

2010 SUSPENSION

Front Suspension SRX

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Application	Specification	
	Metric	English
Front Lower Control Arm Ball Stud Nut	30 N.m □ 120 Degrees	22 lb ft □ 120 Degrees
Front Lower Control Arm Bushing Bolt	55 N.m □ □0 Degrees	41 lb ft □ □0 Degrees
Front Lower Control Arm Front Bolt (□ty□2)	100 N.m □ □0 Degrees	74 lb ft □ □0 Degrees
Front Lower Control Arm Rear Bolt (□ty□2)	110 N.m	81 lb ft
Front Suspension Strut Nut (Bearing)	75 N.m	52 lb ft
Front Suspension Strut Mount Nut	50 N.m	37 lb ft
Front Suspension Strut Nut (Knuckle to Strut) (□ty□2)	110 N.m □ 150 degrees □ 15 degrees	81 lb ft □ 150 degrees □ 15 degrees
Front Wheel Hub Bolt (□ty□3)	110 N.m	81 lb ft
Stabilizer Shaft Link Nut (□ty□2)	75 N.m	55 lb ft
Stabilizer Shaft Insulator Bolt (□ty□2)	45 N.m	33 lb ft

REPAIR INSTRUCTIONS

STABILIZER SHAFT REPLACEMENT

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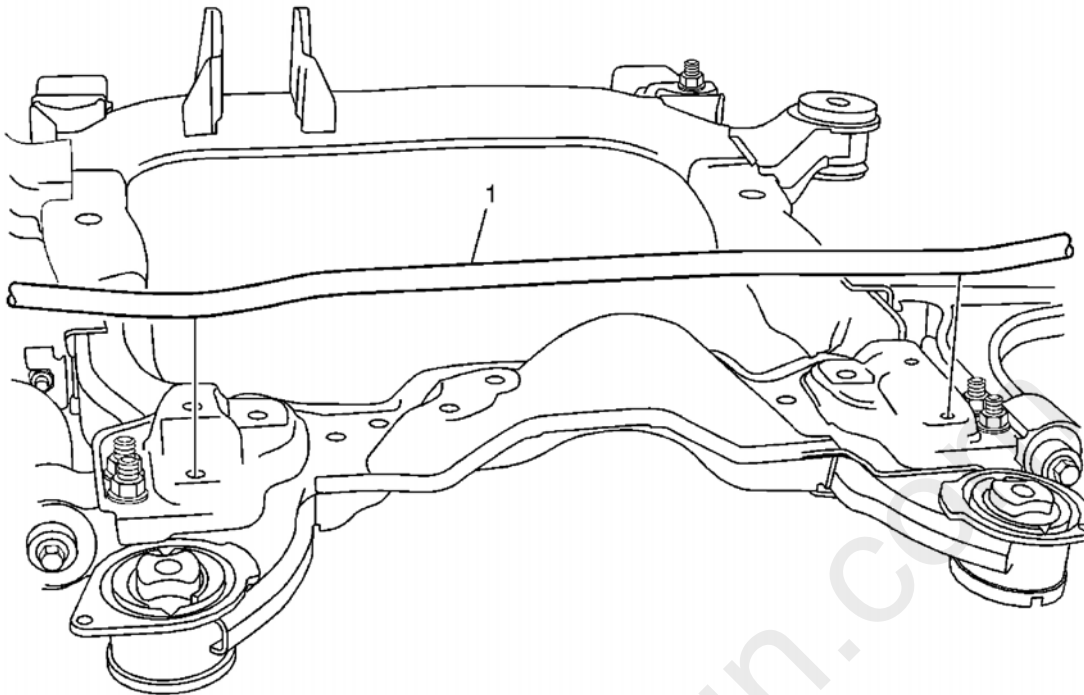


Fig. 1: Identifying Stabilizer Shaft

Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
Preliminary Procedure	
1. Raise and support the vehicle. Refer to <u>Lifting and Jacking the Vehicle</u> .	
2. Remove the tires and wheels. Refer to <u>Tire and Wheel Removal and Installation</u> .	
3. Remove the stabilizer links from the front cradle. Refer to <u>Stabilizer Shaft Link Replacement</u> .	
4. Remove the stabilizer shaft insulator. Refer to <u>Stabilizer Shaft Insulator Replacement</u>	
1	Front Stabilizer Shaft Tip: It maybe necessary to maneuver the stabilizer shaft in such away as to remove it from the vehicle.

STABILIZER SHAFT LINK REPLACEMENT

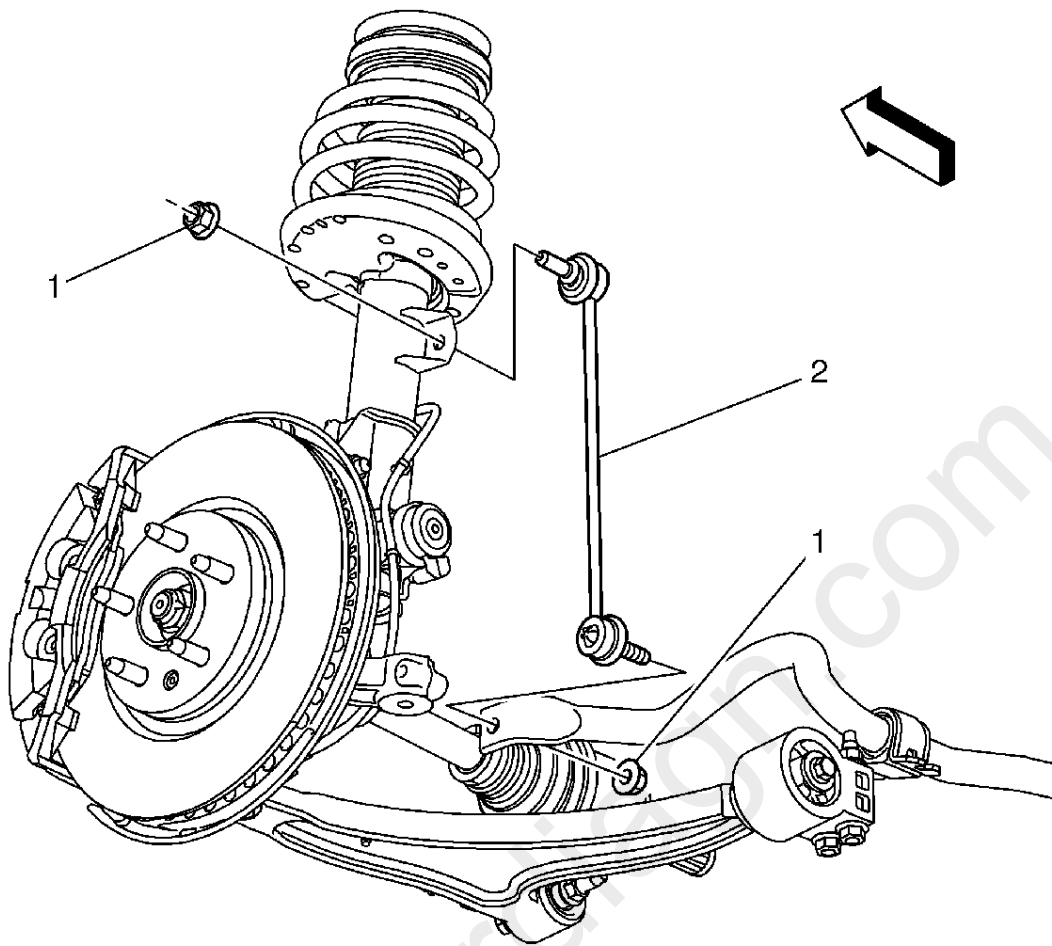


Fig. 1: Identifying Stabilizer Shaft Link
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
Preliminary Procedure	
1. Raise and support the vehicle. Refer to <u>Lifting and Jacking the Vehicle</u> .	
2. Remove the tire and wheel assembly. Refer to <u>Tire and Wheel Removal and Installation</u> .	
1	Front Stabilizer Shaft Link Nut (Qty 2) CAUTION: Refer to <u>Fastener Caution</u> . Tighten: 75 N.m (55 lb ft)
2	Front Stabilizer Shaft Link

STABILIZER SHAFT INSULATOR REPLACEMENT

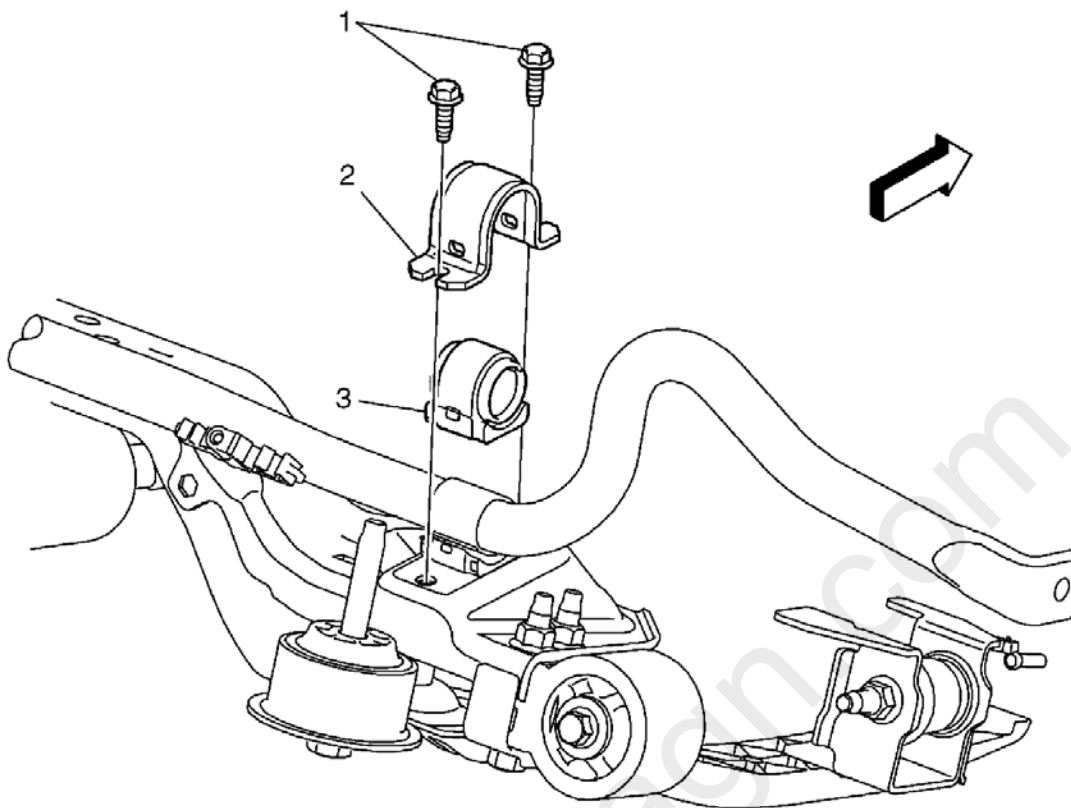


Fig. 1: View Of Stabilizer Shaft Insulator
 Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
Preliminary Procedures 1. Raise and support the vehicle. Refer to <u>Lifting and Jacking the Vehicle</u> . 2. Remove the tires and wheels. Refer to <u>Tire and Wheel Removal and Installation</u> . 3. Remove the stabilizer links from the stabilizer shaft. Refer to <u>Stabilizer Shaft Link Replacement</u>. 4. Remove the rear bolts of the front drivetrain and front suspension frame and lower to gain access to the stabilizer shaft insulators. Refer to <u>Drivetrain and Front Suspension Frame Replacement</u> .	
1	Front Stabilizer Shaft Insulator Bolt (Qty 2) CAUTION: Refer to <u>Fastener Caution</u> . Tighten: 45 N.m (33 lb ft)
2	Front Stabilizer Shaft Clamp
3	Front Stabilizer Shaft Insulator Procedure: Install the stabilizer bar insulator so that the chamfer edge is facing toward the outside of

the vehicle. This will put the slits in the bushing facing opposite directions.

FRONT WHEEL BEARING AND HUB REPLACEMENT

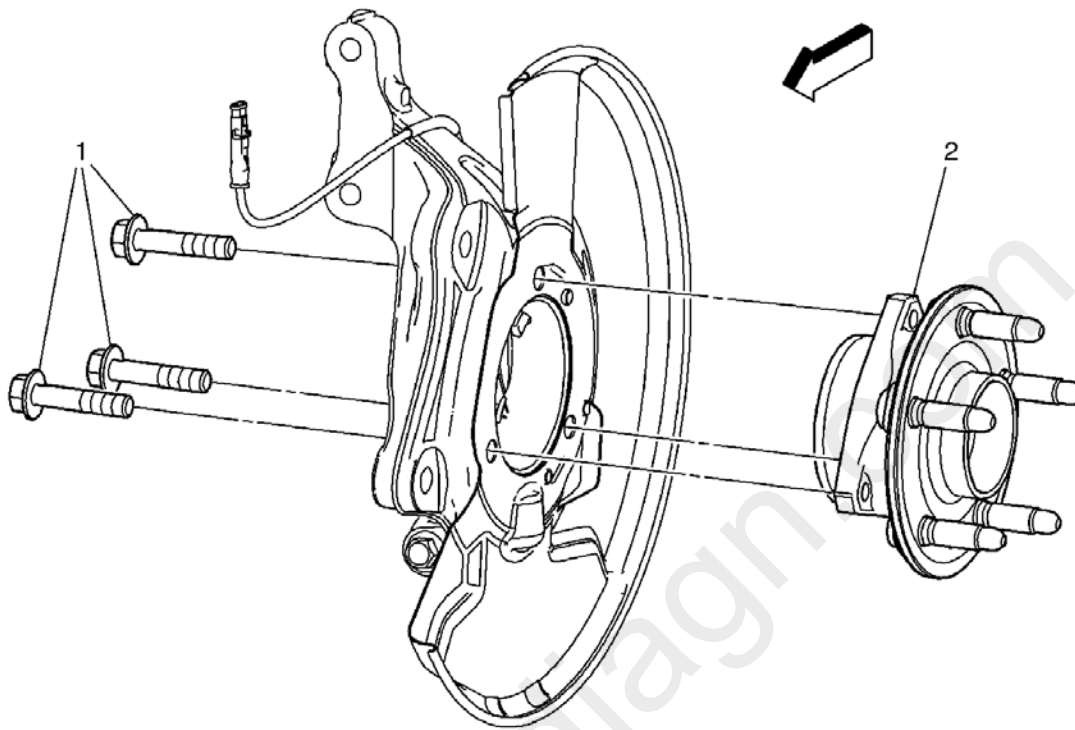


Fig. 4: Identifying Front Wheel Bearing and Hub Bolts
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
Preliminary Procedures 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. Loosen the wheel drive shaft from the wheel bearing hub. Refer to Front Wheel Drive Shaft Replacement - Left Side or Front Wheel Drive Shaft Replacement - Right Side.	
1	Front Wheel Hub Bolt (Qty 3) CAUTION: Refer to Fastener Caution . Procedure 1. Remove the front brake rotor. Refer to Front Brake Rotor Replacement. 2. Discard the bolt and use NEW only.

	Tighten: 110 N.m (81 lb ft)
2	Front Wheel Hub

STEERING KNUCKLE REPLACEMENT

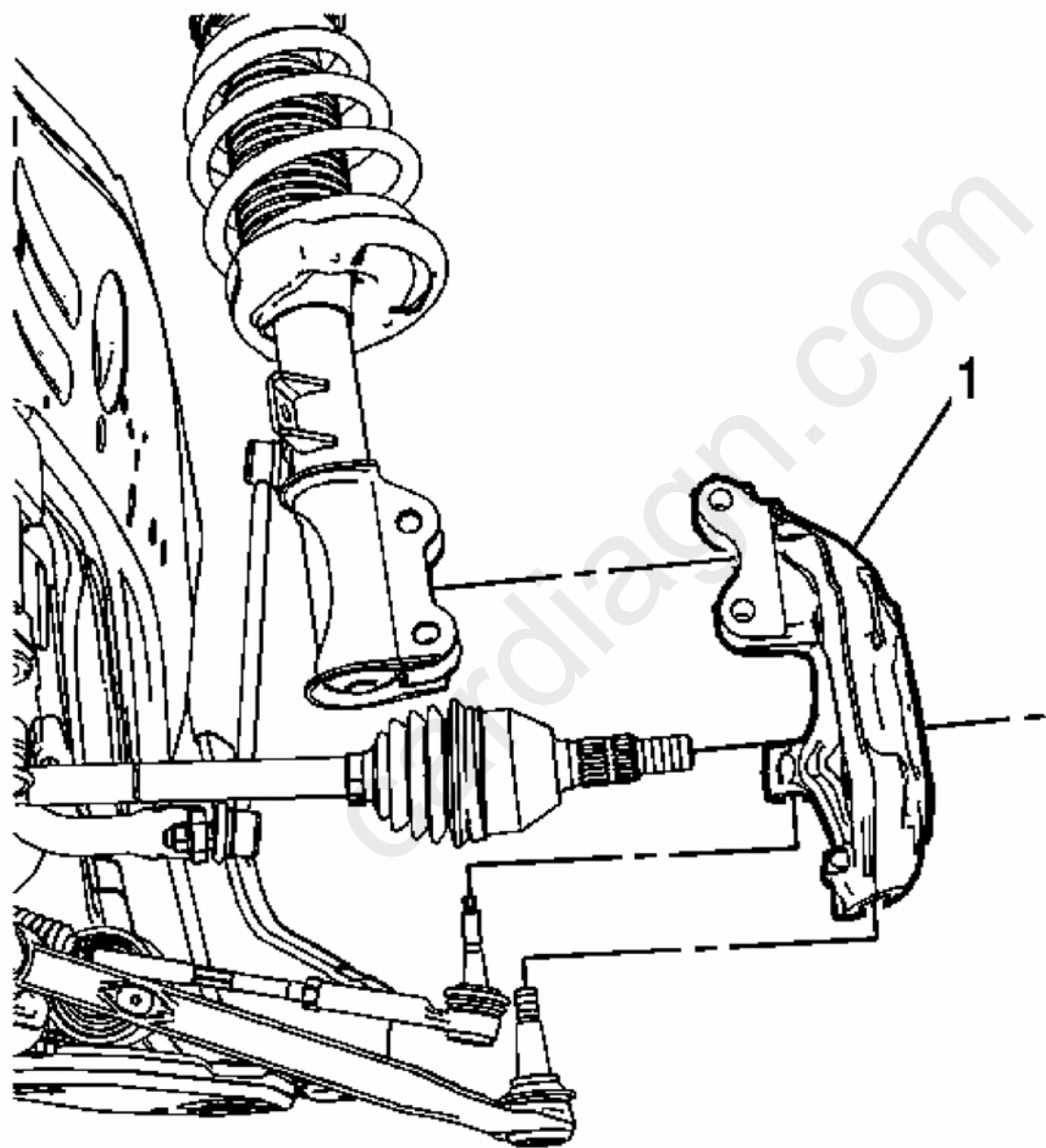


Fig. 5: Identifying Steering Knuckle
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
Preliminary procedure	

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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. Separate the outer tie rod end from the steering knuckle. Refer to **Steering Linkage Outer Tie Rod Replacement** .
4. Remove the wheel speed sensor. Refer to **Front Wheel Speed Sensor Replacement** .
5. Remove the front wheel bearing from the steering knuckle. Refer to **Front Wheel Bearing and Hub Replacement**.
6. Separate the lower control arm from the steering knuckle. Refer to **Lower Control Arm Replacement**.
7. Remove the front suspension strut mounting bolts from the steering knuckle. Refer to **Strut Assembly Replacement**.

1

Steering Knuckle

Procedure:

Check the front end alignment. Refer to **Wheel Alignment Specifications**

LOWER CONTROL ARM REPLACEMENT

Special Tools

CH 47975-A: Ball Joint Remover

For equivalent regional tools, refer to **Special Tools**.

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. Support the steering knuckle with a suitable stand.
4. Disconnect the electric front suspension accelerometer link from the lower control arm, if equipped.

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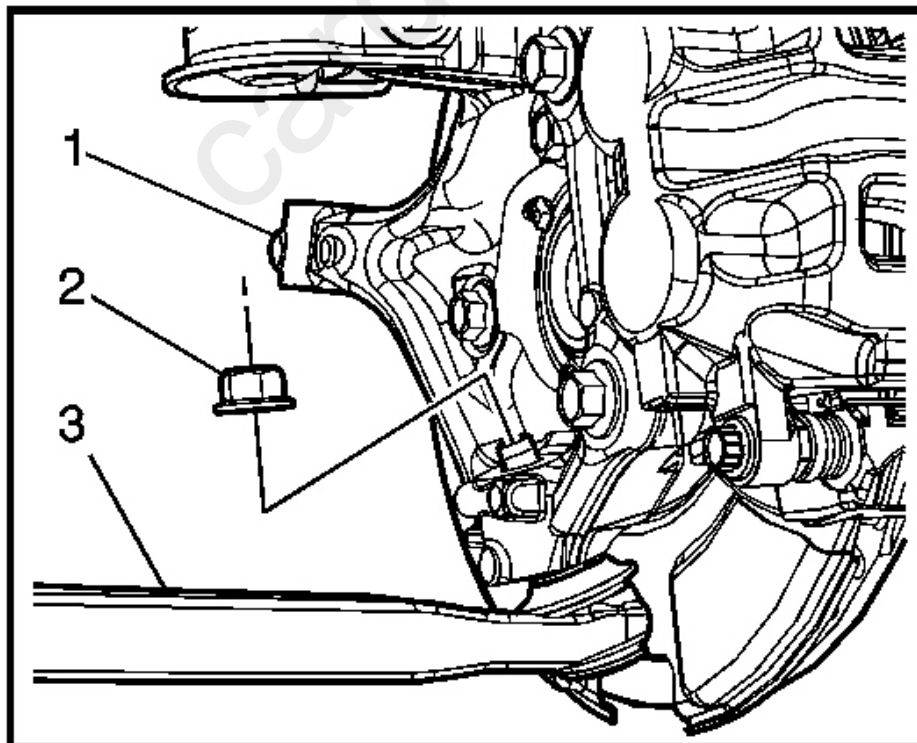
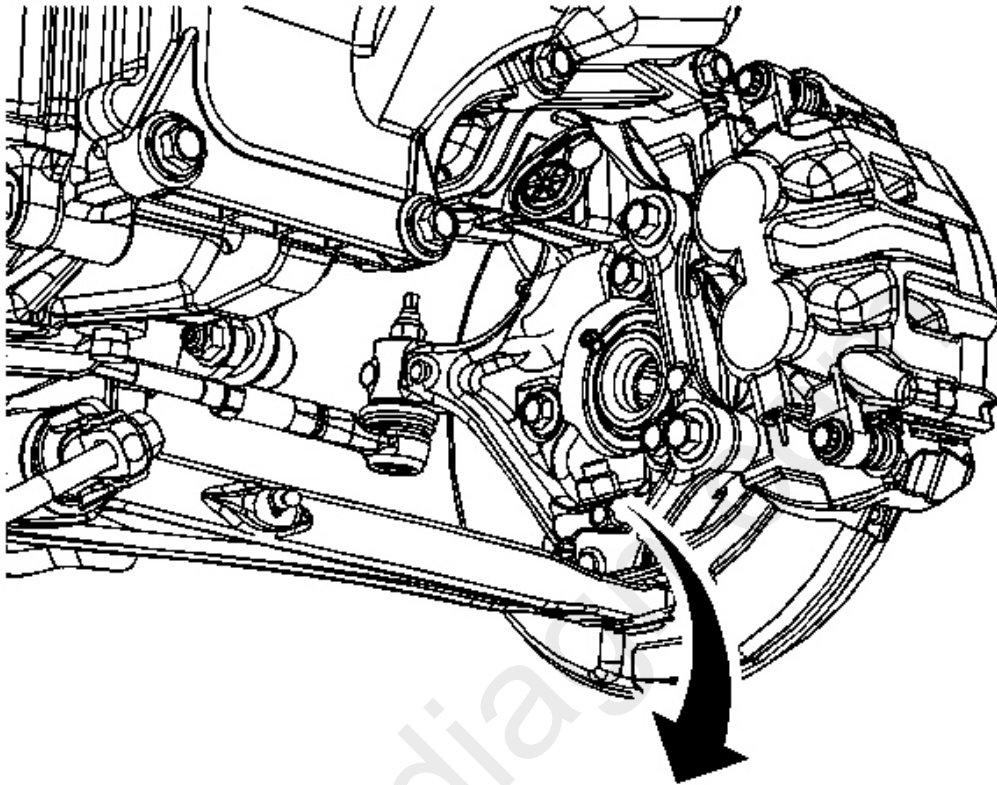


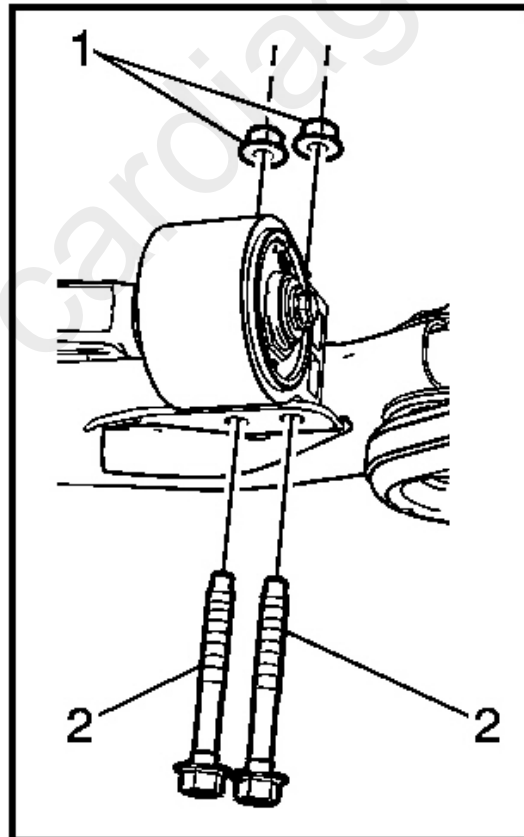
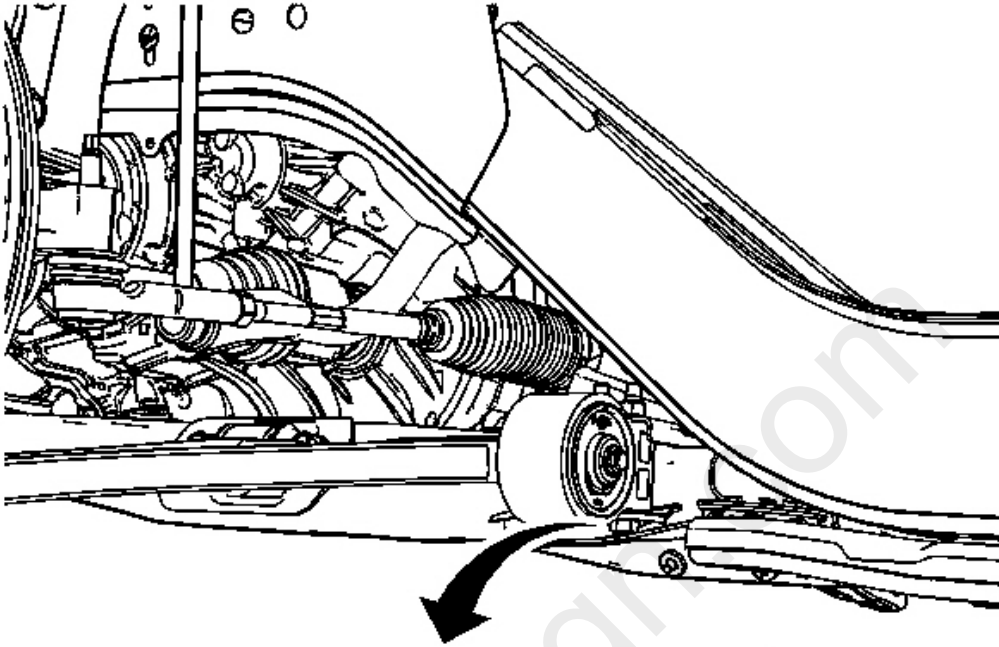
Fig. 6: Locating Lower Ball Joint Fastener
Courtesy of GENERAL MOTORS CORP.

5. Loosen the front lower control arm ball stud nut (2) from the ball joint.
6. Using the **CH 47975-A:** remover, separate the front lower control arm (3) from the steering knuckle (1).
7. Remove the **CH 47975-A:** remover.

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Fig. 7: Identifying Front Lower Control Arm Rear Bolts □ Nuts
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8. Remove the front lower control arm rear nuts (1) and the front lower control arm rear bolts (2).

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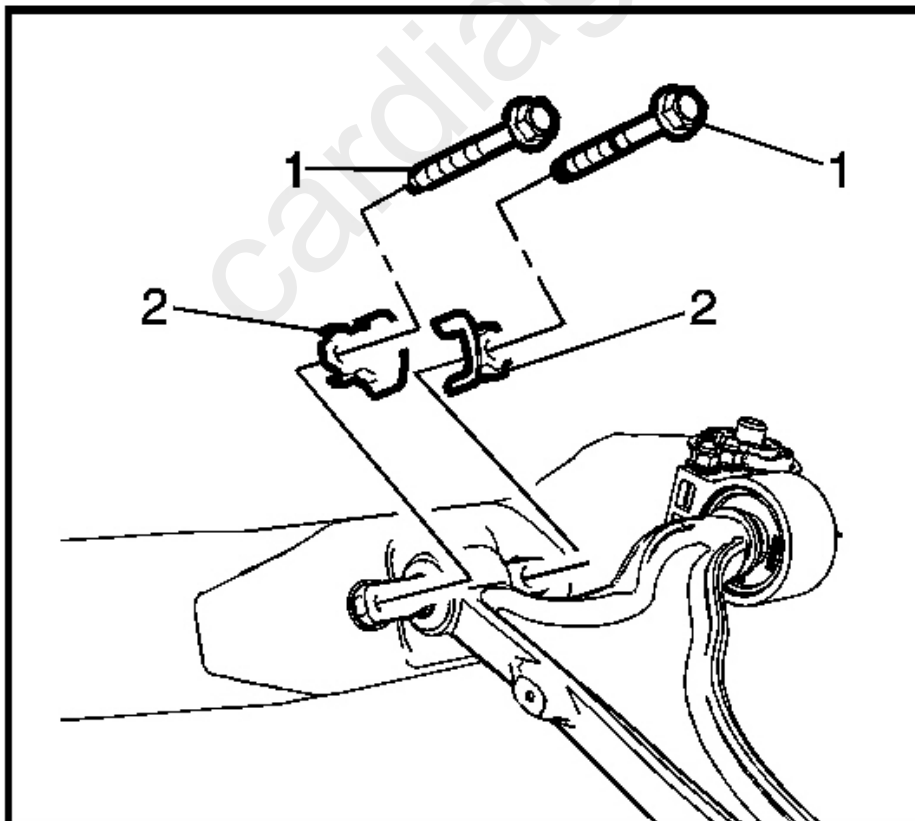
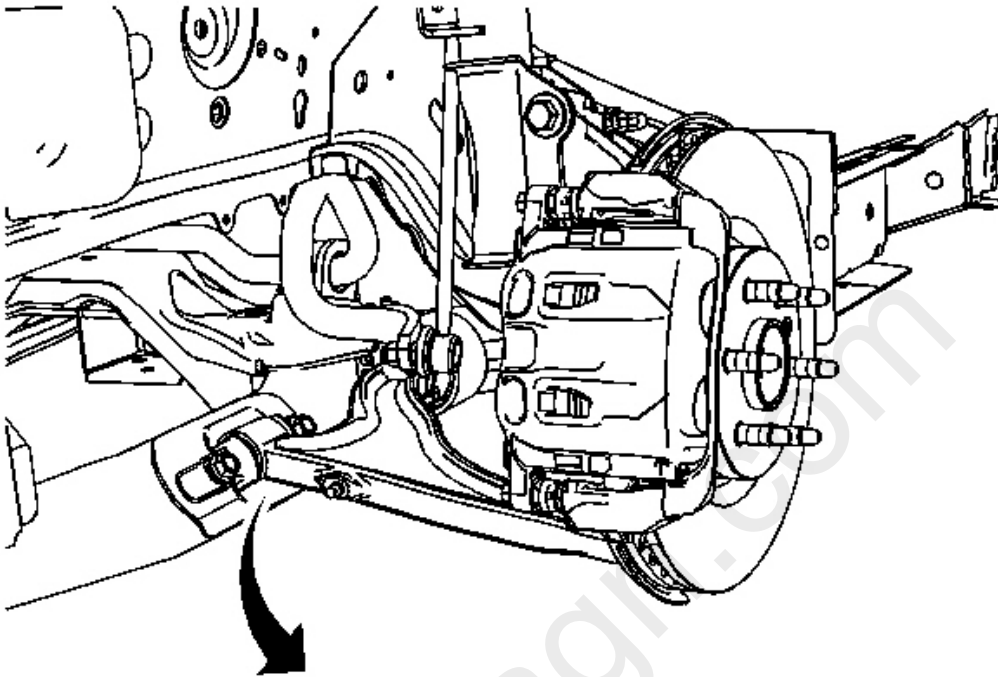


Fig. 8: Identifying Lower Control Arm Front Bolts □ Brackets
Courtesy of GENERAL MOTORS CORP.

NOTE: **Note the position of the brackets.**

9. Remove front lower control arm front bolts (1) and the brackets (2).

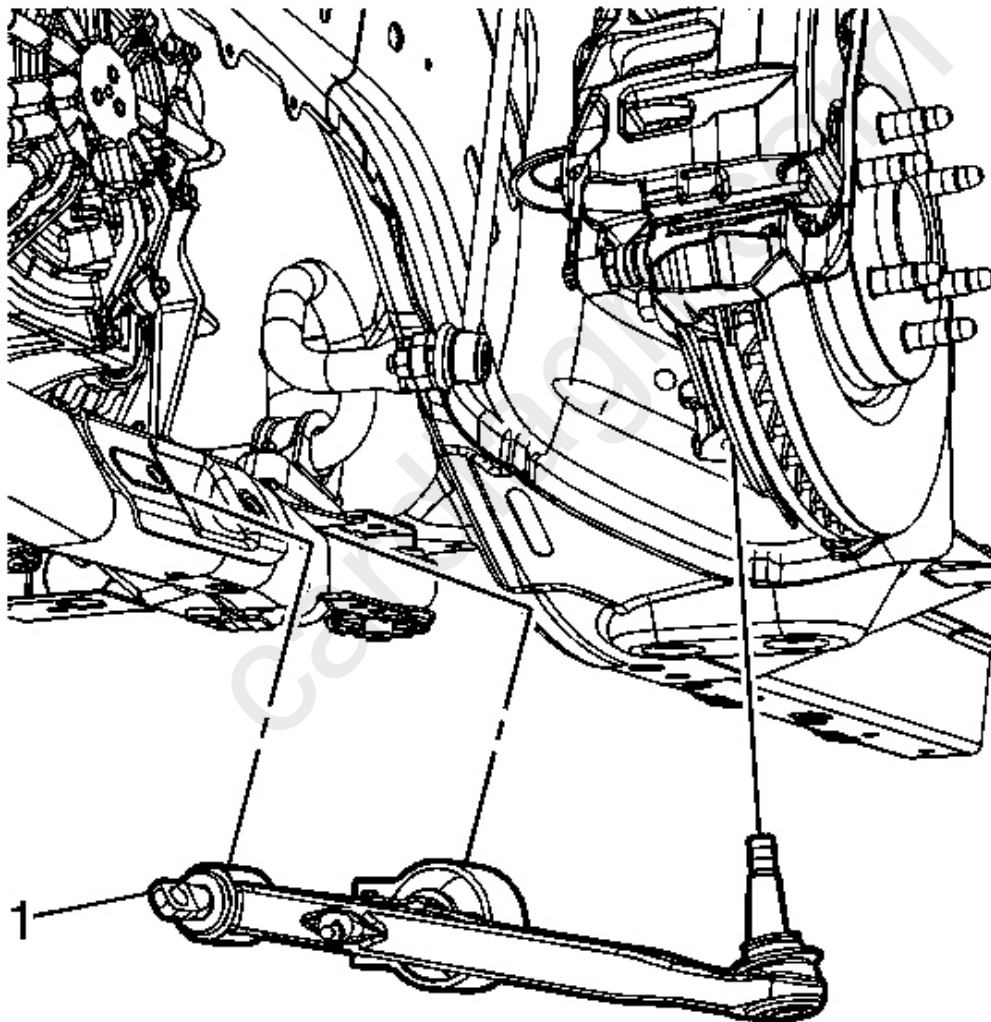


Fig. 9: View Of Front Lower Control Arm
Courtesy of GENERAL MOTORS CORP.

10. Remove the front lower control arm (1) from the vehicle.

Installation Procedure

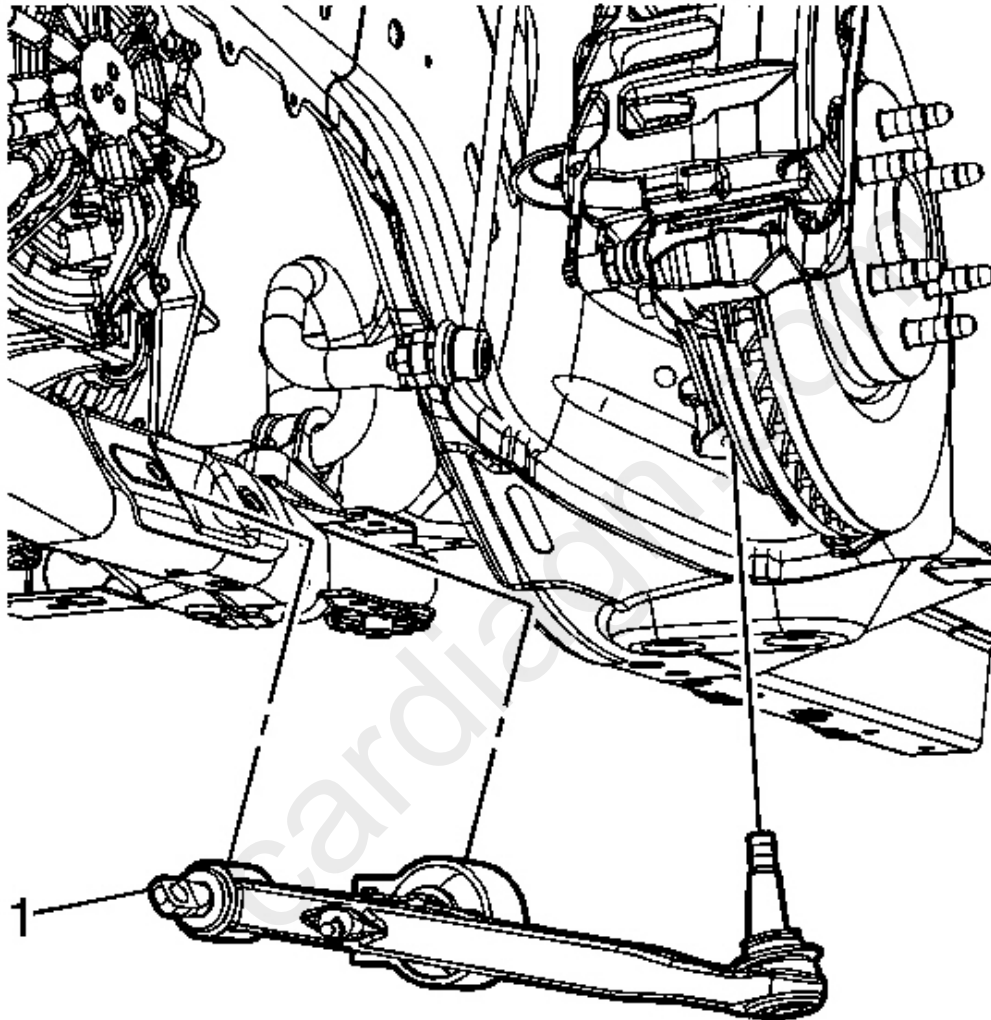
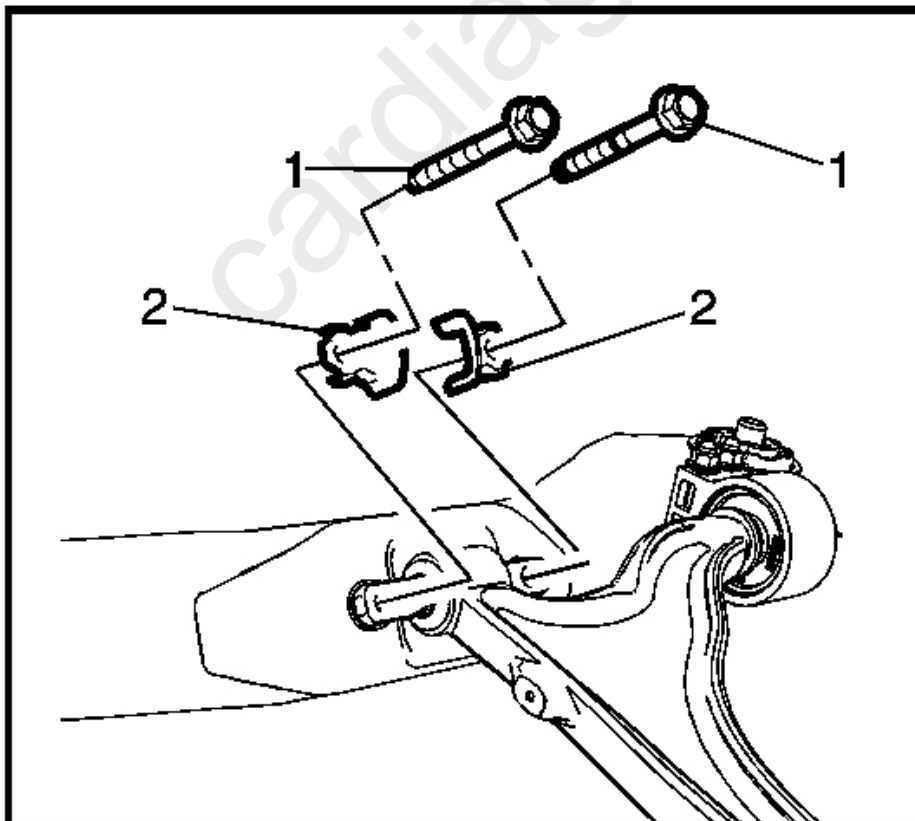
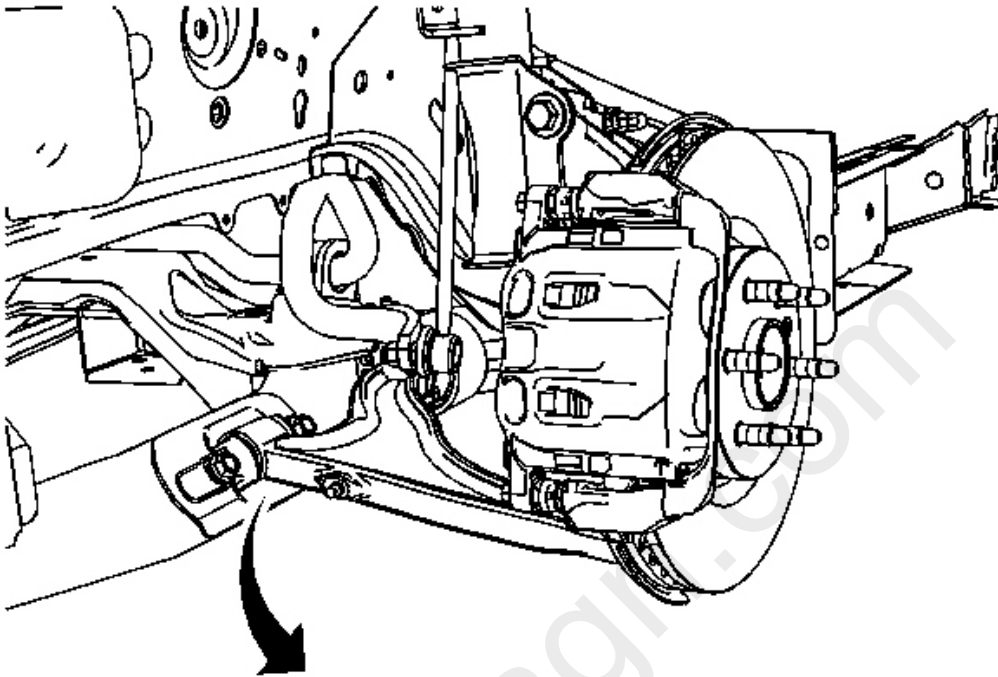


Fig. 1□ View Of Front Lower Control Arm
Courtesy of GENERAL MOTORS CORP.

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

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Fig. 1: Identifying Lower Control Arm Front Bolts & Brackets

Courtesy of GENERAL MOTORS CORP.

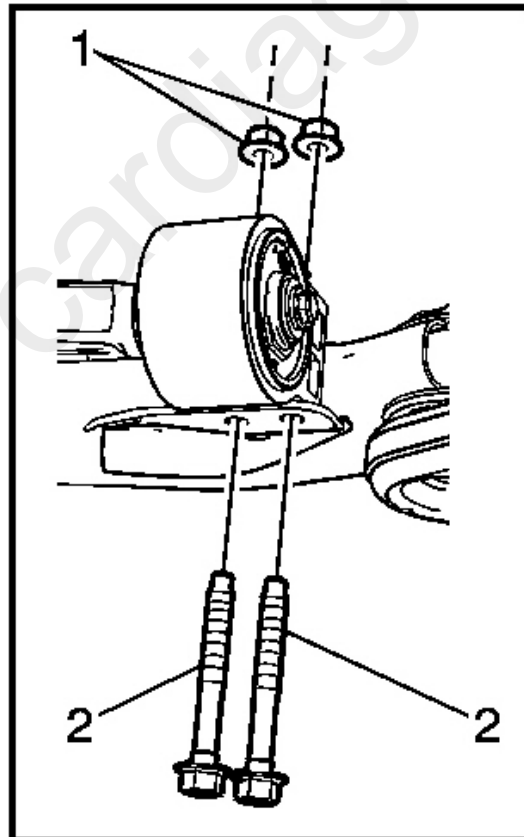
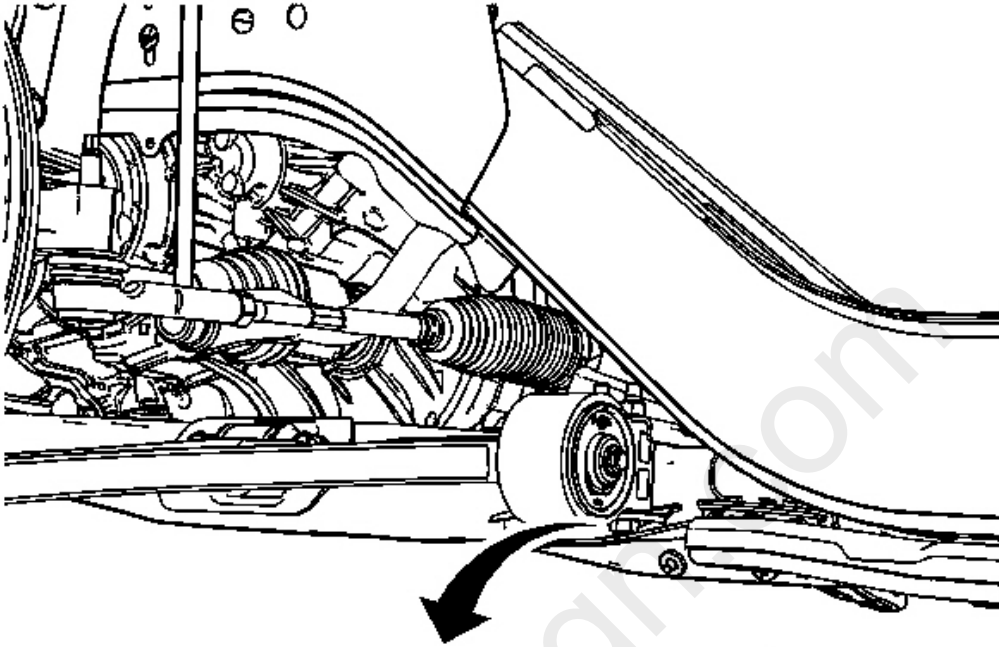
CAUTION: Failure to replace the front lower control brackets will cause premature wear and damage to the front lower control arm bushings.

CAUTION: Refer to Fastener Caution .

2. Install the front lower control arm front mounting brackets (2) bolts (1) and tighten to 100 N.m (4 lb ft) plus an additional 90 degrees.

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Fig. 11: Identifying Front Lower Control Arm Rear Bolts & Nuts
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3. Install the front lower control arm rear bolts (2) and the front lower control arm rear nuts (1).
4. Tighten the front lower control arm rear bolts (2) to 110 N.m (81 lb ft).

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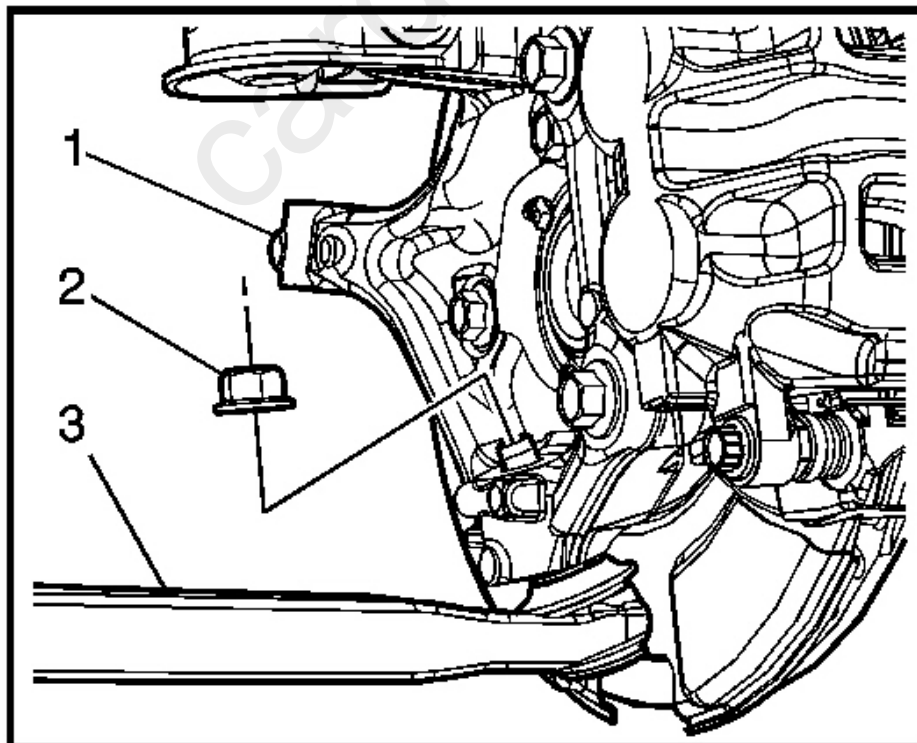
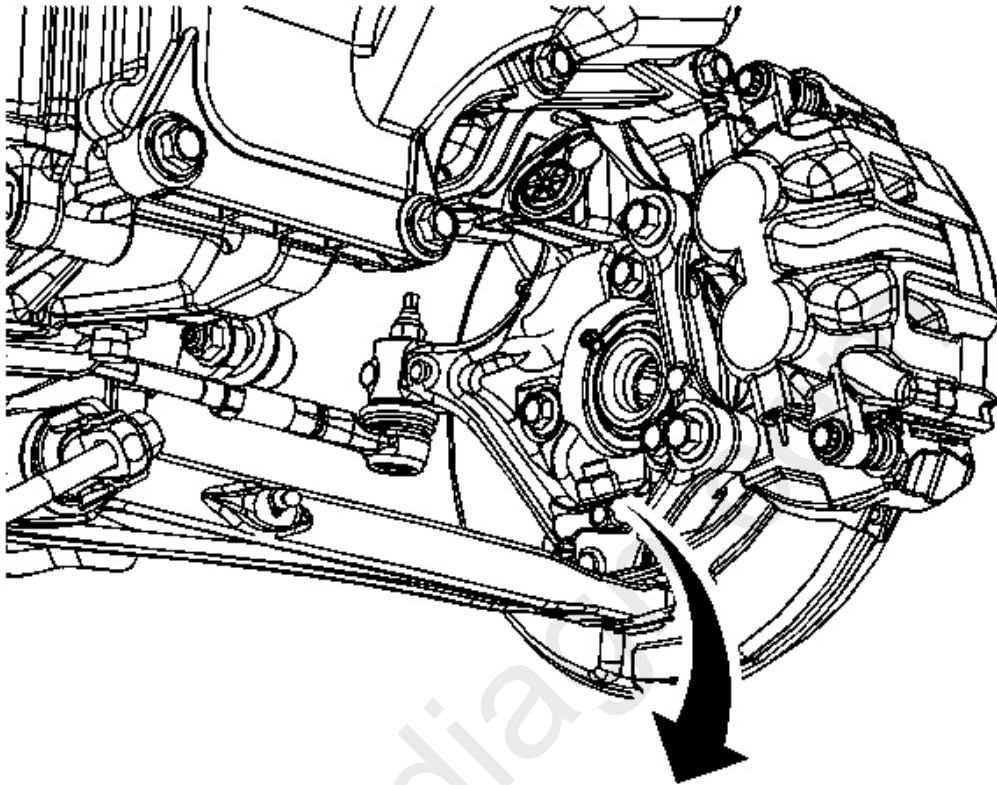


Fig. □□: Locating Lower Ball Joint Fastener
Courtesy of GENERAL MOTORS CORP.

5. Install the front lower control arm ball stud nut (2) to the ball joint and tighten to 30 N.m (22 lb ft) plus an additional 130 degrees.
6. Reconnect the electric front suspension accelerometer link to the lower control arm, if equipped.
 - ☐ Remove the support from the steering knuckle.
 - ☐ Install the tire and wheel assembly. Refer to **Tire and Wheel Removal and Installation**.
9. Remove the support and lower the vehicle.

FRONT LOWER CONTROL ARM BUSHING REPLACEMENT

Removal Procedure

1. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle**.
2. Remove the front lower control arm rear bolts. Refer to **Lower Control Arm Replacement**.

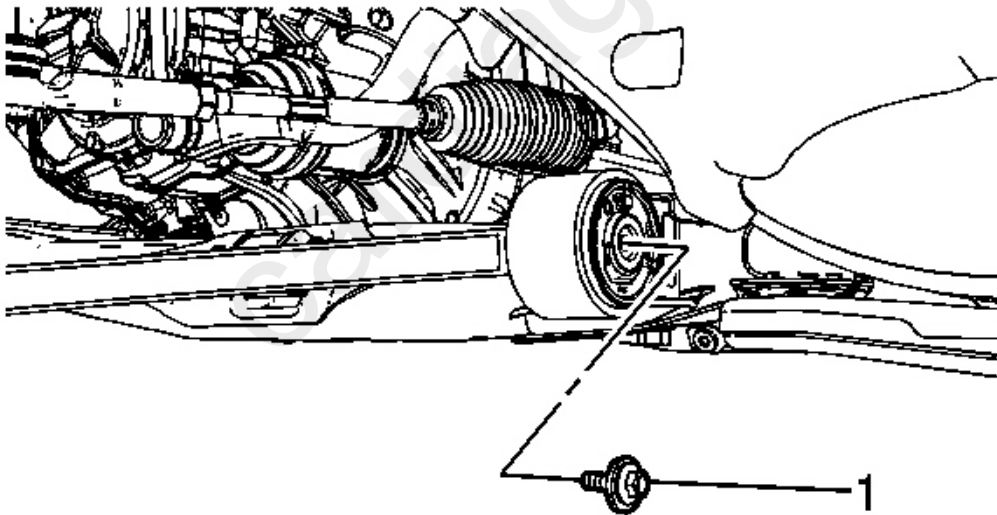


Fig. □4: Identifying Front Lower Control Arm Bushing Bolt
Courtesy of GENERAL MOTORS CORP.

3. Remove and discard the front lower control arm bushing bolt (1). Replace with NEW only.

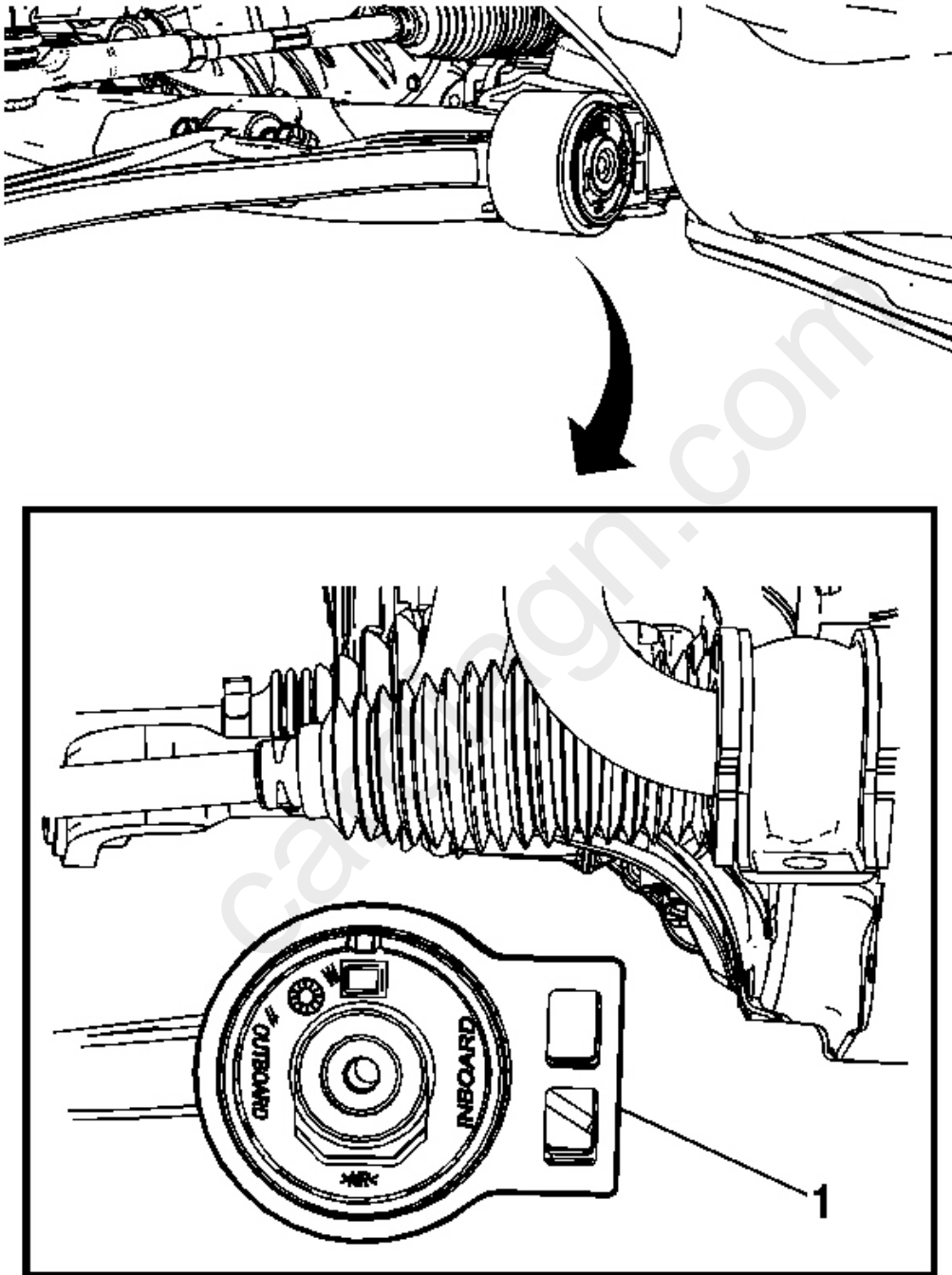


Fig. 15: View Of Lower Control Arm Bushing
Courtesy of GENERAL MOTORS CORP.

4. Before removing the lower control arm bushing (1), note the location of the marking on the bushing (1).

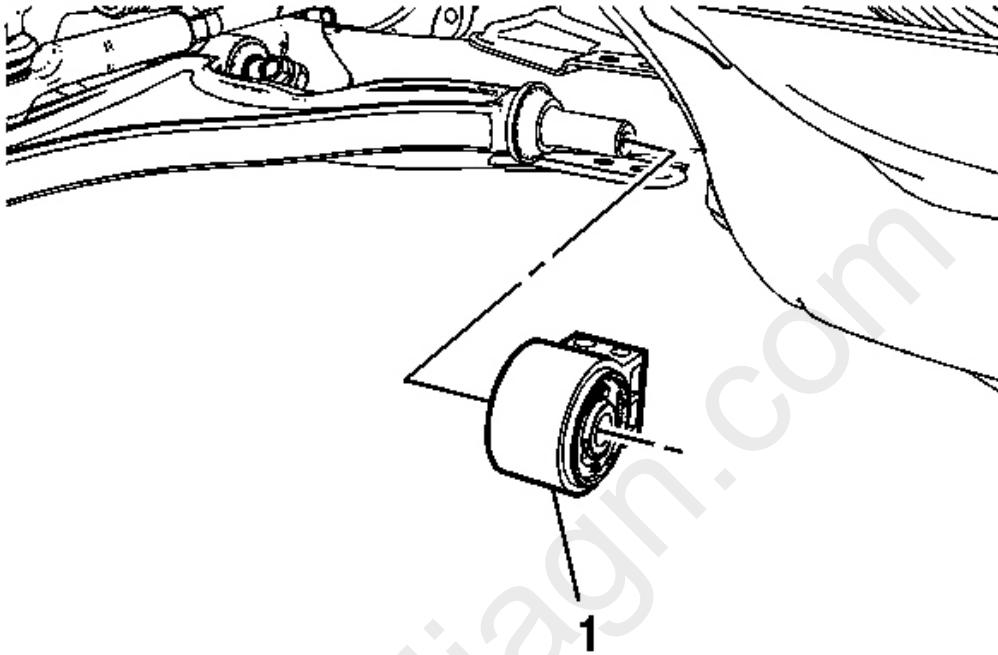


Fig. 16: View Of Control Arm Bushing
Courtesy of GENERAL MOTORS CORP.

NOTE: Use care when repositioning the lower control arm so as not to over stress the bushing on the front of the lower control arm.

5. Position the control arm away from the underside of the vehicle to remove the bushing (1) from the lower control arm.

Installation Procedure

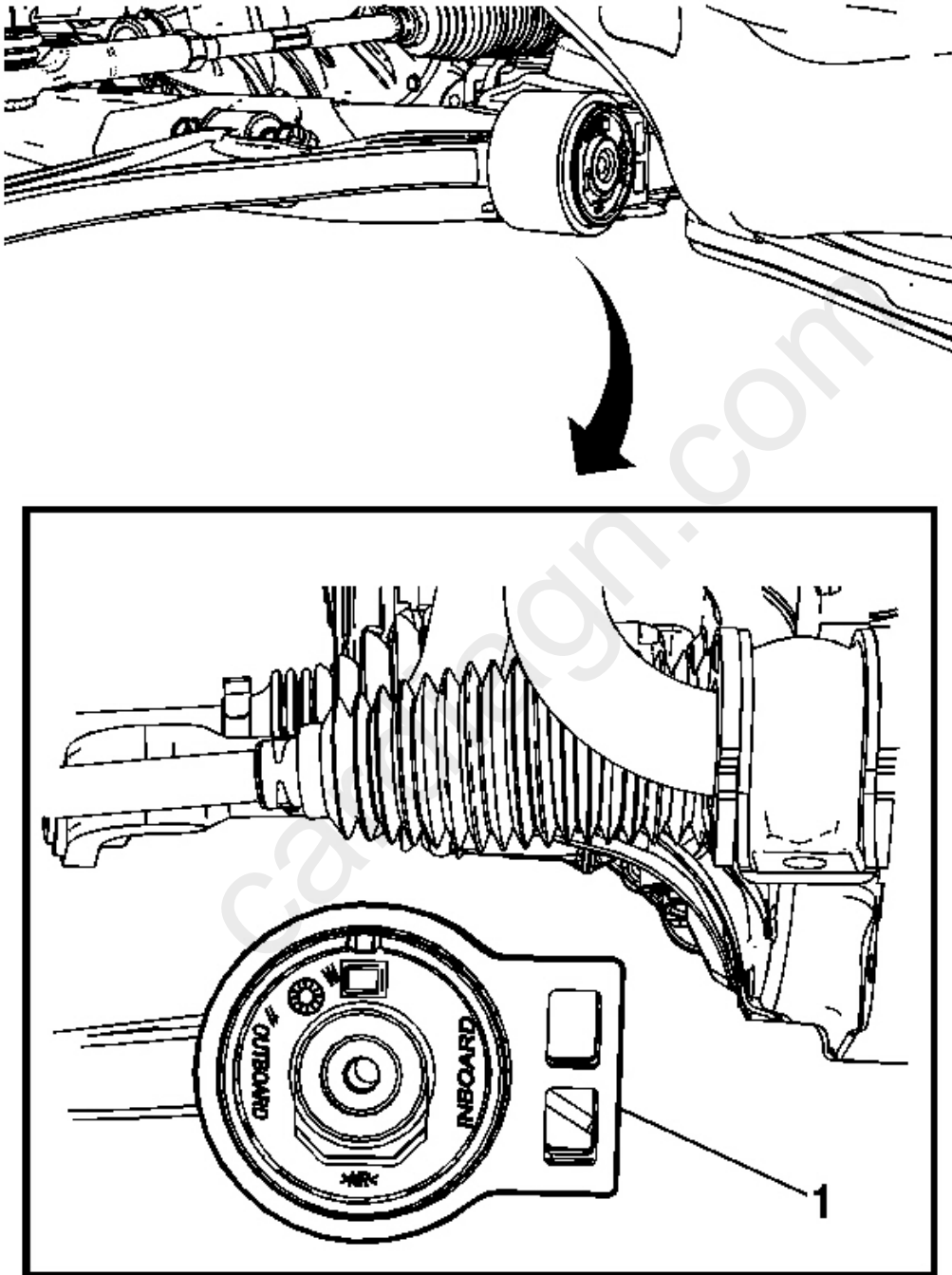


Fig. 17: View Of Lower Control Arm Bushing
Courtesy of GENERAL MOTORS CORP.

1. Ensure that the lower control arm bushing (1) installed with the markings on the bushing (1) are facing the rear of the vehicle.

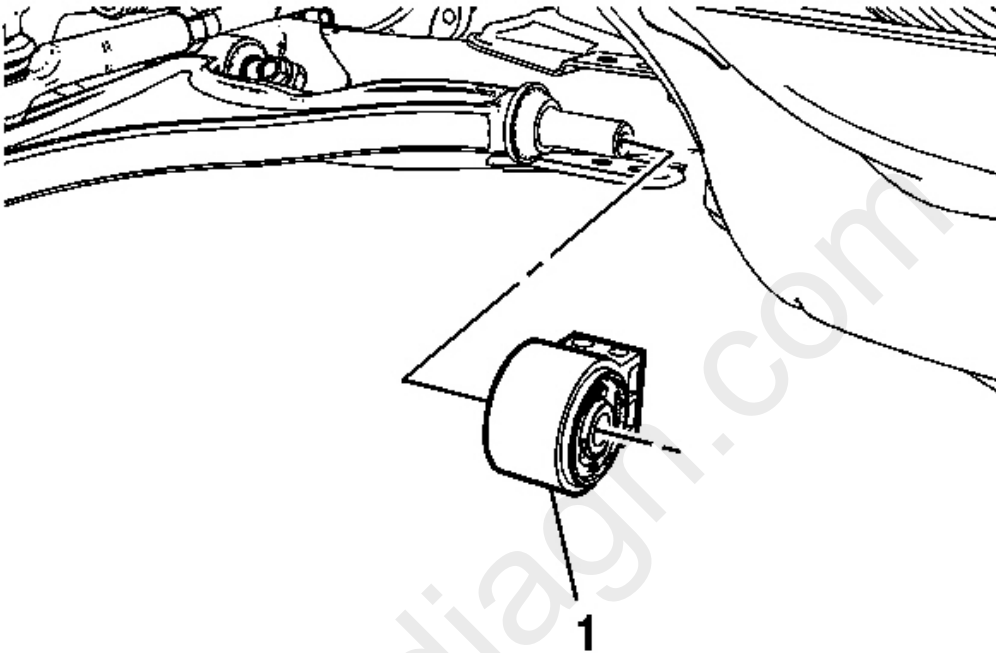


Fig. 18: View Of Control Arm Bushing
Courtesy of GENERAL MOTORS CORP.

2. Reposition the lower control arm in away to install the bushing (1).

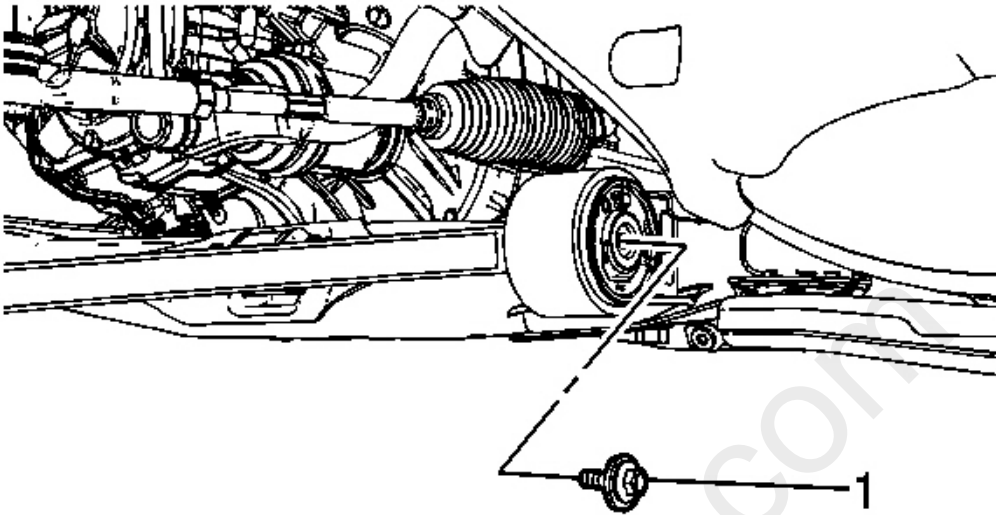


Fig. 19: Identifying Front Lower Control Arm Bushing Bolt
Courtesy of GENERAL MOTORS CORP.

NOTE: **DO NOT** tighten the lower control arm bushing bolt until the vehicle is at curb height.

3. Install the NEW lower control arm bushing bolt (1).
4. Install the front lower control arm rear bolts. Refer to **Lower Control Arm Replacement**
5. With the vehicle at curb height, tighten the lower control arm bushing bolt (1) to 55 N.m 41 lb ft plus 90 degrees.
6. Verify the front wheel alignment. 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** .

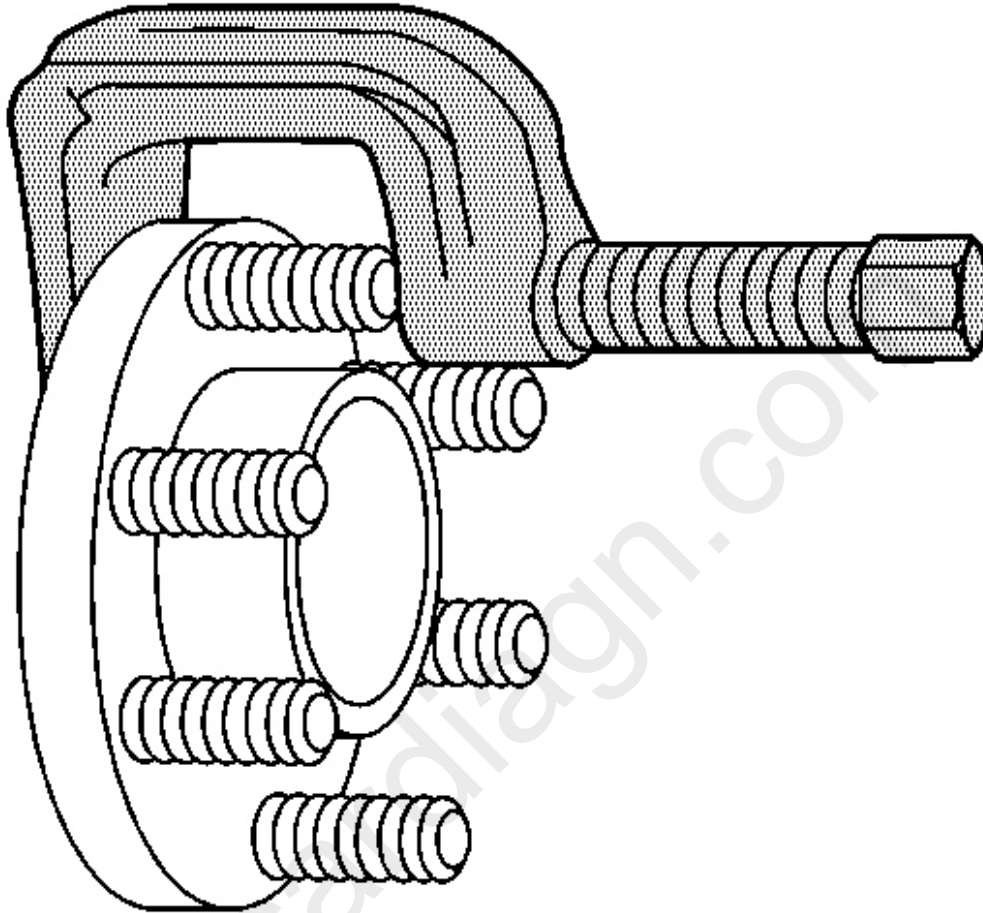


Fig. 2: View Of Special Tool J 4363 & Wheel Stud
Courtesy of GENERAL MOTORS CORP.

3. Remove the brake rotor. Refer to **Front Brake Rotor Replacement** .
4. Using **J 4363** remove the wheel stud at the inner most notch.

Installation Procedure

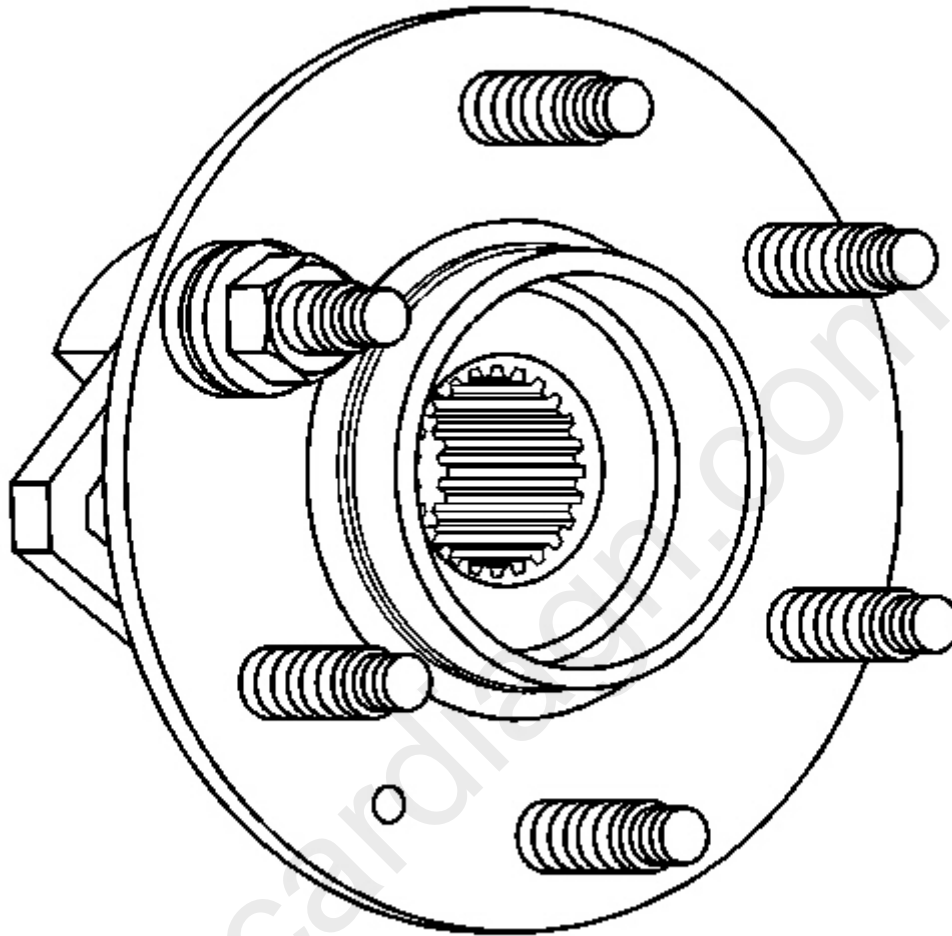


Fig. 2: View Of Wheel Studs
Courtesy of GENERAL MOTORS CORP.

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 brake rotor. Refer to **Front Brake Rotor Replacement**.
5. Install the tire and wheel. Refer to **Tire and Wheel Removal and Installation**.

Lower the vehicle.

STRUT AND SHOCK ABSORBER INSPECTION [STRUT]

NOTE: The strut assembly **DOES NOT** have to be removed from the vehicle to perform the following inspection procedure.

NOTE: A light film of oil on the top portion of the strut is normal. **DO NOT** replace the strut for this condition.

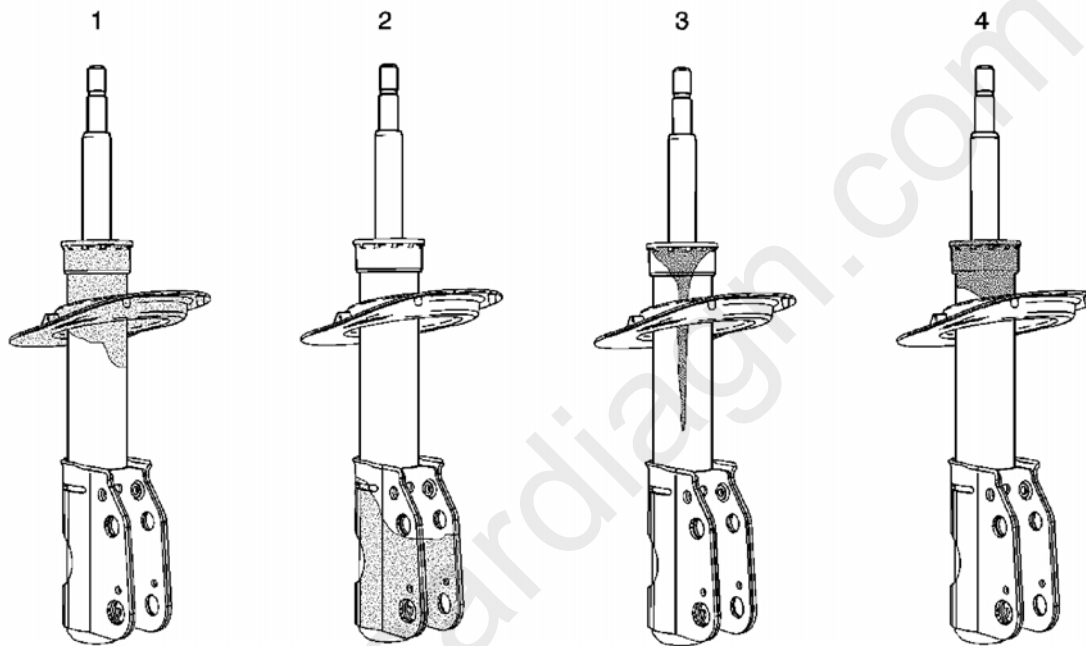


Fig. 22: Identifying Strut Conditions
Courtesy of GENERAL MOTORS CORP.

Condition 1

Oil or fluid residue only on the bottom of the strut tube or on other strut components and not originating from the shaft seal, is not a strut related problem. **DO NOT** replace the strut, look for other external leaks.

Condition 2

Light film/residue on the strut tube, but not on the spring seat and originating from the shaft seal, is a **NORMAL** condition. **DO NOT** replace the strut.

Condition 3

Oil drip or trail down the strut tube and originating from the shaft seal, is an **ABNORMAL** condition. Replace the strut.

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Condition 4

Extreme wet film of oil covering the strut tube and pooling in the spring seat and originating from the shaft seal, is an ABNORMAL condition. Replace the strut.

Inspection

1. Verify the customer's concern is present. If the concern is present, continue to the next step. If the concern is not present, then the vehicle is operating normally.

NOTE: The strut assembly DOES NOT have to be removed from the vehicle to perform the following inspection procedure.

2. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
3. Visually inspect each of the shock absorbers or struts for external fluid leaks. Refer to the following conditions 1, 2, 3, and 4 for visual inspection.
 - If conditions 1 or 2 are found, continue to step 4.
 - If conditions 3 or 4 are found, replace strut. Refer to Strut Assembly Replacement.
4. If equipped with electronic suspension control system, ensure that the system is working properly. Refer to Diagnostic Starting Point-Electronic Suspension Control under DIAGNOSTIC INFORMATION AND PROCEDURES.
5. Use your hands in order to lift up and push down on each corner of the vehicle 3 times. Remove your hands from the vehicle. If the corner motion exceeds 2 cycles, replace the strut. If the strut does not exceed 2 cycles, No repair is necessary.

STRUT ASSEMBLY REPLACEMENT

Special Tools

CH 49375: Wrench

For equivalent regional tools, refer to Special Tools.

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 strut. Refer to Stabilizer Shaft Link Replacement.
4. Disconnect the head lamp level sensor link from the lower control arm, if equipped. Refer to Headlamp Leveling Front Suspension Height Sensor Replacement.

NOTE: DO NOT allow the lower control arm and the steering knuckle drop more than 2 inches when the strut assembly has been removed.

5. Support the lower control arm and the steering knuckle.

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6. ☐ Disconnect the electrical harness/sensor from the strut, if equipped.
7. Remove the front compartment side sight shields. Refer to **Front Compartment Side Sight Shield Replacement**.

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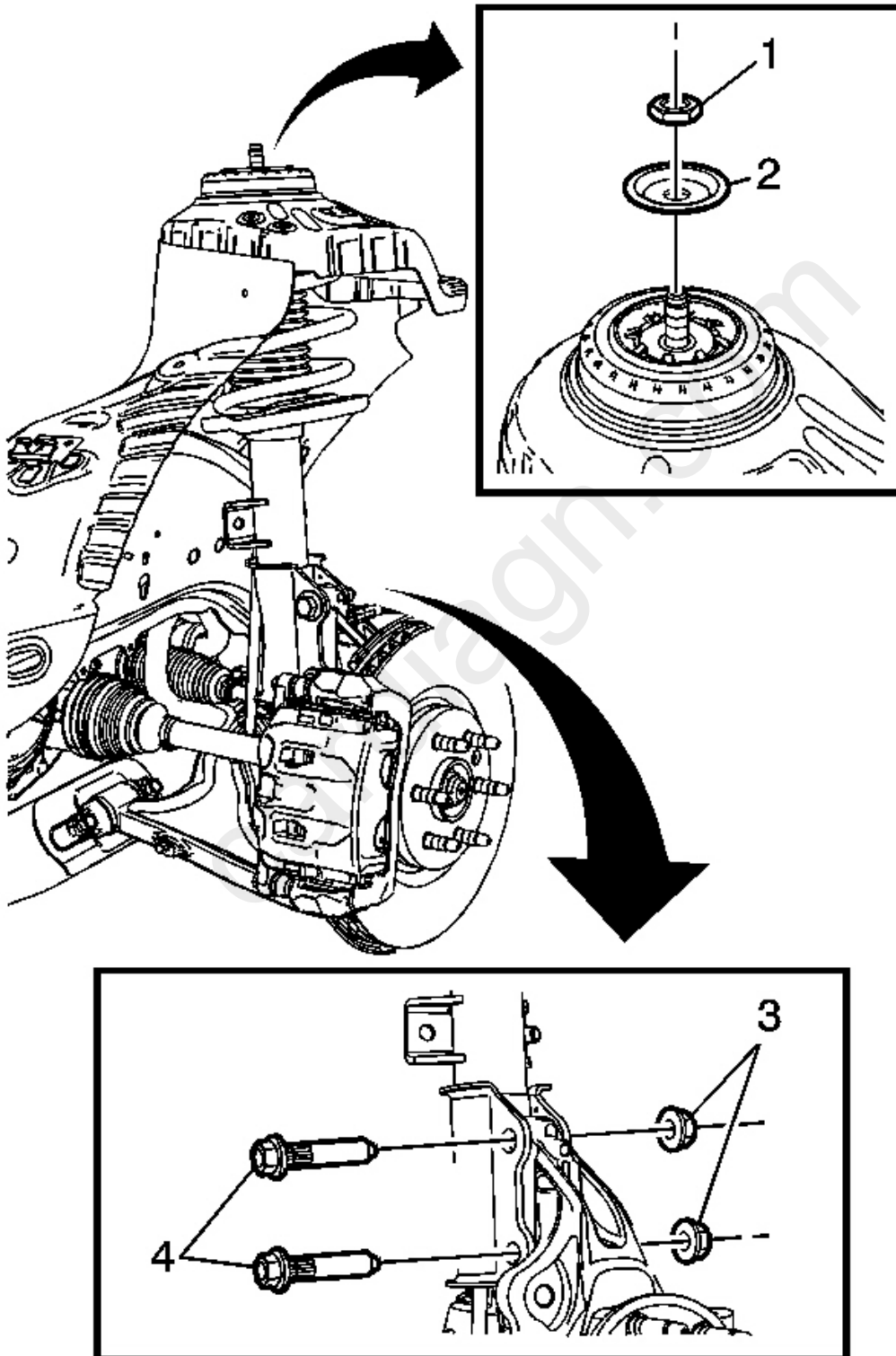


Fig. 23: Identifying Front Suspension Strut Bolts & Nuts
Courtesy of GENERAL MOTORS CORP.

8. Using the **CH 49375:** wrench, remove the front suspension strut mount nut (1) and the front suspension strut mount washer (2).
9. Remove the front suspension strut bolts (4) and the front suspension strut nuts (3).

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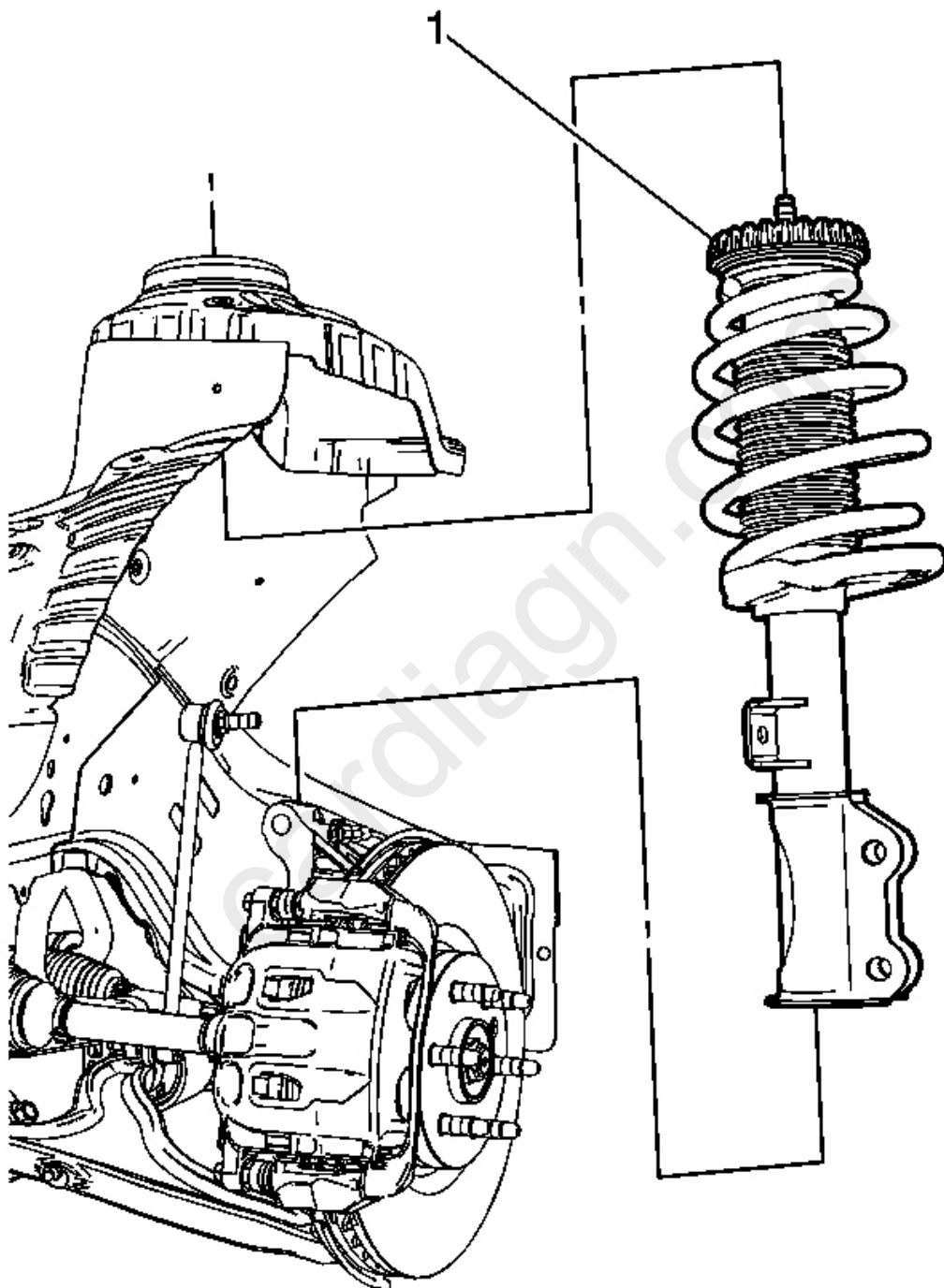


Fig. 24: View Of Front Suspension Strut Assembly
Courtesy of GENERAL MOTORS CORP.

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10. Remove the front suspension strut assembly (1) from the vehicle

Installation Procedure

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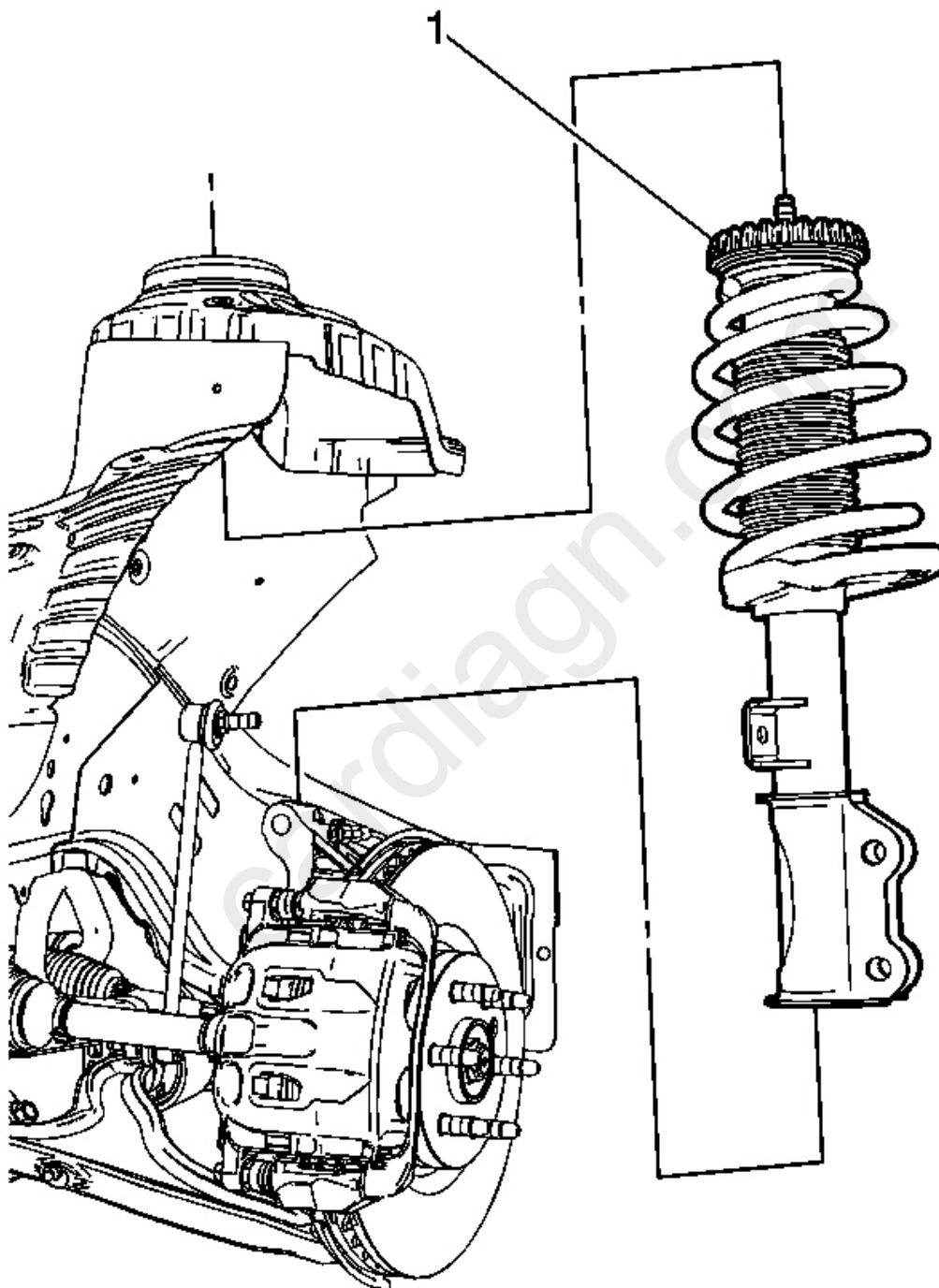


Fig. 25: View Of Front Suspension Strut Assembly
Courtesy of GENERAL MOTORS CORP.

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1. Position the front suspension strut assembly (1) in the vehicle.

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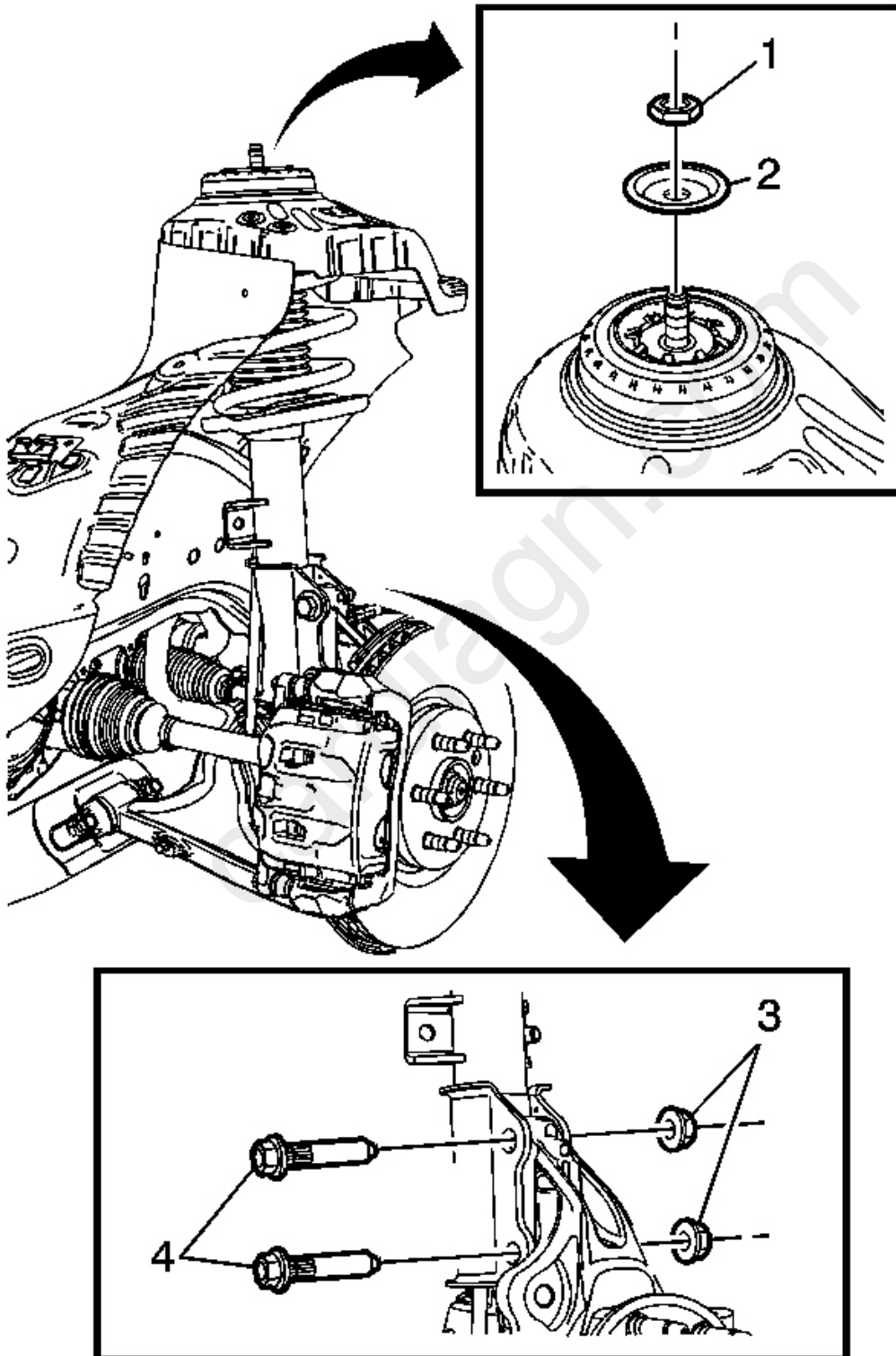


Fig. 26: Identifying Front Suspension Strut Bolts & Nuts
Courtesy of GENERAL MOTORS CORP.

CAUTION: Refer to Fastener Caution .

2. Using the **CH 49375**: wrench, install front suspension strut mount washer (2) and the front suspension strut mount nut (1), then tighten the front suspension strut mount nut to 50 N.m (37 lb ft).
3. Install the front suspension strut bolts (4) and the front suspension strut nuts (3).
4. Tighten the front suspension strut bolts to 190 N.m (140 lb ft)
5. Re-connect the electrical harness/sensor from the strut, if equipped.
6. Reconnect the head lamp level sensor link to the lower control arm, if equipped. Refer to **Headlamp Leveling Front Suspension Height Sensor Replacement** .
7. Remove the support from the lower control arm and the steering knuckle.
8. Install the front stabilizer shaft link. Refer to **Stabilizer Shaft Link Replacement**.
9. Install the tire and wheel assembly. Refer to **Tire and Wheel Removal and Installation** .
10. Install the front compartment side sight shields. Refer to **Front Compartment Side Sight Shield Replacement** .
11. Remove the support and lower the vehicle.

STRUT, STRUT COMPONENT, OR SPRING REPLACEMENT

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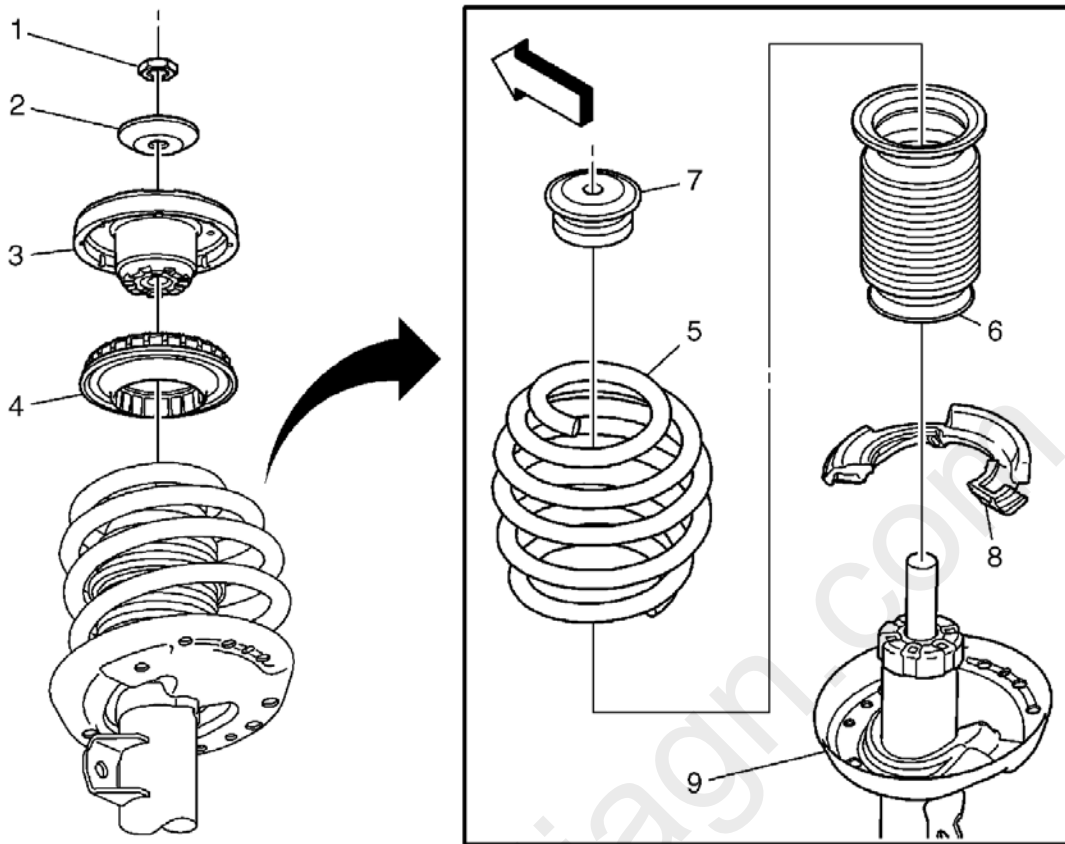


Fig. 27: Identifying Strut, Strut Component Or Spring
 Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
Preliminary Procedure	
1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle . 2. Remove the strut assembly. Refer to Strut Assembly Replacement .	
1	Front Suspension Strut Nut CAUTION: Refer to Fastener Caution . Procedure: Using the CH 48845 : compressor, compress the front strut assembly. Tighten: 70 N.m (52 lb ft) Special Tools: CH 48845: Spring Compressor

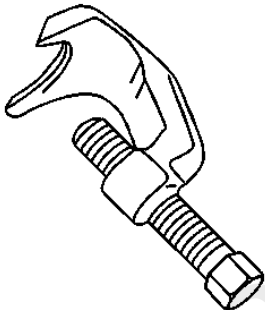
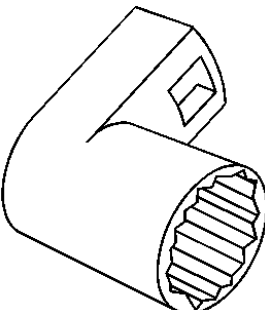
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	For equivalent regional tools, refer to <u>Special Tools</u> .
2	Front Suspension Strut Washer
3	Front Suspension Strut Mount Bearing
4	Spring Seat Upper
5	Front Spring
6	Front Shock Absorber Boot
7	Front Suspension Strut Bumper
8	Insulator Front Spring Lower
9	Front Suspension Strut

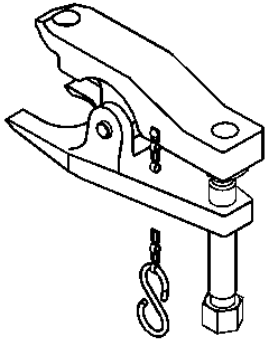
SPECIAL TOOLS AND EQUIPMENT

SPECIAL TOOLS

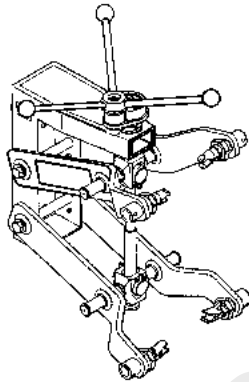
Illustration	Tool Number/Description
	CH 43631 J 43631 Ball Joint Remover
	CH 49375 J 35669 Wrench

2010 Cadillac SRX

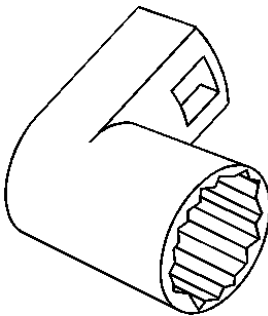
2010 SUSPENSION Front Suspension - SRX



CH 47975-A
Ball Joint Remover



CH 48845
KM 6066
J 48848
Strut Spring Compressor



CH 49375
J 35669
Wrench