

2014 SUSPENSION

Rear Suspension - Acadia, Enclave And Traverse

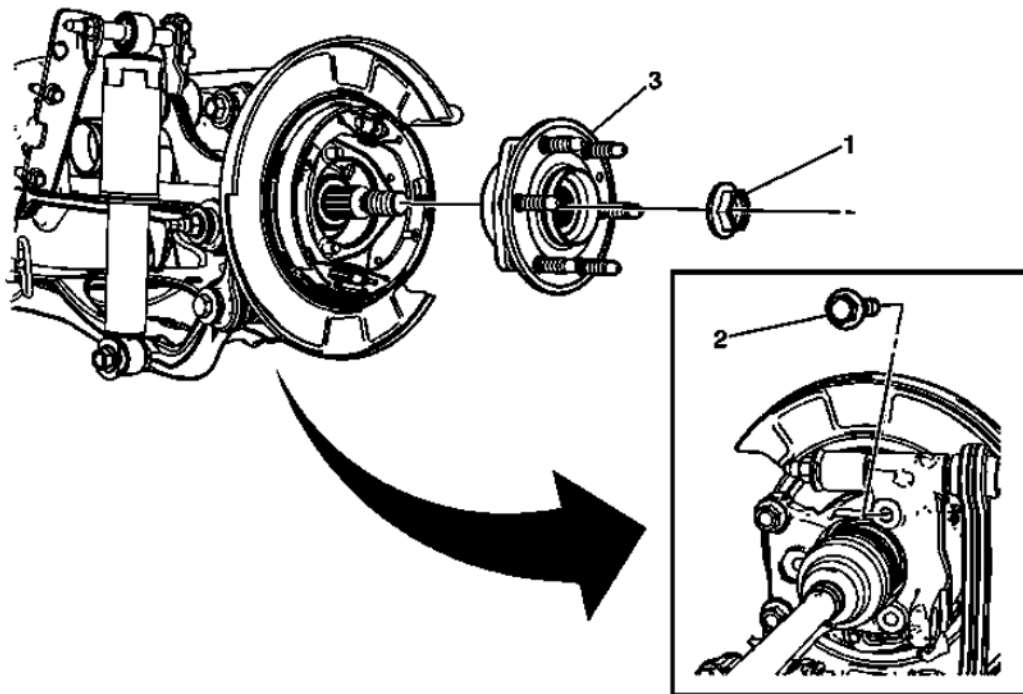
SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Adjuster Link to Crossmember Nuts	140 N.m	103 lb ft
Adjuster Link to Knuckle Nut		
• First Pass	75 N.m	55 lb ft
• Final Pass	+60°	
Lower Control Arm to Crossmember Nuts - Front		
• First Pass	110 N.m	81 lb ft
• Final Pass	+45°	
Lower Control Arm to Crossmember Nuts - Rear		
• First Pass	120 N.m	89 lb ft
• Final Pass	+60°	
Lower Control Arm to Knuckle Bolt		
• First Pass	100 N.m	74 lb ft
• Final Pass	+90°	
Rear Shock Absorber to Lower Control Arm Bolts		
• First Pass	100 N.m	74 lb ft
• Final Pass	+90°	
Rear Wheel Bearing and Hub to Knuckle Bolts	130 N.m	96 lb ft
Stabilizer Shaft Clamp to Crossmember Bolts	50 N.m	37 lb ft
Stabilizer Shaft Link Nuts	22 N.m	16 lb ft
Upper Control Arm to Crossmember Nuts	140 N.m	103 lb ft
Upper Control Arm to Knuckle Bolts		
• First Pass	100 N.m	74 lb ft
• Final Pass	+90°	
Upper Rear Shock Absorber Nuts	73 N.m	54 lb ft
Wheel Drive Shaft Nut	205 N.m	151 lb ft

REPAIR INSTRUCTIONS

REAR WHEEL BEARING AND HUB REPLACEMENT (AWD)**Fig. 1: Identifying Rear Wheel Bearing & Hub (AWD)**

Courtesy of GENERAL MOTORS COMPANY

Rear Wheel Bearing and Hub Replacement (AWD)

Callout	Component Name
CAUTION: The wheel bearing and hub assembly includes a magnetic encoder with built-in permanent magnets that the wheel speed sensor senses. Any contact with another magnet will damage the encoder magnets. The damage will cause a diagnostic trouble code to be set and will require wheel bearing and hub replacement.	
Preliminary Procedures 1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle. 2. Remove the rear brake rotor. Refer to Rear Brake Rotor Replacement.	
1	Wheel Drive Shaft Nut CAUTION: Refer to Fastener Caution . Tighten

	205 N.m (151 lb ft)
	Wheel Bearing Hub Bolt (Qty: 3)
2	Procedure 1. Using the J 45859 axle remover, separate the front wheel hub and bearing from the wheel drive shaft. 2. Apply the high-temperature, high-strength threadlocker to 2/3 of the threads of the wheel bearing hub and the bolt. TIP: Ensure that there are no gaps in the threadlocker and allow to dry approximately 10 minutes before installing the wheel bearing hub bolts. Tighten 130 N.m (96 lb ft) Special Tools J 45859 Axle Remover
3	Rear Wheel Bearing and Hub Assembly

REAR WHEEL BEARING AND HUB REPLACEMENT (FWD)

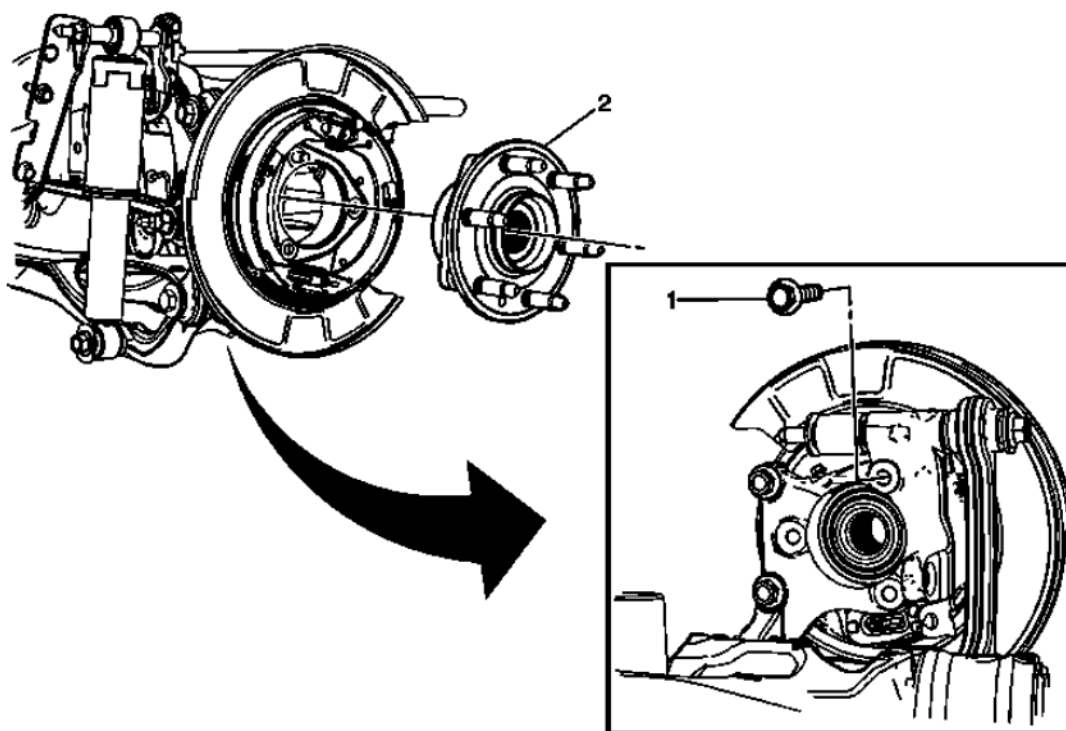


Fig. 2: Identifying Rear Wheel Bearing & Hub (FWD)

Courtesy of GENERAL MOTORS COMPANY

Rear Wheel Bearing and Hub Replacement (FWD)

Callout	Component Name
CAUTION: The wheel bearing and hub assembly includes a magnetic encoder with built-in permanent magnets that the wheel speed sensor senses. Any contact with another magnet will damage the encoder magnets. The damage will cause a diagnostic trouble code to be set and will require wheel bearing and hub replacement.	
Preliminary Procedures 1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle. 2. Remove the rear brake rotor. Refer to Rear Brake Rotor Replacement.	
1	Wheel Bearing Hub Bolt (Qty: 3) CAUTION: Refer to Fastener Caution . Procedure Apply the high-temperature, high-strength threadlocker to 2/3 of the threads of the wheel bearing hub and the bolt. TIP: Ensure that there are no gaps in the threadlocker and allow to dry approximately 10 minutes before installing the wheel bearing hub bolts. Tighten 130 N.m (96 lb ft)
2	Wheel Bearing and Hub

REAR SUSPENSION LINK REPLACEMENT - UPPER TO LOWER CONTROL ARM

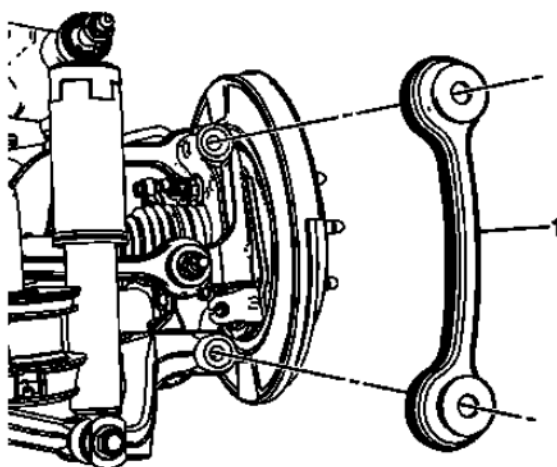


Fig. 3: Identifying Rear Suspension Link

Courtesy of GENERAL MOTORS COMPANY

Rear Suspension Link Replacement - Upper to Lower Control Arm

Callout	Component Name
IMPORTANT: The following procedure indicates servicing the left side of the vehicle. The right side of the vehicle is similar.	
Preliminary Procedure	
1. Raise and support the vehicle. Refer to <u>Lifting and Jacking the Vehicle</u> . 2. Remove the rear tire and wheel. Refer to <u>Tire and Wheel Removal and Installation</u>	
1	Rear Lateral Link Procedure 1. Remove the upper control arm bolt. Refer to <u>Upper Control Arm Replacement</u>. 2. Remove the lower control arm bolt. Refer to <u>Lower Control Arm Replacement</u>. TIP: Support the lower control arm with a jack stand.

KNUCKLE REPLACEMENT**Removal Procedure**

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

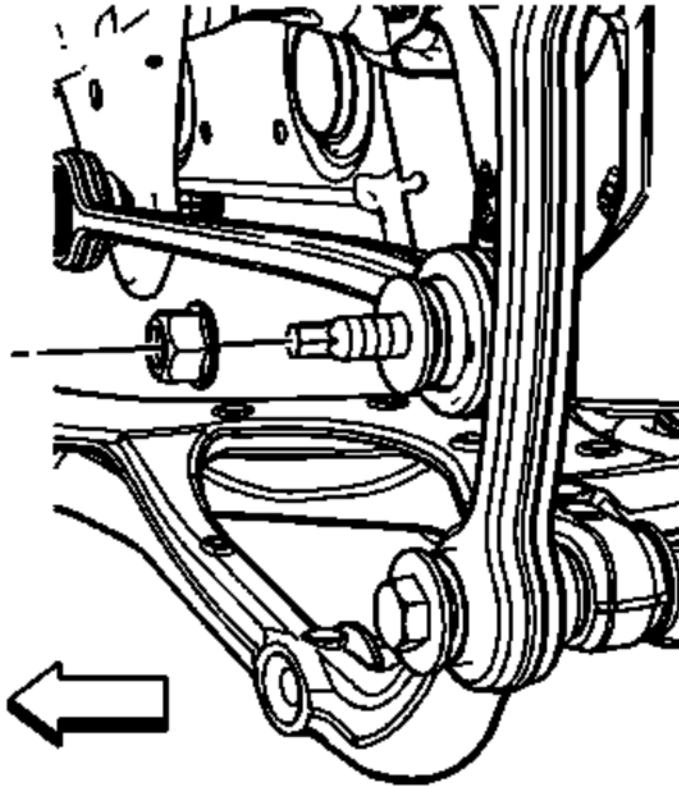


Fig. 4: Identifying Retaining Nut From Adjuster Link To Knuckle
Courtesy of GENERAL MOTORS COMPANY

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

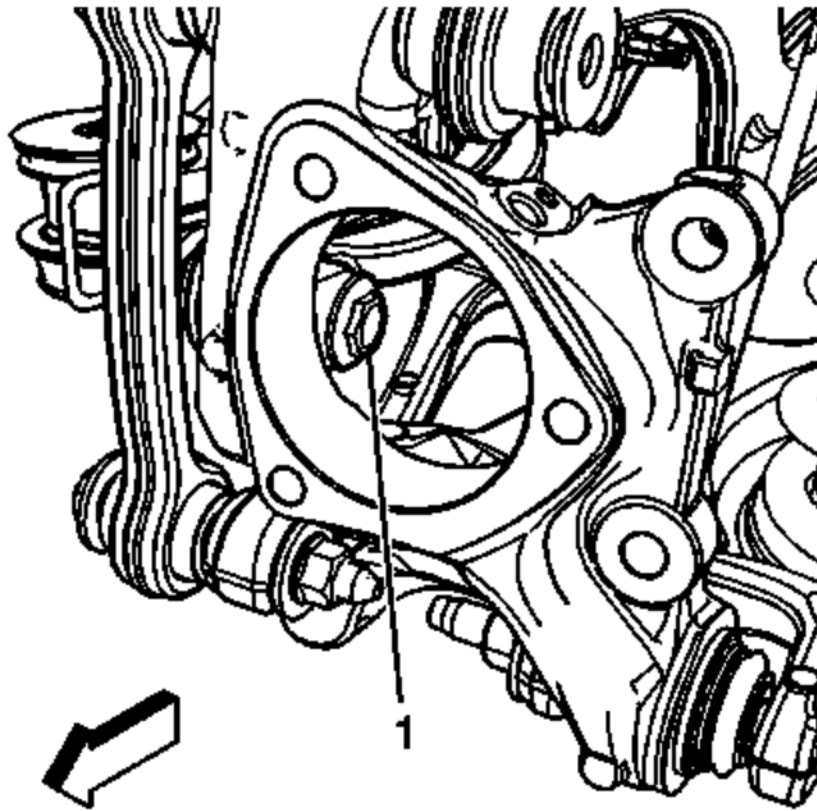


Fig. 5: Identifying Bolt From Knuckle To Adjuster Link
Courtesy of GENERAL MOTORS COMPANY

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

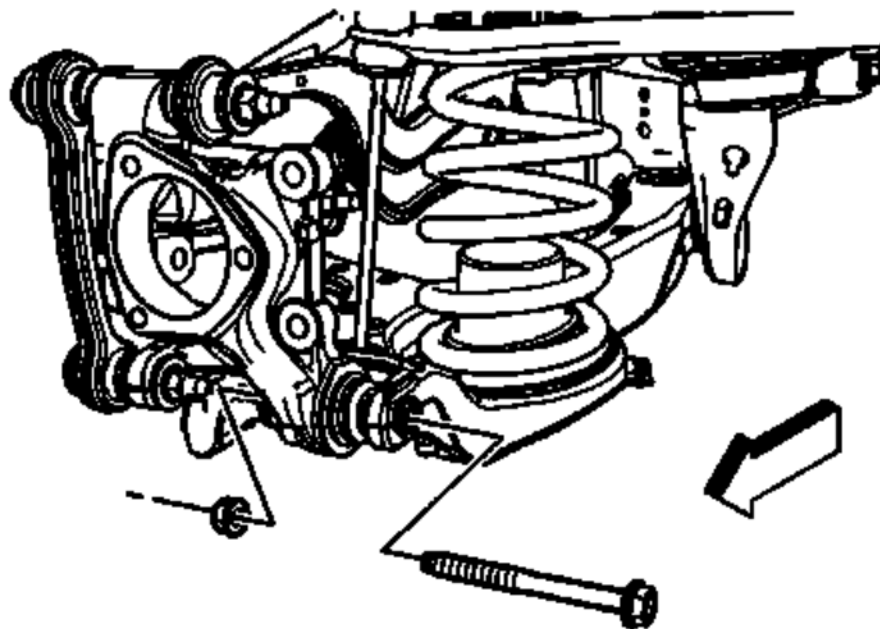


Fig. 6: Identifying Lower Knuckle To Lower Control Arm Nut And Bolt
Courtesy of GENERAL MOTORS COMPANY

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

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

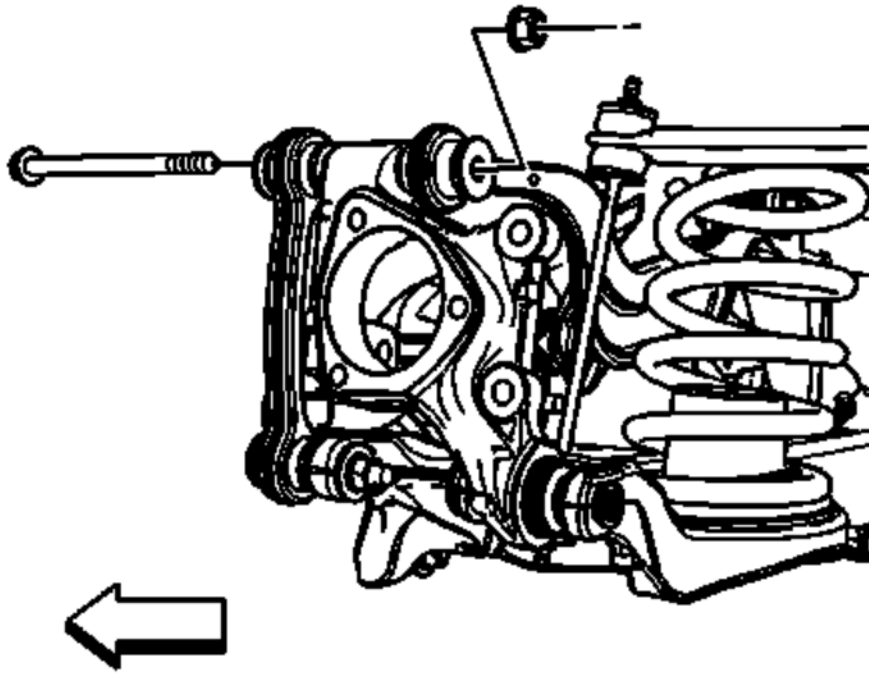


Fig. 7: Identifying Bolt & Nut From Upper Control Arm To Knuckle
Courtesy of GENERAL MOTORS COMPANY

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

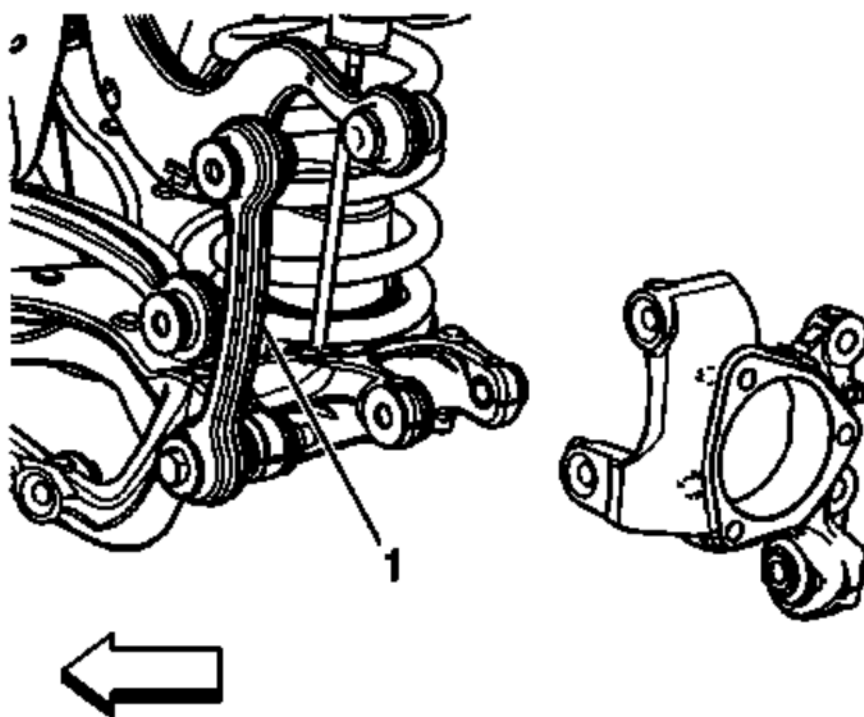


Fig. 8: Identifying Rear Suspension Link

Courtesy of GENERAL MOTORS COMPANY

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

Installation Procedure

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

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

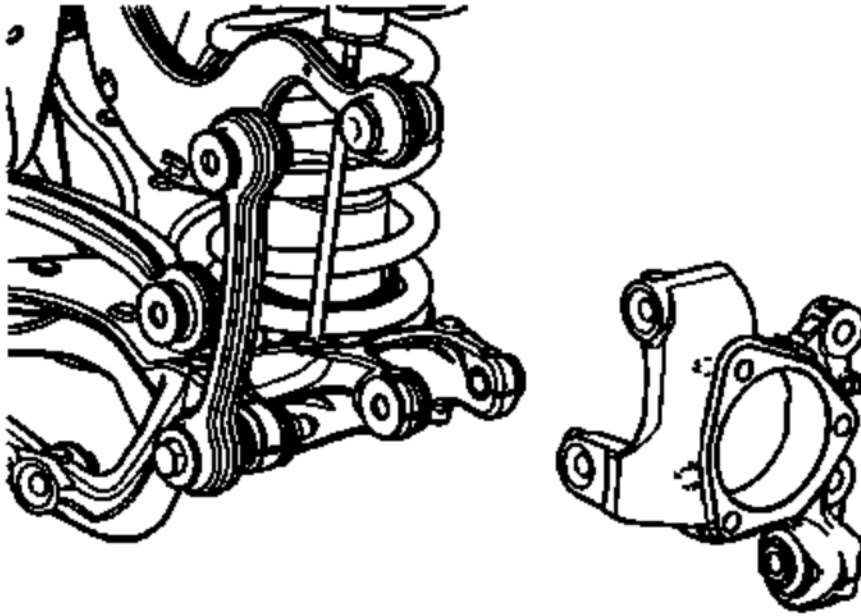


Fig. 9: Identifying Lower Knuckle

Courtesy of GENERAL MOTORS COMPANY

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

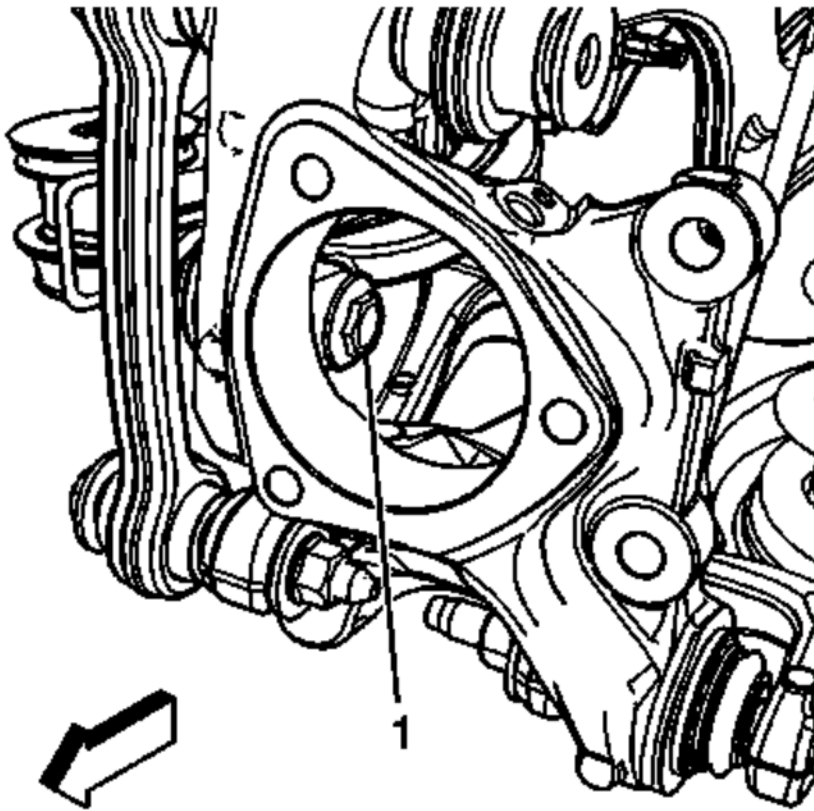


Fig. 10: Identifying Bolt From Knuckle To Adjuster Link
Courtesy of GENERAL MOTORS COMPANY

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

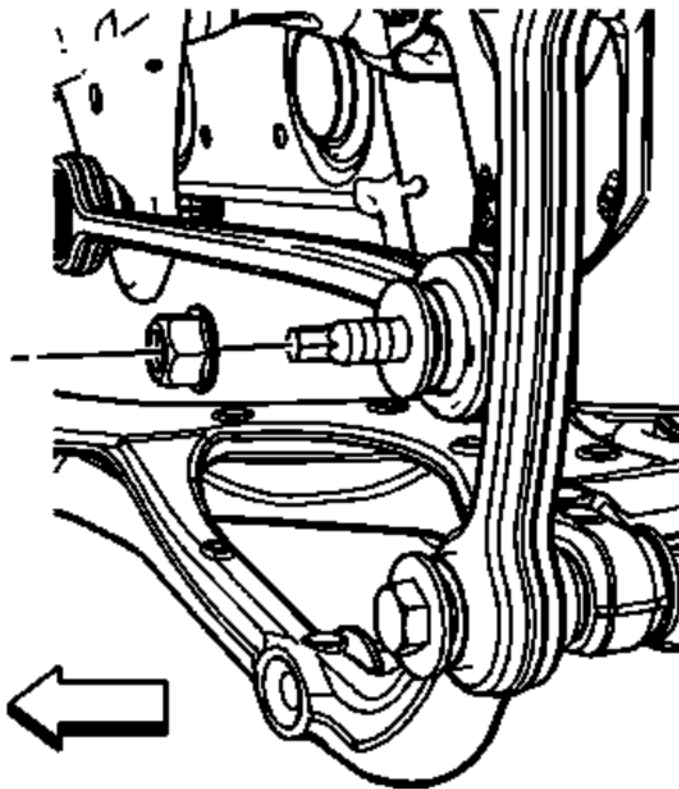


Fig. 11: Identifying Retaining Nut From Adjuster Link To Knuckle
Courtesy of GENERAL MOTORS COMPANY

CAUTION: Refer to Fastener Caution .

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

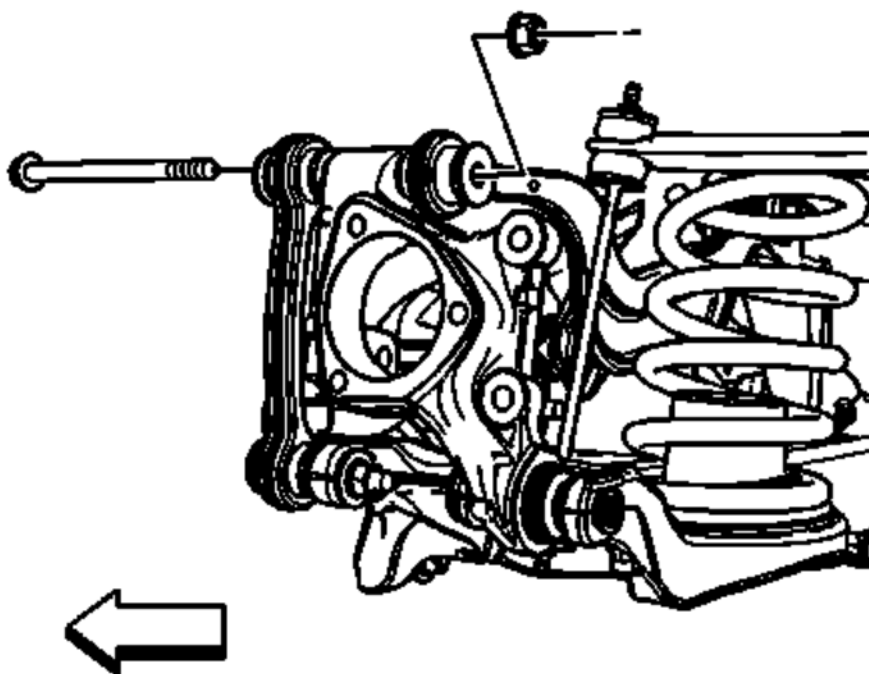


Fig. 12: Identifying Bolt & Nut From Upper Control Arm To Knuckle
Courtesy of GENERAL MOTORS COMPANY

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

5. Install the bolt from the lower control arm to the knuckle and tighten to 100 N.m (74 lb ft) plus 90°.

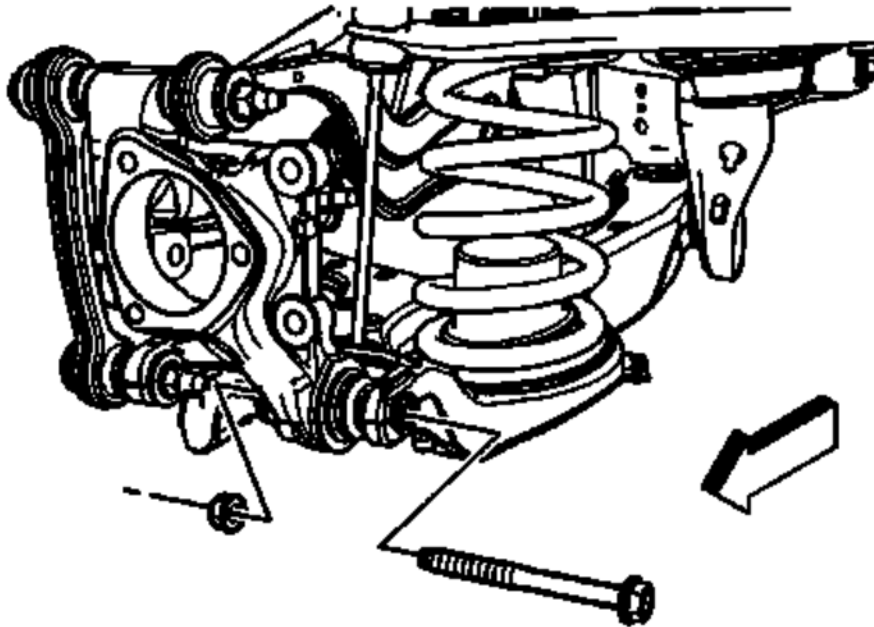


Fig. 13: Identifying Lower Knuckle To Lower Control Arm Nut And Bolt
Courtesy of GENERAL MOTORS COMPANY

6. Remove the jack stand from under the lower control arm.
7. Install the rear wheel drive shaft. Refer to **Rear Wheel Drive Shaft and Rear Axle Shaft Seal Replacement** .
8. Install the park brake backing plate assembly. Refer to **Rear Parking Brake Anchor Backing Plate Replacement** .
9. Install the rear wheel bearing and hub. Refer to **Rear Wheel Bearing and Hub Replacement (AWD)** and **Rear Wheel Bearing and Hub Replacement (FWD)**.
10. Remove the support and lower the vehicle.

STABILIZER SHAFT REPLACEMENT

Removal Procedure

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

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

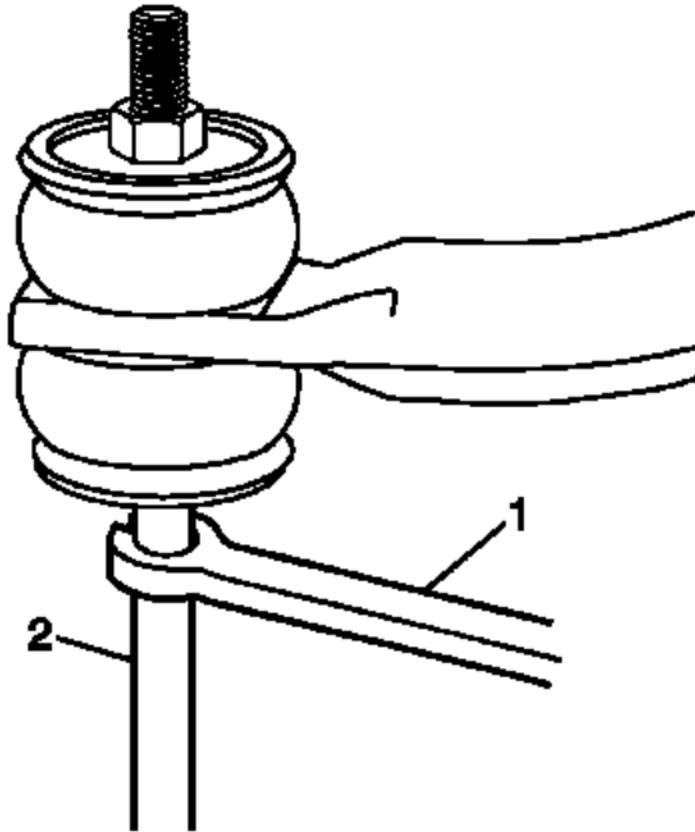


Fig. 14: Identifying Stabilizer Shaft Link
Courtesy of GENERAL MOTORS COMPANY

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

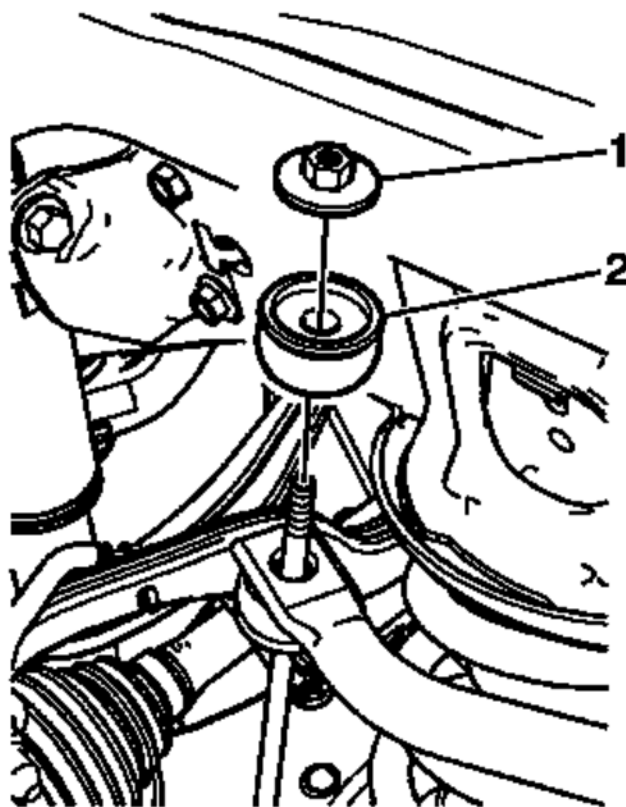


Fig. 15: Identifying Upper Stabilizer Shaft Link Retaining Nut With Washer & Bushing
Courtesy of GENERAL MOTORS COMPANY

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

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

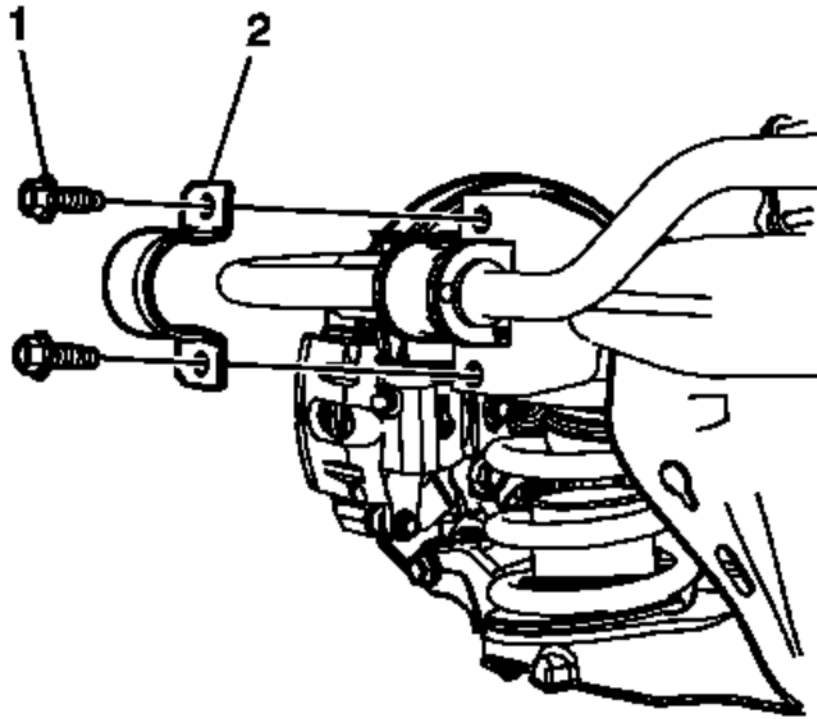


Fig. 16: Identifying Stabilizer Shaft Clamp & Bolts
Courtesy of GENERAL MOTORS COMPANY

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

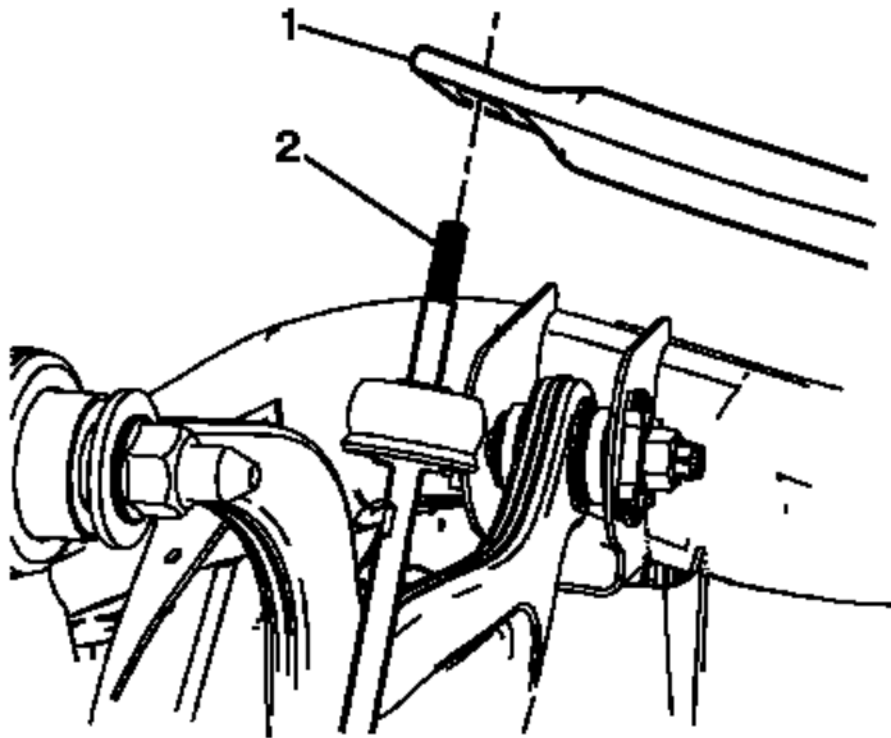


Fig. 17: Identifying Stabilizer Shaft & Stabilizer Shaft Link
Courtesy of GENERAL MOTORS COMPANY

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

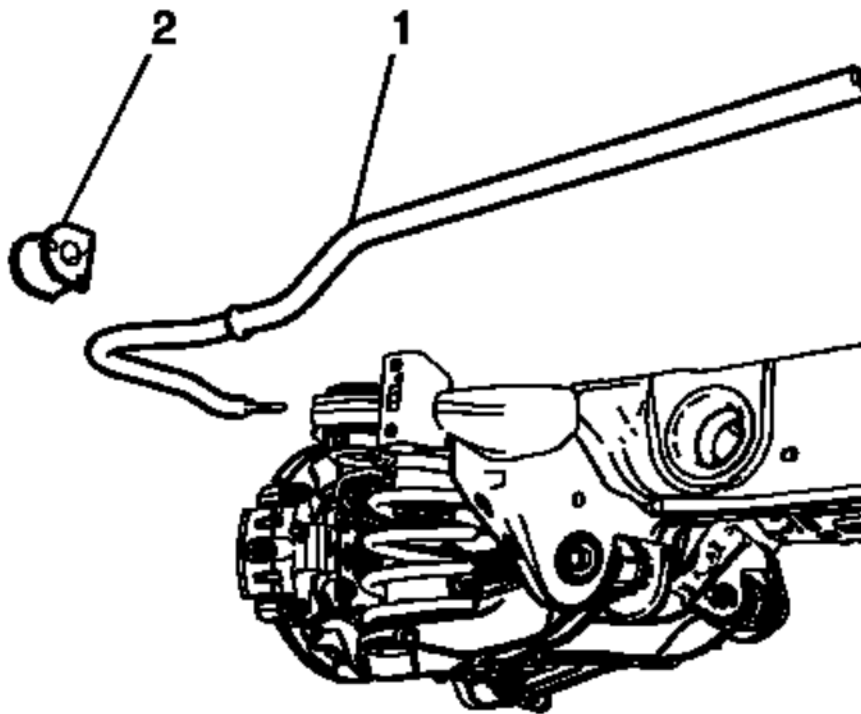


Fig. 18: Identifying Stabilizer Shaft & Bushing
Courtesy of GENERAL MOTORS COMPANY

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

Installation Procedure

1. Install the bushing (2) on the stabilizer shaft (1).

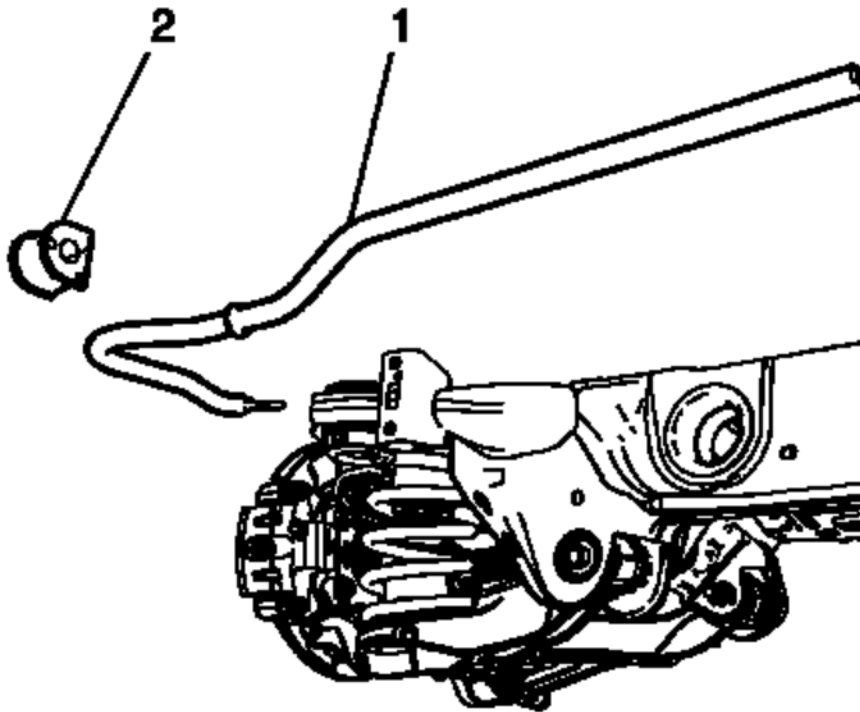


Fig. 19: Identifying Stabilizer Shaft & Bushing
Courtesy of GENERAL MOTORS COMPANY

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

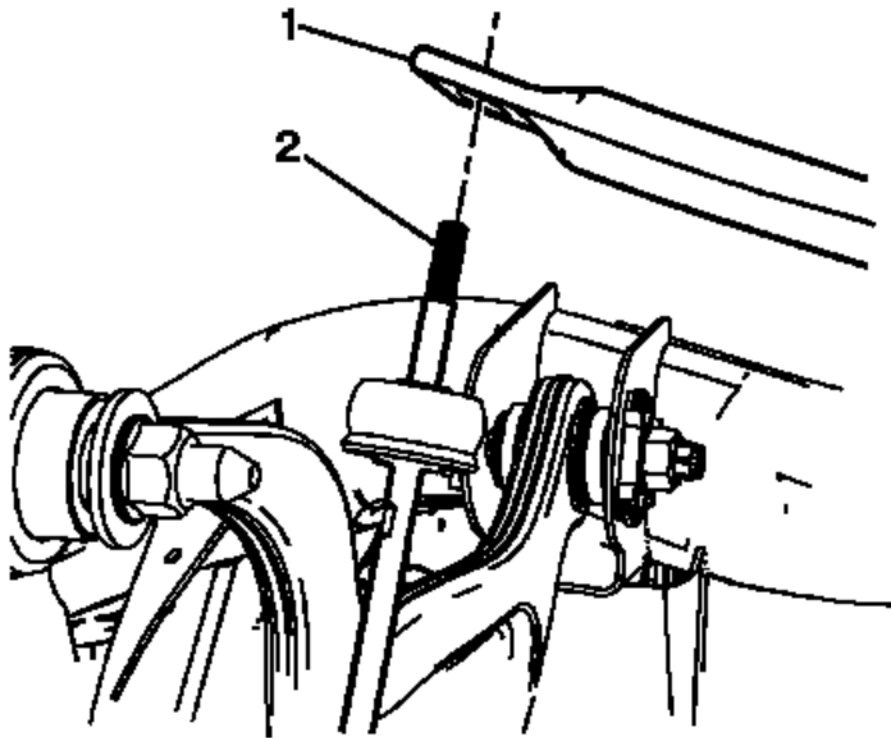


Fig. 20: Identifying Stabilizer Shaft & Stabilizer Shaft Link
Courtesy of GENERAL MOTORS COMPANY

4. Install the stabilizer shaft clamp (2) and the bolts (1).

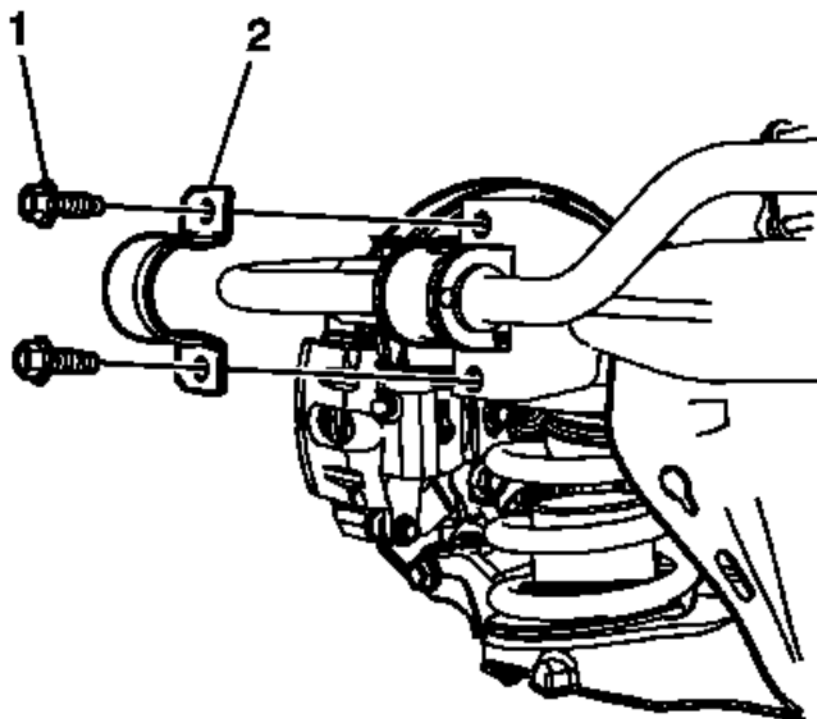


Fig. 21: Identifying Stabilizer Shaft Clamp & Bolts
Courtesy of GENERAL MOTORS COMPANY

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

5. Install the bushing (2) and the upper stabilizer shaft link retaining nut with washer (1).
6. Insert a wrench (1) on the stabilizer shaft link (2) so as not to allow the stabilizer shaft link to rotate when removing or installing the retaining nut.

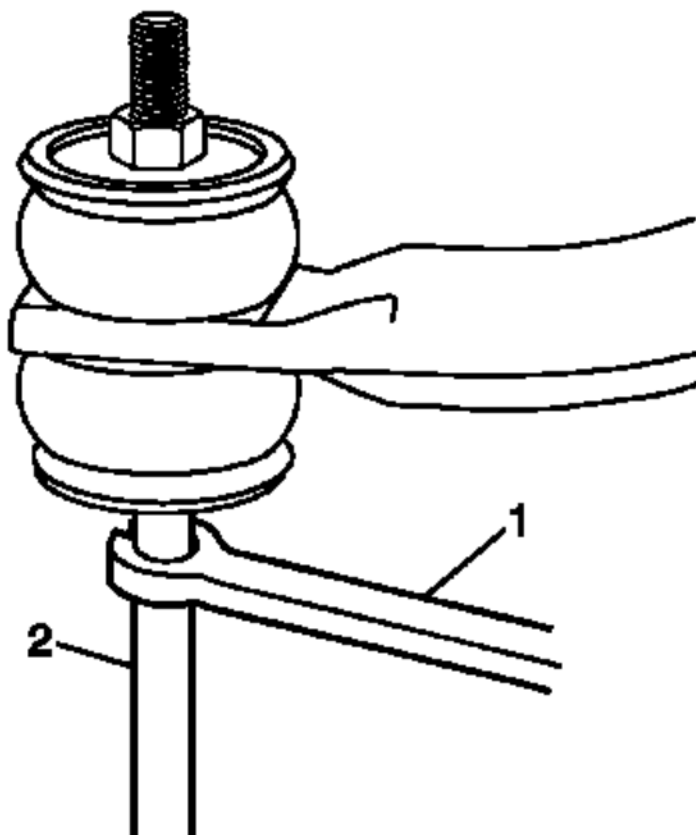


Fig. 22: Identifying Stabilizer Shaft Link

Courtesy of GENERAL MOTORS COMPANY

7. Tighten the upper stabilizer shaft link retaining nut.

CAUTION: Refer to Fastener Caution .

Tighten

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

8. Tighten the stabilizer shaft clamp bolts.

Tighten

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

9. Install the spare tire.
10. Install the rear tires and wheels. Refer to **Tire and Wheel Removal and Installation** .

11. Remove the support and lower the vehicle.

STABILIZER SHAFT INSULATOR REPLACEMENT

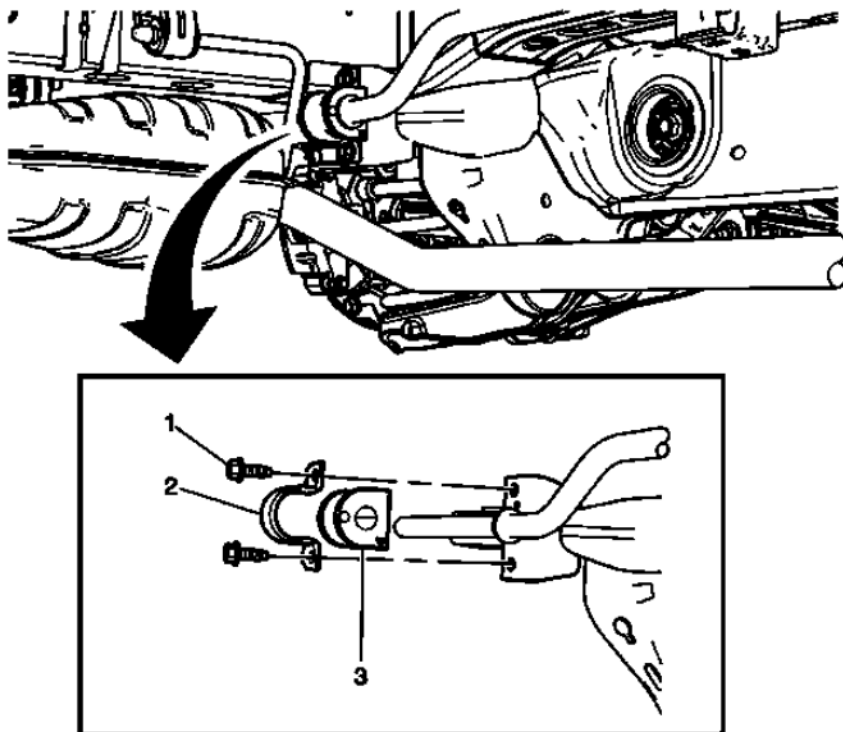


Fig. 23: Identifying Stabilizer Shaft Insulator
Courtesy of GENERAL MOTORS COMPANY

Stabilizer Shaft Insulator Replacement

Callout	Component Name
NOTE: The following service procedure indicates the left side of the vehicle. The right side of the vehicle is similar.	
Preliminary Procedure Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle .	
1	Stabilizer Shaft Clamp Bolt (Qty: 2) CAUTION: Refer to Fastener Caution . Tighten 50 N.m (37 lb ft)
2	Stabilizer Shaft Clamp
3	Stabilizer Shaft Insulator

STABILIZER SHAFT LINK REPLACEMENT

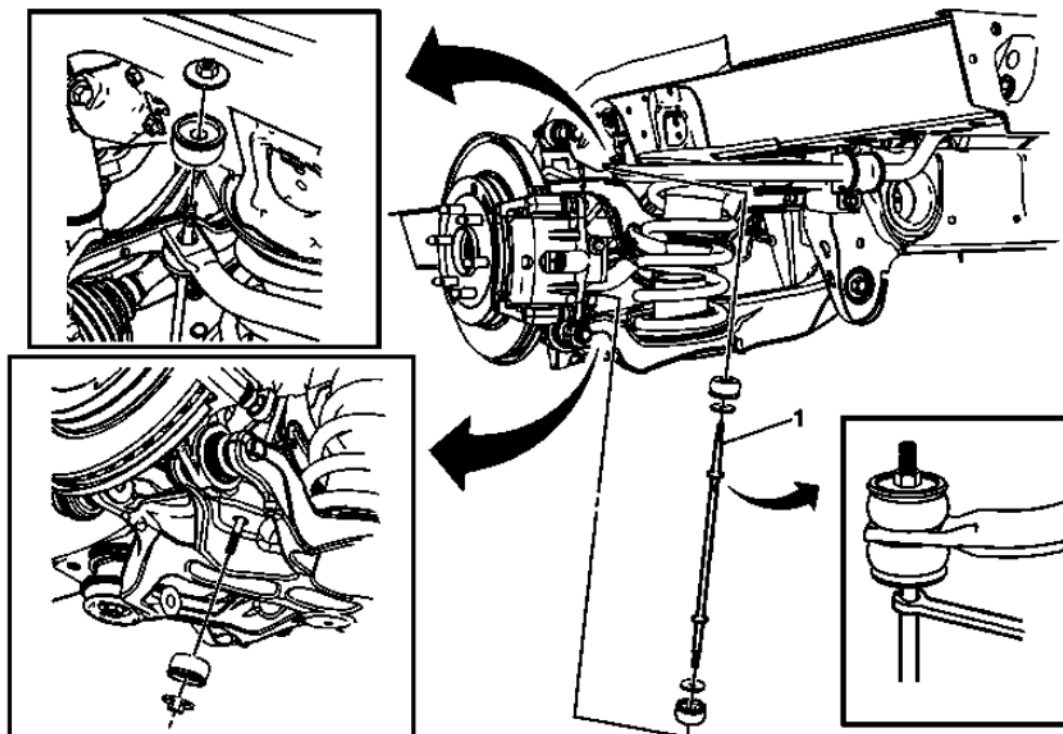


Fig. 24: Identifying Stabilizer Shaft Link

Courtesy of GENERAL MOTORS COMPANY

Stabilizer Shaft Link Replacement

Callout	Component Name
Preliminary Procedures	
1. Raise and support the vehicle. Refer to <u>Lifting and Jacking the Vehicle</u> . 2. Remove the tire and wheel. Refer to <u>Tire and Wheel Removal and Installation</u> .	
1	Stabilizer Shaft Link CAUTION: Refer to <u>Fastener Caution</u> . Procedure 1. Use a wrench to keep the stabilizer shaft link from rotating. 2. Remove the upper stabilizer shaft link retaining nut, washer and bushing. 3. Repeat the previous steps on the lower stabilizer shaft retaining nut, washer and bushing. 4. Remove the stabilizer shaft link from the vehicle. Left side shown, right side similar.

TIP: Apply a small amount of penetrating oil on the treads of the stabilizer shaft link prior to removing the retaining nuts.

Tighten

22 N.m (16 lb ft)

STRUT AND SHOCK ABSORBER INSPECTION (SHOCK ABSORBER)

NOTE: The shock absorber 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 lower shock absorber tube is normal. **DO NOT** replace the shock absorber for this condition.

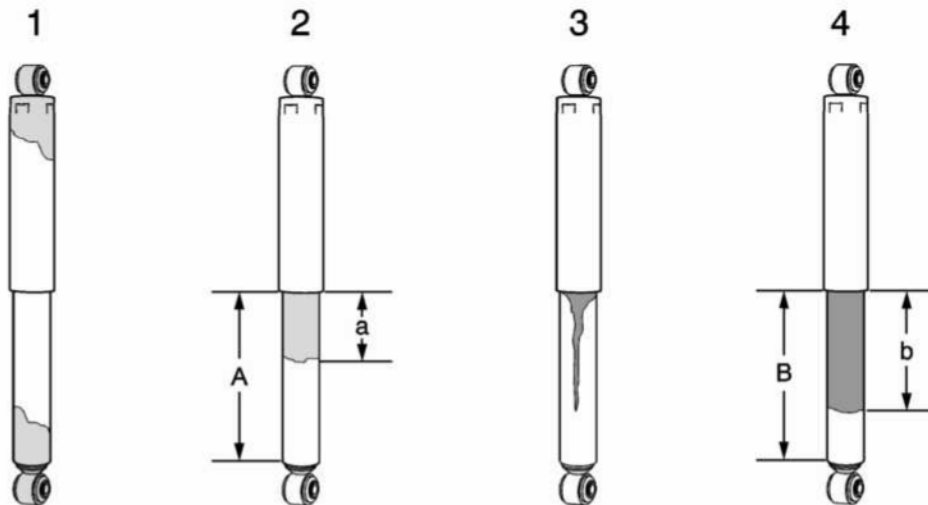


Fig. 25: Identifying Shock Absorber Conditions

Courtesy of GENERAL MOTORS COMPANY

Condition 1

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

Condition 2

Light film/residue on approximately 1/3 (a) or less of the lower shock tube (A) and originating from the shaft seal, is a NORMAL condition. DO NOT replace the shock absorber.

Condition 3

Oil drip or trail down the lower shock tube and originating from the shaft seal, is an ABNORMAL condition. Replace the shock absorber.

Condition 4

An extreme wet film of oil covering more than 1/3 (b) of the lower shock tube and originating from the shaft seal (B), is an ABNORMAL condition. Replace the shock absorber. Refer to **Shock Absorber Replacement**.

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

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

3. Visually inspect each of the shock absorbers 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 shock absorber. Refer to **Shock Absorber Replacement**.
4. If equipped with electronic suspension control system, ensure that the system is working properly. Refer to the appropriate Diagnostic Starting Point - Electronic Suspension Control information.
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 shock absorber. If the shock absorber does not exceed 2 cycles, NO repair is necessary.

SHOCK ABSORBER REPLACEMENT

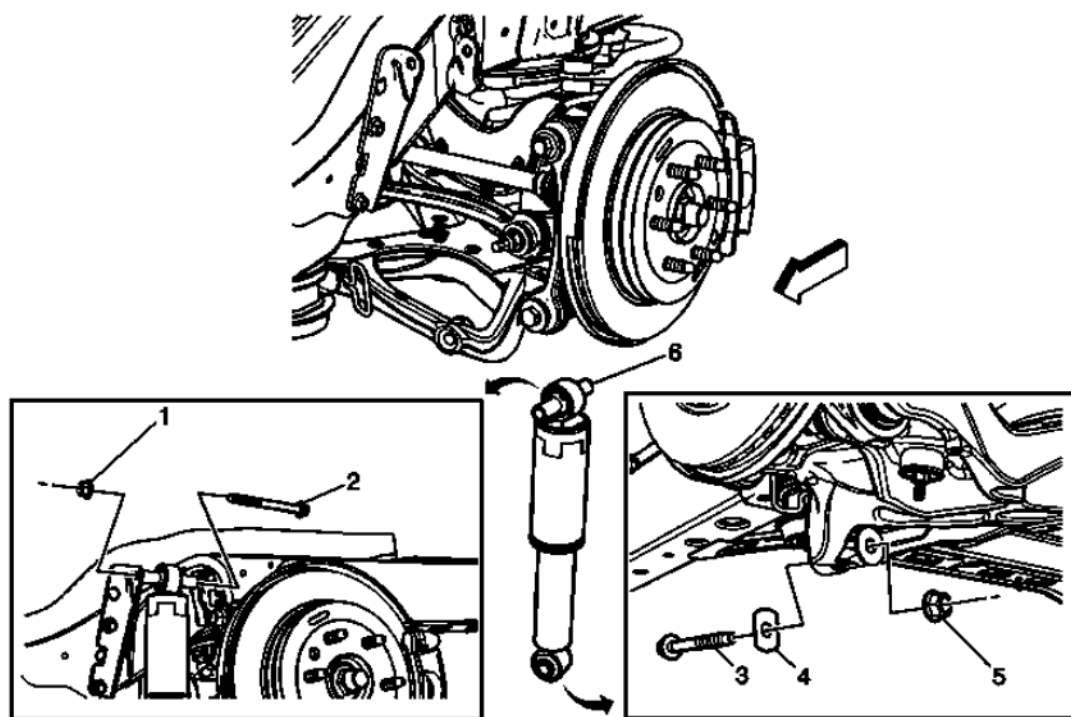


Fig. 26: Identifying Shock Absorber
Courtesy of GENERAL MOTORS COMPANY

Shock Absorber Replacement

Callout	Component Name
Preliminary Procedures	
1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle . 2. Remove the rear tire and wheel. Refer to Tire and Wheel Removal and Installation .	
1	Upper Rear Shock Absorber Nut CAUTION: Refer to Fastener Caution . Tighten 73 N.m (54 lb ft)
2	Upper Shock Absorber Bolt
3	Lower Rear Shock Absorber Bolt Procedure 1. Position a jack stand under the lower control arm. 2. Raise or lower the jack stand to aid in the installation of the lower shock absorber

2014 GMC Acadia Denali

2014 SUSPENSION Rear Suspension - Acadia, Enclave And Traverse

bolt.

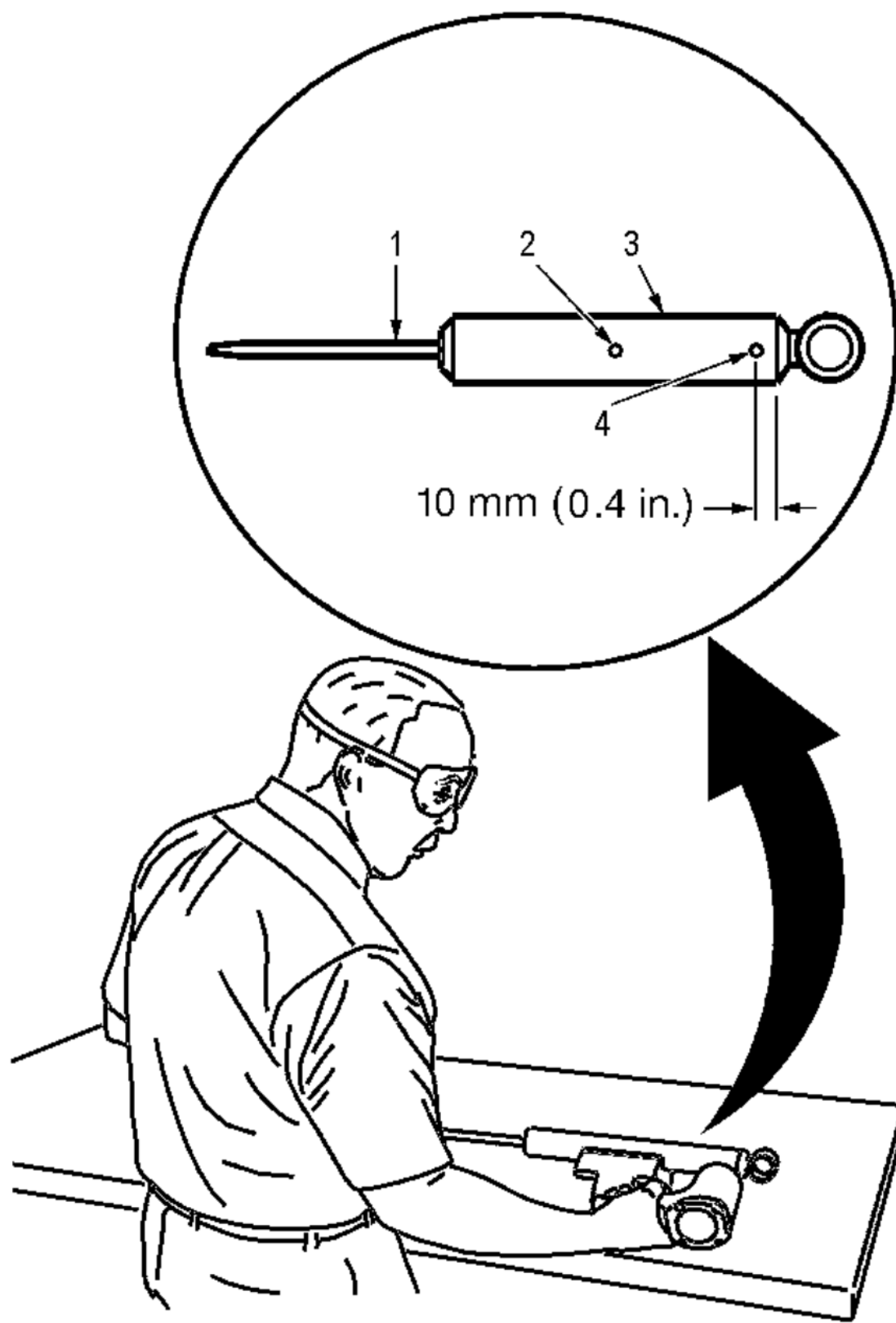
Tighten

100 N.m (74 lb ft) plus 90°

4	Lower Shock Absorber Washer
5	Lower Shock Absorber Nut
6	Rear Shock Absorber

SHOCK ABSORBER DISPOSAL

1. Make an indentation 10 mm (0.4 in) from the bottom (4) of the tube (3) using a centerpunch.



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Fig. 27: Drilling Hole In Shock Absorber At Centerpunched Locations
Courtesy of GENERAL MOTORS COMPANY

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.

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

REAR SPRING, INSULATOR AND JOUNCE BUMPER REPLACEMENT

Removal Procedure

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

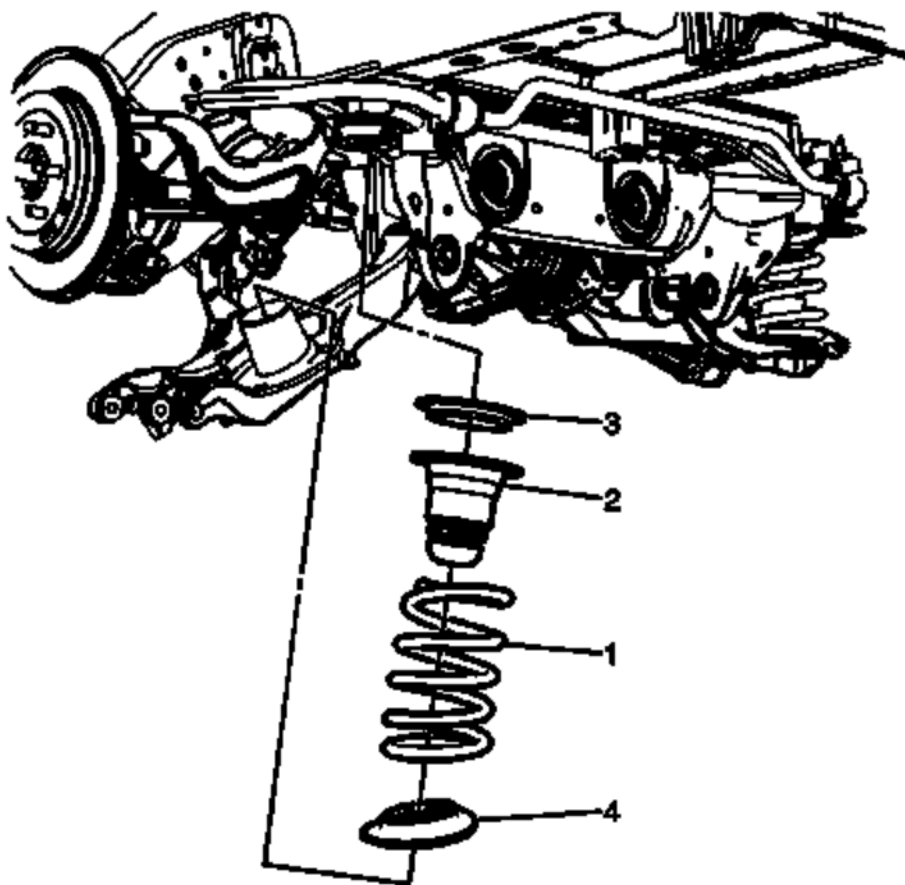


Fig. 28: Identifying Rear Spring & Insulator
Courtesy of GENERAL MOTORS COMPANY

2. Remove the rear tire and wheel. Refer to **Tire and Wheel Removal and Installation** .
3. Position an adjustable jack stand under the lower control arm.
4. Remove the lower stabilizer shaft link bushing and nut. Refer to **Stabilizer Shaft Link Replacement**.
5. Remove the lower shock absorber bolt. Refer to **Shock Absorber Replacement**.

6. Remove the lower bolts from the knuckle. Refer to **Knuckle Replacement**.
7. Using the adjustable jack stand, slowly lower the vehicle until the rear spring (1), insulator (4), jounce bumper (2) and the spring seat (3) can be removed.

Installation Procedure

1. Position the spring seat (3), jounce bumper (2), rear spring (1) and the insulator (4) on the lower control arm.

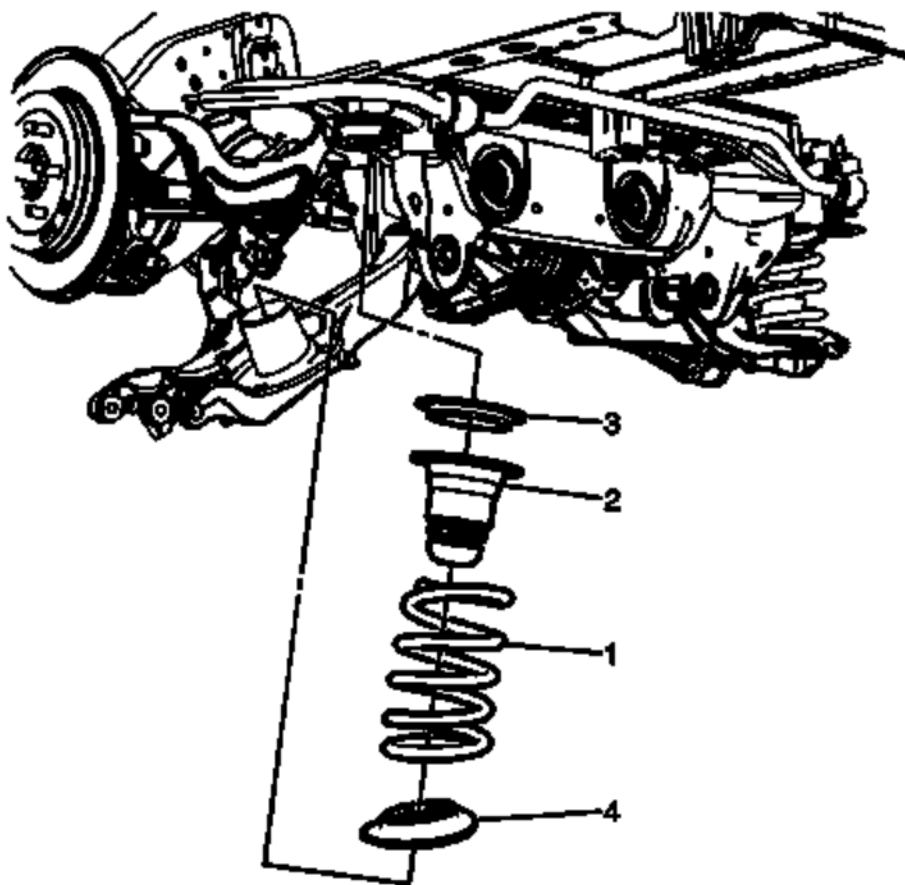


Fig. 29: Identifying Rear Spring & Insulator
Courtesy of GENERAL MOTORS COMPANY

2. Using the adjustable jack stand, raise the lower control arm until the lower bolts for the knuckle can be installed. Refer to **Knuckle Replacement**.
3. Remove the adjustable jack stand.
4. Install the lower stabilizer shaft link bushing and nut. Refer to **Stabilizer Shaft Link Replacement**.

5. Install the lower shock absorber bolt. Refer to **Shock Absorber Replacement**.
6. Install the rear tire and wheels. Refer to **Tire and Wheel Removal and Installation**.
7. Remove the support and lower the vehicle.

ADJUST LINK REPLACEMENT

Removal Procedure

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

1. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle**.
2. Remove the rear shock absorber. Refer to **Shock Absorber Replacement**.
3. Remove the retaining nut from the adjuster link to the knuckle.

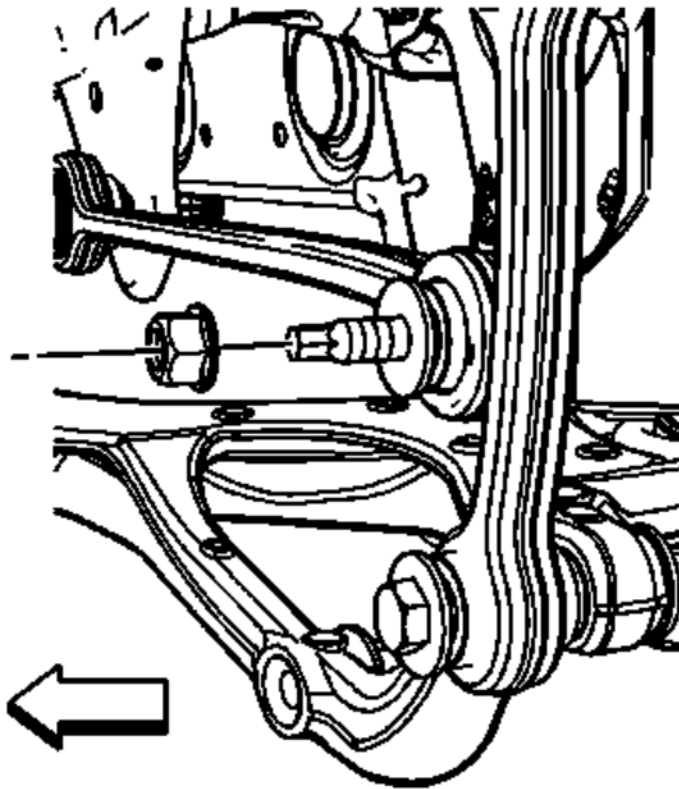


Fig. 30: Identifying Retaining Nut From Adjuster Link To Knuckle
Courtesy of GENERAL MOTORS COMPANY

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

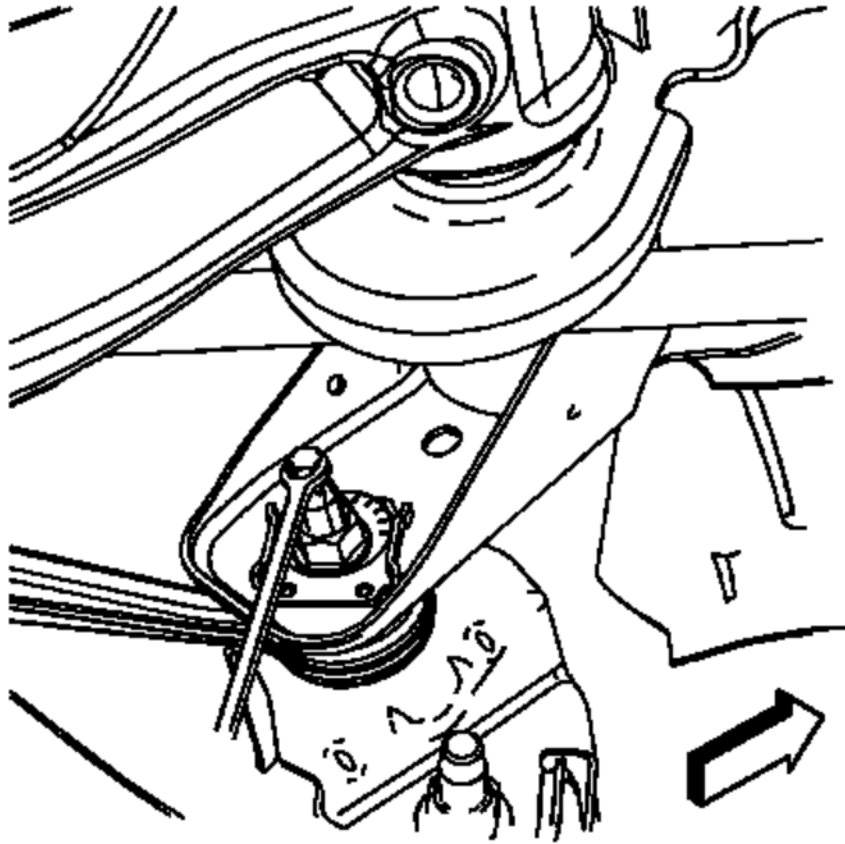


Fig. 31: Identifying Adjuster Cam Bolt
Courtesy of GENERAL MOTORS COMPANY

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

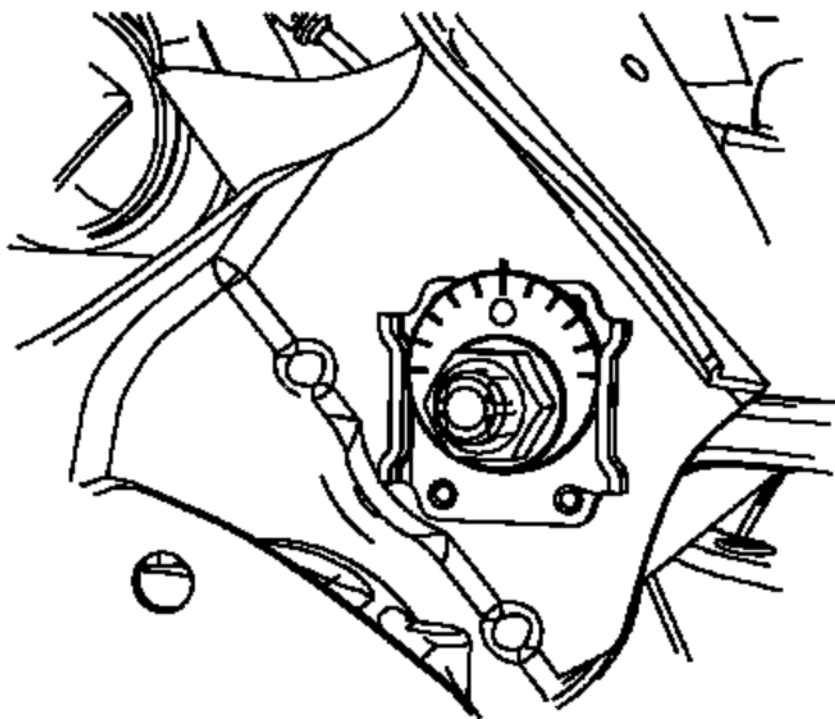


Fig. 32: Identifying Reference Marks On Adjuster Cam & Mounting Bracket
Courtesy of GENERAL MOTORS COMPANY

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

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

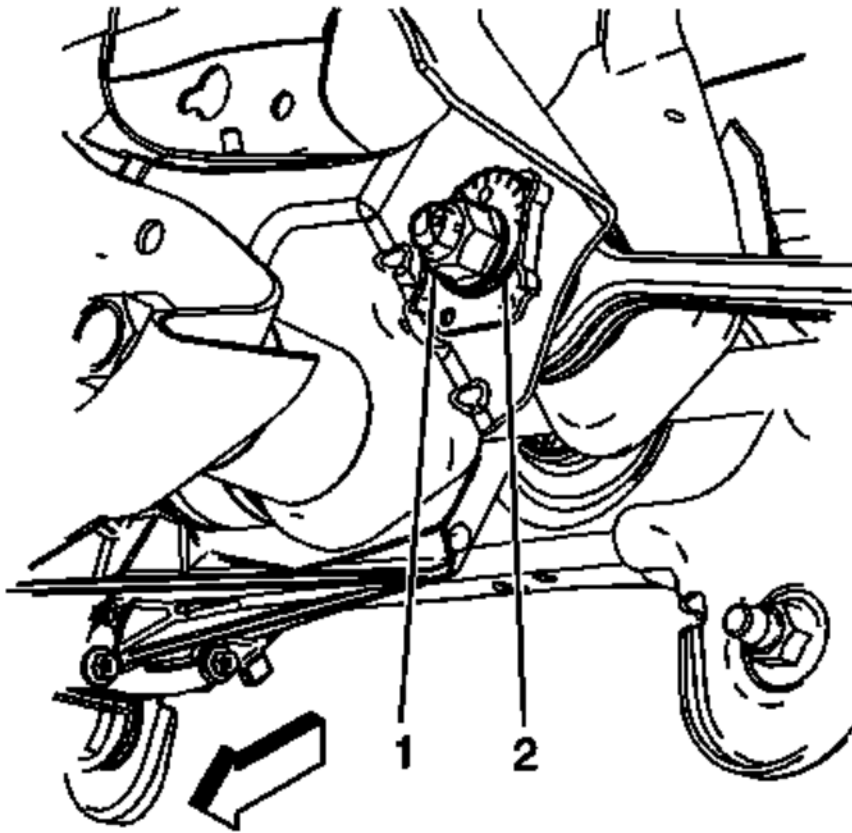


Fig. 33: Identifying Front Adjuster Nut & Adjuster Cam
Courtesy of GENERAL MOTORS COMPANY

7. Remove the rear adjuster nut (1), adjuster cam (2).

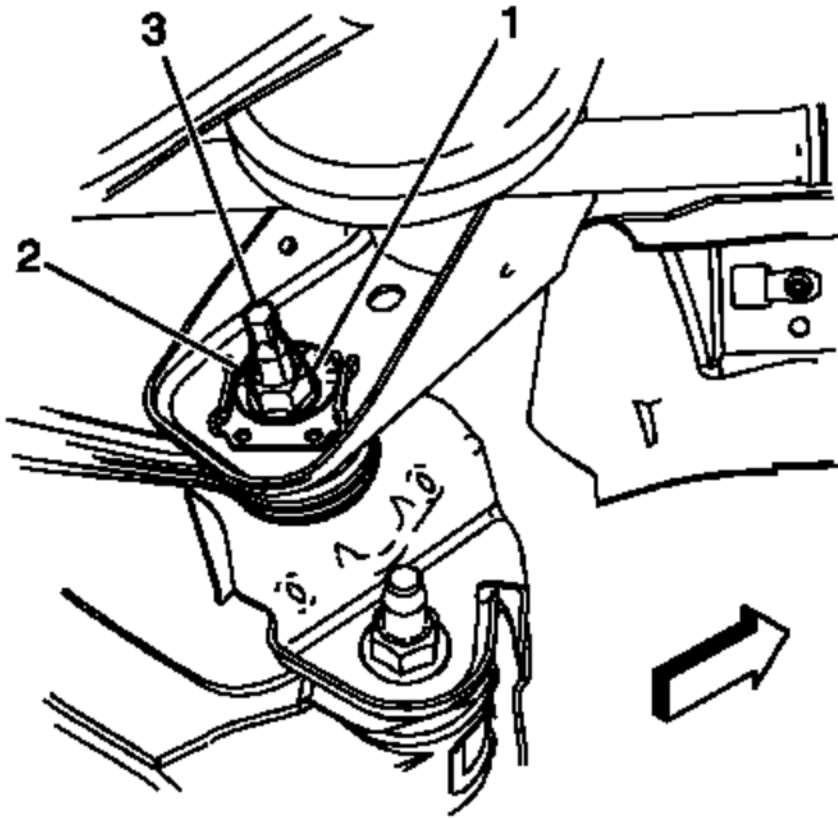


Fig. 34: Identifying Adjuster Bolt In Mounting Bracket & Adjuster Link
Courtesy of GENERAL MOTORS COMPANY

8. Maneuver the adjuster bolt (3) so as to remove it from the mounting bracket.
9. Remove the adjuster link from the knuckle and the mounting bracket.

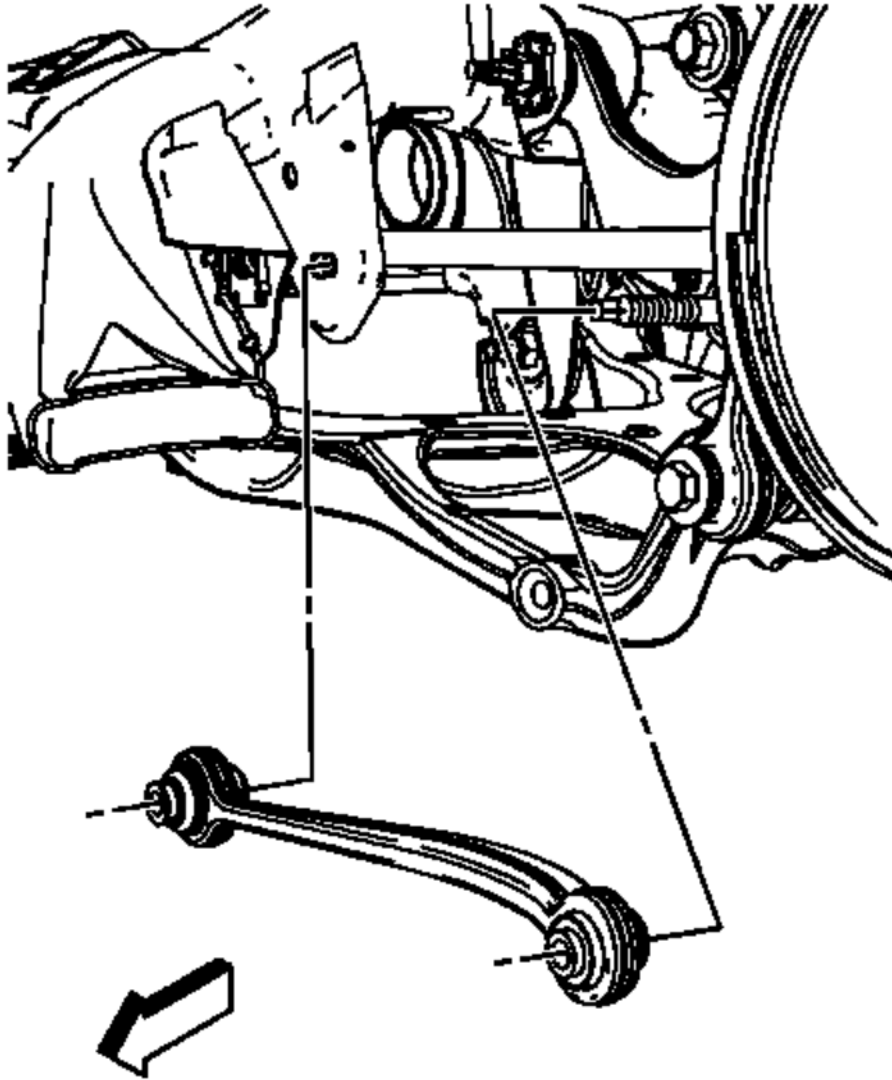


Fig. 35: Identifying Adjuster Link
Courtesy of GENERAL MOTORS COMPANY

Installation Procedure

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

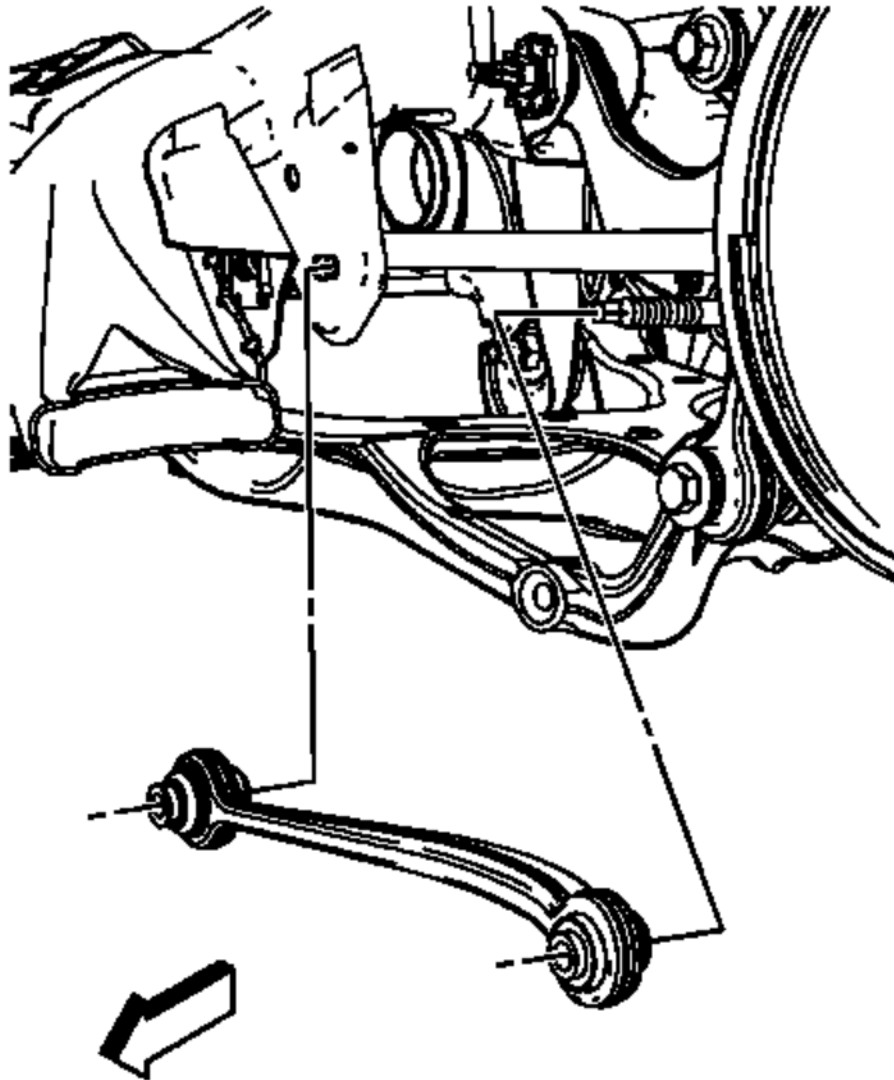


Fig. 36: Identifying Adjuster Link
Courtesy of GENERAL MOTORS COMPANY

2. Install the adjuster bolt (3) in the mounting bracket and adjuster link.

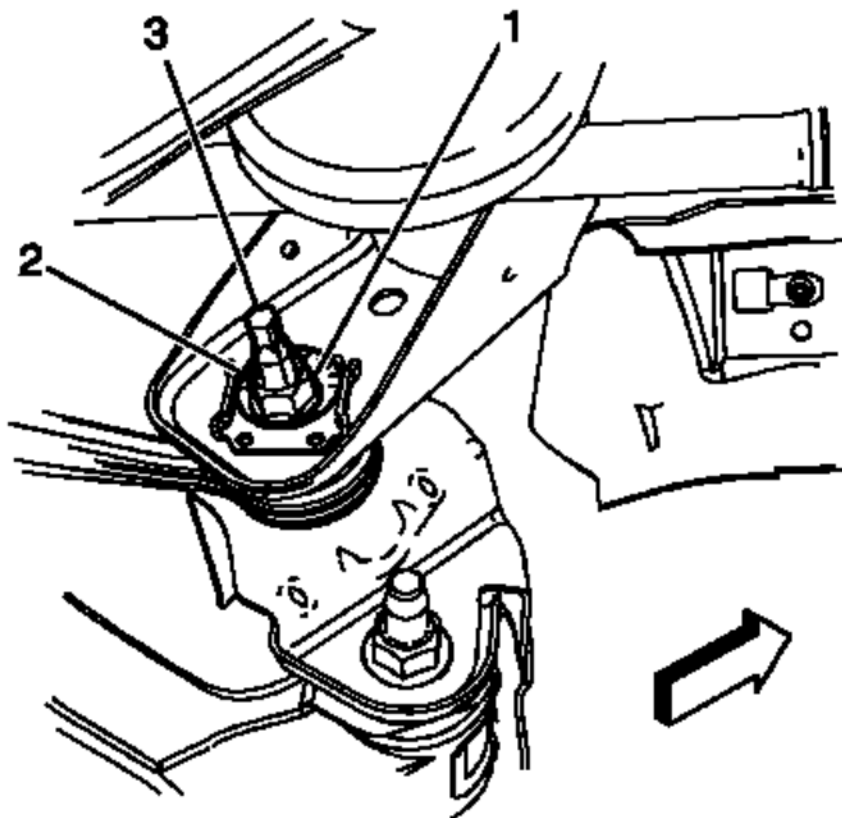


Fig. 37: Identifying Adjuster Bolt In Mounting Bracket & Adjuster Link
Courtesy of GENERAL MOTORS COMPANY

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

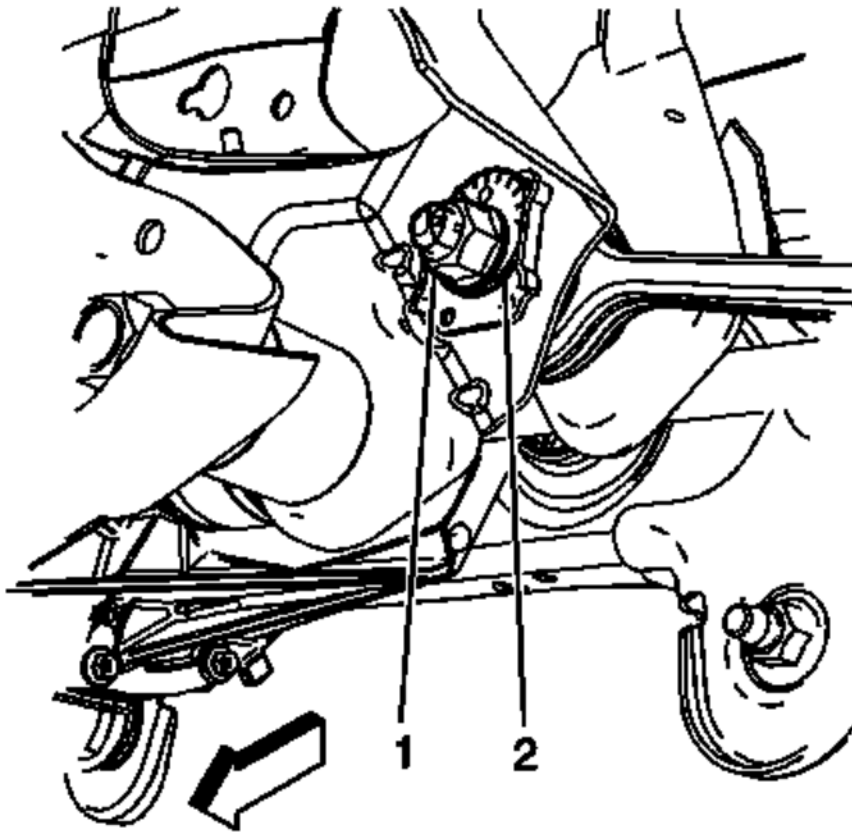


Fig. 38: Identifying Front Adjuster Nut & Adjuster Cam
Courtesy of GENERAL MOTORS COMPANY

5. Install the retaining nut for the adjuster link.

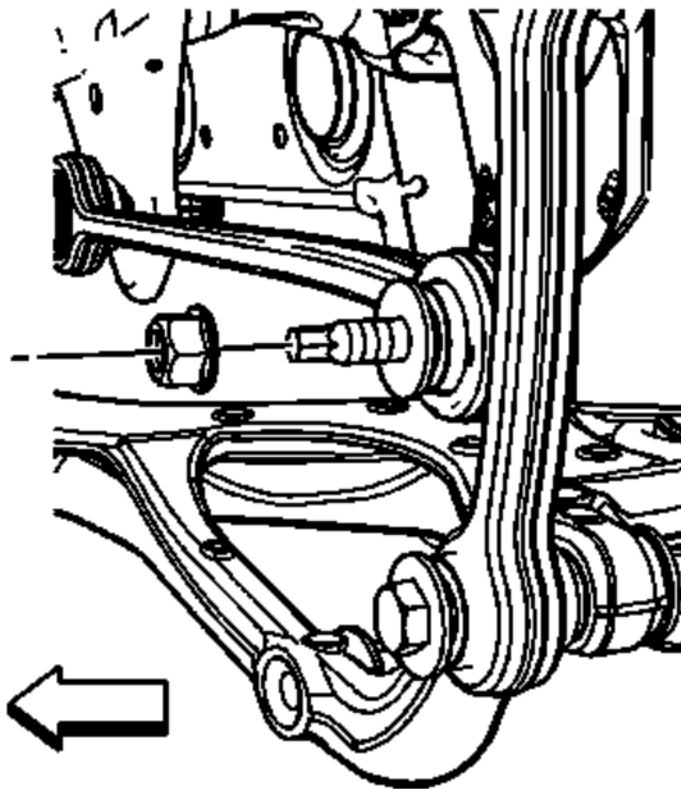


Fig. 39: Identifying Retaining Nut From Adjuster Link To Knuckle
Courtesy of GENERAL MOTORS COMPANY

CAUTION: Refer to Fastener Caution .

Tighten

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

6. Install the rear shock absorber. Refer to **Shock Absorber Replacement**.
7. Align the reference marks on the adjuster cam and the mounting bracket.

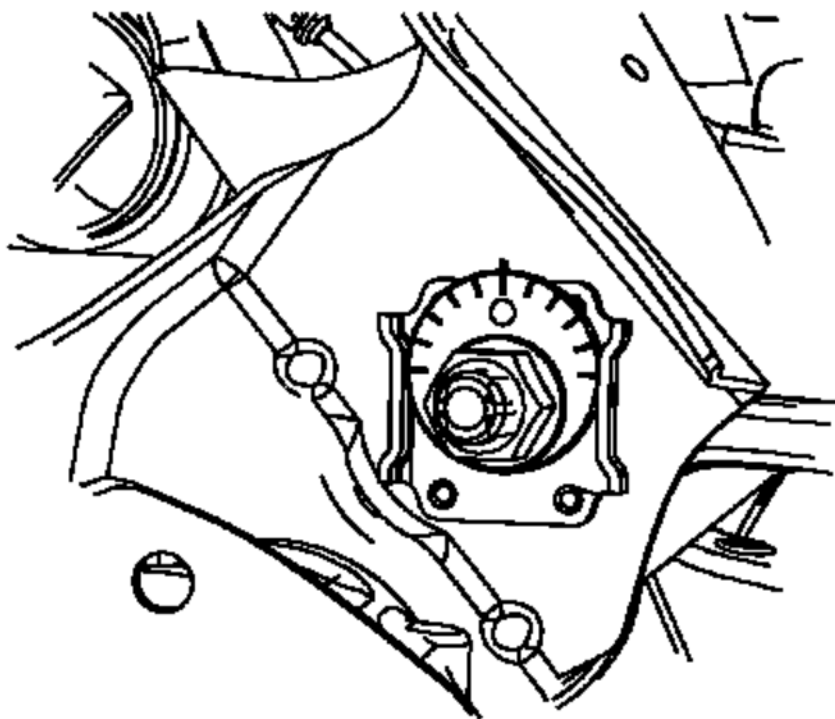


Fig. 40: Identifying Reference Marks On Adjuster Cam & Mounting Bracket
Courtesy of GENERAL MOTORS COMPANY

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

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

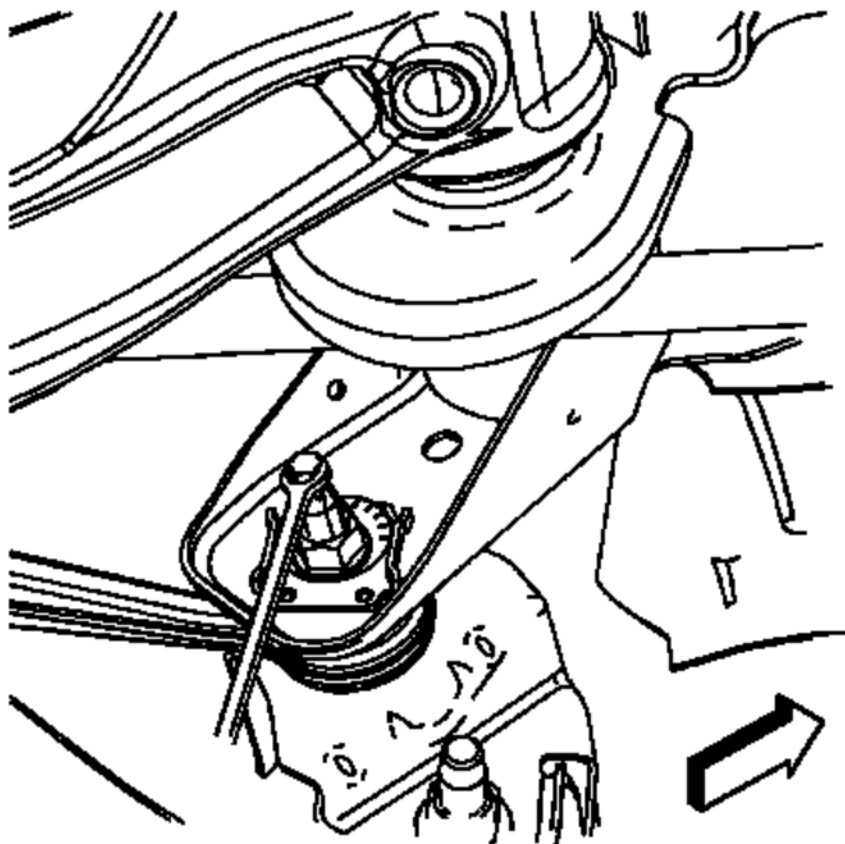


Fig. 41: Identifying Adjuster Cam Bolt
Courtesy of GENERAL MOTORS COMPANY

9. Tighten the adjuster cam nuts.

Tighten

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

10. Remove the support and lower the vehicle.
11. Align the rear suspension. Refer to **Wheel Alignment Specifications**.

UPPER CONTROL ARM REPLACEMENT

Removal Procedure

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

1. Remove the tire and wheel assembly. Refer to **Tire and Wheel Removal and Installation**.

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

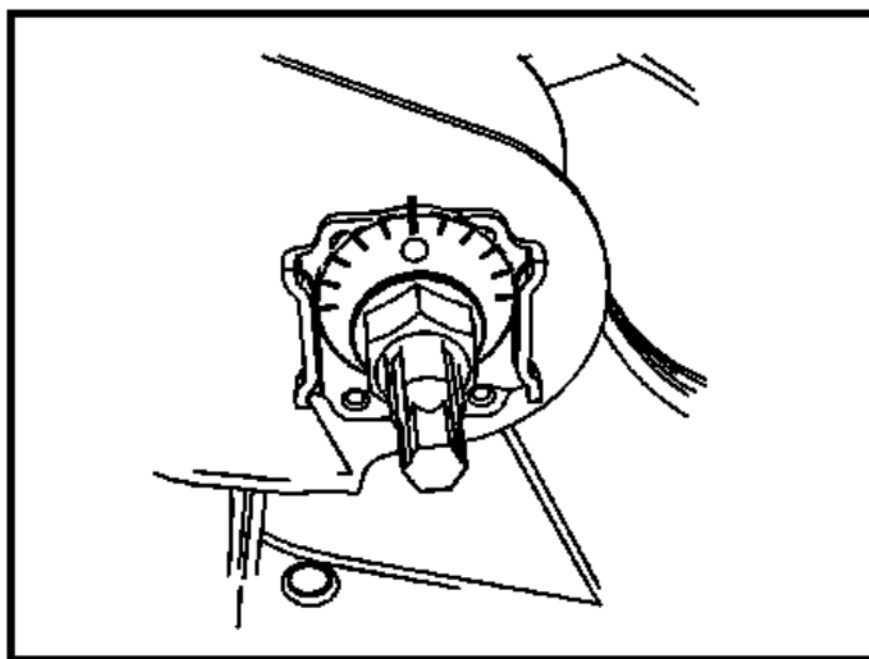
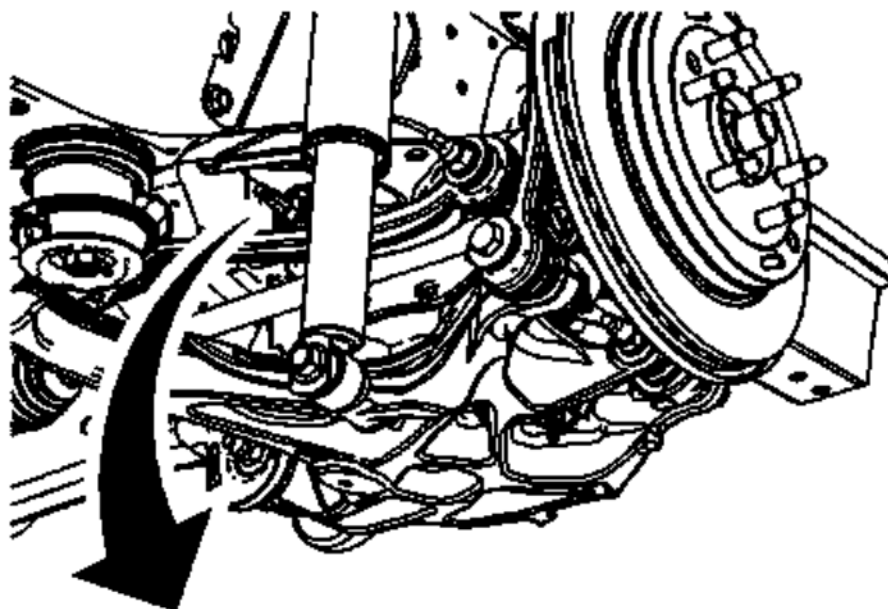


Fig. 42: Identifying Reference Marks On Adjuster Cam & Bracket
Courtesy of GENERAL MOTORS COMPANY

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

3. Remove the speed sensor wiring harness retaining clips (1) and (2) from the upper control arm.

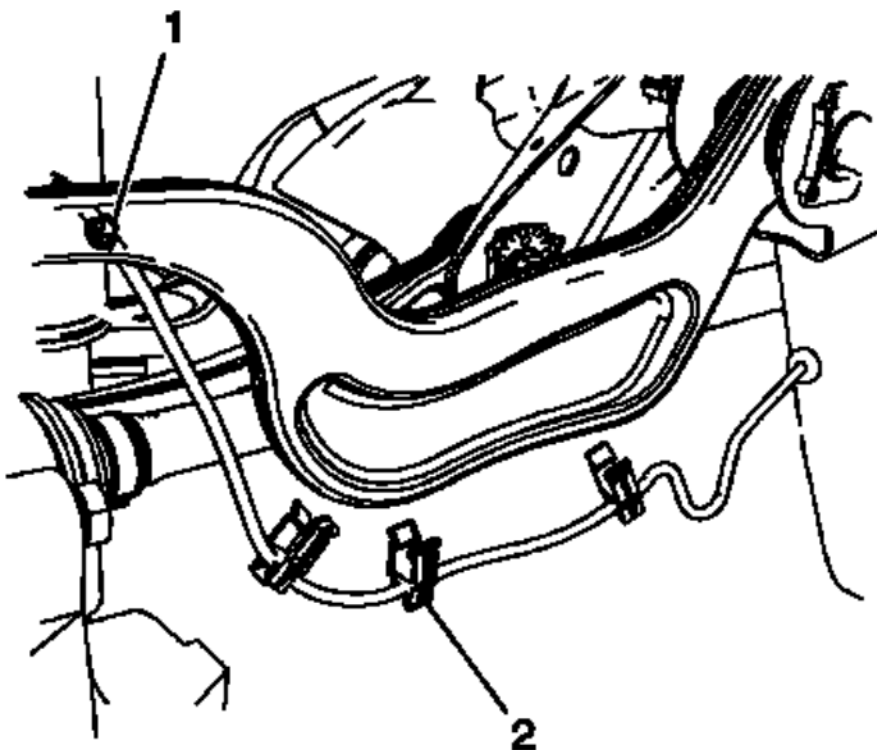


Fig. 43: Identifying Speed Sensor Wiring Harness Retaining Clips
Courtesy of GENERAL MOTORS COMPANY

4. Position a jack stand under the lower control arm.
5. Remove the upper control arm mounting nut (1) and bolt (2).

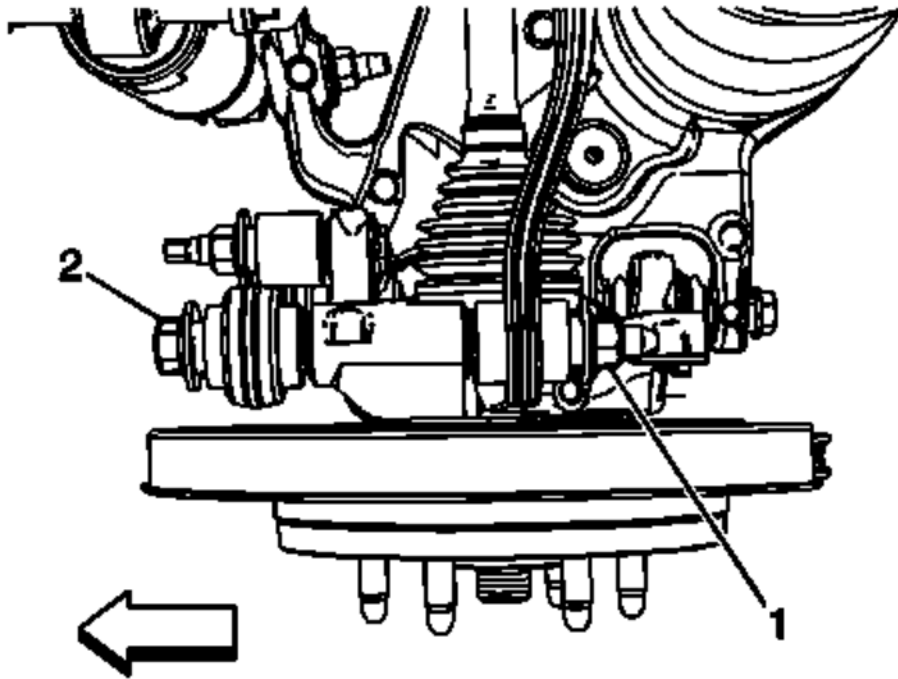


Fig. 44: Identifying Upper Control Arm Bolt & Nut
Courtesy of GENERAL MOTORS COMPANY

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

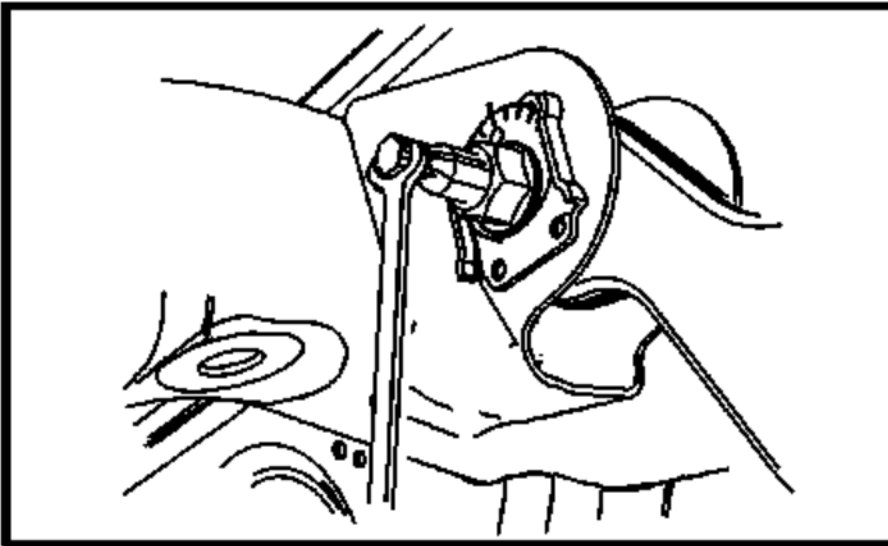
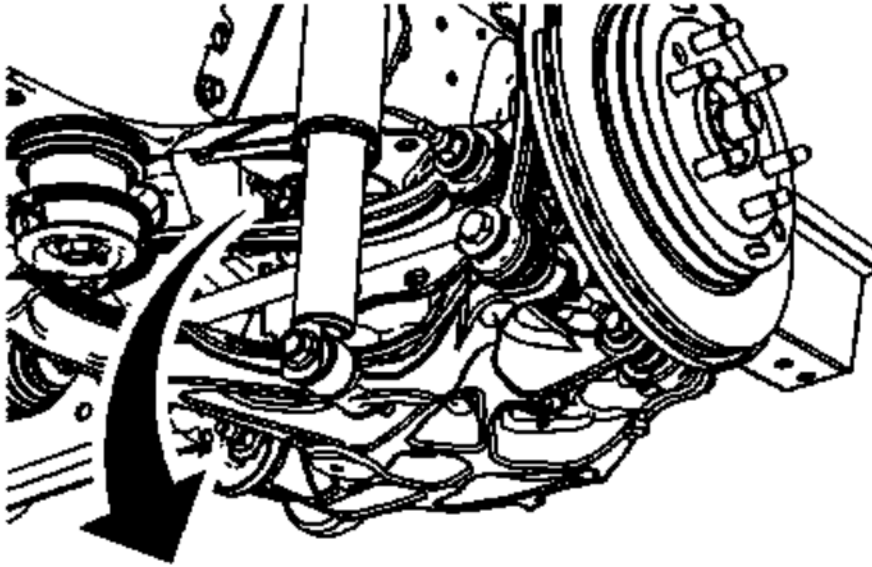


Fig. 45: View Of A Wrench Holding Adjuster Cam Bolt In Place
Courtesy of GENERAL MOTORS COMPANY

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

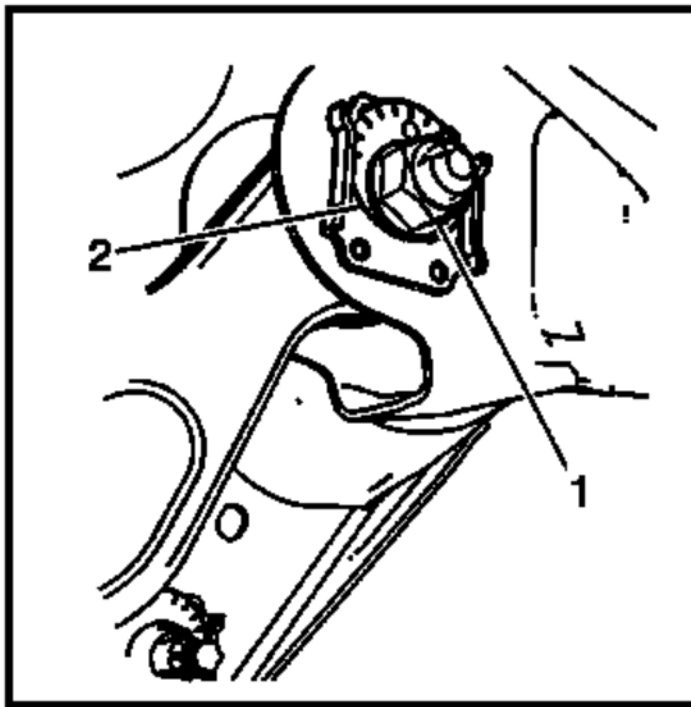
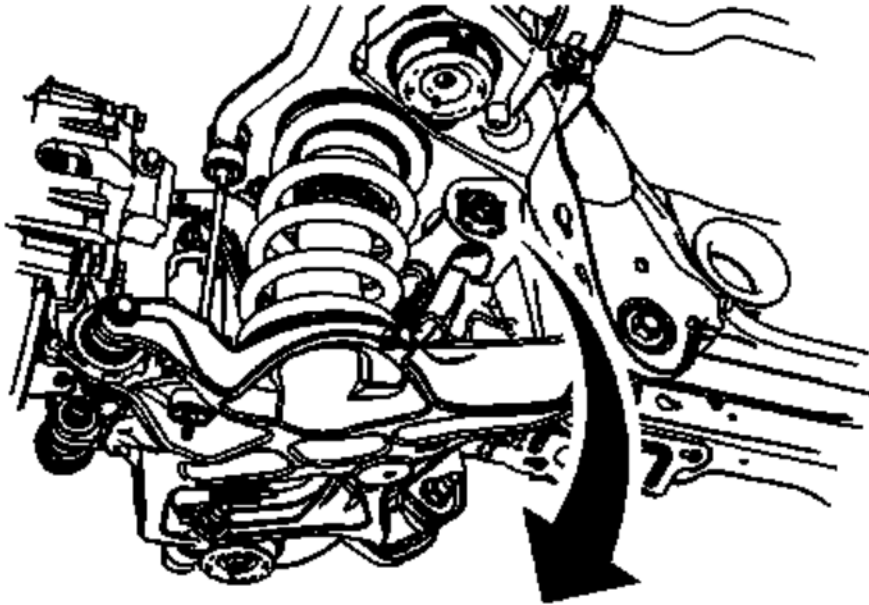


Fig. 46: Identifying Rear Upper Adjuster Cam & Cam Bolt
Courtesy of GENERAL MOTORS COMPANY

8. Remove the rear upper adjuster cam (2).
9. Remove front the adjuster cam nut (1).

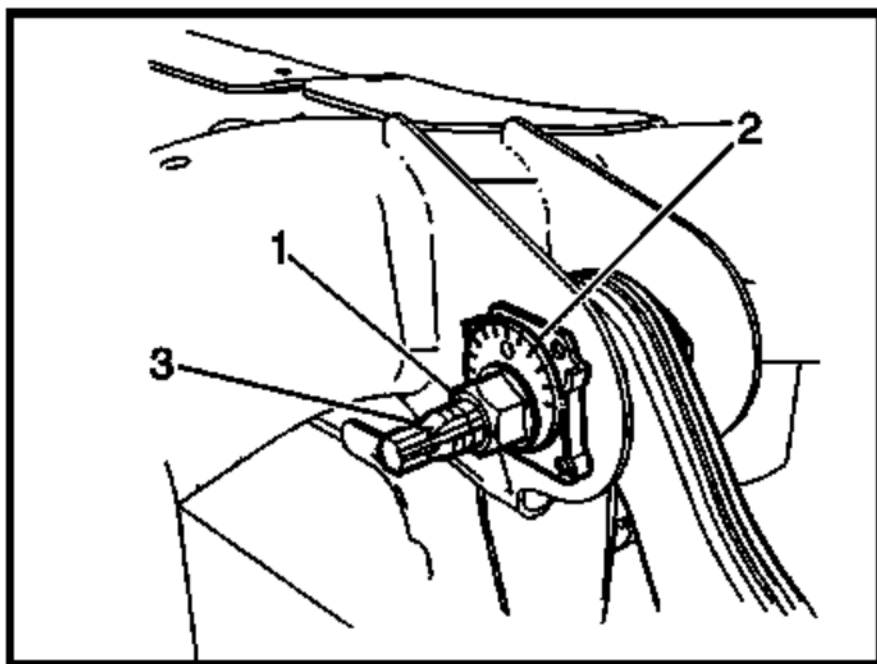
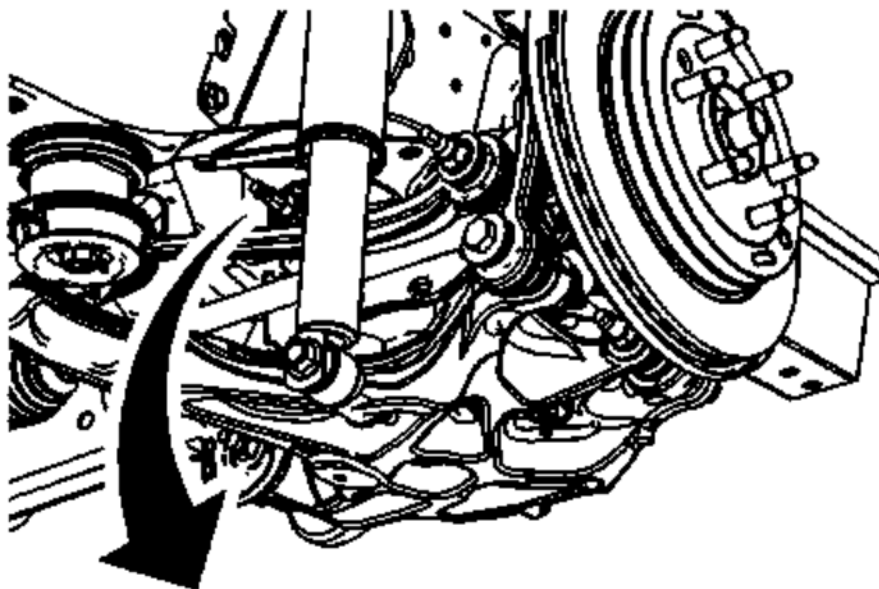


Fig. 47: Identifying Adjuster Cam, Cam Nut & Bolt
Courtesy of GENERAL MOTORS COMPANY

10. Remove the adjuster cam (2).
11. Remove the adjuster cam bolt (3).
12. Rotate the rear knuckle down to gain removal clearance for the upper control arm.

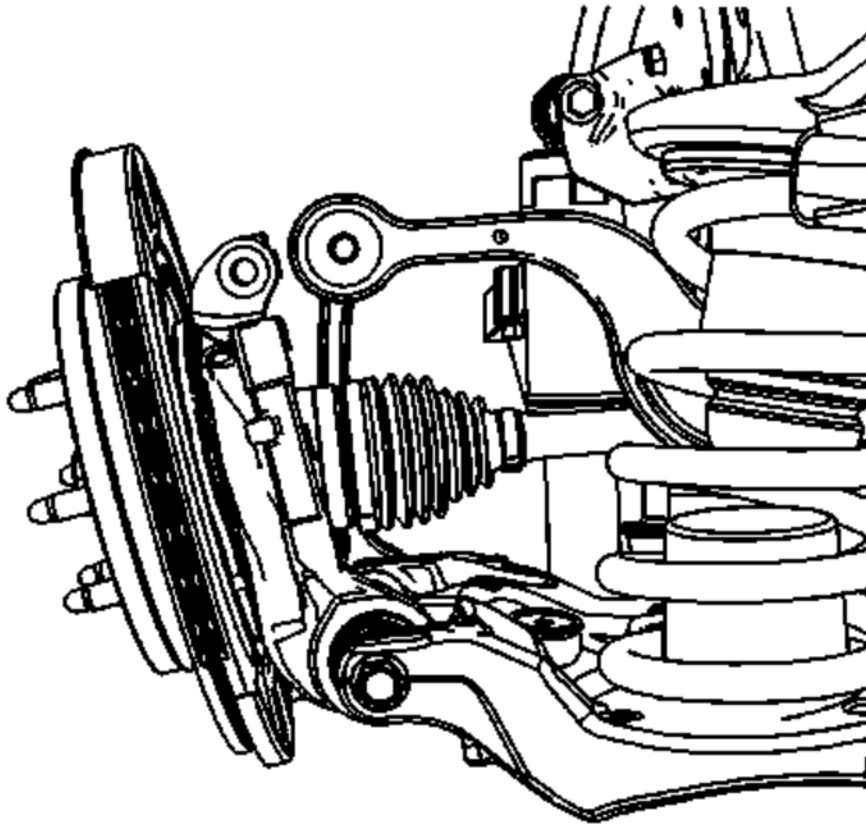


Fig. 48: Identifying Knuckle Assembly
Courtesy of GENERAL MOTORS COMPANY

13. Remove the upper control arm (1).

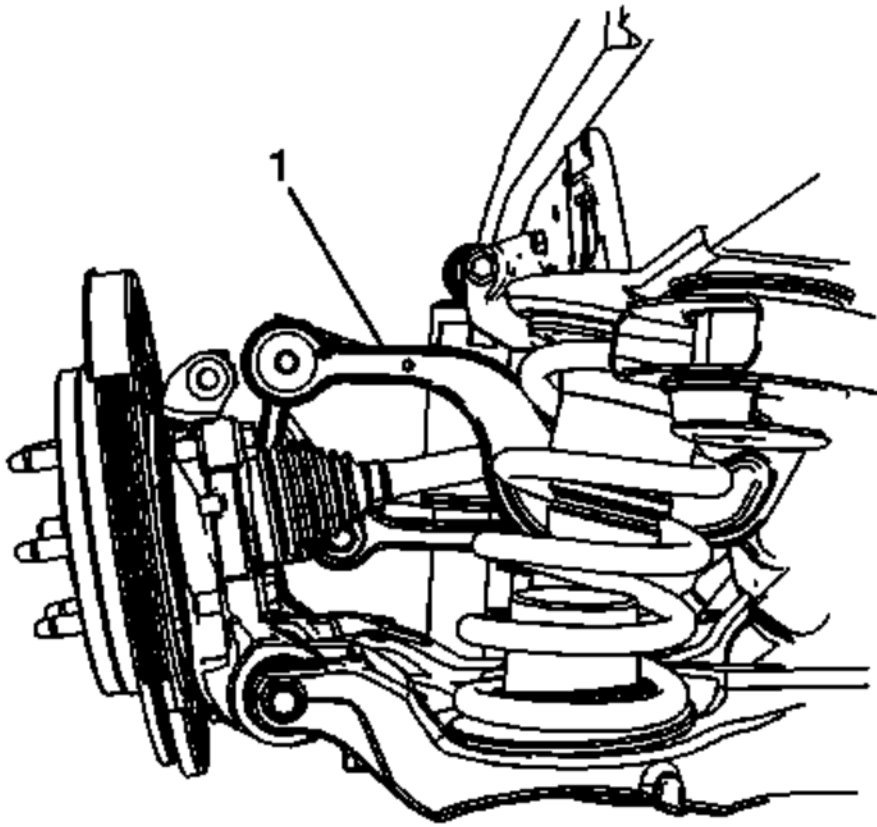


Fig. 49: Identifying Upper Control Arm
Courtesy of GENERAL MOTORS COMPANY

Installation Procedure

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

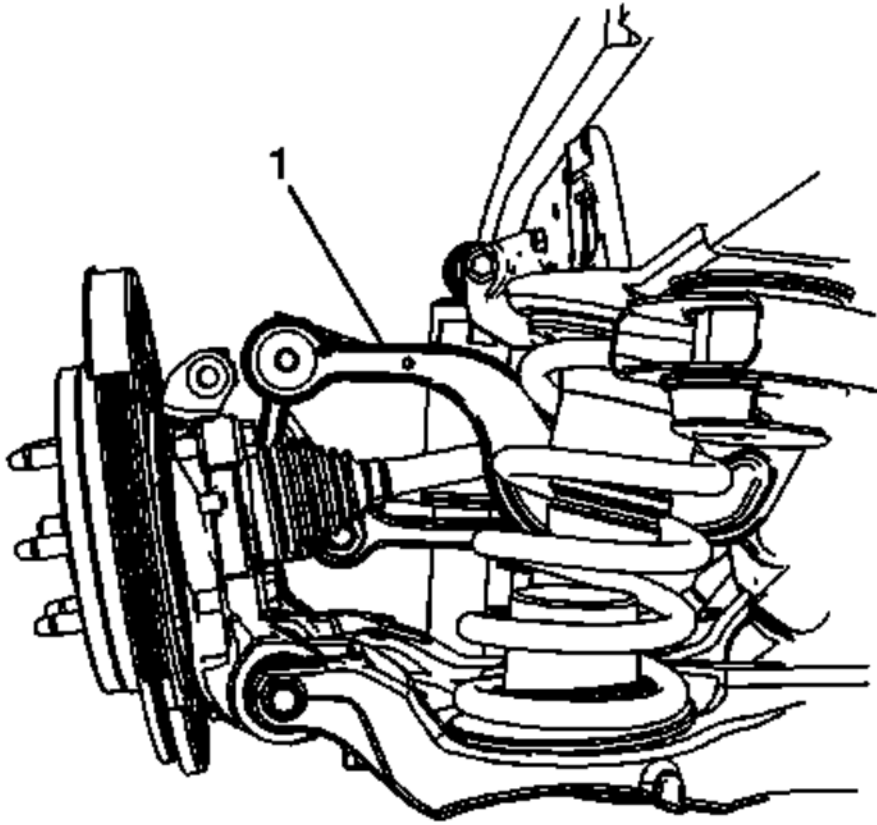


Fig. 50: Identifying Upper Control Arm
Courtesy of GENERAL MOTORS COMPANY

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

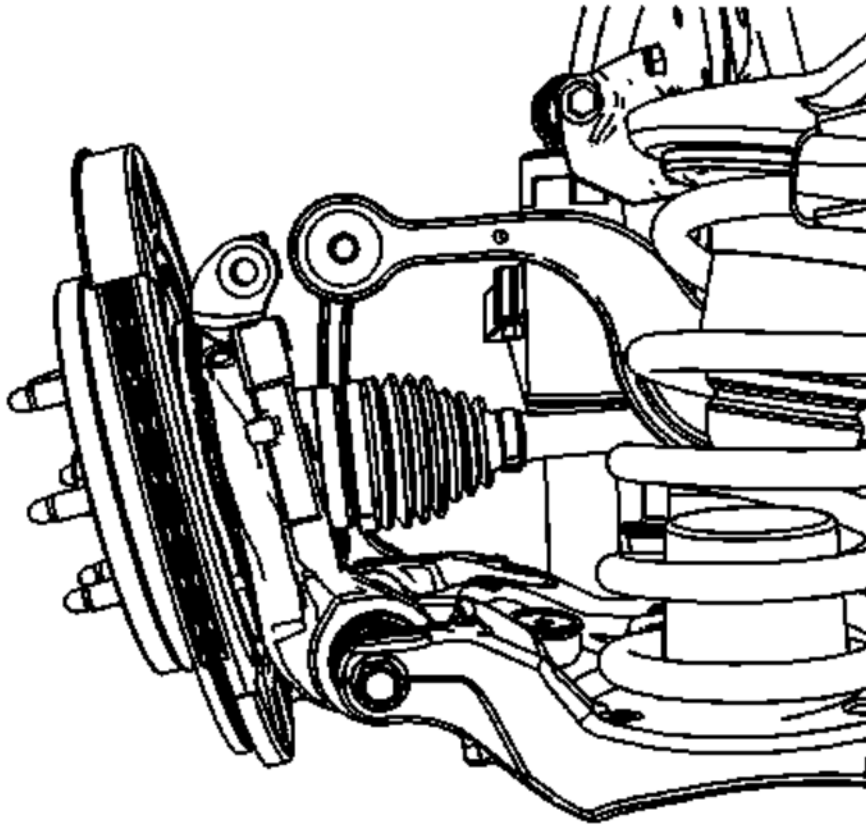


Fig. 51: Identifying Knuckle Assembly
Courtesy of GENERAL MOTORS COMPANY

3. Position the front adjuster cam (2) in the mounting bracket.

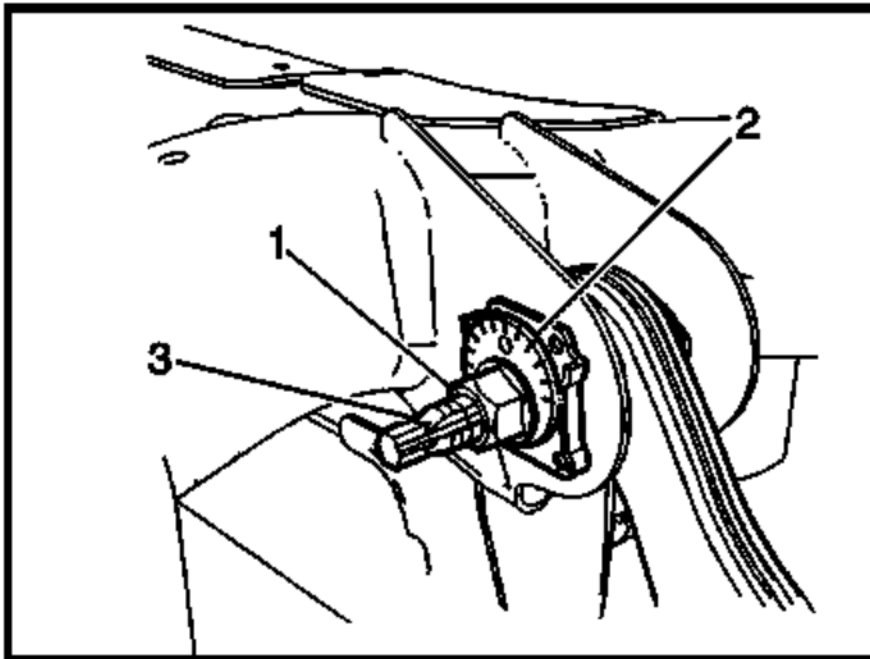
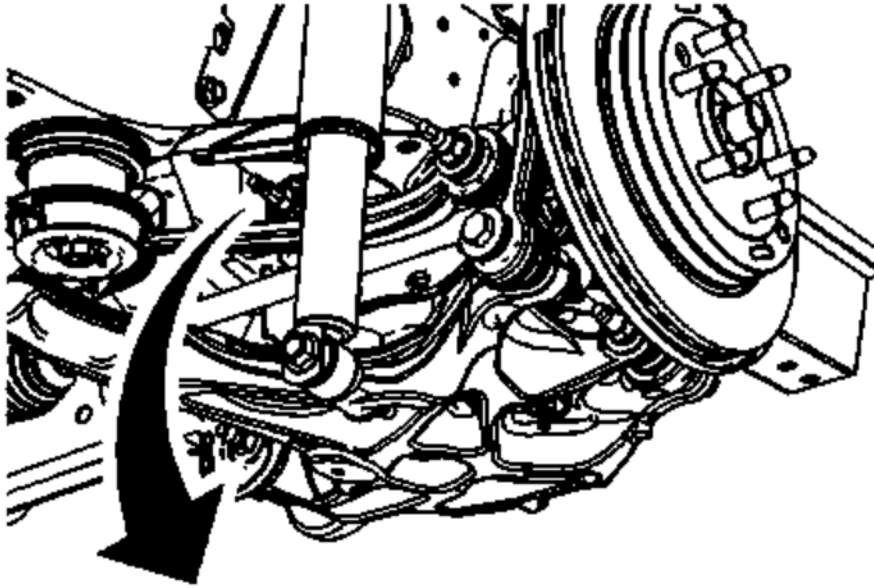


Fig. 52: Identifying Adjuster Cam, Cam Nut & Bolt
Courtesy of GENERAL MOTORS COMPANY

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

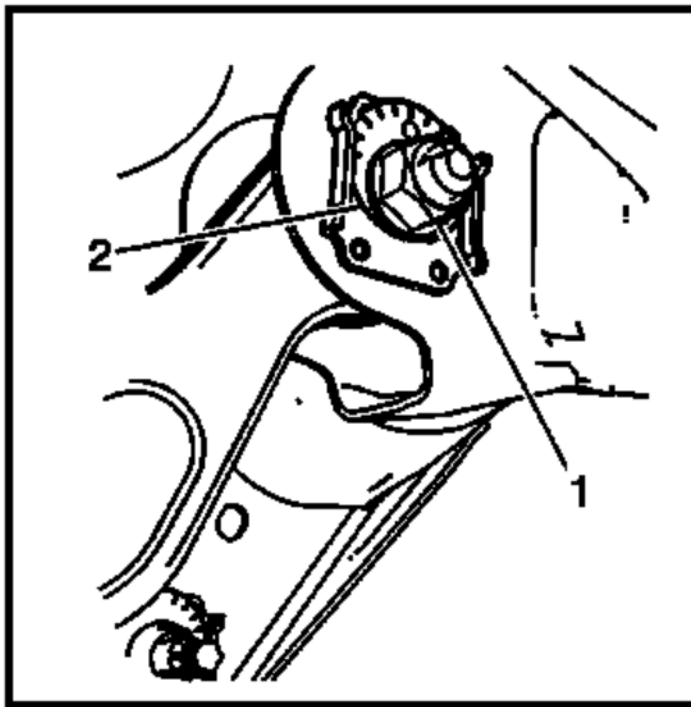
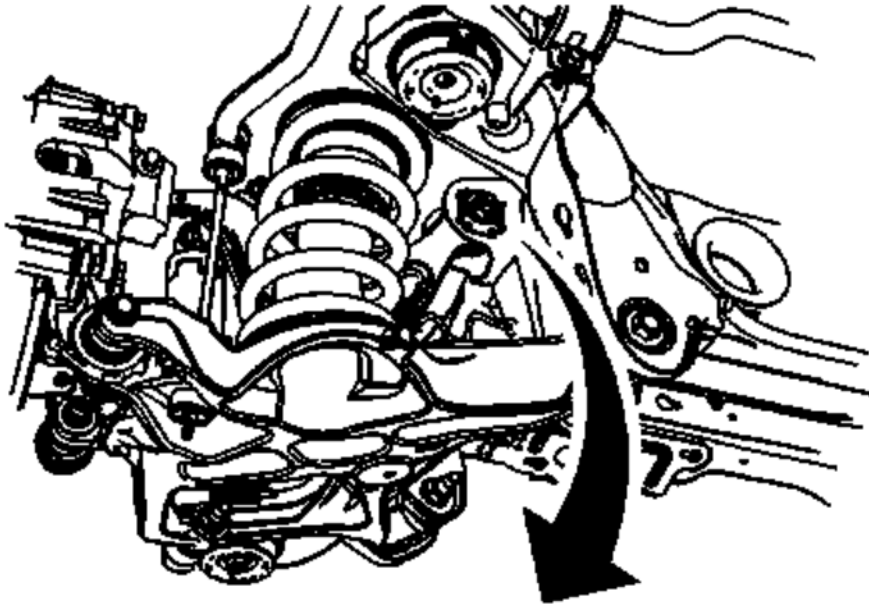


Fig. 53: Identifying Rear Upper Adjuster Cam & Cam Bolt
Courtesy of GENERAL MOTORS COMPANY

7. Finger tighten the rear adjuster cam nut (1).
8. Install the upper control arm bolt (2) and nut (1).

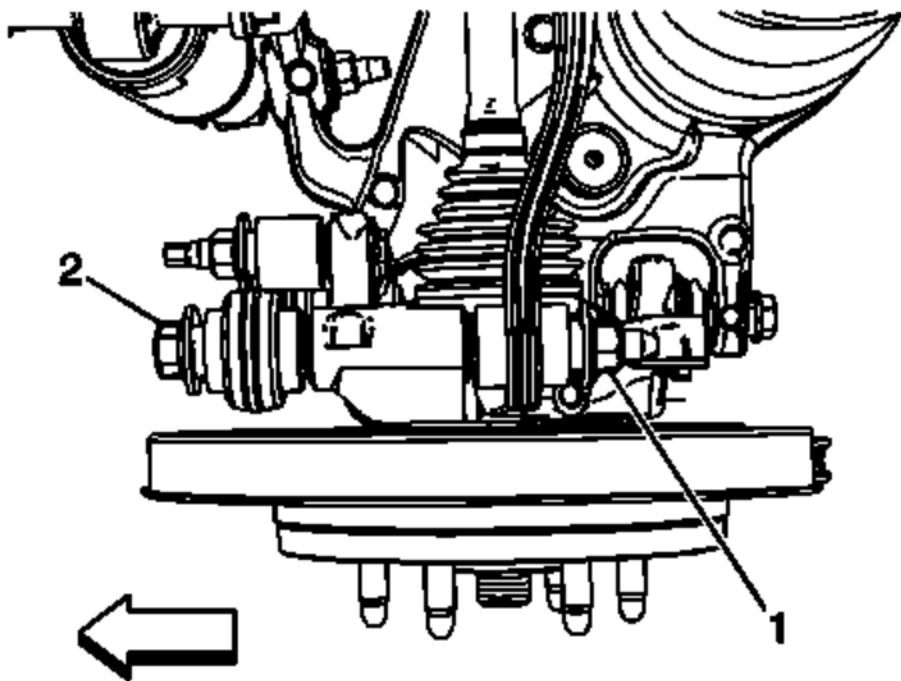


Fig. 54: Identifying Upper Control Arm Bolt & Nut
Courtesy of GENERAL MOTORS COMPANY

CAUTION: Refer to Fastener Caution .

Tighten

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

9. Remove the jack stand from under the lower control arm.
10. Install the speed sensor wiring harness retaining clips (1) and (2) on the upper control arm.

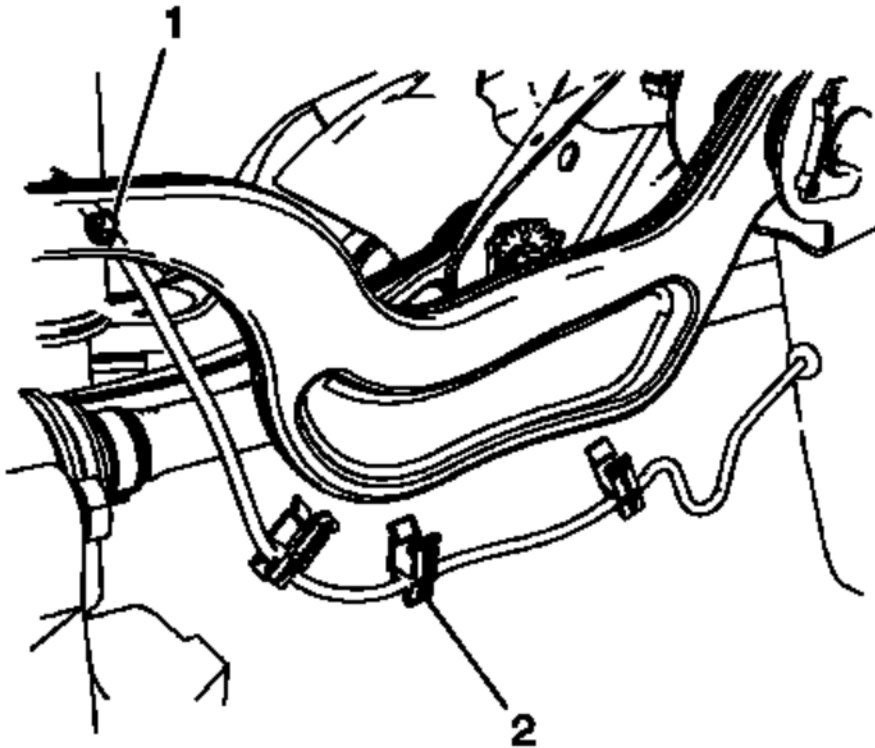


Fig. 55: Identifying Speed Sensor Wiring Harness Retaining Clips
Courtesy of GENERAL MOTORS COMPANY

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

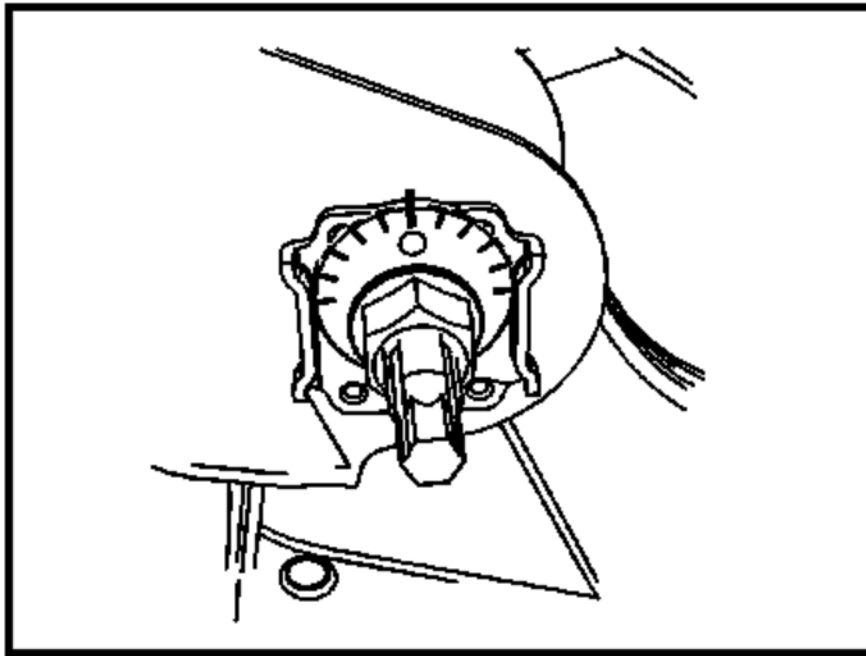
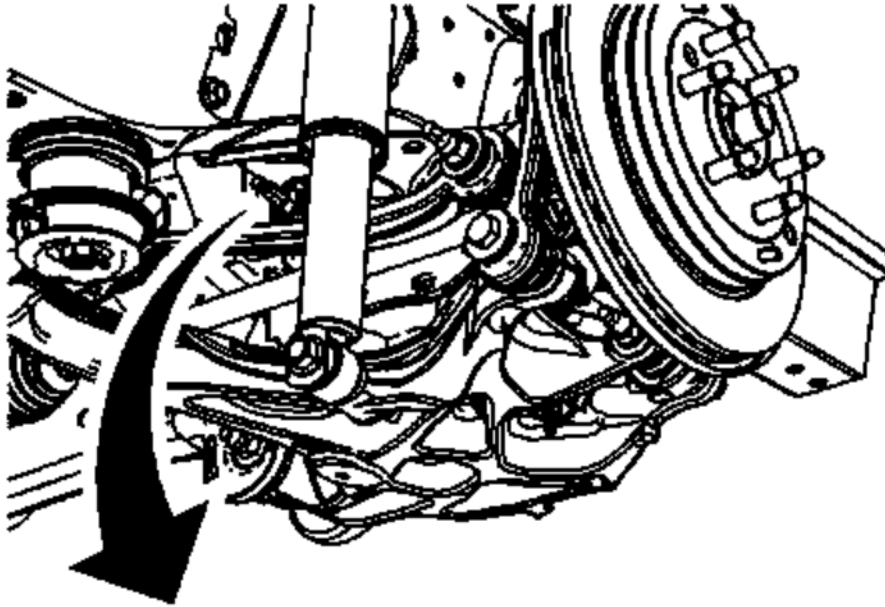


Fig. 56: Identifying Reference Marks On Adjuster Cam & Bracket
Courtesy of GENERAL MOTORS COMPANY

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

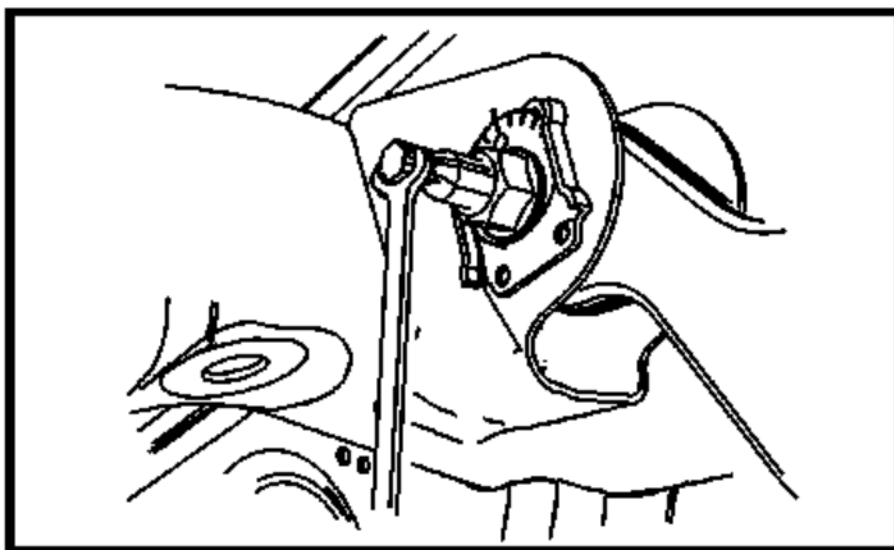
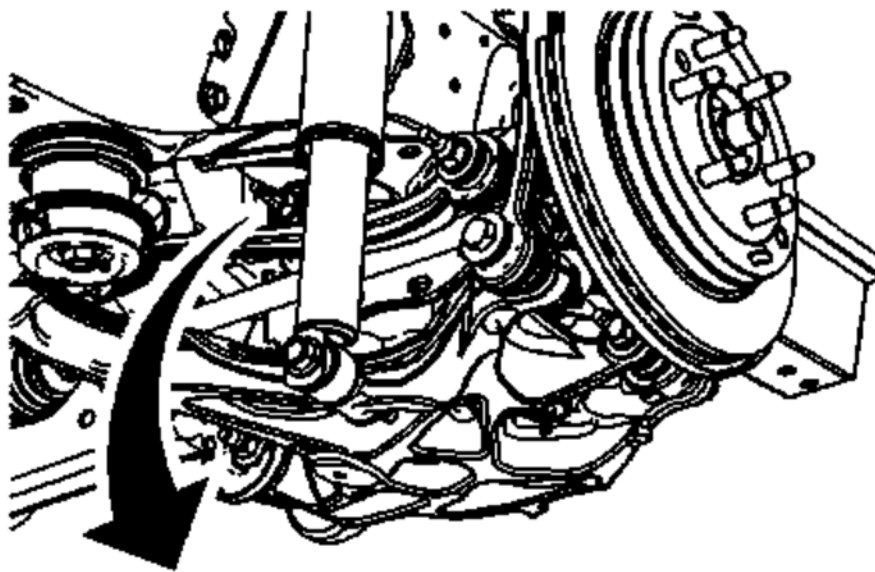


Fig. 57: View Of A Wrench Holding Adjuster Cam Bolt In Place
Courtesy of GENERAL MOTORS COMPANY

Tighten

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

13. Install the tire and wheel assembly. Refer to **Tire and Wheel Removal and Installation** .

14. Verify wheel alignment. Refer to **Wheel Alignment Specifications** .

LOWER CONTROL ARM REPLACEMENT

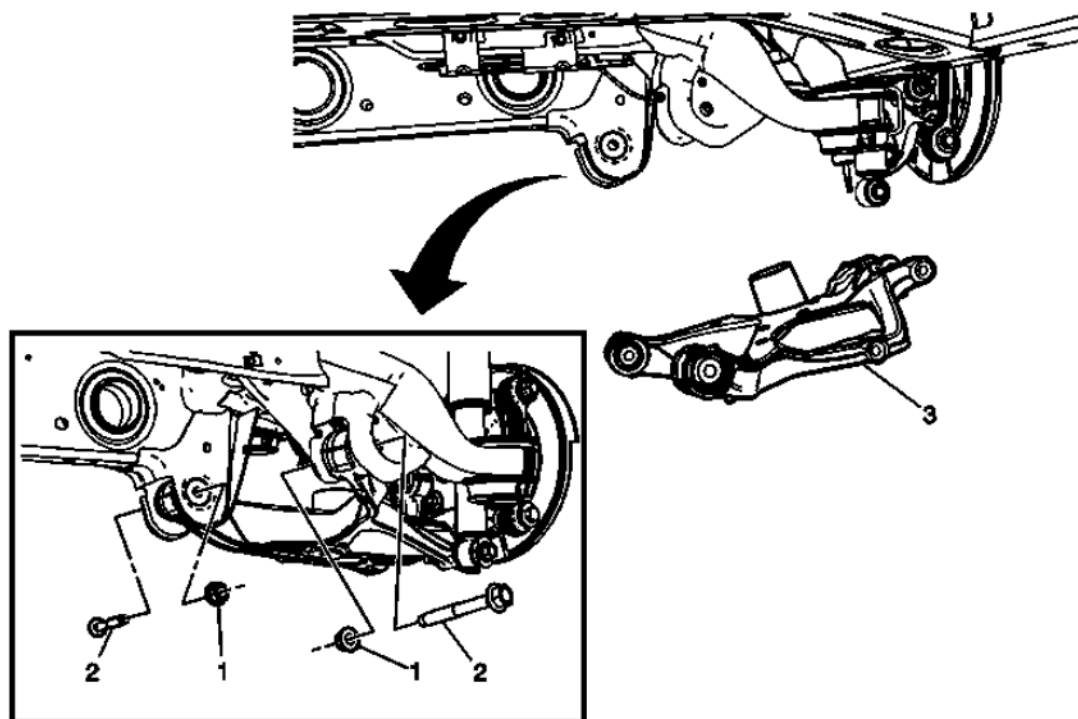
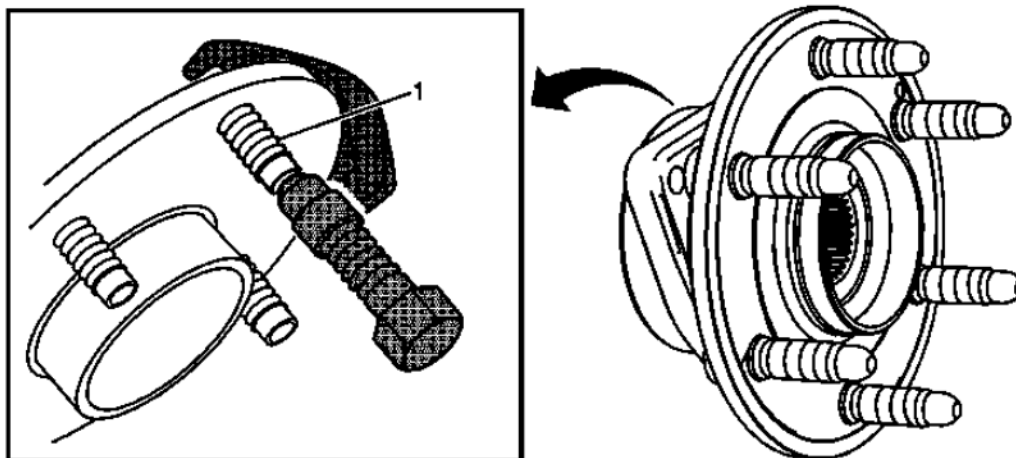


Fig. 58: Identifying Lower Control Arm
Courtesy of GENERAL MOTORS COMPANY

Lower Control Arm Replacement

Callout	Component Name
Preliminary Procedure	
Remove the rear coil spring and related parts. Refer to Rear Spring, Insulator and Jounce Bumper Replacement .	
1	Rear Lower Control Arm Nut (Qty: 2)
	Rear Lower Control Arm Bolt (Qty: 2)
2	CAUTION: Refer to Fastener Caution . Tighten • Tighten the front control nut to 110 N.m (81 lb ft) plus 45° • Tighten the rear control nut to 120 N.m (89 lb ft) plus 60°
	Rear Lower Control Arm

3

ProcedureAlign the rear suspension. Refer to **Wheel Alignment Specifications**.**WHEEL STUD REPLACEMENT****Fig. 59: Identifying Wheel Stud**

Courtesy of GENERAL MOTORS COMPANY

Wheel Stud Replacement

Callout	Component Name
Preliminary Procedure Remove the rear wheel bearing/hub assembly. Refer to Rear Wheel Bearing and Hub Replacement (AWD) and Rear Wheel Bearing and Hub Replacement (FWD) .	
1	Wheel Stud (Qty: 6) Procedure 1. Use either an old lug nut or a nut that will fit the wheel stud. 2. Tighten the lug nut/nut until the wheel stud is seated against the wheel hub. TIP: Ensure that the washers being used, the center hole is larger than the wheel stud. Special Tools J 43631 Ball Joint Remover

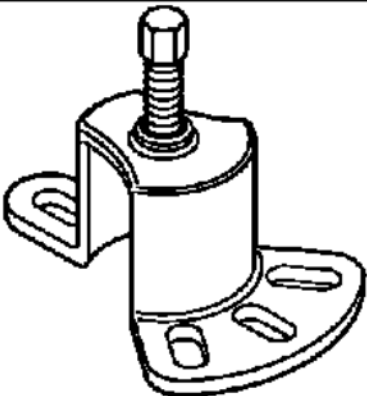
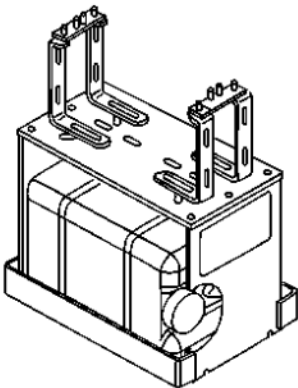
DESCRIPTION AND OPERATION**REAR SUSPENSION DESCRIPTION AND OPERATION**

The rear suspension system on this vehicle is the independent suspension type. The rear suspension system consists of the following components:

- The crossmember
- The knuckle
- The adjuster link
- The wheel bearing
- The upper control arms
- The lower control arms (with integral ball joints)
- The coils springs
- The stabilizer shaft
- The stabilizer shaft links
- The shock absorbers
- The coils springs

SPECIAL TOOLS AND EQUIPMENT

SPECIAL TOOLS

Illustration	Tool Number/Description
	J 42129 Wheel Hub Remover
	J 43631 Ball Joint Remover

2014 GMC Acadia Denali

2014 SUSPENSION Rear Suspension - Acadia, Enclave And Traverse



J 45859-1
Axle Remover