

2013 Chevrolet Cruze

2013 ACCESSORIES & EQUIPMENT Frame and Underbody - Cruze

2013 ACCESSORIES & EQUIPMENT

Frame and Underbody - Cruze

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Drivetrain and Front Suspension Frame Bolt Front	160	118 lb ft
Drivetrain and Front Suspension Frame Bolt Rear	160	118 lb ft
Front Compartment Insulator Bolt	3	27 lb in
Front Compartment Splash Shield Bolt	3	27 lb in
Front Wheelhouse Liner Bolt	2.5	22 lb in
Intermediate Steering Shaft Lower Bolt	34	25 lb ft
Power Steering Fluid Cooling Pipe Bolt	9	80 lb in
Power Steering Inlet and Outlet Hose Bolt	11	97 lb in
Rear Wheelhouse Liner Bolt	2.5	22 lb in
Stabilizer Shaft Link Nut (1)	65	48 lb ft
Steering Linkage Tie Rod Nut	65	48 lb ft
Transmission Front Mount Bolt	100	74 lb ft
Transmission Rear Mount Bracket Bolt	100	74 lb ft
(1) = Use new fastener		

REPAIR INSTRUCTIONS

ENGINE SHIELD REPLACEMENT

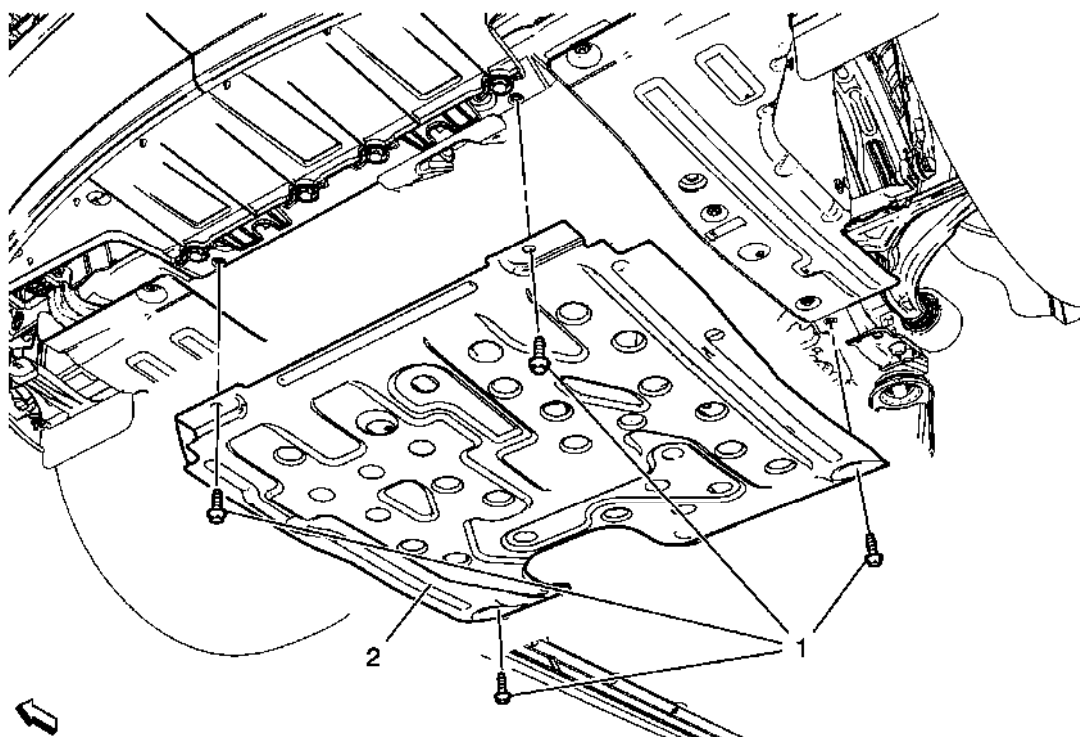


Fig. 1: View Of Engine Shield And Bolts

Courtesy of GENERAL MOTORS COMPANY

Engine Shield Replacement

Callout	Component Name
Preliminary Procedure Raise and support the vehicle. Refer to <u>Lifting and Jacking the Vehicle</u> .	
1	Engine Shield Bolt (Qty: 4) CAUTION: Refer to <u>Fastener Caution</u> . Tighten 40 N.m (30 lb ft)
2	Engine Shield

FRONT COMPARTMENT INSULATOR REPLACEMENT

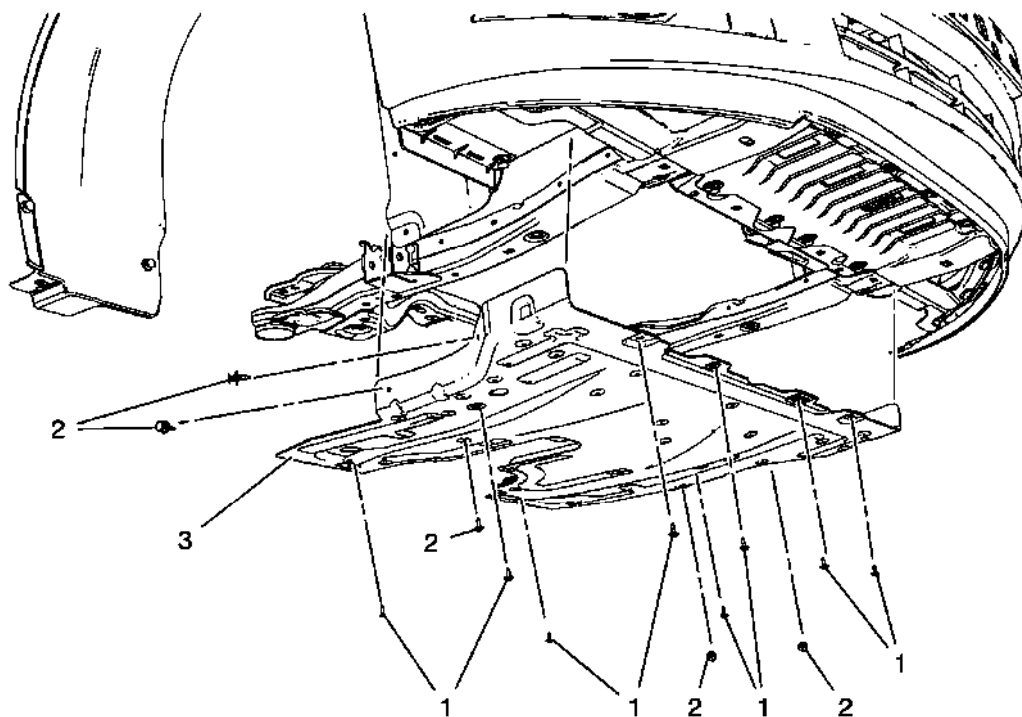


Fig. 2: Identifying Front Compartment Insulator, Screws And Plastic Retainers
Courtesy of GENERAL MOTORS COMPANY

Front Compartment Insulator Replacement

Callout	Component Name
Preliminary Procedure Raise and support the vehicle. Refer to <u>Lifting and Jacking the Vehicle</u> .	
1	Front Compartment Insulator Screw (Qty: 8) CAUTION: Refer to <u>Fastener Caution</u> . Tighten 3 N.m (27 lb in)
2	Front Compartment Insulator Plastic Retainer (Qty: 5)
3	Front Compartment Insulator

FRONT COMPARTMENT AIR DEFLECTOR REPLACEMENT

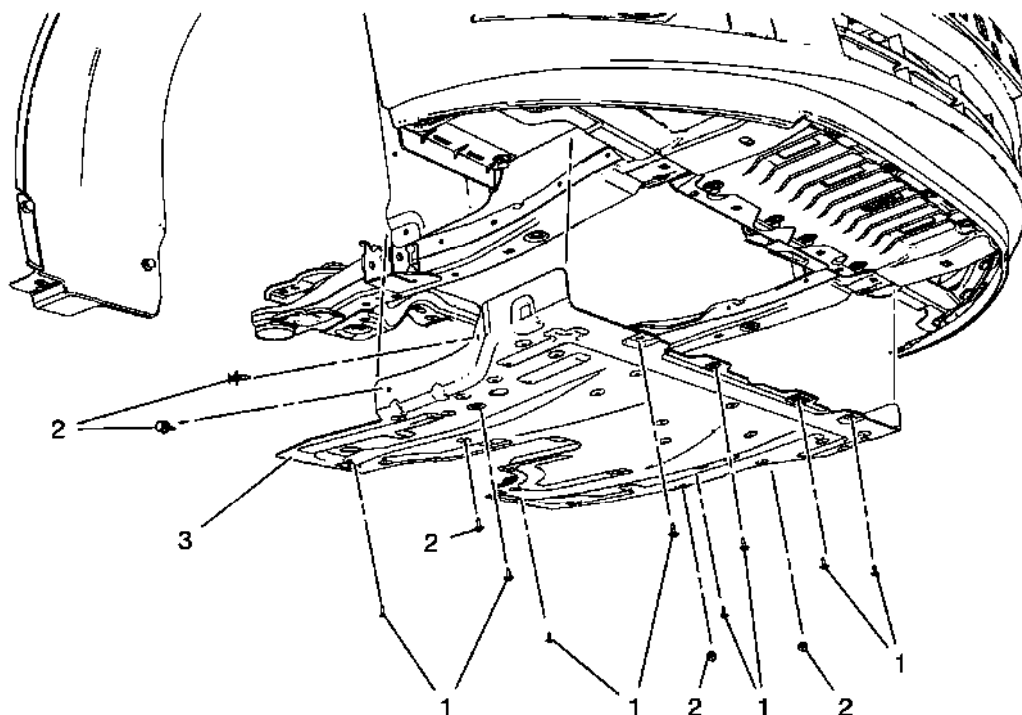


Fig. 3: Identifying Front Compartment Insulator, Screws And Plastic Retainers
Courtesy of GENERAL MOTORS COMPANY

Front Compartment Air Deflector Replacement

Callout	Component Name
Preliminary Procedure Raise and support the vehicle. Refer to <u>Lifting and Jacking the Vehicle</u> .	
1	Front Compartment Air Deflector (Qty: 8) CAUTION: Refer to <u>Fastener Caution</u> . Tighten 3 N.m (27 lb in)
2	Front Compartment Air Deflector Plastic Retainer (Qty: 5)
3	Front Compartment Air Deflector

UNDERBODY FRONT AIR DEFLECTOR REPLACEMENT - LEFT SIDE

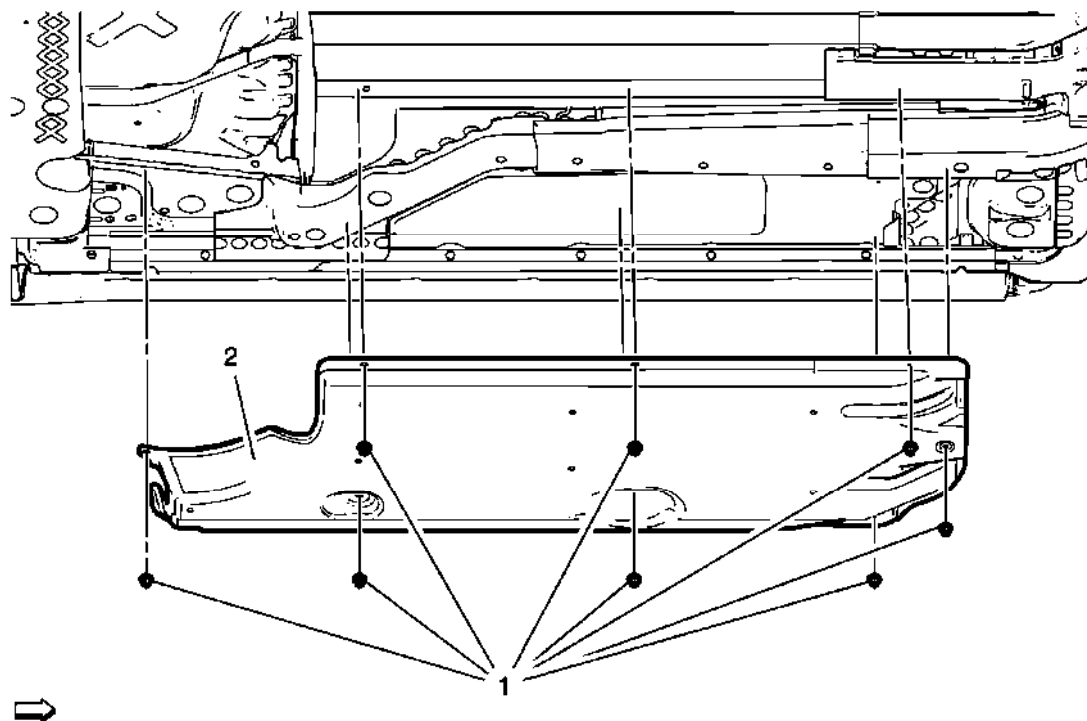


Fig. 4: Underbody Front Air Deflector And Retainers - Left Side
Courtesy of GENERAL MOTORS COMPANY

Underbody Front Air Deflector Replacement - Left Side

Callout	Component Name
Preliminary Procedure	
Raise the vehicle. Refer to <u>Lifting and Jacking the Vehicle</u> .	
1	Underbody Front Air Deflector Retainer (Qty: 8)
2	Underbody Front Air Deflector - Left Side

UNDERBODY FRONT AIR DEFLECTOR REPLACEMENT - RIGHT SIDE

2013 Chevrolet Cruze

2013 ACCESSORIES & EQUIPMENT Frame and Underbody - Cruze

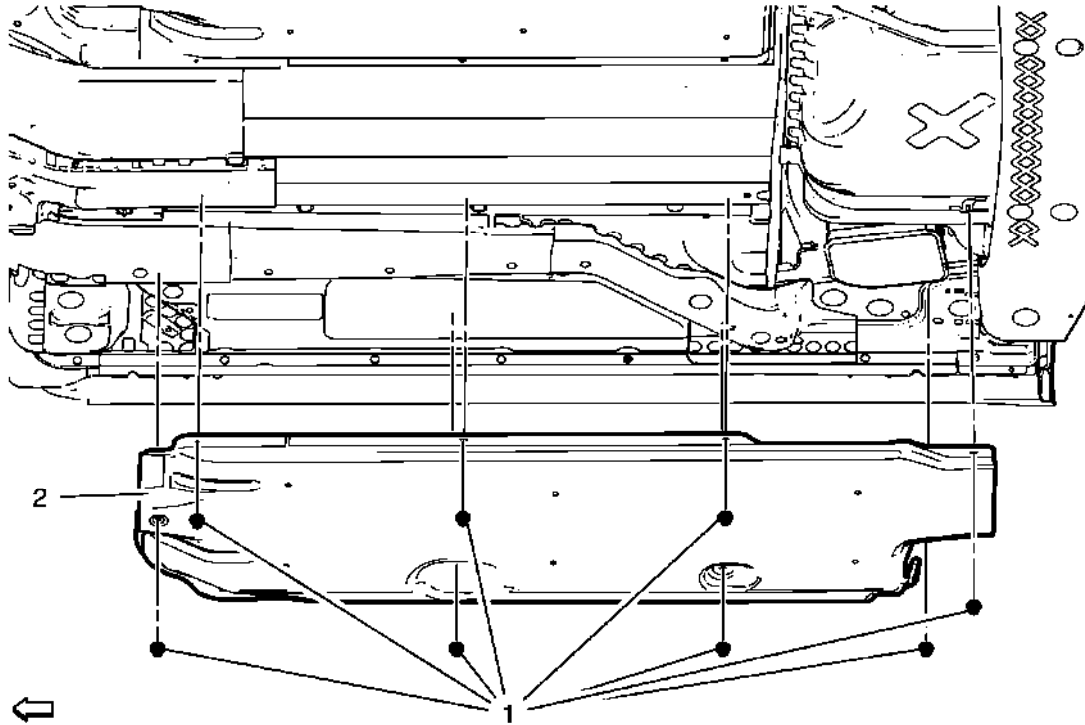


Fig. 5: Underbody Front Air Deflector - Right Side
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedures	
Raise the vehicle. Refer to <u>Lifting and Jacking the Vehicle</u> .	
1	Underbody Front Air Deflector Retainer (Qty: 8)
2	Underbody Front Air Deflector - Right Side

UNDERBODY REAR AIR DEFLECTOR REPLACEMENT

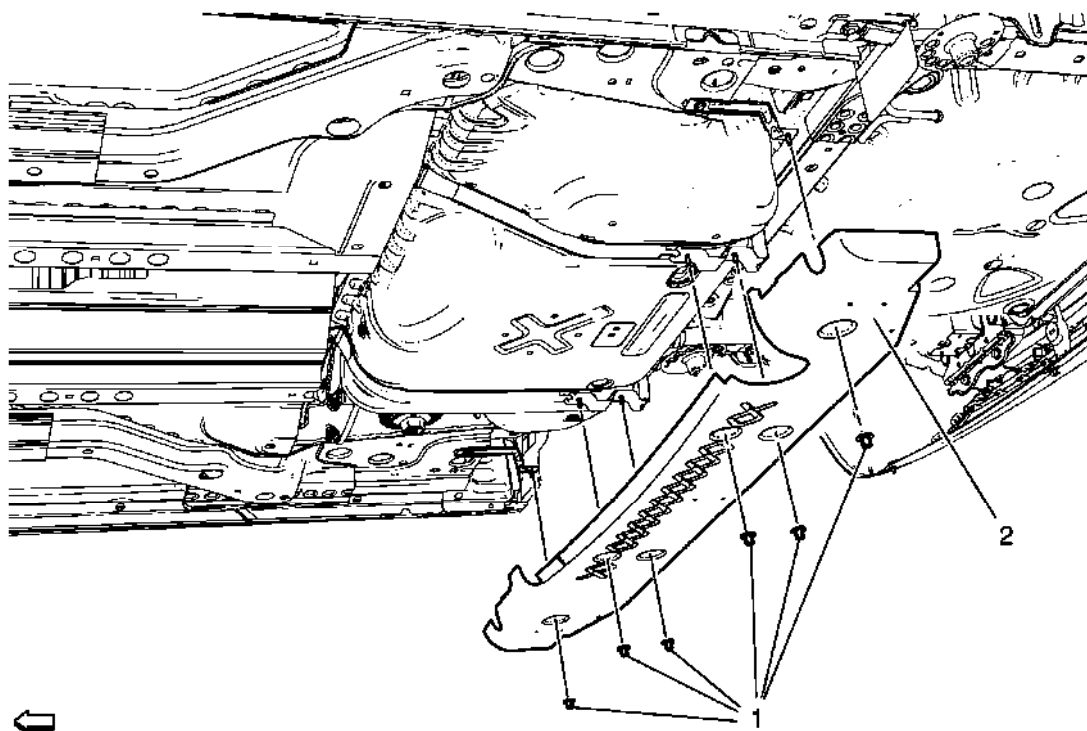


Fig. 6: Underbody Rear Air Deflector And Nuts
Courtesy of GENERAL MOTORS COMPANY

Underbody Rear Air Deflector Replacement

Callout	Component Name
Preliminary Procedure Raise and support the vehicle. Refer to <u>Lifting and Jacking the Vehicle</u> .	
1	Underbody Rear Air Deflector Nut (Qty: 6) CAUTION: Refer to <u>Fastener Caution</u> .
2	Underbody Rear Air Deflector

DRIVETRAIN AND FRONT SUSPENSION FRAME REPLACEMENT

Removal Procedure

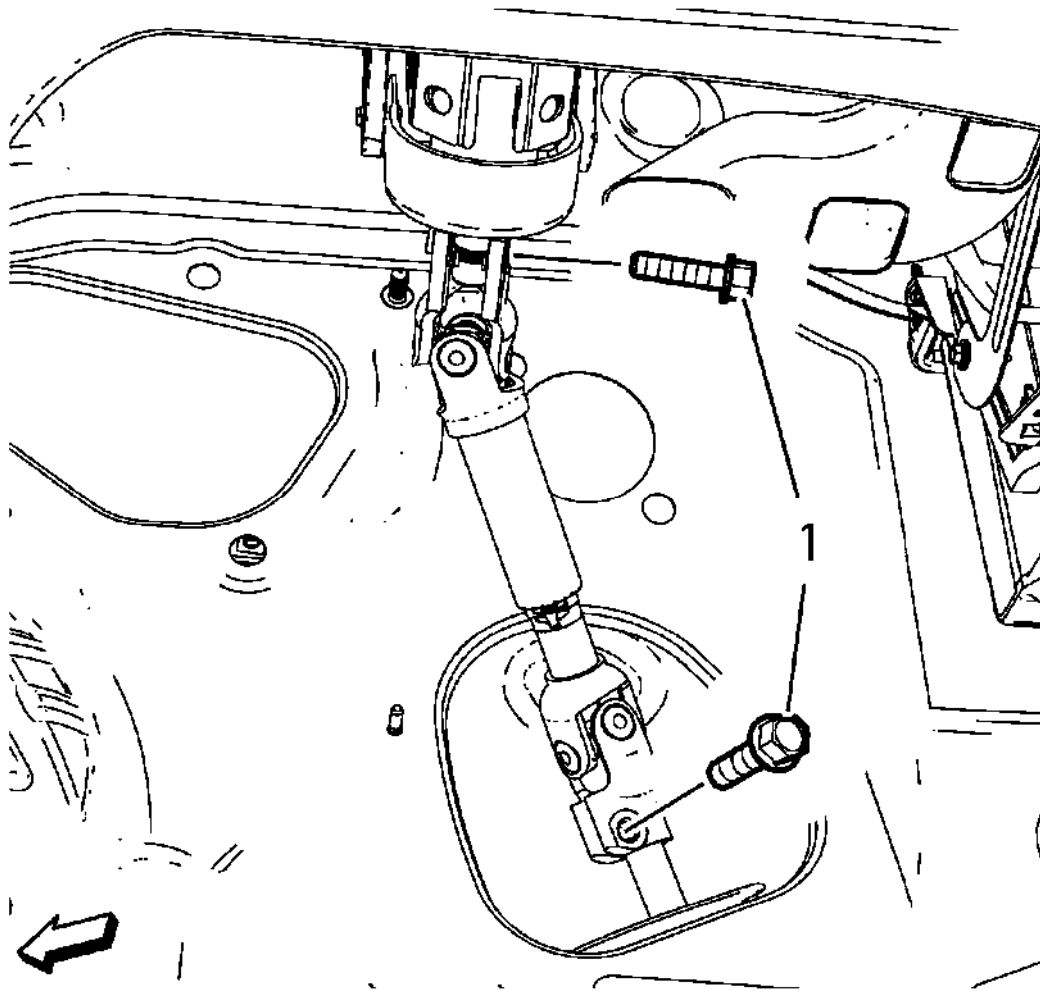


Fig. 7: Lower Steering Intermediate Shaft Bolts

Courtesy of GENERAL MOTORS COMPANY

CAUTION: With wheels of the vehicle facing straight ahead, secure the steering wheel utilizing steering column anti-rotation pin, steering column lock, or a strap to prevent rotation. Locking of the steering column will prevent damage and a possible malfunction of the SIR system. The steering wheel must be secured in position before disconnecting the following components:

- The steering column
- The intermediate shaft(s)
- The steering gear

After disconnecting these components, do not rotate the steering wheel or move the front tires and wheels. Failure to follow this

procedure may cause the SIR coil assembly to become un-centered and cause possible damage to the SIR coil. If you think the SIR coil has become un-centered, refer to your specific SIR coil's centering procedure to re-center SIR Coil.

1. Support the radiator and condenser from above using the condenser tabs on each side.
2. Remove the lower steering intermediate shaft bolt (1).
3. Raise the vehicle on a hoist. Refer to **Lifting and Jacking the Vehicle** .
4. Remove the tire and wheel assemblies. Refer to **Tire and Wheel Removal and Installation** .
5. Remove the exhaust front pipe. Refer to **Exhaust Front Pipe Replacement** .
6. Remove the wheelhouse liners. Refer to **Front Wheelhouse Liner Replacement**.
7. Remove the front compartment insulator, if equipped. Refer to **Front Compartment Insulator Replacement**.
8. Remove the front bumper fascia opening lower cover. Refer to **Front Bumper Fascia Opening Lower Cover Replacement** .

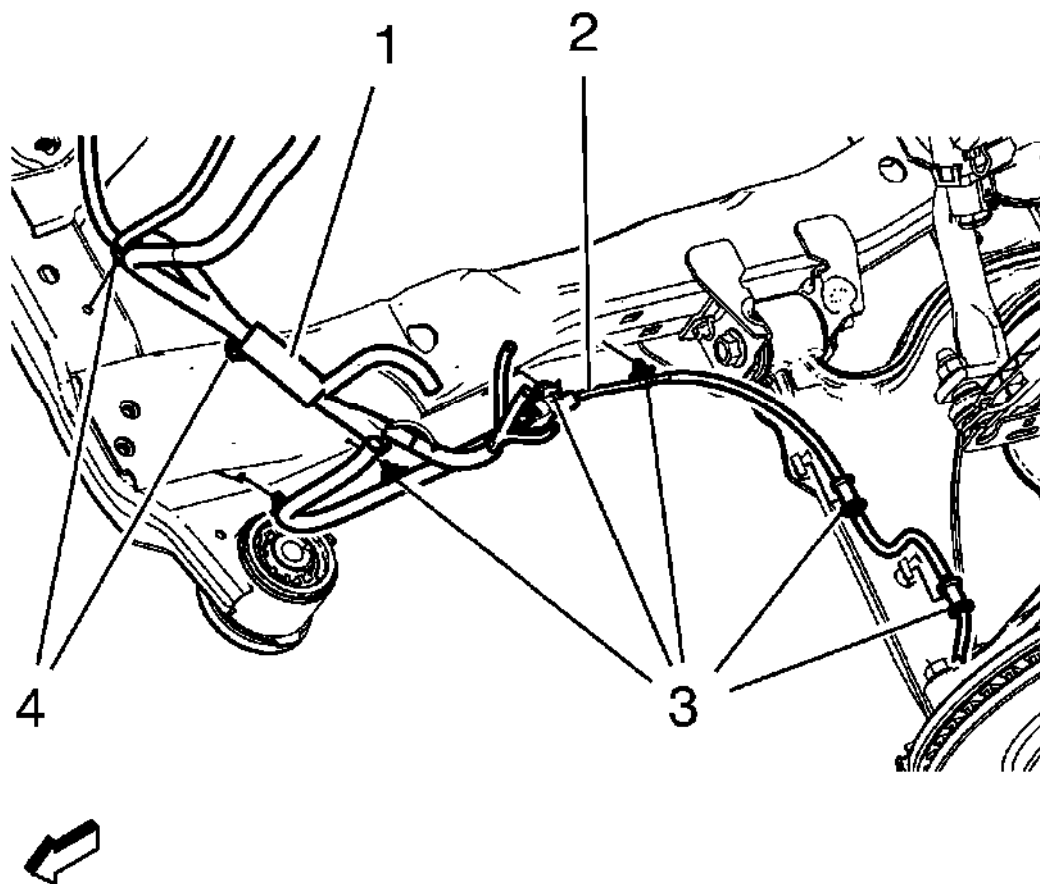


Fig. 8: Radiator Wiring Harness, Wheel Speed Sensor Wiring Harness And Retainers
Courtesy of GENERAL MOTORS COMPANY

9. Remove the wheel speed sensor wiring harness (2) from the frame on both sides.
Remove the wiring harness retainers (3) from the frame and the lower control arm.
10. Remove the radiator wiring harness (1) from the frame.
Remove the wiring harness retainers (4) from the frame.
11. Remove the lower ball joints from the steering knuckles. Refer to **Lower Control Arm Replacement** .

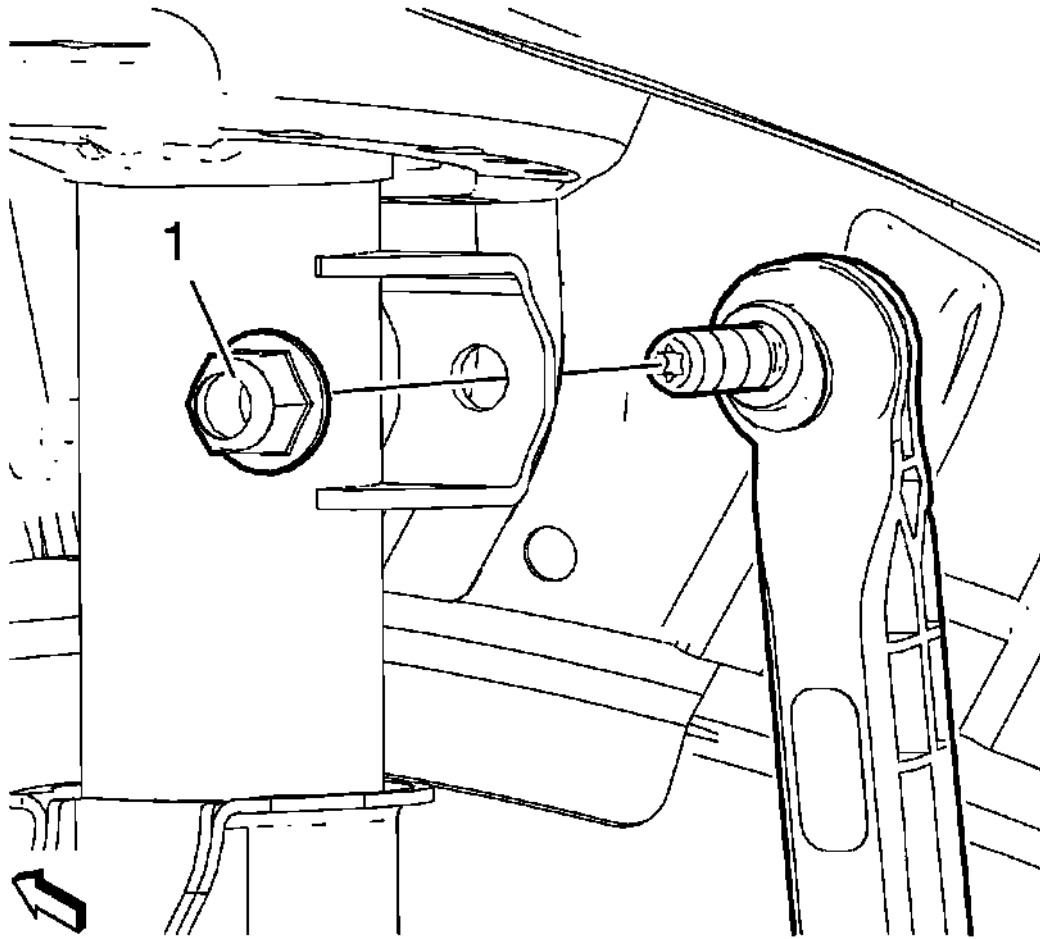


Fig. 9: Stabilizer Link Nut

Courtesy of GENERAL MOTORS COMPANY

12. Remove and DISCARD the stabilizer link nut (1) from the strut.
13. Remove the outer tie rods and tie rod nuts from the steering knuckles. Refer to **Steering Linkage Outer Tie Rod Replacement** .
14. Install the engine support fixture. For the 1.4L engine, refer to **Engine Support Fixture** .

For the 1.8L engine, refer to **Engine Support Fixture** .

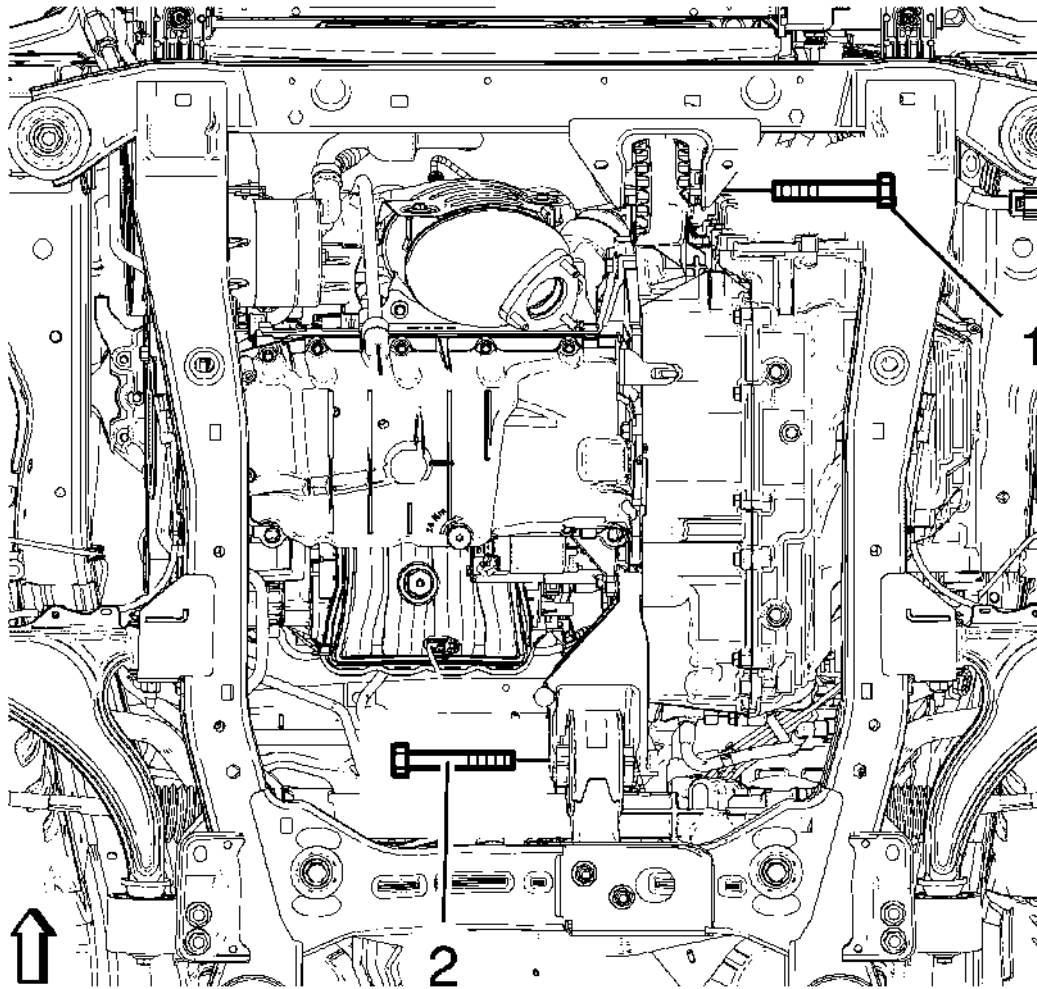


Fig. 10: Identifying Front And Rear Transmission Mount Bracket Bolts
Courtesy of GENERAL MOTORS COMPANY

15. Remove the front (1) and the rear (2) transmission mount bracket bolts.

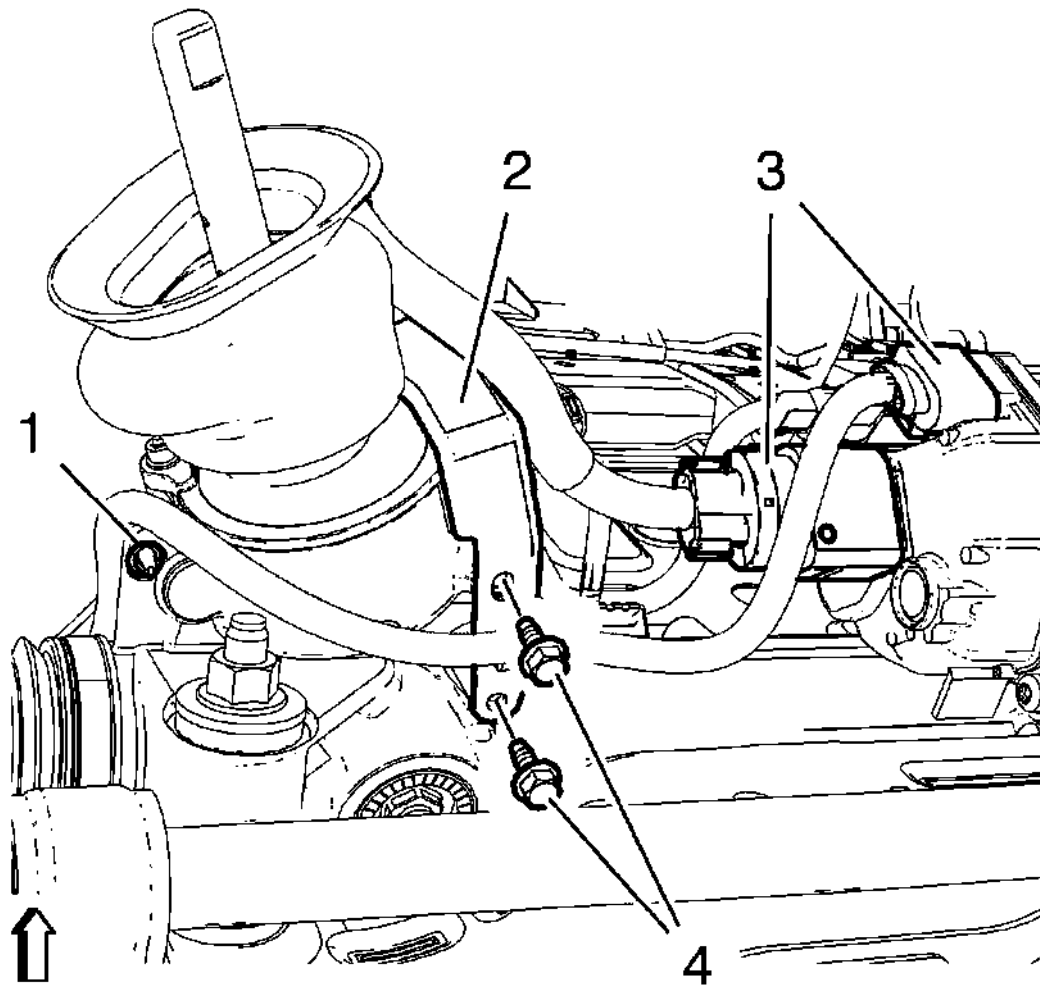


Fig. 11: Transmission Wiring Harness, Plugs, Bracket & Bolts

Courtesy of GENERAL MOTORS COMPANY

16. Carefully disconnect 2 wiring harness plugs (3) from the steering gear with a suitable tool. Refer to **FEP Connectors (Steering Gear)** .
17. Using a suitable engine support table or equivalent, lower the vehicle until the drivetrain and front suspension frame contacts the engine support table.

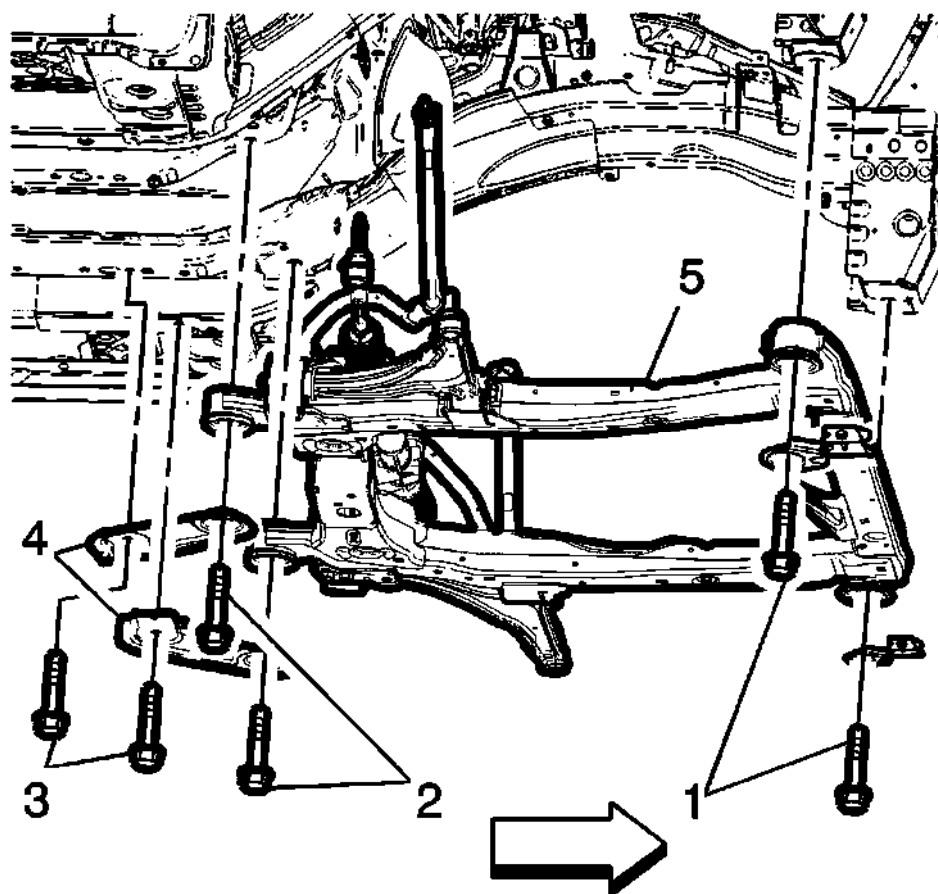


Fig. 12: Front Suspension Frame And Bolts
Courtesy of GENERAL MOTORS COMPANY

18. Remove the frame front bolts (1).
19. Remove the frame rear bolts (2).
20. Remove and DISCARD the rear frame reinforcement bolts (3).
21. Remove the frame reinforcements (4).
22. Remove the frame (5) from the vehicle.
23. Remove the following components if replacing the frame:
 - The lower control arms-Refer to **Lower Control Arm Replacement** .
 - The stabilizer shaft-Refer to **Stabilizer Shaft Replacement** .
 - The radiator support brackets.
 - The steering gear-Refer to **Steering Gear Replacement** .

Installation Procedure

CAUTION: Refer to Fastener Caution .

CAUTION: Refer to Torque-to-Yield Fastener Caution .

1. Install the following components on the drivetrain and front suspension frame if removed:
 - The radiator support brackets and tighten to 22 N.m (16 lb ft) plus 45 degrees.
 - The stabilizer shaft-Refer to Stabilizer Shaft Replacement .
 - The lower control arms-Refer to Lower Control Arm Replacement .
 - The steering gear-Refer to Steering Gear Replacement .

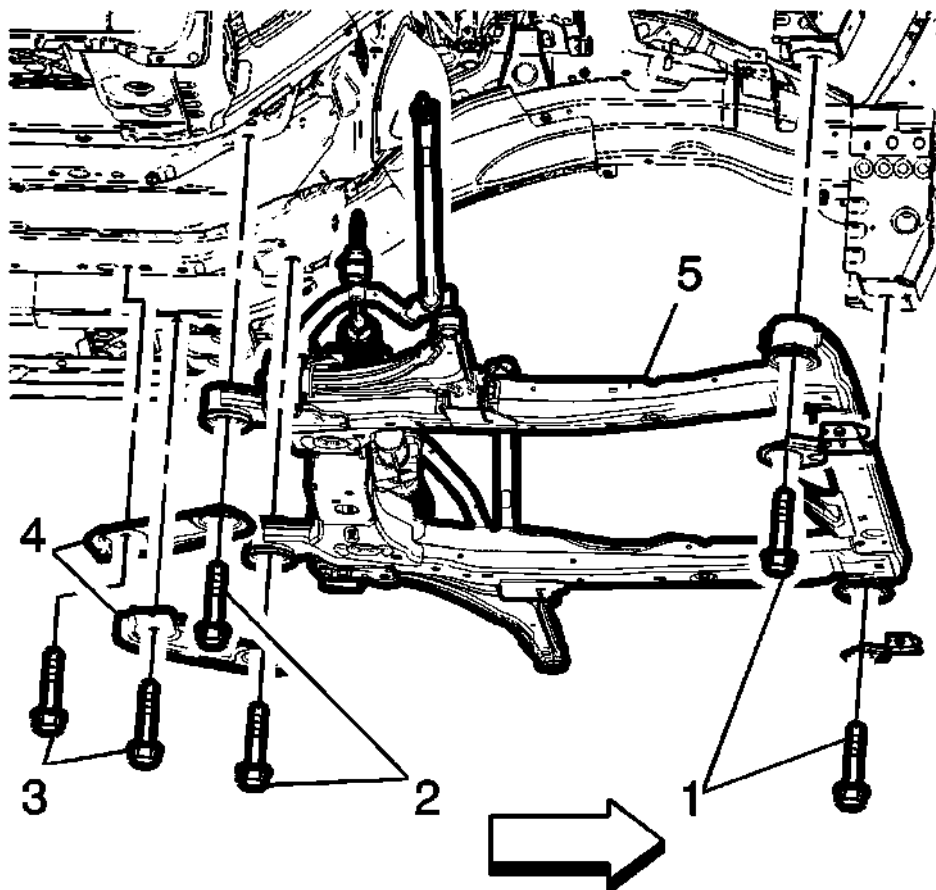


Fig. 13: Front Suspension Frame And Bolts
Courtesy of GENERAL MOTORS COMPANY

2. Install the frame (5) into the vehicle.
3. Install the frame reinforcements (4).

4. Install the frame rear bolts (2) and tighten to 160 N.m (118 lb ft).
5. Install NEW frame reinforcement bolts (3) and tighten to 60 N.m (44 lb ft) plus 45 degrees.
6. Install the frame front bolts (1) and tighten to 160 N.m (118 lb ft).
7. Remove the support for the power steering gear.

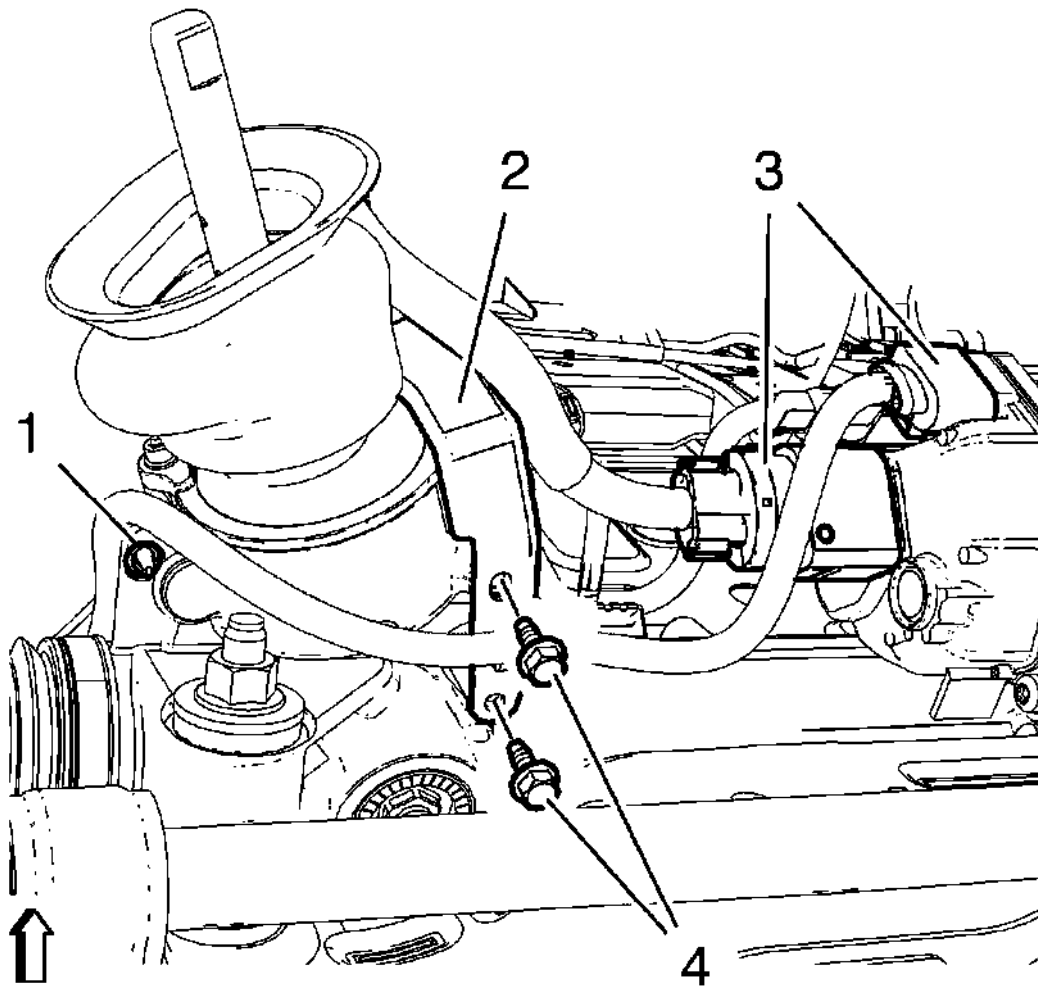


Fig. 14: Transmission Wiring Harness, Plugs, Bracket & Bolts
Courtesy of GENERAL MOTORS COMPANY

8. Install and tighten 2 wiring harness bracket bolts (4) to 9 N.m (80 lb in).
9. Tighten wiring harness retainer (1) to steering gear.
10. Connect 2 wiring harness plugs (3).
11. Install the front bumper energy absorber bracket bolt.

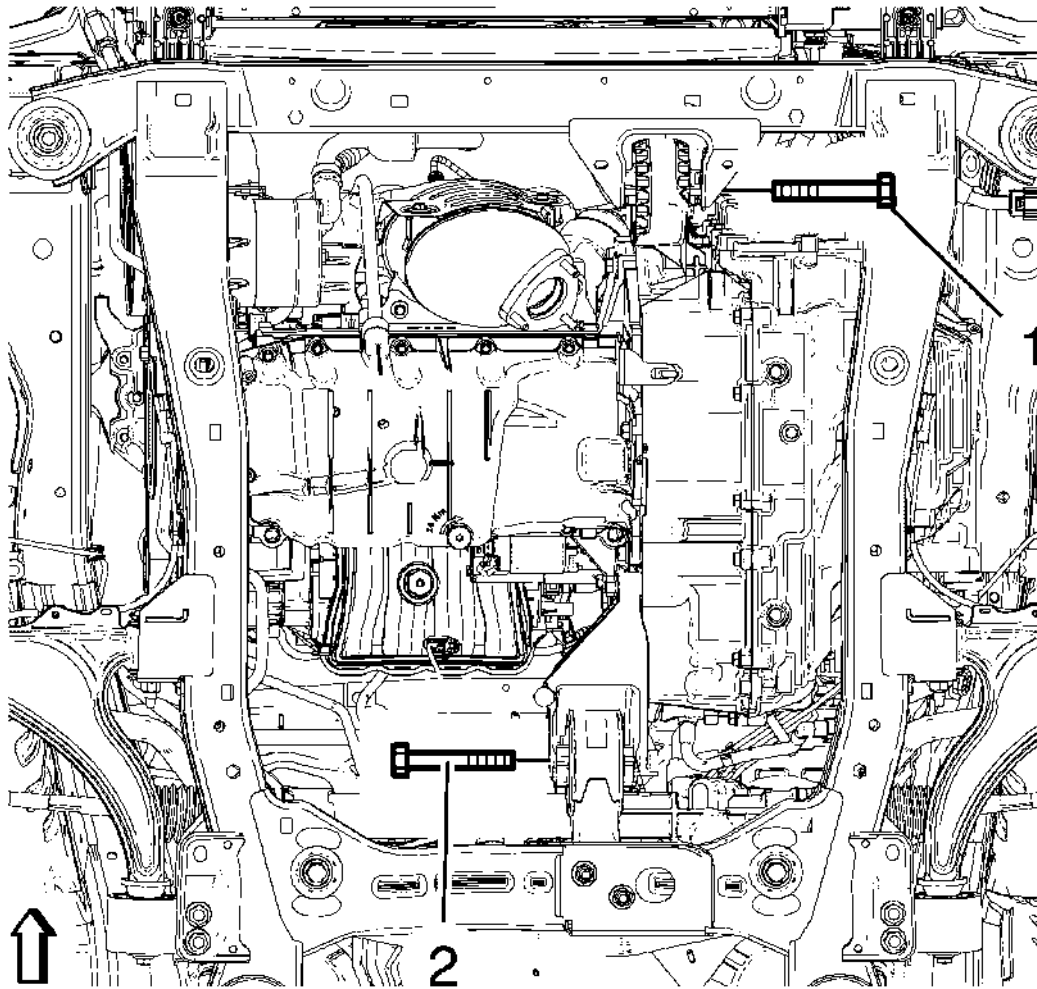


Fig. 15: Identifying Front And Rear Transmission Mount Bracket Bolts

Courtesy of GENERAL MOTORS COMPANY

12. Install the front transmission mount bolt (1) and tighten to 100 N.m (74 lb ft).
13. Install the rear transmission mount bracket bolt (2) and tighten to 100 N.m (74 lb ft).
14. Install the outer tie rods and tie rod nuts to the steering knuckles. Refer to **Steering Linkage Outer Tie Rod Replacement** .

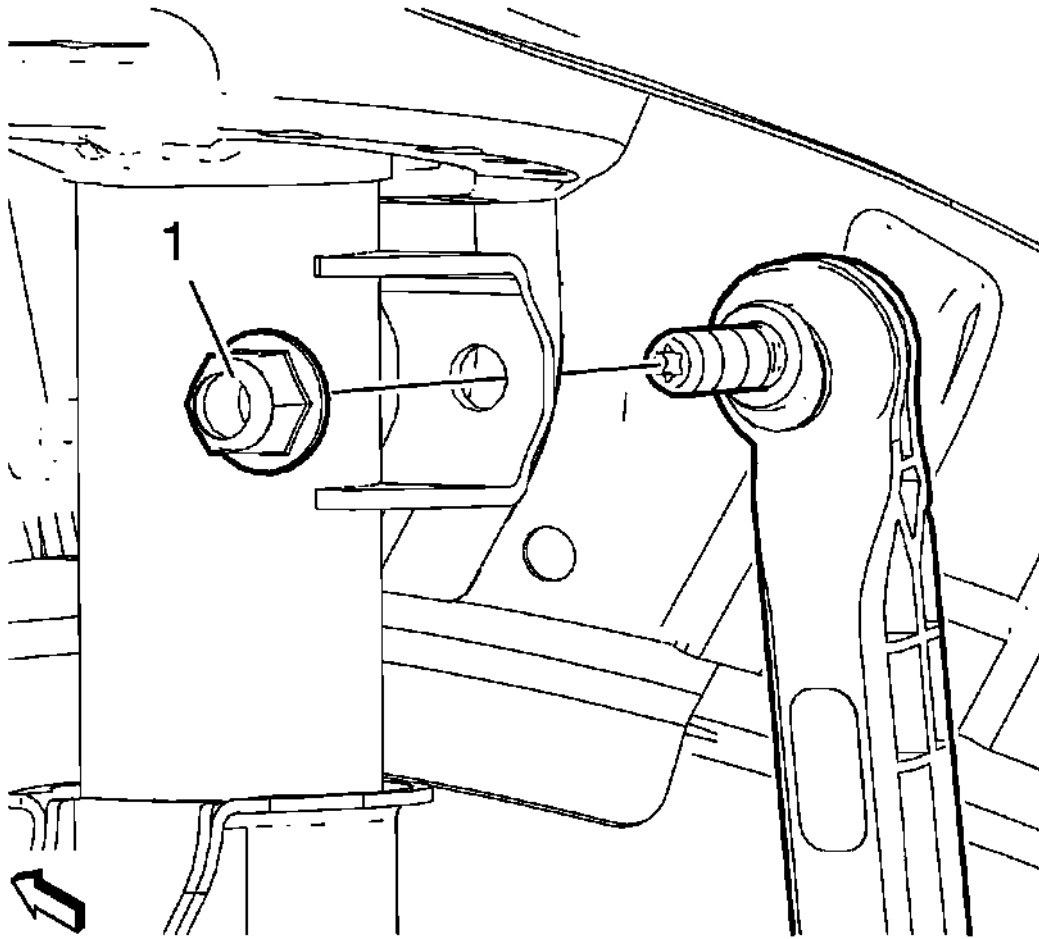


Fig. 16: Stabilizer Link Nut

Courtesy of GENERAL MOTORS COMPANY

15. Install the NEW steering linkage tie rod nuts and tighten to 35 N.m (26 lb ft).
16. Install the lower ball joints to the steering knuckles. Refer to **Lower Control Arm Replacement** .

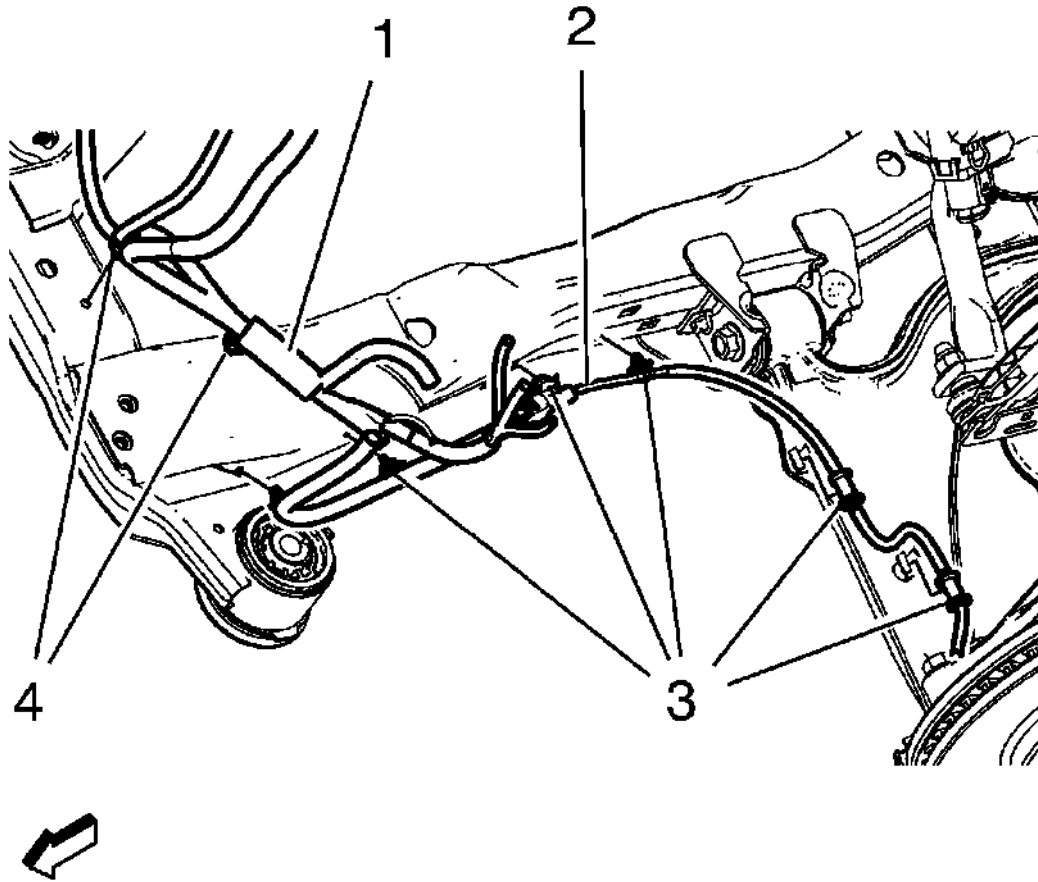


Fig. 17: Radiator Wiring Harness, Wheel Speed Sensor Wiring Harness And Retainers
Courtesy of GENERAL MOTORS COMPANY

17. Install the wheel speed sensor wiring harness (2) to the frame on both sides.
Install the wiring harness retainers (3) to the frame and the lower control arm.
18. Install the radiator wiring harness (1) to the frame.
Install the wiring harness retainers (4) to the frame.

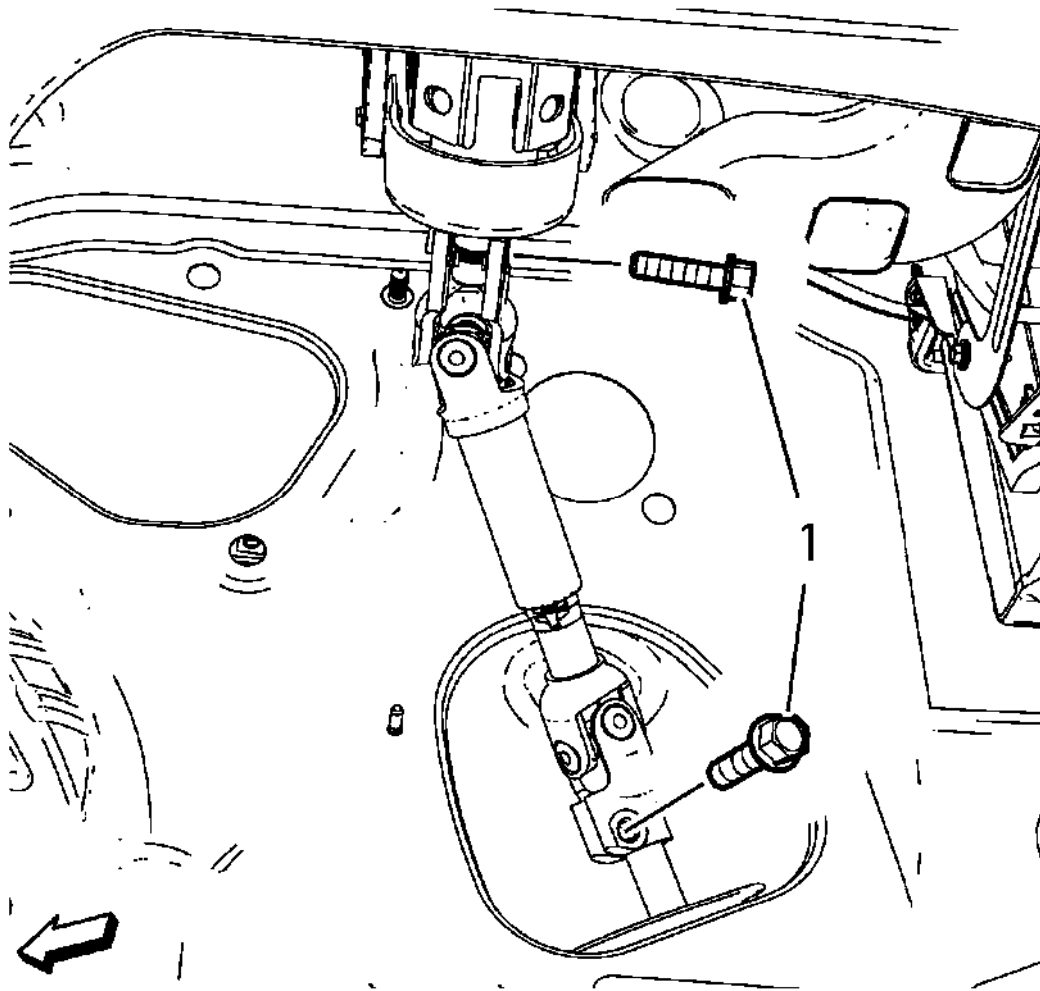


Fig. 18: Lower Steering Intermediate Shaft Bolts

Courtesy of GENERAL MOTORS COMPANY

19. Install the NEW lower steering intermediate shaft (1) bolt and tighten to 25 N.m (18 lb ft) plus 180 degrees.
20. Remove the support of the radiator and condenser.
21. Lower the vehicle on a hoist. Refer to **Lifting and Jacking the Vehicle** .
22. Install the wheelhouse liners. Refer to **Front Wheelhouse Liner Replacement** .
23. Install the tire and wheel assemblies. Refer to **Tire and Wheel Removal and Installation** .
24. Install the exhaust front pipe. Refer to **Exhaust Front Pipe Replacement** .
25. Install the front compartment insulator, if equipped. Refer to **Front Compartment Insulator Replacement** .
26. Install the front bumper fascia opening lower cover. Refer to **Front Bumper Fascia Opening Lower Cover Replacement** .
27. Perform a wheel alignment. Refer to **Front Camber Adjustment** .

DRIVETRAIN AND FRONT SUSPENSION FRAME INSULATOR REPLACEMENT

Special Tools

- CH-906-14 Adapter
- CH-906-42 Adapter
- CH-50342 Threaded Rod

For equivalent regional tools. Refer to **Special Tools**.

Removal Procedure

1. Remove the drivetrain and front suspension frame. Refer to **Drivetrain and Front Suspension Frame Replacement**.

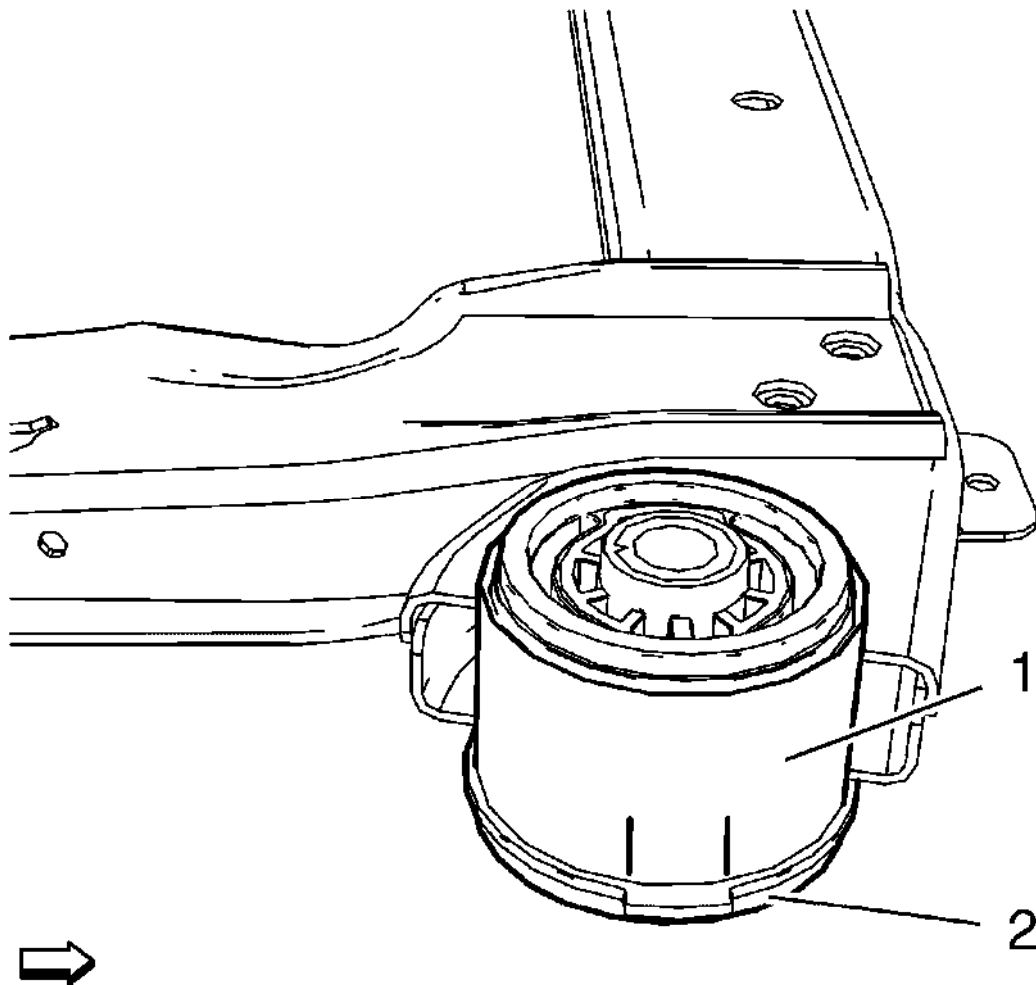


Fig. 19: View Of Frame And Insulator
Courtesy of GENERAL MOTORS COMPANY

2. Mark installation position of insulator (2) at frame (1).

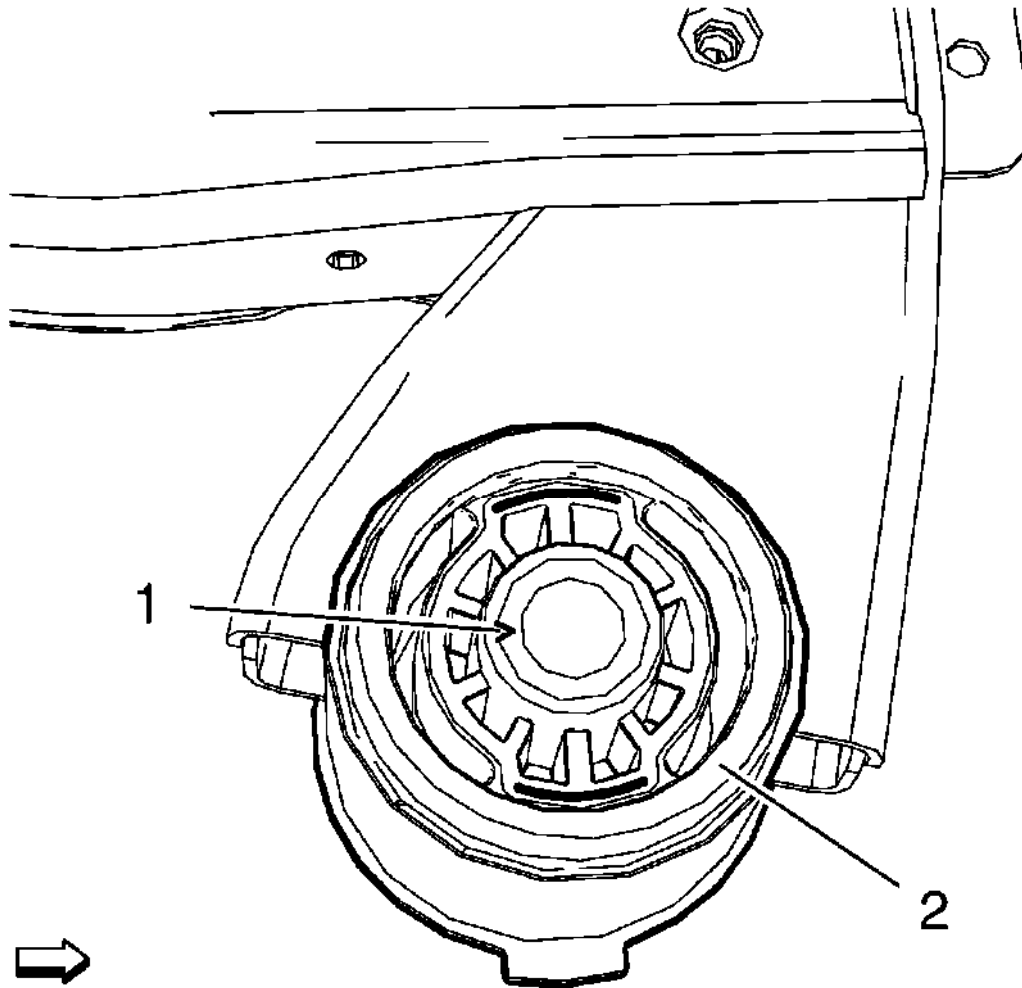


Fig. 20: Identifying Frame Insulator And Core
Courtesy of GENERAL MOTORS COMPANY

NOTE: Drilling holes into the insulator rubber to ease removal of the core.

3. Cut out frame insulator core (1) from frame insulator (2).

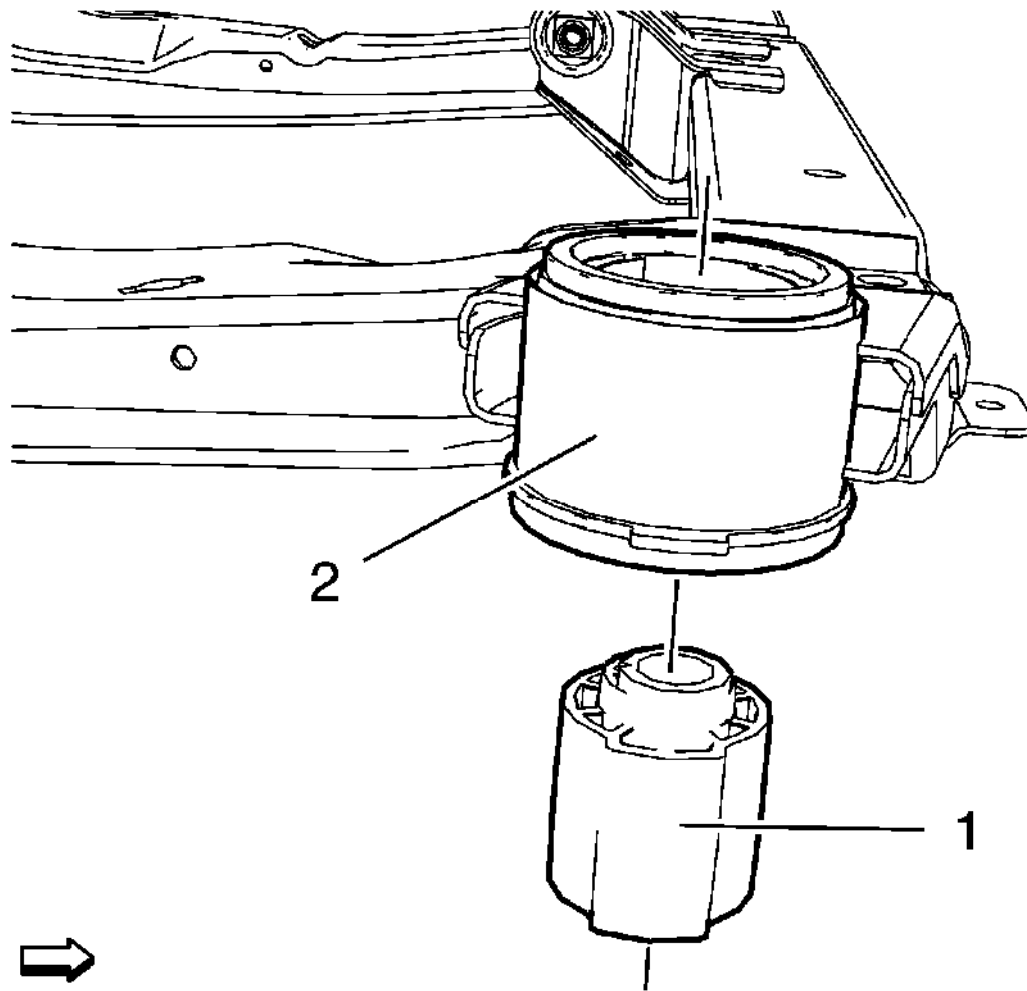


Fig. 21: View Of Frame Insulator And Core
Courtesy of GENERAL MOTORS COMPANY

4. Remove frame insulator core (1) from outer frame insulator (2).

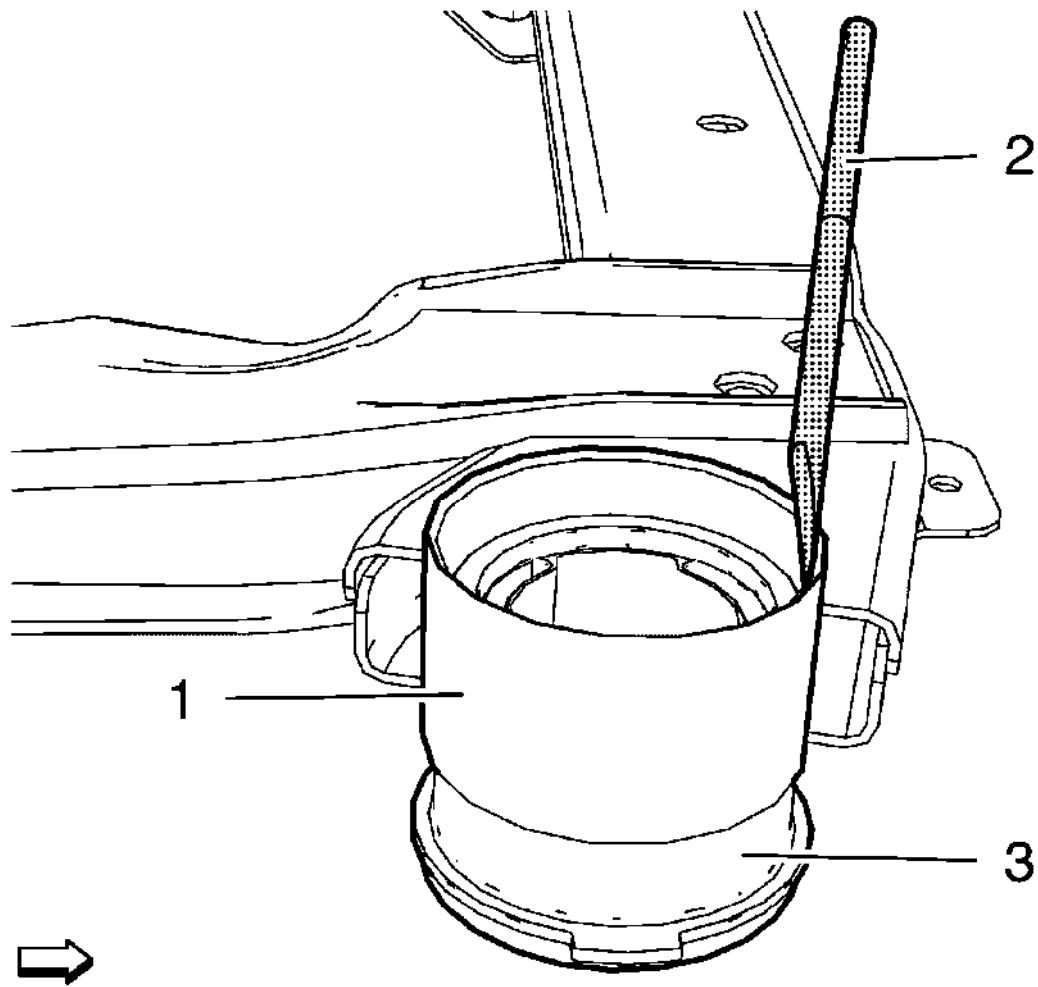


Fig. 22: View Of Front Suspension Frame, Insulator And Chisel
Courtesy of GENERAL MOTORS COMPANY

5. Remove the frame insulator (3) from drivetrain and front suspension frame (1) using a chisel (2) or equivalent.

Installation Procedure

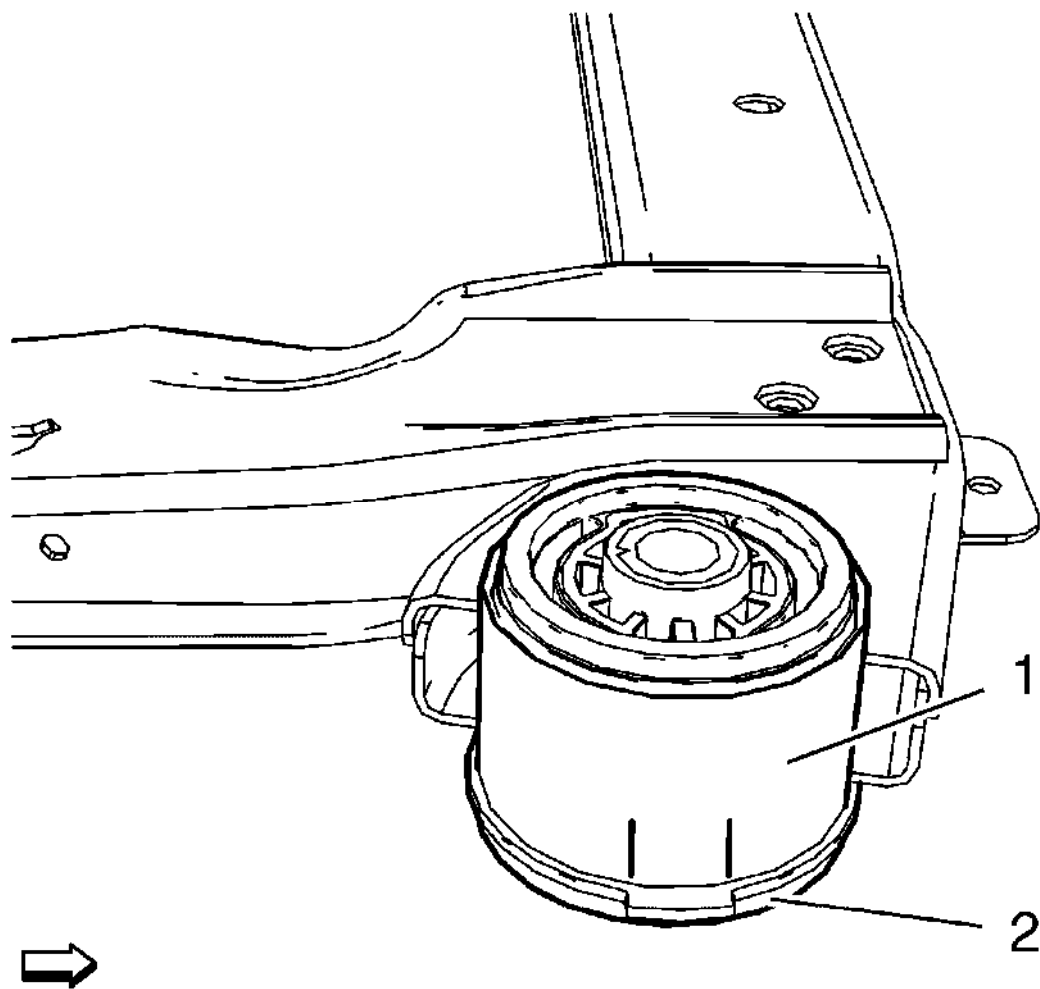
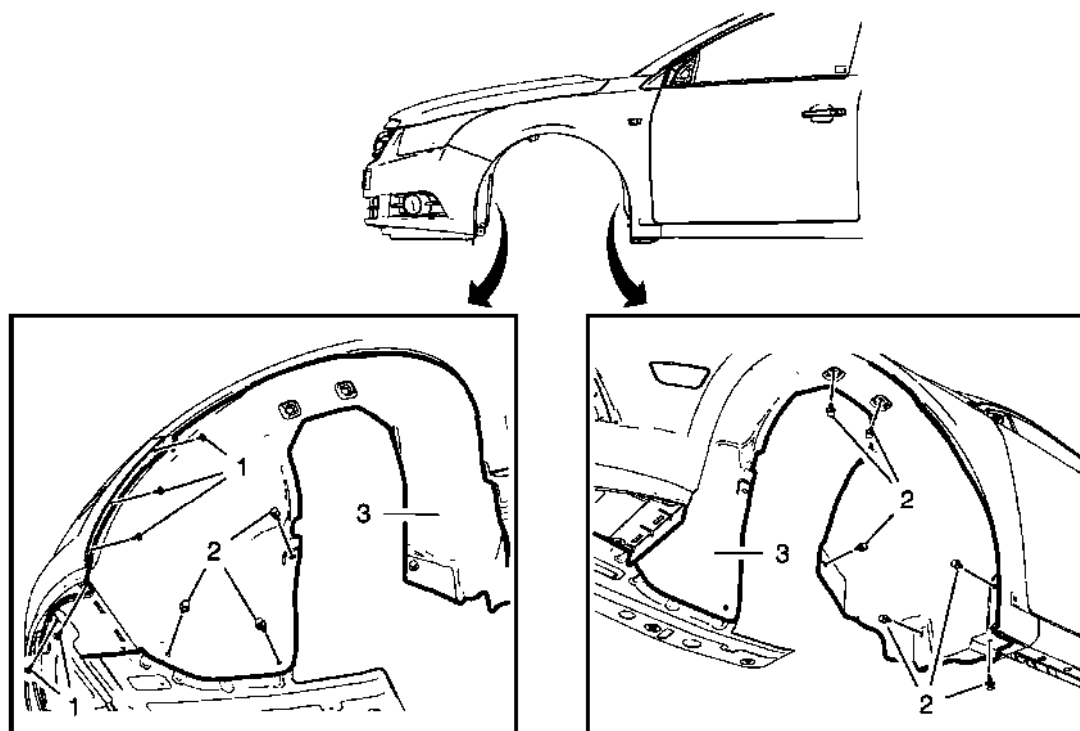


Fig. 23: View Of Frame And Insulator
Courtesy of GENERAL MOTORS COMPANY

1. Install the following components on the drivetrain and front suspension frame:
 - CH-906-14 Adapter.
 - CH-906-42 Adapter.
 - CH-50342 Threaded Rod.

NOTE: Check marking of frame insulator.

- Align the insulator tab with the alignment marks (1) on the frame.
2. Carefully install the frame insulator in to the front suspension frame.
 3. Install the drivetrain and front suspension frame. Refer to **Drivetrain and Front Suspension Frame Replacement**.

**Fig. 24: Front Wheelhouse Liner**

Courtesy of GENERAL MOTORS COMPANY

Front Wheelhouse Liner Replacement

Callout	Component Name
Preliminary Procedures Remove the tire and wheel assembly. Refer to <u>Tire and Wheel Removal and Installation</u> .	
1	Front Wheelhouse Liner Screw (Qty: 5) CAUTION: Refer to <u>Fastener Caution</u> . Tighten 2.5 N.m (23 lb in)
2	Front Wheelhouse Liner Plastic Retainer (Qty: 9)
3	Front Wheelhouse Liner

REAR WHEELHOUSE LINER REPLACEMENT

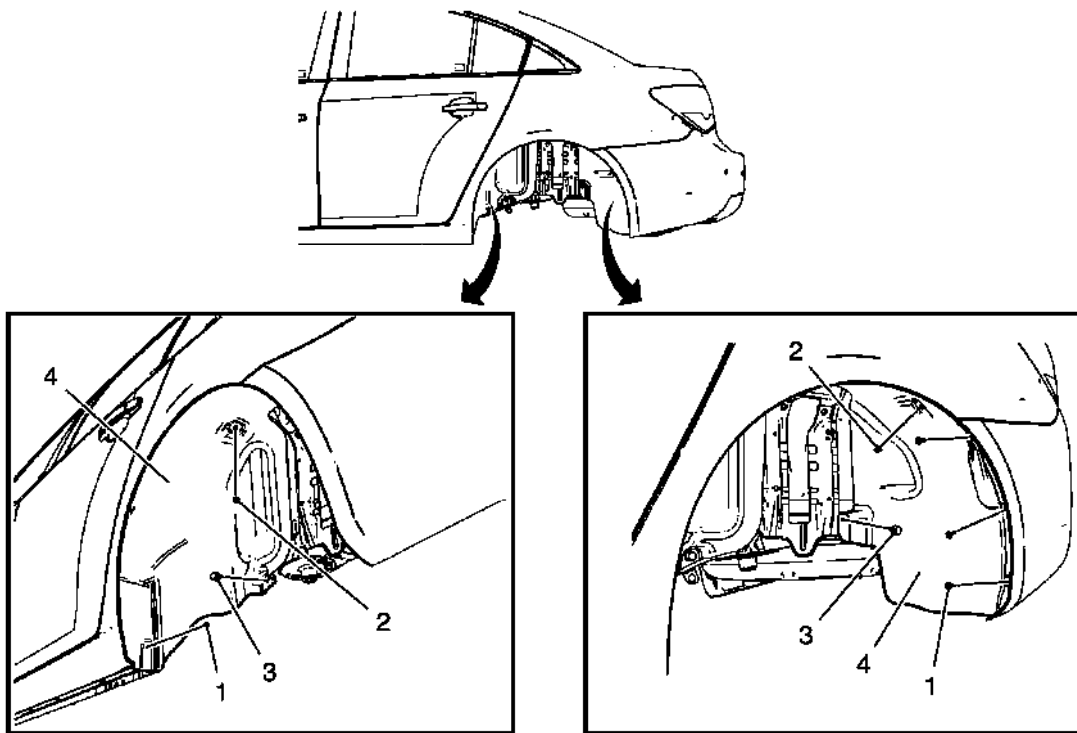


Fig. 25: View Of Rear Wheelhouse Panel Liner, Retainers, Nuts And Screws
Courtesy of GENERAL MOTORS COMPANY

Rear Wheelhouse Liner Replacement

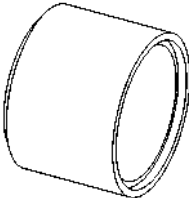
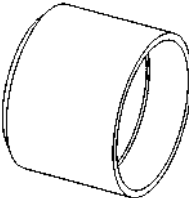
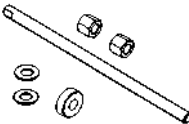
Callout	Component Name
Preliminary Procedure Remove the tire and wheel assembly. Refer to <u>Tire and Wheel Removal and Installation</u> .	
1	Rear Wheelhouse Panel Liner Screw (Qty: 4) CAUTION: Refer to <u>Fastener Caution</u> . Tighten 2.5 N.m (23 lb in)
2	Rear Wheelhouse Panel Liner Nut (Qty: 2) Tighten 2.5 N.m (23 lb in)
3	Rear Wheelhouse Panel Liner Plastic Retainer (Qty: 2)
4	Rear Wheelhouse Panel Liner

SPECIAL TOOLS AND EQUIPMENT

SPECIAL TOOLS

2013 Chevrolet Cruze

2013 ACCESSORIES & EQUIPMENT Frame and Underbody - Cruze

Illustration	Tool Number/ Description
	CH 906-14 Adapter
	CH 906-42 Adapter
	CH 50342 Threaded Rod