

Suspension

Rear Suspension - CTS Coupe & Wagon

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Adjustment Link Nut	75 N.m	55 lb ft
Adjustment Link to Frame Bolt		
• First Pass	120 N.m	89 lb ft
• Second Pass	Plus 45 Degrees	
Adjustment Link to Knuckle Bolt		
• First Pass	80 N.m	59 lb ft
• Second Pass	Plus 60 Degrees	
Lower Control Arm to Frame Bolt	165 N.m	122 lb ft
Lower Control Arm to Knuckle Bolt	160 N.m	118 lb ft
Shock Absorber to Body Nut	25 N.m	18 lb ft
Shock Absorber to Knuckle Bolt	150 N.m	111 lb ft
Stabilizer Shaft Insulator Clamp Bolt	60 N.m	44 lb ft
Stabilizer Shaft Link Nut	66 N.m	49 lb ft
Trailing Link to Frame Nut	150 N.m	125 lb ft
Trailing Link to Knuckle Bolt	170 N.m	129 lb ft
Upper Control Arm Ball Stud to Knuckle Nut		
• First Pass	20 N.m	15 lb ft
• Second Pass	Plus 210 Degrees	
Upper Control Arm to Frame Bolt	120 N.m	88 lb ft
Wheel Bearing/Hub Assembly Bolt	140 N.m	103 lb ft

REPAIR INSTRUCTIONS

REAR WHEEL BEARING AND HUB REPLACEMENT

Speical Tools

J 45859 Axle Shaft Remover/Installer

Removal Procedure

1. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle**
2. Remove the tire and wheel assembly. Refer to **Tire and Wheel Removal and Installation** .
3. Remove the rear wheel speed sensor. Refer to **Rear Wheel Speed Sensor Replacement** .
4. Separate the wheel drive shaft from the wheel bearing/hub assembly. Refer to **Rear Wheel Drive Shaft Replacement** .
5. Remove the rear brake rotor from the wheel bearing/hub assembly. Refer to **Rear Brake Rotor Replacement (J56)** , **Rear Brake Rotor Replacement (JE5, J55)** .

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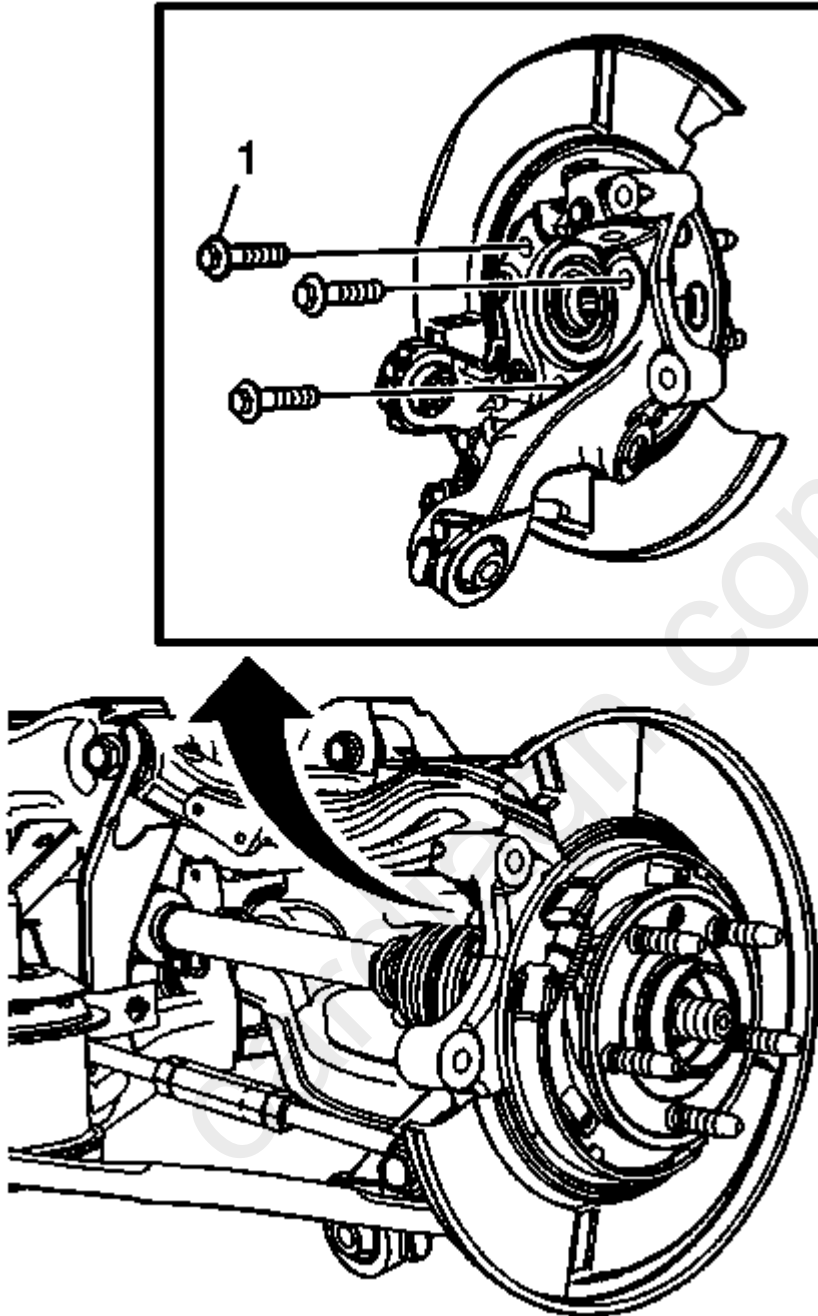


Fig. 1: View of Wheel Bearing/Hub Assembly & Bolts
Courtesy of GENERAL MOTORS COMPANY

CAUTION: Avoid tool contact to the outer constant velocity boot when removing the wheel bearing mounting bolts. Failure to observe this caution may result in damage to the CV boot.

NOTE: When removing the wheel bearing/hub mounting bolts, it may be necessary

to push the outer CV joint in to gain enough clearance to remove the mounting bolts.

6. Remove the mounting bolts (1) for the wheel bearing/hub assembly.

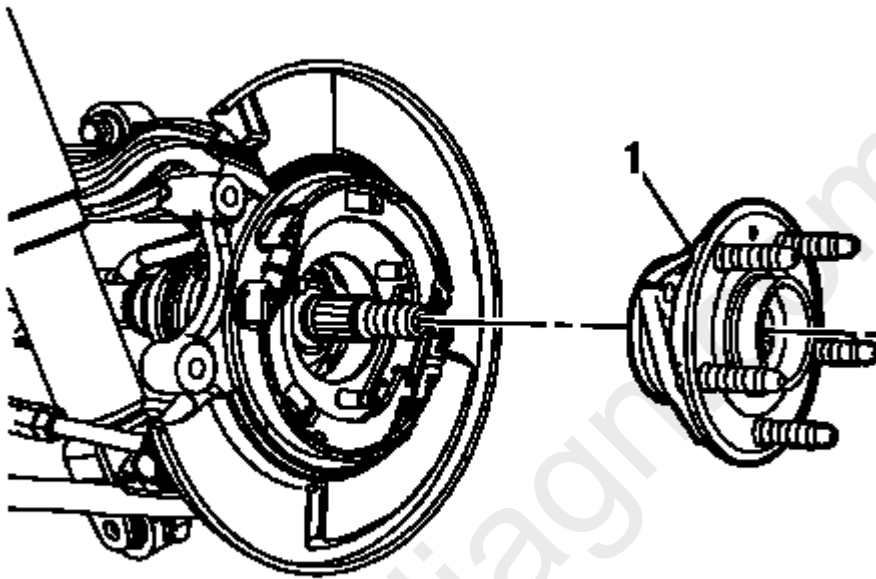


Fig. 2: Identifying Position of Rear Wheel Bearing/Hub
Courtesy of GENERAL MOTORS COMPANY

7. Using the **J 45859** remover/installer , remove the wheel bearing/hub assembly (1) from the knuckle.
8. Remove the **J 45859** remover/installer fromm the wheel bearing/hub assembly

Installation Procedure

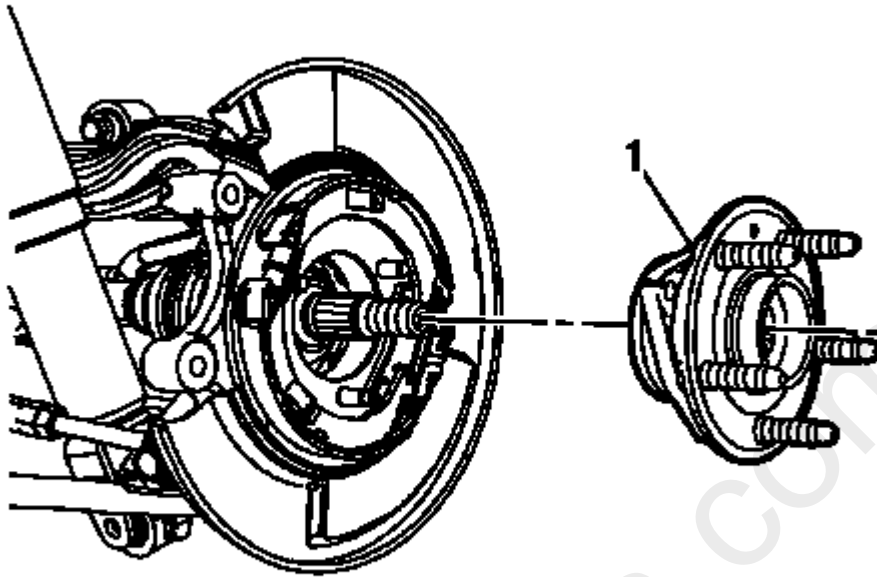


Fig. 3: Identifying Position of Rear Wheel Bearing/Hub
Courtesy of GENERAL MOTORS COMPANY

1. Position the rear wheel bearing/hub (1) assembly in the knuckle.
2. Insert the wheel drive axle into the wheel bearing/hub assembly.

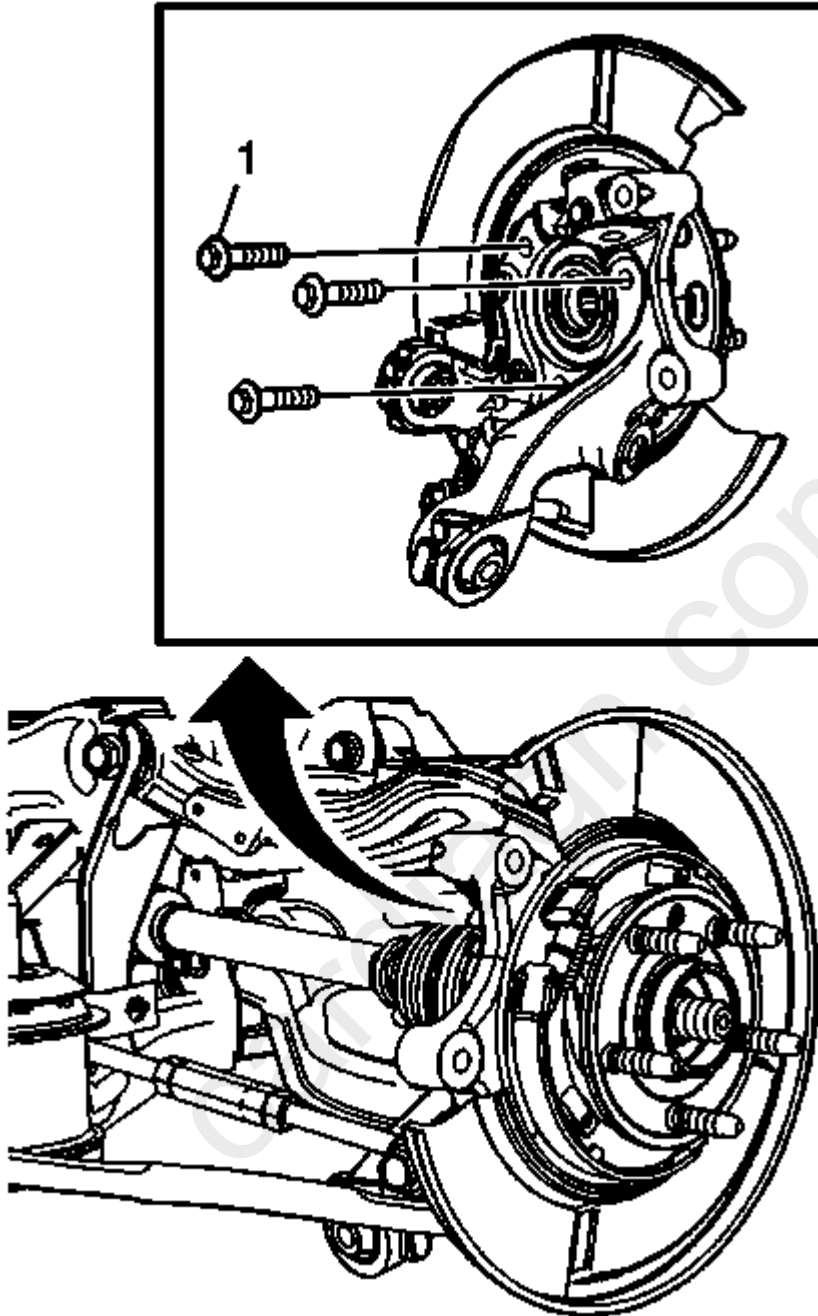


Fig. 4: View of Wheel Bearing/Hub Assembly & Bolts
Courtesy of GENERAL MOTORS COMPANY

3. Hand tighten the wheel bearing/hub assembly mounting bolts (1).

CAUTION: Refer to Fastener Caution .

4. Tighten the wheel bearing/hub bolts to 140 N.m (103 lb ft).
5. Install the rear brake rotor. Refer to **Rear Brake Rotor Replacement (J56)** , **Rear Brake Rotor Replacement (JE5, J55)** .
6. Install the wheel drive shaft nut. Refer to **Rear Wheel Drive Shaft Replacement** .
7. Install the rear wheel speed sensor. Refer to **Rear Wheel Speed Sensor Replacement** .
8. Install the tire and wheel. Refer to **Tire and Wheel Removal and Installation** .
9. Remove the support and lower the vehicle.

KNUCKLE REPLACEMENT

Removal Procedure

1. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle** .
2. Remove the tire and wheel assembly. Refer to **Tire and Wheel Removal and Installation** .
3. Remove the rear park brake cable from the knuckle. **Parking Brake Cable Bracket Replacement (Without Electronic Parking Brake)** , **Parking Brake Cable Bracket Replacement (With Electronic Parking Brake)** .
4. Remove the park brake backing plate. Refer to **Rear Parking Brake Anchor Backing Plate Replacement** .
5. Remove the adjustable link. Refer to **Adjust Link Replacement**.

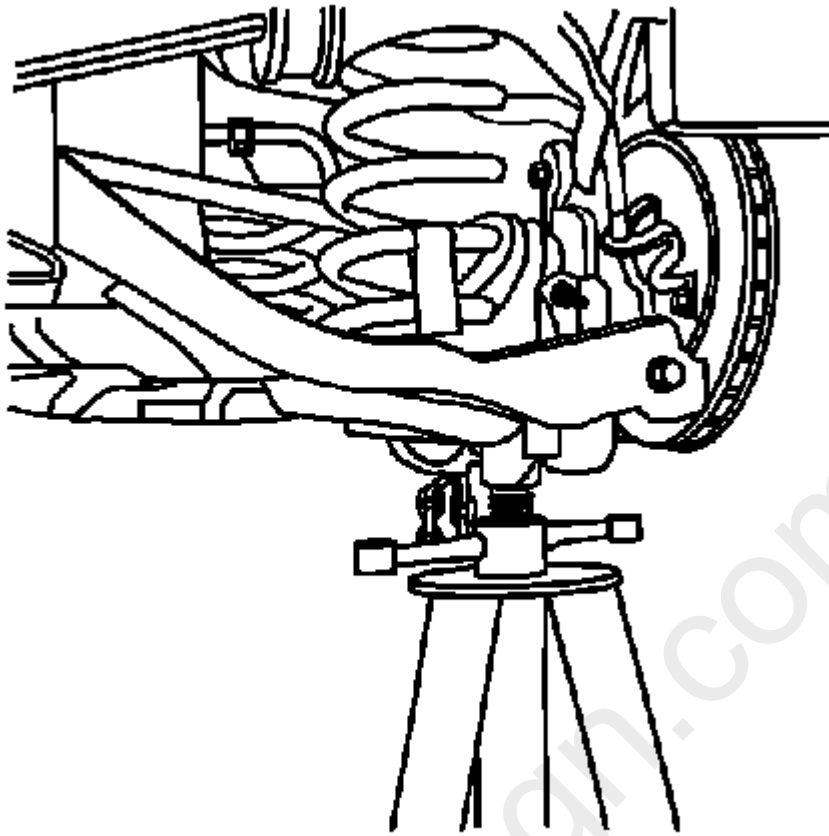


Fig. 5: Supporting Lower Control Arm
Courtesy of GENERAL MOTORS COMPANY

IMPORTANT: Position the jack stand under the lower control to support the rear spring.

6. Position a suitable jack stand under the lower control arm.
7. Remove the upper ball joint from the knuckle. Refer to **Upper Control Arm Replacement**.
8. Remove the lower shock absorber bolt from the knuckle. Refer to **Shock Absorber Replacement**.
9. Remove the bolt from the lower trailing arm to the knuckle. Refer to **Trailing Arm Replacement**.
10. Remove the bolt from the lower control arm to the knuckle. Refer to **Lower Control Arm Replacement**.

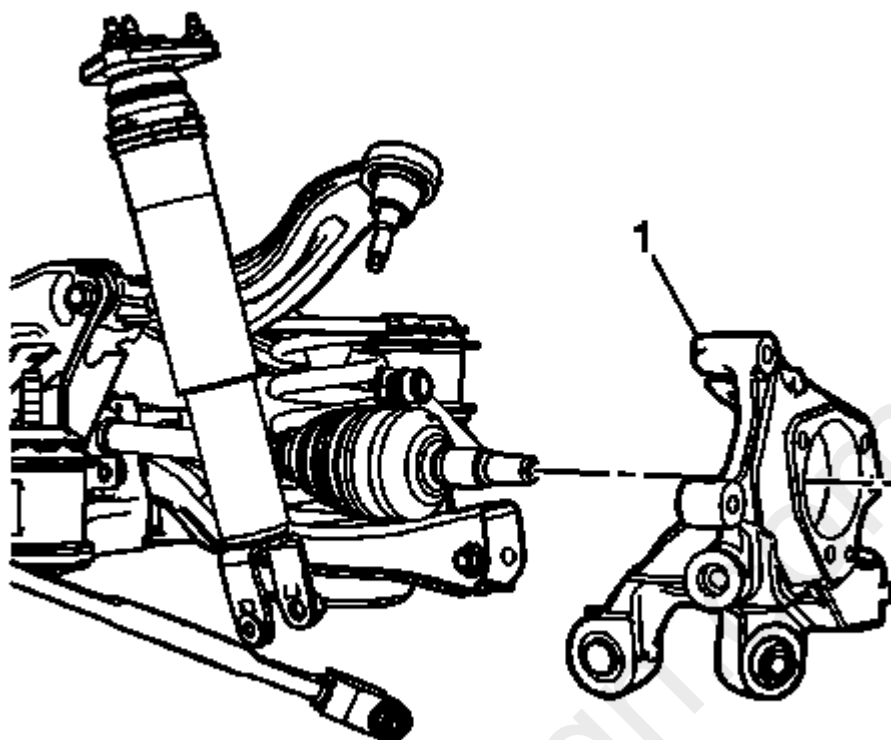


Fig. 6: View of Knuckle Assembly
Courtesy of GENERAL MOTORS COMPANY

11. Remove the knuckle from the vehicle.

Installation Procedure

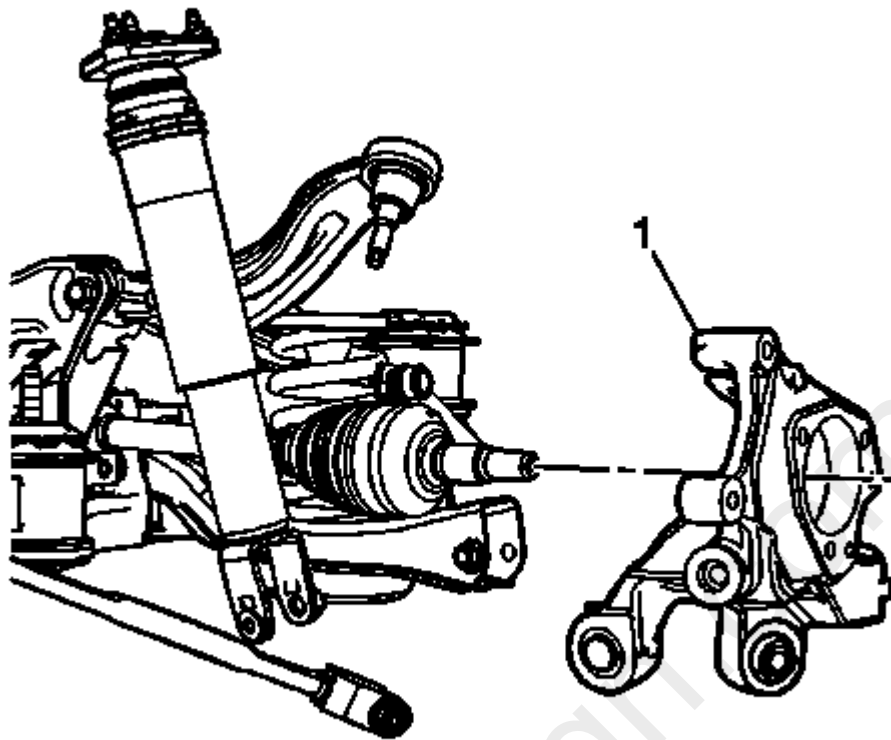


Fig. 7: View of Knuckle Assembly
Courtesy of GENERAL MOTORS COMPANY

1. Position the knuckle on the lower control arm
2. Install the lower control bolt. Refer to Lower Control Arm Replacement.

IMPORTANT: It maybe necessary to adjust the jack stand in order to install the upper control arm bolt.

3. Install the upper ball joint in the knuckle. Refer to Upper Control Arm Replacement.
4. Install the lower shock absorber bolt. Refer to Shock Absorber Replacement.
5. Install the trailing arm bolt. Refer to Trailing Arm Replacement.
6. Install the adjustable link. Refer to Adjust Link Replacement.

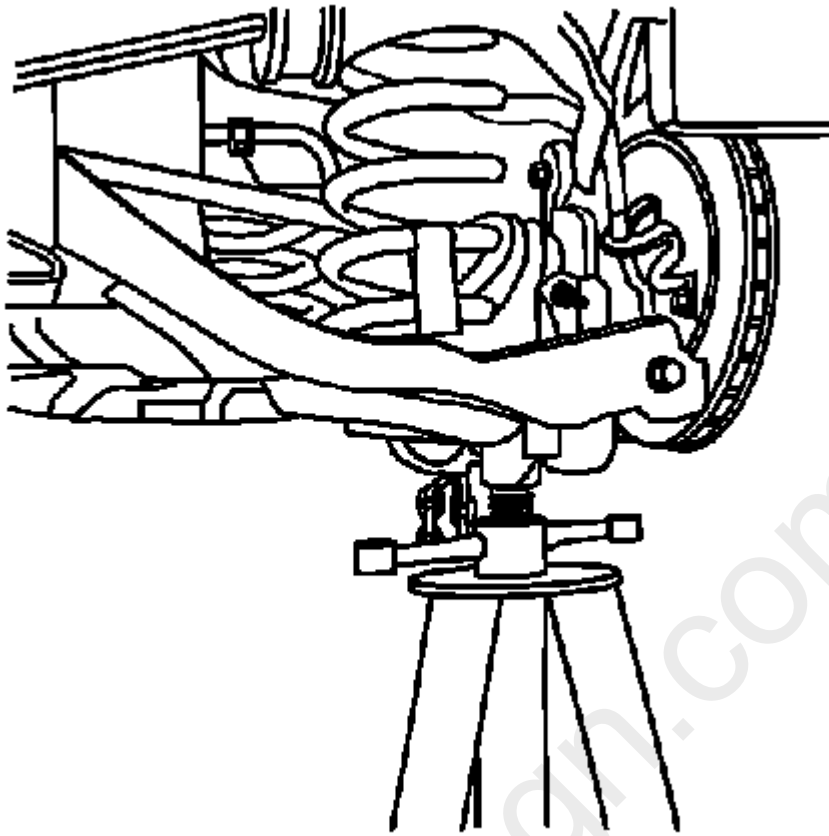


Fig. 8: Supporting Lower Control Arm
Courtesy of GENERAL MOTORS COMPANY

7. Remove the jack stand from the lower control arm.
8. Install the park brake backing plate. Refer to **Rear Parking Brake Anchor Backing Plate Replacement** .
9. Install the park brake cable at the knuckle. Refer to **Parking Brake Cable Bracket Replacement (Without Electronic Parking Brake)** , **Parking Brake Cable Bracket Replacement (With Electronic Parking Brake)** .
10. Install the tire and wheel. Refer to **Tire and Wheel Removal and Installation** .
11. Remove the support and lower the vehicle.

STABILIZER SHAFT REPLACEMENT

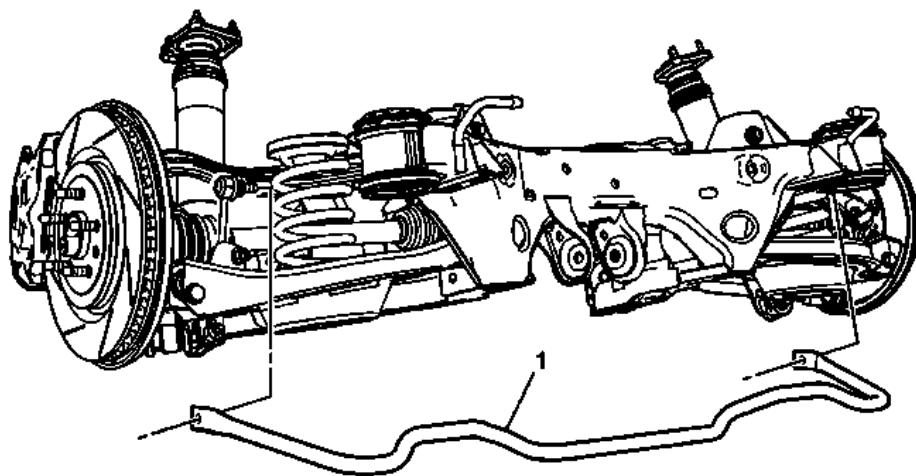


Fig. 9: View of Stabilizer Shaft
Courtesy of GENERAL MOTORS COMPANY

Stabilizer Shaft Replacement

Callout	Component Name
Preliminary Procedure 1. Raise and support the vehicle. Refer to <u>Lifting and Jacking the Vehicle</u> . 2. Remove the stabilizer shaft link from the stabilizer shaft. Refer to <u>Stabilizer Shaft Link Replacement</u> 3. Remove the stabilizer shaft insulators. Refer to <u>Stabilizer Shaft Insulator Replacement</u>.	
1	Stabilizer Shaft Procedure 1. Remove the rear muffler insulators. Refer to <u>Exhaust System Insulator, Hanger, Bracket Replacement</u> 2. Support the rear mufflers with jack stands. TIP: Lower the rear mufflers enough to remove the rear stabilizer shaft.

STABILIZER SHAFT INSULATOR REPLACEMENT

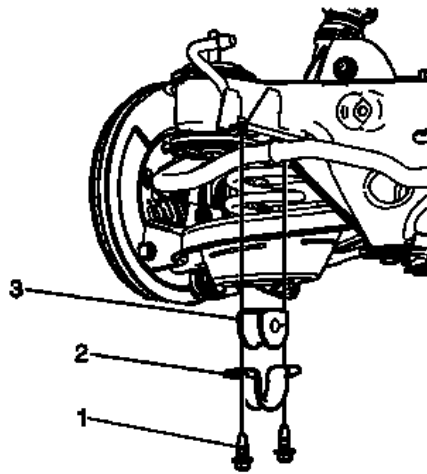


Fig. 10: Identifying Shaft Insulator
 Courtesy of GENERAL MOTORS COMPANY

Stabilizer Shaft Insulator Replacement

Callout	Component Name
Preliminary Procedure Raise and support the vehicle. Refer to <u>Lifting and Jacking the Vehicle</u> .	
1	Stabilizer Shaft Insulator Clamp Bolt (Qty: 2) CAUTION: Refer to <u>Fastener Caution</u> . Tighten 60 N.m (44 lb ft).
2	Stabilizer Shaft Insulator Clamp
3	Stabilizer Shaft Insulator TIP: Install the insulator so the slit is facing the front of the vehicle.

STABILIZER SHAFT LINK REPLACEMENT

Removal Procedure

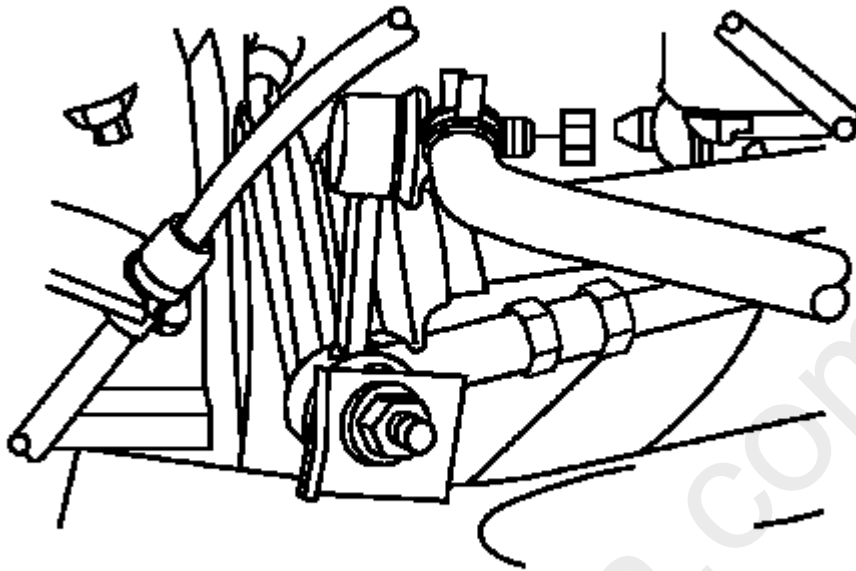


Fig. 11: Locating Stabilizer Shaft Link Retaining Nuts
Courtesy of GENERAL MOTORS COMPANY

CAUTION: The ball stud must not rotate during disassembly or reassembly. Hand tools must be used to keep the ball stud from rotating. If air tools are used and the stud is allowed to rotate, damage to the ball stud and/or stud mounting hole may occur.

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 .

NOTE: Hold the shaft link stud with a hex tool to prevent damage to the link seal.

3. Remove the stabilizer shaft link retaining nuts.
4. Remove the stabilizer shaft link from the stabilizer shaft.

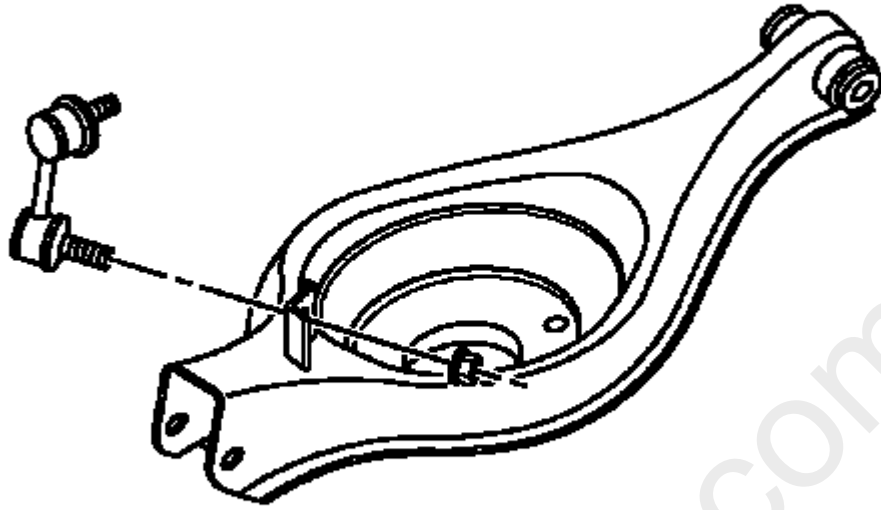


Fig. 12: View Of Stabilizer Shaft Link
Courtesy of GENERAL MOTORS COMPANY

5. Remove the stabilizer shaft link from the lower control arm.

Installation Procedure

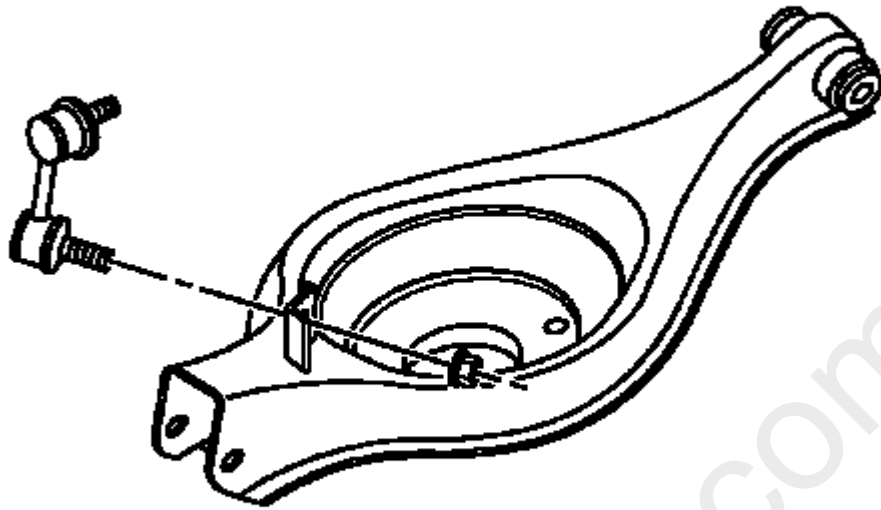


Fig. 13: View Of Stabilizer Shaft Link
Courtesy of GENERAL MOTORS COMPANY

1. Install the stabilizer shaft link to the lower control arm.

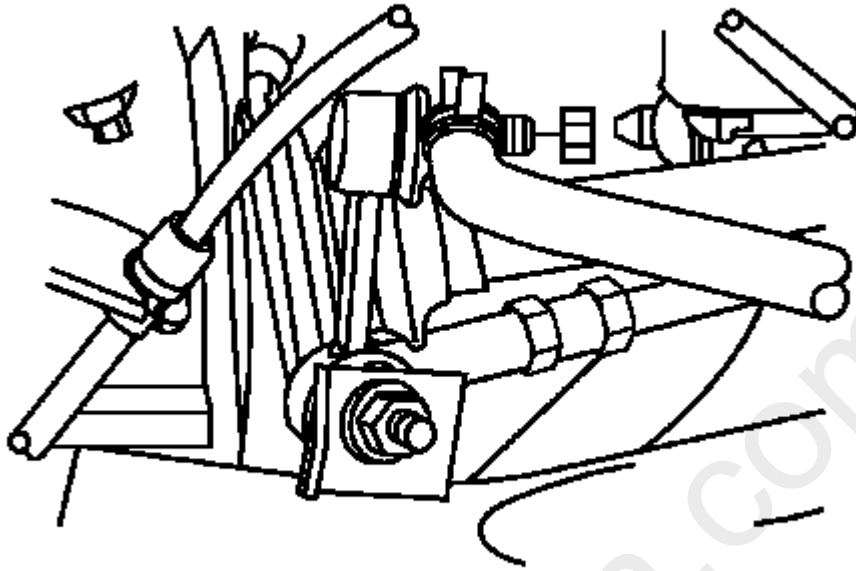


Fig. 14: Locating Stabilizer Shaft Link Retaining Nuts
Courtesy of GENERAL MOTORS COMPANY

2. Install the stabilizer shaft link to the stabilizer shaft.

CAUTION: Refer to Fastener Caution .

NOTE: Hold the shaft link stud with a hex tool to prevent damage to the link seal.

3. Install the stabilizer shaft link retaining nuts.

Tighten

Tighten the nuts to 66 N.m (49 lb ft).

4. Install the tire and wheel. Refer to Tire and Wheel Removal and Installation .
5. Lower the vehicle.

SHOCK ABSORBER REPLACEMENT

Removal Procedure

1. Remove rear compartment side trim panel. Refer to **Rear Compartment Side Trim Panel Replacement (Coupe)** .
 - For coupe, refer to **Rear Compartment Side Trim Panel Replacement (Coupe)** .
 - For the station wagon, refer to **Body Side Lower Trim Panel Replacement (Wagon)** .
2. Disconnect the electrical connector for the electronic suspension, if equipped.

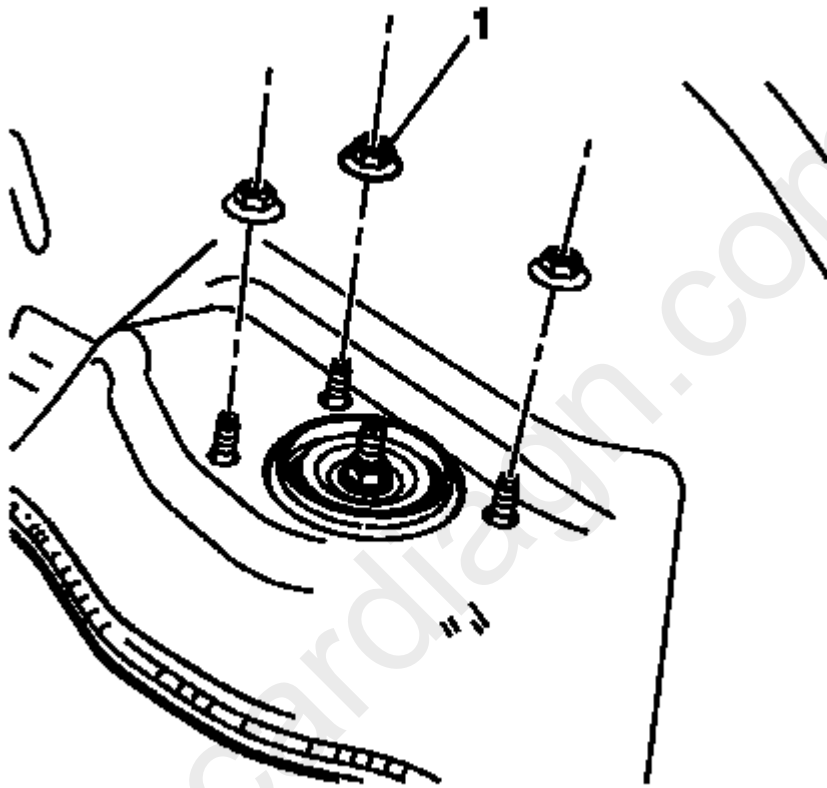


Fig. 15: Identifying Upper Shock Mounting Nuts
Courtesy of GENERAL MOTORS COMPANY

3. Remove the upper shock mounting nuts (1).
4. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle** .

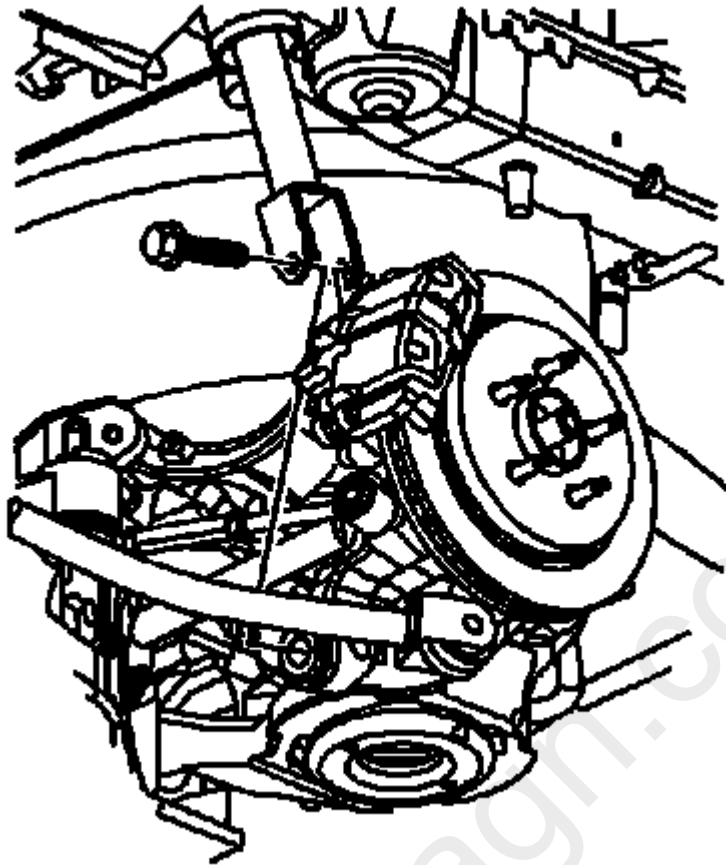


Fig. 16: Identifying Lower Shock Mounting Bolt
Courtesy of GENERAL MOTORS COMPANY

5. Remove the lower shock mounting bolt.

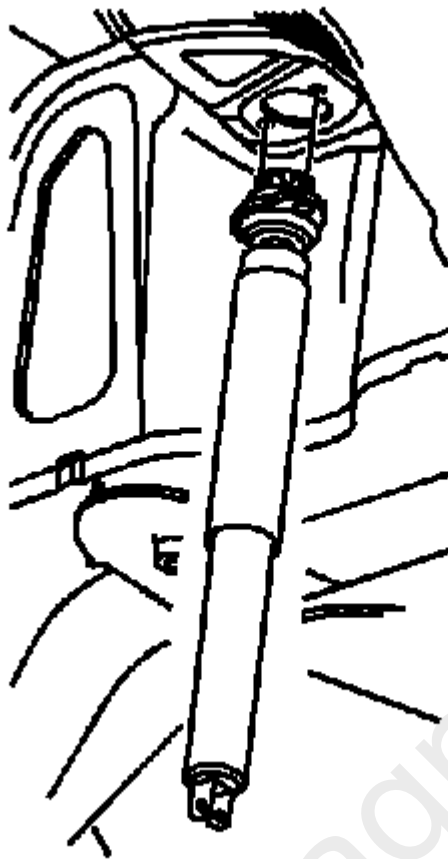


Fig. 17: View of Shock Absorber Assembly
Courtesy of GENERAL MOTORS COMPANY

6. Remove the shock from the vehicle.

Installation Procedure

1. Install the shock to the vehicle.

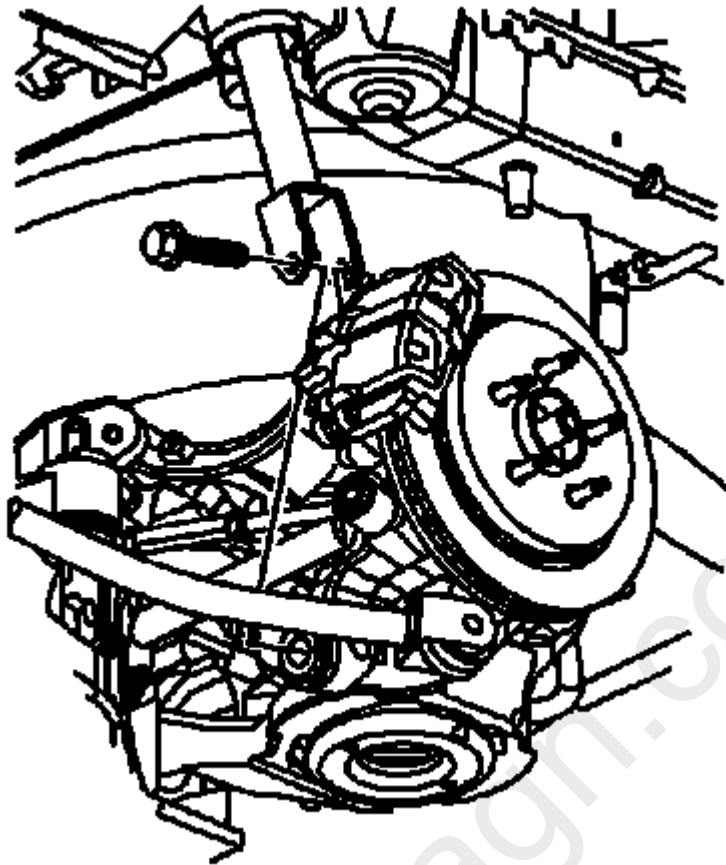


Fig. 18: Identifying Lower Shock Mounting Bolt
Courtesy of GENERAL MOTORS COMPANY

CAUTION: Refer to Fastener Caution .

2. Install the lower shock mounting bolt.

Tighten

Tighten the bolt to 150 N.m (111 lb ft).

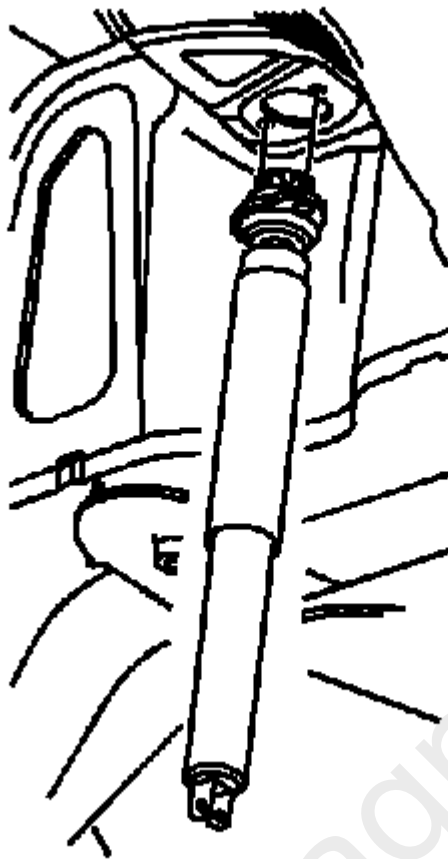


Fig. 19: View of Shock Absorber Assembly
Courtesy of GENERAL MOTORS COMPANY

3. Guide the shock to the body while lowering the vehicle.

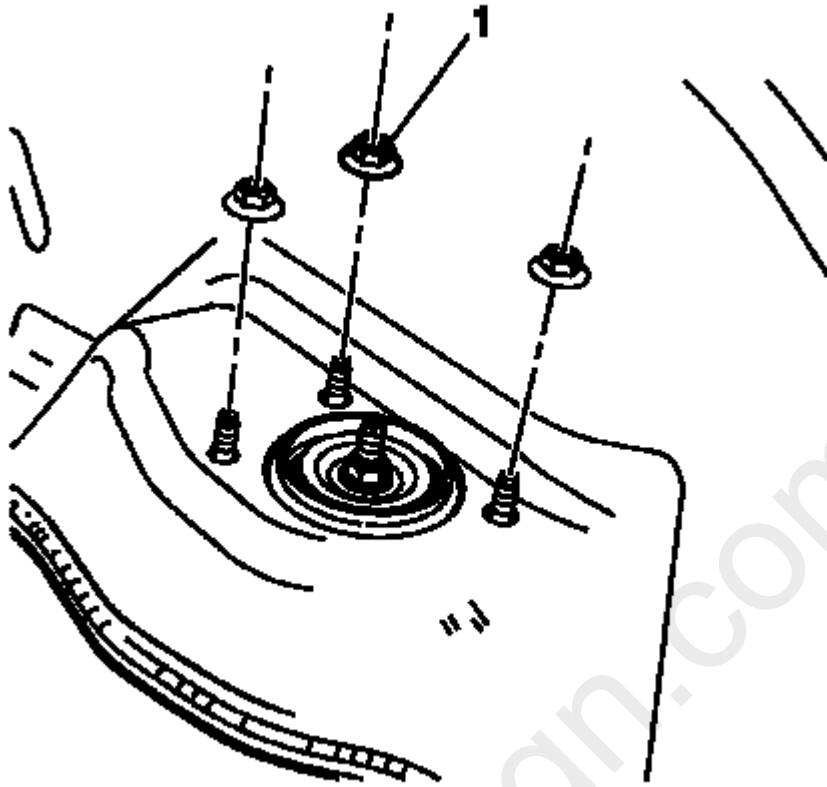


Fig. 20: Identifying Upper Shock Mounting Nuts
Courtesy of GENERAL MOTORS COMPANY

4. Install the upper shock mounting nuts (1).

Tighten

Tighten the nuts to 25 N.m (18 lb ft).

5. Reconnect electrical connector for the electronic suspension, if equipped.
6. Install the rear compartment side trim panel.
 - For the coupe, refer to **Rear Compartment Side Trim Panel Replacement (Coupe)** .
 - For the station wagon, refer to **Body Side Lower Trim Panel Replacement (Wagon)** .

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 tire and wheel assembly. Refer to **Tire and Wheel Removal and Installation** .
3. Remove the stabilizer shaft link from the lower control arm. Refer to **Stabilizer Shaft Link**

Replacement.

4. Remove the trailing arm bolt at the knuckle. Refer to **Trailing Arm Replacement**.
5. Remove the adjustable link bolt from the knuckle. Refer to **Adjust Link Replacement**.

IMPORTANT: In the following service procedure, DO NOT remove the lower control arm nut and bolt from the frame. Loosening the lower control arm nut and bolt will allow the lower control arm to have enough movement to remove the coil spring and other related components.

6. Loosen the lower control arm nut and bolt at the frame.

IMPORTANT: In the following service procedure, it is NOT necessary to completely remove the wheel drive shaft. The wheel drive shaft can remain in the knuckle, but must be able to move freely in the knuckle.

7. Separate the wheel drive shaft from the knuckle. Refer to **Rear Wheel Drive Shaft Replacement** .
8. Position a transmission jack under the lower control arm.
9. Remove the lower shock absorber bolt from the knuckle. Refer to **Shock Absorber Replacement**.
10. Remove the lower control arm bolt from the knuckle. Refer to **Lower Control Arm Replacement**.
11. With the aid of an assistant, move the knuckle outward and up.
12. Slowly lower the transmission jack stand.

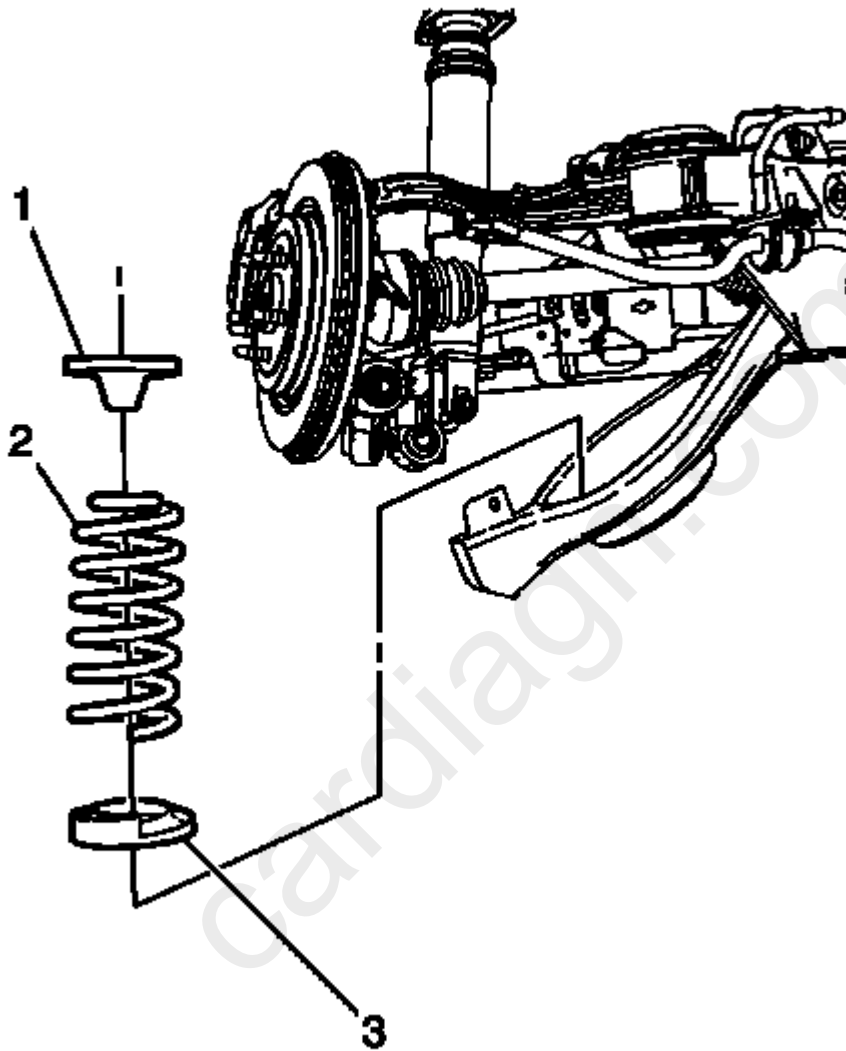


Fig. 21: View of Coil Spring, Insulator, Jounce Bumper Assembly
Courtesy of GENERAL MOTORS COMPANY

13. Lower the control arm and remove the coil spring (1), insulator (2) and the jounce bumper (3).

Installation Procedure

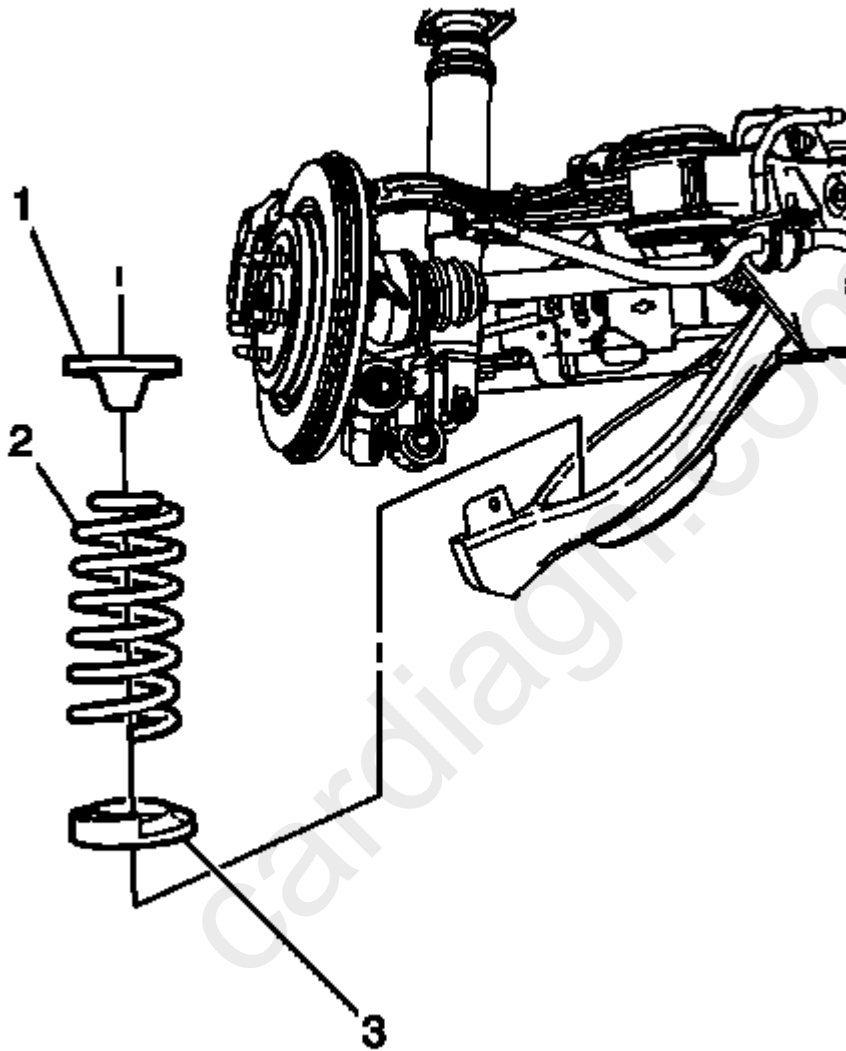


Fig. 22: View of Coil Spring, Insulator, Jounce Bumper Assembly
Courtesy of GENERAL MOTORS COMPANY

1. Install the coil spring (1), insulator (2) and the jounce bumper (3).
2. Using the transmission jack stand, lift the lower control arm.

IMPORTANT: In Steps 4 thru 8, leave all the bolts loose to aide in the alignment of all the suspension components prior the to tighten to the final torque

specifications.

3. With the aide of an assistant, install the lower control arm on the knuckle.
4. Install the lower control arm bolt. Refer to **Lower Control Arm Replacement**.
5. Install the trailing arm bolt in the knuckle. Refer to **Trailing Arm Replacement**.
6. Install the adjustable link bolt in the knuckle. Refer to **Adjust Link Replacement**.
7. Install the lower shock absorber bolt in the knuckle. Refer to **Shock Absorber Replacement**.
8. Install the stabilizer shaft link to the lower control arm. Refer to **Stabilizer Shaft Link Replacement**.
9. Tighten the wheel drive shaft nut. Refer to **Rear Wheel Drive Shaft Replacement** .
10. Install the tire and wheel assembly. Refer to **Tire and Wheel Removal and Installation** .
11. Remove the support and lower the vehicle.
12. Align the rear suspension. Refer to **Wheel Alignment Specifications** .

TRAILING ARM REPLACEMENT

Removal Procedure

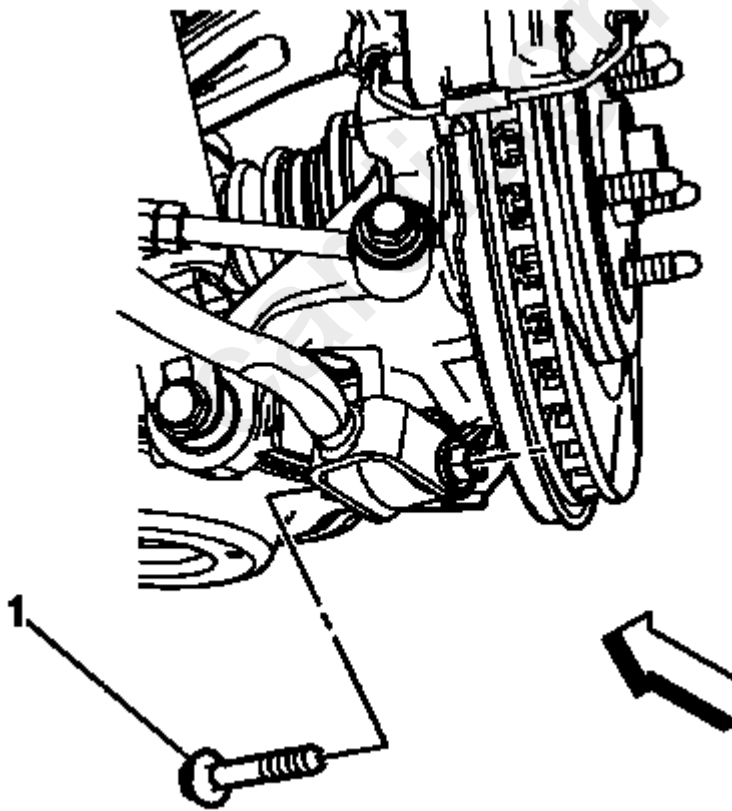


Fig. 23: Applying Nut and Bolt to Trailing Arm
Courtesy of GENERAL MOTORS COMPANY

1. Remove the rear trailing arm mounting bolt (1) from the knuckle.
2. Support the front of the rear suspension support.

NOTE: Lower the rear suspension support enough to gain access to the front trailing arm mounting hole and nut.

3. Remove the front mounting bolts for the rear suspension support. Refer to **Rear Frame Replacement** .

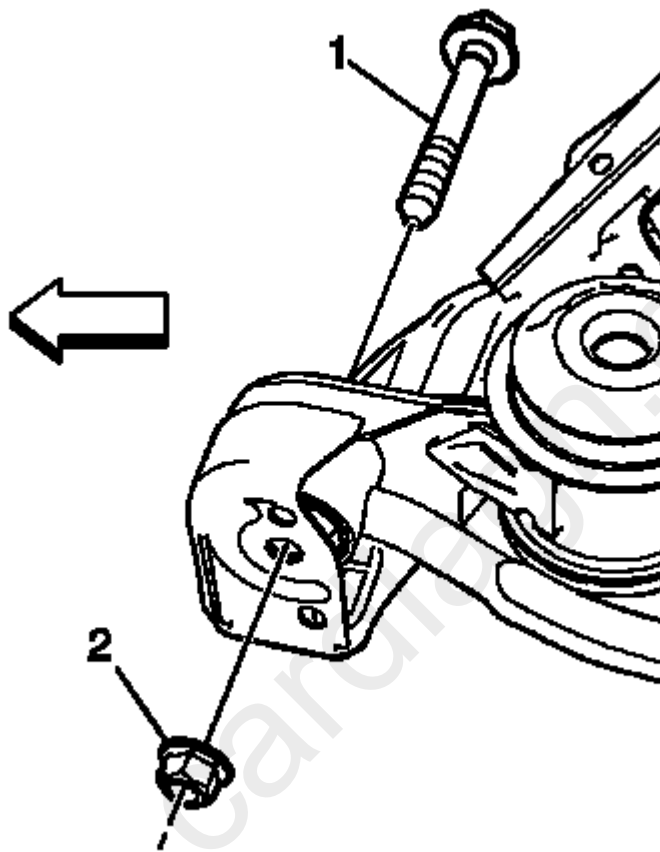


Fig. 24: View of Trailing Arm Mounting
Courtesy of GENERAL MOTORS COMPANY

4. Remove the front mounting nut (2) and bolt (1) for the trailing arm.

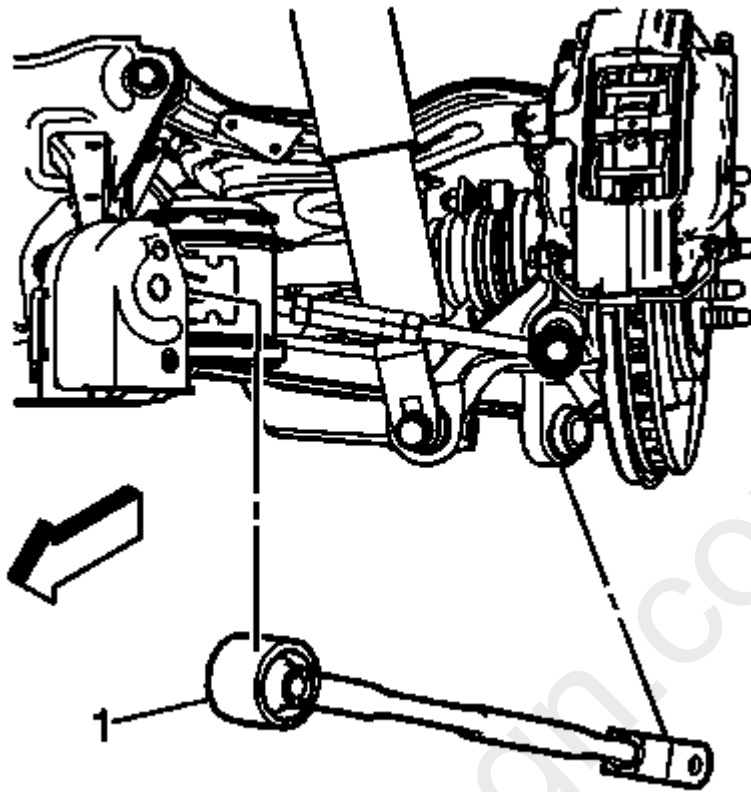


Fig. 25: View of Trailing Arm Assembly
Courtesy of GENERAL MOTORS COMPANY

5. Remove the trailing arm from the vehicle.

Installation Procedure

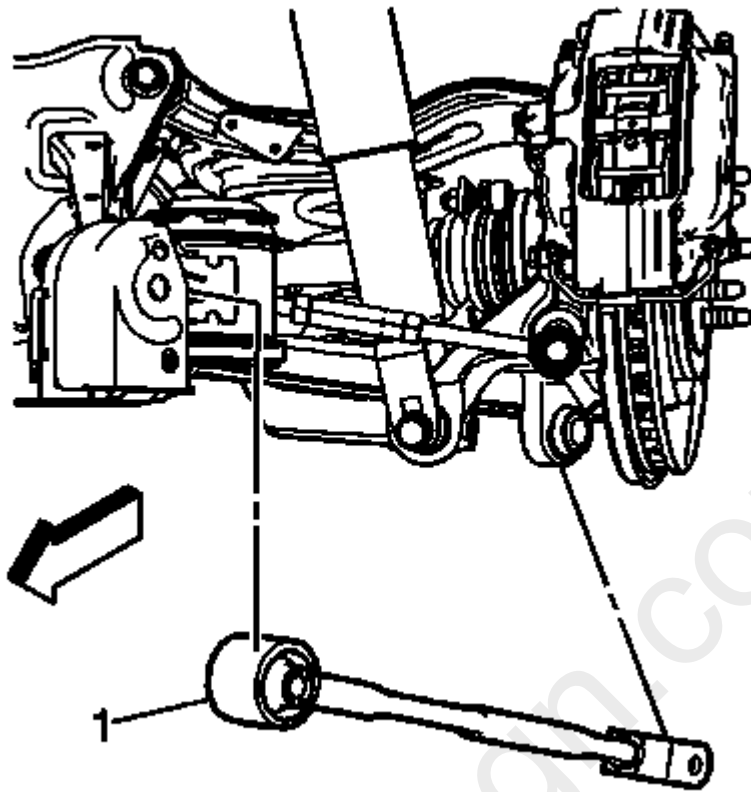


Fig. 26: View of Trailing Arm Assembly
Courtesy of GENERAL MOTORS COMPANY

1. Install the trailing arm in the following manner:
 1. Position the trailing arm in the mounting bracket.
 2. Position trailing arm on the knuckle.
2. Install the trailing arm bolt (1).

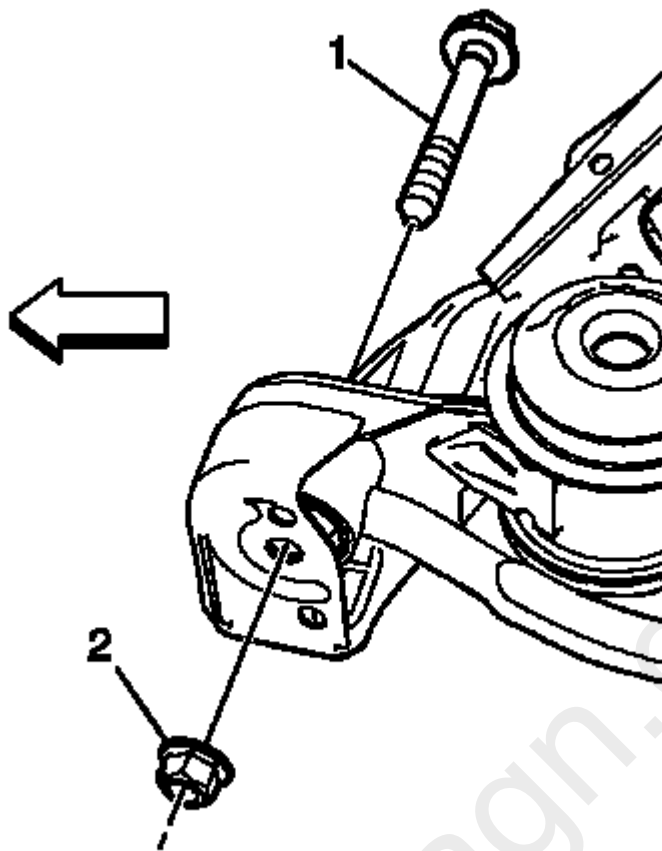


Fig. 27: View of Trailing Arm Mounting
Courtesy of GENERAL MOTORS COMPANY

CAUTION: Refer to Fastener Caution .

3. Install the front trailing arm nut (2).

Tighten

Tighten the front trailing arm nut (2) to 150 N.m (111 lb ft).

4. Install the front mounting bolts for the rear suspension support. Refer to Rear Frame Replacement .

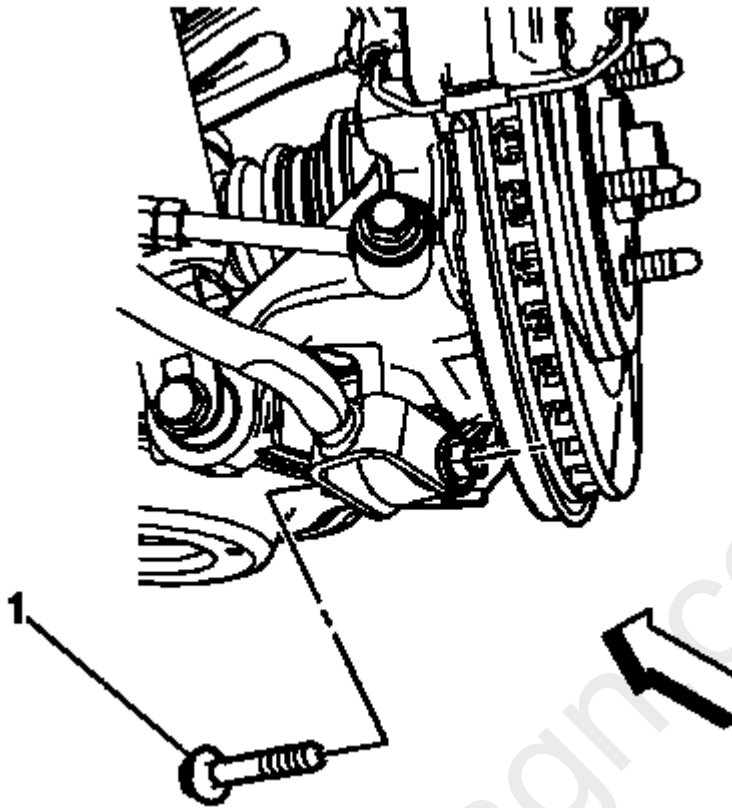


Fig. 28: Applying Nut and Bolt to Trailing Arm
Courtesy of GENERAL MOTORS COMPANY

5. Install the rear trailing arm mounting bolt (1).

Tighten

Tighten the trailing arm bolt (1) to 170 N.m (125 lb ft).

6. Install the tire and wheel. Refer to **Tire and Wheel Removal and Installation** .
7. Remove the support from the vehicle.
8. Lower the vehicle.
9. Check the alignment of the rear suspension. Refer to **Wheel Alignment Specifications** .

ADJUST LINK 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. Lower the front of the rear cradle to gain access to the adjustment link bolt retaining nut. Refer to **Rear**

Frame Replacement .

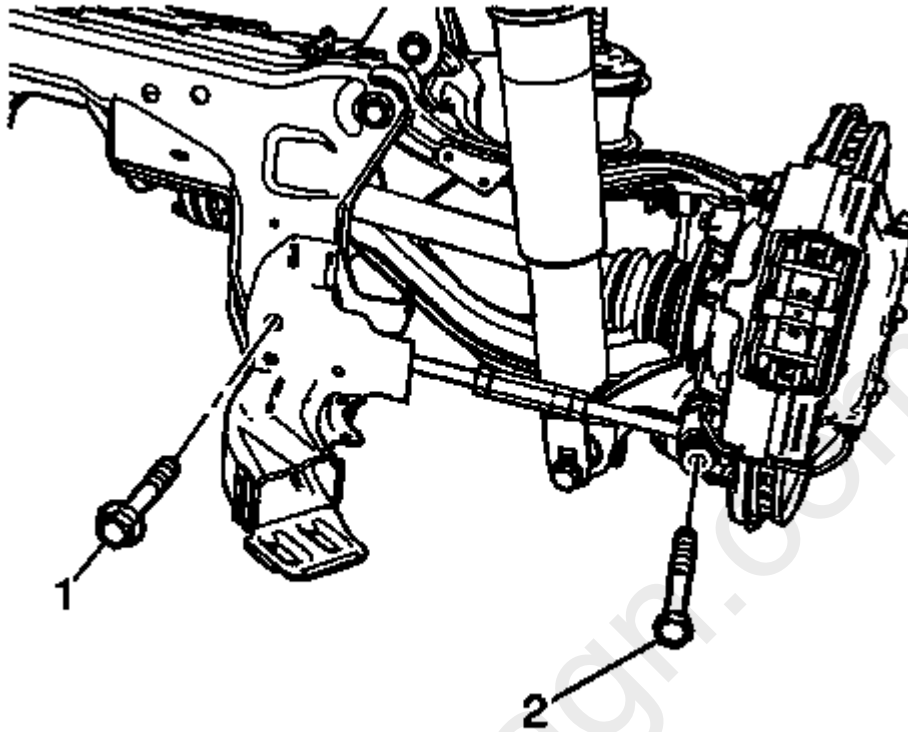


Fig. 29: Identifying Adjustable Link Assembly
Courtesy of GENERAL MOTORS COMPANY

4. Remove the adjustable link mounting bolts (1) and (2).

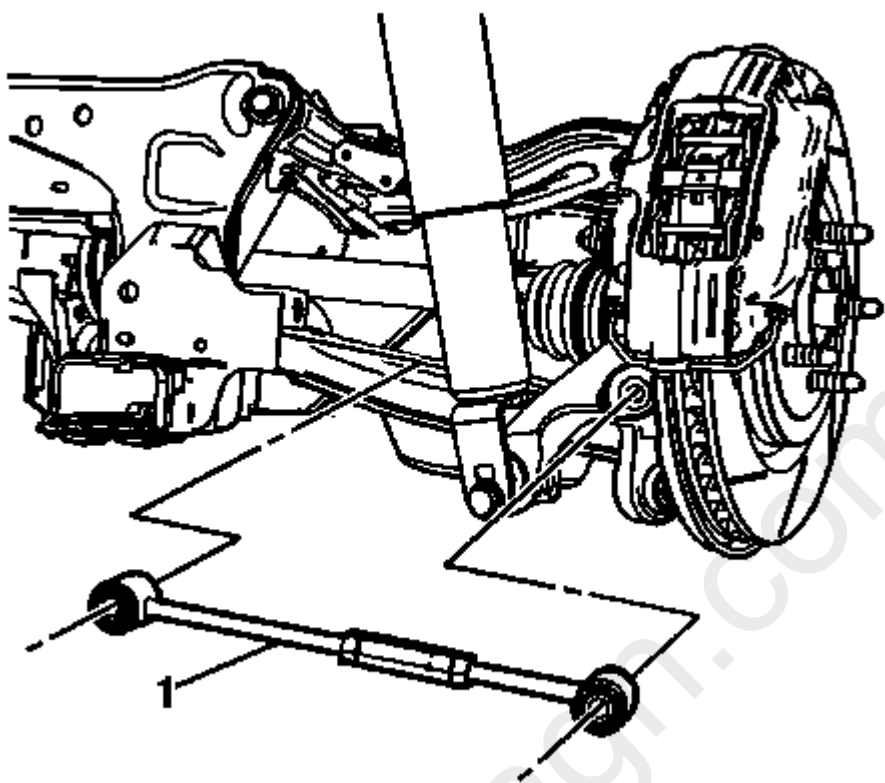


Fig. 30: View of Adjustable Link Assembly
Courtesy of GENERAL MOTORS COMPANY

5. Remove the adjustable link (1).

Installation Procedure

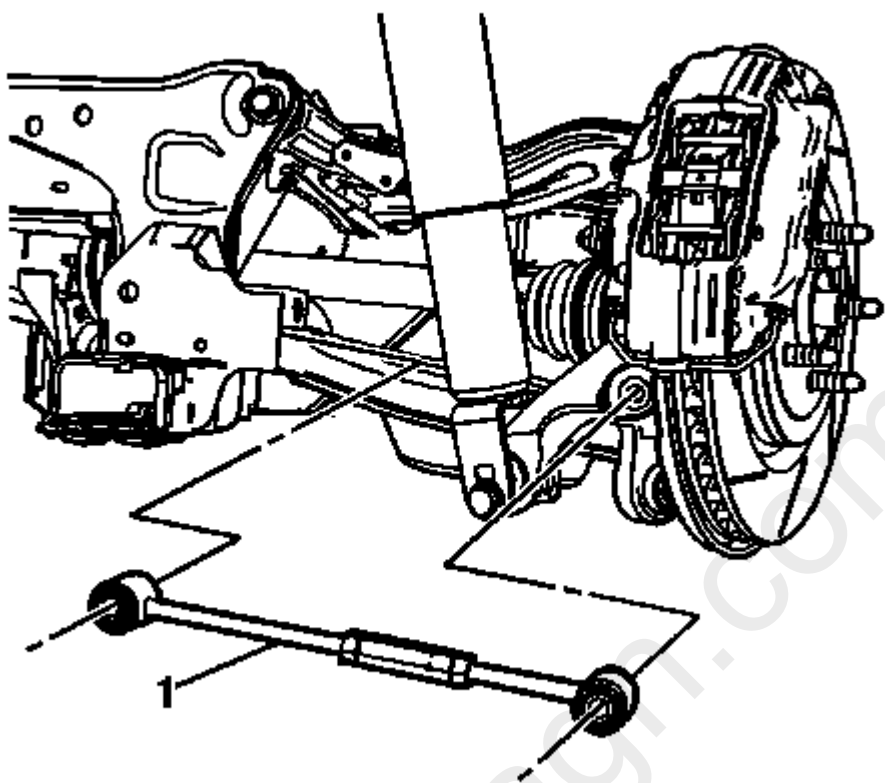


Fig. 31: View of Adjustable Link Assembly
Courtesy of GENERAL MOTORS COMPANY

1. Position the adjustable link (1) in the frame.

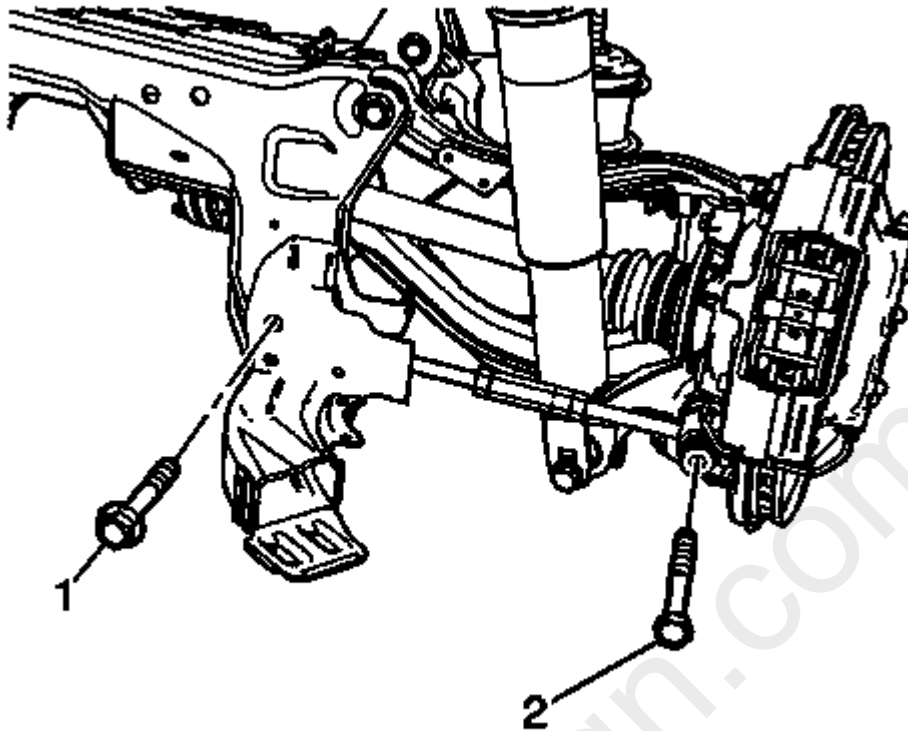


Fig. 32: Identifying Adjustable Link Assembly
Courtesy of GENERAL MOTORS COMPANY

2. Hand tighten the mounting bolts (1) and (2).

CAUTION: Refer to Fastener Caution .

3. Tighten the adjustable link mounting bolts (2).

Tighten

- First pass: tighten the mounting bolt to 80 N.m (59 lb ft).
- Final pass: plus 60°

4. Tighten the adjustable link mounting bolts (1).

Tighten

- First pass: tighten the mounting bolt to 120 N.m (89 lb ft).
- Final pass: plus 45°

5. Raise the front of the rear cradle. Refer to **Rear Frame Replacement** .
6. Install the tire and wheel. Refer to **Tire and Wheel Removal and Installation** .
7. Remove the support and lower the vehicle.
8. Adjust the rear toe. Refer to **Rear Toe Adjustment** .

SUSPENSION SHOCK/STRUT DISPOSAL

WARNING: Gas charged shock absorbers contain high pressure gas. Do not attempt to cut the shock open before all gas pressure is released. Failure to do so 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.

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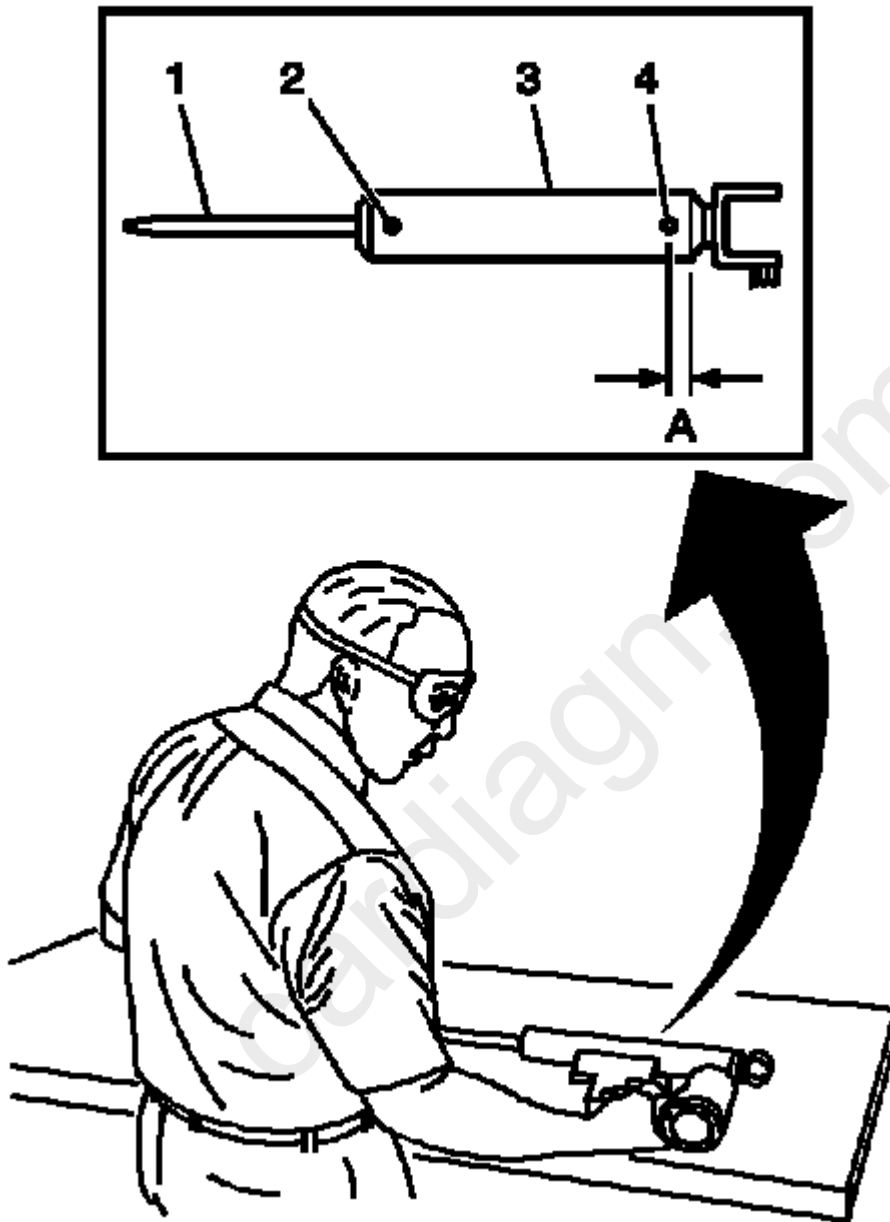


Fig. 33: Disposing Of Shock Absorber
Courtesy of GENERAL MOTORS COMPANY

1. Make an indentation 50 mm (2 in) from the top (2) of the tube using a centerpunch.
2. Make an indentation 25 mm (1.0 in) from the bottom (4) of the tube (3) using a centerpunch.
3. Clamp the shock absorber in a vise horizontally with the shock absorber rod (1) completely extended.
4. 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.

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.

UPPER CONTROL ARM REPLACEMENT

Special Tools

J 43631 Ball Joint Remover

Removal Procedure

CAUTION: The ball stud must not rotate during disassembly or reassembly. Hand tools must be used to keep the ball stud from rotating. If air tools are used and the stud is allowed to rotate, damage to the ball stud and/or stud mounting hole may occur.

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** .

NOTE: Remove the brake caliper and mounting bracket as an assembly. Relocate the assembly and support with mechanics wire.

3. Remove the brake caliper mounting bracket. Refer to **Rear Brake Caliper Bracket Replacement** .
4. Remove the shock absorber. Refer to **Shock Absorber Replacement**.

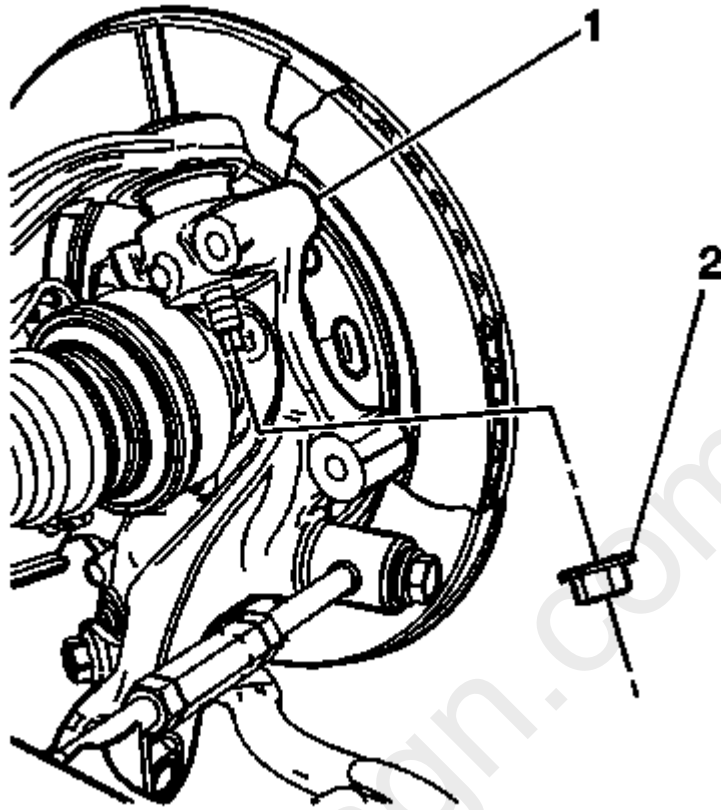


Fig. 34: View of Upper Ball Joint Assembly
Courtesy of GENERAL MOTORS COMPANY

5. Remove the upper ball joint retaining nut (2) from the knuckle (1).

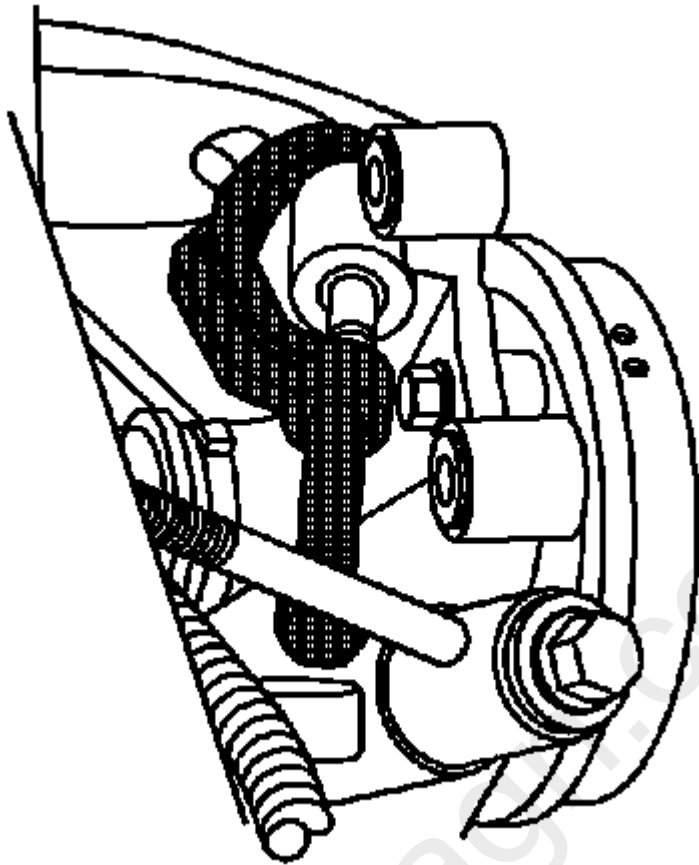


Fig. 35: Separating The Upper Control Arm From The Knuckle Using J 43631
Courtesy of GENERAL MOTORS COMPANY

6. Using the **J 43631** ball joint remover , remove the upper ball joint from the upper control arm.

NOTE: Only remove those items to lower the frame. Complete frame removal is not needed for the step.

7. Lower the rear frame assembly enough to gain access to the rear upper control arm nuts and bolts. Refer to **Rear Frame Replacement**

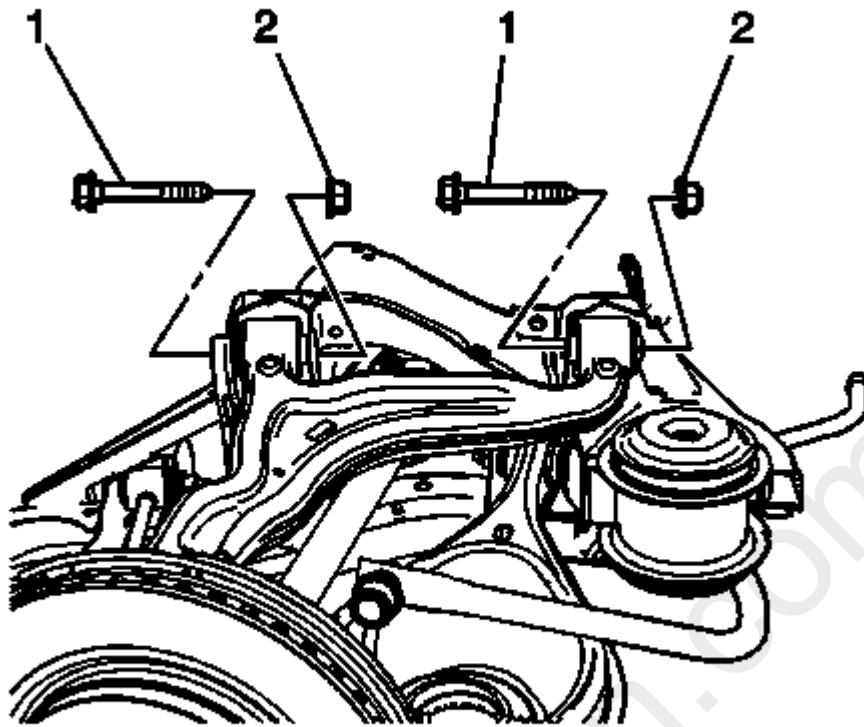


Fig. 36: View of Upper Control Arm Assembly
Courtesy of GENERAL MOTORS COMPANY

8. Remove the upper control arm nuts (2) and bolts (1) from the frame.

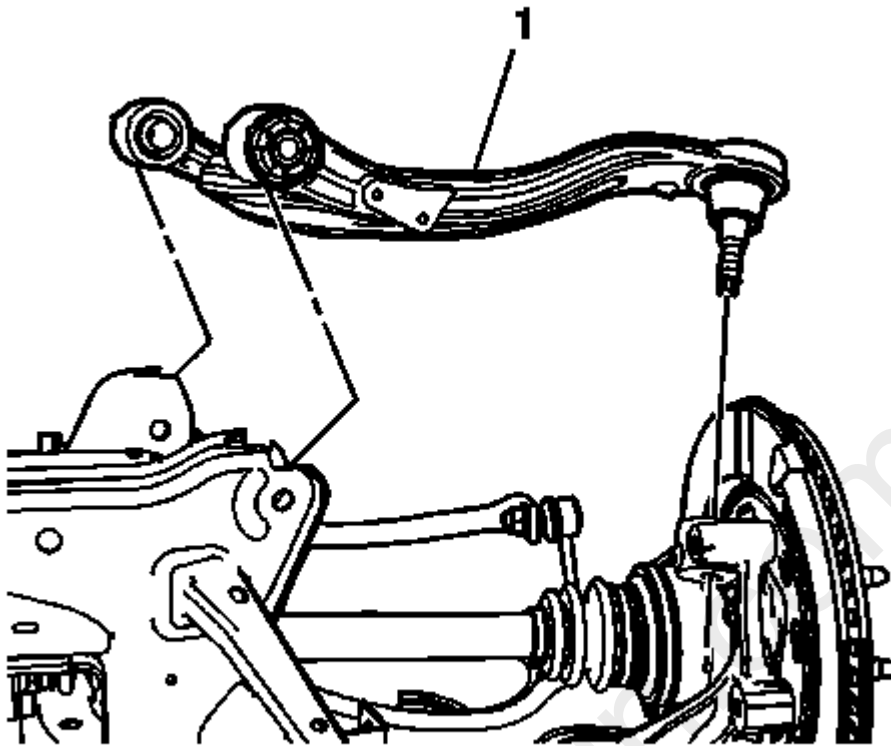


Fig. 37: Identifying Upper Control Arm Positioning
Courtesy of GENERAL MOTORS COMPANY

9. Remove the upper control arm (1) from the vehicle.

Installation Procedure

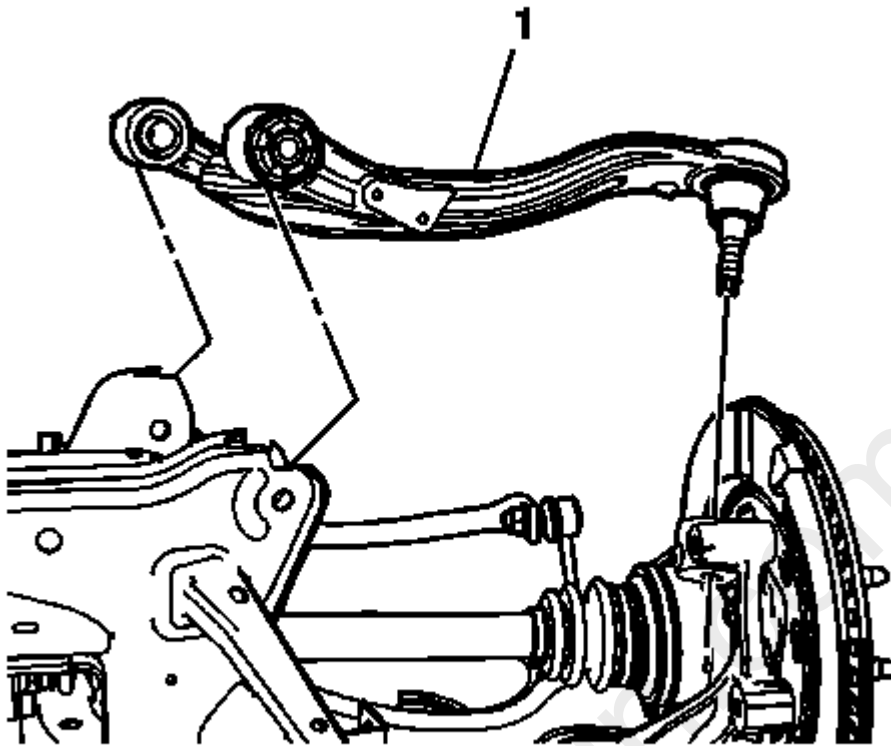


Fig. 38: Identifying Upper Control Arm Positioning
Courtesy of GENERAL MOTORS COMPANY

1. Position the upper control arm (1) in the frame.

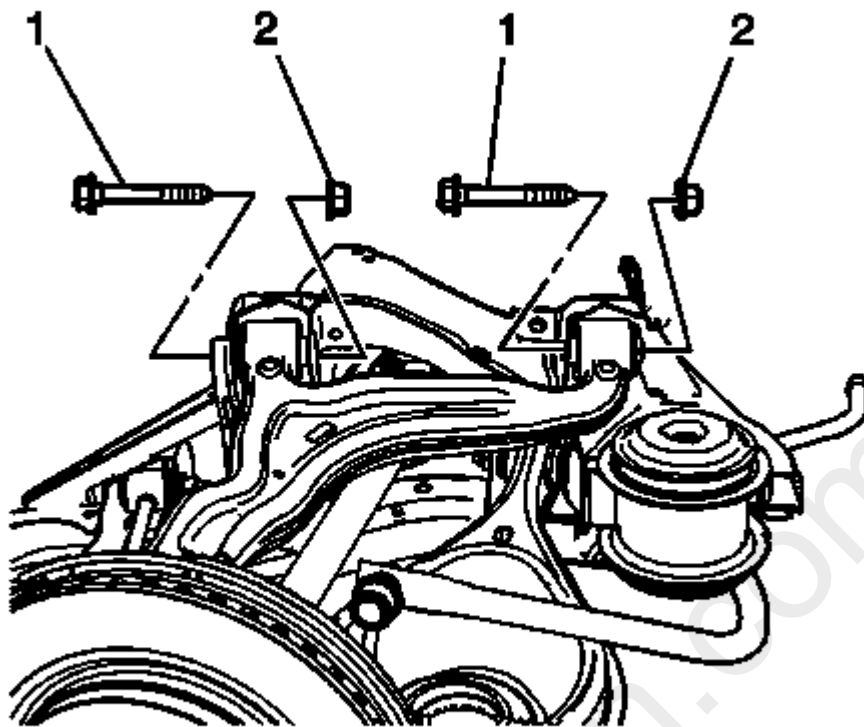


Fig. 39: View of Upper Control Arm Assembly
Courtesy of GENERAL MOTORS COMPANY

CAUTION: Refer to Fastener Caution .

2. Install the upper control arm mounting bolts (1) and the retaining nuts (2) to 120Y (88 lb ft).
3. Raise the rear frame assembly back into position. Refer to **Rear Frame Replacement**

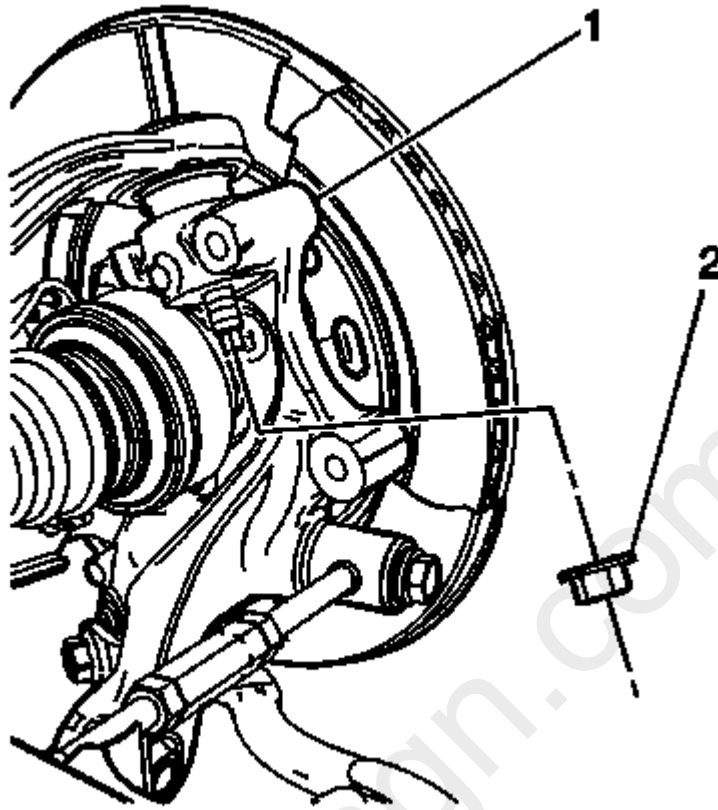


Fig. 40: View of Upper Ball Joint Assembly
Courtesy of GENERAL MOTORS COMPANY

4. Install the upper ball joint (1) to the knuckle (2) and tighten to 20 N.m (15 lb ft) plus an additional 210 degree turn.
5. Install the brake caliper mounting bracket. Refer to **Rear Brake Caliper Bracket Replacement** .
6. Install the shock absorber. Refer to **Shock Absorber Replacement**.
7. Install the tire and wheel assembly. Refer to **Tire and Wheel Removal and Installation** .
8. Remove the support and lower the vehicle.
9. Check the rear wheel alignment. Refer to **Wheel Alignment Specifications** .

LOWER CONTROL ARM 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** .

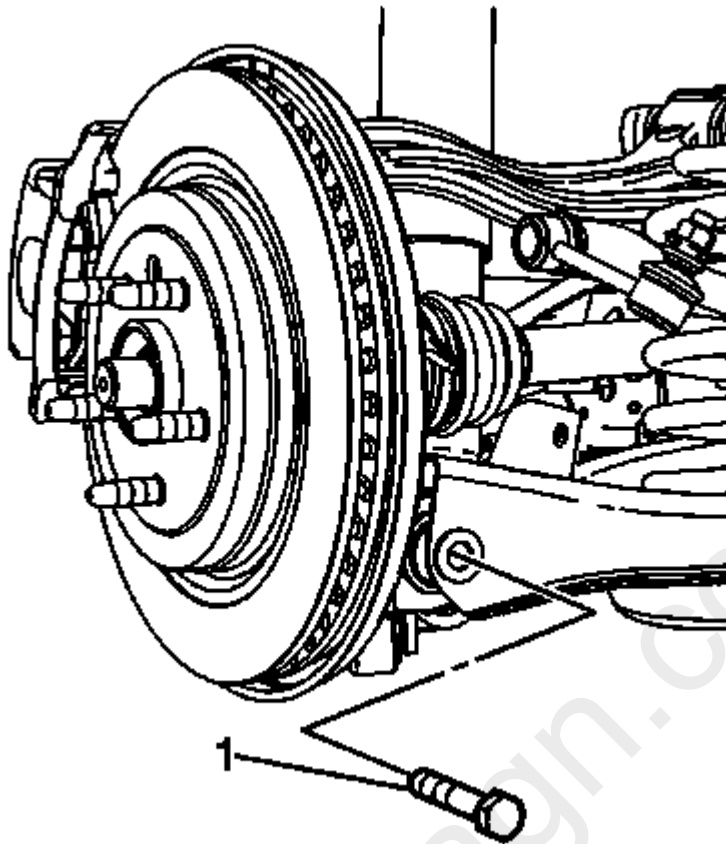


Fig. 41: Identifying Lower Control Arm Assembly
Courtesy of GENERAL MOTORS COMPANY

3. Remove the lower control arm bolt from the knuckle (1).
4. Remove the rear coil spring from the lower control arm. Refer to **Rear Spring, Insulator, and Jounce Bumper Replacement**.

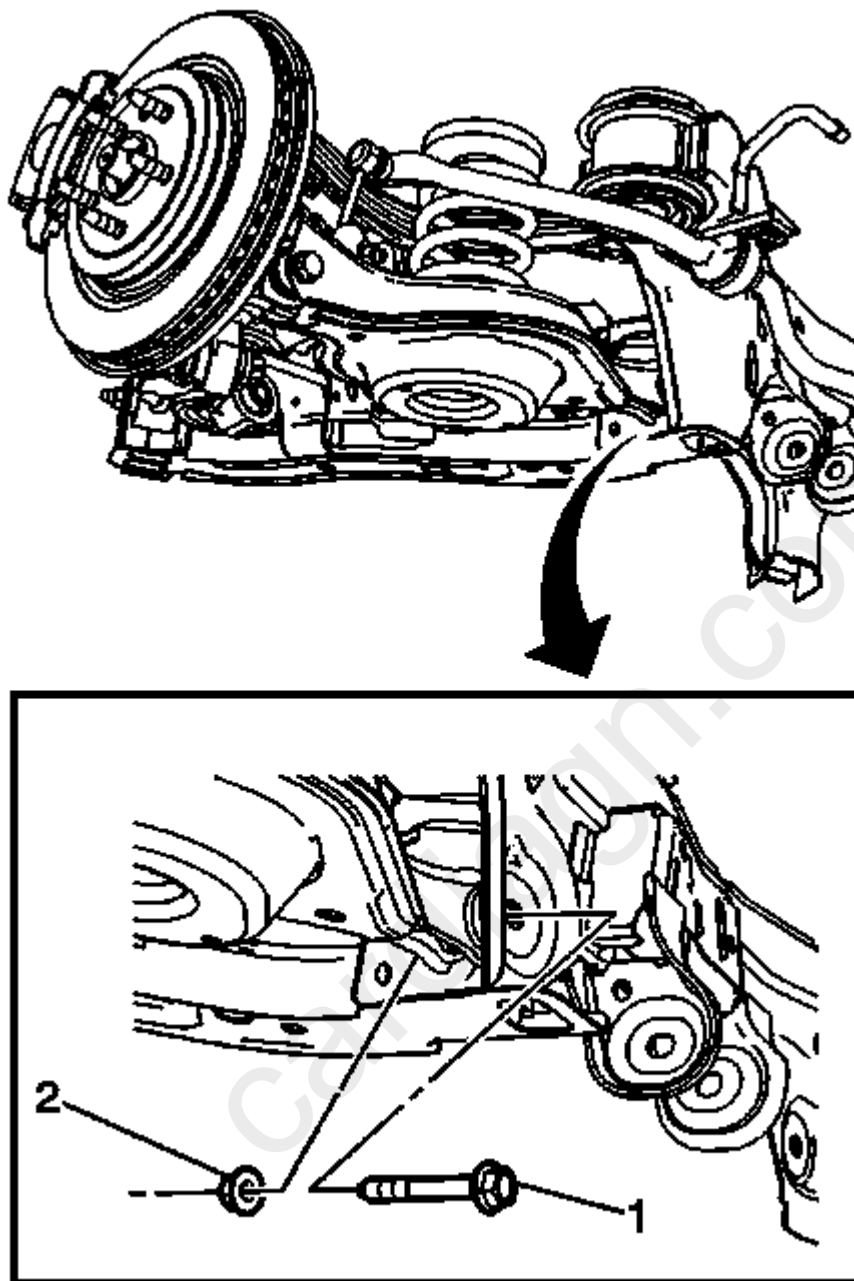


Fig. 42: Exploded View of Lower Control Arm Assembly
Courtesy of GENERAL MOTORS COMPANY

5. Remove the lower control arm retaining nut (2).
6. Remove the lower control arm mounting bolt (1).

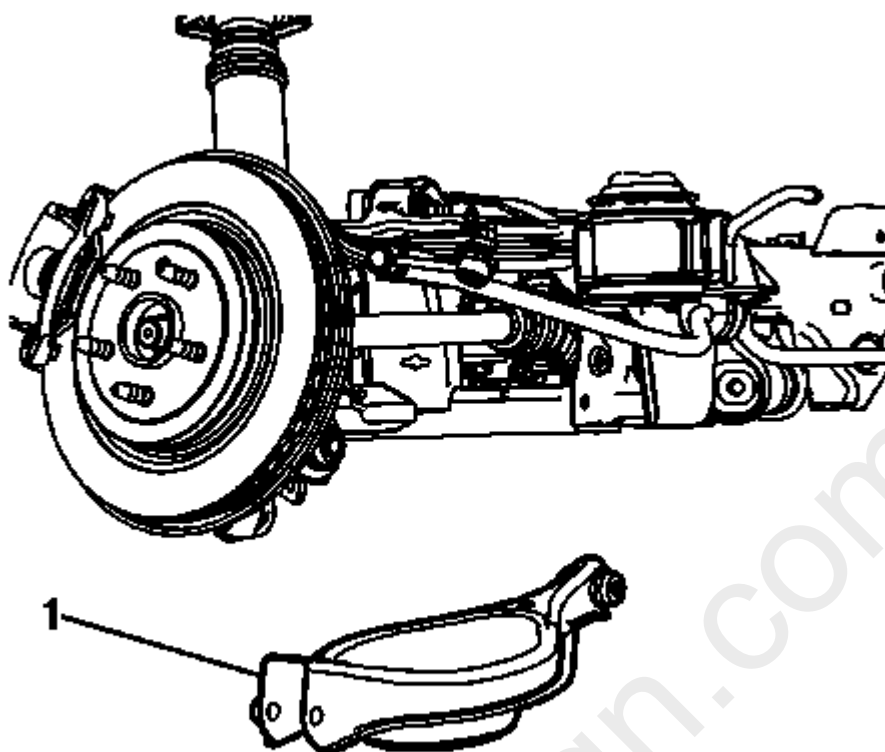


Fig. 43: View of Lower Control Arm
Courtesy of GENERAL MOTORS COMPANY

7. Remove the lower control arm from the vehicle (1).

Installation Procedure

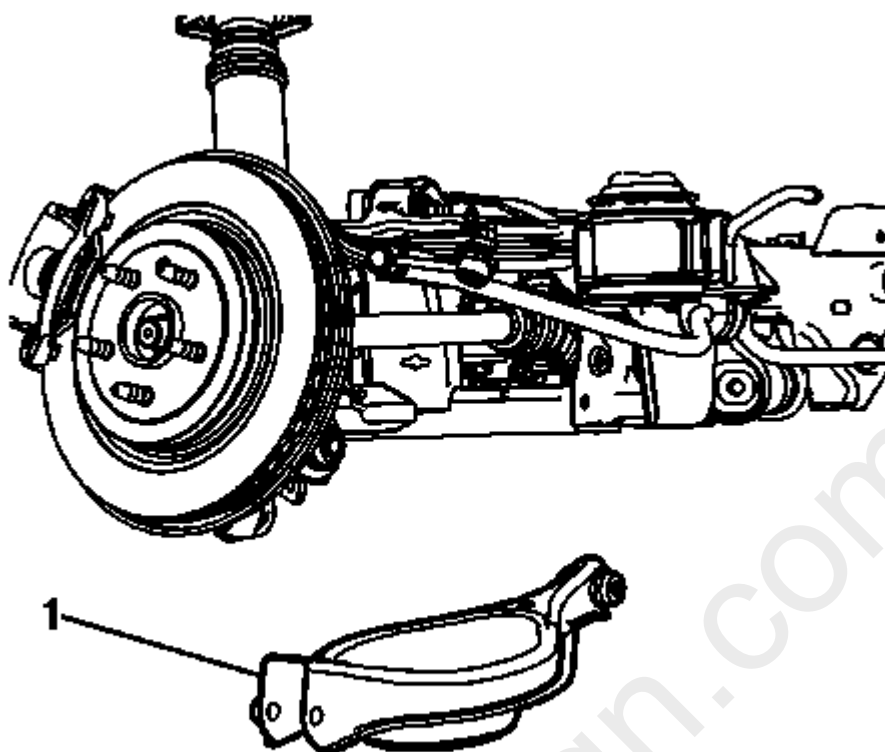


Fig. 44: View of Lower Control Arm
Courtesy of GENERAL MOTORS COMPANY

1. Position the lower control arm in the frame (1).

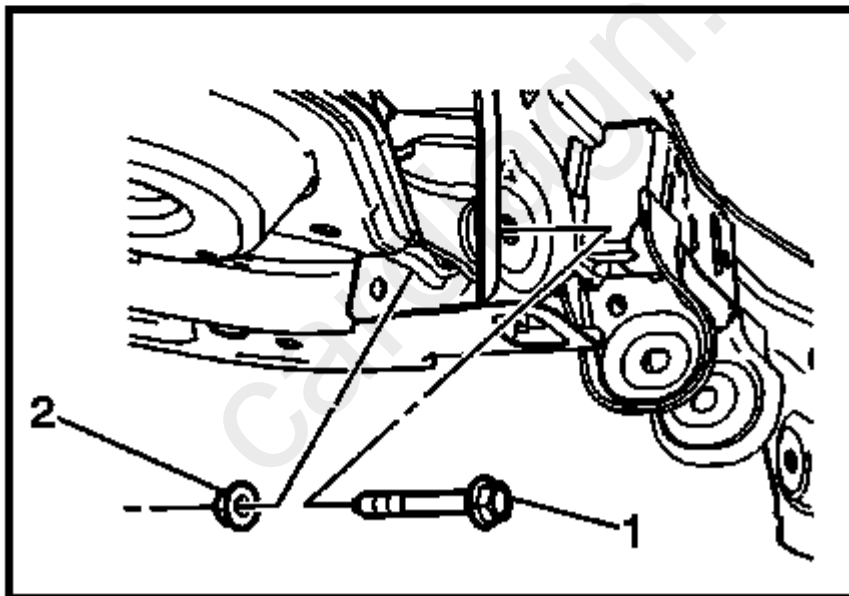
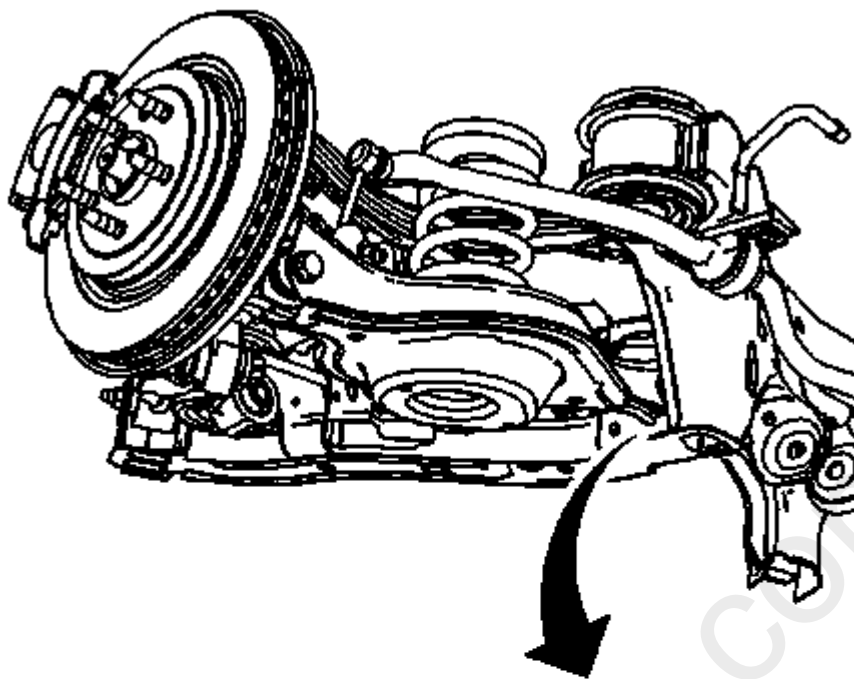


Fig. 45: Exploded View of Lower Control Arm Assembly
 Courtesy of GENERAL MOTORS COMPANY

CAUTION: Refer to Fastener Caution .

NOTE: In steps 2 through 5, leave all the bolts loose to aide in the alignment of all

the suspension components prior the to tighten to the final torque specifications.

2. Install the lower control arm to frame mounting bolt (1) and nut (2) and tighten to 165 N.m (122 lb ft).
3. Install the rear coil spring from the lower control arm. Refer to **Rear Spring, Insulator, and Jounce Bumper Replacement**.

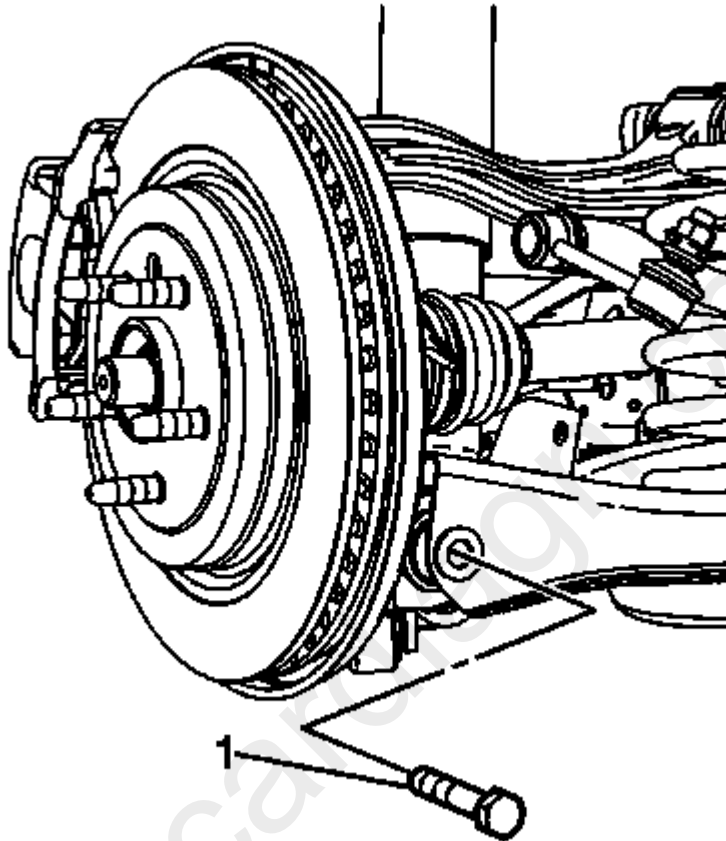


Fig. 46: Identifying Lower Control Arm Assembly
Courtesy of GENERAL MOTORS COMPANY

4. Install the lower control arm bolt in the knuckle (1) and tighten to 160 N.m (118 lb ft).
5. Install the tire and wheel assembly. Refer to **Tire and Wheel Removal and Installation** .
6. Remove the support and lower the vehicle.
7. Align the rear suspension. Refer to **Wheel Alignment Specifications** .

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 .

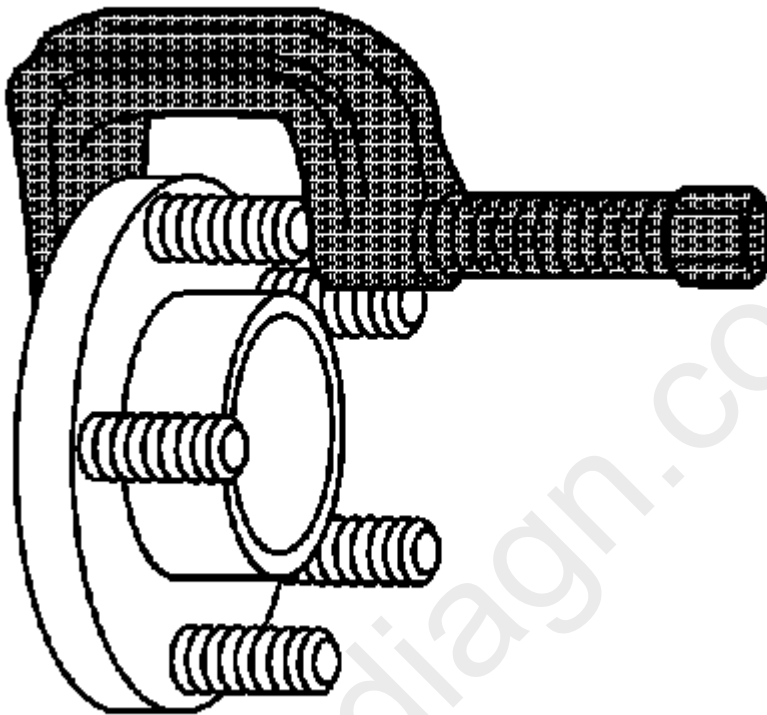


Fig. 47: Removing Wheel Stud From Axle Flange
Courtesy of GENERAL MOTORS COMPANY

3. Remove the wheel bearing/hub assembly. Refer to Rear Wheel Bearing and Hub Replacement.
4. Using **J 43631** ball joint remover remove the wheel stud from the wheel bearing.

Installation Procedure

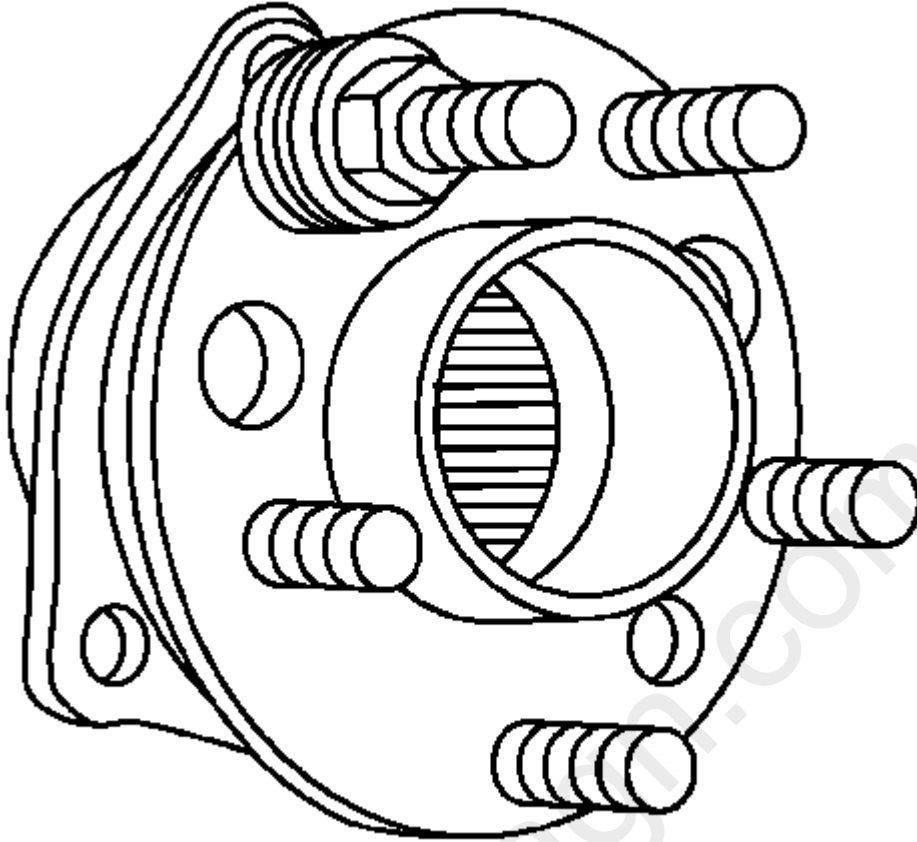


Fig. 48: Installing Wheel Stud
Courtesy of GENERAL MOTORS COMPANY

1. Install the new stud from the back side of the hub.
2. Install flat washers on the wheel stud.

IMPORTANT: Ensure that the wheel stud is fully seated against the wheel hub flange.

3. With the flat side of a wheel nut against the washers, tighten the wheel nut until the wheel stud head seats against the wheel hub flange.
4. Install the wheel bearing/hub assembly. Refer to **Rear Wheel Bearing and Hub Replacement**.
5. Install the tire and wheel. Refer to **Tire and Wheel Removal and Installation**.
6. Lower the vehicle.

DESCRIPTION AND OPERATION

REAR SUSPENSION DESCRIPTION AND OPERATION

These vehicles are equipped with independent rear suspension and coil spring .

The shock absorbers with RPO code FE3 are a fully automatic self levelling shock absorber. The shock absorber when loaded will reach its normal ride height after a few hundred yards.

The rear spring steel stabilizing bar helps minimize body roll and sway during cornering. The rear stabilizer shaft is connected to the frame through insulators and to the lower control arm through the stabilizer shaft links.

The rear suspension system on this vehicle consists of the following components:

- The rear differential
- Two coil springs
- Two shock absorbers
- Two toe adjustment links
- Two upper control arms
- Two lower control arms
- Two knuckles
- The stabilizer shaft
- Two stabilizer shaft links
- Two trailing arms

SPECIAL TOOLS AND EQUIPMENT

SPECIAL TOOLS

Illustration	Tool Number/Descrip
	J-43631 Ball Joint Remo

