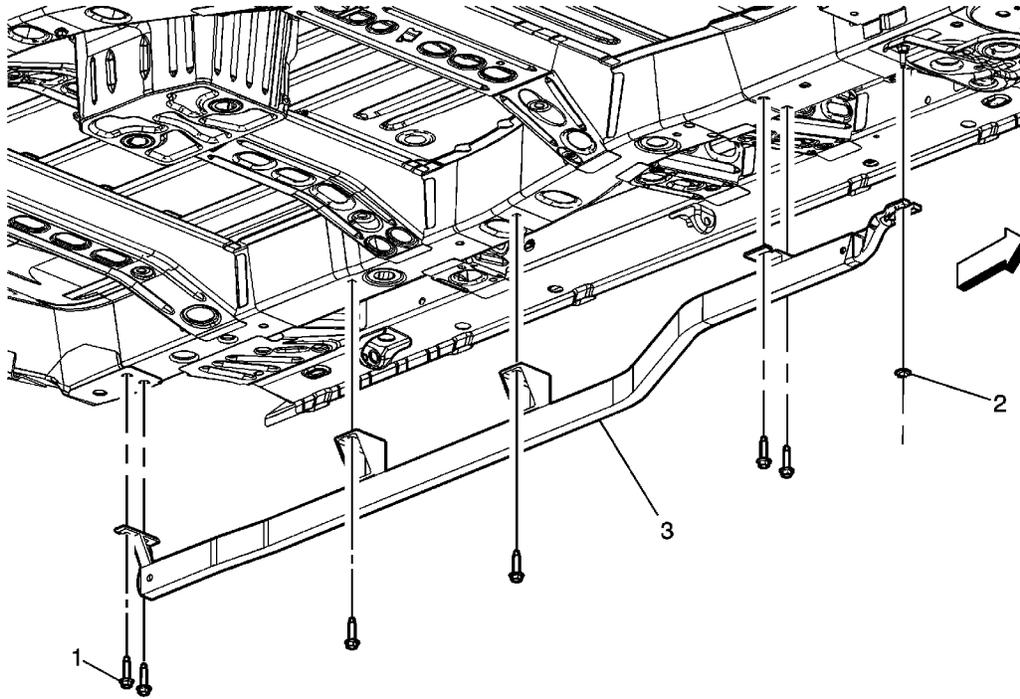


Fastener Tightening Specifications

Application	Specification	
	Metric	English
Engine Mount to Frame Nut	75 N·m	55 lb ft
Frame Brace Bolt	60 N·m	44 lb ft
Front Crossmember Brace Bolt	50 N·m	37 lb ft
Front Frame to Body Bolt	110 N·m	81 lb ft
	+ 90 degrees	
Front Wheelhouse Liner Screw	2.5 N·m	22 lb in
Radiator Support Bolt	50 N·m	37 lb ft
Rear Axle Differential to Body Bolt	160 N·m	118 lb ft
Rear Brake Caliper Bracket Bolt	50 N·m	37 lb ft
Rear Frame Reinforcement Bolt	60 N·m	44 lb ft
Rear Frame Reinforcement Stud	60 N·m	44 lb ft
Rear Shock Absorber Bolt	50 N·m	37 lb ft
Rear Suspension Crossmember to Body Bolt	170 N·m	125 lb ft
Rear Wheelhouse Liner Screw	2.5 N·m	22 lb in
Right Park Brake Cable Retaining Bolt	10 N·m	89 lb in
Trailer Hitch Bolt	100 N·m	74 lb ft
Transmission Mount to Frame Nut	75 N·m	55 lb ft
Underbody Side Rail Bolt	47 N·m	35 lb ft
Underbody Side Rail Nut	11 N·m	97 lb in
Upper Bumper Support to Radiator Support Bolt	9 N·m	80 lb in
Wheel Drive Shaft Nut	260 N·m	192 lb ft

Underbody Rear Side Rail Replacement

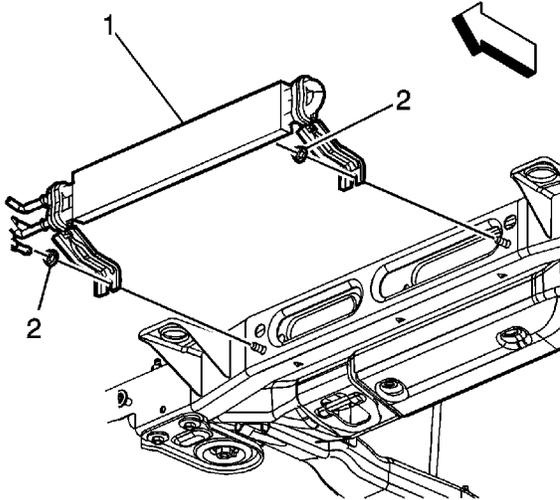


Callout	Component Name
Preliminary Procedure	
Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle .	
1	Underbody Rear Side Rail Bolt (Qty: 6) Caution: Refer to Fastener Caution in the Preface section. Tighten 47 N·m (35 lb ft)
2	Underbody Rear Side Rail Nut Tighten 11 N·m (97 lb in)
3	Underbody Rear Side Rail

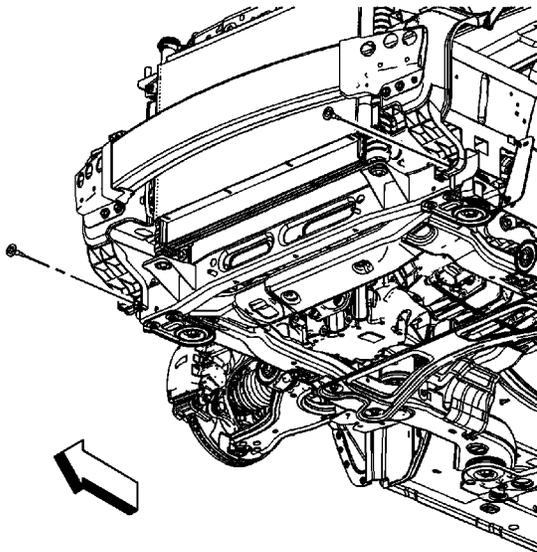
Radiator Crossmember Replacement

Removal Procedure

1. Remove the front bumper fascia. Refer to [Front Bumper Fascia Replacement](#).
2. Tie the condenser radiator fan module to the upper bumper support.
3. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).



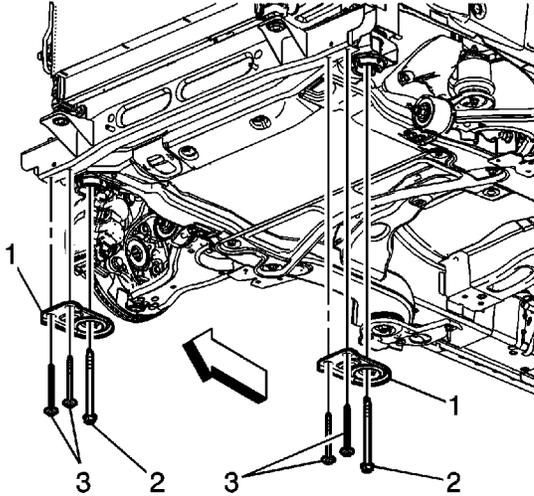
4. Remove the power steering cooler nuts (2).
5. Position the power steering cooler (1) securely out of the way.



6. Remove the lower 2 bolts from the upper bumper support.

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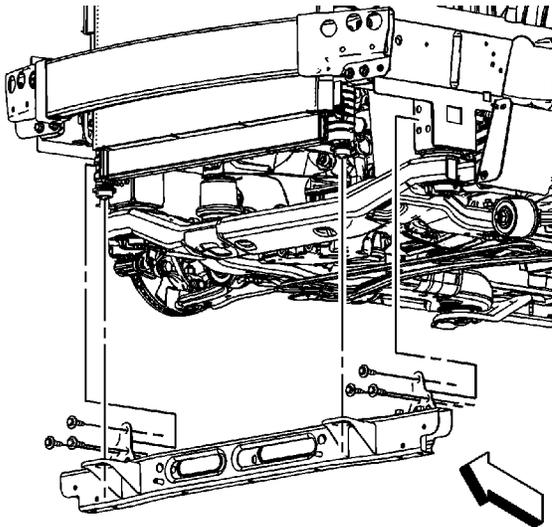
7. Support the frame with a jack stand.



8. Remove the front crossmember brace bolts (3).

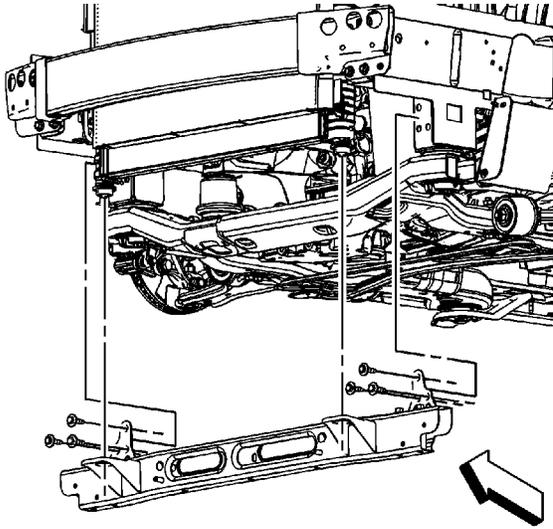
Note: When the frame insulator bolts are removed, always discard the bolts and replace with new bolts.

9. Remove the front frame to body bolts (2).
10. Remove the front crossmember brace (1).



11. Remove the radiator support bolts.
12. Remove the radiator support.

Installation Procedure



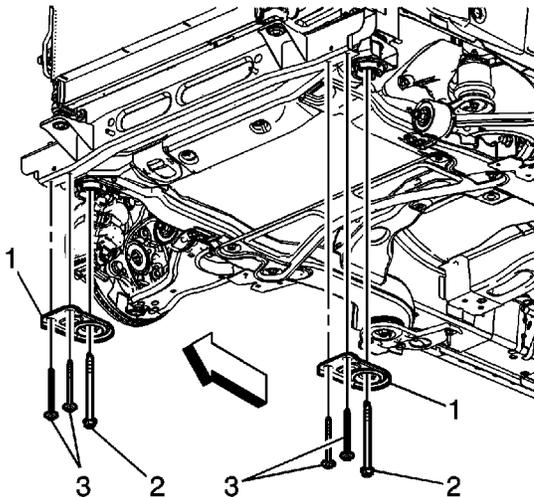
1. Install the radiator support.

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

2. Install the radiator support bolts.

Tighten

Tighten the bolts to 50 N·m (37 lb ft).



3. Install the front crossmember brace (1).

Note: If the frame insulator bolt does not screw in smoothly, run a tap through the frame nut in the body in order to remove foreign material. Ensure the tap does not punch through the underbody.

Do not over tighten the insulator. Over tightening may collapse a spacer or strip a bolt.

4. Install the front frame to body bolts (2).

Tighten

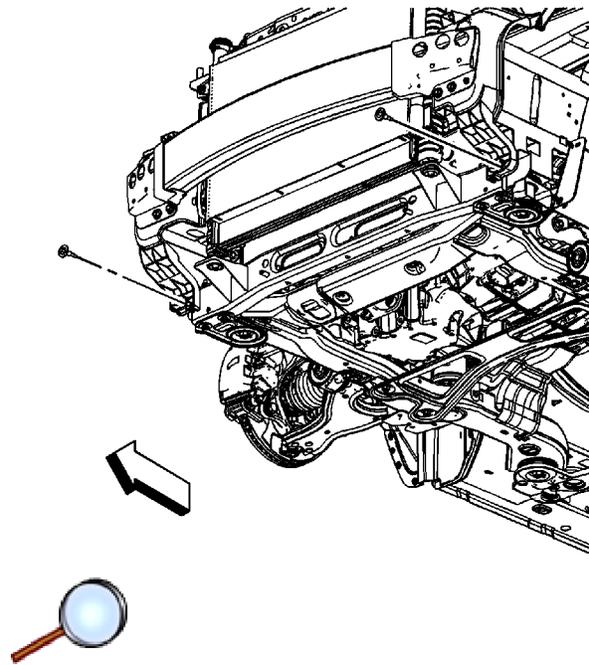
Tighten the bolts to 110 N·m (81 lb ft) plus 90 degrees.

5. Install the front crossmember brace bolts (3).

Tighten

Tighten the bolts to 50 N·m (37 lb ft).

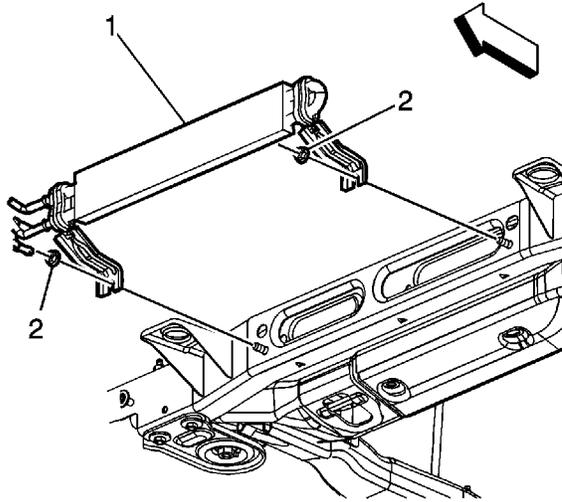
6. Remove the jack stand.



7. Install the lower 2 bolts to the upper bumper support.

Tighten

Tighten the bolts to 9 N·m (80 lb in).

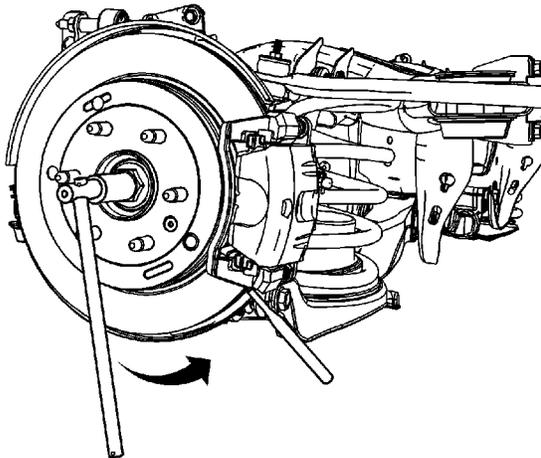


8. Install the power steering cooler (1).
9. Install the power steering cooler nuts (2).
10. Lower the vehicle.
11. Untie the condenser radiator fan module from the upper bumper support.
12. Install the front bumper fascia. Refer to [Front Bumper Fascia Replacement](#).

Rear Suspension Support Crossmember Replacement (All Wheel Drive)

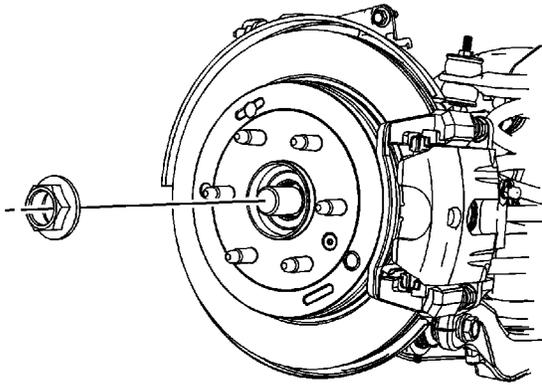
Removal Procedure

1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
2. Remove the rear tire and wheel assemblies. Refer to [Tire and Wheel Removal and Installation](#).
3. Remove the muffler. Refer to [Exhaust Muffler Replacement](#).



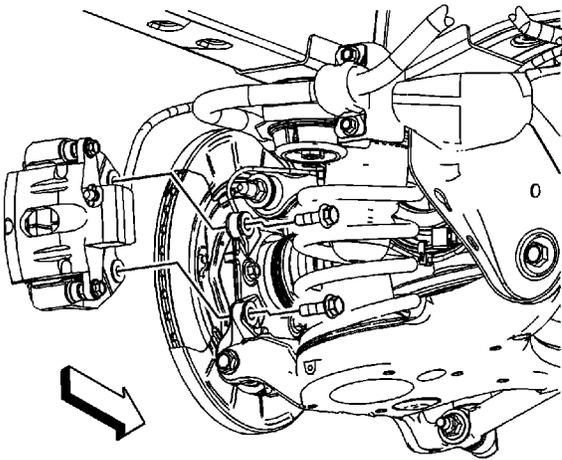
Note: The following step is to ensure that the wheel drive shaft assembly does not rotate while the nut is being removed.

4. Insert a brass drift or punch in the brake rotor so that the brass drift or punch rest against the brake caliper mounting bracket.
5. Using the breaker bar and socket, loosen the wheel drive shaft nut.

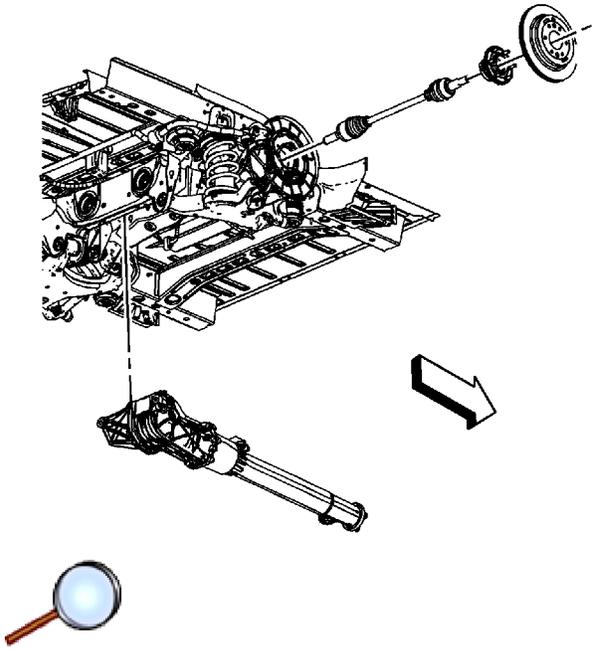


Note: DO NOT re-use the wheel drive shaft nut, discard and use NEW.

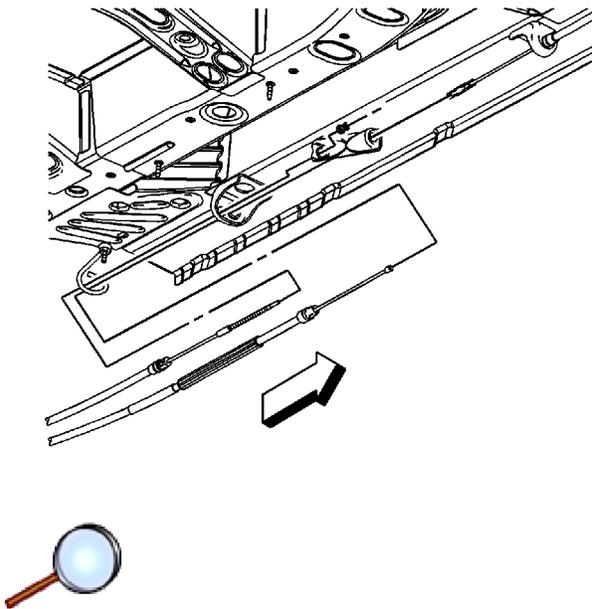
6. Remove the wheel drive shaft nut.



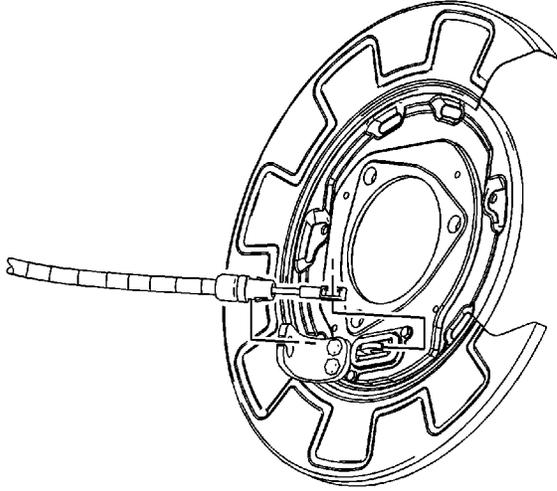
7. Remove the rear brake caliper bracket bolts.
8. Secure the rear brake caliper and bracket assemblies to the vehicle underbody.



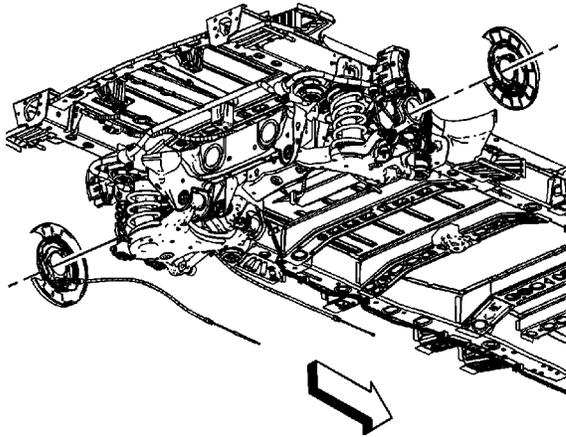
9. Remove the rear wheel bearings, axles, and differential assembly. Refer to [Differential Replacement](#).



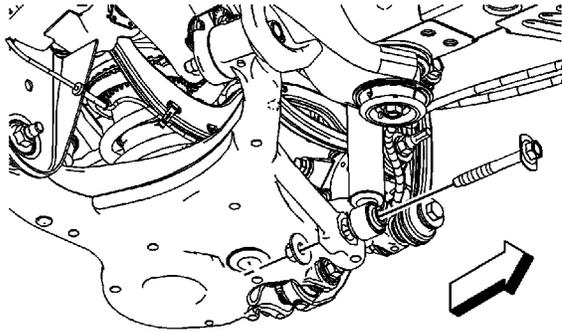
10. Remove the park brake cables from the park brake cable equalizer and park brake cable bracket. Refer to [Park Brake Cable Equalizer Replacement](#).



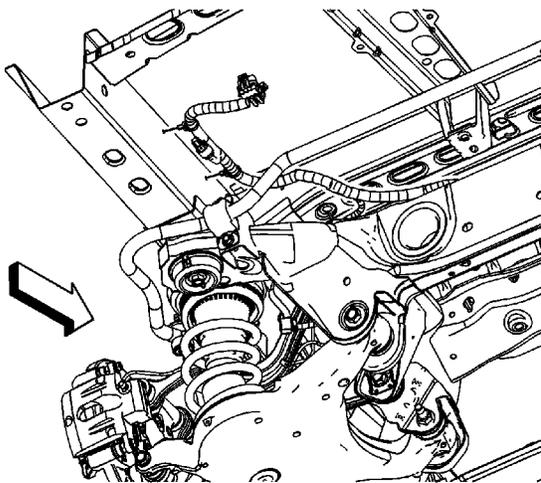
11. Disconnect the right park brake cable from the brake backing plate.



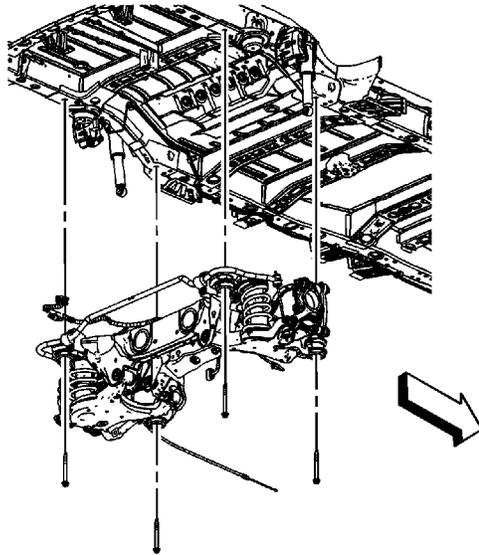
12. Remove both the rear brake backing plates.



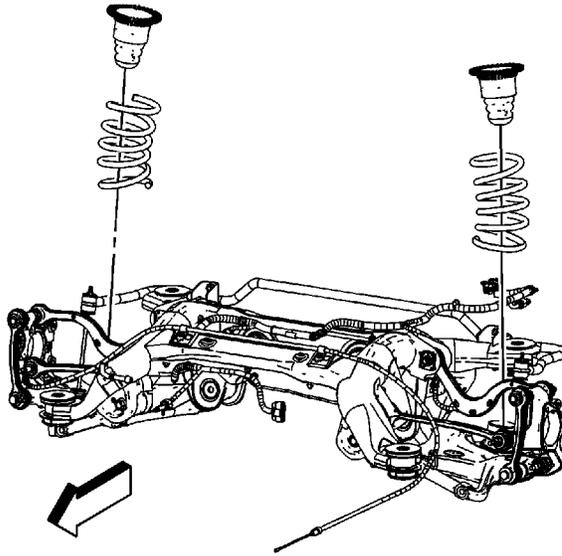
13. Remove the lower bolts from the rear shock absorbers. Refer to [Shock Absorber Replacement](#).



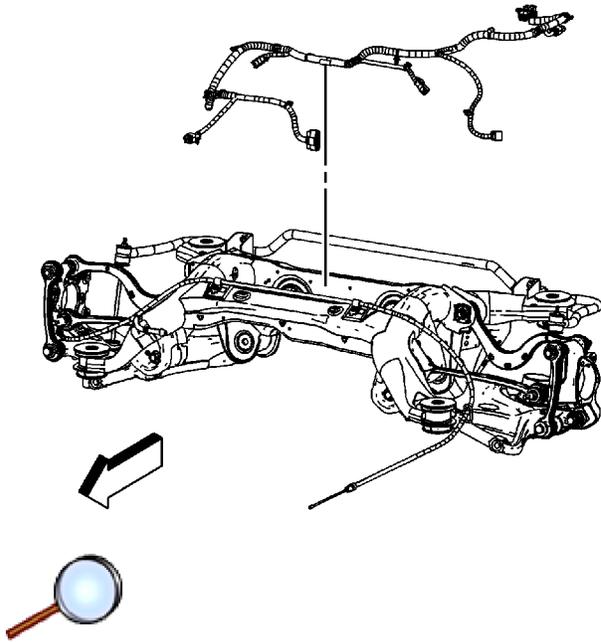
14. Remove the rear suspension crossmember wire harness retainers from the vehicle underbody.
15. Disconnect the rear suspension crossmember wire harness from the vehicle body wire harness.



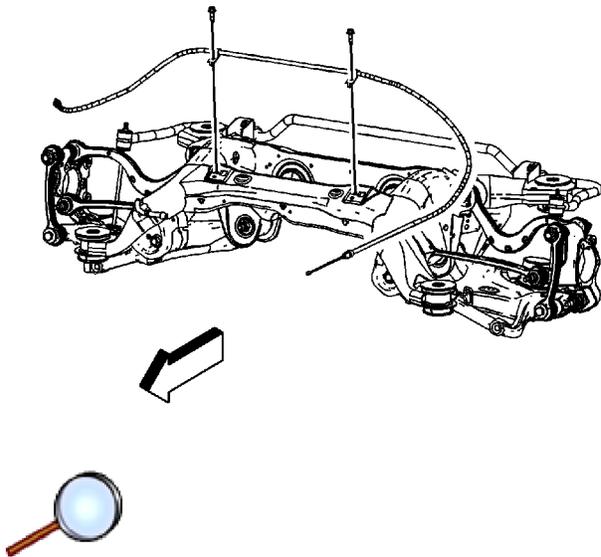
16. Support the rear suspension crossmember with a suitable stand.
17. Remove the four bolts securing the rear suspension crossmember to vehicle.
18. With the aid of an assistant, carefully lower the rear suspension crossmember or raise the vehicle away from the rear suspension crossmember.



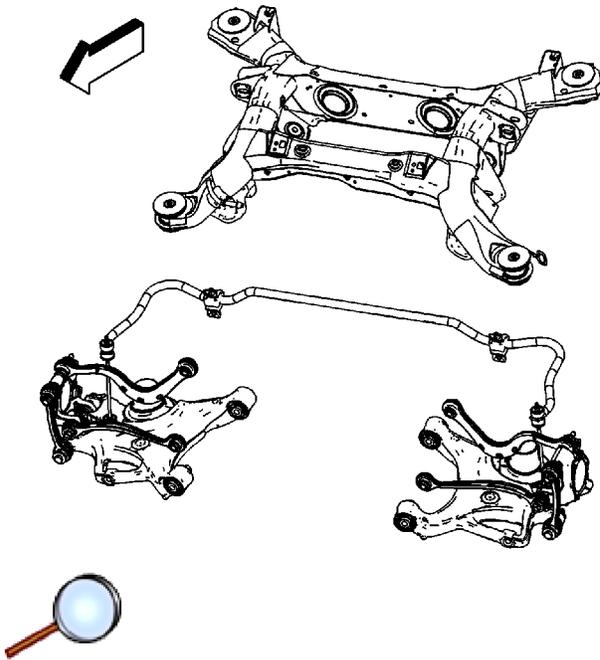
19. Remove the jounce bumpers and springs from the rear suspension crossmember.



20. Release the wire harness retainers from the rear suspension crossmember.
21. Remove the wire harness from the rear suspension crossmember.

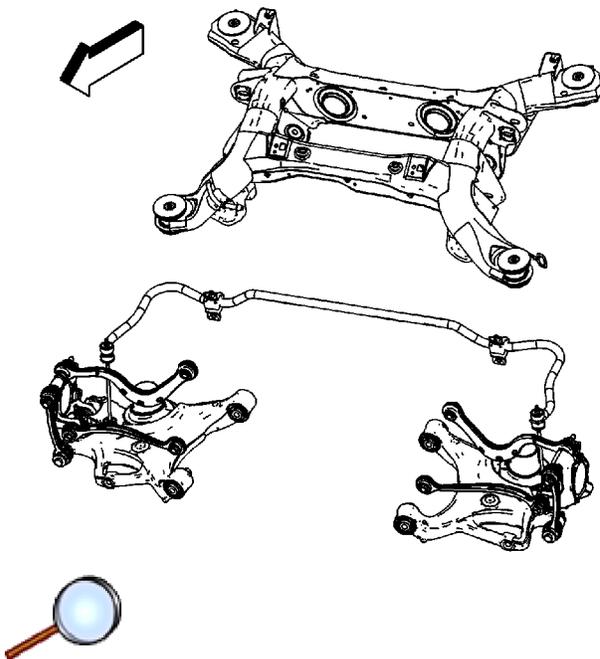


22. Remove the right park brake cable retaining bolts from the rear suspension crossmember.
23. Remove the right park brake cable from the rear suspension crossmember.



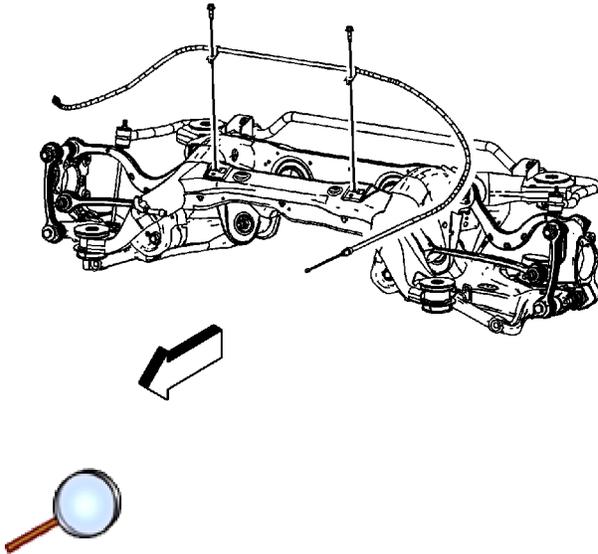
24. Remove the remaining suspension components from the rear suspension crossmember:
- Stabilizer shaft insulator brackets--Refer to [Stabilizer Shaft Insulator Replacement](#).
 - Upper control arm--Refer to [Upper Control Arm Replacement](#).
 - Adjustment link--Refer to [Adjust Link Replacement](#).
 - Lower control arm--Refer to [Lower Control Arm Replacement](#).

Installation Procedure



1. Install the following suspension components to the rear suspension crossmember:
- Lower control arm--Refer to [Lower Control Arm Replacement](#).

- Adjustment link--Refer to [Adjust Link Replacement](#).
- Upper control arm--Refer to [Upper Control Arm Replacement](#).
- Stabilizer shaft insulator brackets--Refer to [Stabilizer Shaft Insulator Replacement](#).



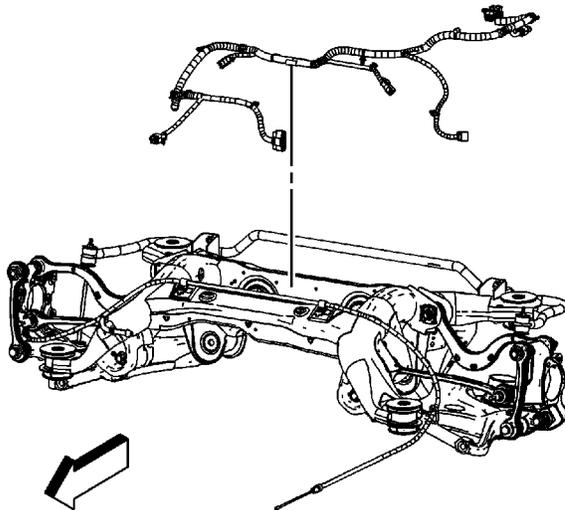
2. Install the right park brake cable to the rear suspension crossmember.

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

3. Install the right park brake cable retaining bolts to the rear suspension crossmember.

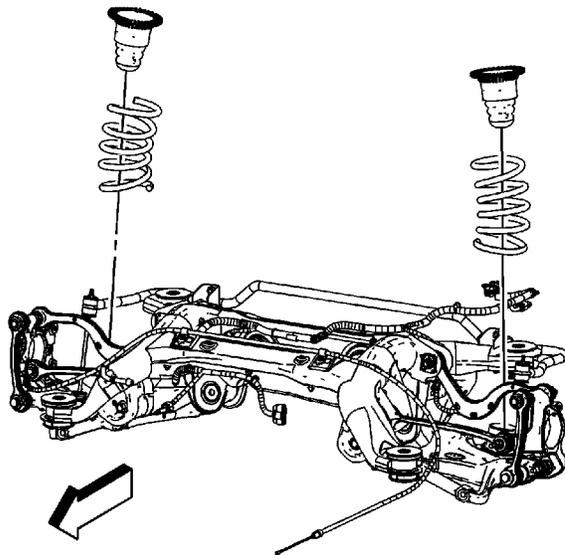
Tighten

Tighten the bolts to 10 N·m (89 lb in).

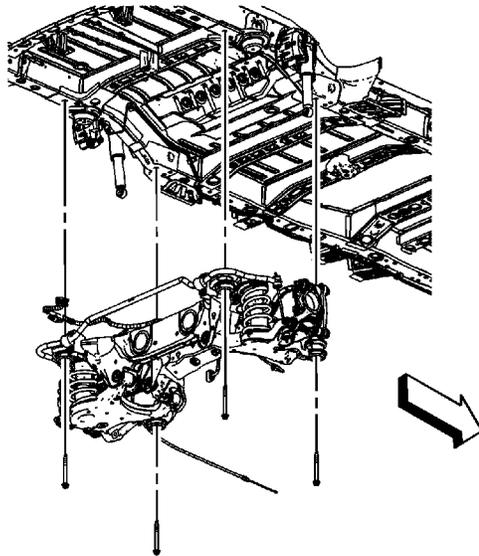




4. Install the wire harness to the rear suspension crossmember.
5. Attach the wire harness retainers to the rear suspension crossmember.



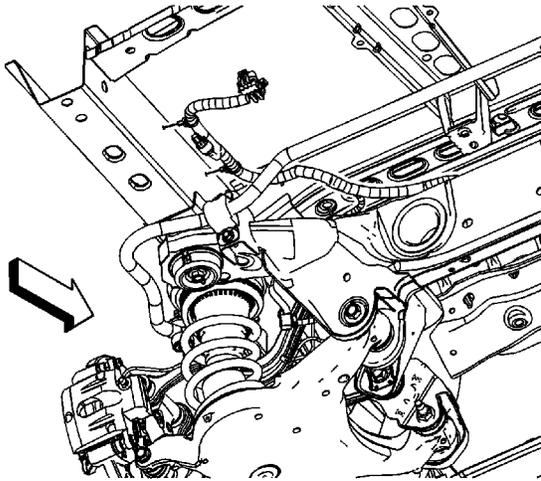
6. Install the jounce bumpers and springs to the rear suspension crossmember. Refer to [Rear Spring, Insulator, and Jounce Bumper Replacement](#) for proper spring installation.



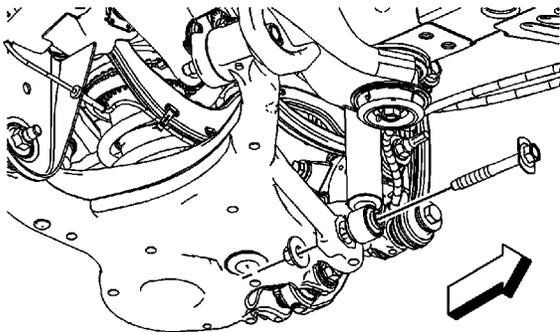
7. With the rear suspension crossmember mounted on a suitable stand and with the aid of an assistant, carefully lower the vehicle or raise the rear suspension crossmember into location on the vehicle.
8. Install the four bolts securing the rear suspension crossmember to vehicle.

Tighten

Tighten the bolts to 170 N·m (125 lb ft).



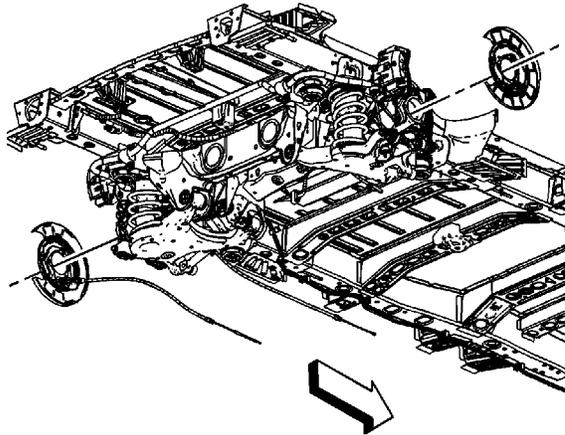
9. Connect the rear suspension crossmember wire harness to the vehicle body wire harness.
10. Install the rear suspension crossmember wire harness retainers to the vehicle underbody.



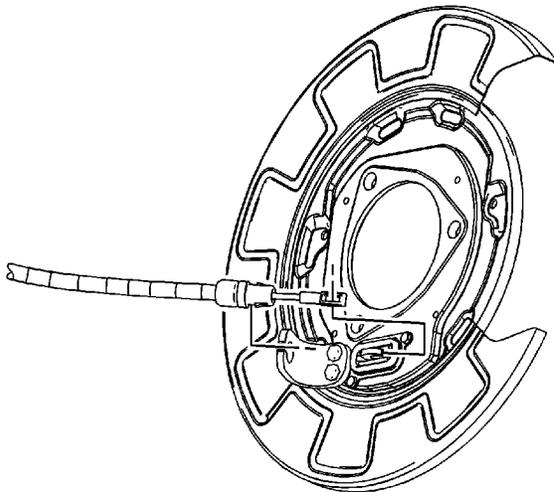
11. Install the lower bolts to the rear shock absorbers. Refer to [Shock Absorber Replacement](#).

Tighten

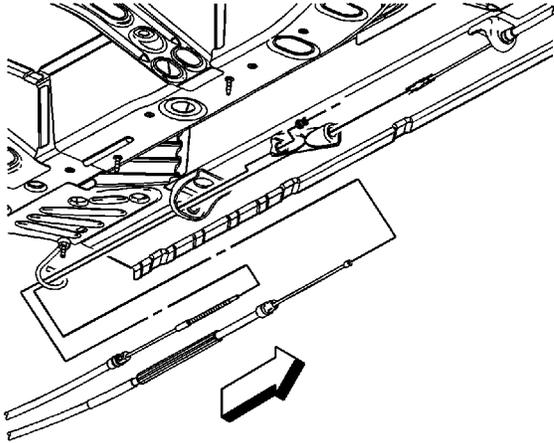
Tighten the bolts to 50 N·m (37 lb ft).



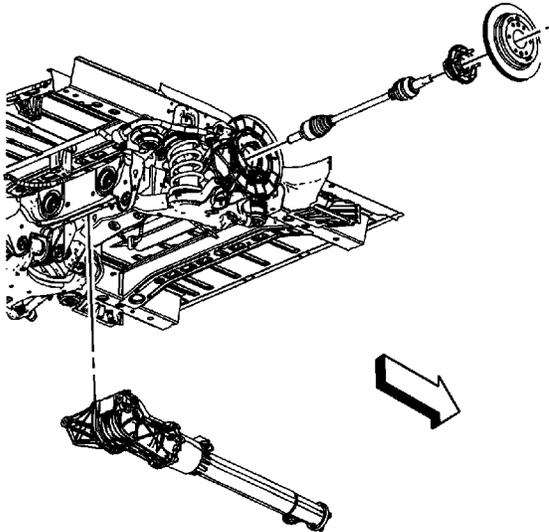
12. Install both the rear brake backing plates.



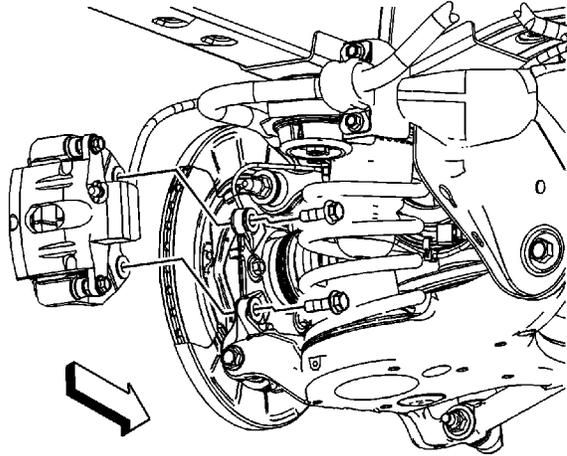
13. Connect the right park brake cable to the brake backing plate.



14. Install the park brake cables to the park brake cable equalizer and park brake cable bracket. Refer to [Park Brake Cable Equalizer Replacement](#).



15. Install the rear differential assembly, axles, and wheel bearings. Refer to [Differential Replacement](#).

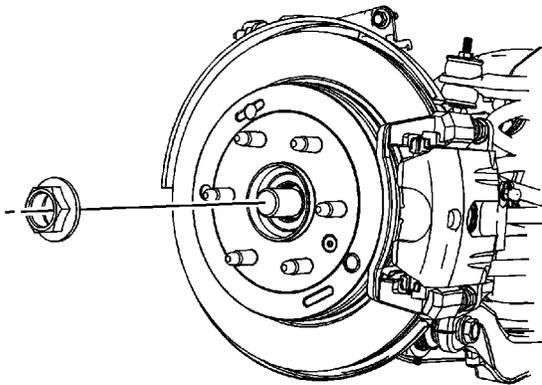


16. Install the rear brake caliper and bracket assemblies to the rear knuckles.
17. Install the rear brake caliper bracket bolts.

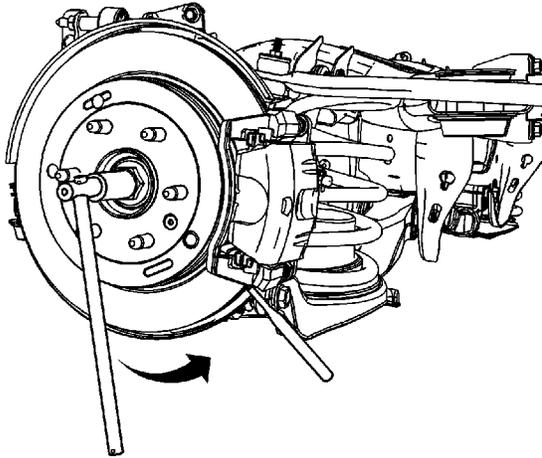
Tighten

Tighten the bolts to 50 N·m (37 lb ft).

Note: DO NOT re-use the wheel drive shaft nut, discard and use NEW.



18. Install the wheel drive shaft nut.



Note: The following step is to ensure that the wheel drive shaft assembly does not rotate while the nut is being installed.

19. Insert a brass drift or punch in the brake rotor so that the brass drift or punch rest against the brake caliper mounting bracket.
20. Using a torque wrench and socket, tighten the new wheel drive shaft nut.

Tighten

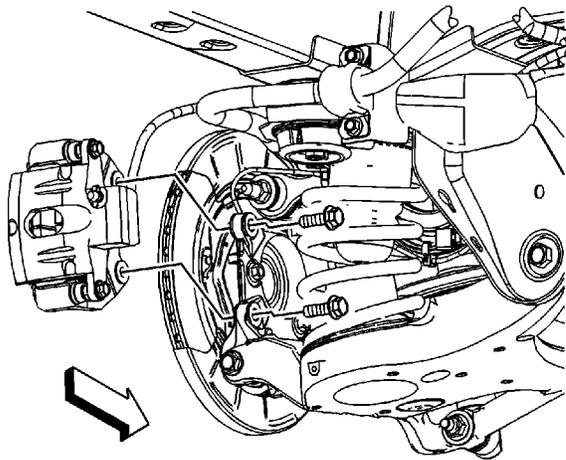
Tighten the nut to 260 N·m (192 lb ft).

21. Install the muffler. Refer to [Exhaust Muffler Replacement](#).
22. Install the rear tire and wheel assemblies. Refer to [Tire and Wheel Removal and Installation](#).
23. Lower the vehicle.

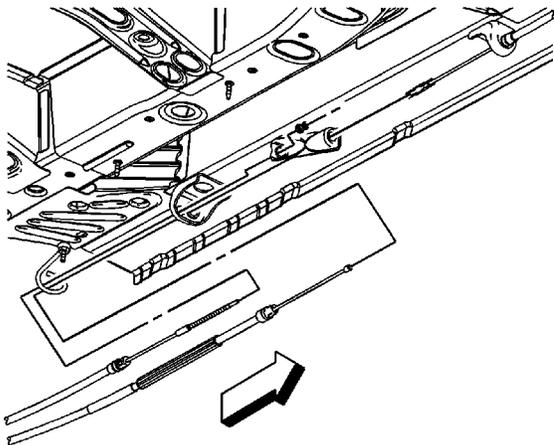
Rear Suspension Support Crossmember Replacement (Front Wheel Drive)

Removal Procedure

1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
2. Remove the rear tire and wheel assemblies. Refer to [Tire and Wheel Removal and Installation](#).
3. Remove the muffler. [Exhaust Muffler Replacement](#).

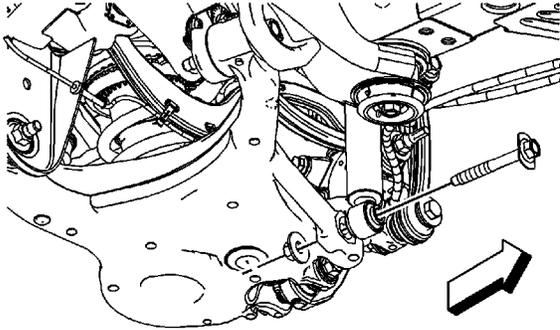


4. Remove the rear brake caliper bracket bolts.
5. Secure the rear brake caliper and bracket assemblies to the vehicle underbody.

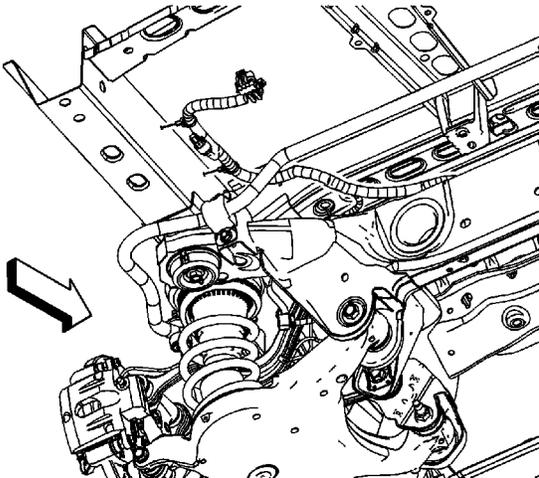




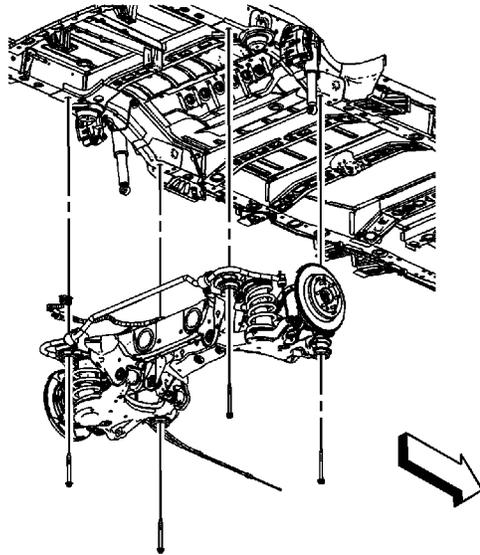
6. Remove the park brake cables from the park brake cable equalizer and park brake cable bracket. Refer to [Park Brake Cable Equalizer Replacement](#).



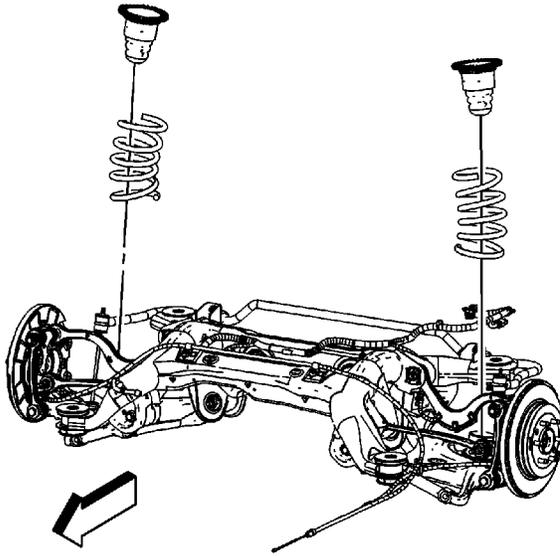
7. Remove the lower bolts from the rear shock absorbers. Refer to [Shock Absorber Replacement](#).



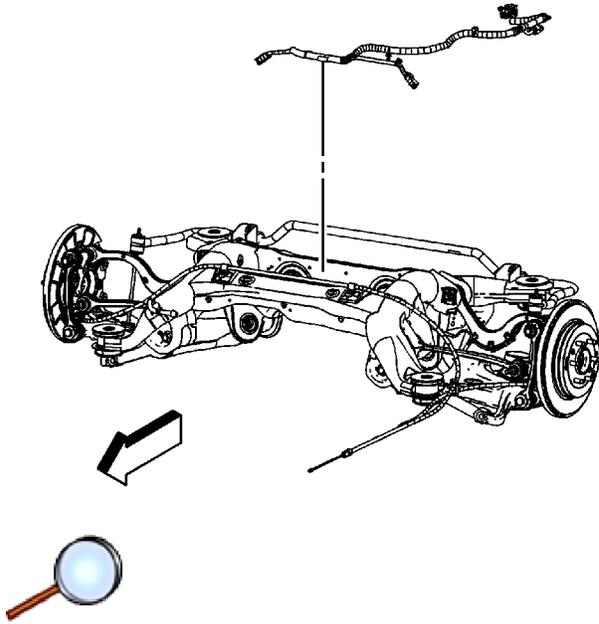
8. Remove the rear suspension crossmember wire harness retainers from the vehicle underbody.
9. Disconnect the rear suspension crossmember wire harness from the vehicle body wire harness.



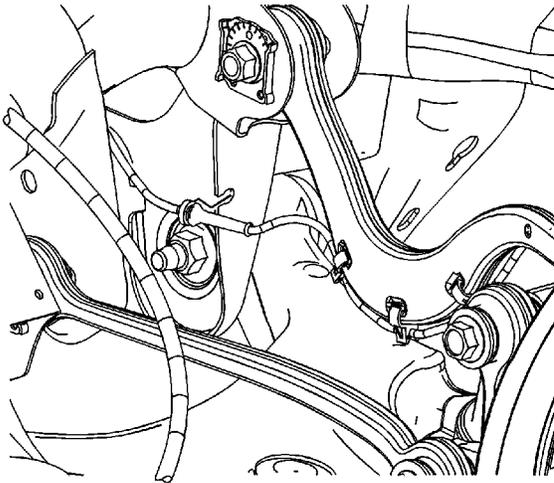
10. Support the rear suspension crossmember with a suitable stand.
11. Remove the four bolts securing the rear suspension crossmember to vehicle.
12. With the aid of an assistant, carefully lower the rear suspension crossmember or raise the vehicle away from the rear suspension crossmember.



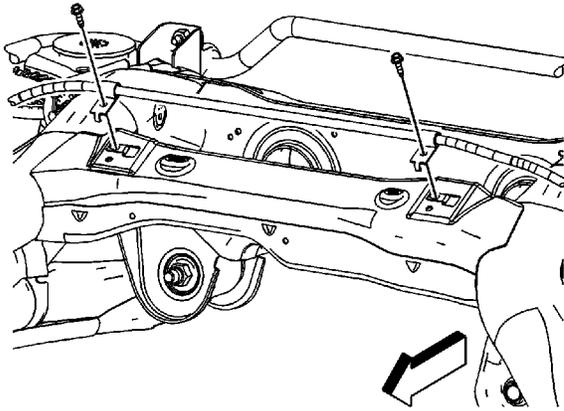
13. Remove the jounce bumpers and springs from the rear suspension crossmember.



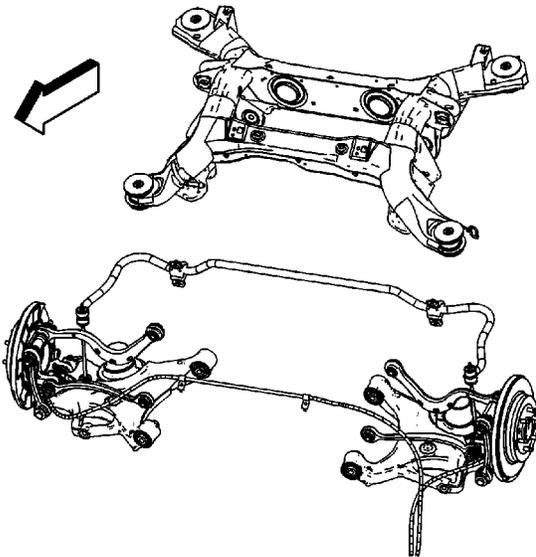
14. Release the wire harness retainers from the rear suspension crossmember.
15. Disconnect the wire harness from the wheel speed sensors.
16. Remove the wire harness from the rear suspension crossmember.



17. Release the wheel speed wire harness retainers from the rear suspension crossmember.

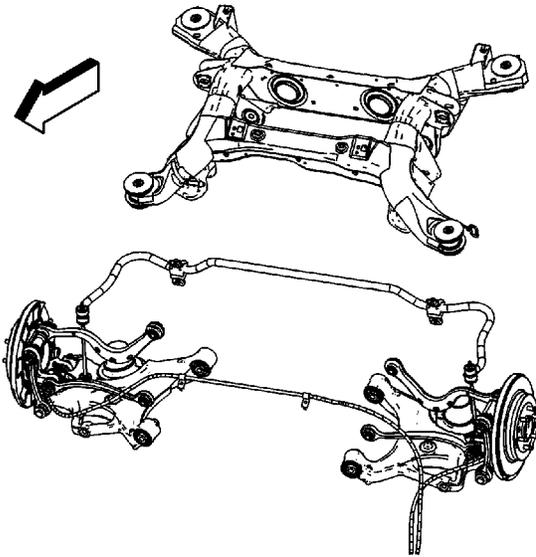


18. Remove the right park brake cable retaining bolts from the rear suspension crossmember.
19. Remove the right park brake cable from the rear suspension crossmember.

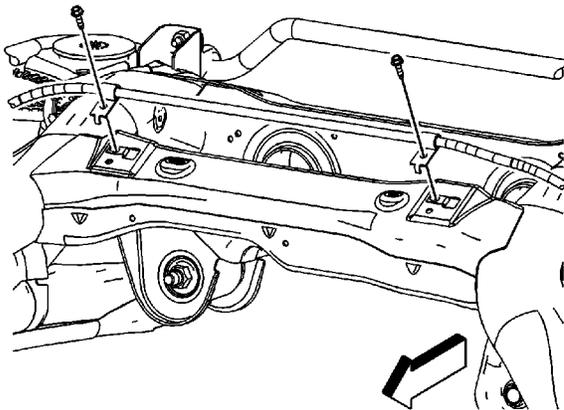


20. Remove the remaining suspension components from the rear suspension crossmember:
 - Stabilizer shaft insulator brackets--Refer to [Stabilizer Shaft Insulator Replacement](#).
 - Upper control arm--Refer to [Upper Control Arm Replacement](#).
 - Adjustment link--Refer to [Adjust Link Replacement](#).
 - Lower control arm--Refer to [Lower Control Arm Replacement](#).

Installation Procedure



1. Install the following suspension components to the rear suspension crossmember:
 - Lower control arm--Refer to [Lower Control Arm Replacement](#).
 - Adjustment link--Refer to [Adjust Link Replacement](#).
 - Upper control arm--Refer to [Upper Control Arm Replacement](#).
 - Stabilizer shaft insulator brackets--Refer to [Stabilizer Shaft Insulator Replacement](#).



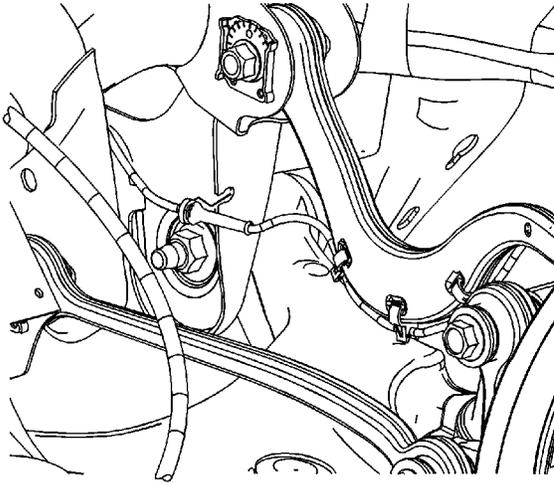
2. Install the right park brake cable to the rear suspension crossmember.

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

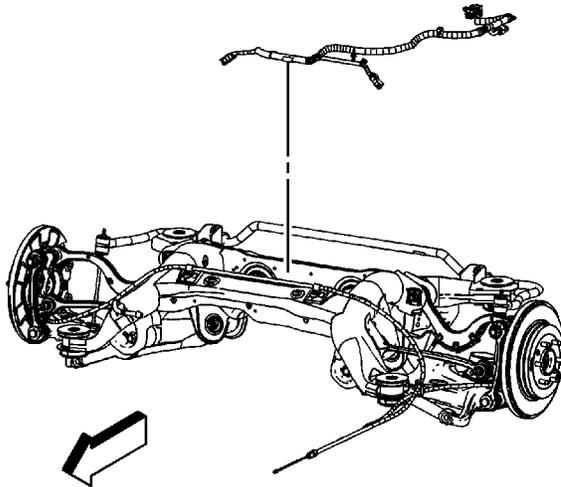
3. Install the right park brake cable retaining bolts to the rear suspension crossmember.

Tighten

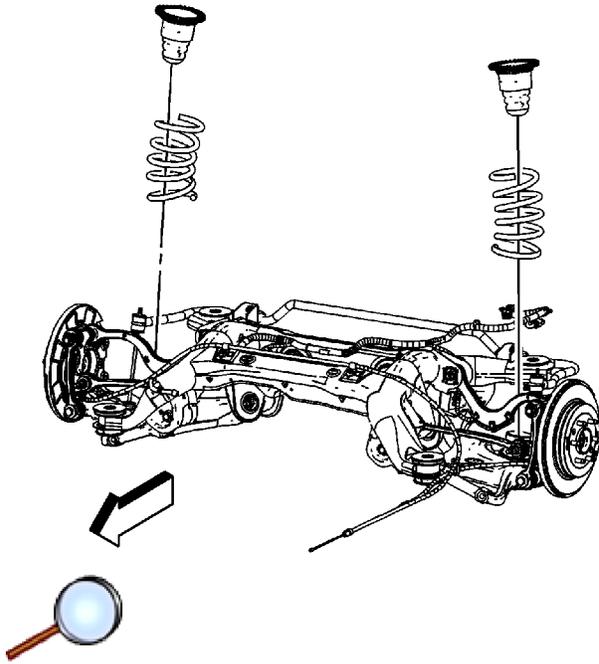
Tighten the bolts to 10 N·m (89 lb in).



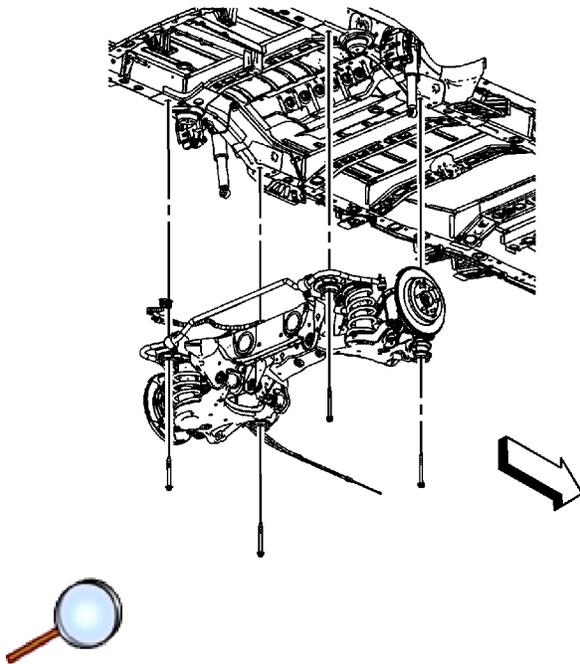
4. Install the wheel speed wire harness retainers to the rear suspension crossmember.



5. Install the wire harness to the rear suspension crossmember.
6. Attach the wire harness retainers to the rear suspension crossmember.
7. Connect the wire harness to the wheel speed sensors.



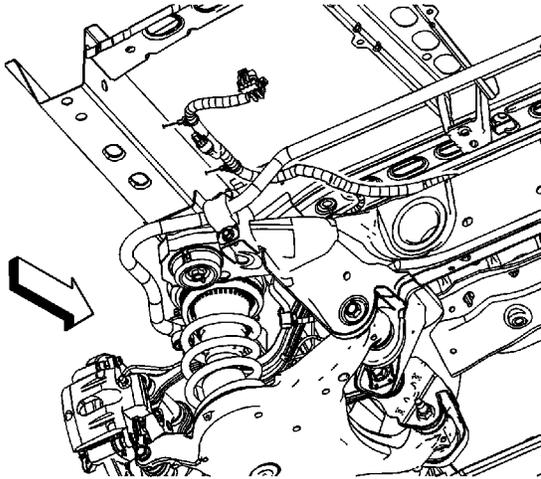
8. Install the jounce bumpers and springs to the rear suspension crossmember. Refer to [Rear Spring, Insulator, and Jounce Bumper Replacement](#) for proper spring installation.



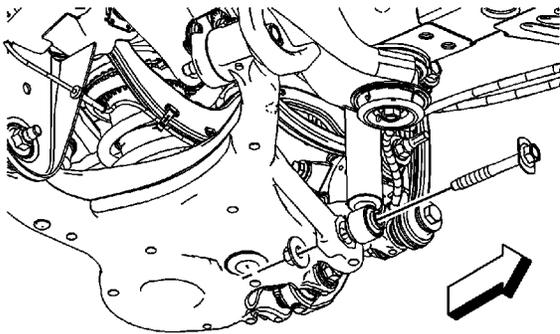
9. With the rear suspension crossmember mounted on a suitable stand and with the aid of an assistant, carefully lower the vehicle or raise the rear suspension crossmember into location on the vehicle.
10. Install the four bolts securing the rear suspension crossmember to vehicle.

Tighten

Tighten the bolts to 170 N·m (125 lb ft).



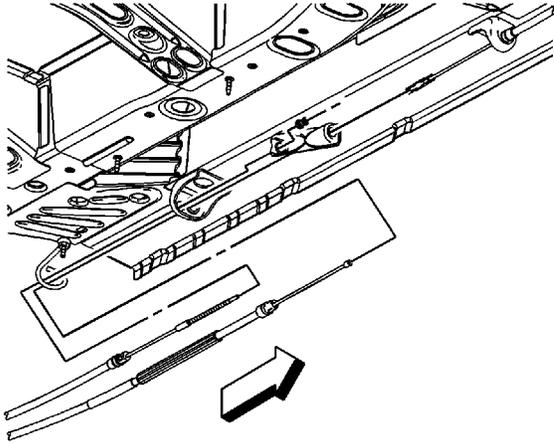
11. Connect the rear suspension crossmember wire harness to the vehicle body wire harness.
12. Install the rear suspension crossmember wire harness retainers to the vehicle underbody.



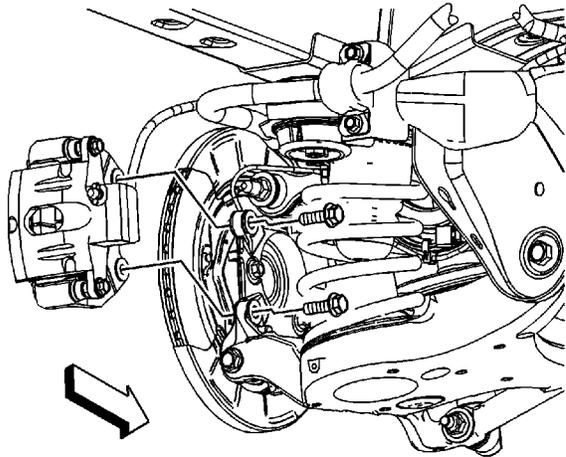
13. Install the lower bolts to the rear shock absorbers. Refer to [Shock Absorber Replacement](#).

Tighten

Tighten the bolts to 50 N·m (37 lb ft).



14. Install the park brake cables to the park brake cable equalizer and park brake cable bracket. Refer to [Park Brake Cable Equalizer Replacement](#).



15. Install the rear brake caliper and bracket assemblies to the rear knuckles.
16. Install the rear brake caliper bracket bolts.

Tighten

Tighten the bolts to 50 N·m (37 lb ft).

17. Install the muffler. [Exhaust Muffler Replacement](#).
18. Install the rear tire and wheel assemblies. Refer to [Tire and Wheel Removal and Installation](#).
19. Lower the vehicle.

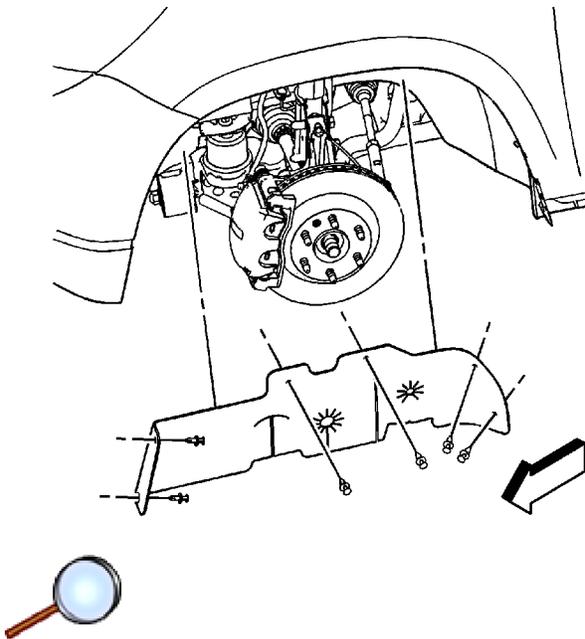
Front Frame Replacement

Tools Required

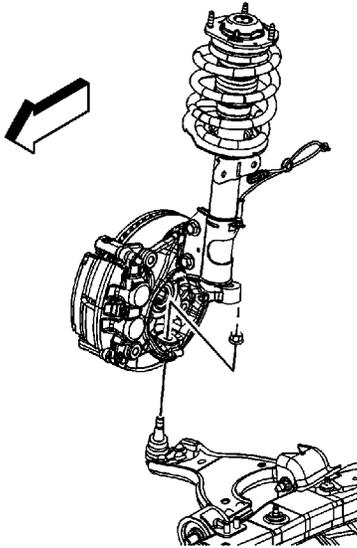
J-39580 Engine Support Stand

Removal Procedure

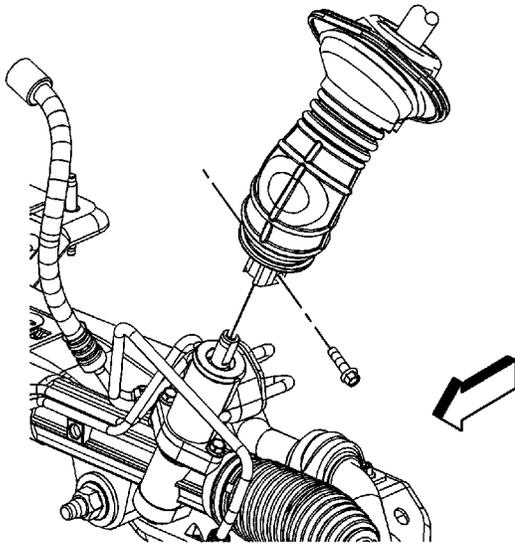
1. Install the engine support fixture. Refer to [Engine Support Fixture](#).
2. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
3. Remove the front tires and wheels. Refer to [Tire and Wheel Removal and Installation](#).



4. Remove the left engine splash shield. Refer to [Engine Splash Shield Replacement](#).
5. Remove the exhaust flexible pipe. Refer to [Exhaust Flexible Pipe Replacement](#).
6. Remove the propeller shaft if the vehicle is equipped with all wheel drive. Refer to [Propeller Shaft Replacement](#).



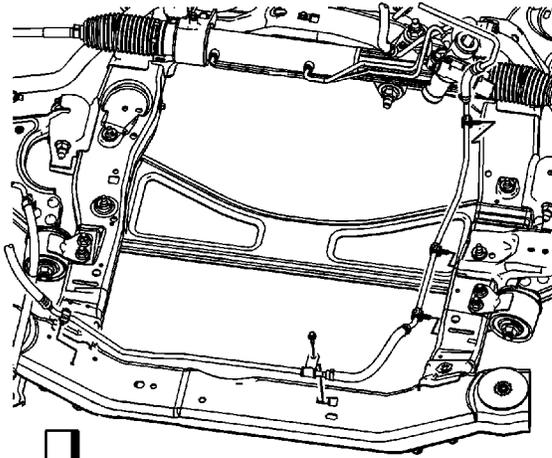
7. Remove both lower ball joint retaining nuts. Refer to [Lower Control Arm Replacement](#).
8. Remove the lower ball joints from the steering knuckles. Refer to [Lower Control Arm Replacement](#).
9. Disconnect the stabilizer shaft links from the stabilizer shaft. Refer to [Stabilizer Shaft Link Replacement](#).
10. Remove the power steering gear heat shields. Refer to [Steering Gear Heat Shield Replacement](#).



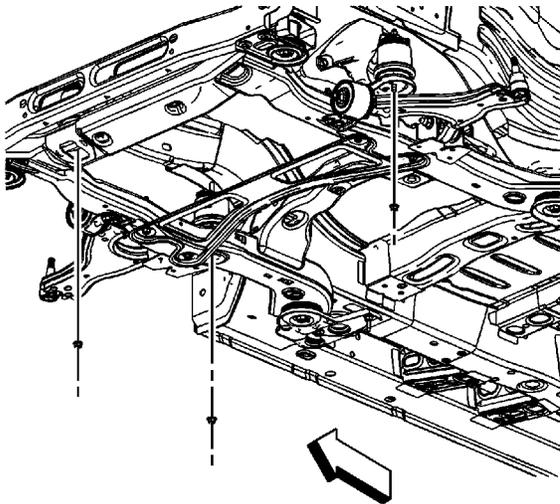
Note: Whenever the steering gear is moved in relation to the body, disconnect the intermediate shaft from the steering gear stub shaft.

11. Disconnect the intermediate shaft from the steering gear stub shaft. Refer to [Intermediate Steering Shaft Replacement](#).

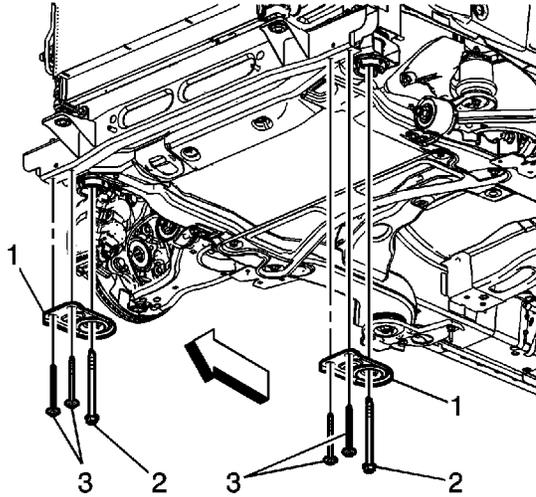
12. Remove the power steering gear bolts. Refer to [Steering Gear Replacement](#).
13. Remove the power steering gear from the frame. Refer to [Steering Gear Replacement](#).
14. Use mechanics wire secure the power steering gear to the exhaust manifold.



15. Remove the power steering cooler inlet pipe from the frame. Refer to [Power Steering Cooler Pipe/Hose Replacement](#).



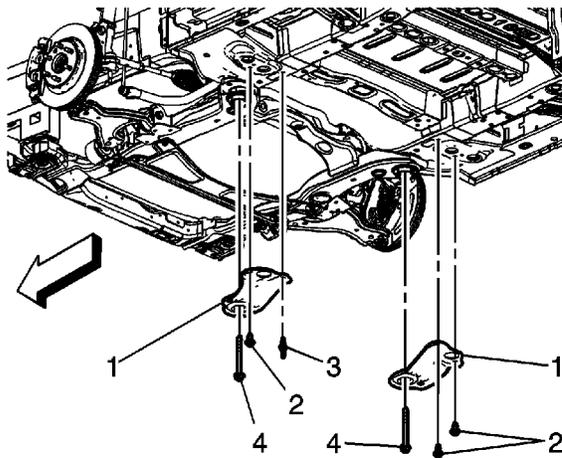
16. Remove and discard the engine and transmission mount lower nuts.
17. Lower the vehicle until the frame contacts the [J 39580](#) .
18. Remove the underbody rear side rail. Refer to [Underbody Rear Side Rail Replacement](#).



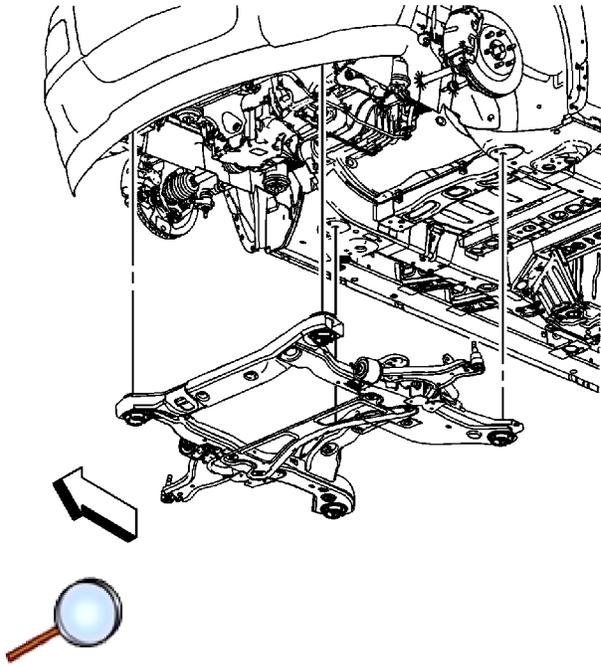
19. Remove the front crossmember brace bolts (3).

Note: When the frame insulator bolts are removed, always discard the bolts and replace with new bolts.

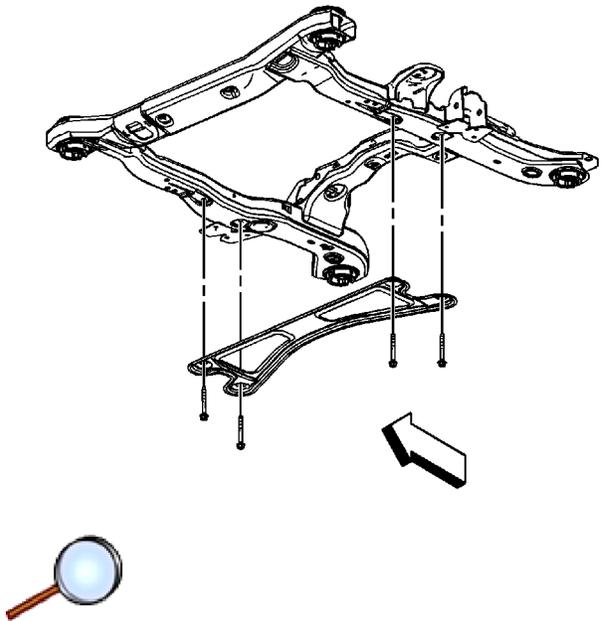
20. Remove the front frame to body bolts (2).
 21. Remove the front crossmember brace (1).



22. Remove the reinforcement bolts (2).
 23. Remove the reinforcement studs (3).
 24. Remove the frame to body bolts (4).
 25. Remove the reinforcements (1).

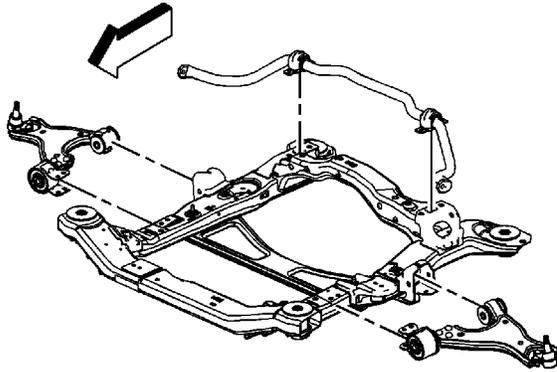


26. Raise the vehicle in order to separate the frame from the vehicle.



27. Remove the frame brace bolts.

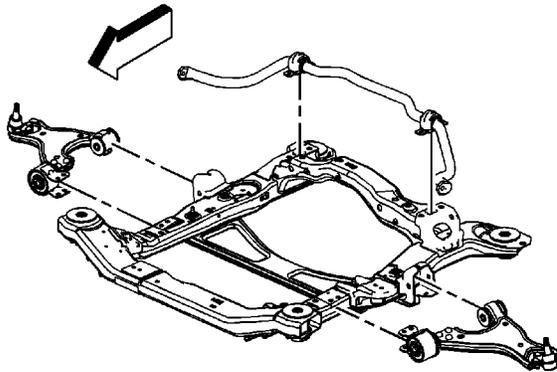
28. Remove the frame brace.



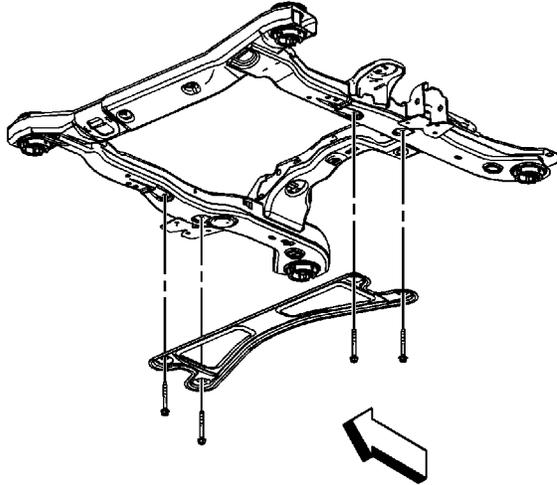
29. Remove the stabilizer shaft. Refer to [Stabilizer Shaft Insulator Replacement](#).
30. Remove the lower control arms. Refer to [Lower Control Arm Replacement](#).
31. Remove the frame insulators from the frame. Refer to [Front Frame Cushion or Insulator Replacement](#) and [Rear Frame Cushion or Insulator Replacement](#).

Installation Procedure

1. Install the frame insulators to the frame. Refer to [Front Frame Cushion or Insulator Replacement](#) and [Rear Frame Cushion or Insulator Replacement](#).



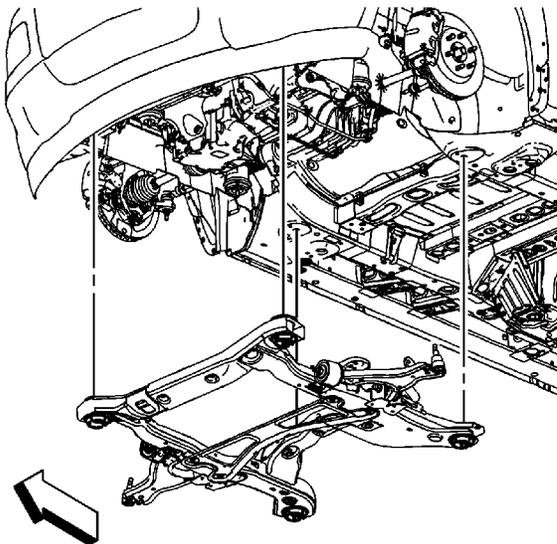
2. Install the lower control arms. Refer to [Lower Control Arm Replacement](#).
3. Install the stabilizer shaft. Refer to [Stabilizer Shaft Insulator Replacement](#).



4. Install the frame brace.

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

5. Install the frame brace bolts and tighten to **60 N·m (44 lb ft)**



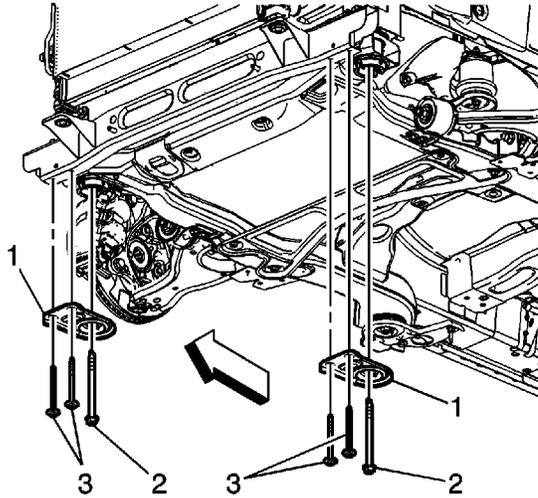
6. Position the transmission table with the frame under the vehicle.

Note: Ensure that the power steering cooler line does not become trapped by the engine mount during this step.

7. Lower the vehicle while aligning the powertrain mounts with the frame until the vehicle is close to the frame.

Note: Ensure that the alignment pins remain installed during the frame installation.

- Inserting two 19 mm (0.75 in) diameter X 203 mm (8.0 in) long guide pins or drill bits into the frame rear alignment holes in order to align the frame.

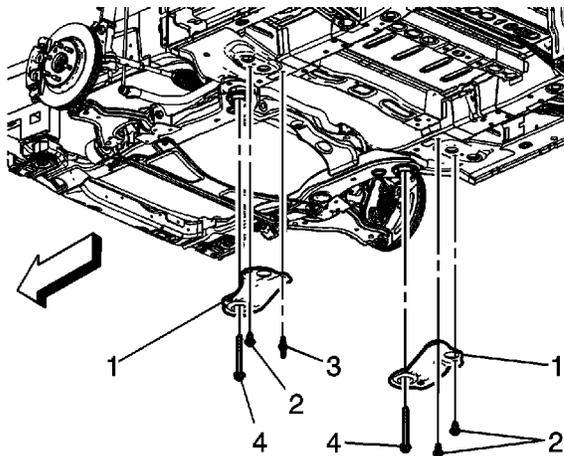


- Install the front crossmember brace (1).

Note: If the frame insulator bolt does not screw in smoothly, run a tap through the frame nut in the body in order to remove foreign material. Ensure the tap does not punch through the underbody.

Do not over tighten the insulator. Over tightening may collapse a spacer or strip a bolt.

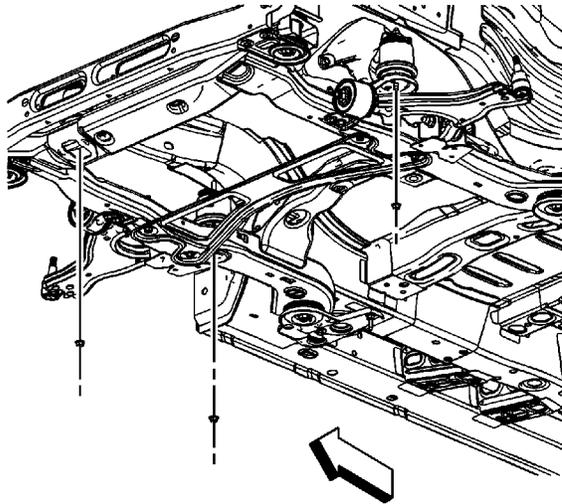
- Install the front frame to body bolts (2) and tighten to **110 N·m (81 lb ft) plus 90 degrees**.
- Install the front crossmember brace bolts (3) and tighten to **50 N·m (37 lb ft)**.



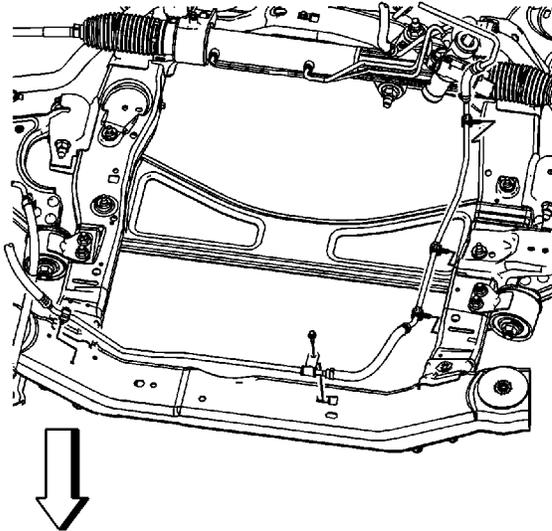


12. Install the reinforcements (1).
13. Install the rear frame to body bolts (4) and tighten to **110 N·m (81 lb ft) plus 90 degrees**.
14. Install the reinforcement bolts (2) and tighten to **60 N·m (44 lb ft)**.
15. Install the reinforcement studs (3) and tighten to **60 N·m (44 lb ft)**.
16. Remove the alignment pins from the frame.
17. Install the underbody rear side rail. Refer to [Underbody Rear Side Rail Replacement](#).

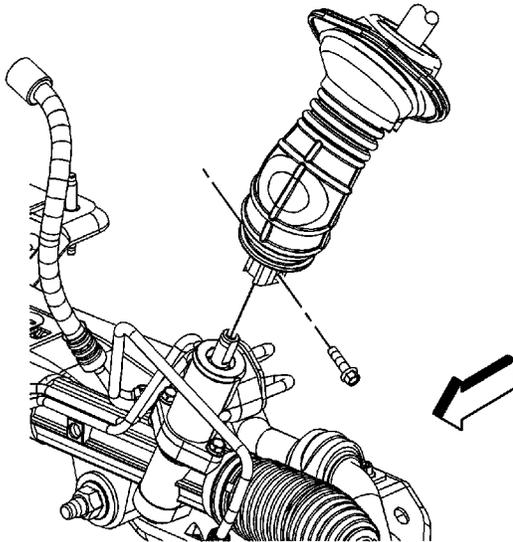
Note: The engine and transmission mount nuts must be replaced once removed. When the nut has to be loosened or removed, threadlocker must be used in addition to using a new nut. Allow adhesive on new engine and transmission mount nuts to cure for 24 hours after replacement.



18. Apply threadlocker GM P/N 12345382 (Canadian P/N 10953489) to the engine and transmission mount threads.
19. Install the engine and transmission mount nuts and tighten to **75 N·m (55 lb ft)**.

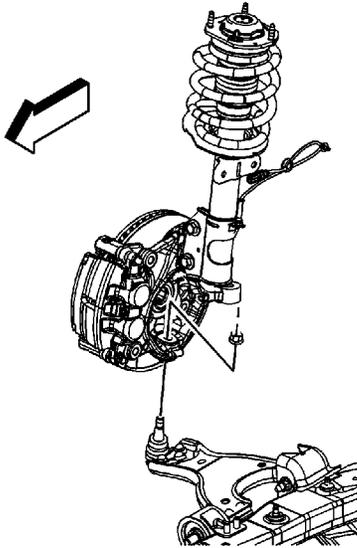


20. Install the power steering cooler inlet pipe to the frame. Refer to [Power Steering Cooler Pipe/Hose Replacement](#).
21. Install the power steering gear to the frame. Refer to [Steering Gear Replacement](#).
22. Install the power steering gear bolts. Refer to [Steering Gear Replacement](#).
23. Install the power steering gear heat shield. Refer to [Steering Gear Heat Shield Replacement](#).

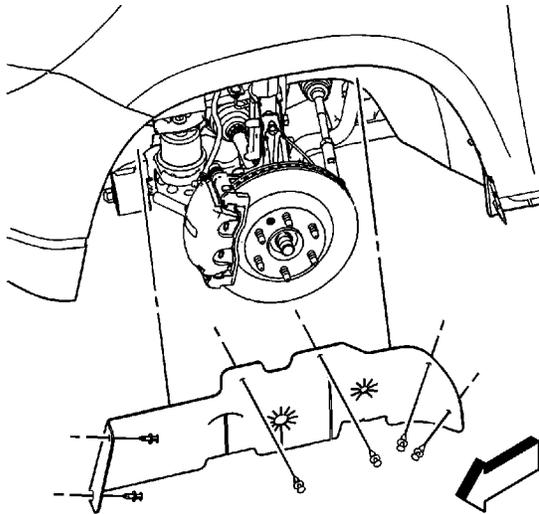


Note: Whenever the steering gear is moved in relation to the body, disconnect the intermediate shaft from the steering gear stub shaft.

24. Disconnect the intermediate shaft from the steering gear stub shaft. Refer to [Intermediate Steering Shaft Replacement](#).
25. Connect the stabilizer shaft links to the stabilizer shaft. Refer to [Stabilizer Shaft Link Replacement](#).

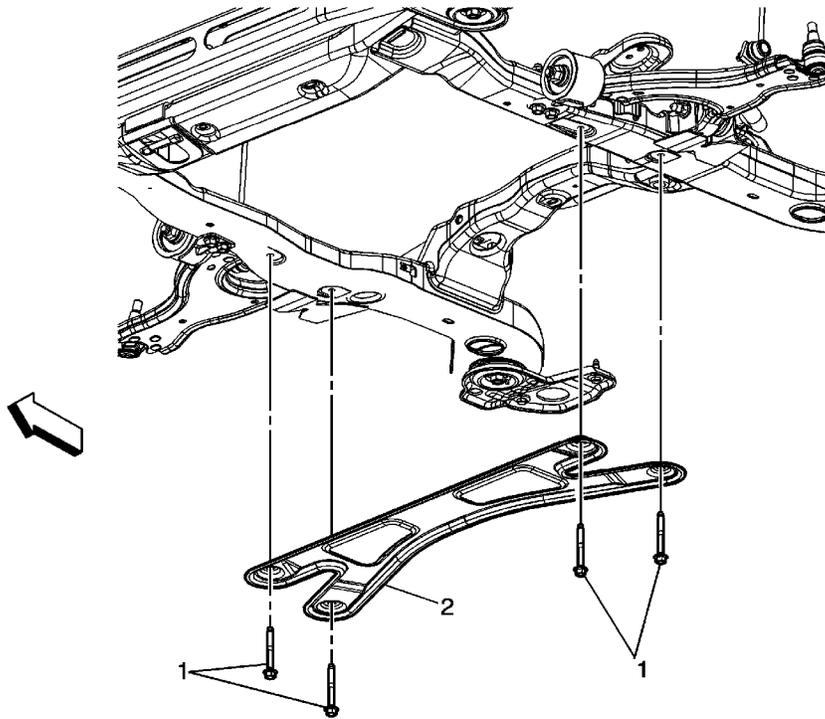


26. Install the lower ball joints to the steering knuckles. Refer to [Lower Control Arm Replacement](#).
27. Install both lower ball joint retaining nuts. Refer to [Lower Control Arm Replacement](#).
28. Install the propeller shaft if the vehicle is equipped with all wheel drive. Refer to [Propeller Shaft Replacement](#).
29. Install the exhaust flexible pipe. Refer to [Exhaust Flexible Pipe Replacement](#).



30. Install the left engine splash shield. Refer to [Engine Splash Shield Replacement](#).
31. Install the front tires and wheels. Refer to [Tire and Wheel Removal and Installation](#).
32. Lower the vehicle.
33. Remove the engine support fixture.
34. Inspect the front wheel alignment and adjust the toe angle if necessary. Refer to [Wheel Alignment Measurement](#).

Frame Brace Replacement



Callout	Component Name
Preliminary Procedure	
Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle .	
1	Frame Brace Bolt (Qty: 4) Caution: Refer to Fastener Caution in the Preface section. Tighten 60 N·m (44 lb ft)
2	Frame Brace

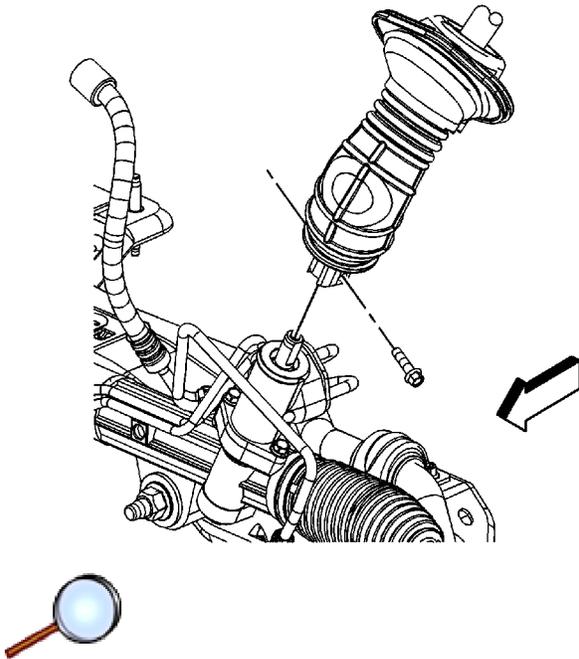
Drivetrain and Front Suspension Frame Front Insulator Replacement

Special Tools

J 45725 Frame Bushing Installer

Removal Procedure

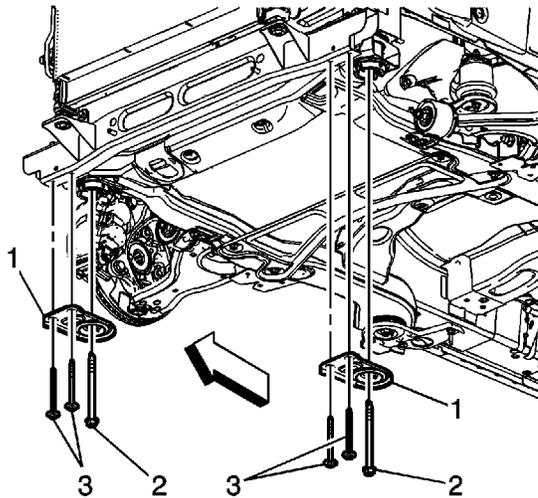
1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).



Note: Whenever the frame is moved in relation to the body, disconnect the intermediate shaft from the steering gear stub shaft.

2. Disconnect the intermediate shaft from the steering gear stub shaft. Refer to [Intermediate Steering Shaft Replacement](#).
3. Install a jackstand under the center of the frame, between the front frame insulators.

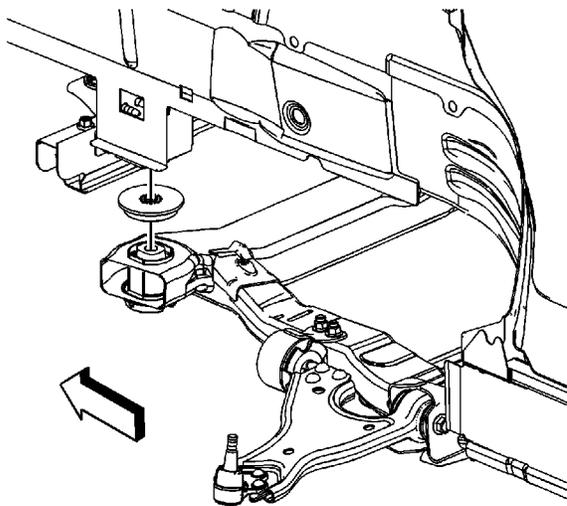
Note: In order to remove any frame insulator, loosen the adjacent frame insulator to permit the frame to separate from the body. Use caution when lowering or tilting the frame to prevent damage to other components.



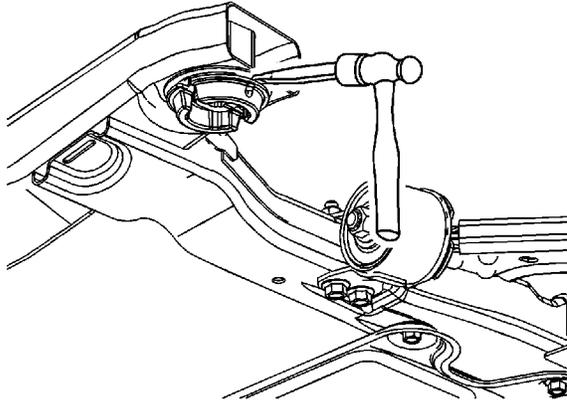
4. Remove the front crossmember brace bolts (3).

Note: When the frame insulator bolts are removed, always discard the bolts and replace with new bolts.

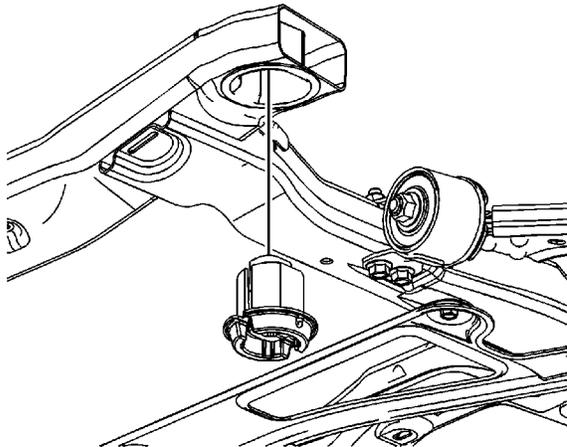
5. Remove the front frame to body bolts (2).
6. Remove the crossmember brace (1).



7. Lower the front of the frame only enough to service the insulator, approximately 38 mm (1.5 in).
8. Remove the upper insulator.



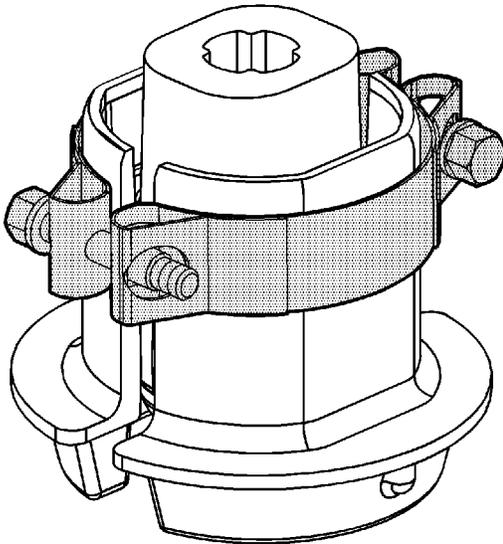
9. Remove the lower insulator using a flat chisel. Begin extracting the insulator by guiding the wedge of the chisel tip between the insulator flange lip and the vehicle frame.



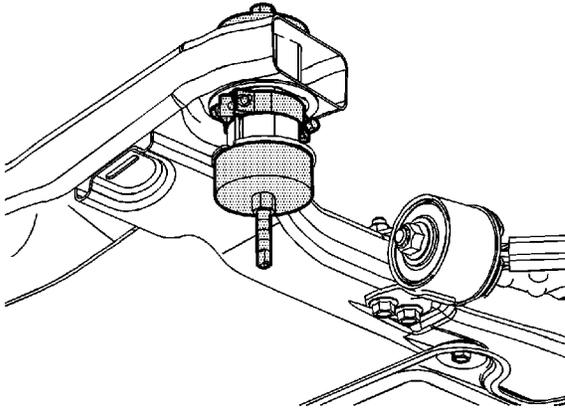
10. Continue extracting the insulator until it is fully removed from the frame.

Installation Procedure

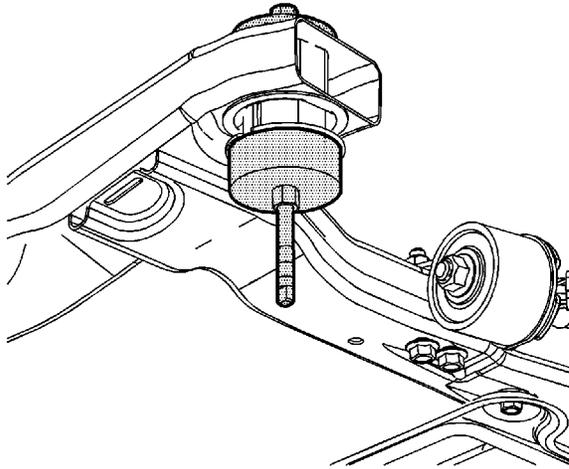
1. Clean the frame insulator opening.
2. Apply a thin coat of rubber lubricant GM P/N 1051717 (Canadian P/N 5728223), or equivalent to the inside of the frame insulator opening.
3. Apply a thin coat of rubber lubricant GM P/N 1051717 (Canadian P/N 5728223), or equivalent to the frame insulator.



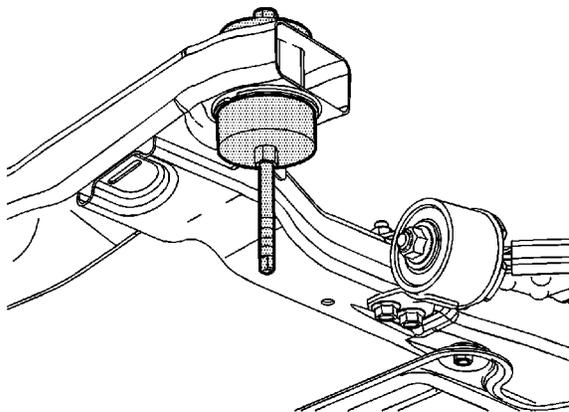
4. Install clamp *J 45725* Installer onto the insulator about 1/8 inch from the top of the insulator.



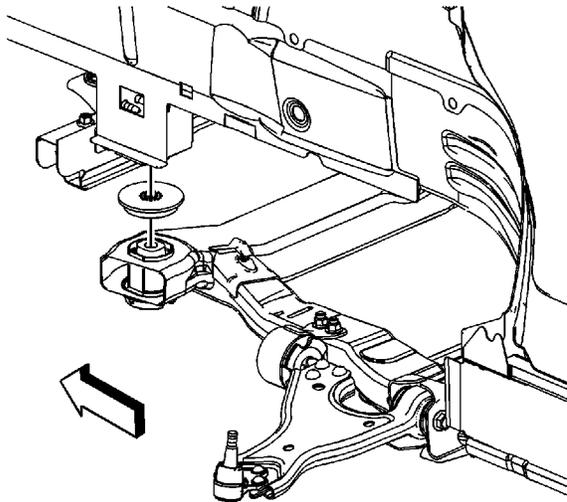
5. Align the split of the insulator to the front of the frame.
6. Install *J 45725* Installer to the insulator and the frame.



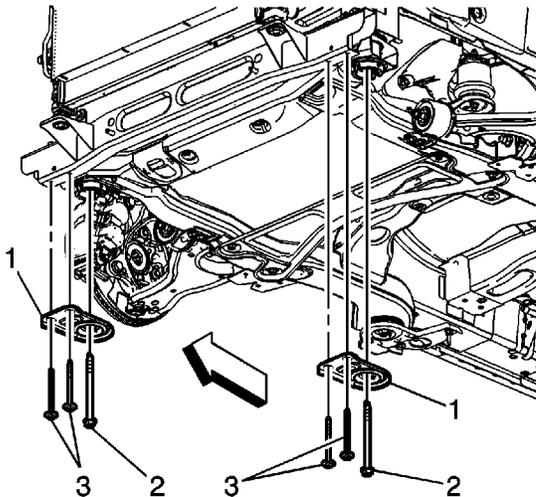
7. Using *J 45725* Installer install the insulator until the insulator is halfway recessed in the frame.
8. Remove only the clamp *J 45725* Installer .



9. Using *J 45725* Installer continue installing the insulator until the flange lip of the insulator is fully seated to the bottom of the frame.
10. Remove *J 45725* Installer from the insulator and the frame.



11. Install the upper insulator.
12. Raise the front of the frame.



13. Install the front crossmember brace (1).

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

Note: If the frame insulator bolt does not screw in smoothly, run a tap through the frame nut in the body in order to remove foreign material. Ensure the tap does not punch through the underbody.

Do not over tighten the insulator. Over tightening may collapse a spacer or strip a bolt.

14. Install the front frame to body bolts (2).

Tighten

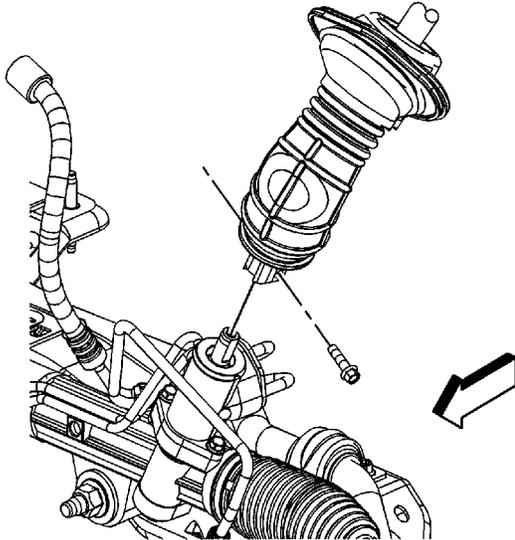
Tighten the bolts to 110 N·m (81 lb ft) plus 90 degrees.

15. Install the front crossmember brace bolts (3).

Tighten

Tighten the bolt to 50 N·m (37 lb ft).

16. Remove the jackstand.



17. Connect the intermediate shaft to the steering gear stub shaft. Refer to [Intermediate Steering Shaft Replacement](#).
18. Lower the vehicle.

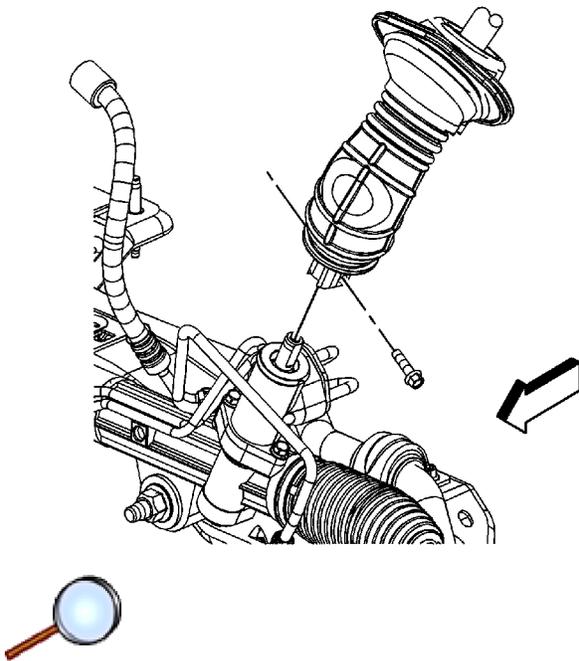
Drivetrain and Front Suspension Frame Rear Insulator Replacement

Special Tools

J 45725 Frame Bushing Installer

Removal Procedure

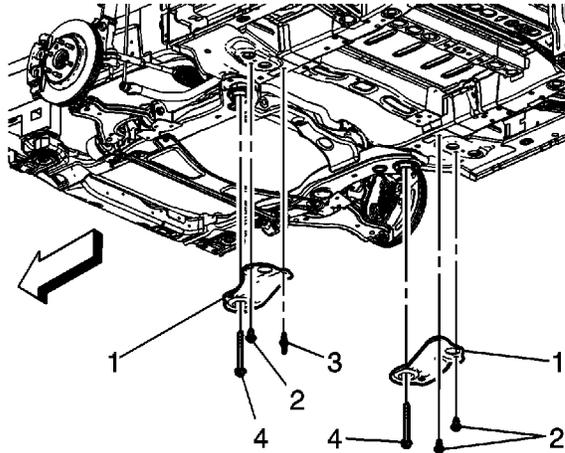
1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).



Note: Whenever the frame is moved in relation to the body, disconnect the intermediate shaft from the steering gear stub shaft.

2. Disconnect the intermediate shaft from the steering gear stub shaft. Refer to [Intermediate Steering Shaft Replacement](#).
3. Install a jackstand under the center of the frame, between the rear frame insulators.

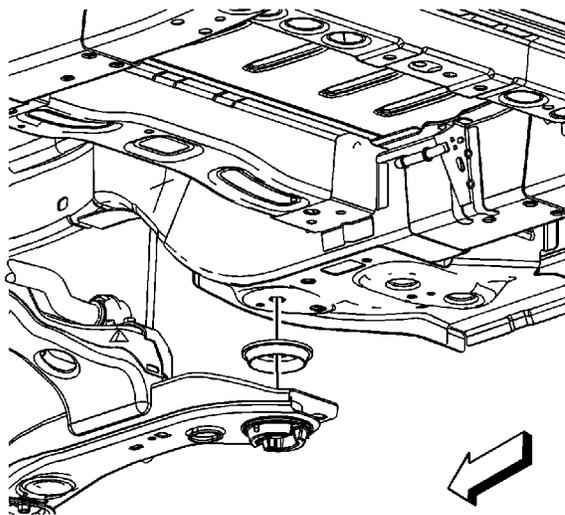
Note: In order to remove any frame insulator, loosen the adjacent frame insulator to permit the frame to separate from the body. Use caution when lowering or tilting the frame to prevent damage to other components.



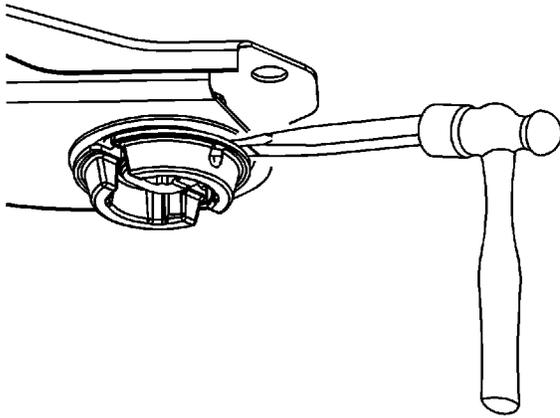
4. Remove the reinforcement bolts (2).
5. Remove the reinforcement studs (3).

Note: When the frame insulator bolts are removed, always discard the bolts and replace with new bolts.

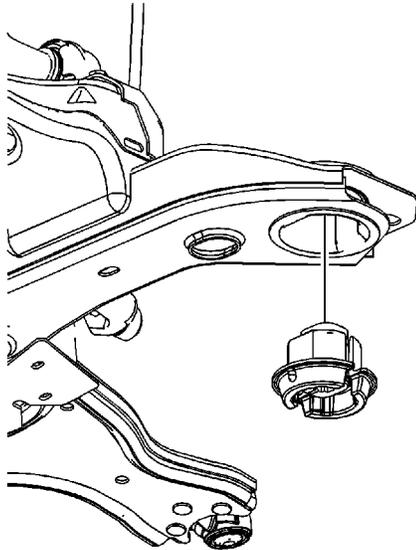
6. Remove the frame to body bolts (4).
7. Remove the reinforcements (1).



8. Lower the rear of the frame only enough to service the insulator, approximately 38 mm (1.5 in).
9. Remove the upper insulator.



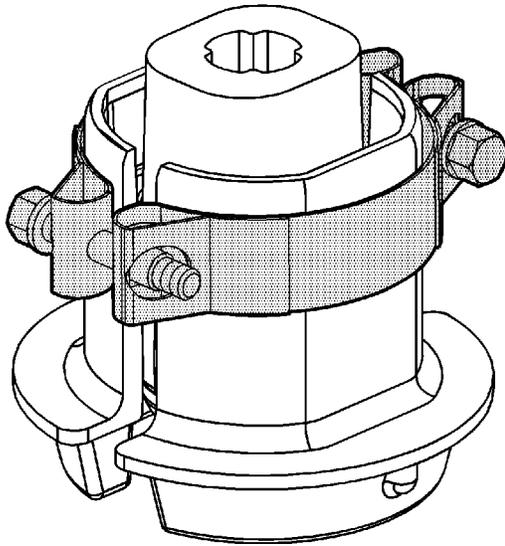
10. Remove the lower insulator using a flat chisel. Begin extracting the insulator by guiding the wedge of the chisel tip between the insulator flange lip and the vehicle frame.



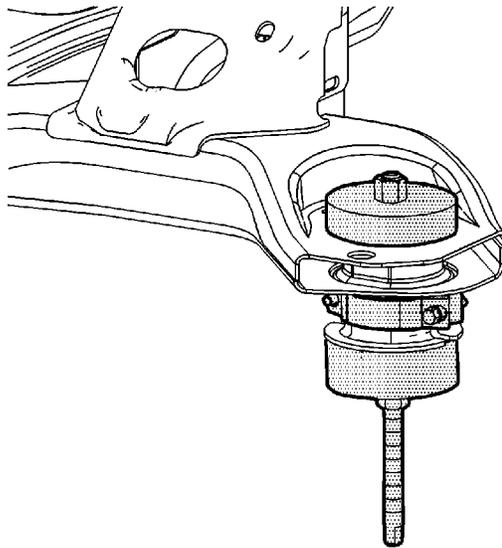
11. Continue extracting the insulator until it is fully removed from the frame.

Installation Procedure

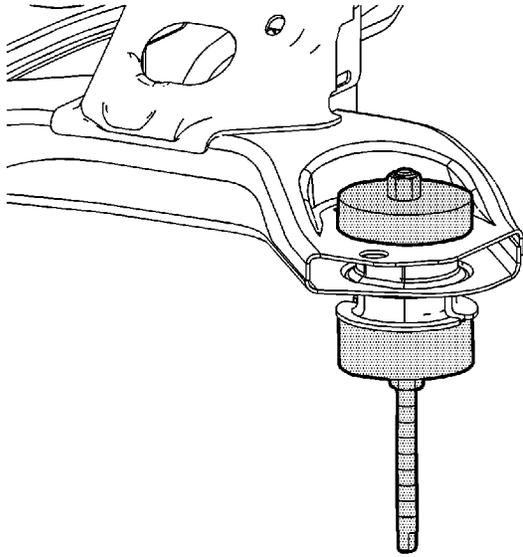
1. Clean the frame insulator opening.
2. Apply a thin coat of rubber lubricant GM P/N 1051717 (Canadian P/N 5728223), or equivalent to the inside of the frame insulator opening.
3. Apply a thin coat of rubber lubricant GM P/N 1051717 (Canadian P/N 5728223), or equivalent to the frame insulator.



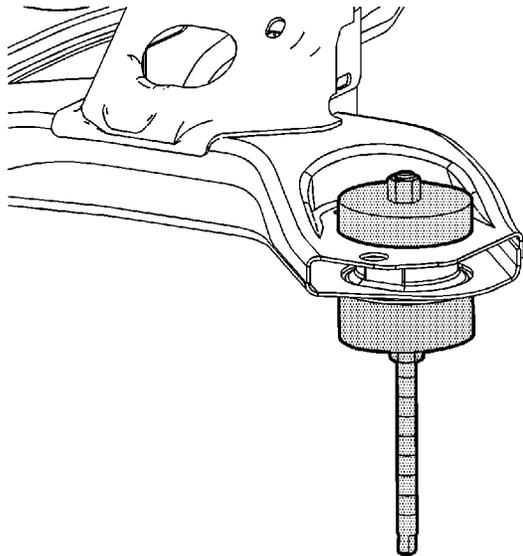
4. Install clamp *J 45725* Installer onto the insulator about 1/8 inch from the top of the insulator.



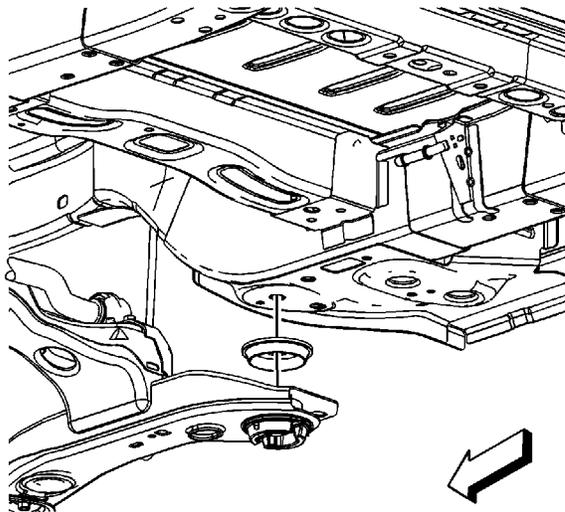
5. Align the split of the insulator to the front of the frame.
6. Install *J 45725* Installer to the insulator and the frame.



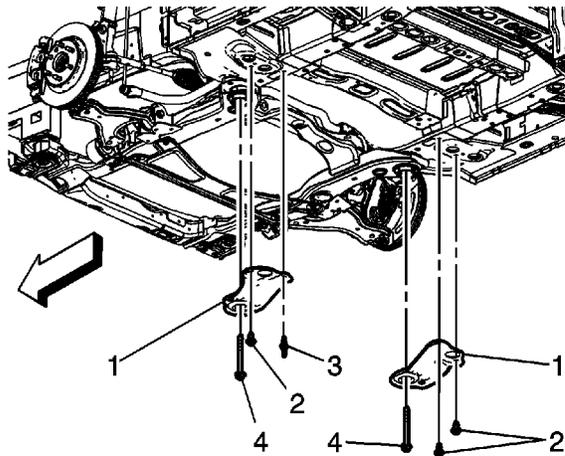
7. Using *J 45725* Installer install the insulator until the insulator is halfway recessed in the frame.
8. Remove only the clamp *J 45725* Installer .



9. Using *J 45725* Installer continue installing the insulator until the flange lip of the insulator is fully seated to the bottom of the frame.
10. Remove *J 45725* Installer from the insulator and the frame.



11. Install the upper insulator.
12. Raise the rear of the frame.



13. Install the reinforcements (1).

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

Note: If the frame insulator bolt does not screw in smoothly, run a tap through the frame nut in the body in order to remove foreign material. Ensure the tap does not punch through the underbody.

Do not over tighten the insulator. Over tightening may collapse a spacer or strip a bolt.

14. Install the rear frame to body bolts (4).

Tighten

Tighten the bolts to 110 N·m (81 lb ft) plus 90 degrees.

15. Install the reinforcement bolts (2).

Tighten

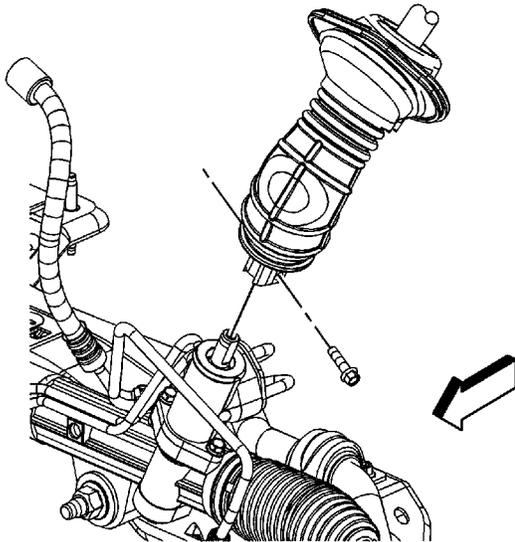
Tighten the bolt to 60 N·m (44 lb ft).

16. Install the reinforcement studs (3).

Tighten

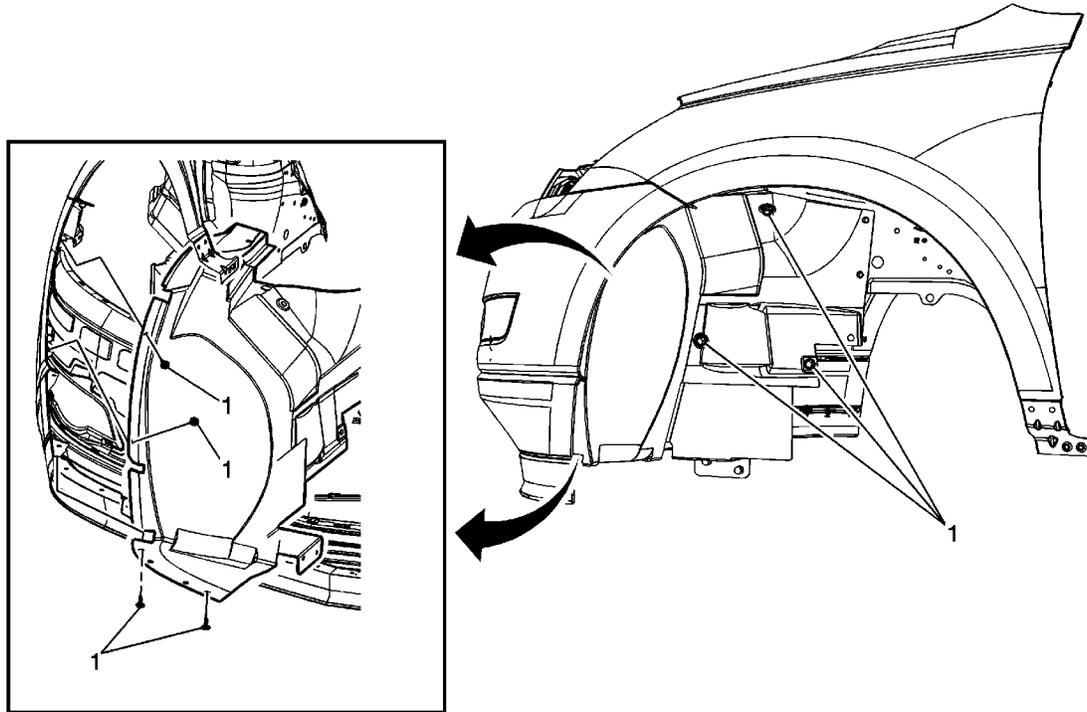
Tighten the stud to 60 N·m (44 lb ft).

17. Remove the jackstand.



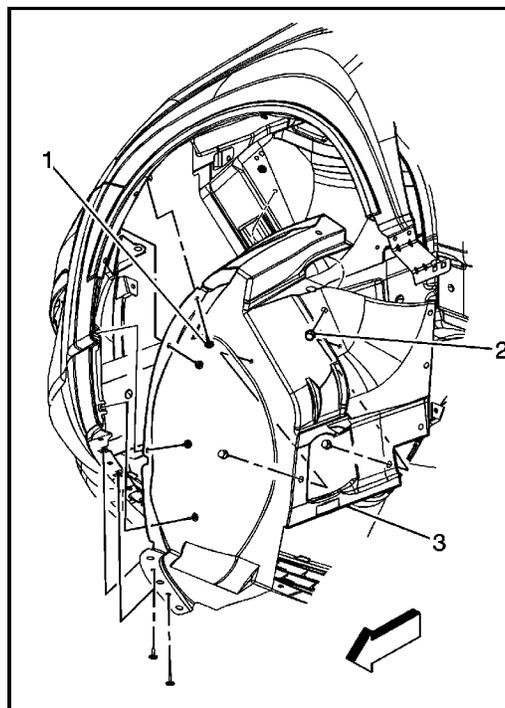
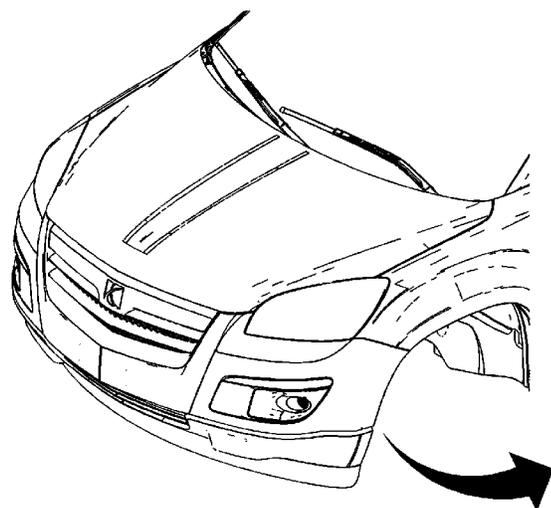
18. Connect the intermediate shaft to the steering gear stub shaft. Refer to [Intermediate Steering Shaft Replacement](#).
19. Lower the vehicle.

Front Wheelhouse Front Liner Replacement (Traverse)



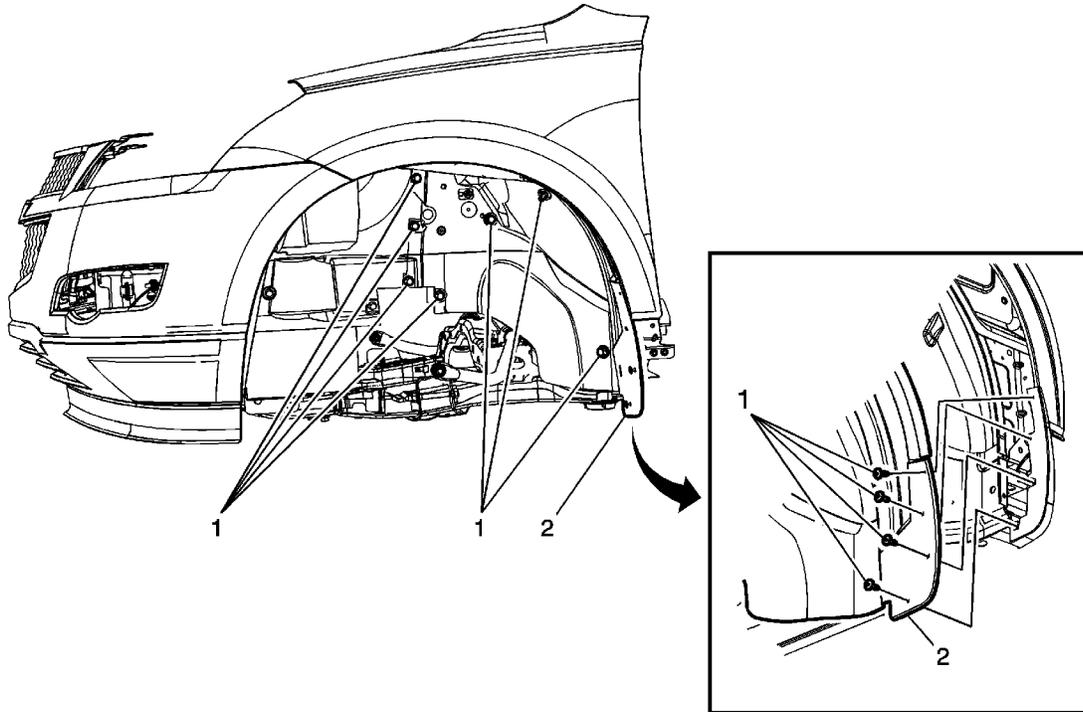
Callout	Component Name
Preliminary Procedure	
Remove the front rear wheelhouse liner. Refer to Front Wheelhouse Rear Liner Replacement .	
1	Front Wheelhouse Liner - Front (Qty: 9)
2	Front Wheelhouse Liner - Front

Front Wheelhouse Front Liner Replacement (Outlook)



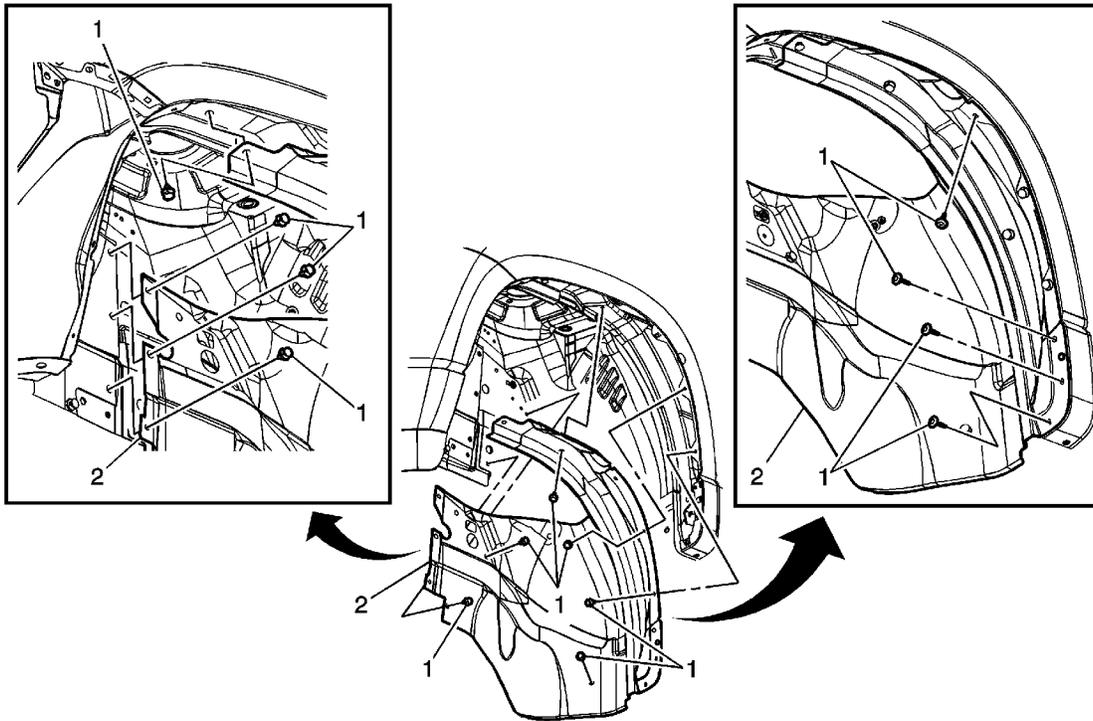
Callout	Component Name
Preliminary Procedure	
Remove the tire/wheel assembly. Refer to Tire and Wheel Removal and Installation .	
1	Front Wheelhouse Liner Screw - Front (Qty: 10) Caution: Refer to Fastener Caution in the Preface section. Tighten 2.5 N·m (22 lb in)
2	Front Wheelhouse Liner Plastic Retainer - Front (Qty: 11)
3	Front Wheelhouse Liner - Front

Front Wheelhouse Rear Liner Replacement (Traverse)



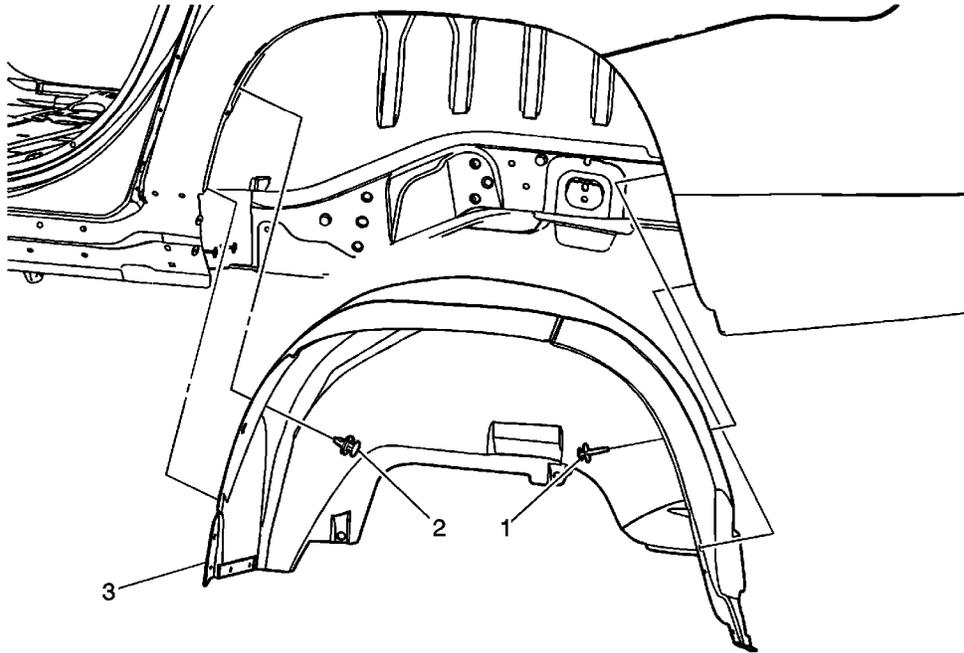
Callout	Component Name
Preliminary Procedure	
Remove the tire and wheel assembly. Refer to Tire and Wheel Removal and Installation .	
1	Front Wheelhouse Panel Rear Plastic Retainer (Qty: 12)
2	Front Wheelhouse Panel Rear

Front Wheelhouse Rear Liner Replacement (Outlook)



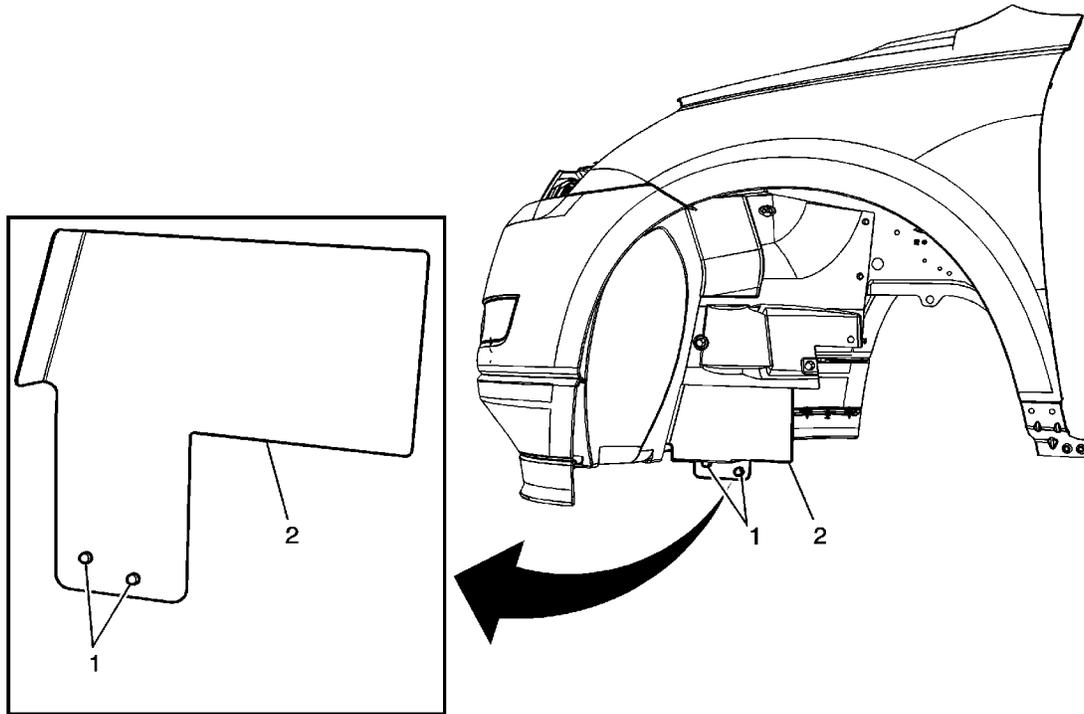
Callout	Component Name
Preliminary Procedure	
Remove the tire and wheel assembly. Refer to Tire and Wheel Removal and Installation .	
1	Front Wheelhouse Panel Rear Plastic Retainer (Qty: 14)
2	Front Wheelhouse Panel Rear

Rear Wheelhouse Panel Liner Replacement



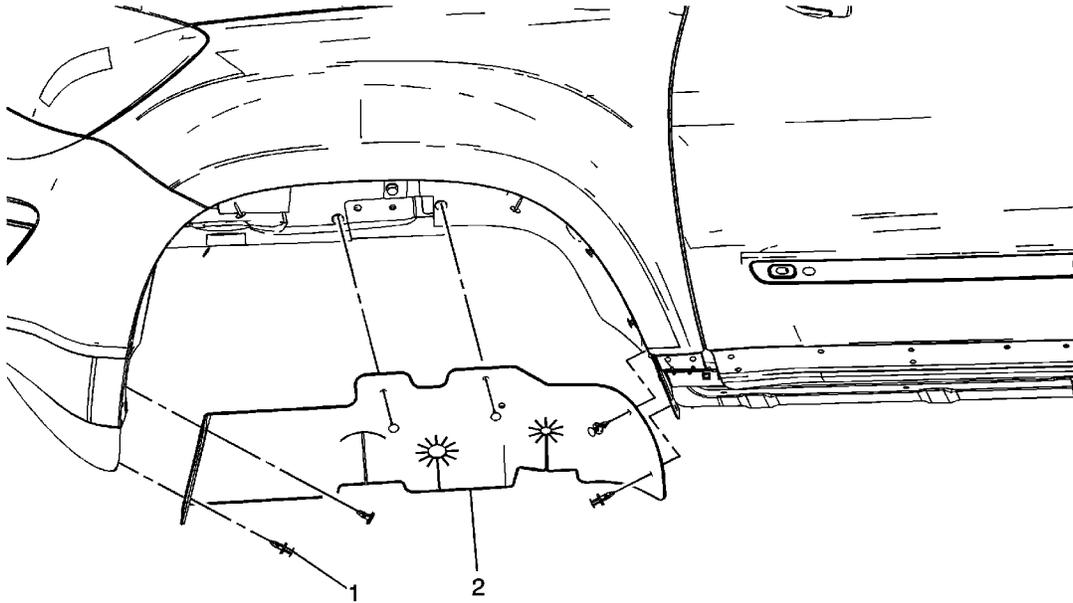
Callout	Component Name
Preliminary Procedure	
Remove the tire and wheel assembly. Refer to Tire and Wheel Removal and Installation .	
1	Rear Wheelhouse Liner Screw (Qty: 4) Caution: Refer to Fastener Caution in the Preface section. Tighten 2.5 N·m (22 lb in)
2	Rear Wheelhouse Liner Plastic Retainer (Qty: 3)
3	Rear Wheelhouse Liner Procedure Install using the reverse procedure, with the proper alignment of the rear wheelhouse liner.

Front Wheelhouse Panel Front Extension Replacement (Traverse)



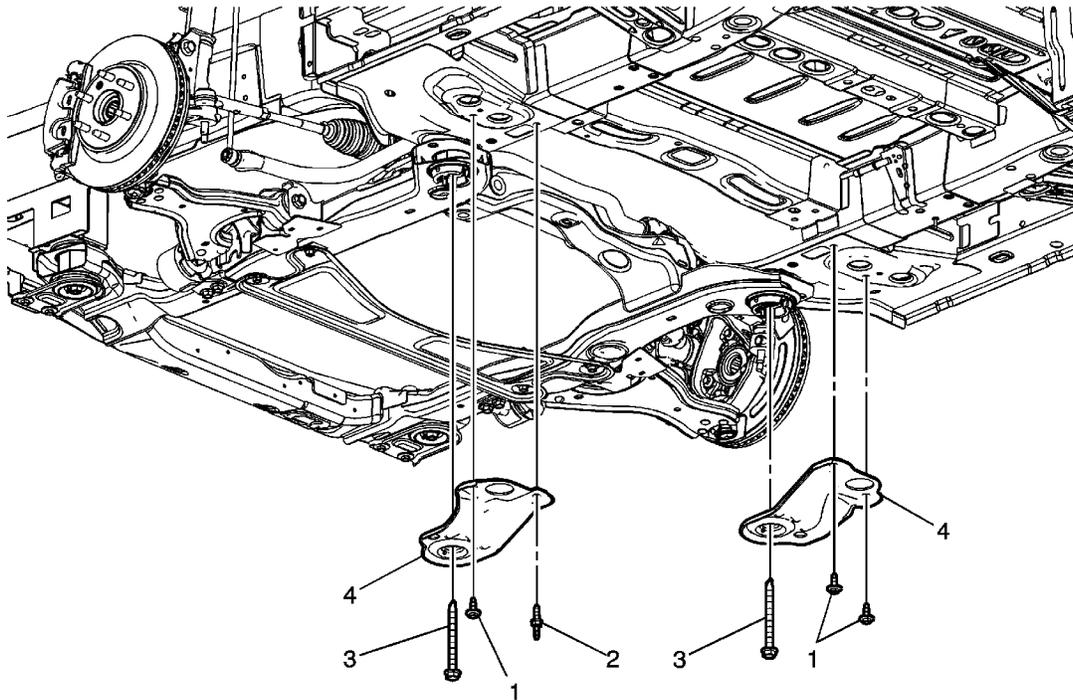
Callout	Component Name
Preliminary Procedures	
1. Lift and support vehicle. Refer to Lifting and Jacking the Vehicle . 2. Remove the tire and wheel assembly. Refer to Tire and Wheel Removal and Installation .	
1	Front Wheelhouse Panel Front Extension Retainer (Qty: 2)
2	Front Wheelhouse Panel Front Extension

Engine Splash Shield Replacement



Callout	Component Name
Preliminary Procedure	
Remove the tire and wheel assembly. Refer to Tire and Wheel Removal and Installation .	
1	Engine Splash Shield Plastic Retainer (Qty: 3)
2	Engine Splash Shield

Drivetrain and Front Suspension Frame Reinforcement Replacement



Callout	Component Name
Preliminary Procedures	
1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle . 2. Remove the underbody rear side rail. Refer to Underbody Rear Side Rail Replacement . 3. Support the frame with a jack stand.	
1	Frame Reinforcement Bolt (Qty: 3) Caution: Refer to Fastener Caution in the Preface section. Tighten 60 N·m (44 lb ft)
2	Frame Reinforcement Stud Tighten 60 N·m (44 lb ft)
3	Frame Bolt (Qty: 2) Tighten

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	110 N·m (81 lb ft) plus 90 degrees
4	Frame Reinforcement (Qty: 2)

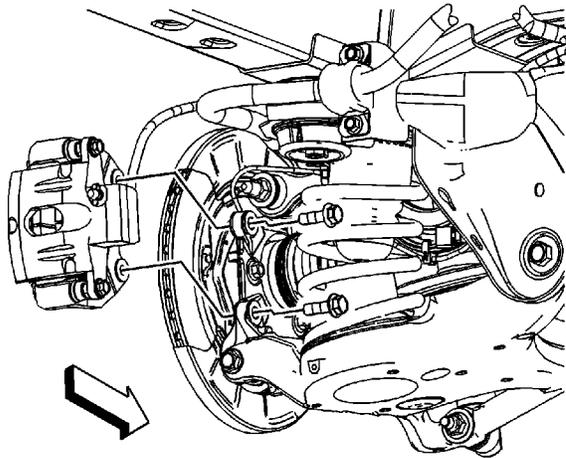
Rear Suspension Support Lower Mount Replacement - Front (All Wheel Drive)

Special Tools

J 45725 Frame Bushing Installer

Removal Procedure

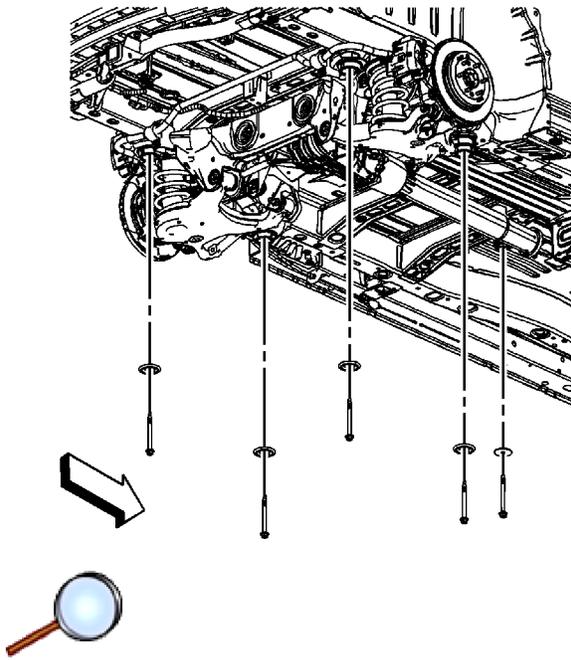
1. Remove the spare tire.
2. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
3. Remove the rear tire and wheel assemblies. Refer to [Tire and Wheel Removal and Installation](#).



4. Remove the rear brake caliper bracket bolts.

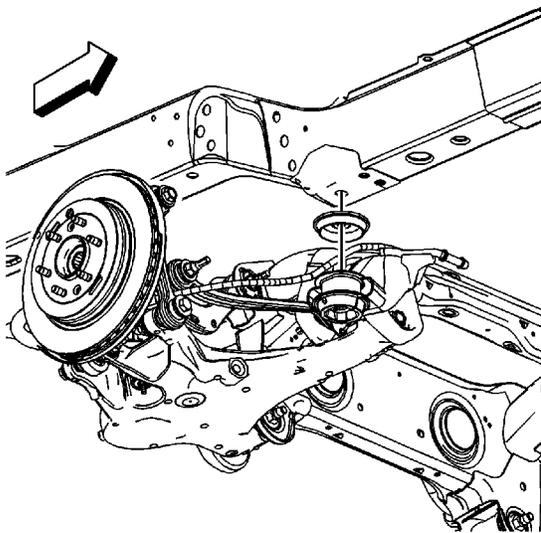
Note: Support the rear brake calipers from the vehicle body not the suspension to prevent stressing of the brake hoses.

5. Support the rear brake caliper.
6. Support the exhaust system on a suitable stand and disconnect the rubber insulator hangers from the exhaust system.
7. Lower the exhaust only enough to allow lowering of the suspension crossmember 38 mm (1.5 in).
8. Install a jackstand under the front of the rear drive module.
9. Install jackstands under the front and rear of the suspension crossmember.

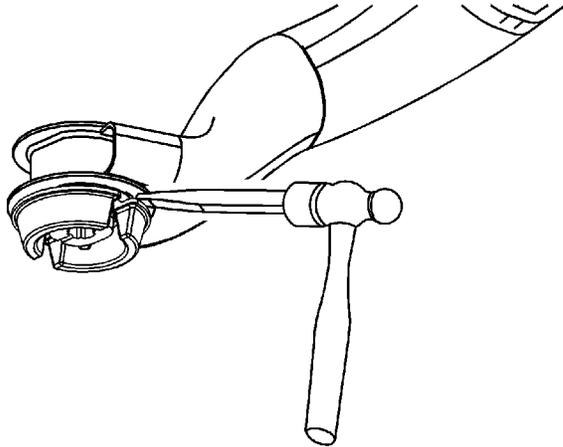


Note: Both the front and rear of the rear drive module must be lowered equally to prevent over stressing the rear drive module bushing and suspension crossmember mounts.

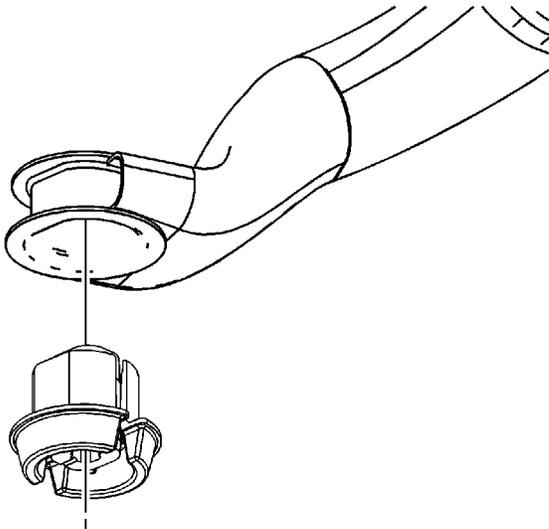
10. Remove the suspension crossmember to body bolts.
11. Remove the rear axle differential to body bolt.



12. Lower the rear drive module and suspension crossmember only enough to service the mount, approximately 38 mm (1.5 in).
13. Remove the upper mount.



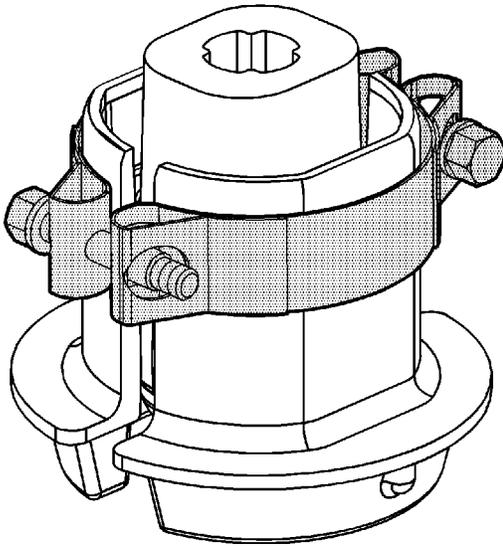
14. Remove the lower mount using a flat chisel. Begin extracting the mount by guiding the wedge of the chisel tip between the mount flange lip and the suspension crossmember.



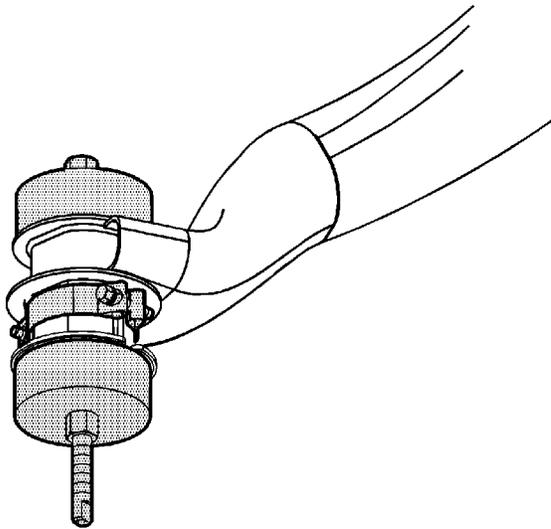
15. Continue extracting the mount until it is fully removed from the suspension crossmember.

Installation Procedure

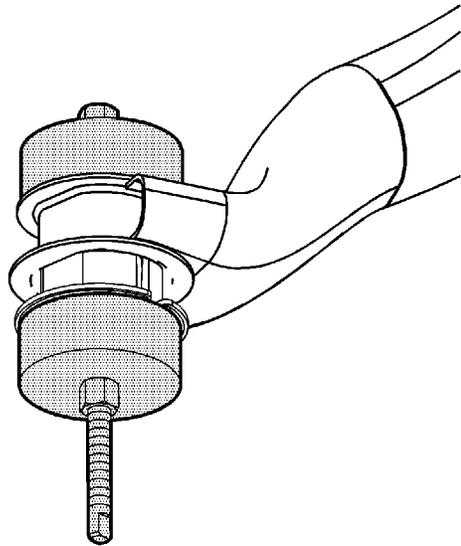
1. Clean the suspension crossmember mount opening.
2. Apply a thin coat of rubber lubricant GM P/N 1051717 (Canadian P/N 5728223), or equivalent to the inside of the suspension crossmember mount opening.
3. Apply a thin coat of rubber lubricant GM P/N 1051717 (Canadian P/N 5728223), or equivalent to the suspension crossmember mount.



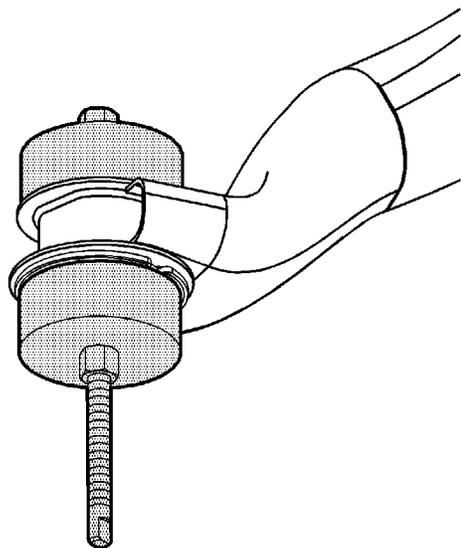
4. Install clamp *J 45725* Installer onto the mount about 1/8 inch from the top of the mount.



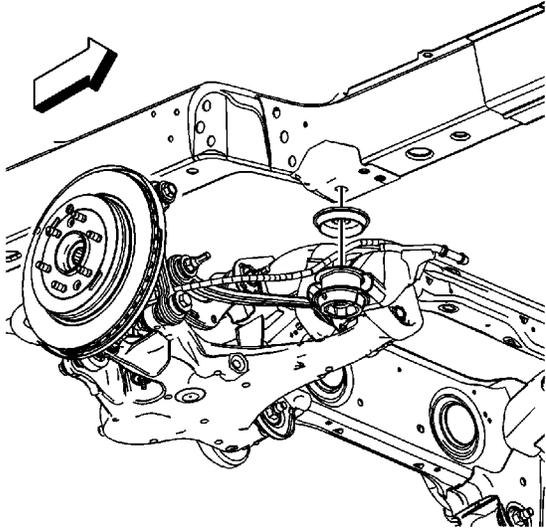
5. Align the split of the mount to the front of the suspension crossmember.
6. Install *J 45725* Installer to the mount and the suspension crossmember.



7. Using *J 45725* Installer install the mount until the mount is halfway recessed in the suspension crossmember.
8. Remove only the clamp *J 45725* Installer .

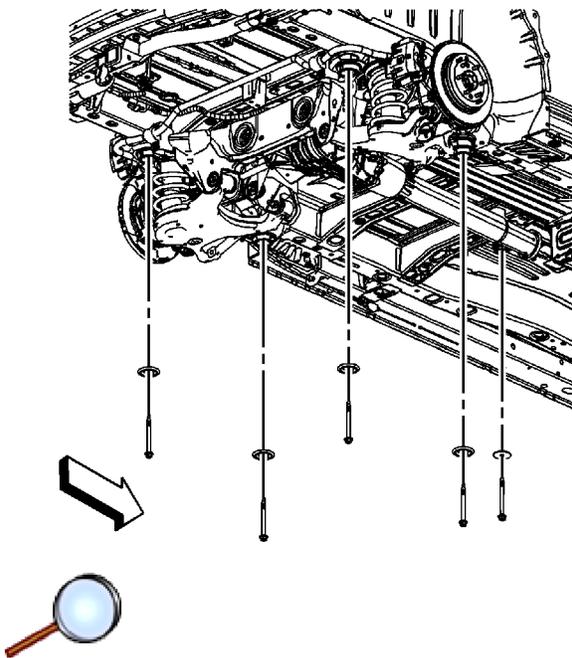


9. Using *J 45725* Installer continue installing the mount until the flange lip of the mount is fully seated to the bottom of the suspension crossmember.
10. Remove *J 45725* Installer from the mount and the suspension crossmember.



11. Install the upper mount.
12. Raise the suspension crossmember and rear drive module.

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



Note: If the suspension crossmember mount bolt does not screw in smoothly, run a tap through the suspension crossmember nut in the body in order to remove foreign material. Ensure the tap does not punch through the underbody.

Do not over tighten the body mount. Over tightening may collapse a spacer or strip a bolt.

13. Install the suspension crossmember to body bolts.

Tighten

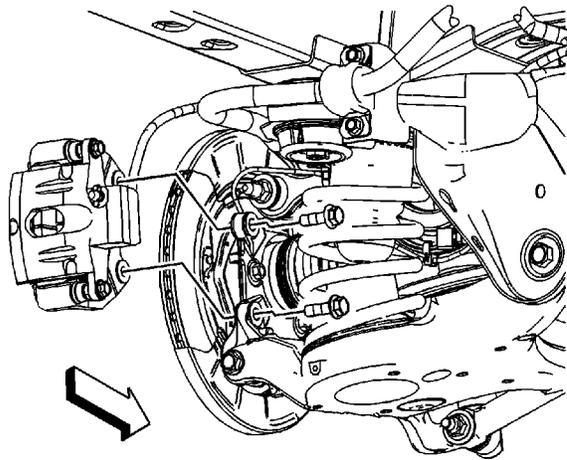
Tighten the bolts to 110 N·m (81 lb ft) plus 90 degrees.

14. Install the rear axle differential to body bolt.

Tighten

Tighten the bolts to 160 N·m (118 lb ft).

15. Remove the jackstands.



16. Install the rear brake caliper bracket and bolts. Refer to [Rear Brake Caliper Bracket Replacement](#).
17. Install the rear tire and wheel assemblies. Refer to [Tire and Wheel Removal and Installation](#).
18. Lower the vehicle.
19. Install the spare tire.

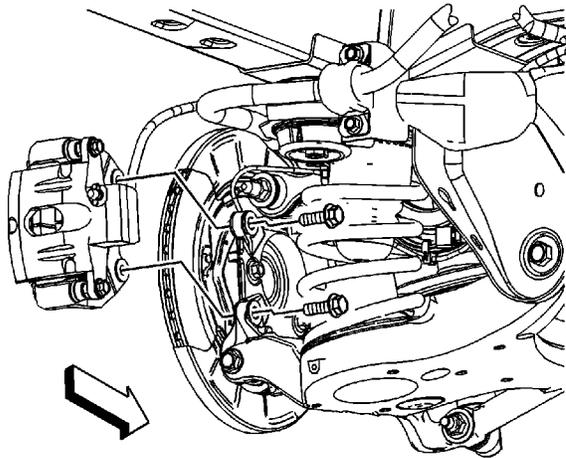
Rear Suspension Support Lower Mount Replacement - Front (Front Wheel Drive)

Special Tools

J 45725 Frame Bushing Installer

Removal Procedure

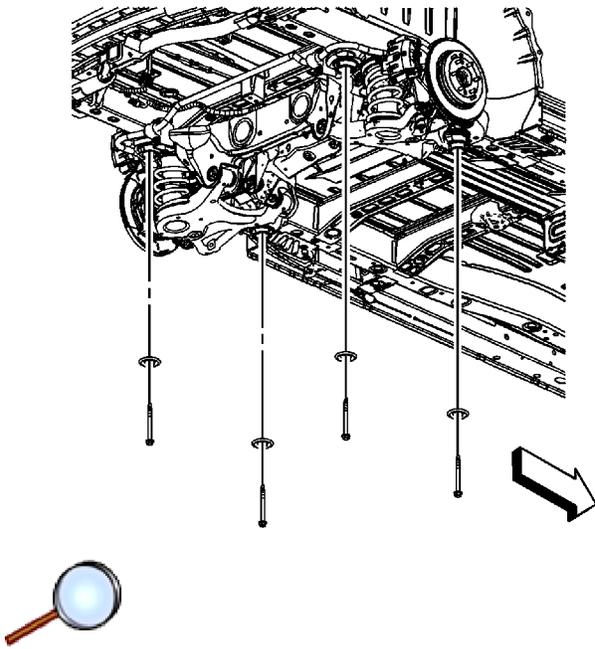
1. Remove the spare tire.
2. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
3. Remove the rear tire and wheel assemblies. Refer to [Tire and Wheel Removal and Installation](#).



4. Remove the rear brake caliper bracket bolts.

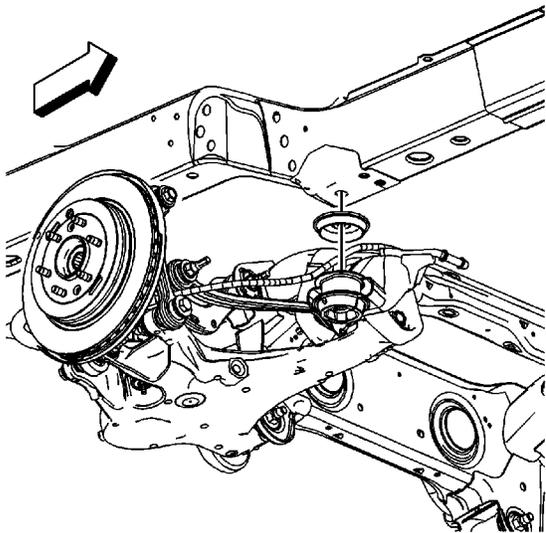
Note: Support the rear brake calipers from the vehicle body not the suspension to prevent stressing of the brake hoses.

5. Support the rear brake caliper.
6. Support the exhaust system on a suitable stand and disconnect the rubber insulator hangers from the exhaust system.
7. Lower the exhaust only enough to allow lowering of the suspension crossmember 38 mm (1.5 in).
8. Install jackstands under the front and rear of the suspension crossmember.

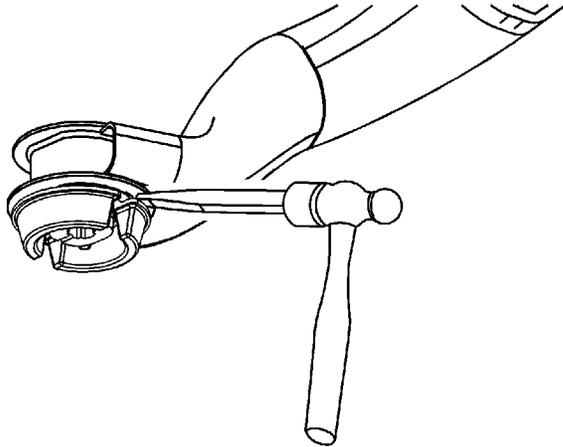


Note: Both the front and rear of the suspension crossmember must be lowered equally to prevent over stressing the mounts.

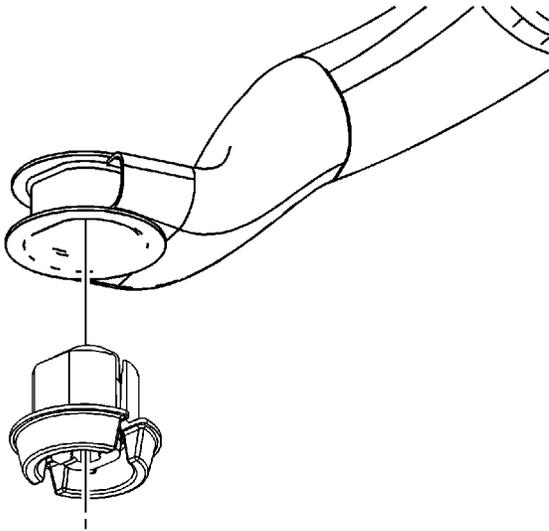
9. Remove the suspension crossmember to body bolts.



10. Lower the suspension crossmember only enough to service the mount, approximately 38 mm (1.5 in).
11. Remove the upper mount.



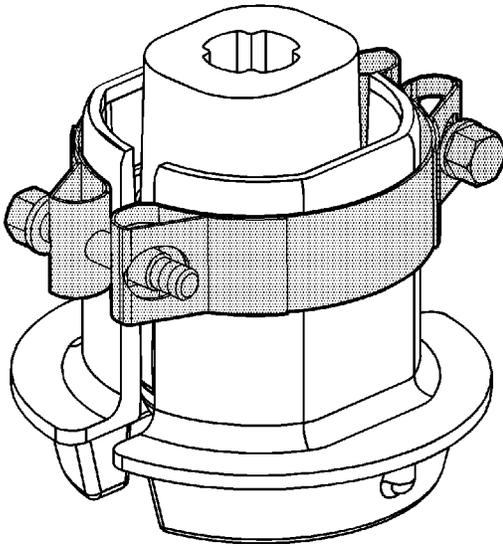
12. Remove the lower mount using a flat chisel. Begin extracting the mount by guiding the wedge of the chisel tip between the mount flange lip and the suspension crossmember.



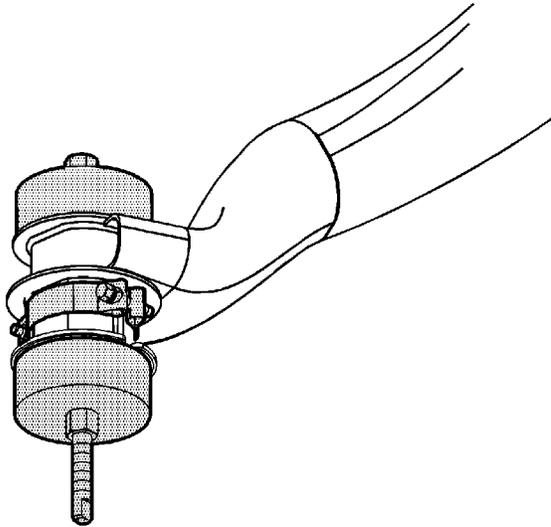
13. Continue extracting the mount until it is fully removed from the suspension crossmember.

Installation Procedure

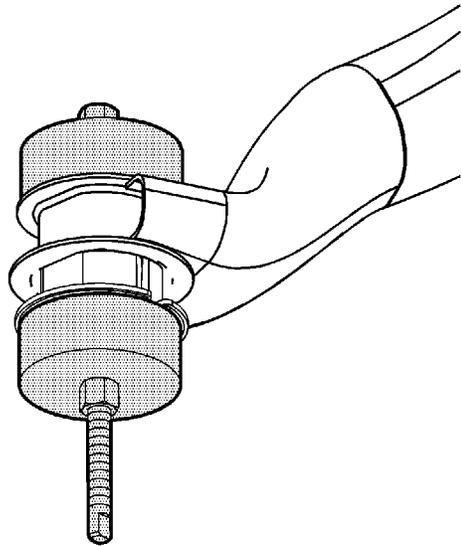
1. Clean the frame mount opening.
2. Apply a thin coat of rubber lubricant GM P/N 1051717 (Canadian P/N 5728223), or equivalent to the inside of the suspension crossmember mount opening.
3. Apply a thin coat of rubber lubricant GM P/N 1051717 (Canadian P/N 5728223), or equivalent to the suspension crossmember mount.



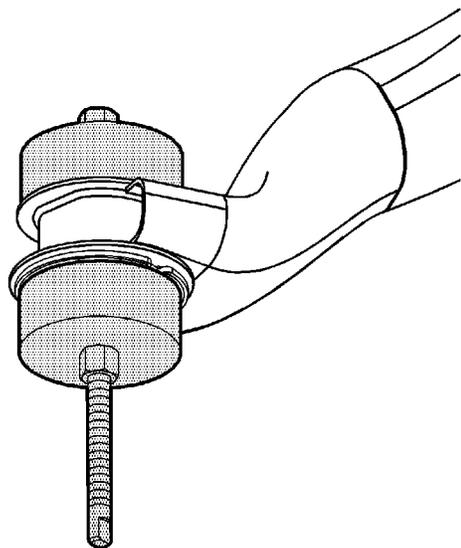
4. Install clamp *J 45725* Installer onto the mount about 1/8 inch from the top of the mount.



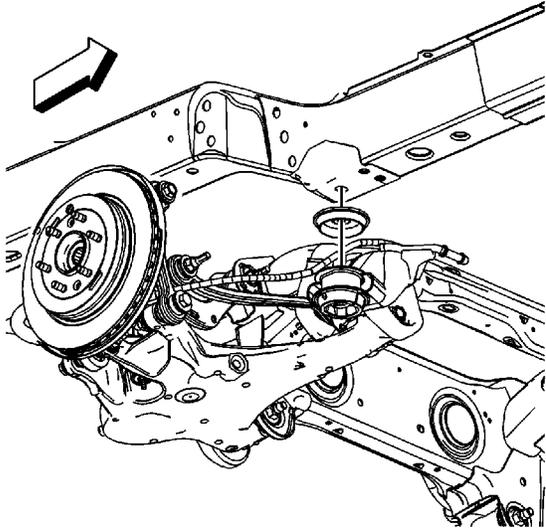
5. Align the split of the mount to the front of the suspension crossmember.
6. Install *J 45725* Installer to the mount and the suspension crossmember.



7. Using *J 45725* Installer install the mount until the mount is halfway recessed in the suspension crossmember.
8. Remove only the clamp *J 45725* Installer .

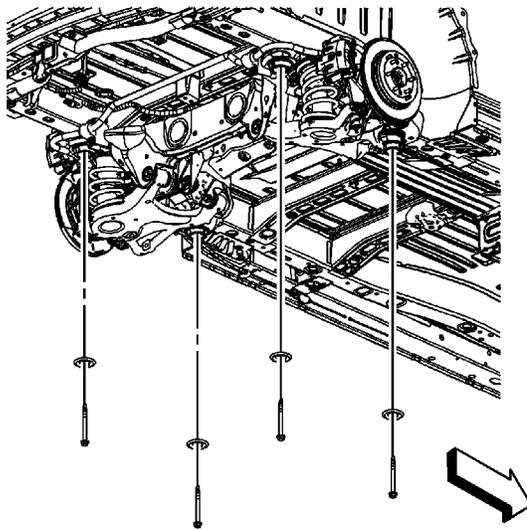


9. Using *J 45725* Installer continue installing the mount until the flange lip of the mount is fully seated to the bottom of the suspension crossmember.
10. Remove *J 45725* Installer from the mount and the suspension crossmember.



11. Install the upper mount.
12. Raise the suspension crossmember.

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



Note: If the suspension crossmember mount bolt does not screw in smoothly, run a tap through the frame crossmember nut in the body in order to remove foreign material. Ensure the tap does not punch through the underbody.

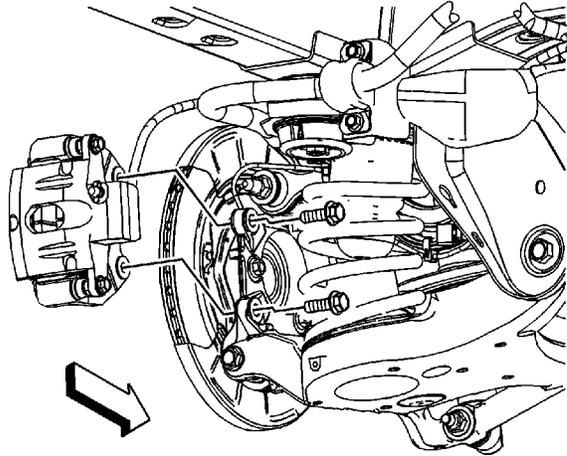
Do not over tighten the body mount. Over tightening may collapse a spacer or strip a bolt.

13. Install the suspension crossmember to body bolts.

Tighten

Tighten the bolts to 110 N·m (81 lb ft) plus 90 degrees.

14. Remove the jackstands.



15. Install the rear brake caliper bracket and bolts. Refer to [Rear Brake Caliper Bracket Replacement](#).
16. Install the rear tire and wheel assemblies. Refer to [Tire and Wheel Removal and Installation](#).
17. Lower the vehicle.
18. Install the spare tire.

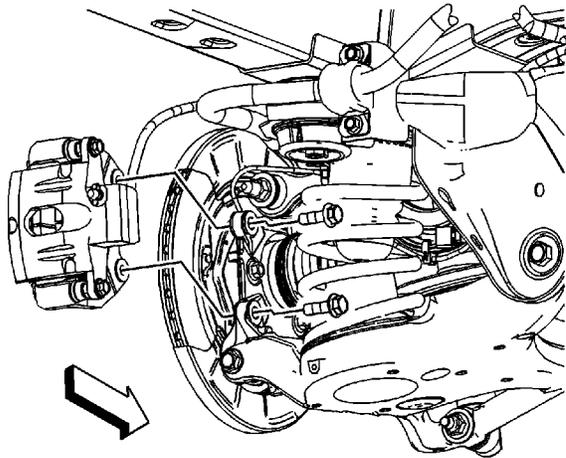
Rear Suspension Support Lower Mount Replacement - Rear (All Wheel Drive)

Special Tools

J 45725 Frame Bushing Installer

Removal Procedure

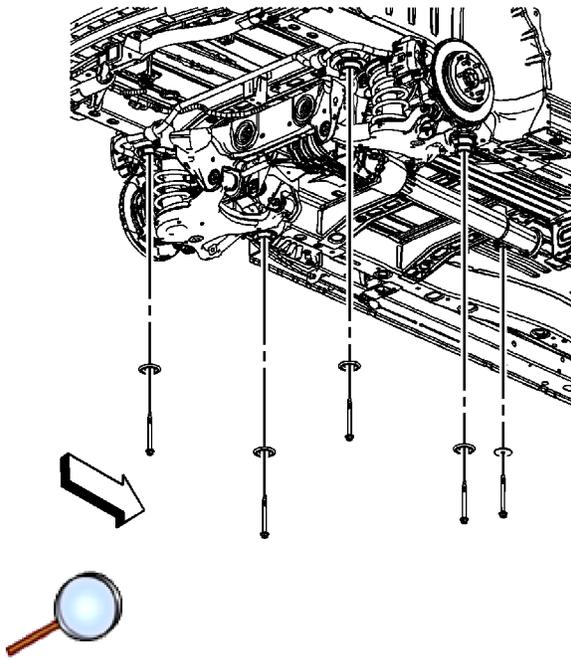
1. Remove the spare tire.
2. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
3. Remove the rear tire and wheel assemblies. Refer to [Tire and Wheel Removal and Installation](#).



4. Remove the rear brake caliper bracket bolts.

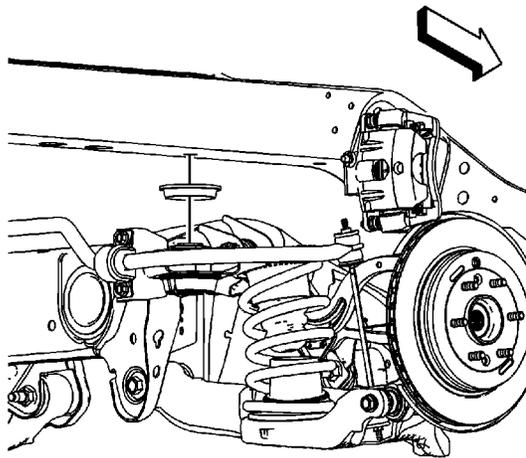
Note: Support the rear brake calipers from the vehicle body not the suspension to prevent stressing of the brake hoses.

5. Support the rear brake caliper.
6. Support the exhaust system on a suitable stand and disconnect the rubber insulator hangers from the exhaust system.
7. Lower the exhaust only enough to allow lowering of the suspension crossmember 38 mm (1.5 in).
8. Install a jackstand under the front of the rear drive module.
9. Install jackstands under the front and rear of the suspension crossmember.

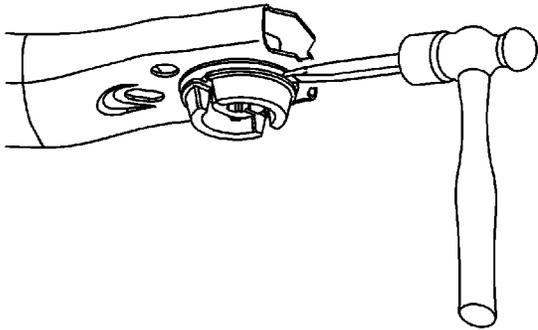


Note: Both the front and rear of the rear drive module must be lowered equally to prevent over stressing the rear drive module bushing and suspension crossmember mounts.

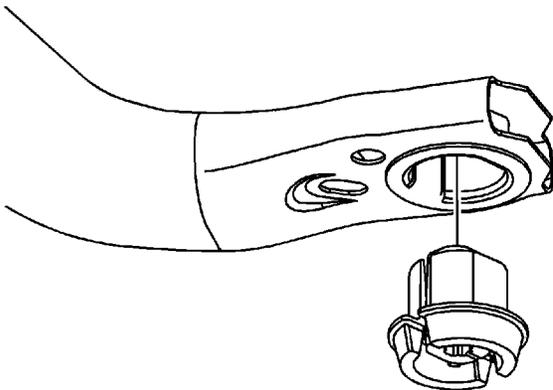
10. Remove the suspension crossmember to body bolts.
11. Remove the rear axle differential to body bolt.



12. Lower the rear drive module and suspension crossmember only enough to service the mount, approximately 38 mm (1.5 in).
13. Remove the upper mount.



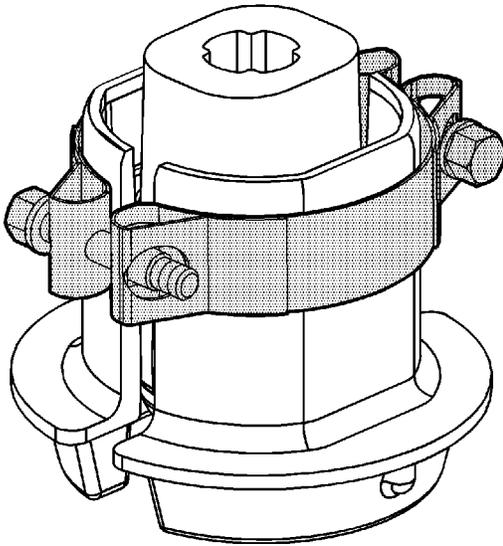
14. Remove the lower mount using a flat chisel. Begin extracting the mount by guiding the wedge of the chisel tip between the mount flange lip and the suspension crossmember.



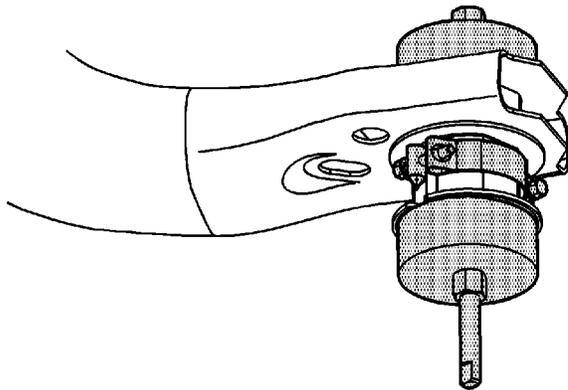
15. Continue extracting the mount until it is fully removed from the suspension crossmember.

Installation Procedure

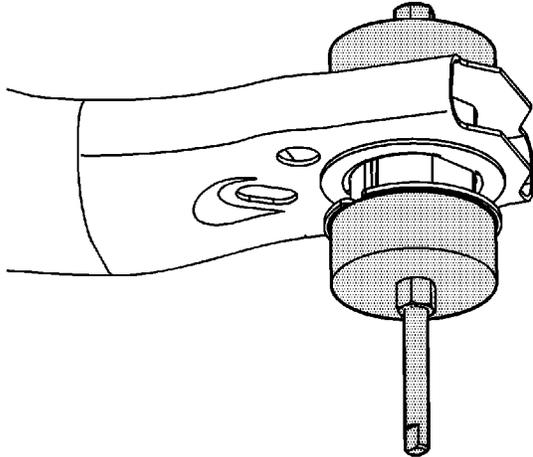
1. Clean the suspension crossmember mount opening.
2. Apply a thin coat of rubber lubricant GM P/N 1051717 (Canadian P/N 5728223), or equivalent to the inside of the suspension crossmember mount opening.
3. Apply a thin coat of rubber lubricant GM P/N 1051717 (Canadian P/N 5728223), or equivalent to the suspension crossmember mount.



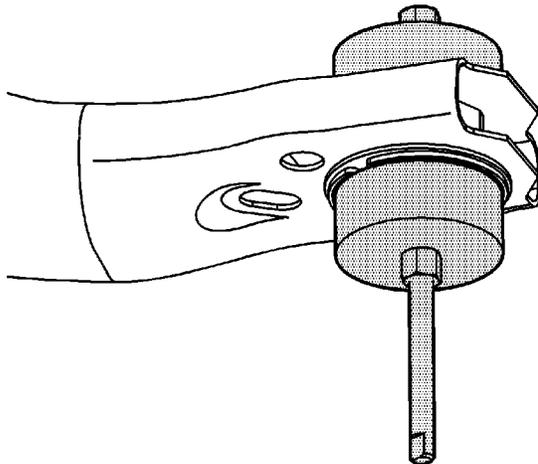
4. Install clamp *J 45725* Installer onto the mount about 1/8 inch from the top of the mount.



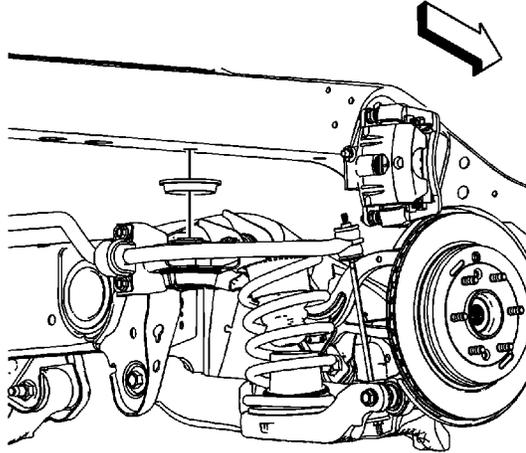
5. Align the split of the mount to the front of the suspension crossmember.
6. Install *J 45725* Installer to the mount and the suspension crossmember.



7. Using *J 45725* Installer install the mount until the mount is halfway recessed in the suspension crossmember.
8. Remove only the clamp *J 45725* Installer .

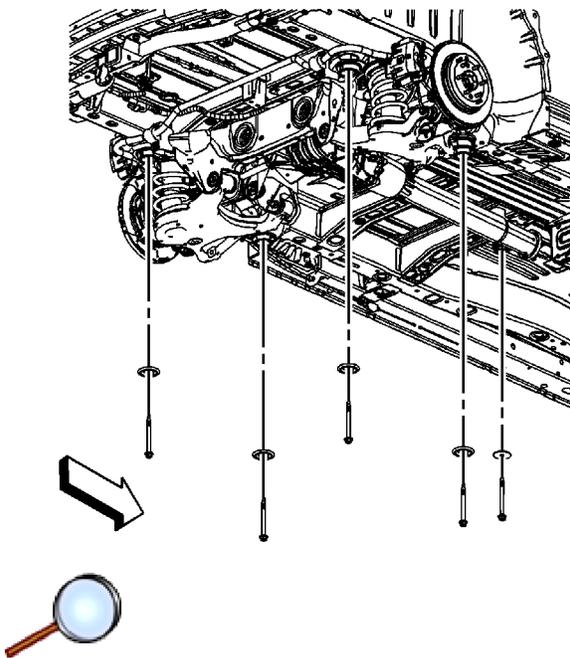


9. Using *J 45725* Installer continue installing the mount until the flange lip of the mount is fully seated to the bottom of the suspension crossmember.
10. Remove *J 45725* Installer from the mount and the suspension crossmember.



11. Install the upper mount.
12. Raise the suspension crossmember and rear drive module.

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



Note: If the suspension crossmember mount bolt does not screw in smoothly, run a tap through the suspension crossmember nut in the body in order to remove foreign material. Ensure the tap does not punch through the underbody.

Do not over tighten the body mount. Over tightening may collapse a spacer or strip a bolt.

13. Install the suspension crossmember to body bolts.

Tighten

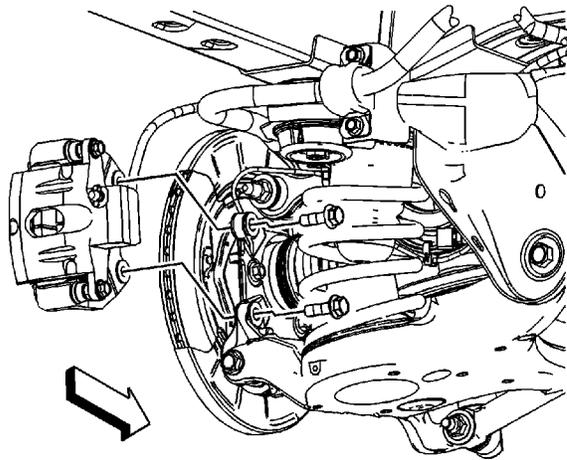
Tighten the bolts to 110 N·m (81 lb ft) plus 90 degrees.

14. Install the rear axle differential to body bolt.

Tighten

Tighten the bolts to 160 N·m (118 lb ft).

15. Remove the jackstands.



16. Install the rear brake caliper bracket and bolts. Refer to [Rear Brake Caliper Bracket Replacement](#).
17. Install the rear tire and wheel assemblies. Refer to [Tire and Wheel Removal and Installation](#).
18. Lower the vehicle.
19. Install the spare tire.

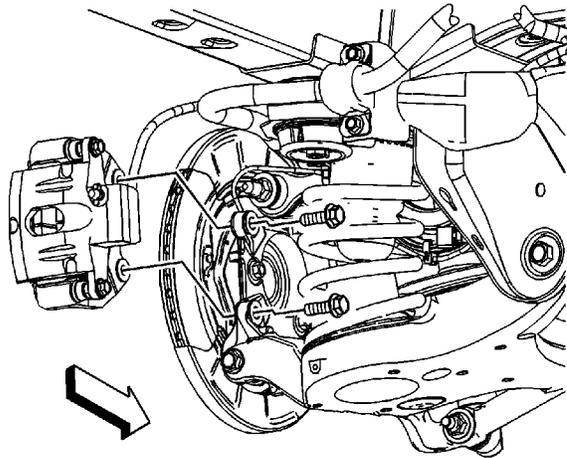
Rear Suspension Support Lower Mount Replacement - Rear (Front Wheel Drive)

Special Tools

J 45725 Frame Bushing Installer

Removal Procedure

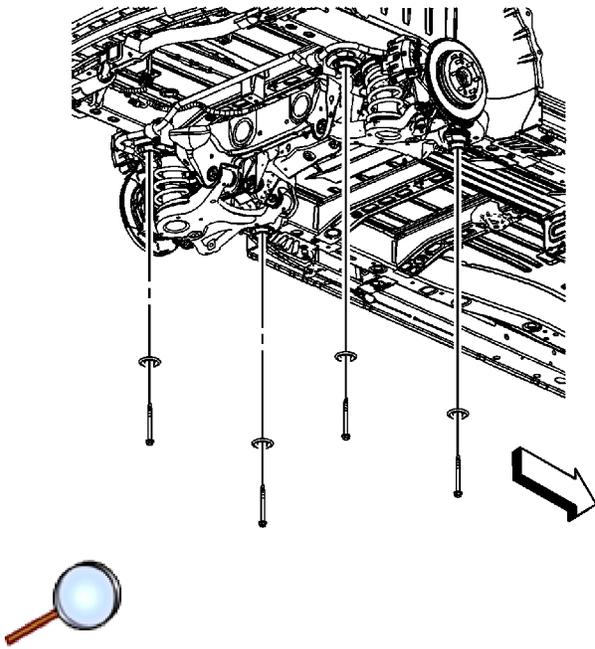
1. Remove the spare tire.
2. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
3. Remove the rear tire and wheel assemblies. Refer to [Tire and Wheel Removal and Installation](#).



4. Remove the rear brake caliper bracket bolts.

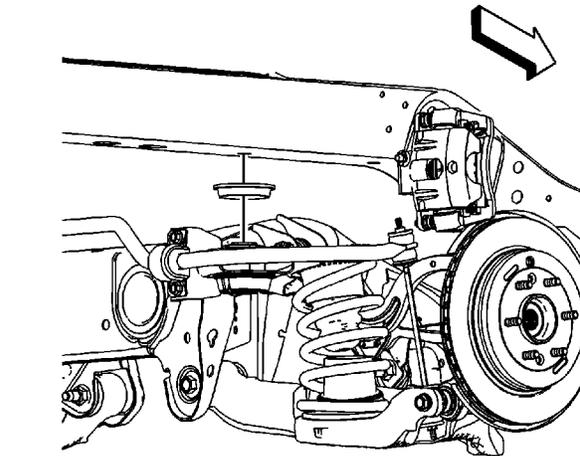
Note: Support the rear brake calipers from the vehicle body not the suspension to prevent stressing of the brake hoses.

5. Support the rear brake caliper.
6. Support the exhaust system on a suitable stand and disconnect the rubber insulator hangers from the exhaust system.
7. Lower the exhaust only enough to allow lowering of the suspension crossmember 38 mm (1.5 in).
8. Install jackstands under the front and rear of the suspension crossmember.

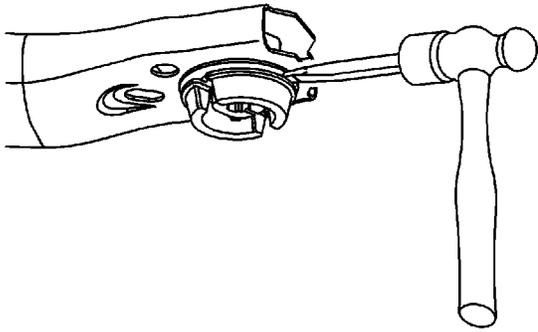


Note: Both the front and rear of the suspension crossmember must be lowered equally to prevent over stressing the mounts.

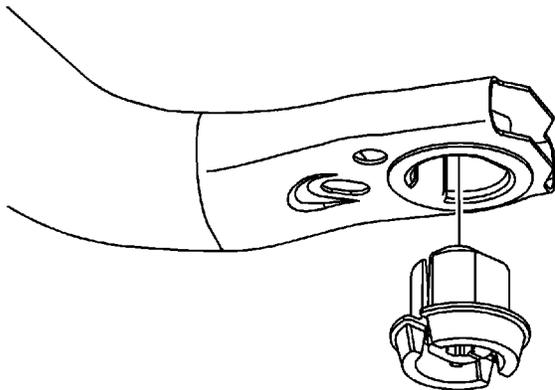
9. Remove the suspension crossmember to body bolts.



10. Lower the suspension crossmember only enough to service the mount, approximately 38 mm (1.5 in).
11. Remove the upper mount.



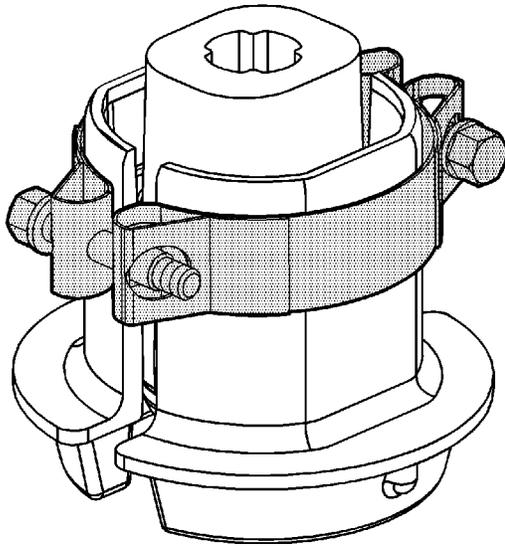
12. Remove the lower mount using a flat chisel. Begin extracting the mount by guiding the wedge of the chisel tip between the mount flange lip and the suspension crossmember.



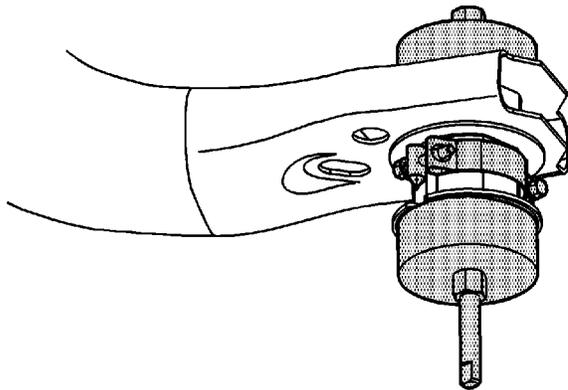
13. Continue extracting the mount until it is fully removed from the suspension crossmember.

Installation Procedure

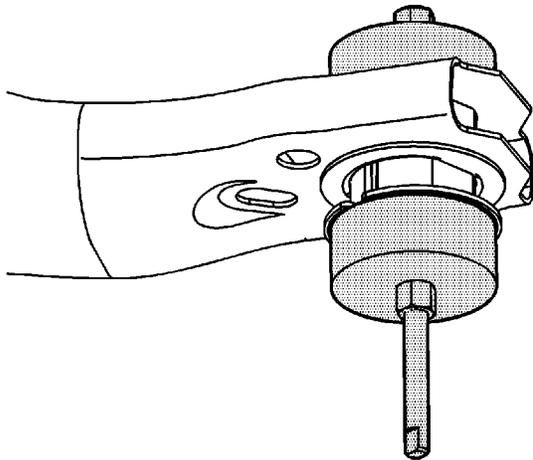
1. Clean the frame mount opening.
2. Apply a thin coat of rubber lubricant GM P/N 1051717 (Canadian P/N 5728223), or equivalent to the inside of the suspension crossmember mount opening.
3. Apply a thin coat of rubber lubricant GM P/N 1051717 (Canadian P/N 5728223), or equivalent to the suspension crossmember mount.



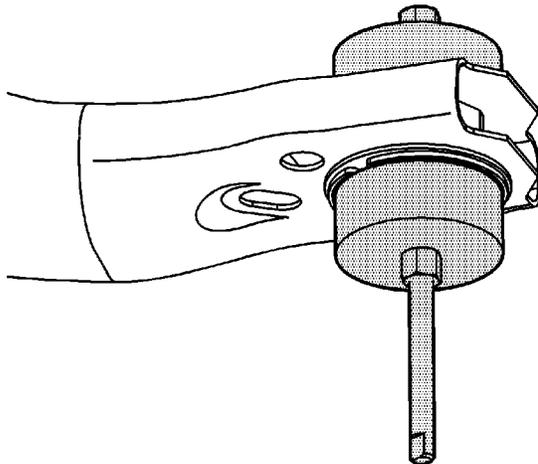
4. Install clamp *J 45725* Installer onto the mount about 1/8 inch from the top of the mount.



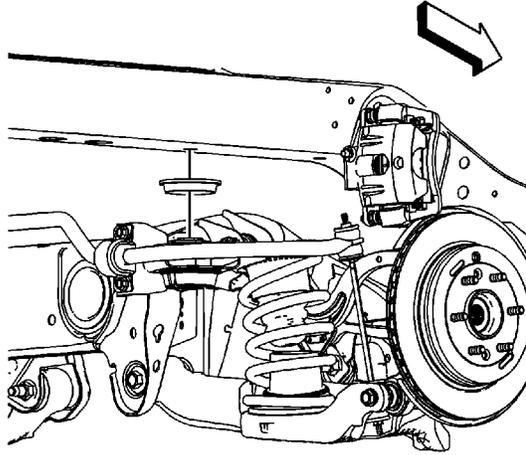
5. Align the split of the mount to the front of the suspension crossmember.
6. Install *J 45725* Installer to the mount and the suspension crossmember.



7. Using *J 45725* Installer install the mount until the mount is halfway recessed in the suspension crossmember.
8. Remove only the clamp *J 45725* Installer .

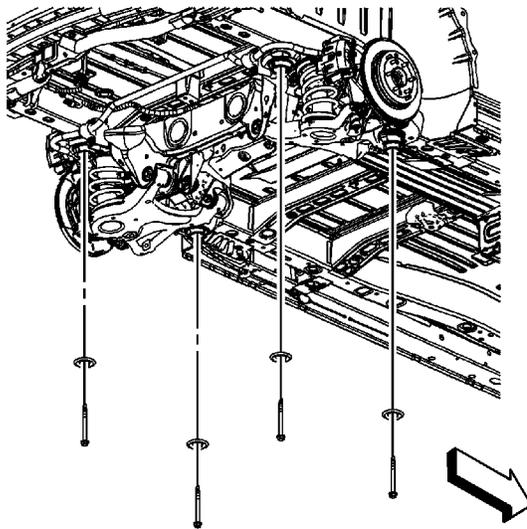


9. Using *J 45725* Installer continue installing the mount until the flange lip of the mount is fully seated to the bottom of the suspension crossmember.
10. Remove *J 45725* Installer from the mount and the suspension crossmember.



11. Install the upper mount.
12. Raise the suspension crossmember.

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



Note: If the suspension crossmember mount bolt does not screw in smoothly, run a tap through the frame crossmember nut in the body in order to remove foreign material. Ensure the tap does not punch through the underbody.

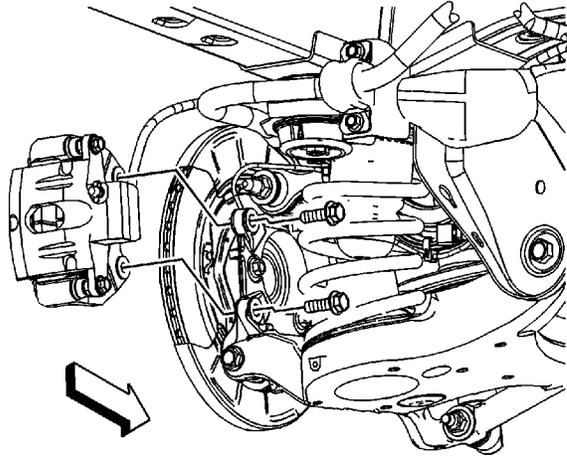
Do not over tighten the body mount. Over tightening may collapse a spacer or strip a bolt.

13. Install the suspension crossmember to body bolts.

Tighten

Tighten the bolts to 110 N·m (81 lb ft) plus 90 degrees.

14. Remove the jackstands.

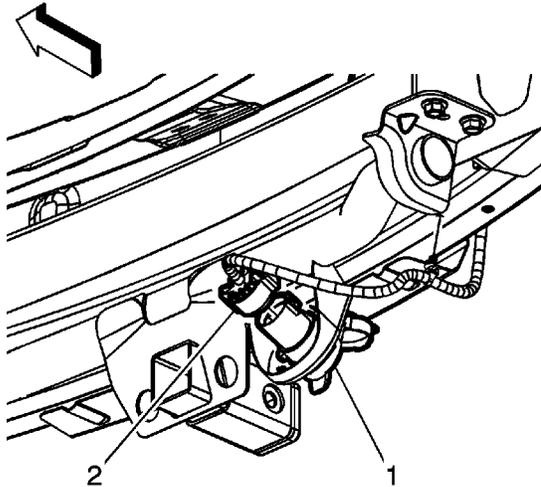


15. Install the rear brake caliper bracket and bolts. Refer to [Rear Brake Caliper Bracket Replacement](#).
16. Install the rear tire and wheel assemblies. Refer to [Tire and Wheel Removal and Installation](#).
17. Lower the vehicle.
18. Install the spare tire.

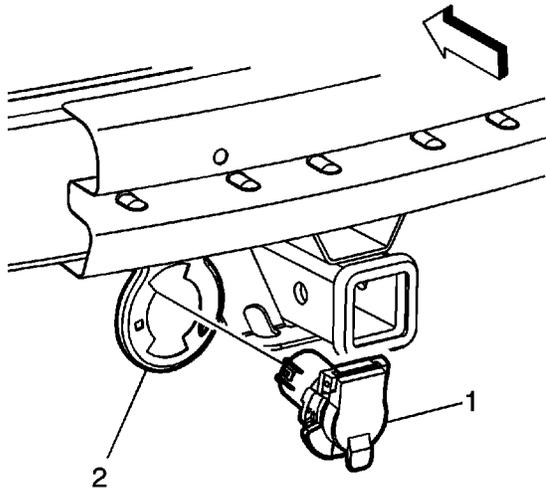
Trailer Hitch Replacement

Removal Procedure

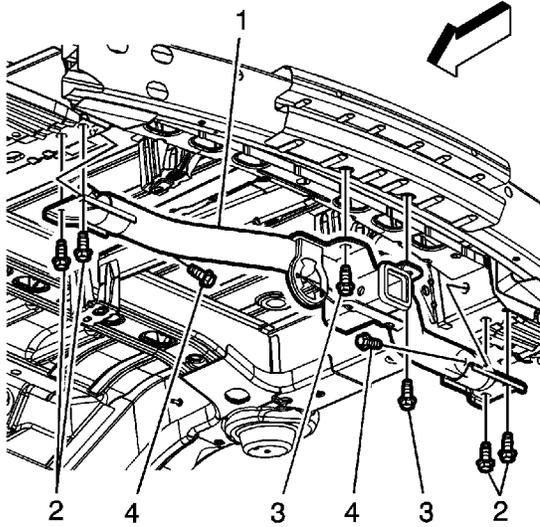
1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).



2. Disconnect the body wire harness (2) from the trailer wire harness connector (1).

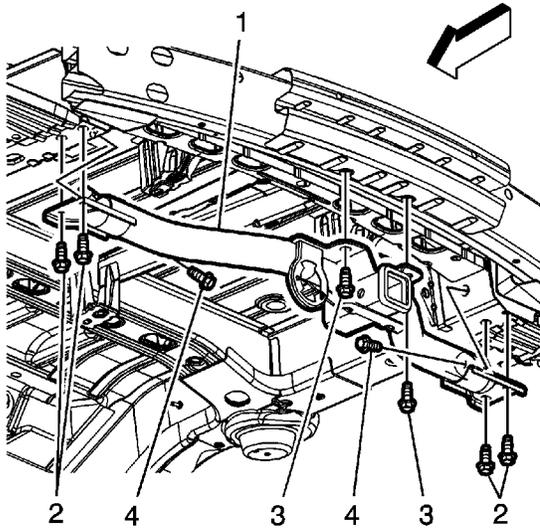


3. If replacing the trailer hitch, remove the trailer wire harness connector (1) from the trailer hitch (2).



4. Remove the trailer hitch bolts (2-4).
5. Remove the trailer hitch (1).

Installation Procedure



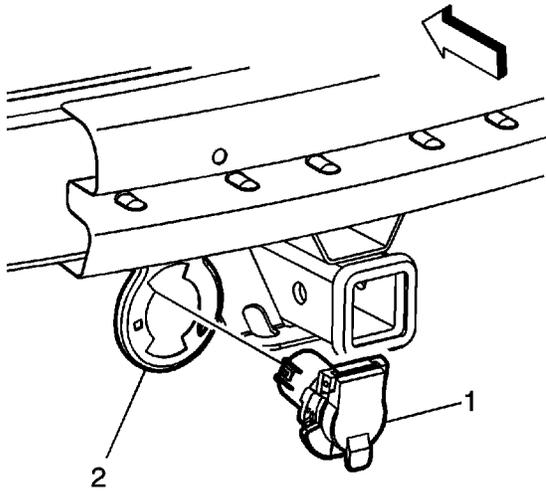
1. Install the trailer hitch (1).

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

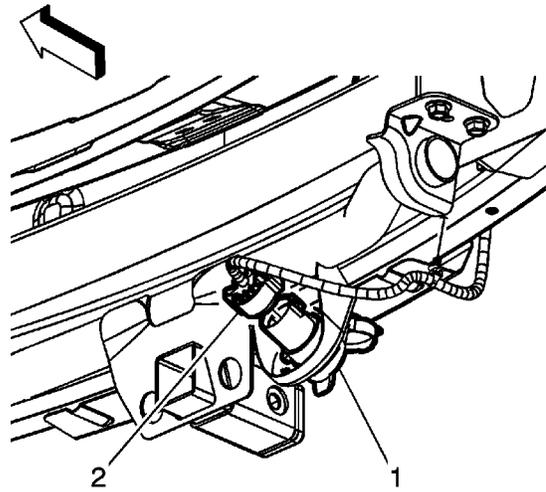
2. Install the trailer hitch bolts (2-4).

Tighten

Tighten the bolts to 100 N·m (74 lb ft).



3. If previously removed, install the trailer wire harness connector (1) to the trailer hitch (2).



4. Connect the body wire harness (2) to the trailer wire harness connector (1).
5. lower the vehicle.