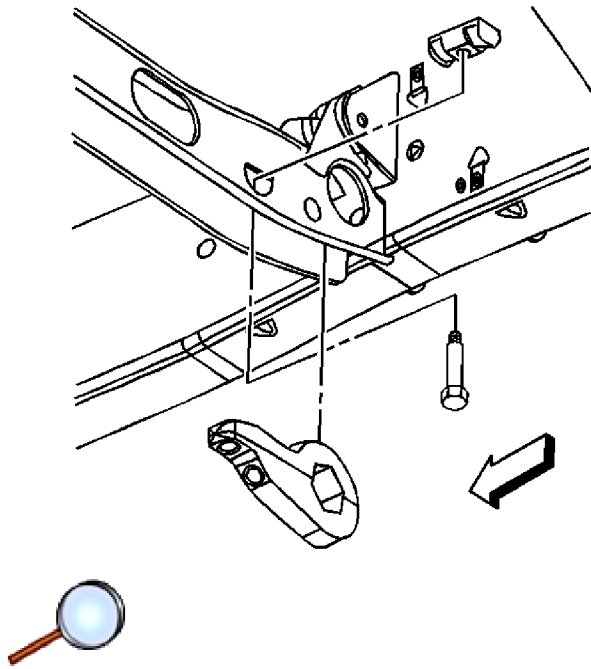
[J 36202](#) Torsion Bar Unloading/Loading Tool

### Removal Procedure



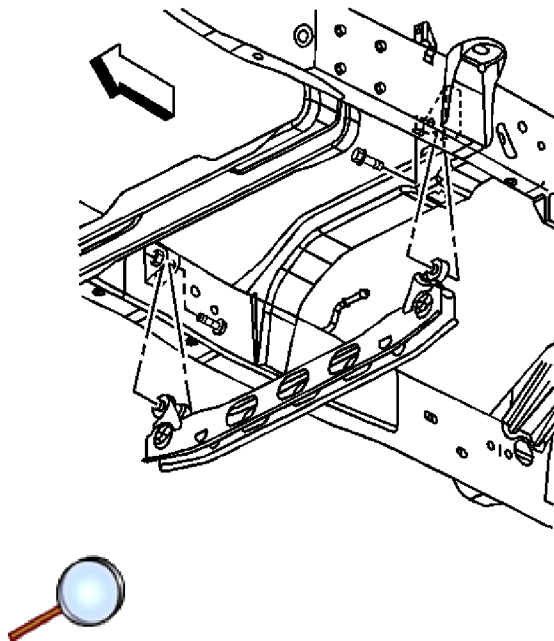
**Caution:** Use care when handling the torsion bars in order to avoid chipping or scratching the coating. Damage to the coating will result in premature failure of the torsion bars.

1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
2. Install the [J 36202](#) to the adjustment arm and the support.
3. Increase the tension on the adjustment arm until the load is removed from the adjustment bolt and the adjuster nut.



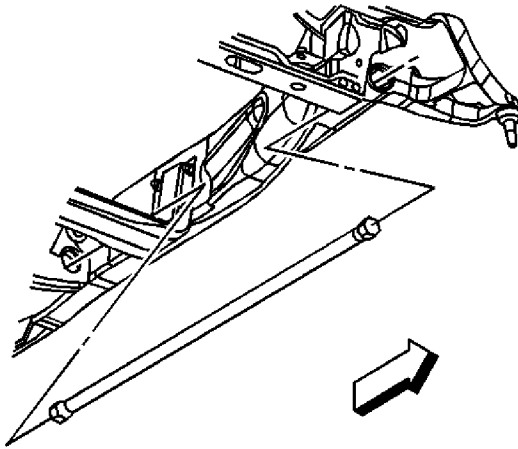
**Note:** Mark the adjustment bolt and count the number of times that is required to remove the adjustment bolt.

4. Remove the adjustment bolt and the adjuster nut.
5. Remove the [J 36202](#) , allowing the torsion bar to unload.
6. Remove the adjustment arm by sliding the torsion bar forward until the torsion bar clears the adjustment arm. Use your hand to support the adjustment arm as the adjustment arm releases from the torsion bar.



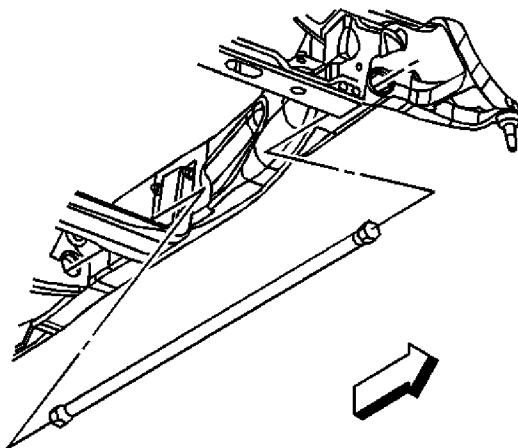
7. Remove the torsion bar support bolts.
8. Remove the torsion bar support.

**Note:** Note the position of the torsion bars as the left and right bars are different.

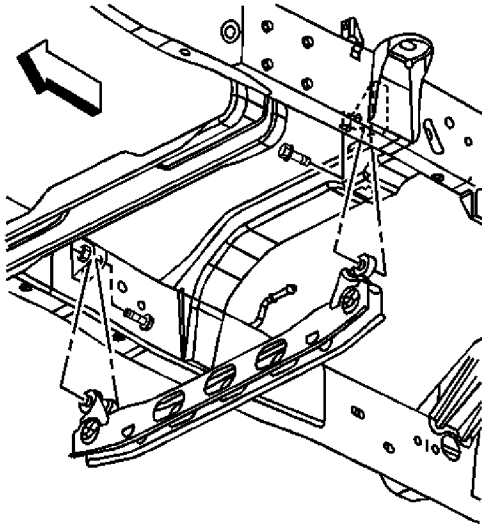


9. Remove the torsion bars from the vehicle.

## Installation Procedure



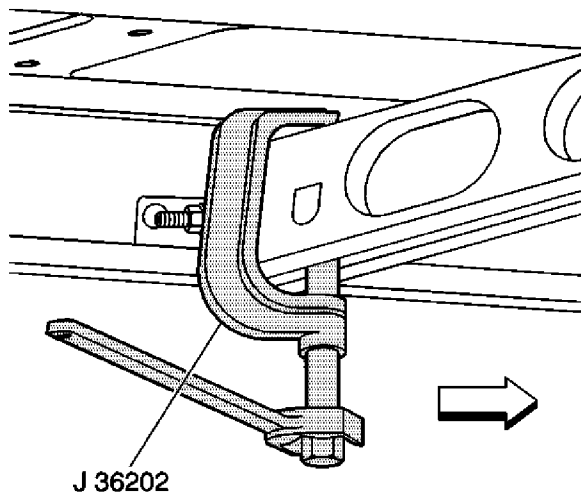
1. Install the torsion bars to the lower control arm.



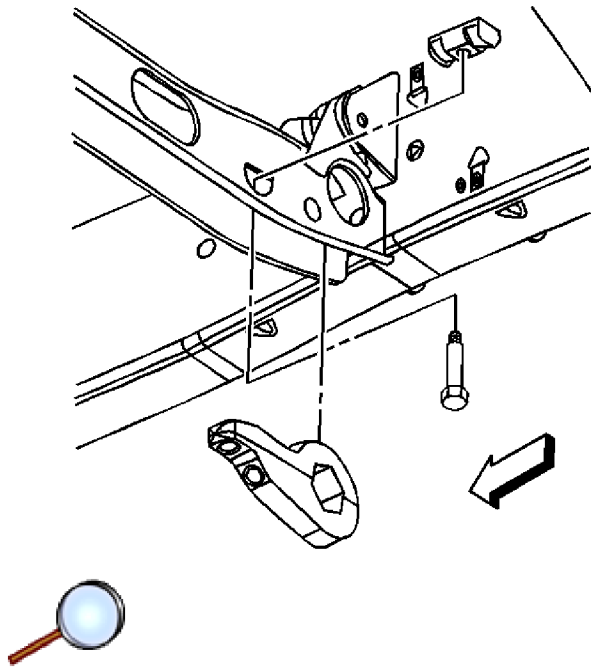
2. Install the torsion bar support.

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

3. Install the torsion bar support bolts and tighten to **95 N·m (70 lb ft)**.

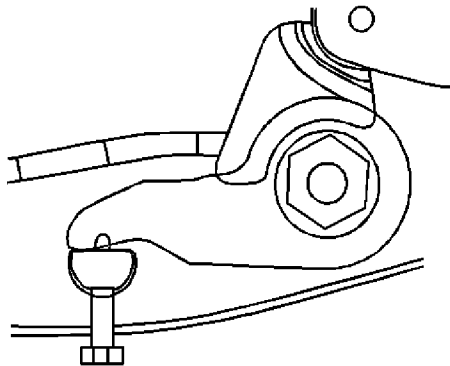


4. While supporting the adjustment arm, slide the torsion bar rearward until the torsion bar fully engages the adjustment arm.
5. Install the [J 36202](#) to the adjustment arm and the support.
6. Increase the tension on the adjustment arm in order to load the torsion bar.



**Note:** Install the adjustment bolt the same amount of turns that were required to remove the bolt during removal.

7. Install the adjustment bolt and the adjuster nut.
8. Remove the [J 36202](#) releasing the tension on the torsion bar until the load is taken up by the adjustment bolt.
9. Lower the vehicle.
10. Measure the Z height. Refer to [Trim Height Inspection](#).

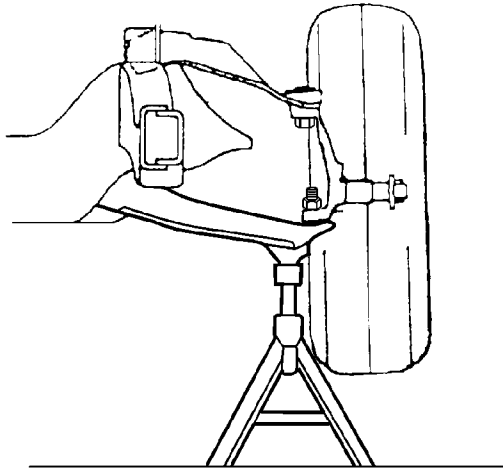


11. Turn the adjustment bolt clockwise to increase the Z height and counterclockwise to decrease the Z height.

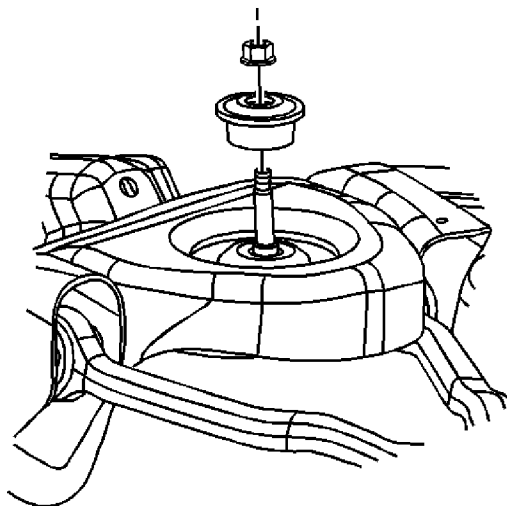


## Shock Absorber Replacement (RWD)

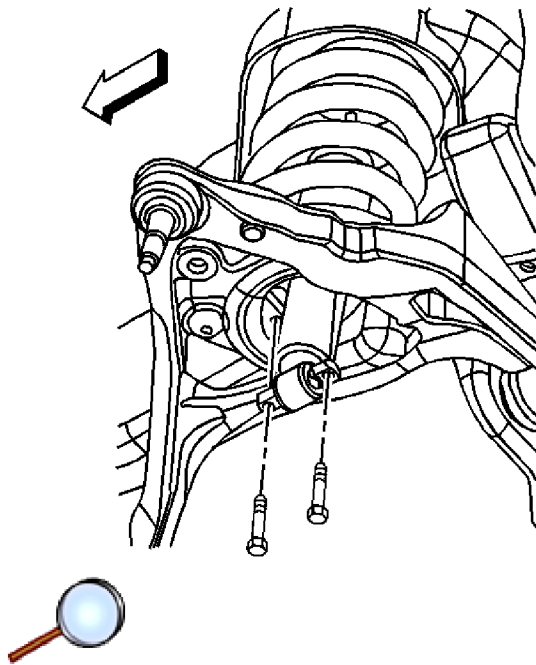
### Removal Procedure



1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
2. Support the lower control arm with a jack stand.

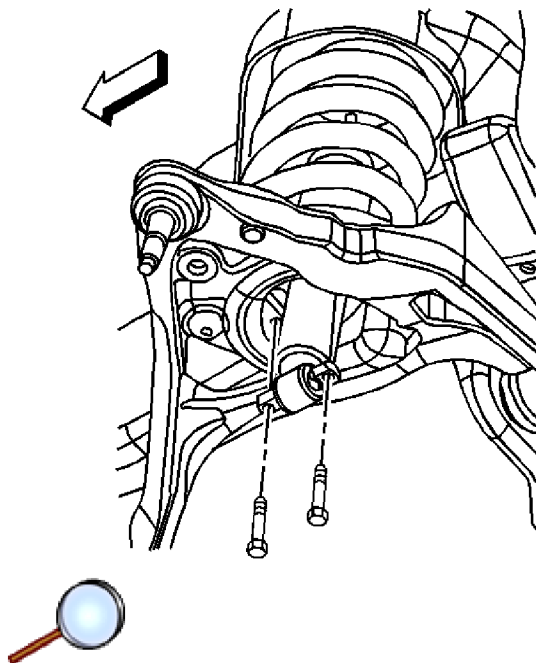


3. Remove the shock absorber nut and bushing.



4. Remove the shock absorber lower mounting bolts.
5. Remove the shock absorber from the vehicle.

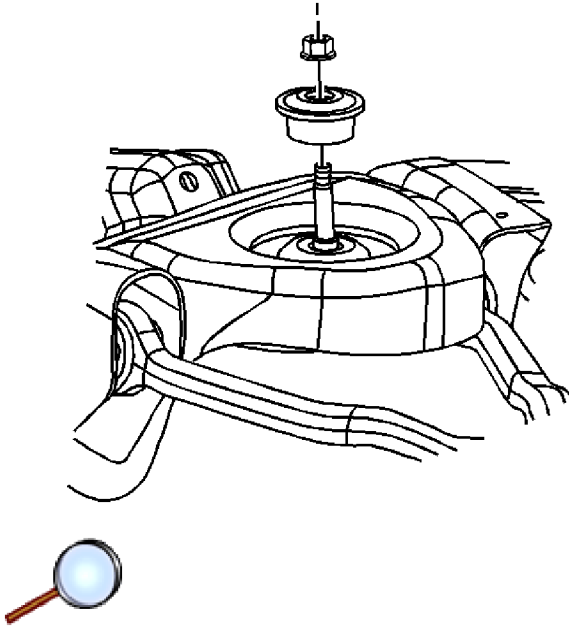
## Installation Procedure



1. Install the shock absorber to the vehicle.
2. Align the shock absorber with the mounting holes in the lower control arm.

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

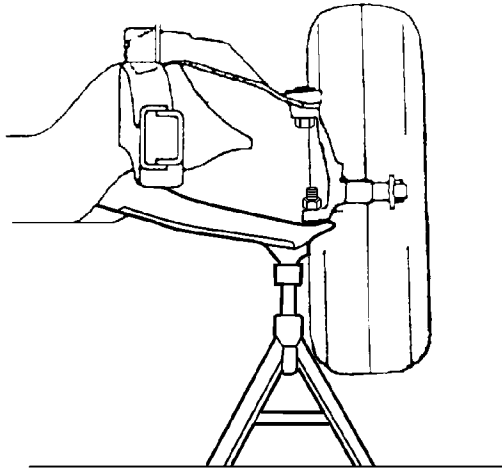
3. Install the shock absorber lower mounting bolts and tighten to **25 N·m (18 lb ft)**.



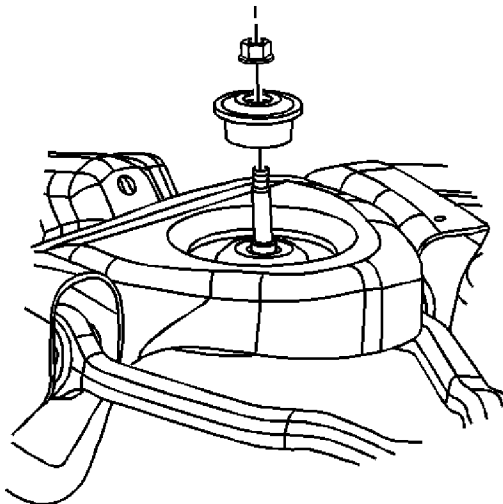
4. Install the shock absorber upper retaining nut and bushing and tighten to **20 N·m (15 lb ft)**.
5. Remove the safety stands.
6. Lower the vehicle.
7. Dispose of the shock absorber. Refer to [Shock Absorber Disposal](#).

## Shock Absorber Replacement (4WD)

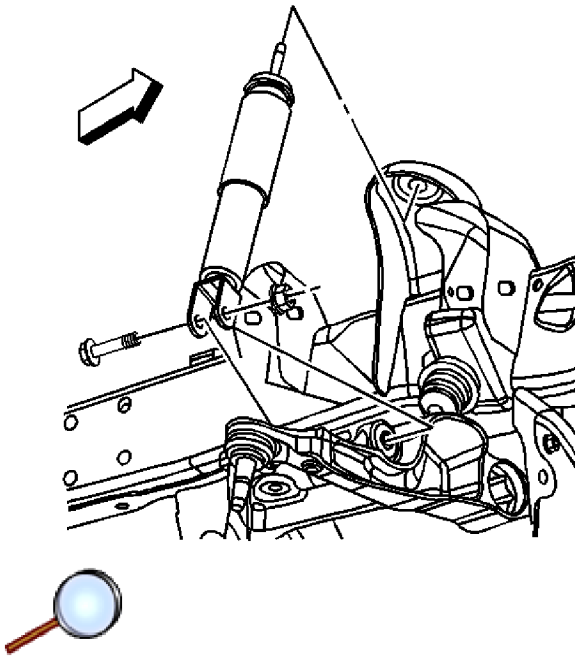
### Removal Procedure



1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
2. Support the lower control arm with a jack stand.

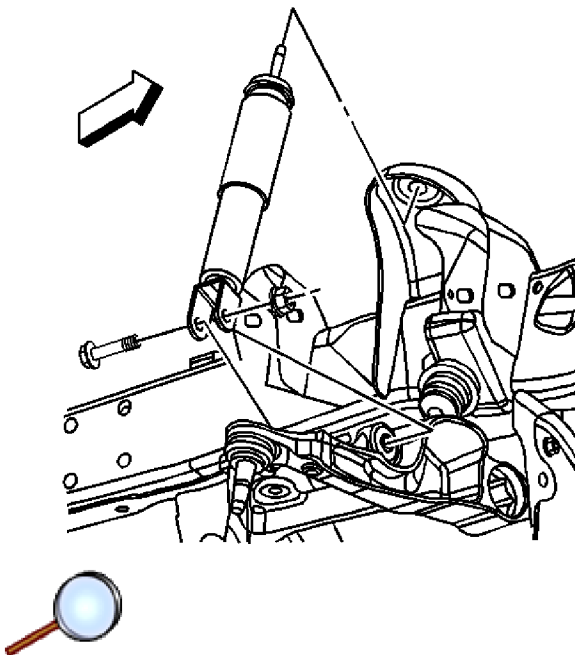


3. Remove the shock absorber upper retaining nut and bushing.



4. Remove the shock absorber lower mounting bolt.
5. Remove the shock absorber.

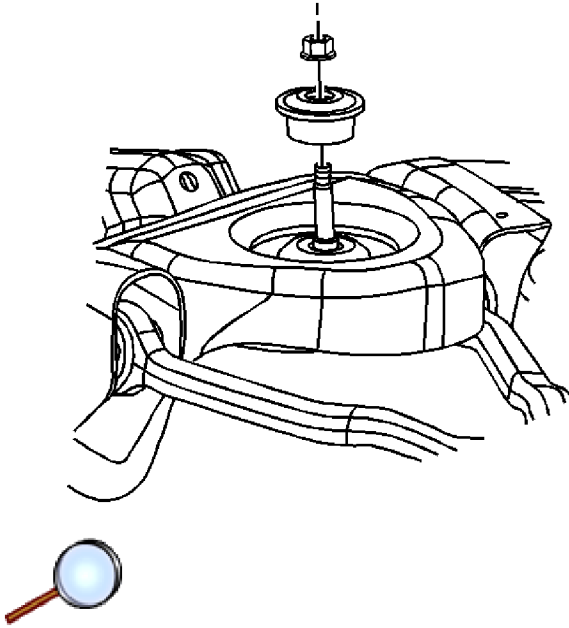
## Installation Procedure



1. Install the shock absorber. Insert the stem through the hole in the shock tower.
2. Align the shock absorber with the mounting holes in the lower control arm.

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

3. Install the shock absorber lower mounting bolt and nut and tighten to **80 N·m (59 lb ft)**.

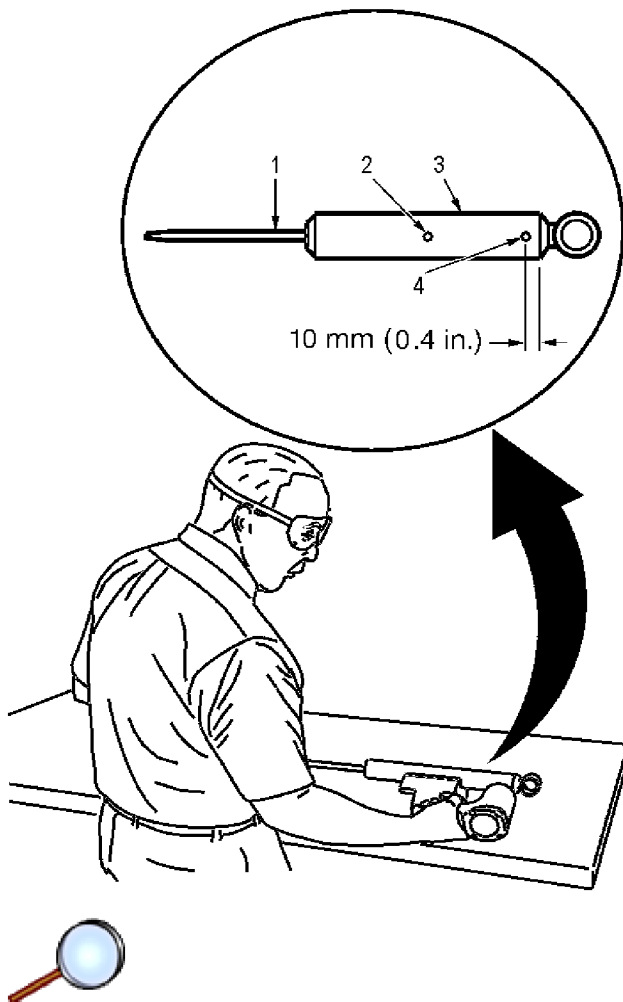


4. Install the shock absorber upper retaining nut and bushing and tighten to **20 N·m (15 lb ft)**.
5. Remove the safety stands.
6. Lower the vehicle.
7. Dispose of the shock absorber. Refer to [Shock Absorber Disposal](#).

## 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 to contain the escaping oil.

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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.