

Frame and Underbody Description

The following components are supported by a front crossmember frame which is rigidly bolted to the body rail at 6 locations.

- The engine
- The front suspension components
- The steering linkage

The following components are supported by the rear suspension frame which is attached to the body rail through rubber insulators at 4 locations:

- The rear drive axle assembly
- The rear suspension components

The transmission support is rigidly bolted to the floor pan and supports the transmission extension.

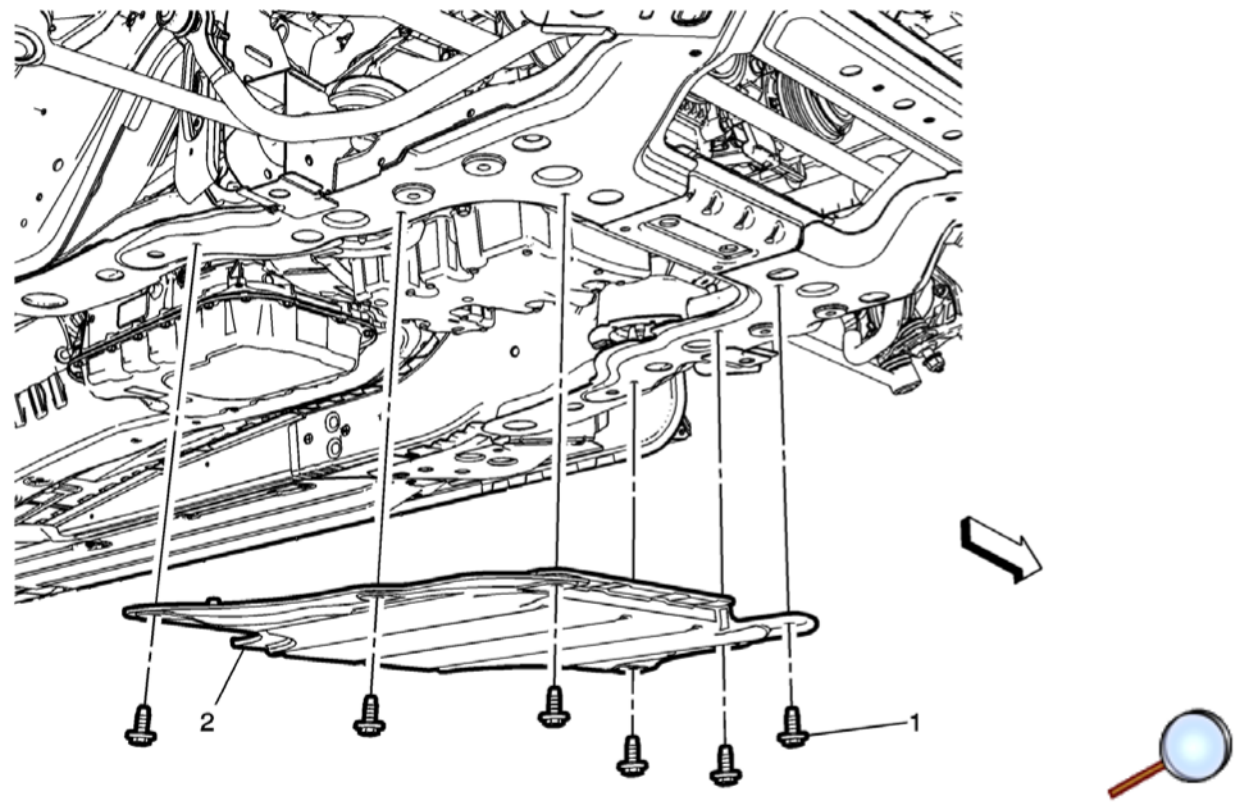
The underbody frames must be properly aligned to maintain the correct transmission, suspension and wheel alignment.

Important: In the event there is evidence of structural damage to the frames they must be replaced.

The individual underbody components contribute directly to the overall strength of the unibody. Use proper metal panel bonding techniques during service repair operations to the underbody.

The components must be corrosion protected whenever body repair operations damage or destroy the original sealing surfaces. Use a two part catalysed primer when corrosion protection is needed to welded surfaces. Apply the sealers and anti-corrosion materials as necessary. Do not combine paint systems.

Oil Pan Shield Replacement



Oil Pan Shield Replacement

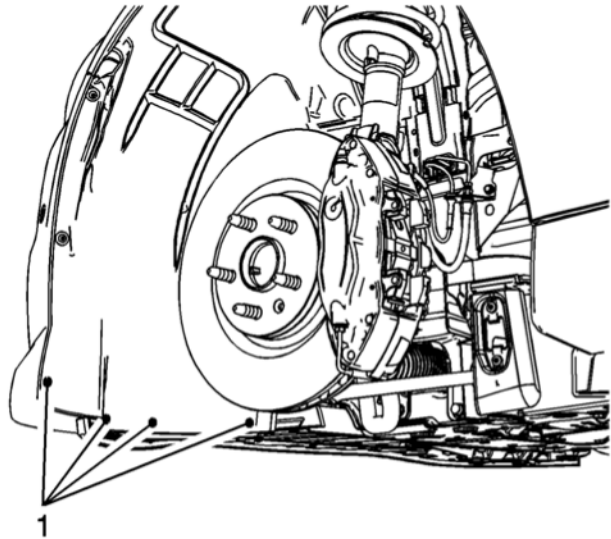
Callout	Component Name
Preliminary Procedure Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle .	
	Oil Pan Shield Bolts (Qty 1) Caution: Refer to Fastener Caution .

1	Tighten 22 N•m (16 lb ft)
2	Oil Pan Shield

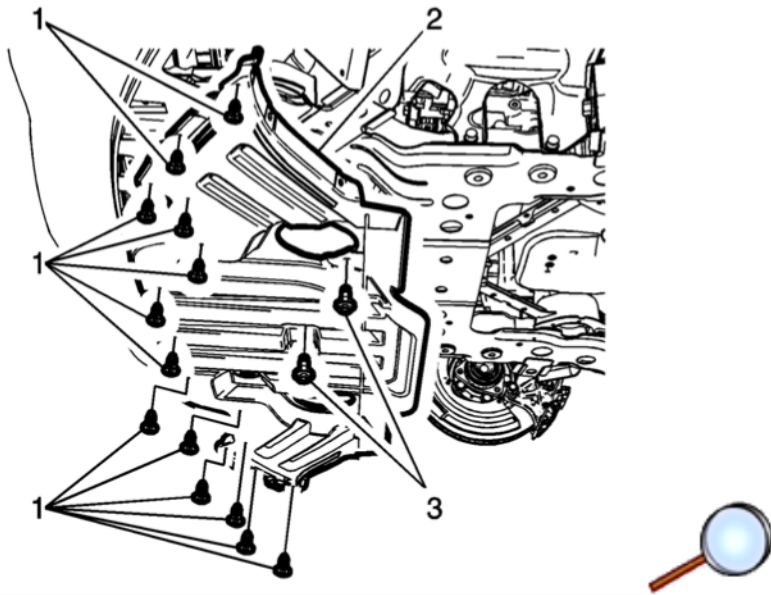
Underbody Front Air Deflector Replacement

Removal Procedure

1. Remove the front wheels. Refer to [Tire and Wheel Removal and Installation](#).

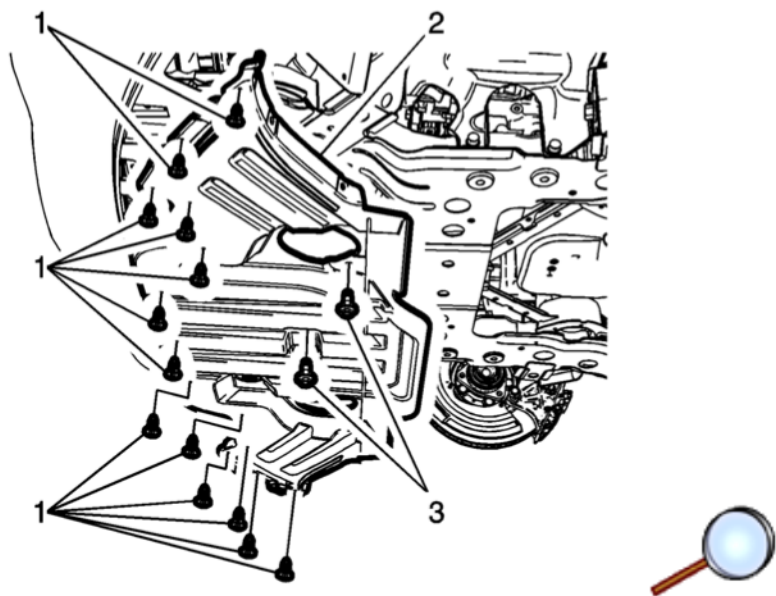


2. Remove the left and right front wheelhouse liner to the front air deflector retaining fasteners (1).



3. Remove the 2 underbody front air deflector fasteners (3).
4. Remove the 13 fasteners from underbody front air deflector (1).
5. Remove the underbody front air deflector (2) from the vehicle.

[Installation Procedure](#)

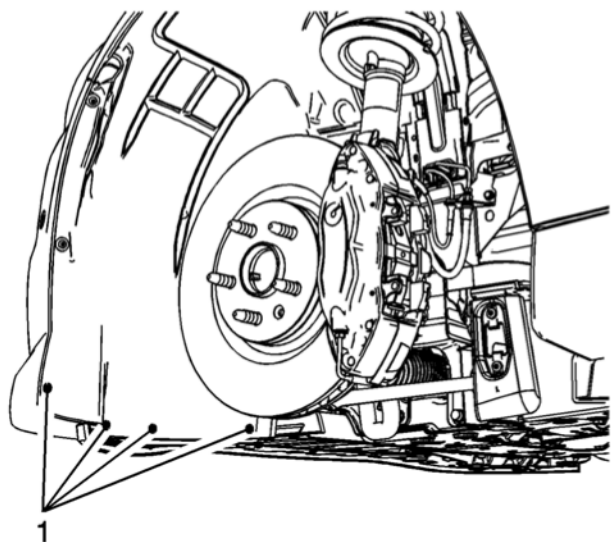


1. Position the underbody front air deflector (2) to the vehicle.

Caution: Refer to [Fastener Caution](#).

2. Install the 13 fasteners to underbody front air deflector (1) and tighten to **3 N•m (27 lb in)**.

3. Install the 2 underbody front air deflector fasteners (3) and tighten to **22 N•m (16 lb ft)**.

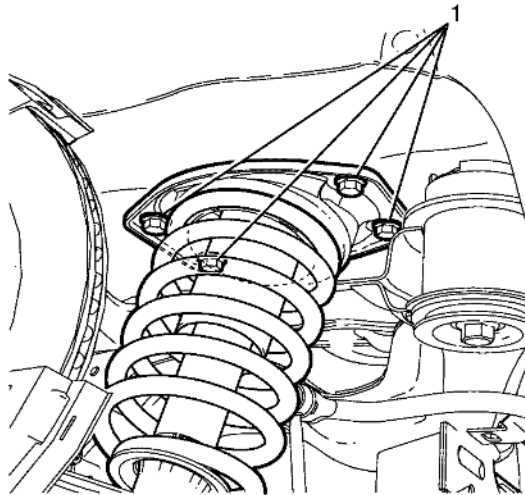


4. Install the left and right front wheelhouse liner to the front air deflector retaining fasteners (1).
5. Install the front wheels. Refer to [Tire and Wheel Removal and Installation](#).

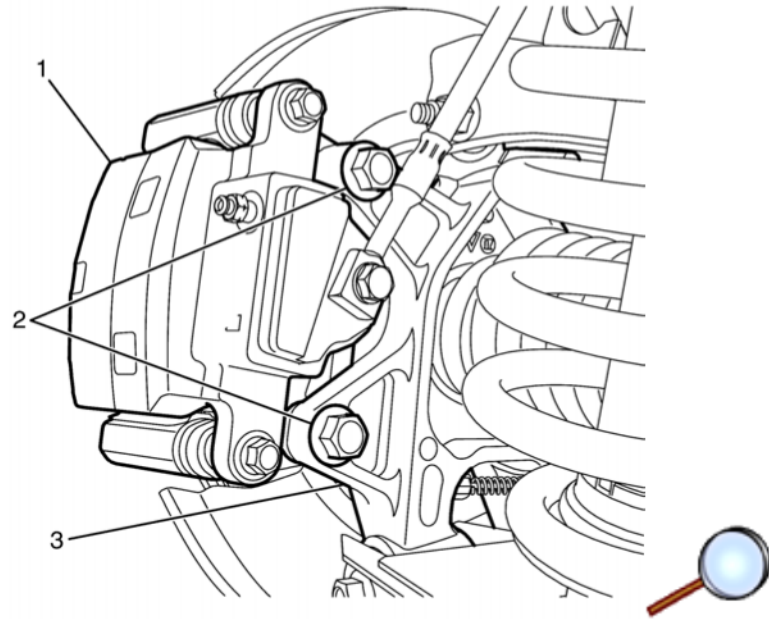
Rear Suspension Support Removal and Installation

Removal Procedure

1. Perform the parking brake caliper adjuster disabling procedure. Refer to [Parking Brake Cable Adjuster Disabling](#).
2. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
3. Remove the rear wheels. Refer to [Tire and Wheel Removal and Installation](#).
4. Remove the exhaust system. Refer to [Exhaust System Replacement](#).
5. Remove the propeller shaft. Refer to [Propeller Shaft Replacement](#).



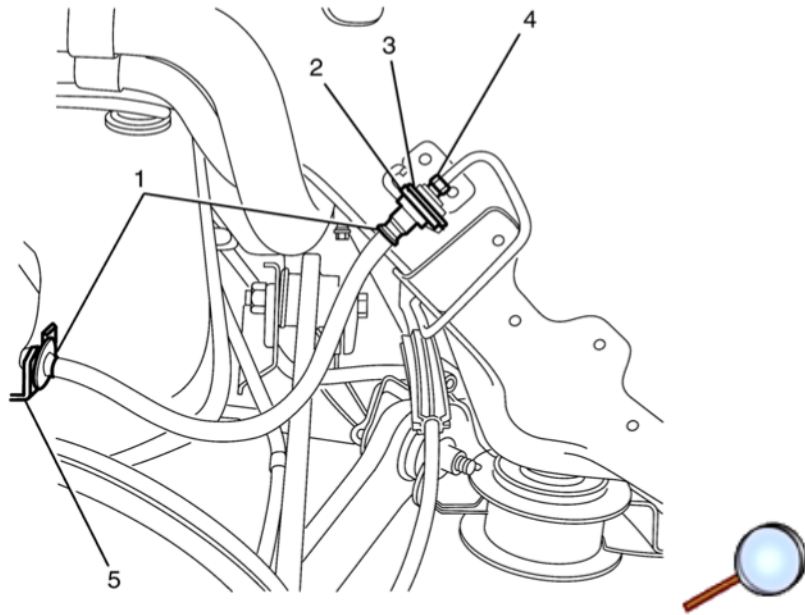
6. Remove the top strut assembly to body retaining bolts (1).



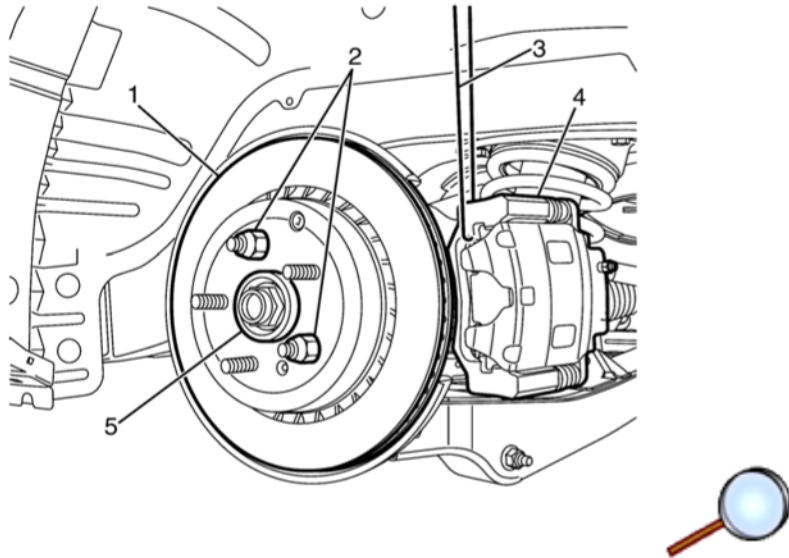
7. Remove the brake caliper anchor plate to knuckle retaining bolts (2).

Note: DO NOT disconnect the hydraulic brake flexible hose from the brake caliper otherwise complete bleeding of the braking system will be necessary.

8. Remove the brake caliper (1) from the knuckle (3).

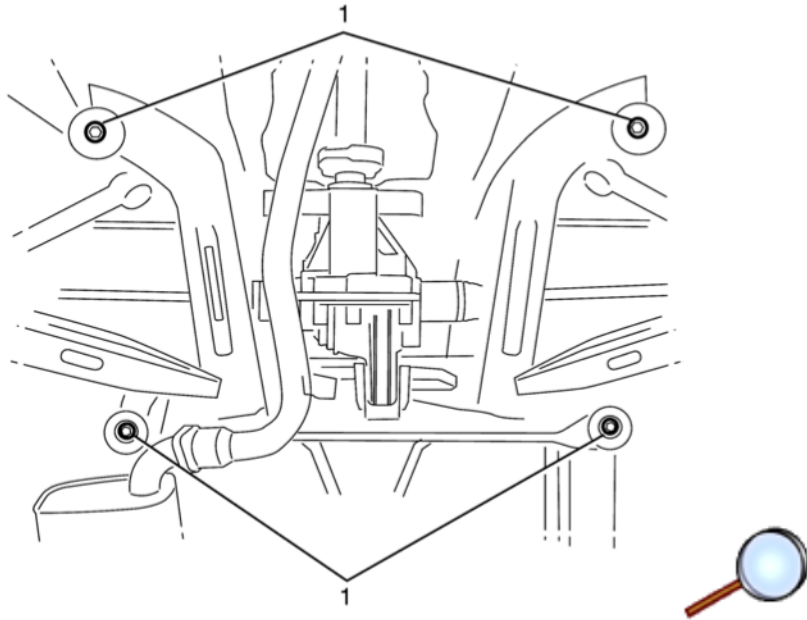


9. Detach the brake hose (1) from the upper control arm mounted brake hose retaining bracket (5).



Caution: Refer to [Brake Caliper Caution](#).

10. Support the brake caliper (4) with a cable tie (3), or equivalent.
11. Install 2 wheel nuts (2) to retain the brake disc (1) to the hub (5).
12. Position a suitable frame support table under the vehicle.
13. Using a suitable frame support table, lower the vehicle to the frame support table.



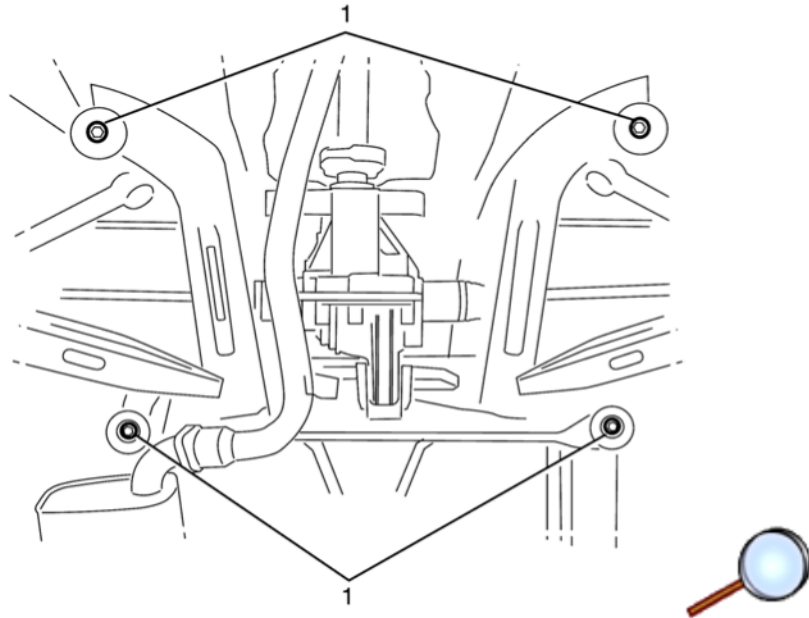
Note: Bolts with micro-encapsulated thread sealant must be replaced after removal.

14. Remove the rear sub frame to rear chassis rail retaining bolts (1) and discard the bolts.
15. Carefully raise the vehicle from the rear frame assembly, enough to gain clearance to the electronic park brake control module.
16. Disconnect the wiring harness from the electronic park brake control module and the park brake actuator support.
17. Carefully raise the vehicle from the rear frame and frame support table.
18. For disassembly refer to [Rear Frame Replacement](#).

Installation Procedure

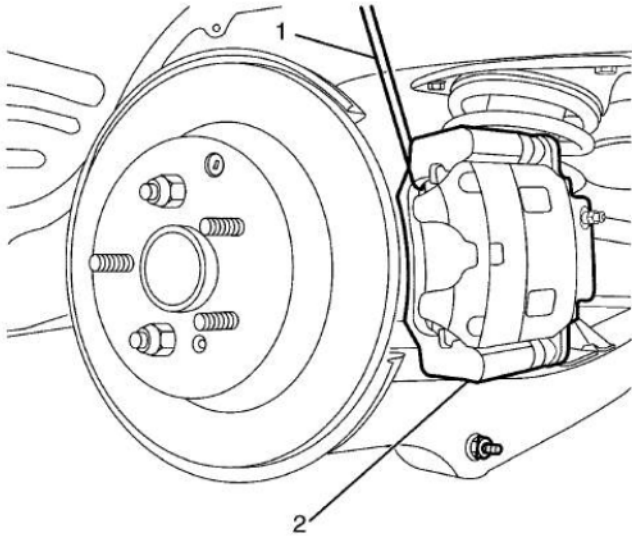
1. For assembly refer to [Rear Frame Replacement](#).
2. Using appropriate thread cleaning tools, remove all thread locking compound residue from the four chassis rail bolt holes.
3. Carefully lower the vehicle to the rear frame and frame support table, allowing enough clearance to access to the electronic park brake control module.

4. Connect the wiring harness to the electronic park brake control module and the park brake actuator support.
5. Index the rear side frame mounts to the rear locator sleeves located on the body.
6. Lower the vehicle until the frame mounts contact the body rail.

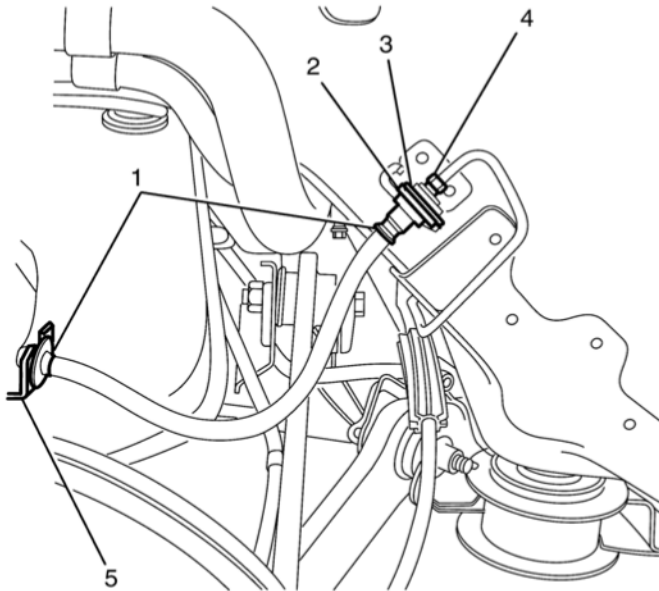


Caution: Refer to [Fastener Caution](#).

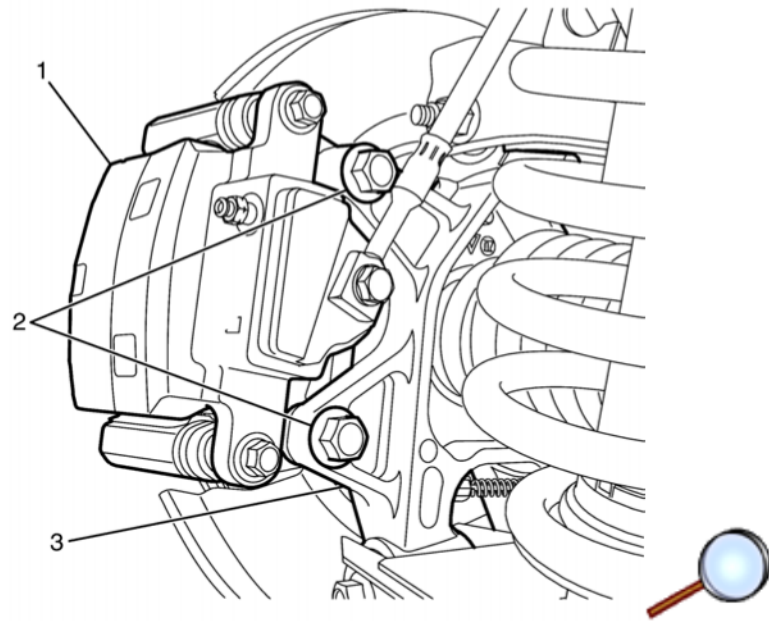
7. Install NEW rear sub frame to rear chassis rail retaining bolts (1) and tighten to:
 - First pass: **60 N•m (44 lb ft)**.
 - Final pass: **120 Degrees**
8. Raise the vehicle.
9. Remove the frame support table from under the vehicle.



10. Remove the cable tie (1) from the brake caliper (2).



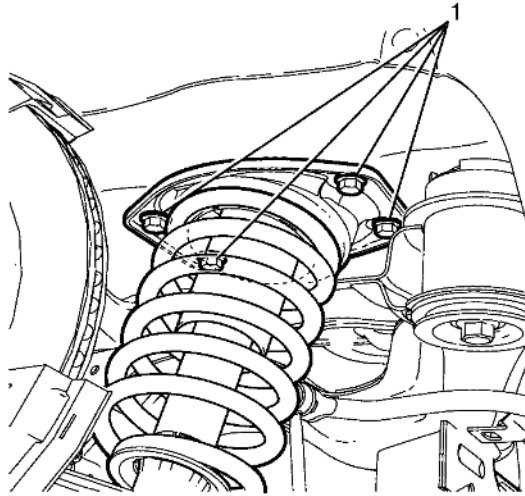
11. Attach the brake hose (1) to the upper control arm mounted brake hose retaining bracket (5).



Caution: Make sure the brake hose is not twisted or kinked after installation. Damage to the hose could result.

12. Install the brake caliper assembly (1) to the knuckle (3).

13. Install the brake caliper anchor plate to knuckle retaining bolts (2) and tighten to **110N•m (81 lb ft)**.



14. Install the top strut assembly to body retaining bolts (1) and tighten to **58 N·m (43 lb ft)**.
15. Install the propeller shaft. Refer to [Propeller Shaft Replacement](#).
16. Install the exhaust system. Refer to [Exhaust System Replacement](#).
17. Install the rear wheel. Refer to [Tire and Wheel Removal and Installation](#).
18. Lower the vehicle to the ground.
19. Perform the parking brake adjuster enabling procedure. Refer to [Parking Brake Cable Adjuster Enabling](#).
20. Check the wheel alignment of the vehicle. Refer to [Wheel Alignment Measurement](#).
21. Correct the wheel alignment of the vehicle, if necessary. Refer to [Rear Camber Adjustment](#) and [Rear Toe Adjustment](#).

Drivetrain and Front Suspension Frame Replacement

Special Tools

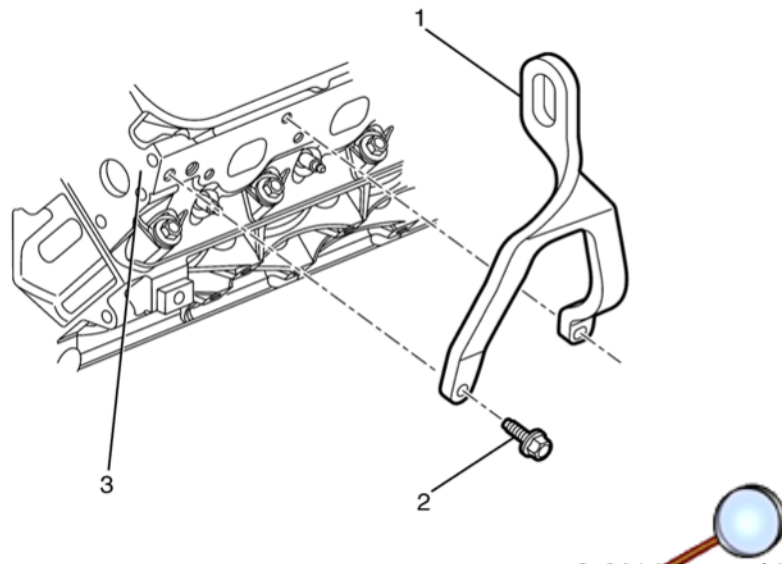
EN 46114 Engine Lift Bracket

[Removal Procedure](#)

Danger: To avoid any vehicle damage, serious personal injury or death when major components are removed from the vehicle and the vehicle is supported by a hoist, support the vehicle with jack stands at the opposite end from which the components are being removed and strap the vehicle to the hoist.

Warning: Refer to [Safety Glasses Warning](#).

1. Remove the engine dress cover. Refer to [Intake Manifold Sight Shield Replacement](#) for 3.6L engine or [Engine Cover Replacement](#) for 6.0L engine.



© 2014 General Motors. All rights reserved.

2. Position the EN 46114 engine lift bracket (1) on the cylinder head (3).

Caution: Refer to [Fastener Caution](#).

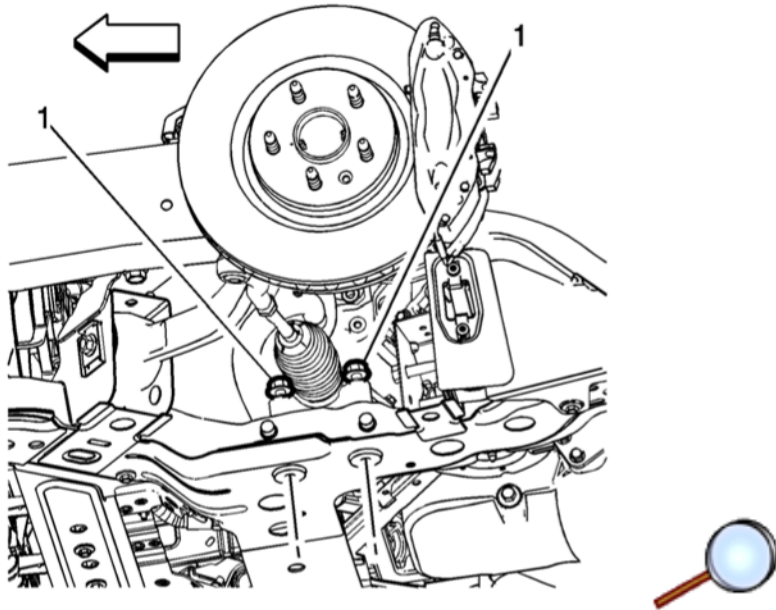
3. Install the *EN 46114* engine lift bracket to cylinder head retaining bolts (2).

Tighten

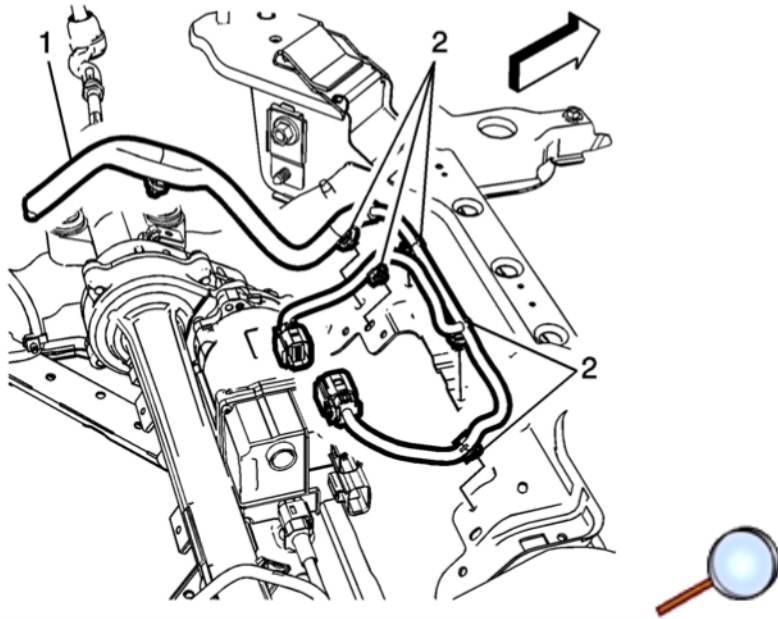
Tighten the *EN 46114* engine lift bracket to cylinder head retaining bolts (3) to 50 N·m (36 lb ft).

Note: When lifting the engine assembly, observe the clearance between the rear of the engine assembly and the dash panel.

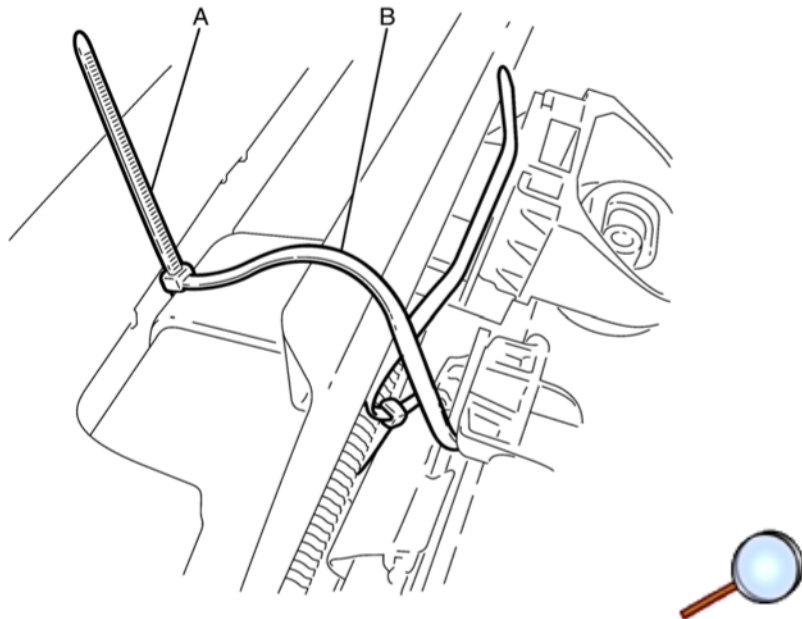
4. Install a suitable lifting tool and raise the engine assembly until the engine mount brackets are clear of the engine mount retainers.
5. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
6. Remove the front bumper fascia. Refer to [Front Bumper Fascia Replacement](#).
7. Remove the underbody front air deflector. Refer to [Underbody Front Air Deflector Replacement](#).
8. Remove the oil pan shield, if equipped. Refer to [Oil Pan Shield Replacement](#).
9. Remove the front lower control rear link. Refer to [Front Lower Control Rear Link Replacement](#).
10. Remove the front lower control front link. Refer to [Front Lower Control Front Link Replacement](#).
11. Remove the stabilizer shaft link. Refer to [Stabilizer Shaft Link Replacement](#).
12. Remove the front wheelhouse splash shield. Refer to [Front Wheelhouse Splash Shield Replacement](#)



13. Remove the steering gear to drivetrain and front suspension frame mounting bolts (1).



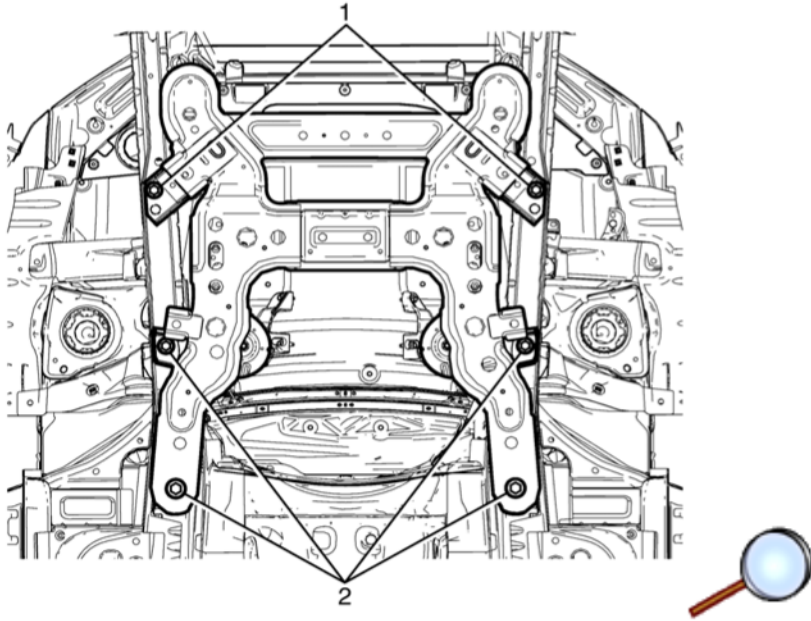
14. Disconnect the retainers (2), securing the engine harness (1), to the power steering wiring harness bracket.



Note: It is necessary to secure the radiator to the front end assembly, as the radiator is supported by the subframe.

Note: Thread zip tie A around the front end assembly and zip tie B through the radiator and condenser mount. Insert zip tie A into the retainer of zip tie B and insert zip tie B into the retainer of zip tie A.

15. Secure the radiator to the radiator upper mounting brackets.

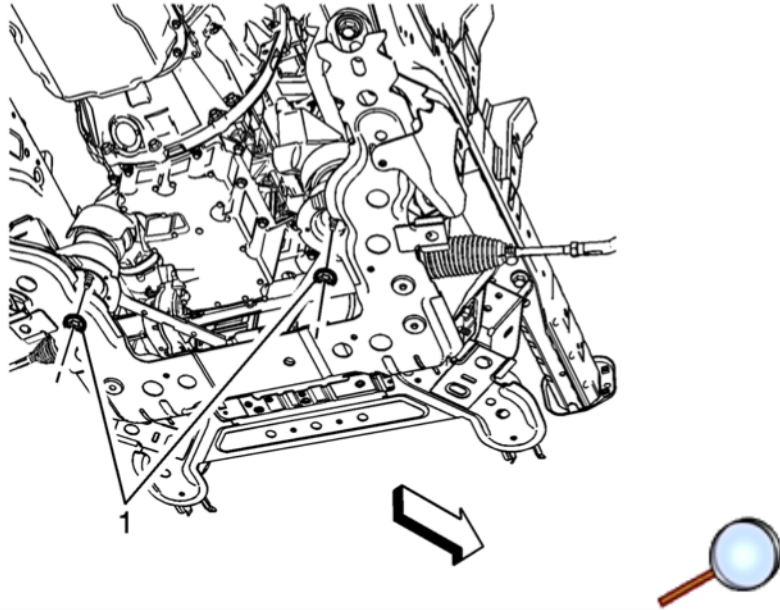


16. Install a suitable bench trolley under the frame.

17. Lower the vehicle to the frame support table.

18. Remove the drivetrain and front suspension frame retaining bolts (1).

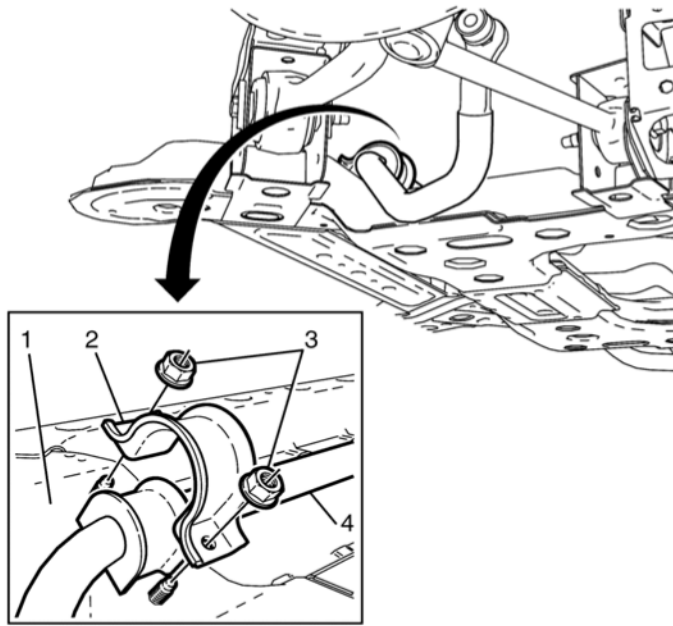
19. Remove the drivetrain and front suspension frame retaining bolts (2).



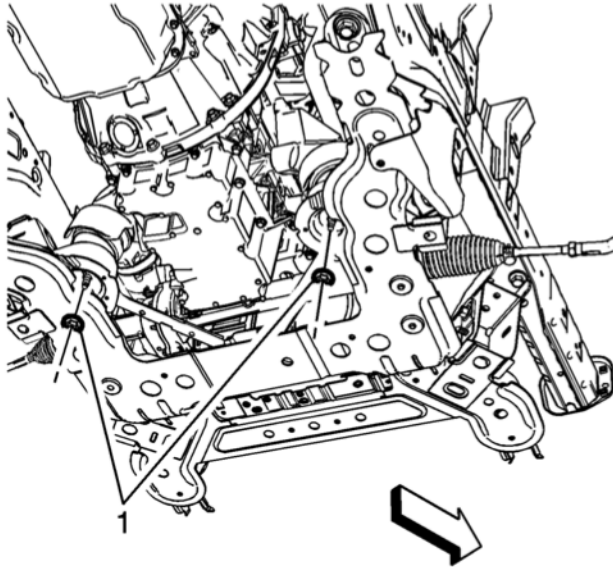
20. Remove the nuts (1), securing the lower engine mount, to the drivetrain and front suspension frame.
21. Carefully raise the body from the frame.
22. Make sure when raising the body the following items are clear from the frame:
 - The brake pipes
 - The steering knuckle assembly
 - The wheel speed sensor electrical harness
23. Remove the stabilizer shaft from the drivetrain and front suspension frame. Refer to [Stabilizer Shaft Replacement](#).
24. With the aid of an assistant, remove the frame from the support fixture.

Installation Procedure

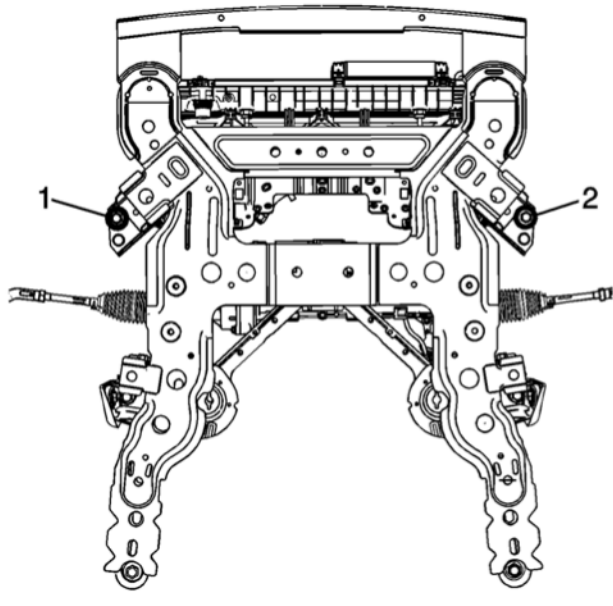
1. With the aid of an assistant, install the frame to the support fixture.



2. Install the stabilizer shaft to the drivetrain and front suspension frame. Refer to [Stabilizer Shaft Replacement](#).
3. Carefully lower the body to the frame.
4. Make sure the following components are clear from the frame.
 - The wheel speed sensor electrical harness
 - The steering knuckle assembly
 - The brake pipes
5. Lower the engine and remove the suitable lifting tool from the engine.

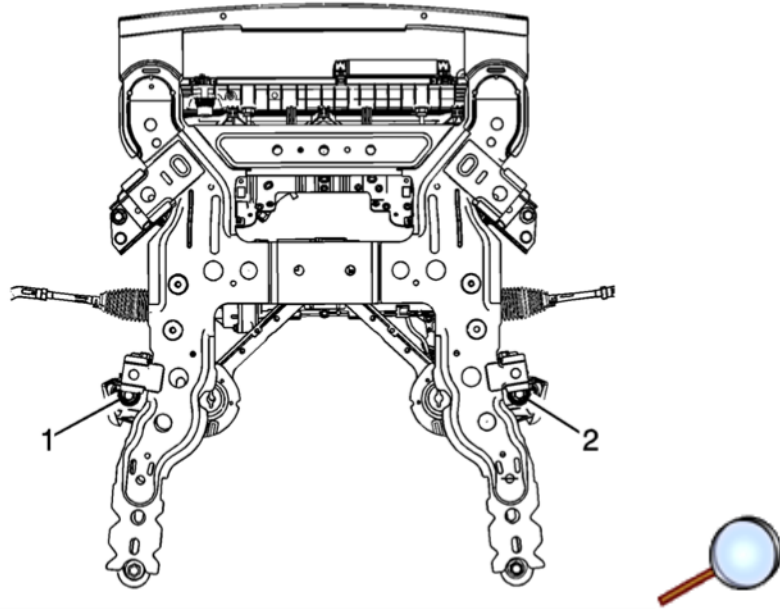


6. Install the lower engine mount nuts (1) to the drivetrain and front suspension frame.
Do not fully tighten at this stage.

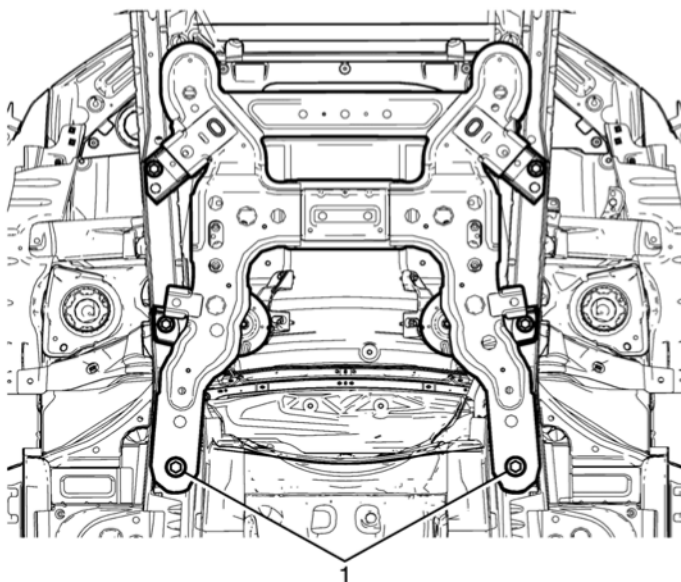


Caution: Refer to [Fastener Caution](#).

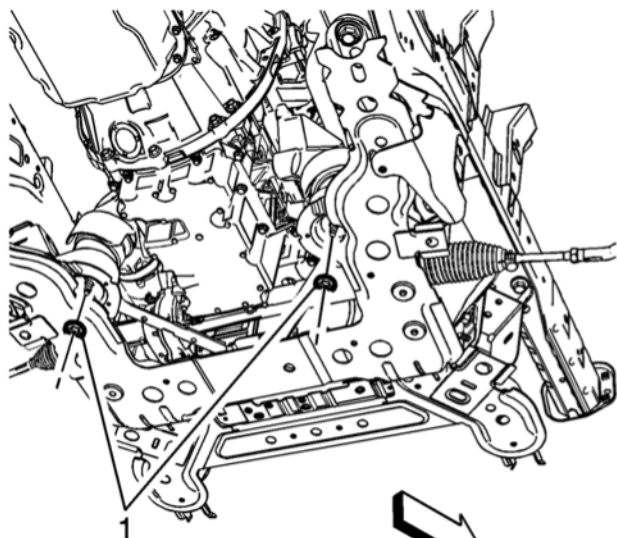
7. Install the drivetrain and front suspension frame front mounting bolt (1) and tighten to **160 N·m (118 lb ft)**.
8. Install the drivetrain and front suspension frame front mounting bolt (2) and tighten to **160 N·m (118 lb ft)**.



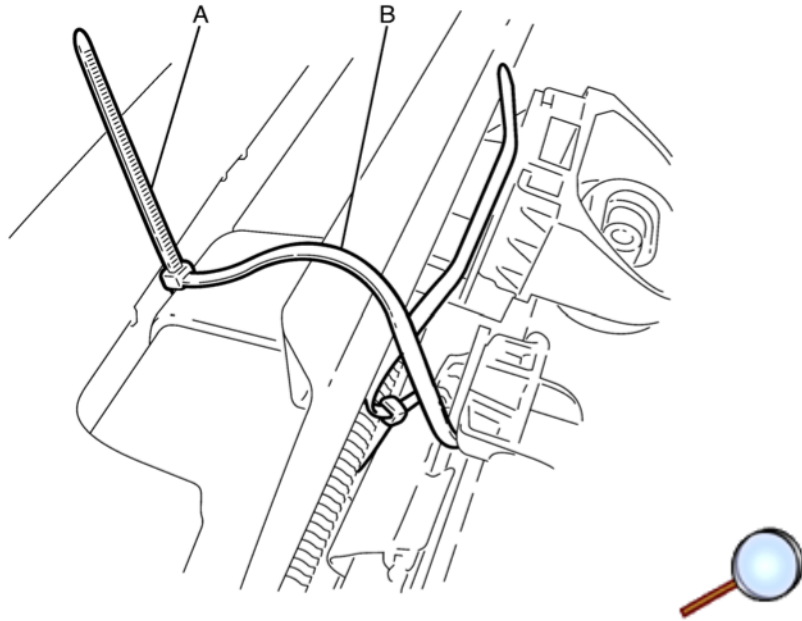
9. Install the drivetrain and front suspension frame middle mounting bolt (1) and tighten to **160 N·m (118 lb ft)**.
10. Install the drivetrain and front suspension frame middle mounting bolt (2) and tighten to **160 N·m (118 lb ft)**.



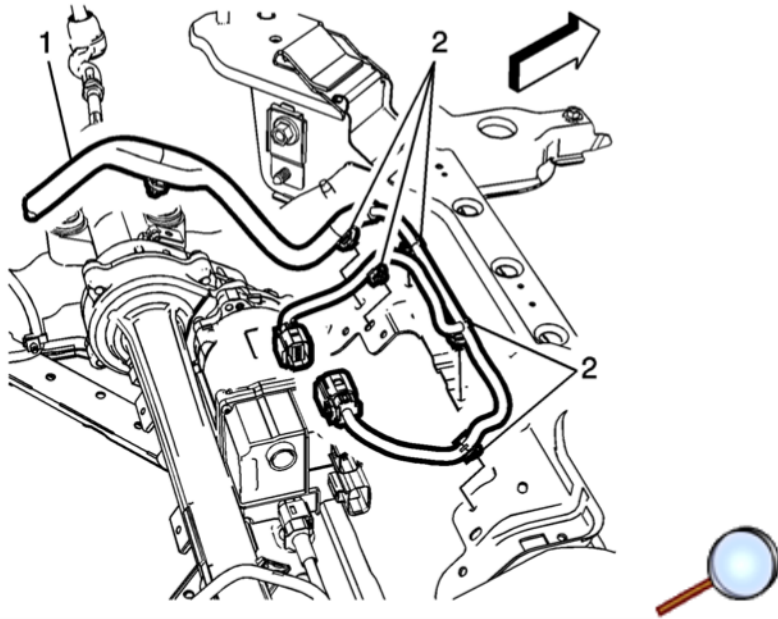
11. Install the drivetrain and front suspension frame rear mounting bolts (1) and tighten to **240 N·m (177 lb ft)**.



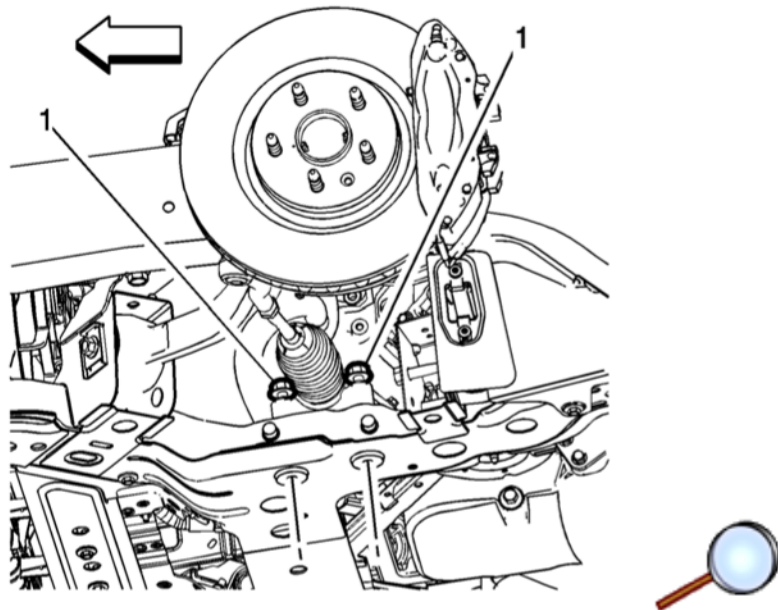
12. Tighten the lower engine mount nuts (1) to **80 N•m (59 lb ft)**.
13. Raise the vehicle
14. Remove the suitable bench trolley from under the vehicle.



15. Cut zip tie A around the front end assembly and zip tie B through the radiator and condenser mount.

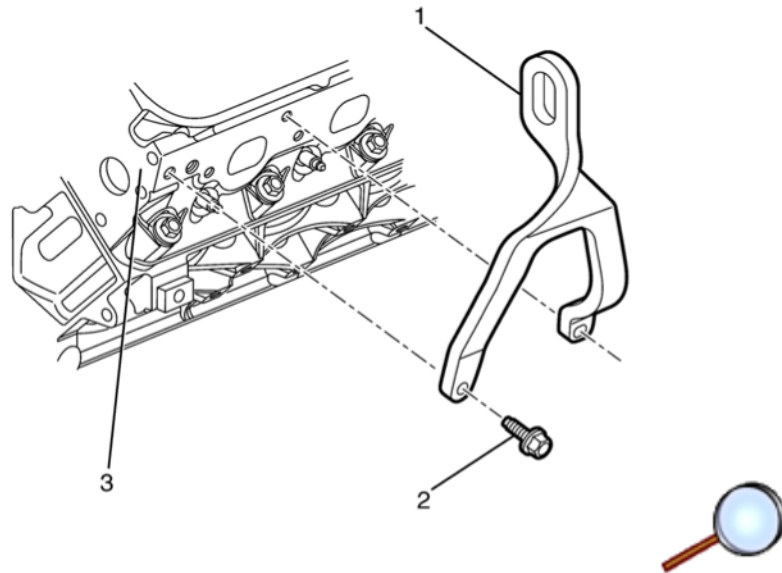


16. Secure the engine harness retainers (2) to the power steering harness bracket.



17. Install the steering gear insulator retaining bracket (2) to the steering gear insulator (3).

18. Install the steering gear to the drivetrain and front suspension frame mounting bolts (1) and tighten to **65 N·m (48 lb ft)**.
19. Install the stabilizer shaft link. Refer to [Stabilizer Shaft Link Replacement](#).
20. Install the front lower control front link. Refer to [Front Lower Control Front Link Replacement](#).
21. Install the front lower control rear link. Refer to [Front Lower Control Rear Link Replacement](#).
22. Install the oil pan shield, if equipped. Refer to [Oil Pan Shield Replacement](#).
23. Install the underbody front air deflector. Refer to [Underbody Front Air Deflector Replacement](#).
24. Install the front bumper fascia. Refer to [Front Bumper Fascia Replacement](#).

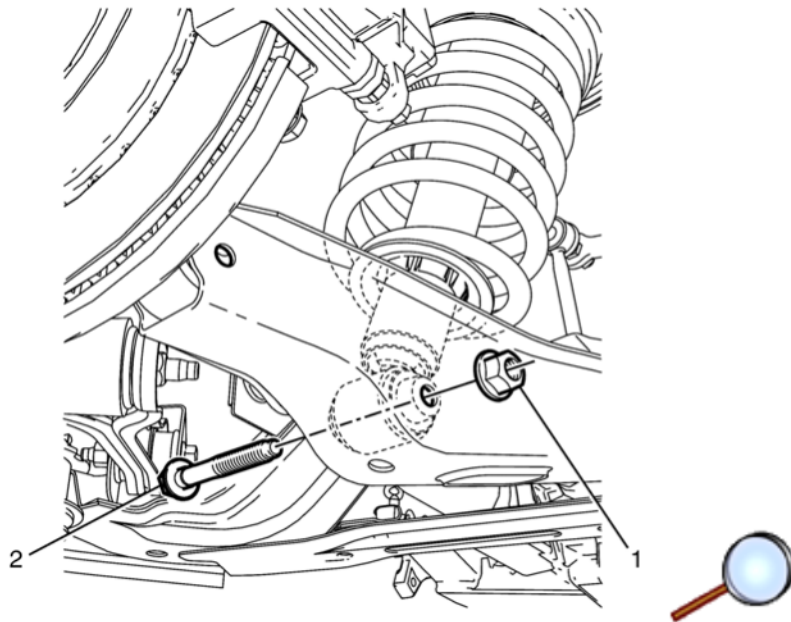


25. Remove the *EN 46114* engine lift bracket to cylinder head retaining bolts (2).
26. Remove the *EN 46114* engine lift bracket (1) from the cylinder head (3).
27. Install the engine dress cover. Refer to [Intake Manifold Sight Shield Replacement](#) for 3.6L engine or [Engine Cover Replacement](#) for 6.0L engine.
28. Align the vehicle. Refer to [Wheel Alignment Measurement](#).

Rear Frame Replacement

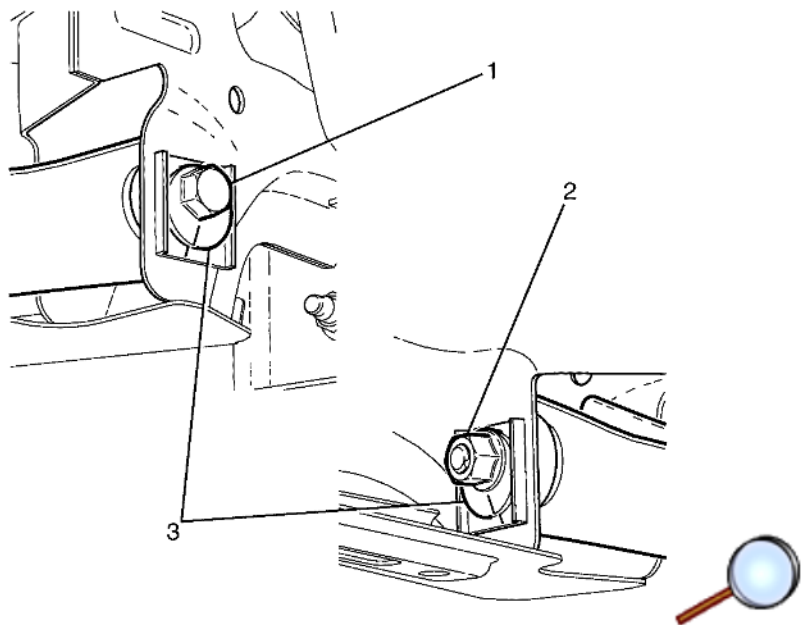
Removal Procedure

1. Remove the rear suspension support assembly. Refer to [Rear Suspension Support Removal and Installation](#).
2. Remove the electronic parking brake control module. Refer to [Electronic Parking Brake Control Module Replacement](#).
3. Remove the right side parking brake rear cable. Refer to [Parking Brake Rear Cable Replacement - Right Side](#).
4. Remove the left side parking brake rear cable. Refer to [Parking Brake Rear Cable Replacement - Left Side](#).
5. Remove the stabilizer shaft link. Refer to [Stabilizer Shaft Link Replacement](#).
6. Remove the stabilizer shaft. Refer to [Stabilizer Shaft Replacement](#).
7. Remove the rear wheel hub and knuckle assembly. Refer to [Knuckle Replacement](#).



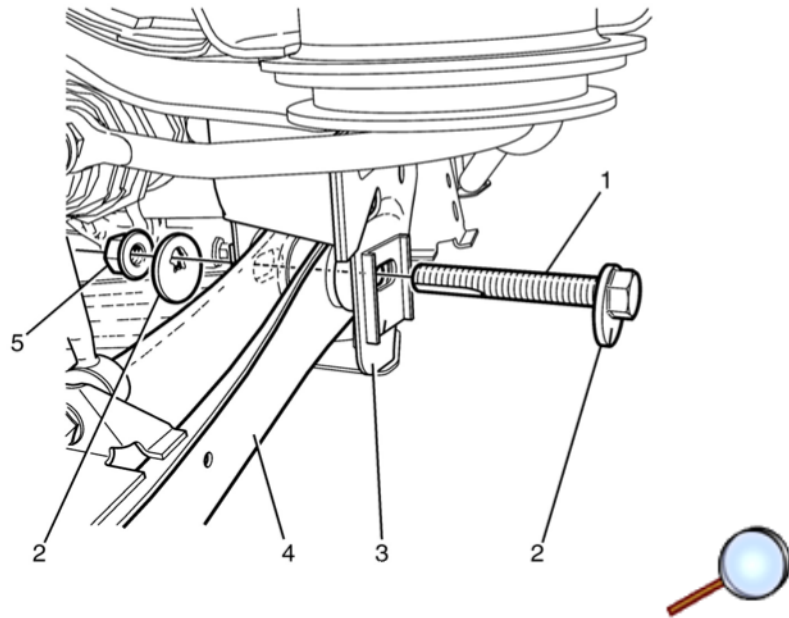
8. Remove the rear strut assembly to lower control arm retaining bolt (2) and nut (1).
9. Discard the nut.

© 2014 General Motors. All rights reserved.

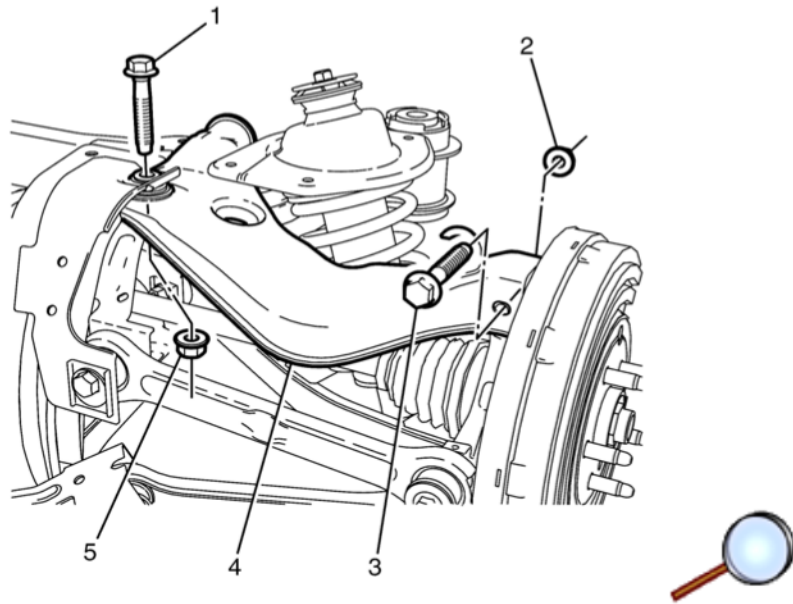


Note: The lower control arm to subframe retaining bolt (1) and nut (2) eccentric washers (3) are used to adjust the rear suspension camber. One eccentric washer (3) is mounted directly to the head of the lower control arm to subframe retaining bolt (1).

10. Scribe the eccentric washers (3) with reference to their seating position relative to the subframe.

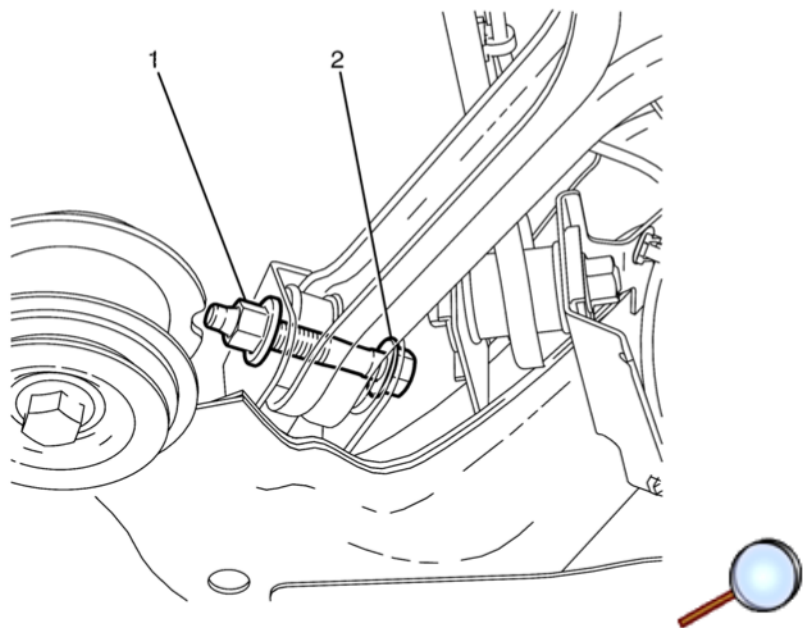


11. Remove the lower control arm to subframe retaining bolt (1) and nut (5).
12. Discard the nut.
13. Remove the lower control arm (4) from the subframe (3).
14. Remove the upper control arm pivot bushing. Refer to [Knuckle Replacement](#).

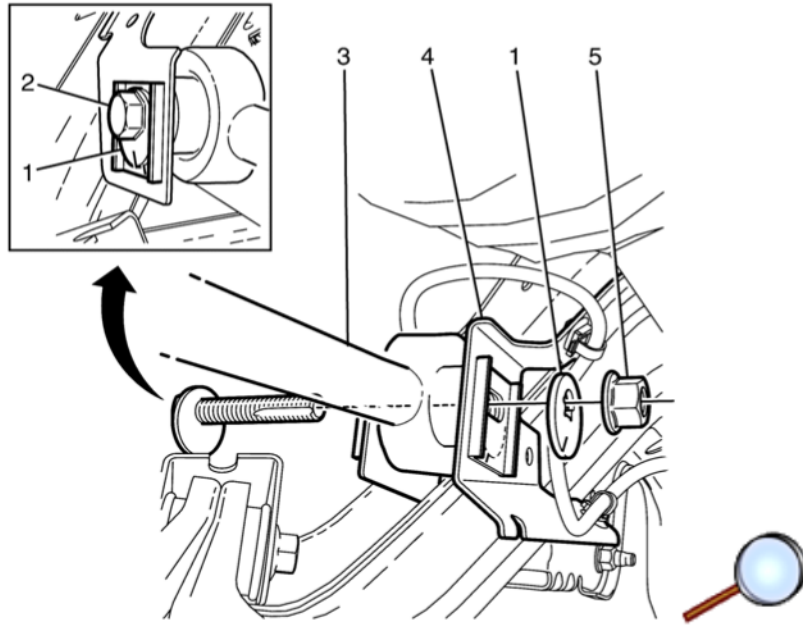


Note: Nuts with micro-encapsulated thread sealant must be replaced after removal.

15. Remove the upper control arm ball joint bushing to subframe retaining bolt (1) and nut (5).
16. Discard the nut.
17. Remove the upper control arm to knuckle retaining bolt (3) and nut (2).
18. Discard the nut.



19. Remove the Y-Link to subframe retaining bolt (2) and nut (1).
20. Discard the nut.
21. Remove the Y-Link (5).



Note: The I-Link to subframe retaining bolt (2), nut (5) and eccentric washers (1) are used to adjust the rear suspension toe. One eccentric washer (1) is mounted directly to the head of the I-Link to subframe retaining bolt (2).

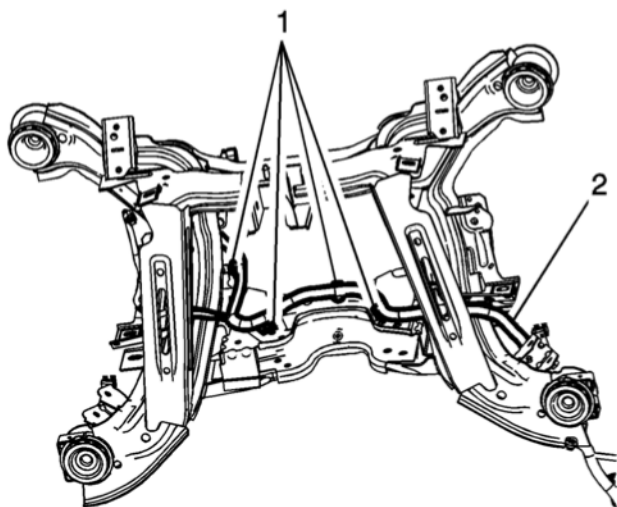
22. Scribe the eccentric washers (1) with reference to their seating position relative to the subframe (4).

Note: Nuts with micro-encapsulated thread sealant must be discarded after removal.

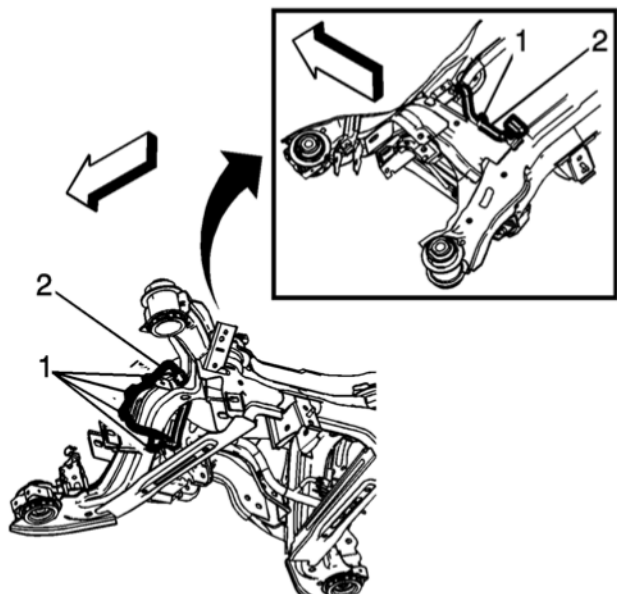
Discard the nut.

23. Remove the I-Link to subframe retaining bolt (2) and nut (5).

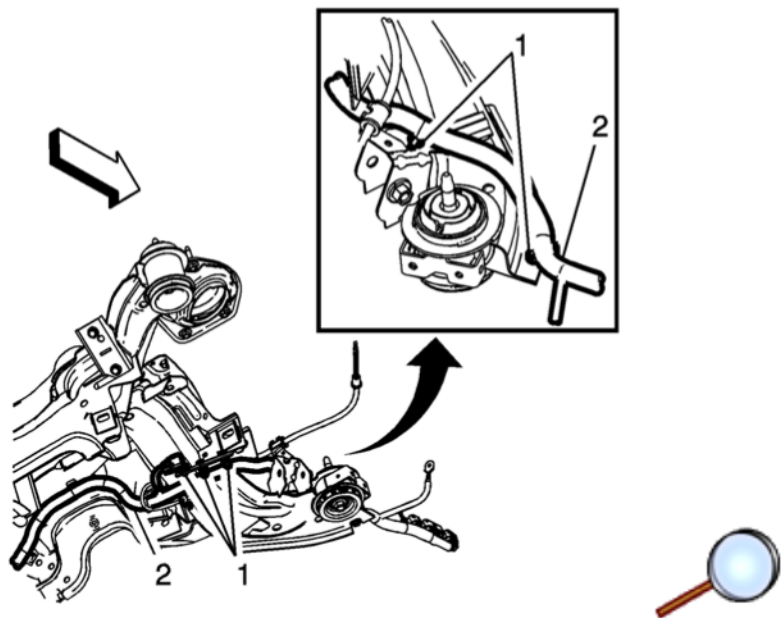
24. Remove the I-Link (3) from the subframe (4).



25. Disconnect the rear frame wiring harness retainers (1) from the rear frame.

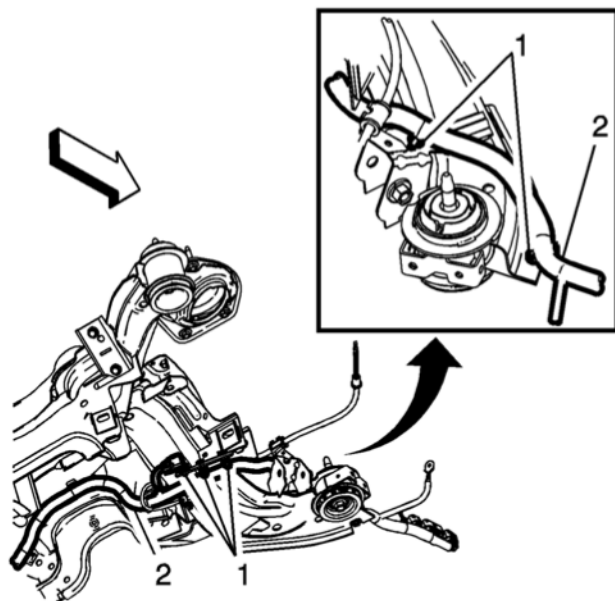


26. Disconnect the left side rear frame wiring harness retainers (1) from the rear frame.

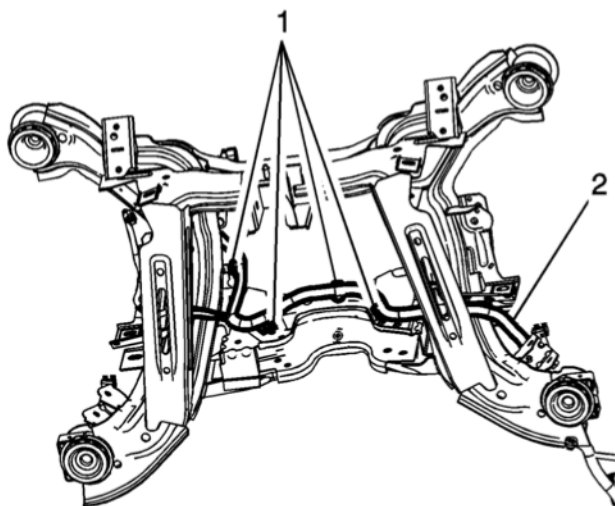


27. Disconnect the right side rear frame wiring harness retainers (1) from the rear frame.

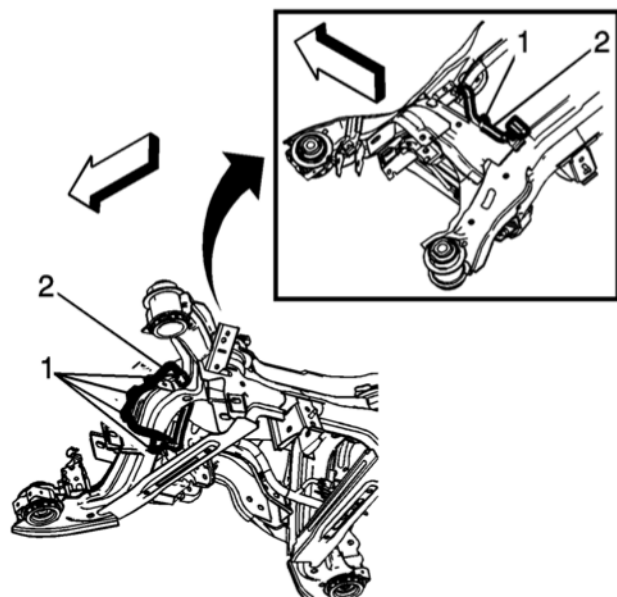
Installation Procedure



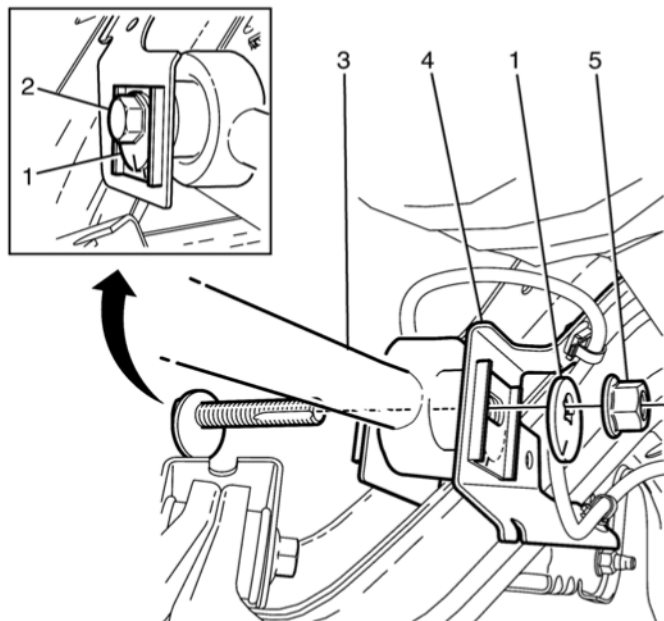
1. Install the right side rear frame wiring harness (2), to the rear frame, with the harness retainers (1).



2. Install the rear frame wiring harness (2), to the rear frame, with the harness retainers (1).



3. Install the left side rear frame wiring harness (2), to the rear frame, with the harness retainers (1).



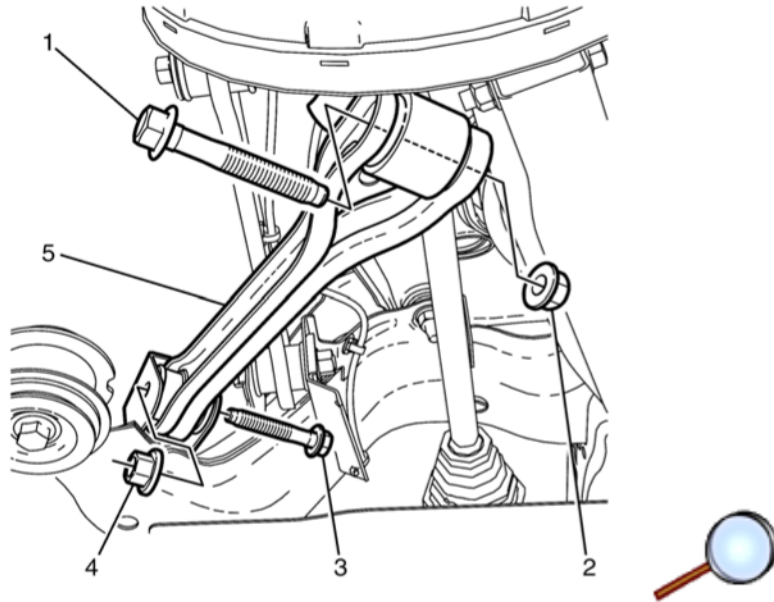
4. Install the I-Link (3) into the rear subframe (4).

Note:

The eccentric washers (1) must be fitted correctly in terms of their orientation and alignment marks.

The I-Link to rear subframe retaining bolt (2) and NEW nut (5) must not be fully tightened at this stage.

5. Install the I-Link to rear subframe retaining bolt (2).
6. Install the eccentric washer (1) and the NEW nut (5).
Do not fully tighten at this stage.

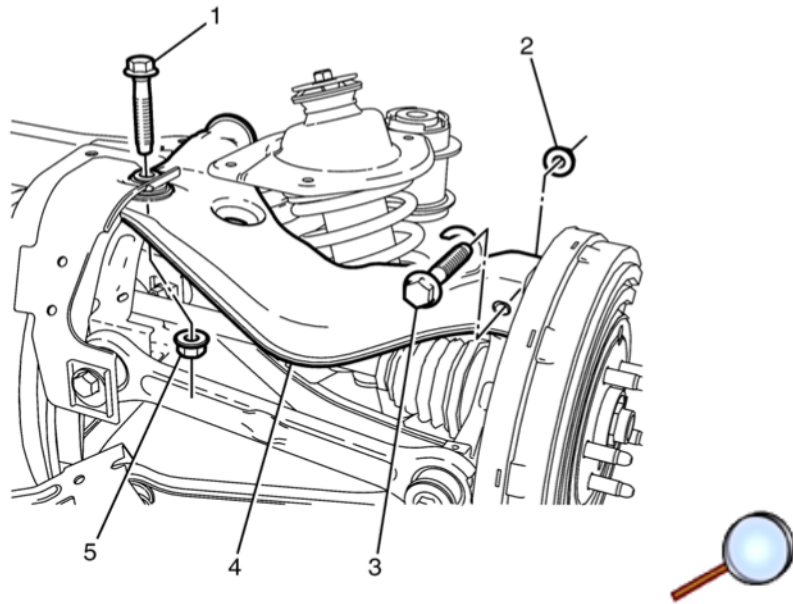


Note: The Y-Link to subframe retaining bolt (3) and nut (4) must not to be fully tightened at this stage.

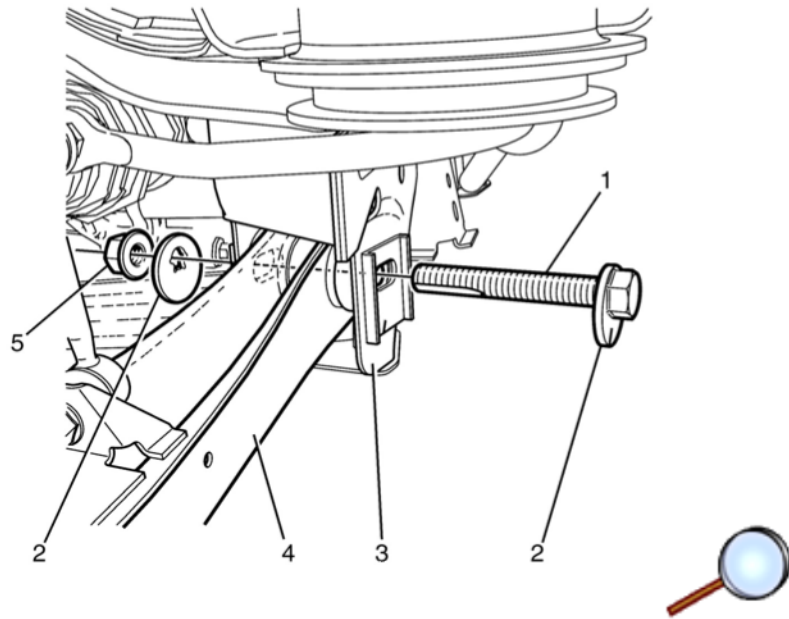
7. Install the Y-Link (5) to the rear subframe.

Note: The Y-Link to subframe retaining bolt (1) and nut (2) must not to be fully tightened at this stage.

8. Install the Y-Link to rear subframe retaining bolt (3) and NEW nut (4). Do not fully tighten at this stage..
9. Install the Y-Link to knuckle retaining bolt (1) and NEW nut (2).
Do not fully tighten at this stage.



10. Install the upper control arm(4) into the rear subframe.
11. Install the upper control arm ball joint bushing to rear subframe retaining bolt (1) and NEW nut (5).
- Caution:** Refer to [Fastener Caution](#).
12. Tighten the retaining bolt (1) and NEW nut (5) to:
 - First pass: **80 N•m (59 lb ft)**.
 - Final pass: **120 Degrees**.
13. Install the upper control arm to knuckle retaining bolt (3) and NEW nut (2).
14. Tighten the retaining bolt (1) and NEW nut (2) to:
 - First pass: **60 N•m (44 lb ft)**.
 - Final pass: **120 Degrees**.
15. Install the upper control arm pivot bushing. Refer to [Knuckle Replacement](#).



16. Install the lower control arm(4) into the rear subframe (3).

Note:

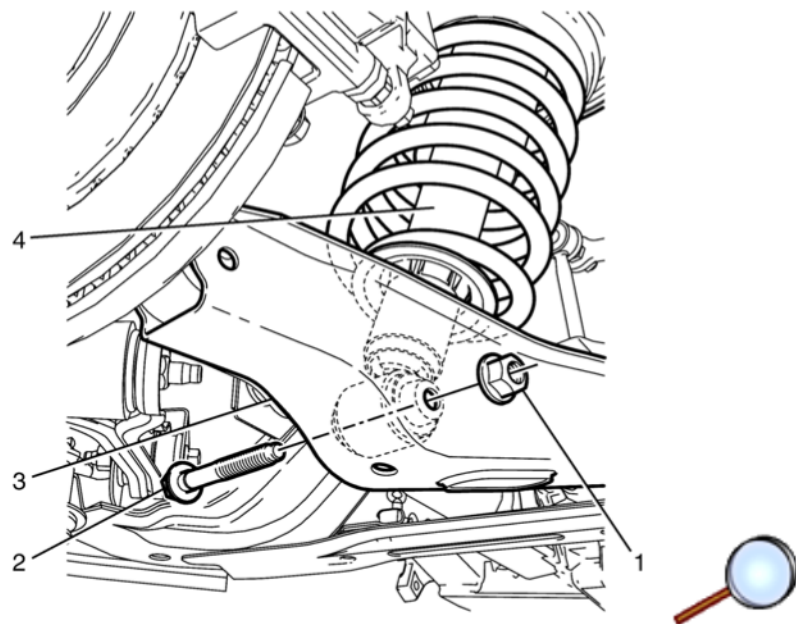
The eccentric washers (2) must be fitted correctly in terms of their orientation and alignment marks.

Do not fully tighten the lower control arm to rear subframe retaining bolt (1) and nut (5) at this stage.

17. Install the lower control arm to rear subframe retaining bolt (1).

18. Install the eccentric washer(2) and the NEW nut (5).

Do not fully tighten at this stage.

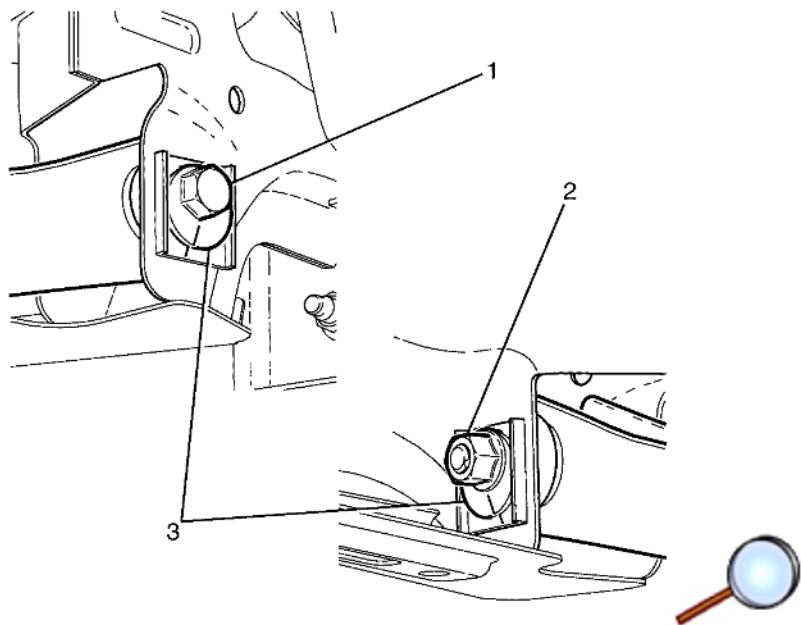


Note: Do not fully tighten the lower control arm to strut assembly retaining bolt (2) and nut (1) at this stage.

19. Connect the rear strut assembly (4) to the lower control arm (3).
20. Install the lower control arm to strut assembly retaining bolt (2) and NEW nut (1). Do not fully tighten at this stage.
21. Install the rear wheel hub and knuckle assembly. Refer to [Knuckle Replacement](#).
22. Install the stabilizer shaft. Refer to [Stabilizer Shaft Replacement](#).
23. Install the stabilizer shaft link. Refer to [Stabilizer Shaft Link Replacement](#).
24. Install the electronic parking brake control module. Refer to [Electronic Parking Brake Control Module Replacement](#).
25. Install the right side parking brake rear cable. Refer to [Parking Brake Rear Cable Replacement - Right Side](#).
26. Install the left side parking brake rear cable. Refer to [Parking Brake Rear Cable Replacement - Left Side](#).

Note: Do not perform a wheel alignment at this time.

27. Install the rear suspension support assembly. Refer to [Rear Suspension Support Removal and Installation](#).
28. Bounce the vehicle several times to settle the suspension.

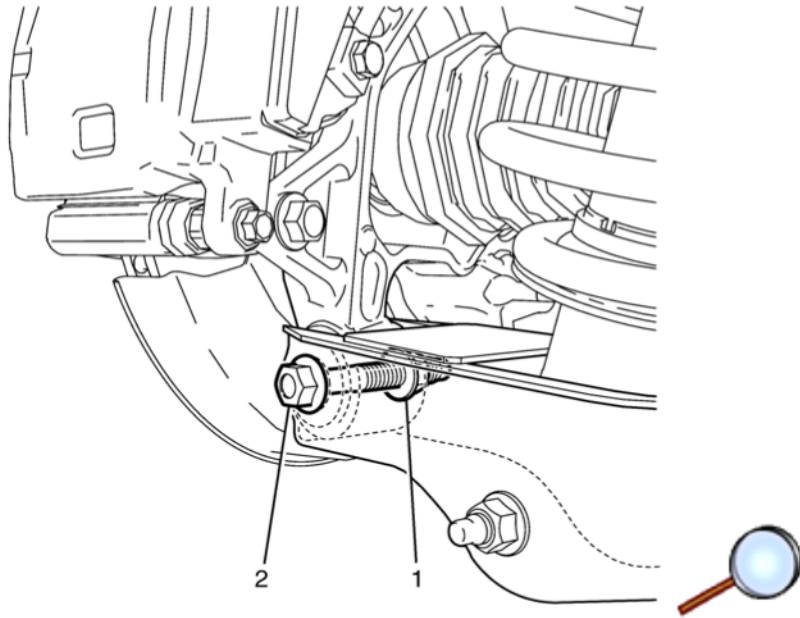


Note: The lower control arm to the subframe retaining bolt (1) and nut (2) eccentric washers (3) are used to adjust rear suspension camber.

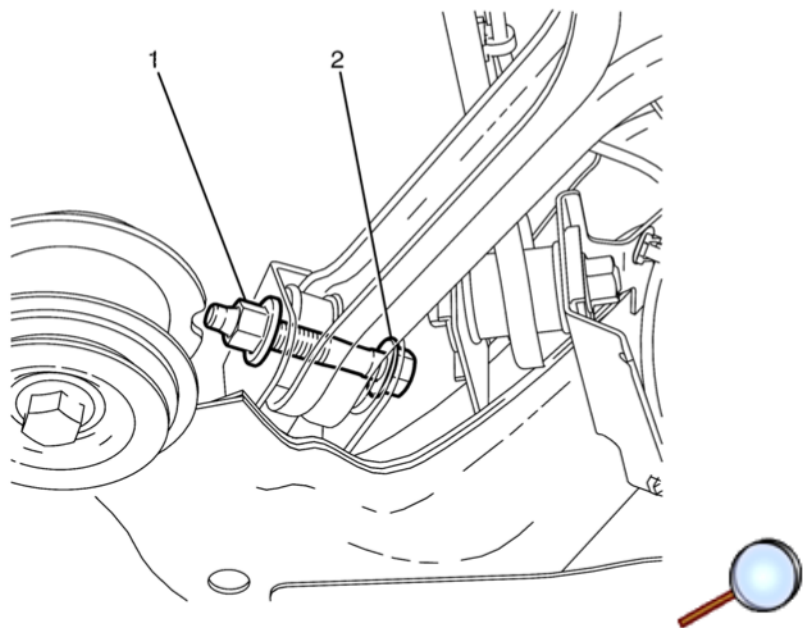
29. Align the marks on the eccentric washers (3) with the marks on the subframe.

Note: Make sure that the vehicle is positioned on a suitable hoist to load the rear suspension bushes to the correct position.

30. Tighten the lower control arm to subframe retaining bolt (1) to **175 N·m (129 lb ft)**.

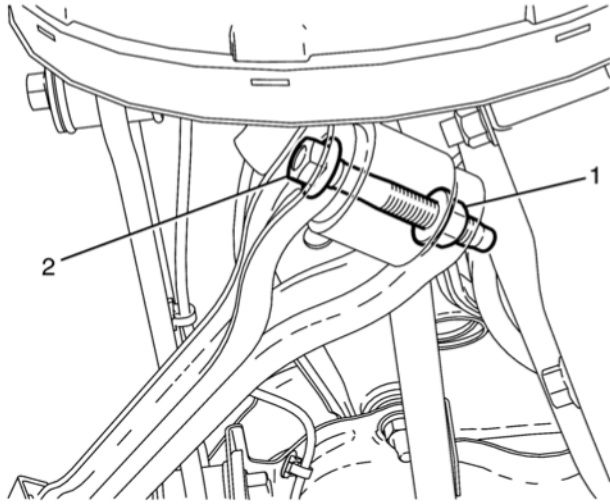


31. Tighten the lower control arm to knuckle retaining bolt (2) and NEW nut (1) to:
- First pass: **40 N•m (30 lb ft)**.
 - Final pass: **120 Degrees**



Note: Make sure that the vehicle is positioned on a suitable hoist to load the rear suspension bushings to the correct position.

32. Tighten the Y-Link to subframe retaining bolt (2) and NEW nut (1) to **100 N•m (74 lb ft)**.



33. Tighten the Y-Link to knuckle retaining bolt (2) and NEW nut (1) to:
- First pass: **40 N•m (30 lb ft)**.
 - Final pass: **120 Degrees**

Rear Suspension Support Bushing Replacement

Special Tools

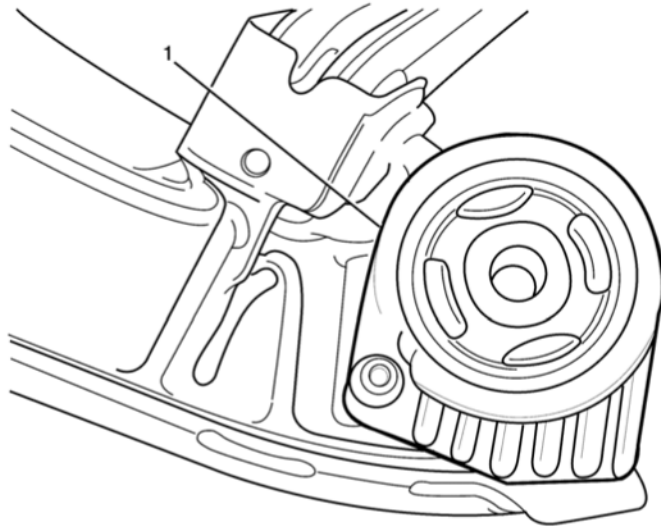
CH-48509 Rear Frame Bush Removal Tool

Removal Procedure

Danger: To avoid any vehicle damage, serious personal injury or death when major components are removed from the vehicle and the vehicle is supported by a hoist, support the vehicle with jack stands at the opposite end from which the components are being removed and strap the vehicle to the hoist.

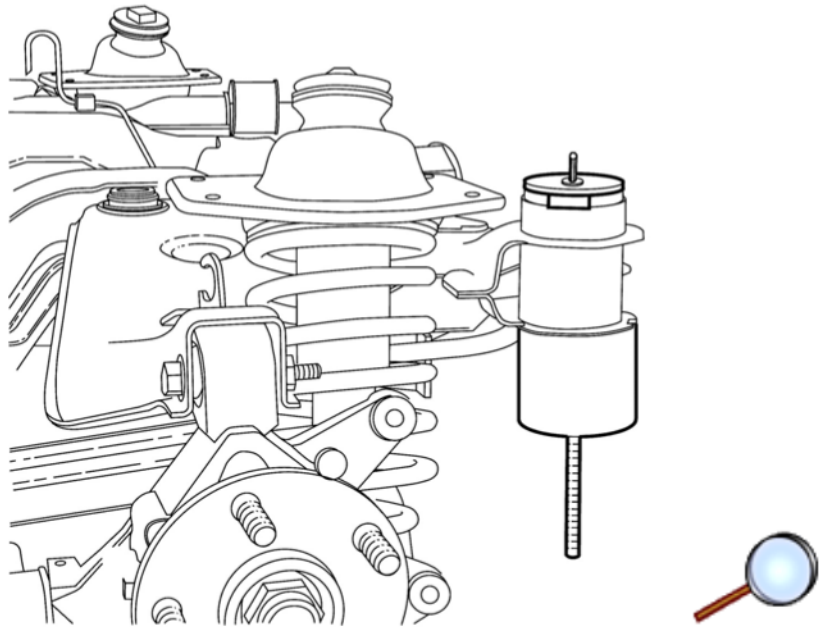
Warning: Refer to [Safety Glasses Warning](#).

1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
2. Remove the rear suspension support. Refer to [Rear Suspension Support Removal and Installation](#).



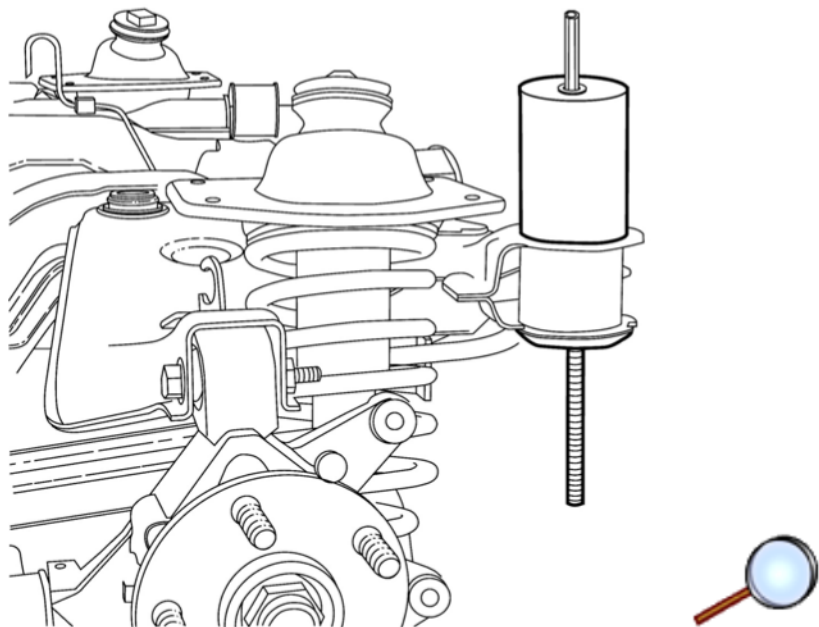
© 2014 General Motors. All rights reserved.

3. Remove the rear sub frame insulator rubber (1) from the rear sub frame.

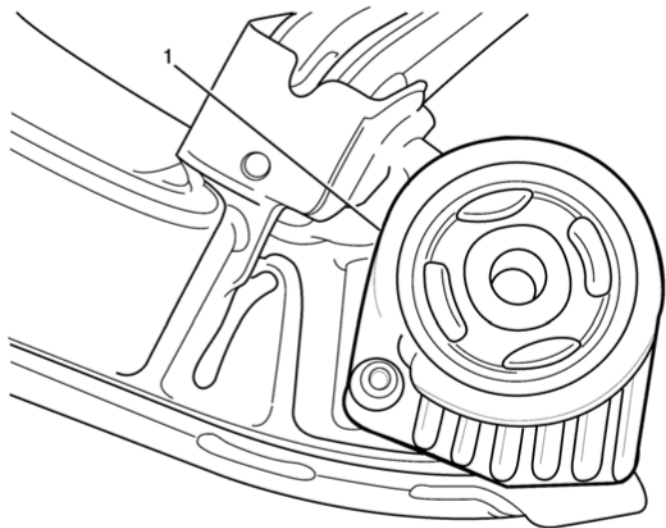


4. Install the *CH-48509* rear frame bush removal tool to the rear sub frame bush.
5. Remove the rear sub frame bush by slowly pressing the rear sub frame removal tool into the rear sub frame.
6. Remove the rear sub frame bush from the rear sub frame.

[Installation Procedure](#)



1. Install the rear sub frame bush to the rear sub frame.
2. Install the *CH-48509* rear frame bush removal tool to the rear sub frame bush.
3. Install the rear sub frame bush by slowly pressing rear sub frame tool.
4. Remove the rear sub frame bush tool from the rear sub frame.



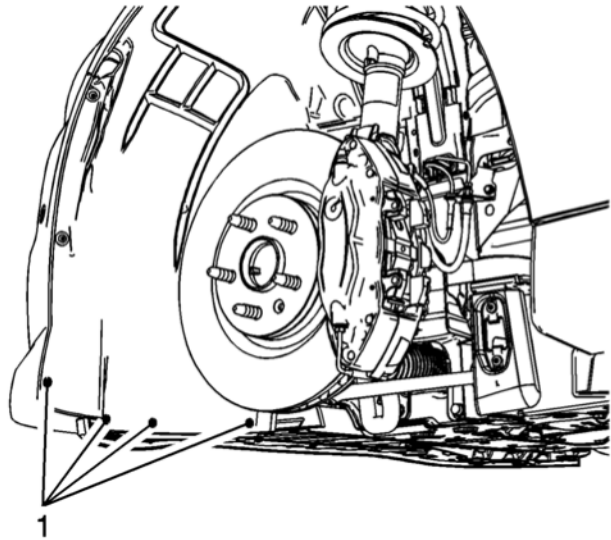
5. Install the rear sub frame insulator rubber (1) to the rear sub frame.
6. Install the rear suspension support. Refer to [Rear Suspension Support Removal and Installation](#).

Front Wheelhouse Liner Replacement (SWB)

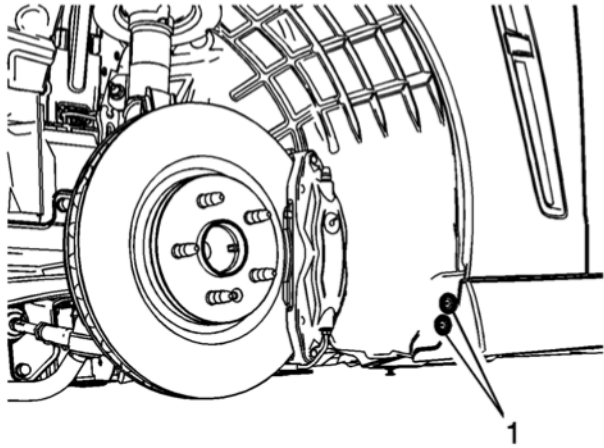
Removal Procedure

Note: Left side shown, right side similar.

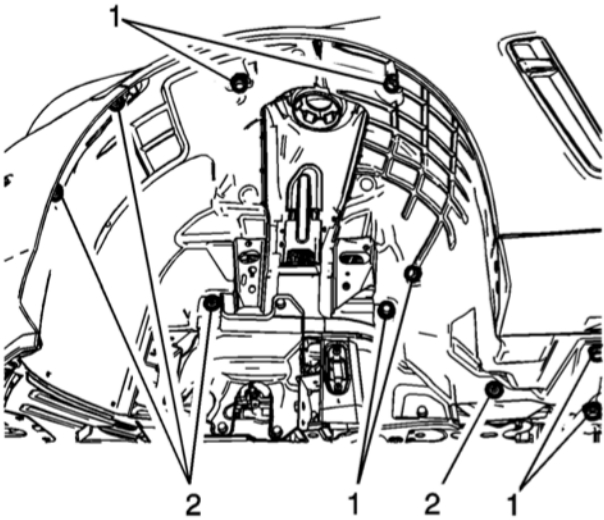
1. Remove the front wheel. Refer to [Tire and Wheel Removal and Installation](#).



2. Remove the front wheelhouse liner to the front air deflector retaining scrivenets (1).



3. Remove the front wheelhouse liner to rocker panel retaining screws (1).

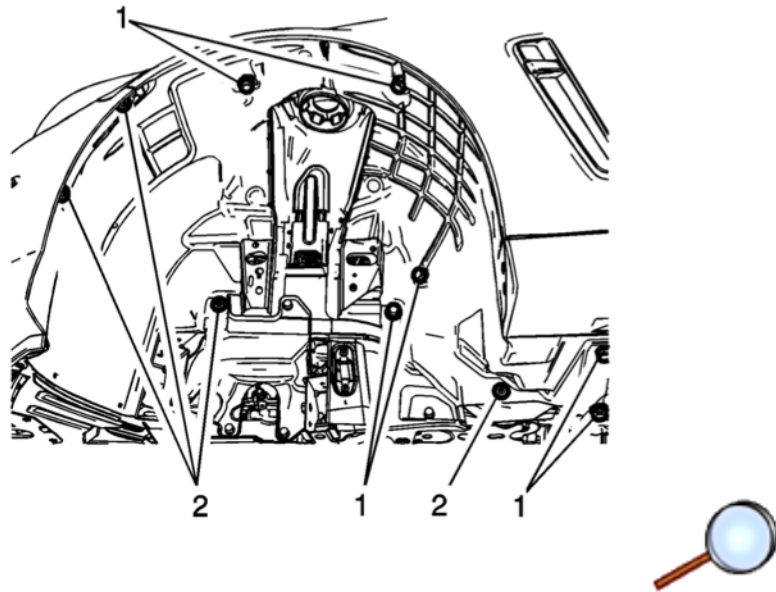


4. Remove the front wheelhouse liner to wheelhouse retaining scrivenets (1).

5. Remove the front wheelhouse liner to wheelhouse retaining screws (2).
6. Remove the front wheelhouse liner from the vehicle.

Installation Procedure

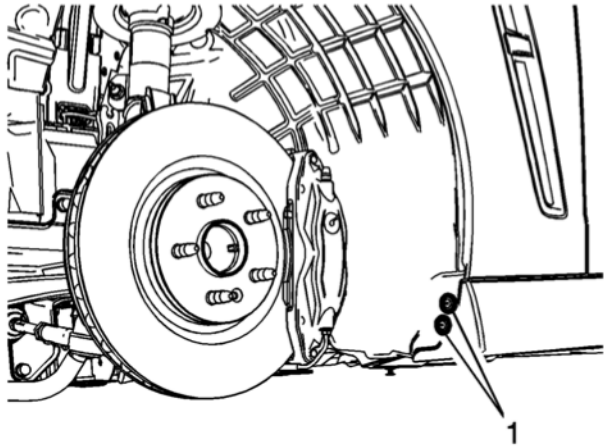
1. Position the front wheelhouse liner to the vehicle.



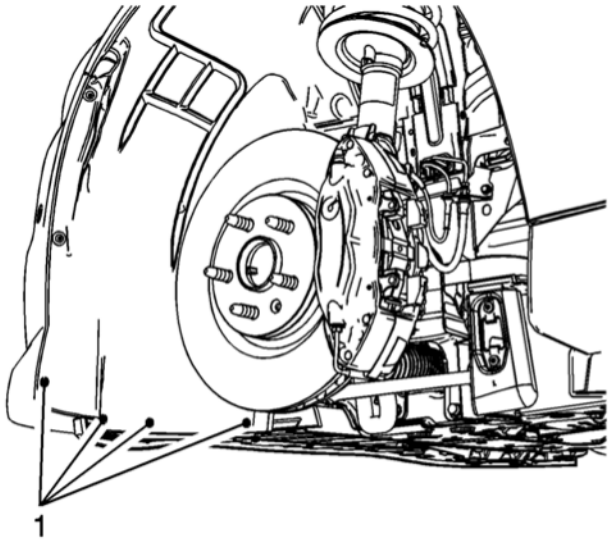
2. Install the front wheelhouse liner to wheelhouse retaining scrivenets (1).

Caution: Refer to [Fastener Caution](#).

3. Install the front wheelhouse liner to wheelhouse retaining screws (2) and tighten to **2 N·m (18 lb in)**.



4. Install the front wheelhouse liner to rocker panel retaining screws (1) and tighten to **2 N•m (18 lb in)**.

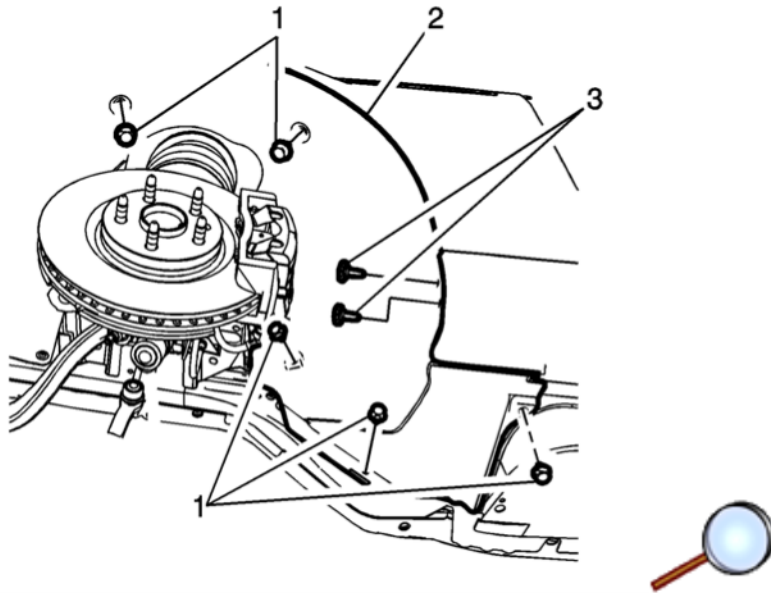


5. Install the front wheelhouse liner to the front air deflector retaining scrivets (1).
6. Install the front wheel. Refer to [Tire and Wheel Removal and Installation](#).
7. Lower the vehicle.

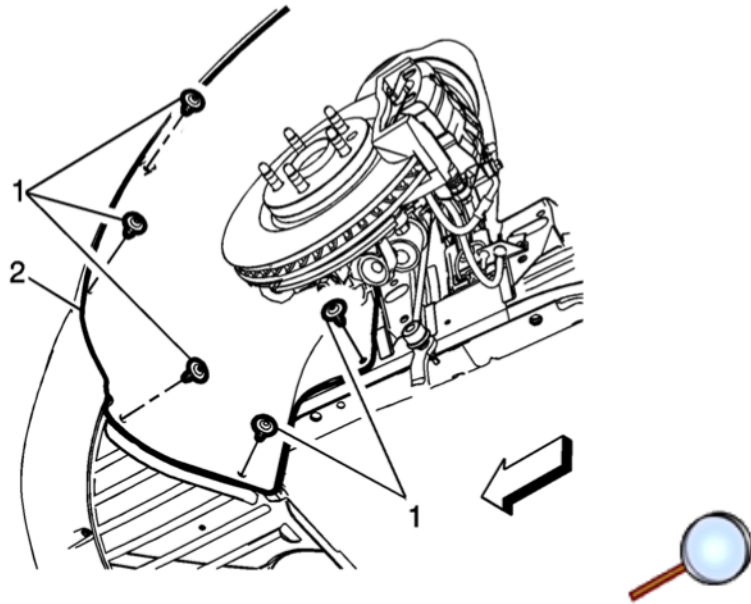
Front Wheelhouse Liner Replacement (LWB)

Removal Procedure

1. Remove the front wheel. Refer to [Tire and Wheel Removal and Installation](#).

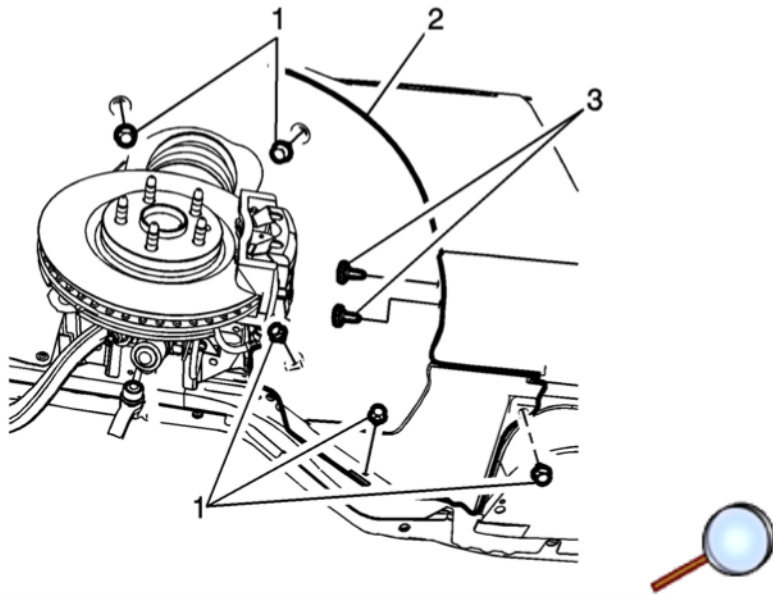


2. Remove the front wheelhouse liner to the rocker panel molding screws (3).
3. Remove the front wheelhouse liner retainers (1).

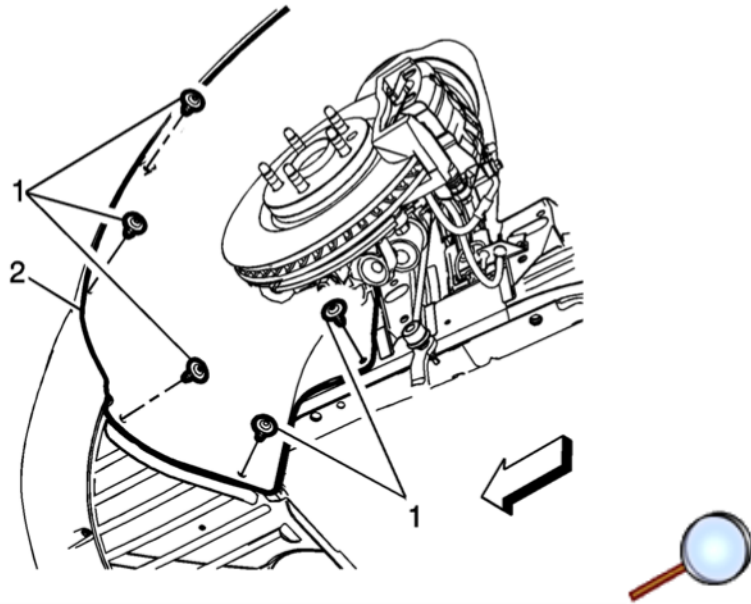


4. Remove the front wheelhouse liner to wheelhouse screws (1).
5. Remove the front wheelhouse liner (2) from the vehicle.

[Installation Procedure](#)



1. Position the front wheelhouse liner (2) to the vehicle.
2. Install the front wheelhouse liner to wheelhouse retainers (1).
- Caution:** Refer to [Fastener Caution](#).
3. Install the front wheelhouse screws (3) and tighten to **3 N·m (27 lb in)**.



4. Install the front wheelhouse liner screws (1) and tighten to **3 N·m (27 lb in)**.
5. Install the front wheel. Refer to [Tire and Wheel Removal and Installation](#).

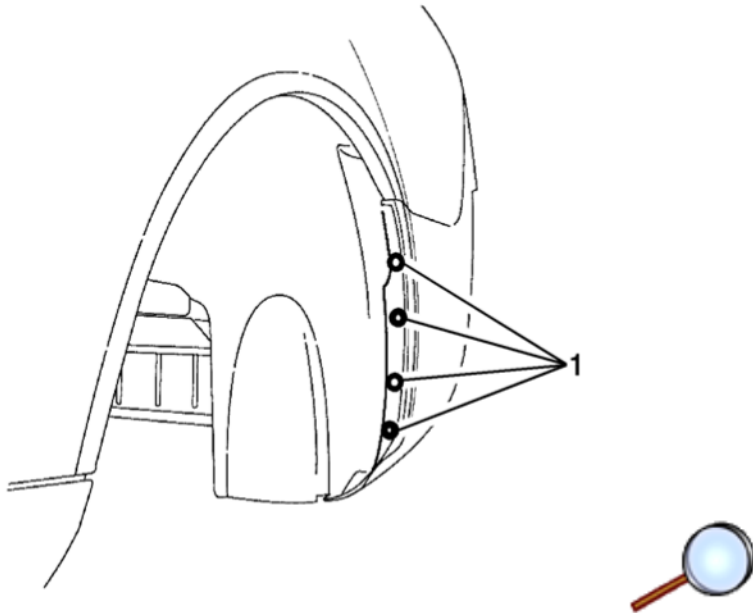
Rear Wheelhouse Liner Replacement

[Removal Procedure](#)

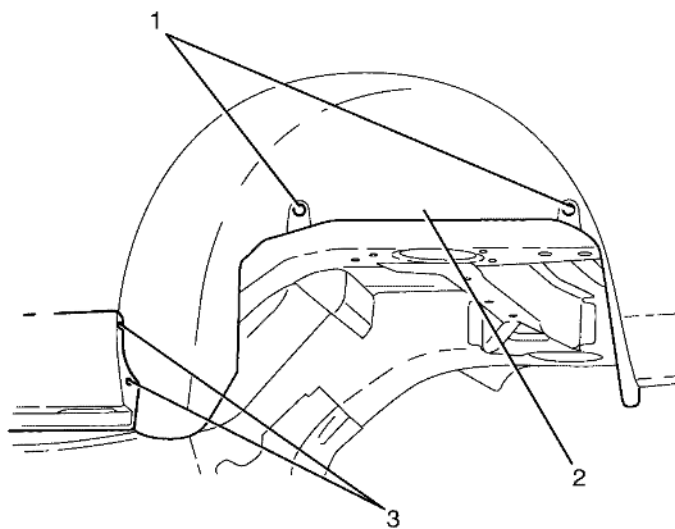
Danger: To avoid any vehicle damage, serious personal injury or death when major components are removed from the vehicle and the vehicle is supported by a hoist, support the vehicle with jack stands at the opposite end from which the components are being removed and strap the vehicle to the hoist.

Warning: Refer to [Safety Glasses Warning](#).

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

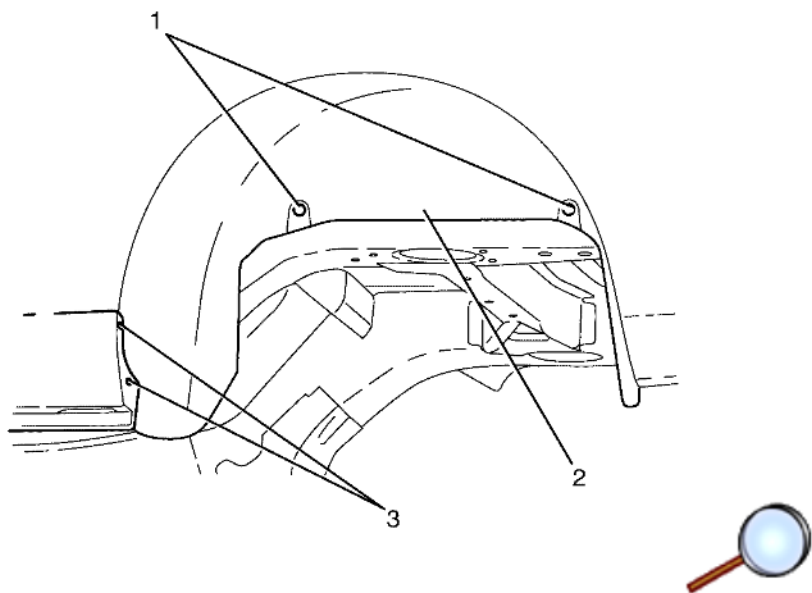


3. Remove the rear wheelhouse liner to rear bumper fascia retaining screws (1).



4. Remove the rear wheelhouse liner to rocker moulding retaining screws (3).
5. Remove the rear wheelhouse liner to vehicle screws (1).
6. Remove the rear wheelhouse liner (2) from the vehicle.

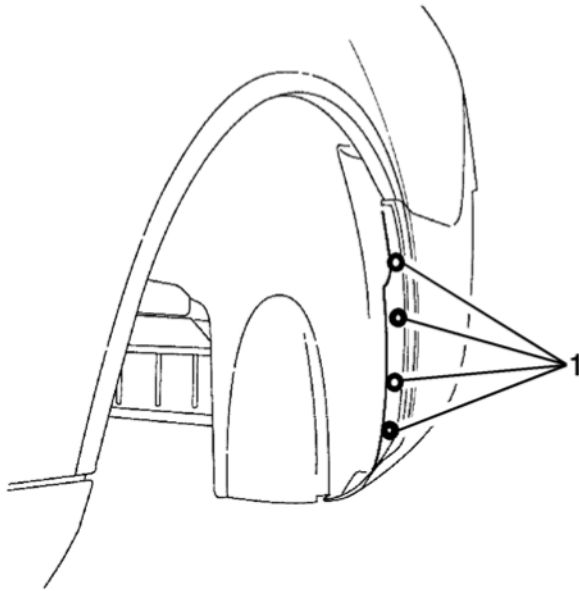
Installation Procedure



1. Position the rear wheelhouse liner (2) to the vehicle.
2. Install the rear wheelhouse liner to vehicle body screws (1).

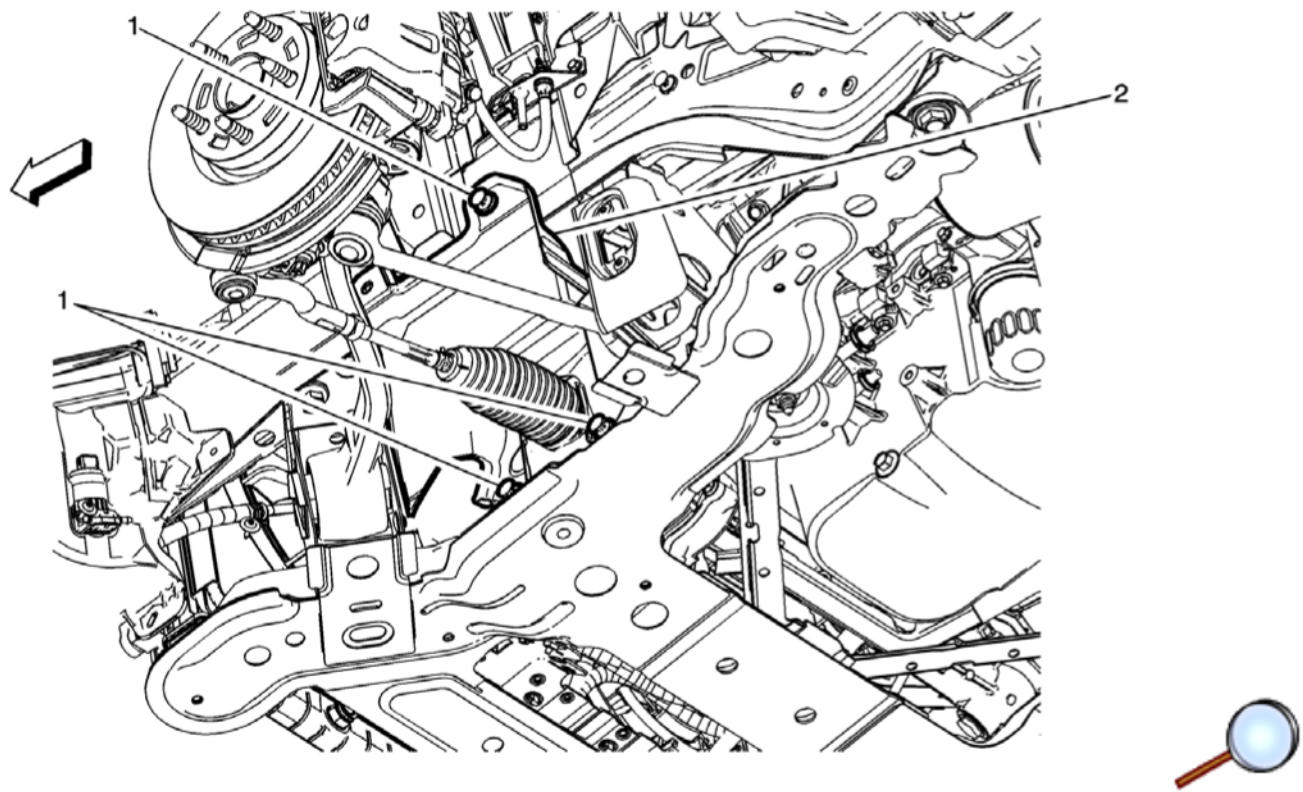
Caution: Refer to [Fastener Caution](#).

3. Install the rear wheelhouse liner to rocker moulding retaining screws (3) and tighten to **2 N•m (18 lb in)**.



4. Install the rear wheelhouse liner to rear bumper fascia retaining screws (1).
5. Install the rear wheels. Refer to [Tire and Wheel Removal and Installation](#).
6. Lower the vehicle.

Front Wheelhouse Splash Shield Replacement



Front Wheelhouse Splash Shield Replacement

Callout	Component Name
Preliminary Procedures Remove the front wheelhouse liner. Refer to Front Wheelhouse Liner Replacement . © 2014 General Motors. All rights reserved.	
1	Front Wheelhouse Splash Shield Retainers (Qty 3) Caution: Refer to Fastener Caution .

2	Front Wheelhouse Splash Shield
---	--------------------------------

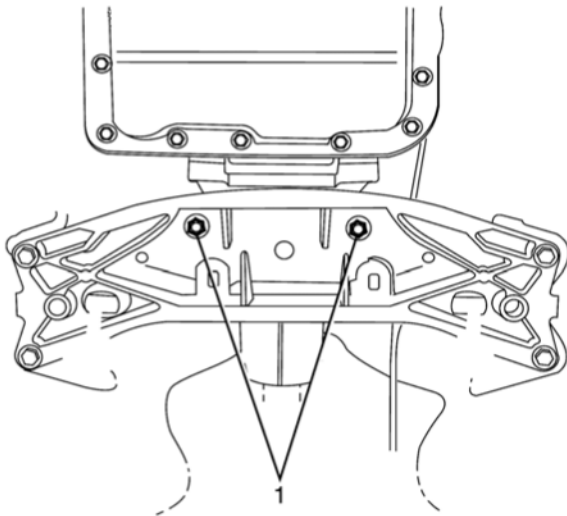
Transmission Support Replacement

[Removal Procedure](#)

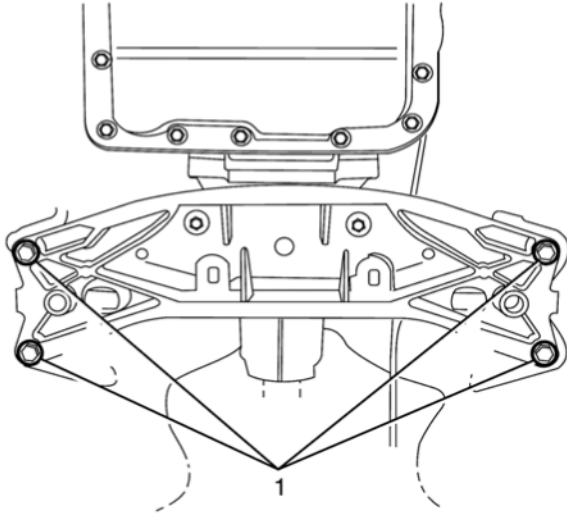
Danger: To avoid any vehicle damage, serious personal injury or death when major components are removed from the vehicle and the vehicle is supported by a hoist, support the vehicle with jack stands at the opposite end from which the components are being removed and strap the vehicle to the hoist.

Warning: Refer to [Safety Glasses Warning](#).

1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
2. Remove the exhaust system. Refer to [Exhaust System Replacement](#).

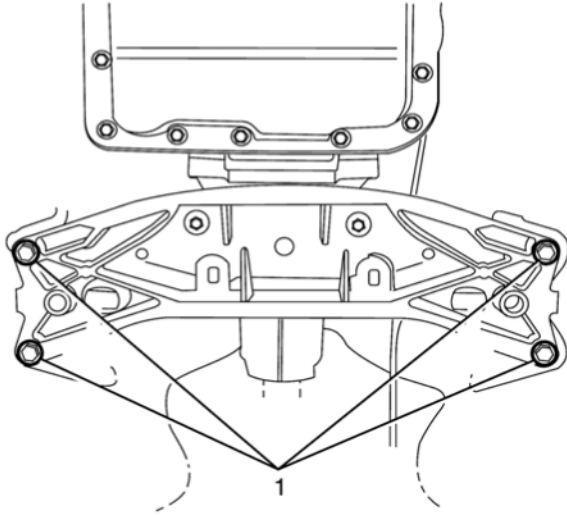


3. Remove the transmission support to transmission mount retaining nuts (1).
4. Support the transmission with a suitable supporting stand.



5. Remove the transmission support to subframe retaining bolts (1).
6. Remove the transmission support from the vehicle.

[Installation Procedure](#)



1. Install the transmission support to the vehicle.

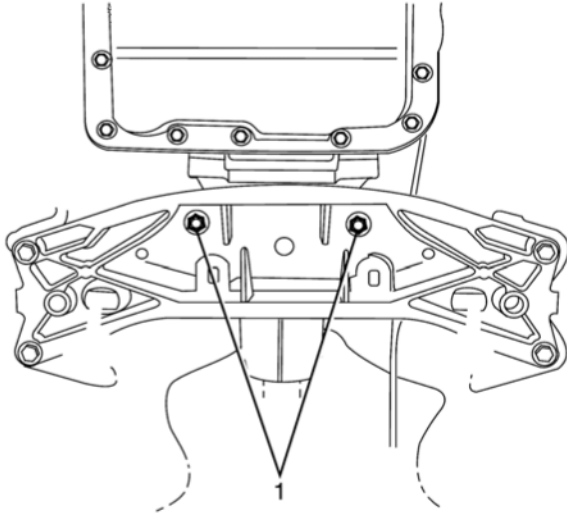
Caution: Refer to [Fastener Caution](#).

2. Install the transmission support to subframe retaining bolts (1).

Tighten

Tighten the bolts to 58 N•m (43 lb ft).

3. Remove the suitable supporting stand from the transmission.



4. Install the transmission support to transmission mount retaining nuts (1).

Tighten

Tighten the nuts to 58 N•m (43 lb ft).

5. Install the exhaust system. Refer to [Exhaust System Replacement](#).
6. Lower the vehicle.

Underbody Inspection

Danger: To avoid any vehicle damage, serious personal injury or death when major components are removed from the vehicle and the vehicle is supported by a hoist, support the vehicle with jack stands at the opposite end from which the components are being removed and strap the vehicle to the hoist.

Warning: Refer to [Safety Glasses Warning](#).

1. Raise and support the vehicle. Refer to [Lifting and Jacking the Vehicle](#).
2. Check for obvious deterioration of the floor pan.
3. Check for loose dirt and corrosion around the inside of the floor pan reinforcement member access holes. This is the first indication that corrosion may exist in hidden areas, and repairs may be required before the final cleaning and protective treatment is performed.
4. Using a chisel, ensure that the drain provisions in the floor pan reinforcement members are open. There are drain holes in the body side panels also. These holes can be opened using a punch or a drift. The side panel drain holes are in the rear section of the rocker panels, and in the lower rear quarter panels.

Fastener Tightening Specifications

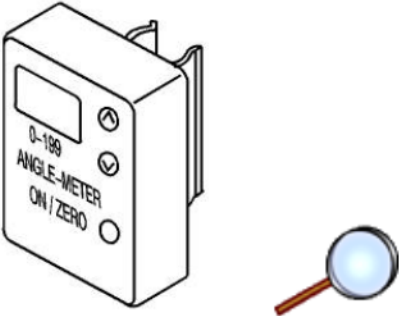
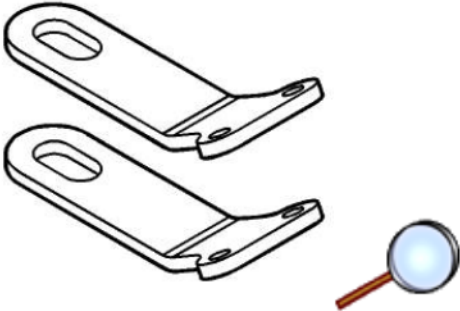
Fastener Tightening Specifications

Application	Specification	
	Metric	English
Adjust Link to Rear Frame Retaining Nut	175 N•m	129 lb ft
Engine Mount to Front Drivetrain and Front Suspension Frame Retaining Nut	80 N•m	59 lb ft
Engine Splash Shield to Front Drivetrain and Front Suspension Frame Retaining Bolt	9 N•m	80 lb in
Front Drivetrain and Front Suspension Frame to Body Centre Retaining Bolt	160 N•m	118 lb ft
Front Drivetrain and Front Suspension Frame to Body Front Retaining Bolt	160 N•m	118 lb ft
Front Drivetrain and Front Suspension Frame to Body Rear Retaining Bolt	240 N•m	177 lb ft
Front Wheelhouse Liner to Front Air Deflector Retaining Screw	2 N•m	18 lb in
Front Wheelhouse Liner to Rocker Panel Retaining Screw	2 N•m	18 lb in
Oil Pan Drain Plug Splash Shield to Front Drivetrain and Front Suspension Frame Retaining Bolt	19 N•m	14 lb ft
Rear Brake Caliper Anchor Plate to Knuckle Retaining Bolt	110 N•m	81 lb ft
© 2014 General Motors. All rights reserved.		
Rear Frame to Underbody Retaining Bolt		

• First Pass	65 N•m	48 lb ft
• Final Pass	+ 125 Degrees	
Rear Lower Control Arm to Knuckle Retaining Bolt		
• First Pass	40 N•m	30 lb ft
• Final Pass	+ 120 Degrees	
Rear Lower Control Arm to Rear Frame Retaining Nut	175 N•m	129 lb ft
Rear Strut Assembly to Body Retaining Bolt	58 N•m	43 lb ft
Rear Strut Assembly to Lower Control Arm Retaining Nut		
• First Pass	50 N•m	37 lb ft
• Final Pass	+ 120 Degrees	
Rear Wheelhouse Liner to Rocker Molding Screws	2 N•m	18 lb in
Steering Gear to Front Drivetrain and Front Suspension Frame Retaining Bolt		
• First Pass	50 N•m	37 lb ft

• Final Pass	+ 120 Degrees	
Trailing Link to Knuckle Retaining Bolt		
• First Pass	40 N•m	30 lb ft
• Final Pass	+ 120 Degrees	
Trailing Link to Rear Frame Retaining Nut	100 N•m	74 lb ft
Transmission Support to Transmission Mount Retaining Nut	58 N•m	43 lb ft
Transmission Support to Underbody Retaining Bolt	58 N•m	43 lb ft
Upper Control Arm Ball Joint to Rear Frame Retaining Nut		
• First Pass	80 N•m	59 lb ft
• Final Pass	+ 120 Degrees	
Upper Control Arm to Knuckle Retaining Nut	120 N•m	89 lb ft

Special Tools

Illustration	Tool Number/ Description
	EN-45059 J-45059 Angle Meter
	EN-46114 Engine Lift Brackets