

2017 ACCESSORIES & EQUIPMENT

Frame and Underbody - Impala

SPECIFICATIONS

FASTENER SPECIFICATIONS

Single Use Threaded Fastener/Component Tightening Specifications

NOTE: <i>All fasteners/components listed in this table MUST BE DISCARDED and replaced with NEW after removal.</i>	
Application	Specification
	Metric (English)
Drivetrain and Front Suspension Frame Rear Support-to-Body Bolt	
• First Pass:	60 N.m (44 lb ft)
• Final Pass:	30 Degrees
Rear Suspension Support-to-Body Bolt	
• First Pass:	90 N.m (66 lb ft)
• Final Pass:	120 Degrees
Steering Gear Bolt	
• First Pass:	110 N.m (81 lb ft)
• Final Pass:	150 Degrees

Reusable Threaded Fastener Tightening Specifications

NOTE: <i>All fasteners listed in this table can be reused after removal.</i>	
Application	Specification
	Metric (English)
Front Compartment Air Deflector Bolt	3 N.m (27 lb in)
Front Compartment Splash Shield Bolt	3 N.m (27 lb in)
Drivetrain and Front Suspension Frame Retaining Bolt	160 N.m (118 lb ft)
Front Transmission Mount-to-Frame Bolt	100 N.m (74 lb ft)
Front Wheelhouse Panel Splash Shield Bolt	2.5 N.m (22 lb in)
Rear Transmission Mount-to-Frame Bolt	100 N.m (74 lb ft)
Side Member Reinforcement Bolt	22 N.m (16 lb ft)
Underbody Front Air Deflector Bolt	2.5 N.m (22 lb in)
Underbody Rear Air Deflector Bolt	2.5 N.m (22 lb in)
Underbody Rear Air Outer Deflector Bracket Fastener	9 N.m (80 lb in)

REPAIR INSTRUCTIONS

ENGINE FRONT SPLASH SHIELD REPLACEMENT (LKW)

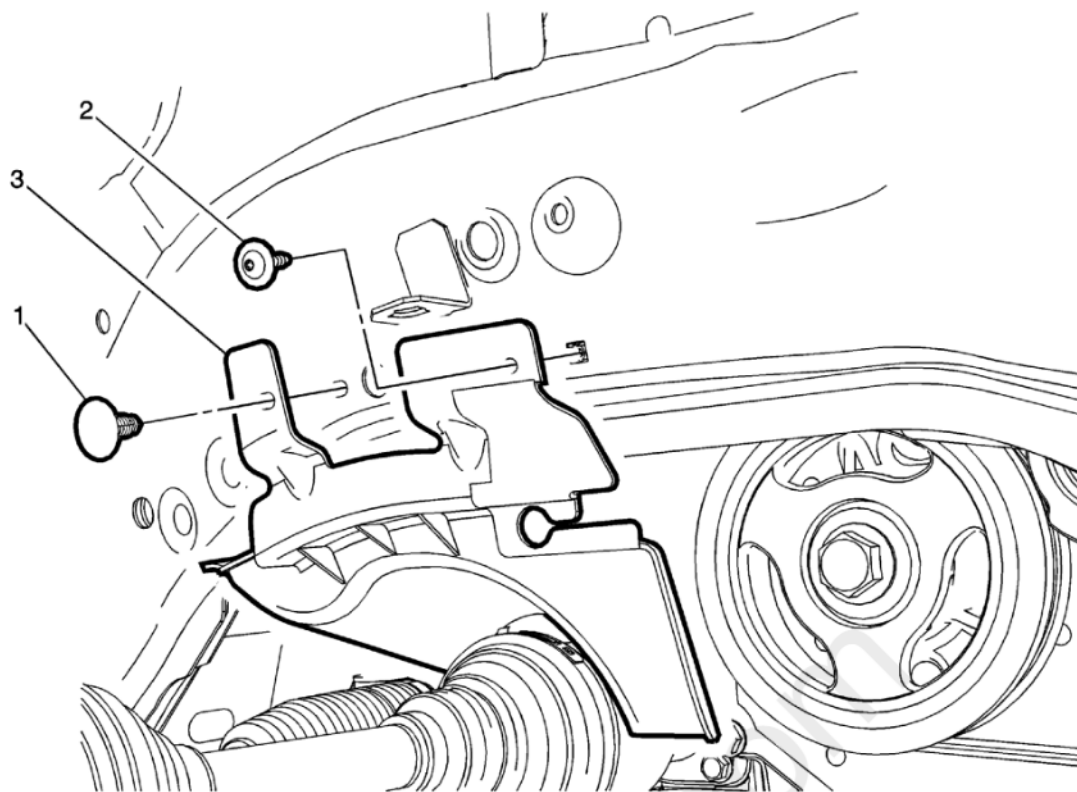


Fig. 1: Engine Front Splash Shield (LKW)

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedures Remove the front wheelhouse liner. Refer to Front Wheelhouse Liner Replacement .	
1	Engine Front Splash Shield Retainer
2	Engine Front Splash Shield Fastener CAUTION: Refer to Fastener Caution .
3	Engine Front Splash Shield

FRONT COMPARTMENT SPLASH SHIELD REPLACEMENT

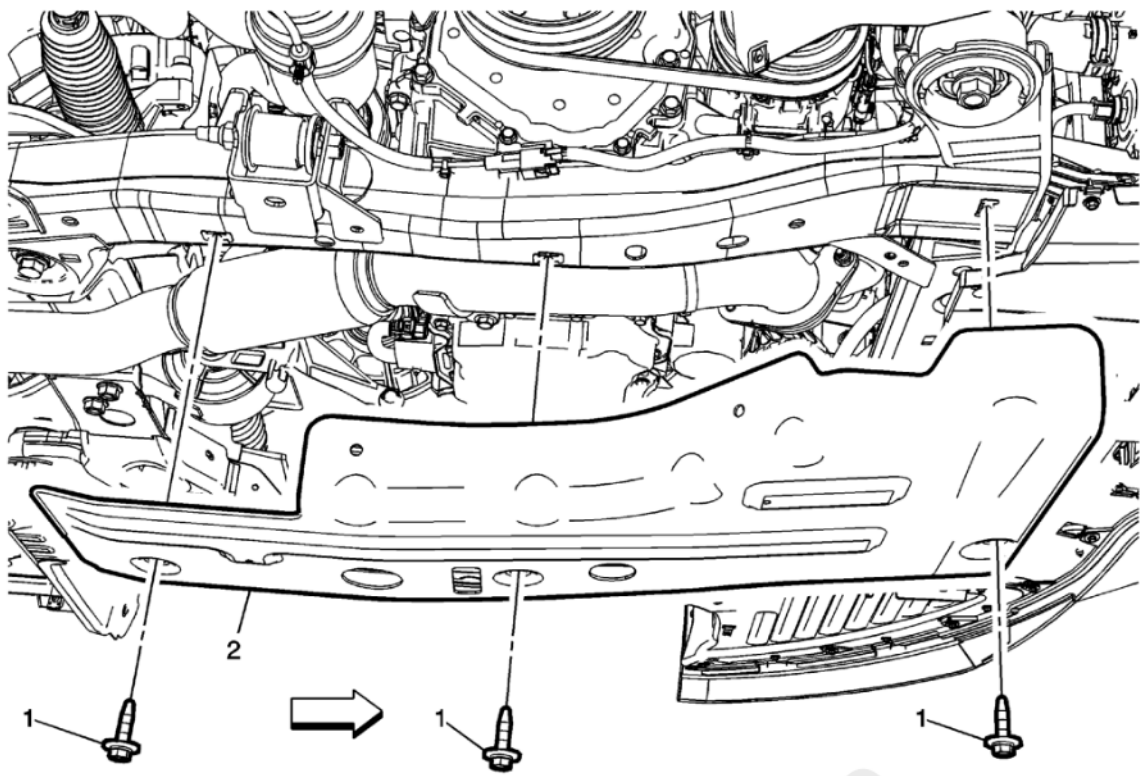


Fig. 2: Front Compartment Splash Shield
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedures Remove the front wheelhouse liner. Refer to Front Wheelhouse Liner Replacement .	
1	Front Compartment Splash Shield Fastener (Qty 3) CAUTION: Refer to Fastener Caution .
2	Front Compartment Splash Shield

FRONT COMPARTMENT AIR DEFLECTOR REPLACEMENT

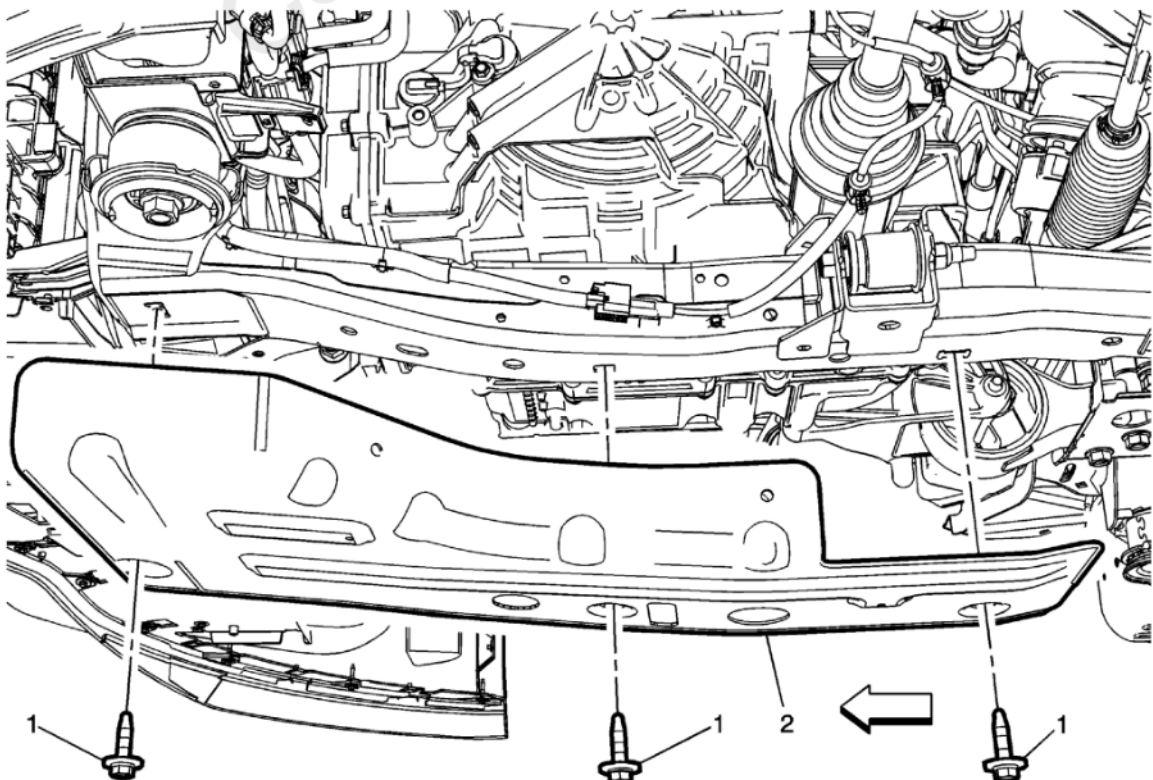


Fig. 3: Front Compartment Air Deflector
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedures Remove the front wheelhouse liner. Refer to Front Wheelhouse Liner Replacement .	
1	Front Compartment Air Deflector Fastener (Qty 3) CAUTION: Refer to Fastener Caution .
2	Front Compartment Air Deflector

UNDERBODY FRONT AIR DEFLECTOR REPLACEMENT - LEFT SIDE (TIRE)

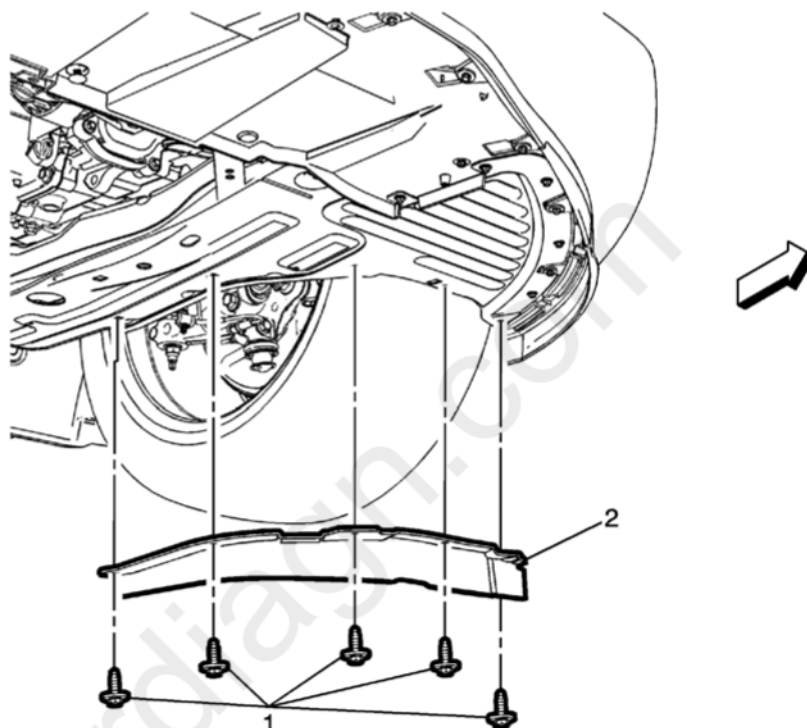


Fig. 4: Underbody Front Air Deflector - Left Side (Tire)
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedures Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle	
1	Underbody Front Air Deflector Screw (Qty: 5) CAUTION: Refer to Fastener Caution .
2	Underbody Front Air Deflector

UNDERBODY FRONT AIR DEFLECTOR REPLACEMENT - LEFT SIDE (XFE)

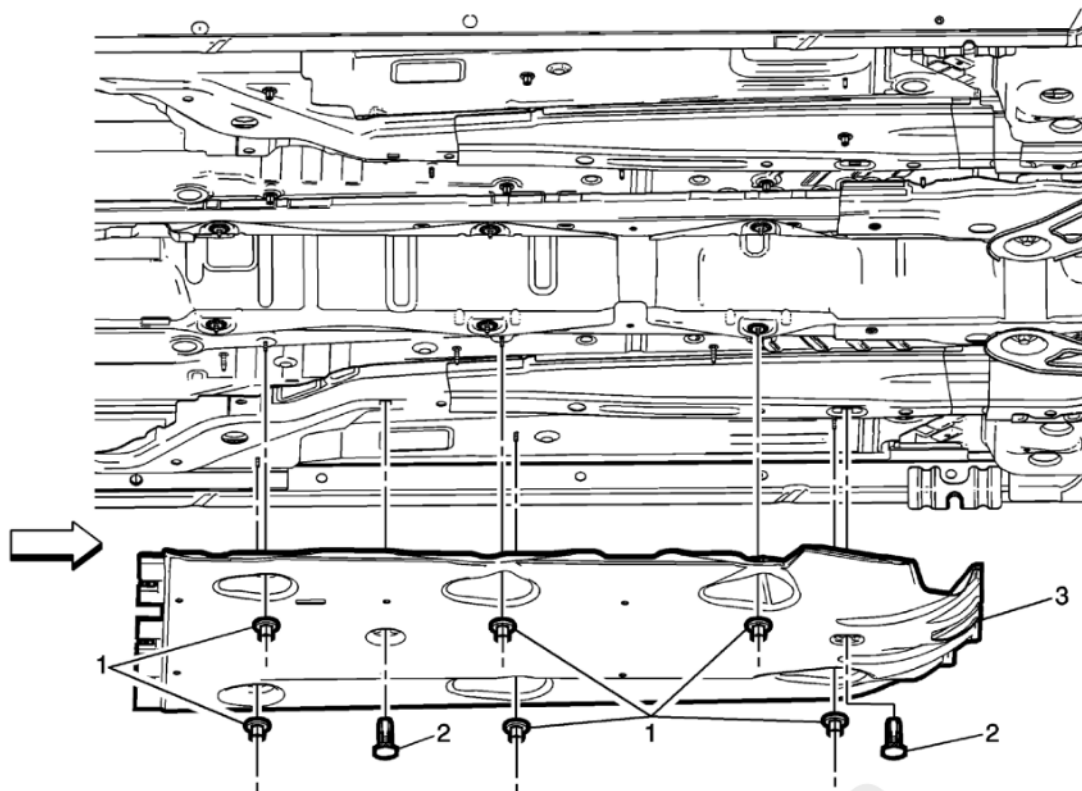


Fig. 5: Underbody Front Air Deflector - Left Side

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
WARNING: Do not use a service jack to lift this vehicle. Lifting the vehicle with a jack could cause the vehicle to slip off the jack and roll; this could cause injury or death.	
Preliminary Procedures 1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle . 2. Remove the underbody rear air deflector - left side. Refer to Underbody Rear Air Deflector Replacement - Left Side.	
1	Underbody Front Air Deflector Fastener (Qty: 6) CAUTION: Refer to Fastener Caution . Tighten 2.5 N.m (22 lb in)
2	Underbody Left Front Air Deflector Fastener (Qty: 2)
3	Underbody Left Front Air Deflector

UNDERBODY FRONT AIR DEFLECTOR REPLACEMENT - RIGHT SIDE (TIRE)

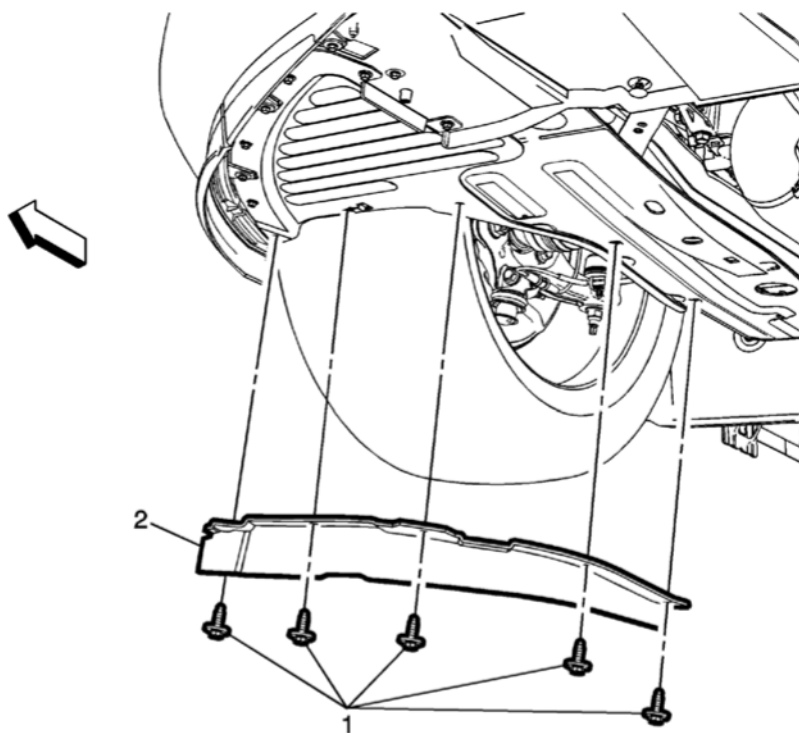


Fig. 6: Underbody Front Air Deflector - Right Side (Tire)

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedures	
Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle	
1	Underbody Front Air Deflector Screw (Qty: 5) CAUTION: Refer to Fastener Caution .
2	Underbody Front Air Deflector

UNDERBODY FRONT AIR DEFLECTOR REPLACEMENT - RIGHT SIDE (XFE)

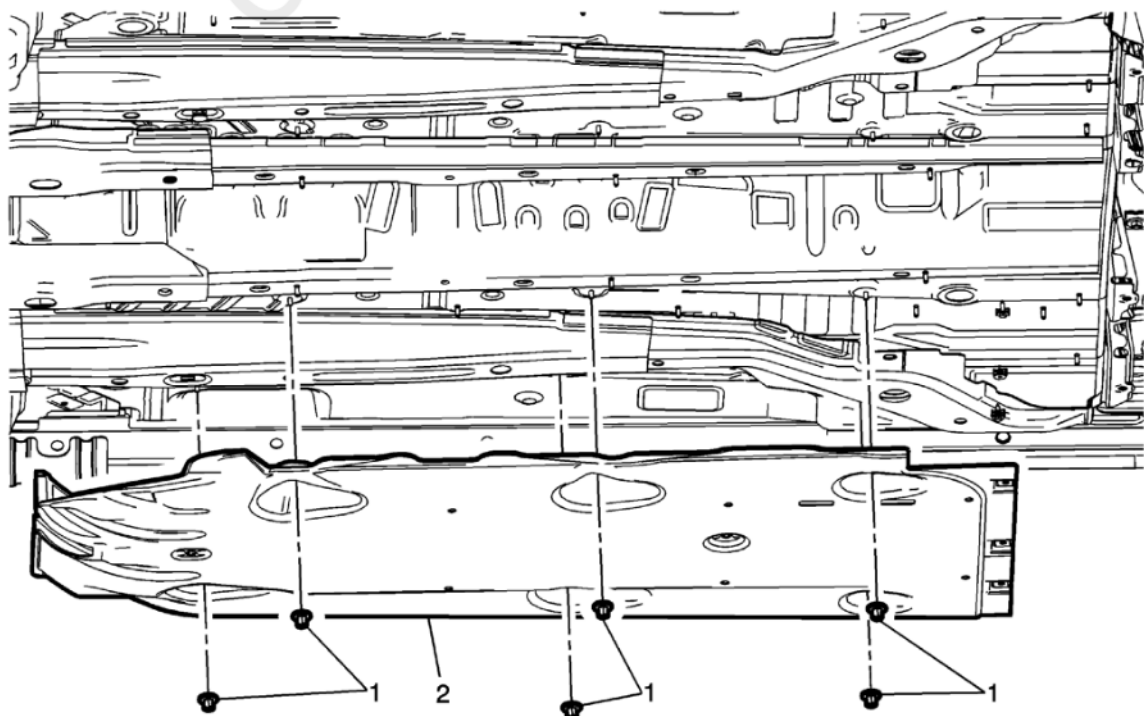


Fig. 7: Underbody Front Air Deflector - Right Side
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
WARNING: Do not use a service jack to lift this vehicle. Lifting the vehicle with a jack could cause the vehicle to slip off the jack and roll; this could cause injury or death.	
Preliminary Procedure 1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle . 2. Remove the underbody rear air deflector - right side. Refer to Underbody Rear Air Deflector Replacement - Right Side .	
1	Underbody Front Air Deflector Fastener (Qty: 8) CAUTION: Refer to Fastener Caution . Tighten 2.5 N.m (22 lb in)
2	Underbody Right Front Air Deflector

UNDERBODY REAR AIR DEFLECTOR REPLACEMENT (TIRE)

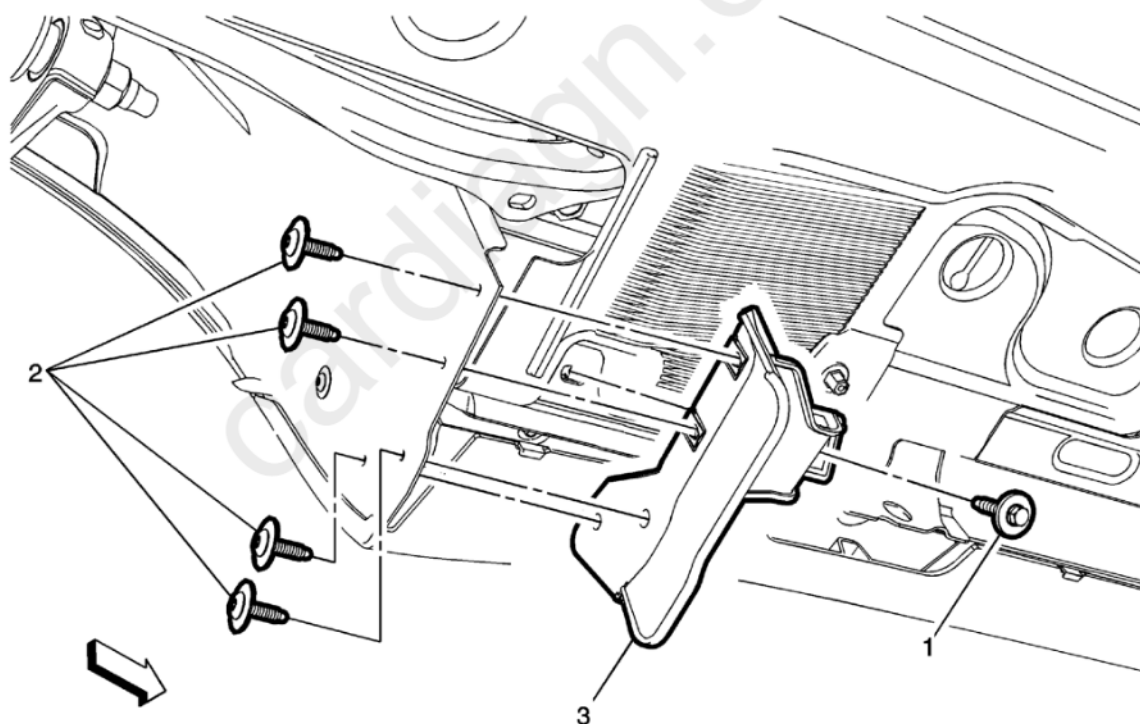


Fig. 8: Underbody Rear Air Deflector (Tire)
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Remove the tire and wheel assembly. Refer to Tire and Wheel Removal and Installation .	

Callout	Component Name
1	Underbody Rear Air Deflector Fastener CAUTION: Refer to Fastener Caution .
2	Rear Wheelhouse Panel Liner Fastener (Qty: 4)
3	Underbody Rear Air Deflector

UNDERBODY REAR AIR DEFLECTOR REPLACEMENT - LEFT SIDE

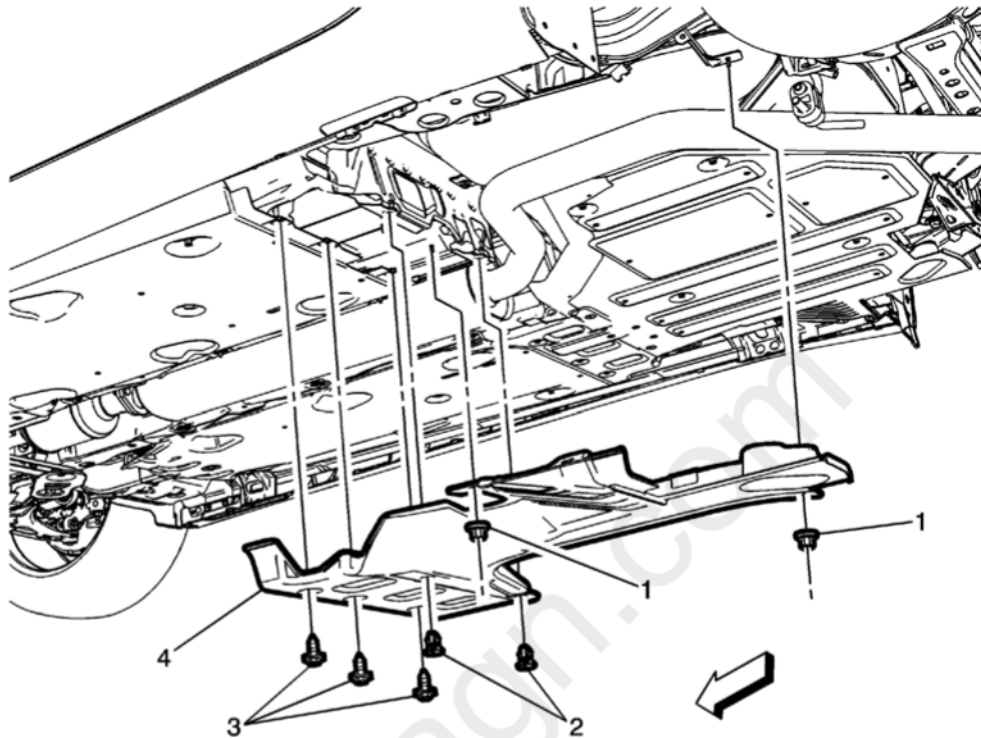


Fig. 9: Underbody Rear Air Deflector - Left Side
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
WARNING: Do not use a service jack to lift this vehicle. Lifting the vehicle with a jack could cause the vehicle to slip off the jack and roll; this could cause injury or death. Preliminary Procedure Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle .	
1	Underbody Left Rear Air Deflector Nuts (Qty 2) CAUTION: Refer to Fastener Caution . Tighten: 3 N.m (27 lb in)
2	Underbody Left Rear Air Deflector Retainers (Qty 2)
3	Underbody Left Rear Air Deflector Screws (Qty 3) Tighten: 3 N.m (27 lb in)
4	Underbody Left Rear Air Deflector

UNDERBODY REAR AIR DEFLECTOR REPLACEMENT - RIGHT SIDE

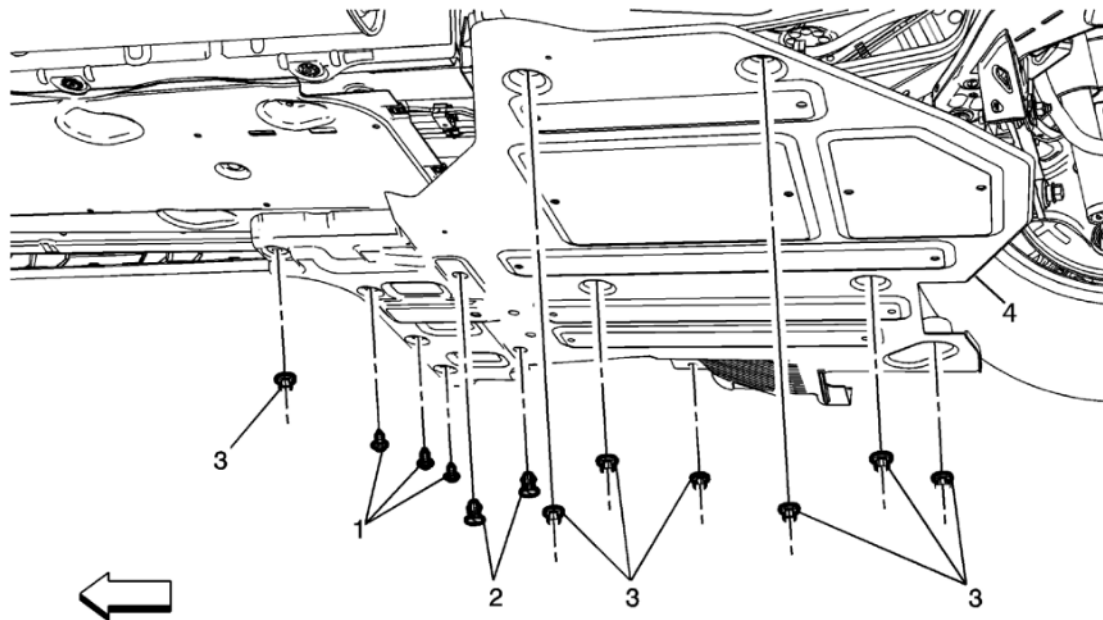


Fig. 10: Underbody Rear Air Deflector - Right Side

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
WARNING: Do not use a service jack to lift this vehicle. Lifting the vehicle with a jack could cause the vehicle to slip off the jack and roll; this could cause injury or death. Preliminary Procedure Remove the underbody rear air deflector. Refer to Underbody Rear Air Deflector Replacement (Tire) .	
1	Underbody Front Air Deflector Fastener (Qty: 3) CAUTION: Refer to Fastener Caution .
2	Underbody Front Air Deflector Retainers (Qty: 2)
3	Underbody Front Air Deflector Fastener (Qty: 7)
4	Underbody Right Rear Air Deflector

UNDERBODY REAR AIR DEFLECTOR BRACKET REPLACEMENT - LEFT SIDE

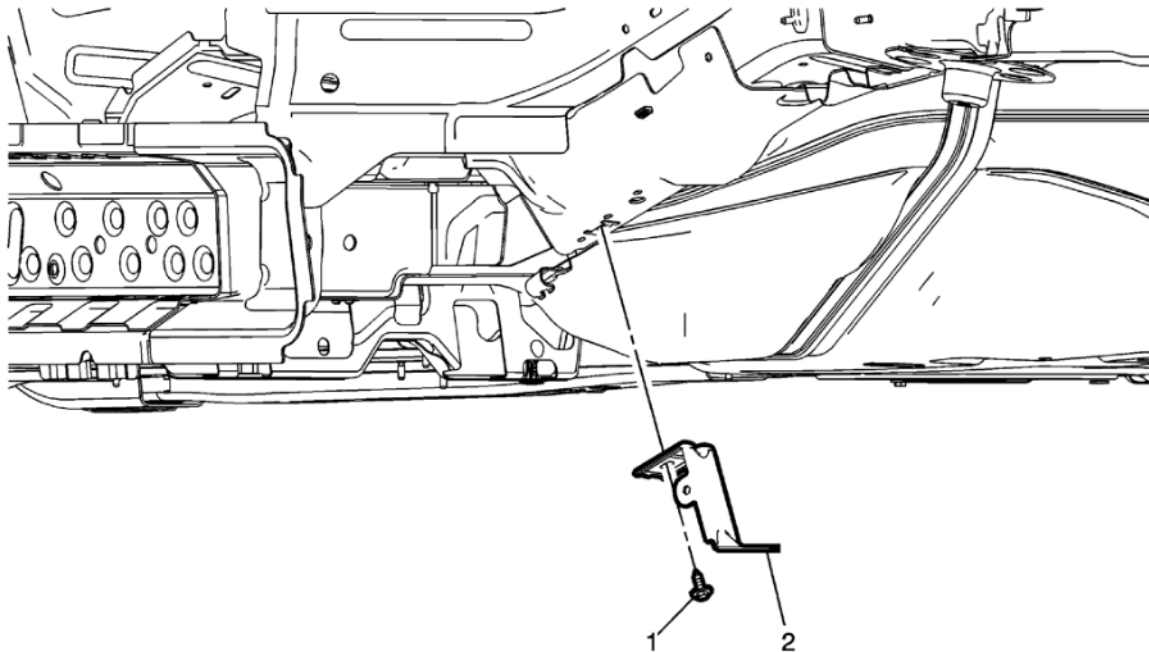


Fig. 11: Underbody Rear Air Outer Deflector Bracket - Left Side

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
WARNING: Do not use a service jack to lift this vehicle. Lifting the vehicle with a jack could cause the vehicle to slip off the jack and roll; this could cause injury or death. Preliminary Procedure 1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle . 2. Remove the underbody rear air deflector - left side. Refer to Underbody Rear Air Deflector Replacement - Left Side.	
1	Underbody Rear Air Outer Deflector Bracket Left Side Fastener (Qty: 1) CAUTION: Refer to Fastener Caution . Tighten: 9 N.m (80 lb in)
2	Underbody Rear Air Outer Deflector Bracket Left Side

UNDERBODY REAR AIR DEFLECTOR BRACKET REPLACEMENT - RIGHT SIDE

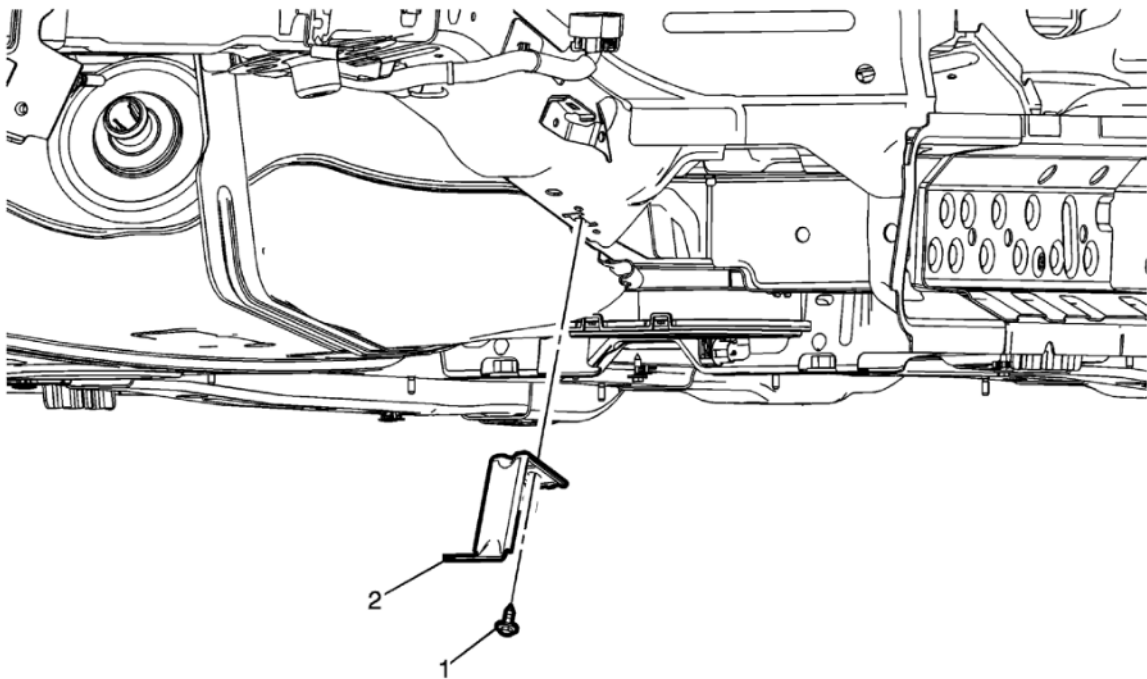


Fig. 12: Underbody Rear Air Outer Deflector Bracket - Right Side

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
WARNING: Do not use a service jack to lift this vehicle. Lifting the vehicle with a jack could cause the vehicle to slip off the jack and roll; this could cause injury or death. Preliminary Procedure 1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle . 2. Remove the underbody rear air deflector - right side. Refer to Underbody Rear Air Deflector Replacement - Right Side.	
1	Underbody Rear Air Outer Deflector Bracket Right Side Fastener (Qty: 1) CAUTION: Refer to Fastener Caution . Tighten: 9 N.m (80 lb in)
2	Underbody Rear Air Outer Deflector Bracket Right Side

SIDE MEMBER REINFORCEMENT REPLACEMENT (NJ2)

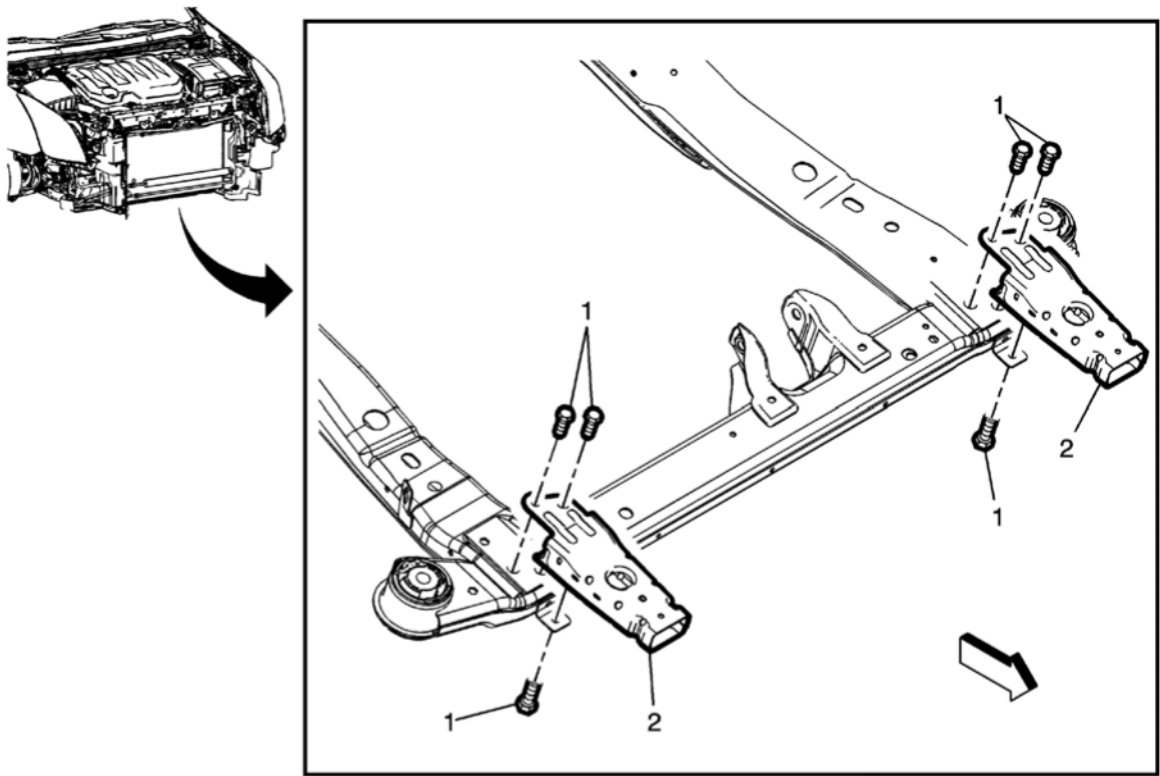


Fig. 13: Side Member Reinforcement (NJ2)
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedures 1. Remove the radiator air side baffle retainer from the side member reinforcement. Refer to Radiator Air Side Baffle and Deflector Replacement (Left) Radiator Air Side Baffle and Deflector Replacement (Right) . 2. Support the radiator.	
1	Side Member Reinforcement Fastener (Qty: 6) CAUTION: Refer to Fastener Caution . Tighten 22 N.m (16 lb ft)
2	Side Member Reinforcement (Qty: 2)

DRIVETRAIN AND FRONT SUSPENSION FRAME REPLACEMENT

Removal Procedure

NOTE: Vehicle alignment is not required if the cradle is being lowered or dropped to perform another procedure. Mark the location of the frame using spray paint for correct positioning during installation. Only align if replacing the cradle with a NEW part and transferring components.

1. Remove the front fascia. Refer to [Front Bumper Fascia Replacement](#) .
2. Install the engine support fixture. [Engine Support Fixture](#) , or [Engine Support Fixture](#)
3. Remove the front wheels. Refer to [Tire and Wheel Removal and Installation](#) .

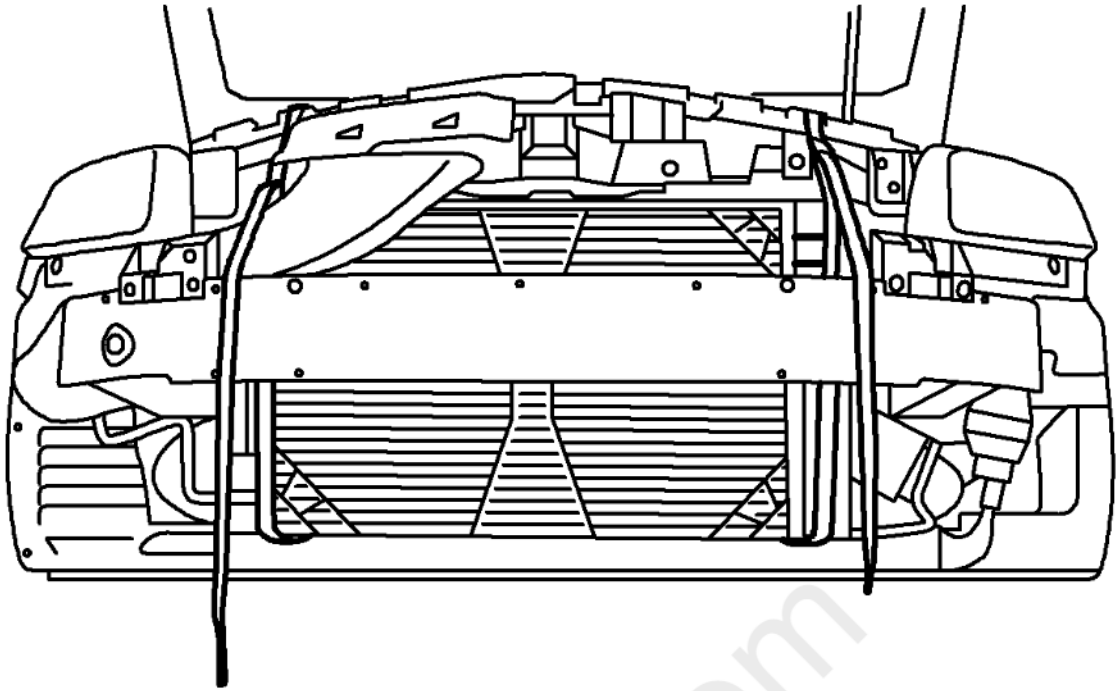


Fig. 14: Tying Radiator, Air Conditioning Condenser And Fan Module Assembly To Upper Radiator Support

Courtesy of GENERAL MOTORS COMPANY

4. Tie the radiator, air conditioning condenser, and fan module assembly to the upper radiator support to keep the assembly with the vehicle when the frame is lowered.
5. Raise and support the vehicle. Refer to [**Lifting and Jacking the Vehicle**](#) .
6. Remove the front compartment splash shield. Refer to [**Front Compartment Splash Shield Replacement**](#).
7. Remove the front compartment air deflector. Refer to [**Front Compartment Air Deflector Replacement**](#).
8. Remove the front exhaust pipe. Refer to [**Front Pipe Replacement \(LCV\)**](#) [**Front Pipe Replacement \(LFX\)**](#) .
9. Disconnect the outer tie rods from the knuckles. Refer to [**Steering Linkage Outer Tie Rod Replacement**](#) .
10. Disconnect the left and right stabilizer links from the strut assemblies. Refer to [**Stabilizer Shaft Link Replacement**](#) .

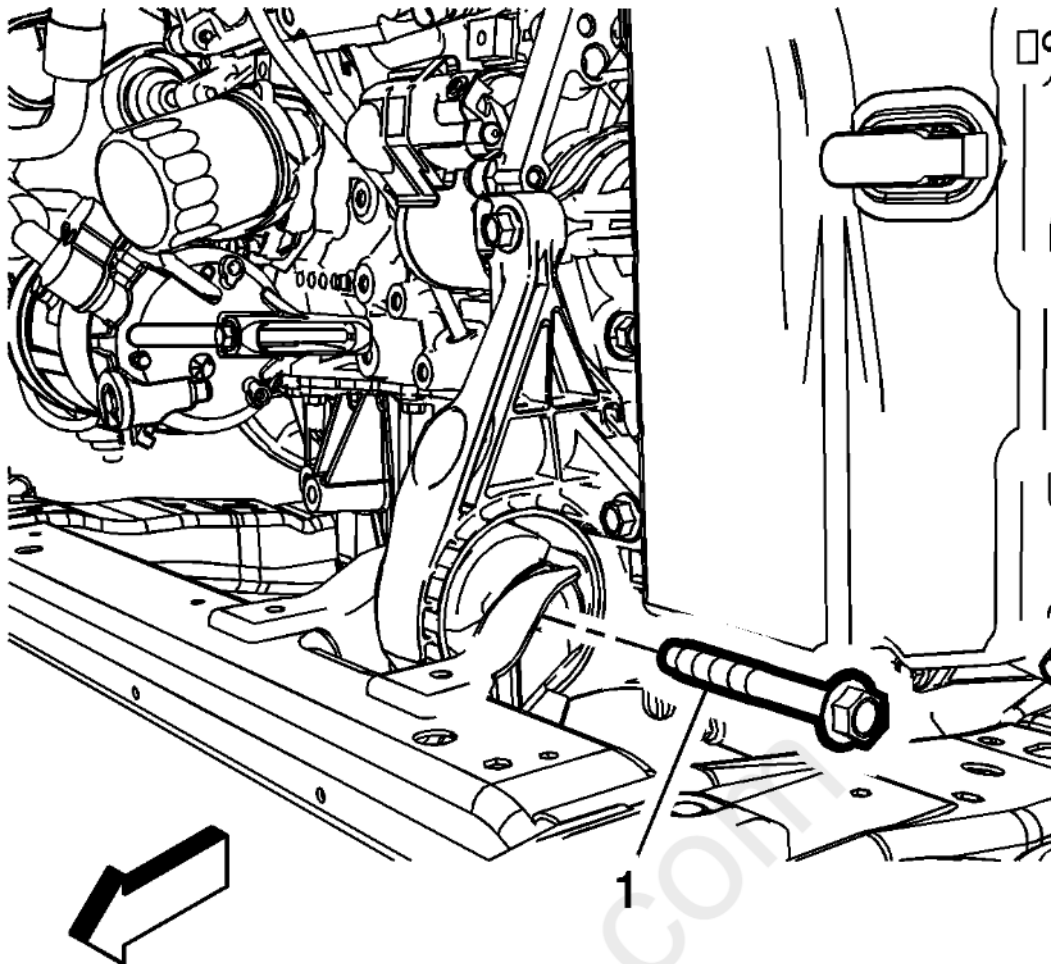


Fig. 15: Front Transmission Mount Through Bolt
Courtesy of GENERAL MOTORS COMPANY

11. Remove the front transmission mount through bolt (1).

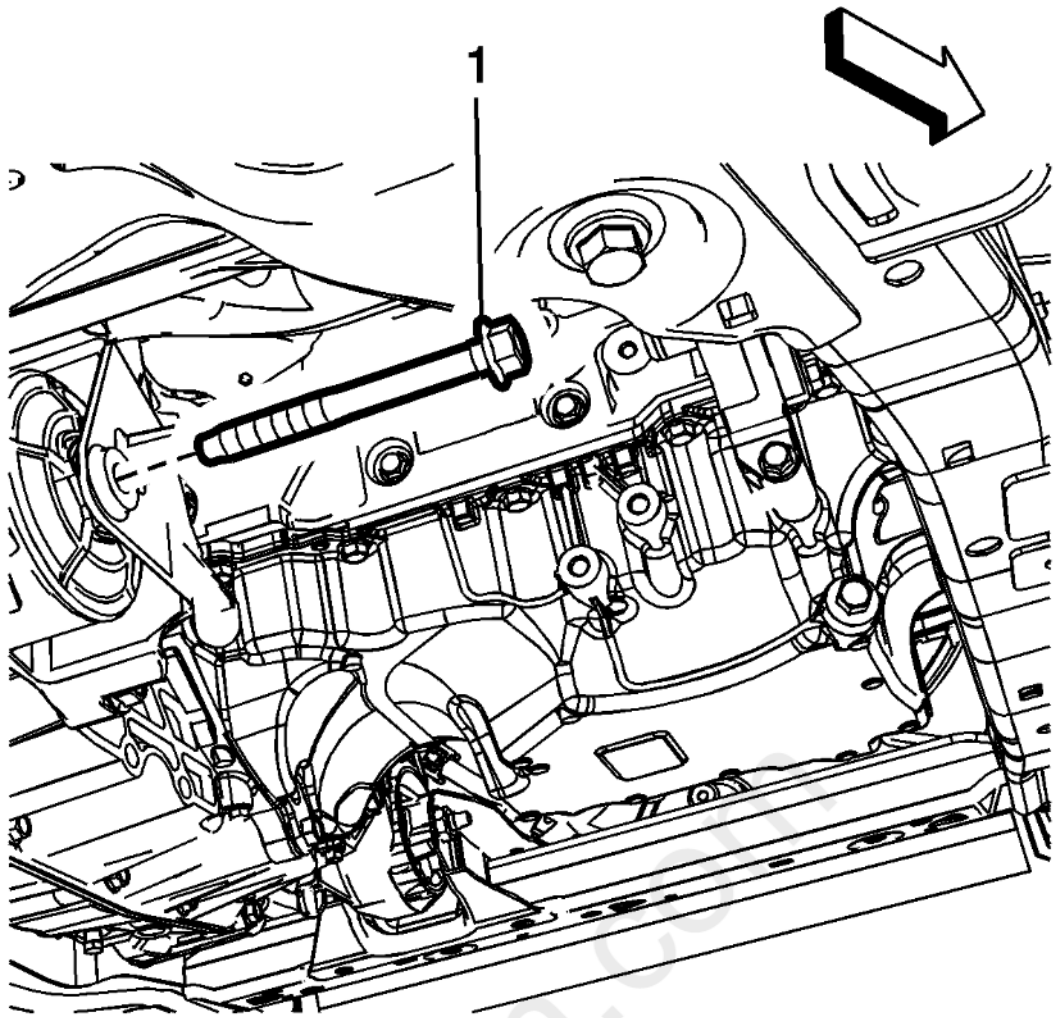


Fig. 16: Rear Transmission Mount Through Bolt
Courtesy of GENERAL MOTORS COMPANY

12. Remove the rear transmission mount through bolt (1).

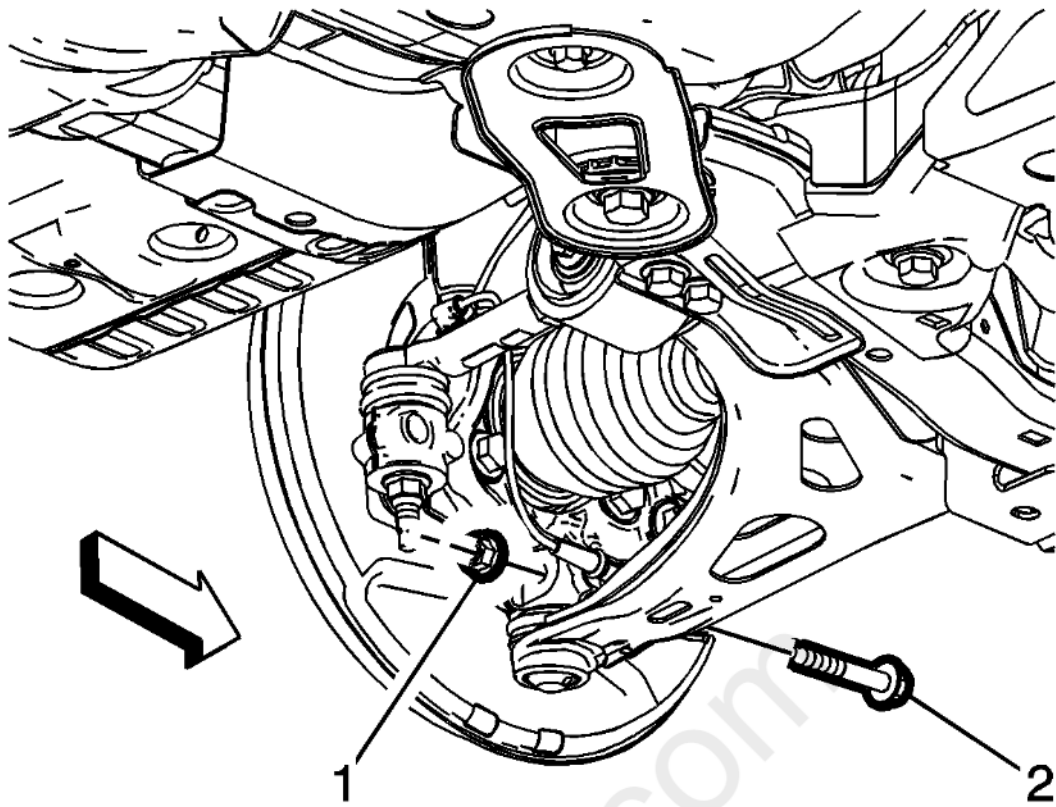


Fig. 17: Steering Knuckle

Courtesy of GENERAL MOTORS COMPANY

13. Remove the lower control arm nut (1) and bolt (2), from the steering knuckle. Discard the bolt.

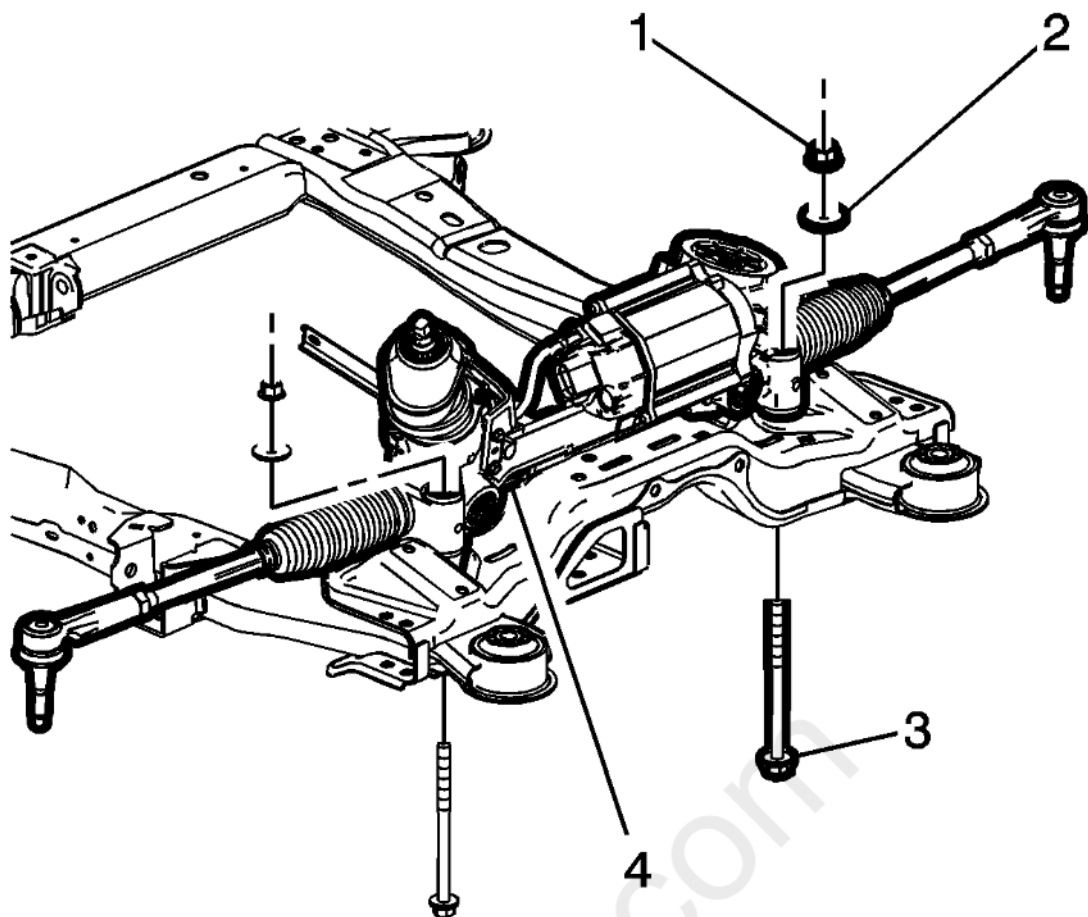


Fig. 18: Power Steering Gear

Courtesy of GENERAL MOTORS COMPANY

14. Remove the steering gear nuts (1), washers (2) and bolts (3) from the steering gear (4). Discard the nuts and bolts.
15. Using mechanics wire, suspend the steering gear (4) from the powertrain.
16. Remove any electrical harness retainers attached to the frame.
17. Mark the location of the frame using spray paint for correct positioning during installation.
18. Carefully lower the vehicle until the frame contacts the support table.
19. Remove the drivetrain and front suspension frame rear supports to body bolts. Refer to **Drivetrain and Front Suspension Frame Rear Support Replacement**.

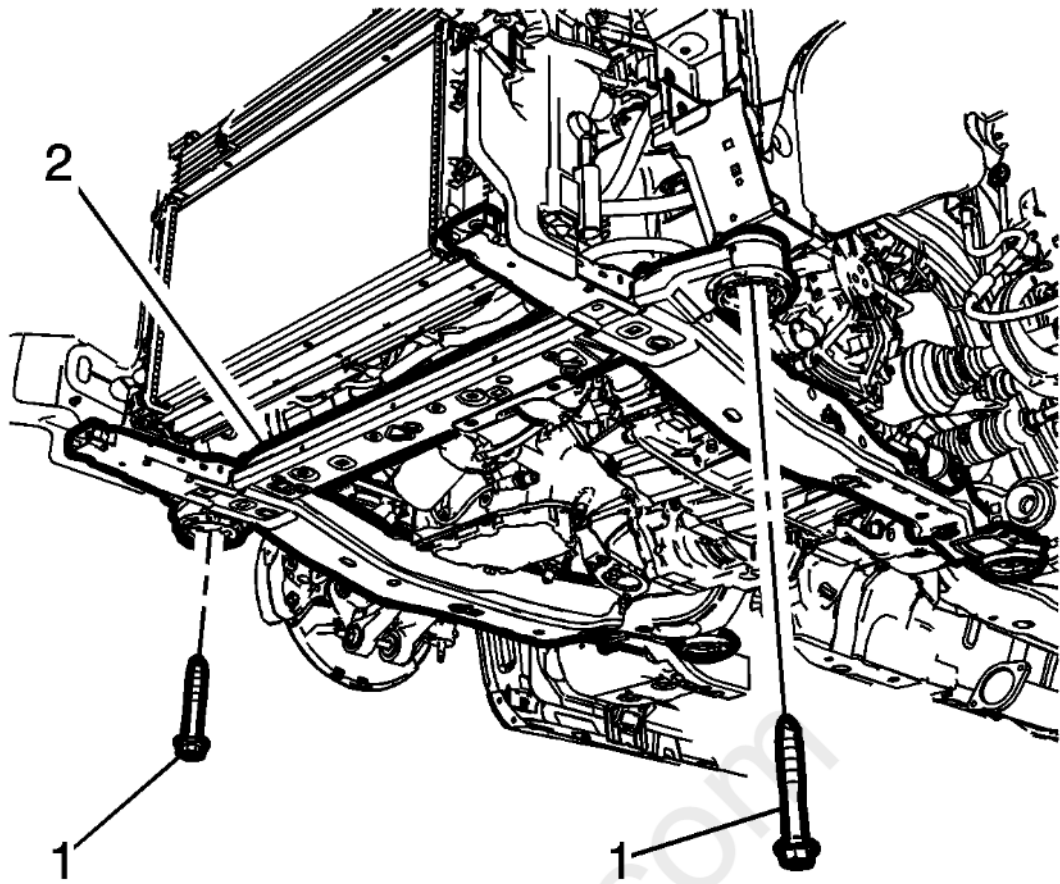


Fig. 19: Front Drivetrain And Front Suspension Frame Fasteners
Courtesy of GENERAL MOTORS COMPANY

20. Remove the two front frame-to-body bolts (1).
21. Carefully raise the vehicle to separate the frame from the body.

NOTE: Do not separate the stabilizer bar bracket from the insulator and stabilizer bar when transferring parts.

22. If replacing the frame, transfer components as necessary.

Installation Procedure

1. Carefully lower the vehicle until contacts the frame assembly and is correctly positioned within the spray painted areas.
2. Install the drivetrain and front suspension frame rear supports. Refer to **Drivetrain and Front Suspension Frame Rear Support Replacement**.

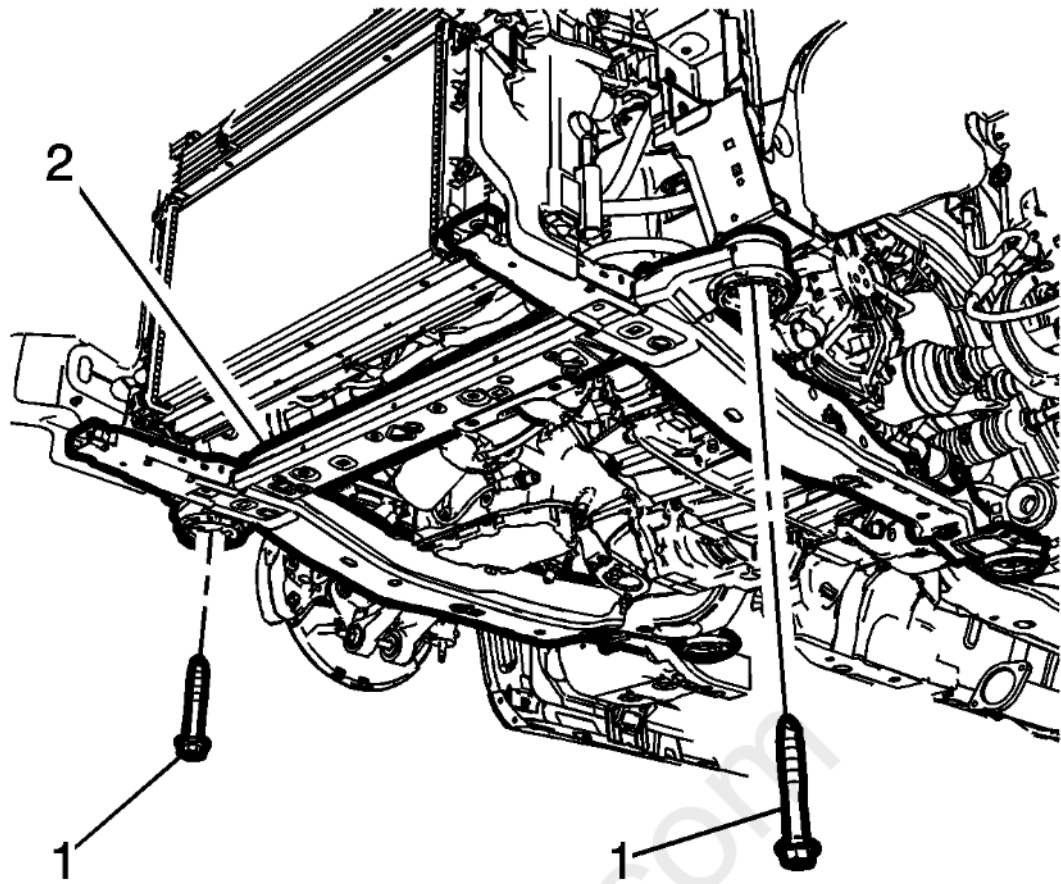


Fig. 20: Front Drivetrain And Front Suspension Frame Fasteners
Courtesy of GENERAL MOTORS COMPANY

CAUTION: Refer to **Fastener Caution** .

3. Install the two front frame-to-body bolts (1) and tighten to 160 N.m (118 lb ft).
4. Install the frame retaining bolts then tighten the bolts to 160 N.m (118 lb ft).
5. Remove the mechanics wire supporting the steering gear.

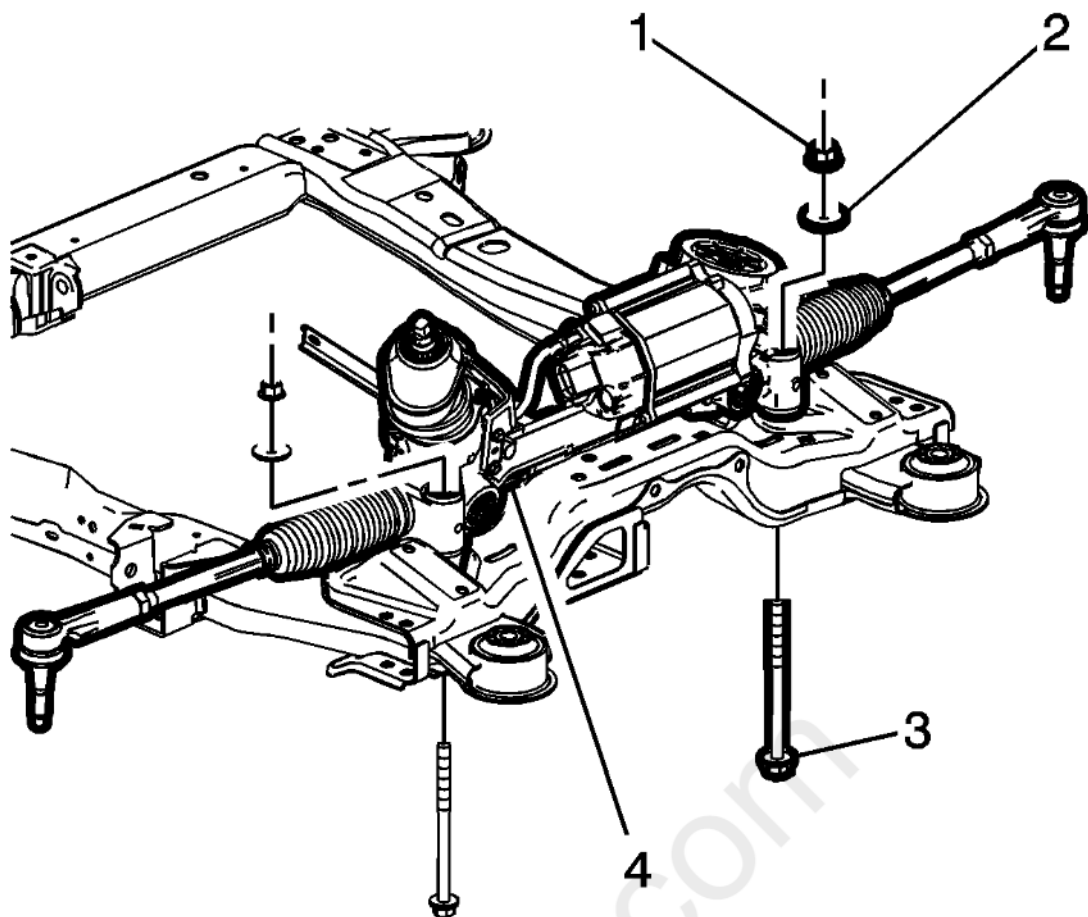


Fig. 21: Power Steering Gear

Courtesy of GENERAL MOTORS COMPANY

6. Install the NEW steering gear bolts (3), washers (2) and NEW nuts (1). Tighten the bolts (3) to 110 N.m (81 lb ft) + 150 Degrees.

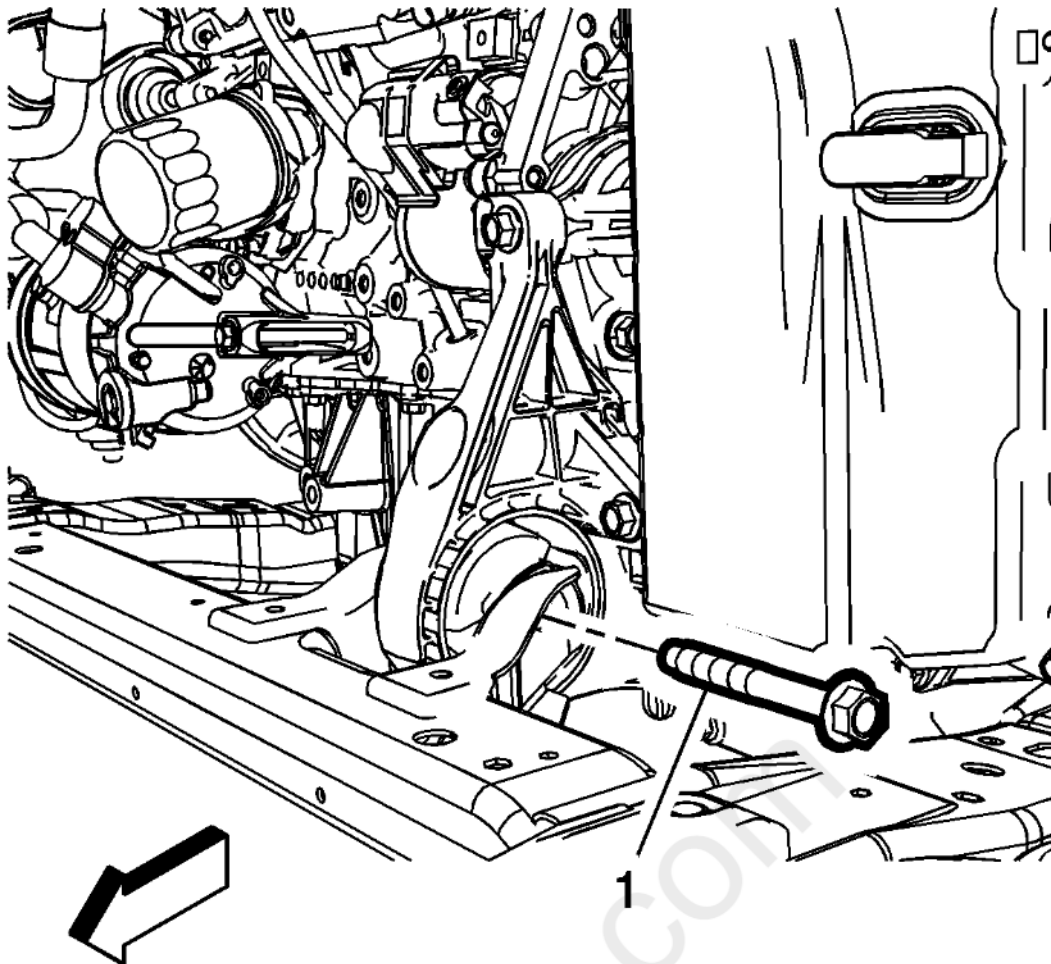


Fig. 22: Front Transmission Mount Through Bolt

Courtesy of GENERAL MOTORS COMPANY

7. Install the front transmission mount through bolt (1) and tighten to 100 N.m (74 lb ft).

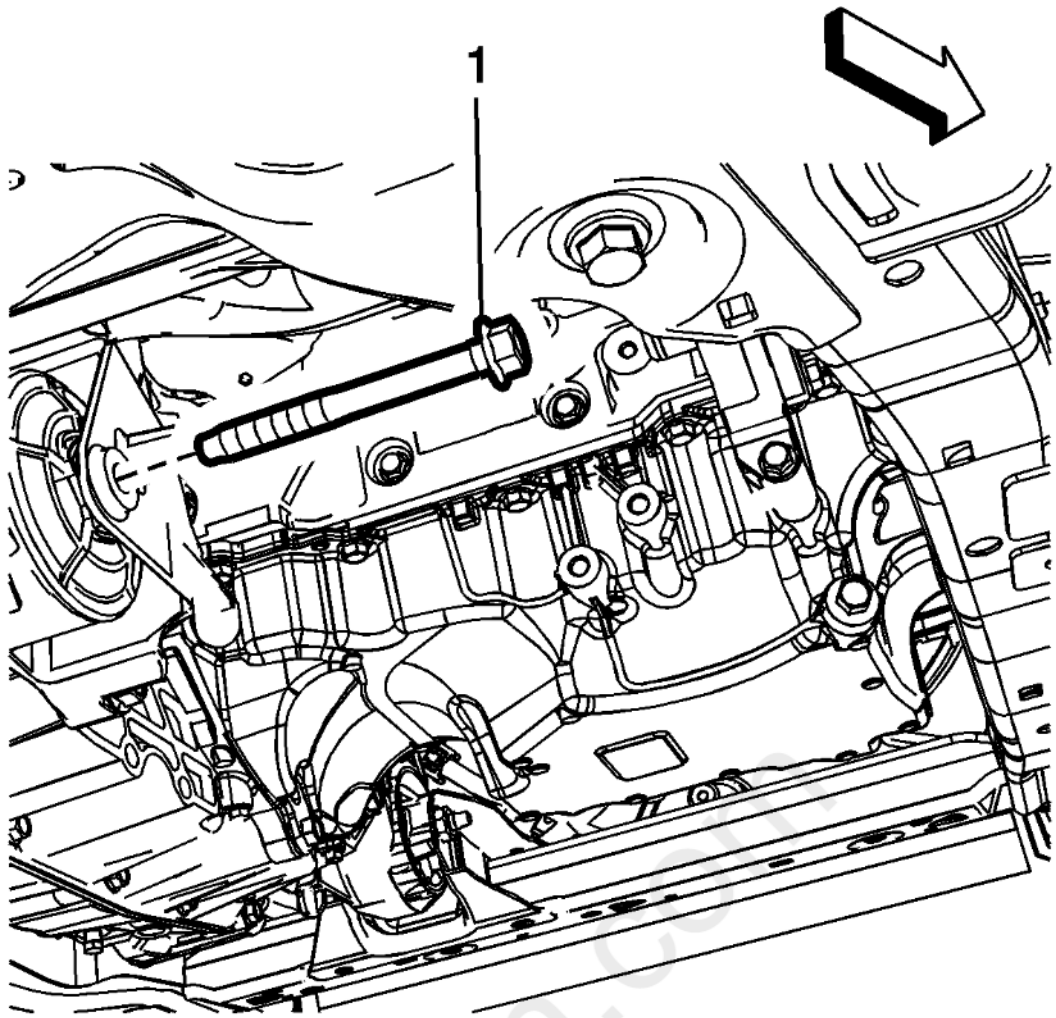


Fig. 23: Rear Transmission Mount Through Bolt

Courtesy of GENERAL MOTORS COMPANY

8. Install the rear transmission mount through bolt (1) and tighten to 100 N. m (74 lb ft).

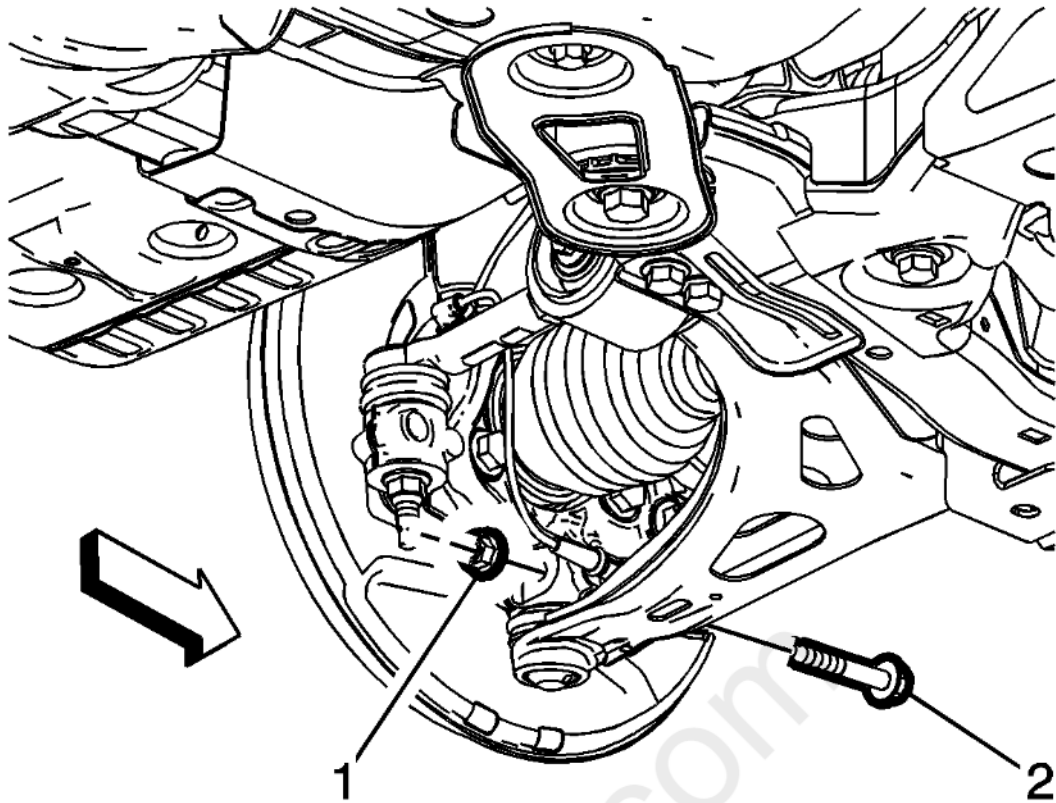


Fig. 24: Steering Knuckle

Courtesy of GENERAL MOTORS COMPANY

9. Install the NEW steering knuckle bolt (2) and the nut (1).
10. Tighten the steering knuckle nut (1) to 50 N.m (37 lb ft)
11. After the initial tightening, loosen the steering knuckle nut (1) 120 Degrees.
12. Tighten the steering knuckle nut (1) to 50 N.m (37 lb ft) + 45 Degrees.
13. Connect the left and right stabilizer links to the strut assemblies. Refer to [Stabilizer Shaft Link Replacement](#) .
14. Connect the outer tie rods to the knuckles. Refer to [Steering Linkage Outer Tie Rod Replacement](#) .
15. Install the front exhaust pipe. Refer to [Front Pipe Replacement \(LCV\)](#) [Front Pipe Replacement \(LFX\)](#) .
16. Install the front compartment splash shield. Refer to [Front Compartment Splash Shield Replacement](#) .
17. Install the front compartment air deflector. Refer to [Front Compartment Air Deflector Replacement](#) .
18. Install the front wheels. Refer to [Tire and Wheel Removal and Installation](#) .
19. Lower the vehicle.
20. Untie the radiator, air conditioning condenser, and fan module assembly from the upper radiator support.
21. Remove the engine support fixture. [Engine Support Fixture](#) , or [Engine Support Fixture](#)
22. Install the front fascia. Refer to [Front Bumper Fascia Replacement](#) .
23. If the frame is replaced, check the wheel alignment. Refer to [Front Camber Adjustment](#) , and [Wheel Alignment - Steering Wheel Angle and/or Front Toe Adjustment](#) .

1. Install the engine support fixture. [Engine Support Fixture](#) , or [Engine Support Fixture](#)

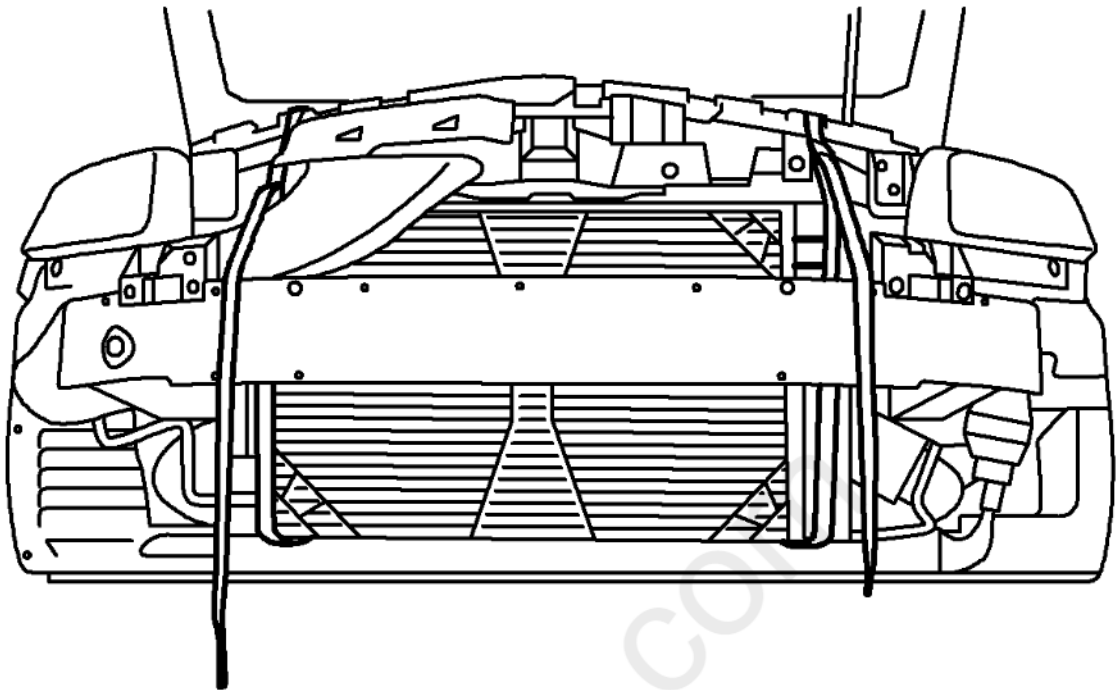


Fig. 25: Tying Radiator, Air Conditioning Condenser And Fan Module Assembly To Upper Radiator Support

Courtesy of GENERAL MOTORS COMPANY

2. Tie the radiator, air conditioning condenser, and fan module assembly to the upper radiator support to keep the assembly with the vehicle when the frame is lowered.
3. Remove the front compartment splash shield. Refer to [Front Compartment Splash Shield Replacement](#).
4. Remove the front compartment air deflector. Refer to [Front Compartment Air Deflector Replacement](#).
5. Disconnect the left and right stabilizer links from the strut assemblies. Refer to [Stabilizer Shaft Link Replacement](#).
6. Remove the two steering gear retaining bolts. Refer to [Electric Dual Pinion Rack and Pinion Steering Gear Replacement \(NJ1\)](#) , or [Electric Belt Drive Rack and Pinion Steering Gear Replacement \(NJ2\)](#).
7. Using mechanics wire, suspend the steering gear from the powertrain.
8. Remove the drivetrain and front suspension frame rear supports. Refer to [Drivetrain and Front Suspension Frame Rear Support Replacement](#).
9. Remove the front exhaust pipe. Refer to [Front Pipe Replacement \(LCV\)](#) [Front Pipe Replacement \(LFX\)](#).

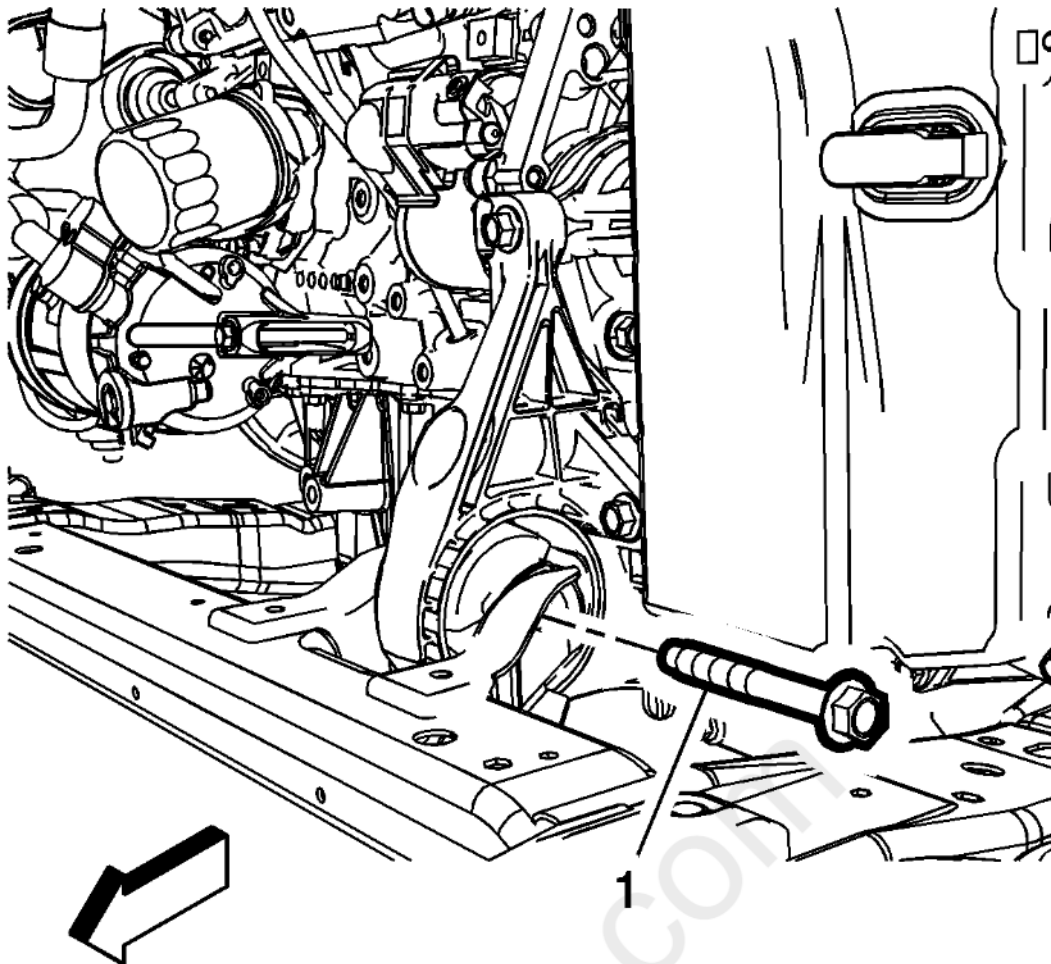


Fig. 26: Front Transmission Mount Through Bolt
Courtesy of GENERAL MOTORS COMPANY

10. Remove the front transmission mount through bolt (1).

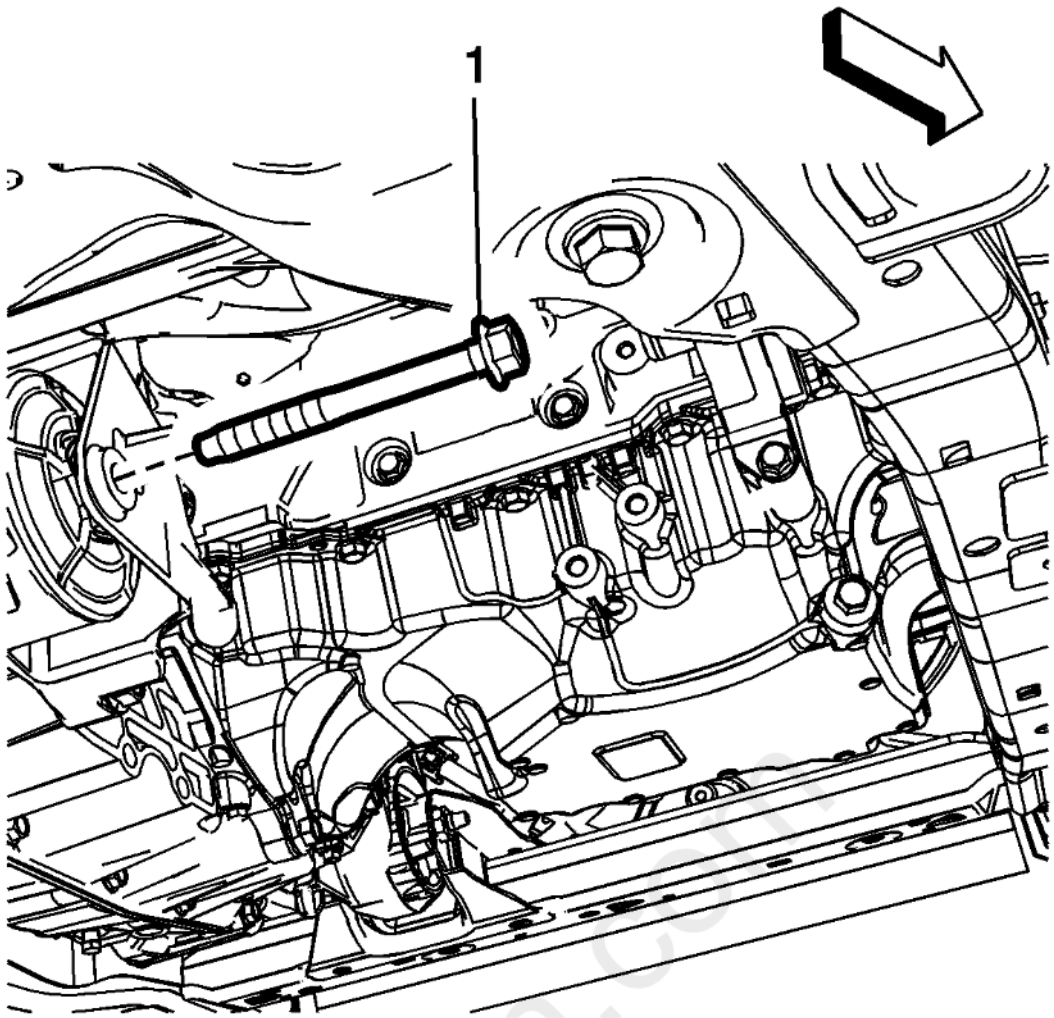


Fig. 27: Rear Transmission Mount Through Bolt

Courtesy of GENERAL MOTORS COMPANY

11. Remove the rear transmission mount through bolt (1).
12. Separate the lower ball joints from the steering knuckles (1). Refer to [**Lower Control Arm Replacement**](#) .

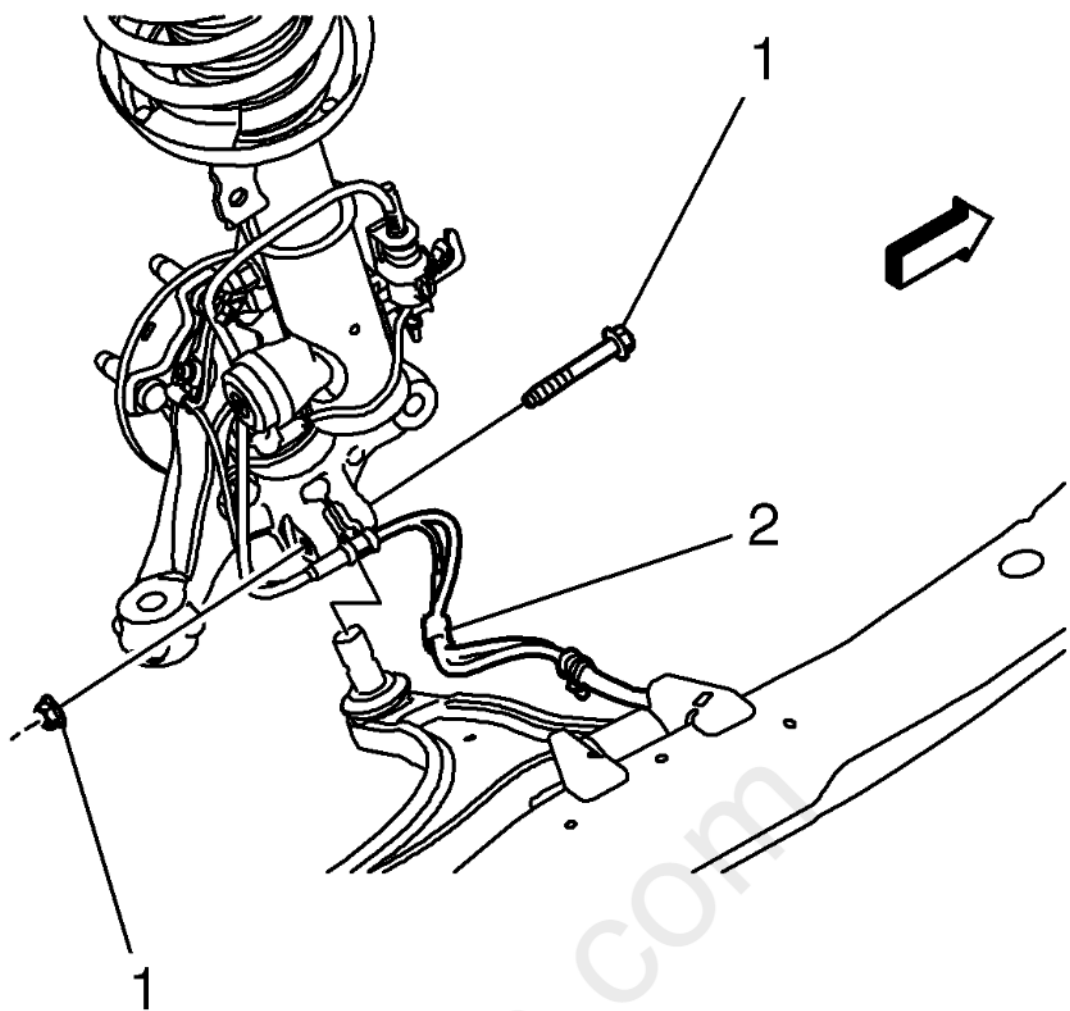


Fig. 28: Electrical Harness And Power Steering Cooler Line Clips
 Courtesy of GENERAL MOTORS COMPANY

13. Remove the electrical harness from the clips in the frame (2).
14. Mark the location of the frame using spray paint for correct positioning during installation.
15. Carefully lower the vehicle until the frame contacts the support table.
16. Remove the two rear frame-to-body bolts.
17. Remove the frame reinforcements.
18. Remove the two front frame-to-body bolts.
19. Carefully raise the vehicle to separate the frame from the body.

Installation Procedure

1. Carefully lower the vehicle until contacts the frame assembly and is correctly positioned within the spray painted areas.
2. Install the front exhaust pipe. Refer to [**Front Pipe Replacement \(LCV\)**](#) [**Front Pipe Replacement \(LFX\)**](#).
3. Install the drivetrain and front suspension frame rear supports. Refer to [**Drivetrain and Front Suspension Frame Rear Support Replacement**](#)

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

4. Install the frame retaining bolts then tighten the bolts to 160 N.m (118 lb ft).
5. Remove the mechanics wire.
6. Install the steering gear bolts. Refer to [**Electric Dual Pinion Rack and Pinion Steering Gear Replacement \(NJ1\)**](#), or [**Electric Belt Drive Rack and Pinion Steering Gear Replacement \(NJ2\)**](#).

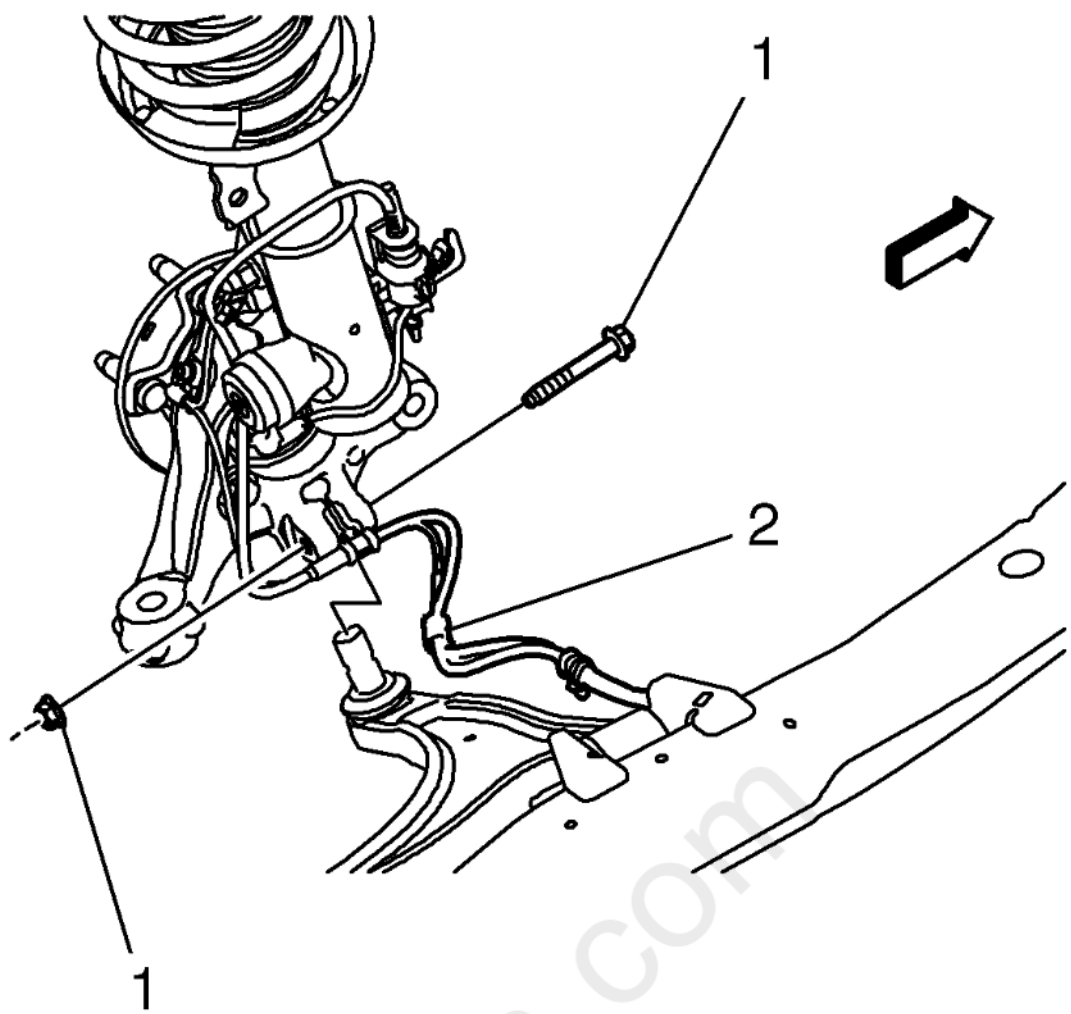


Fig. 29: Electrical Harness And Power Steering Cooler Line Clips
Courtesy of GENERAL MOTORS COMPANY

7. Install the electrical harness clips on the frame (2).
8. Connect the ball joint studs to the steering knuckles (1). Refer to [Lower Control Arm Replacement](#)

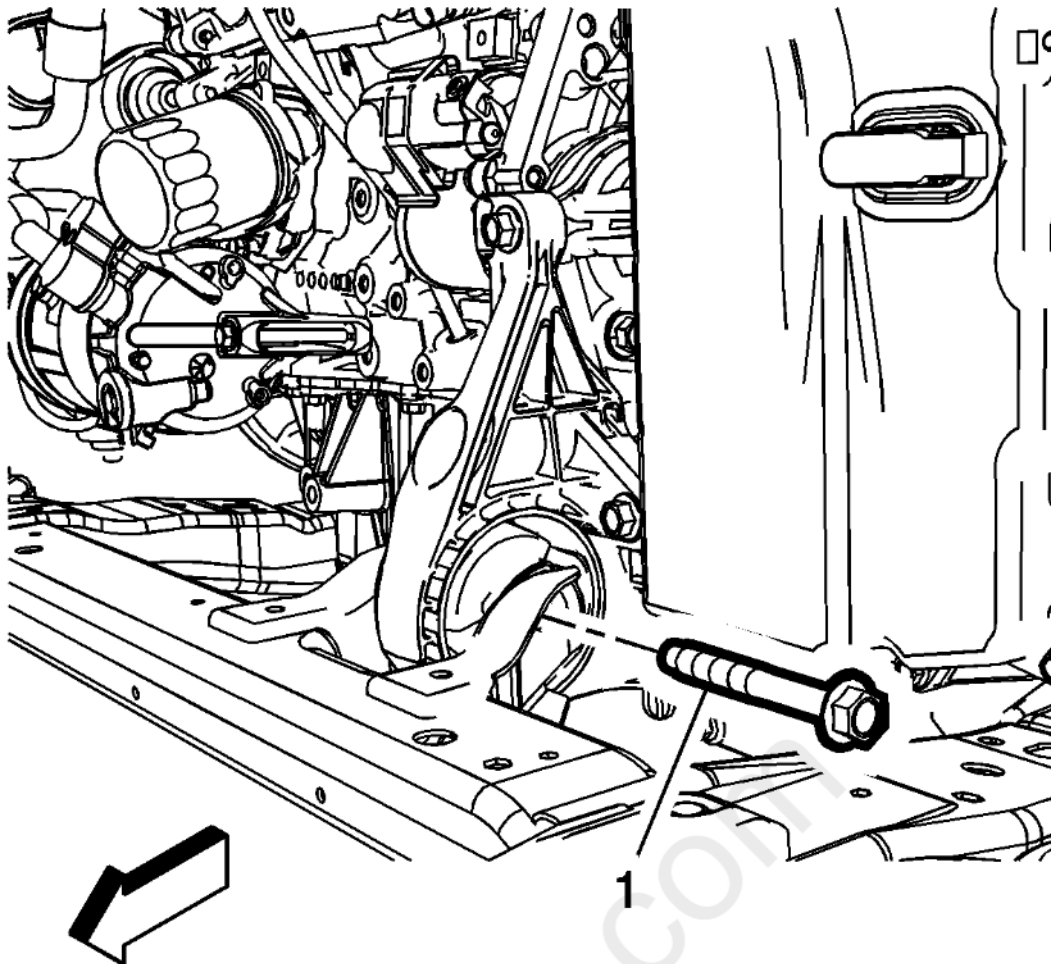


Fig. 30: Front Transmission Mount Through Bolt

Courtesy of GENERAL MOTORS COMPANY

9. Install the front transmission mount through bolt (1) and tighten to 100 N.m (74 lb ft).

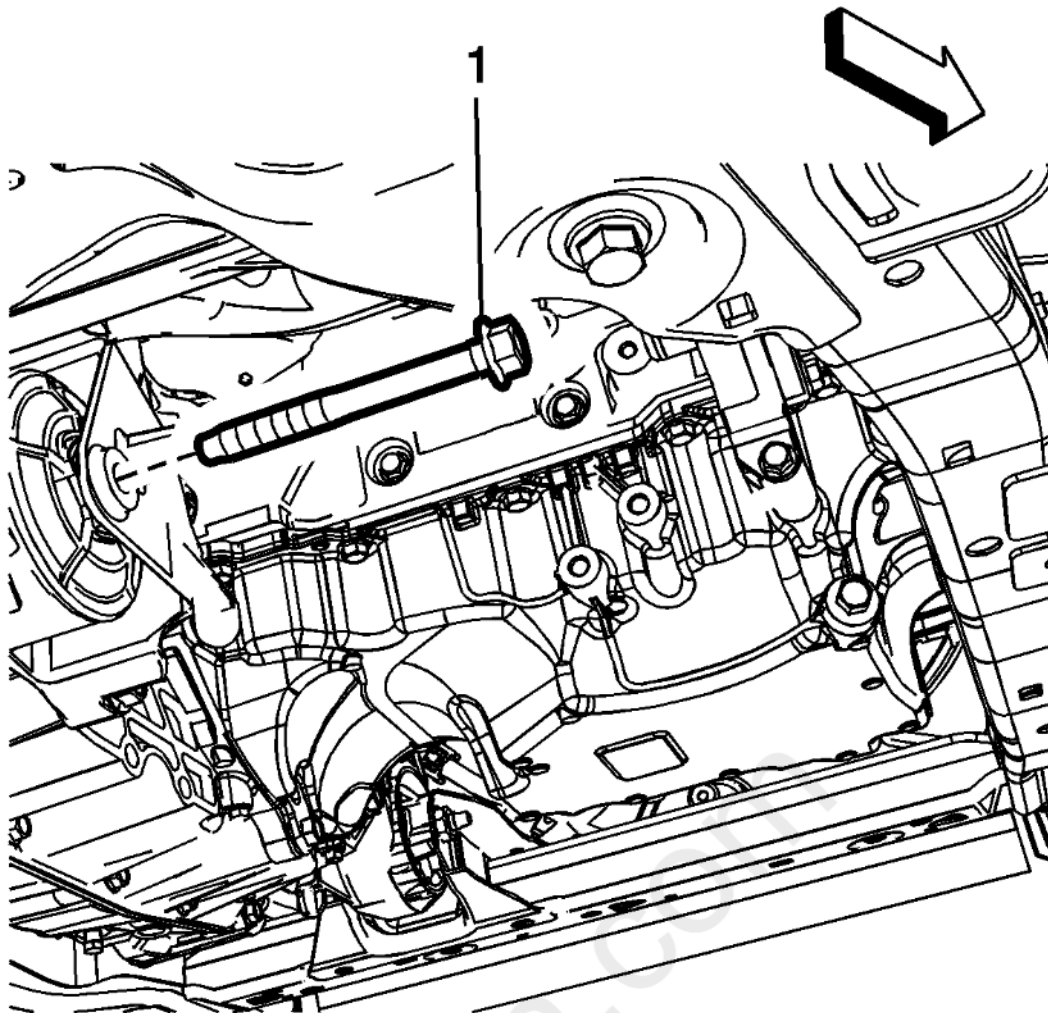


Fig. 31: Rear Transmission Mount Through Bolt
 Courtesy of GENERAL MOTORS COMPANY

10. Install the rear transmission mount through bolt (1) and tighten to 100 N.m (74 lb ft).
11. Connect the left and right stabilizer links to the strut assemblies. Refer to [Stabilizer Shaft Link Replacement](#) .
12. Install the front compartment splash shield. Refer to [Front Compartment Splash Shield Replacement](#).
13. Install the front compartment air deflector. Refer to [Front Compartment Air Deflector Replacement](#).
14. Install the front wheels. Refer to [Tire and Wheel Removal and Installation](#) .
15. Lower the vehicle.
16. Untie the radiator, air conditioning condenser, and fan module assembly from the upper radiator support.
17. Remove the engine support fixture. [Engine Support Fixture](#) , or [Engine Support Fixture](#)
18. Check the wheel alignment. Refer to [Front Camber Adjustment](#) , and [Wheel Alignment - Steering Wheel Angle and/or Front Toe Adjustment](#) .

DRIVETRAIN AND FRONT SUSPENSION FRAME REAR SUPPORT REPLACEMENT

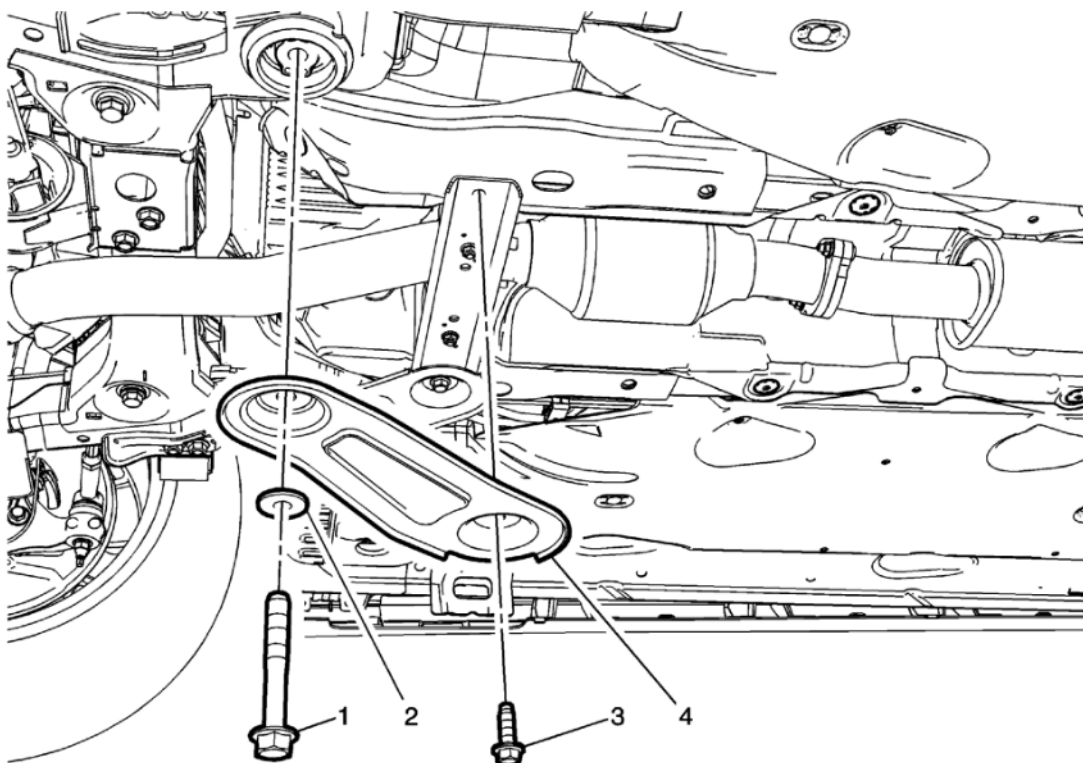


Fig. 32: Drivetrain & Front Suspension Frame Rear Support

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
WARNING: Do not use a service jack to lift this vehicle. Lifting the vehicle with a jack could cause the vehicle to slip off the jack and roll; this could cause injury or death.	
Preliminary Procedure 1. Engine Support Fixture for LCV engine, if equipped. 2. Engine Support Fixture for LFX engine, if equipped. 3. Lifting and Jacking the Vehicle	
1	Drivetrain and Front Suspension Frame Fastener (Qty: 1) CAUTION: Refer to Fastener Caution . Tighten 160 N.m (118 lb ft)
2	Washer (Qty: 1)

Callout	Component Name
3	Drivetrain and Front Suspension Frame Support Fastener (Qty: 1) CAUTION: This vehicle is equipped with torque-to-yield or single use fasteners. Install a NEW torque-to-yield or single use fastener when installing this component. Failure to replace the torque-to-yield or single use fastener could cause damage to the vehicle or component. CAUTION: Refer to Fastener Caution . Procedure Remove and discard the bolts. DO NOT reuse, replace with NEW only. Tighten: • First Pass:60 N.m (44 lb ft) • Final Pass:: Plus 30 degrees
4	Drivetrain and Front Suspension Frame Rear Support

REAR SUSPENSION SUPPORT REPLACEMENT

Removal Procedure

NOTE: Vehicle alignment is not required if the cradle is being lowered or dropped to perform another procedure. Mark the location of the frame using spray paint for correct positioning during installation. Only align if replacing the cradle with a NEW part and transferring components.

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 rear muffler assembly. Refer to [Exhaust Muffler with Resonator, Exhaust, and Tail Pipe Replacement](#) .
4. Remove the left underbody rear air deflector. Refer to [Underbody Rear Air Deflector Replacement - Left Side](#).
5. Remove the right underbody rear air deflector. Refer to [Underbody Rear Air Deflector Replacement - Right Side](#).
6. Disconnect the stabilizer shaft from stabilizer shaft links. Refer to [Stabilizer Shaft Link Replacement](#) .
7. Remove the park brake cables from the support. Refer to [Parking Brake Cable Replacement](#) .
8. Support both rear rotor assemblies.
9. Remove the lower control arms from the vehicle. Refer to [Lower Control Arm Replacement](#) .
10. Remove the rear suspension link. Refer to [Rear Suspension Link Replacement - Toe Link](#)
11. Mark the location of the frame using spray paint for correct positioning during installation.
12. Position a transmission jack under the rear support and firmly secure the support to the jack with straps.

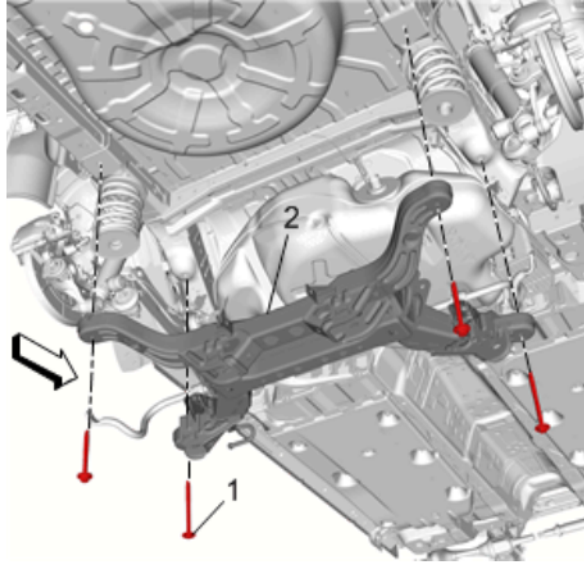


Fig. 33: Rear Suspension Support And Fasteners
Courtesy of GENERAL MOTORS COMPANY

13. Remove the rear suspension support fasteners (1) and discard them.
14. With the aid of an assistant, lower the rear suspension support (2) from the transmission jack stand.
15. Remove the stabilizer shaft from the rear support.
16. Transfer parts as necessary.

Installation Procedure

NOTE: When transferring any suspension components, refer to each suspension component replacement procedure for the proper torque specifications.

1. Install the stabilizer shaft assembly on to the support. Refer to [Stabilizer Shaft Replacement](#).
2. With the aid of an assistant, position the rear support onto the transmission jack and firmly secure the support to the jack with straps.
3. Carefully lower the vehicle until contacts the frame assembly and is correctly positioned within the spray painted areas.

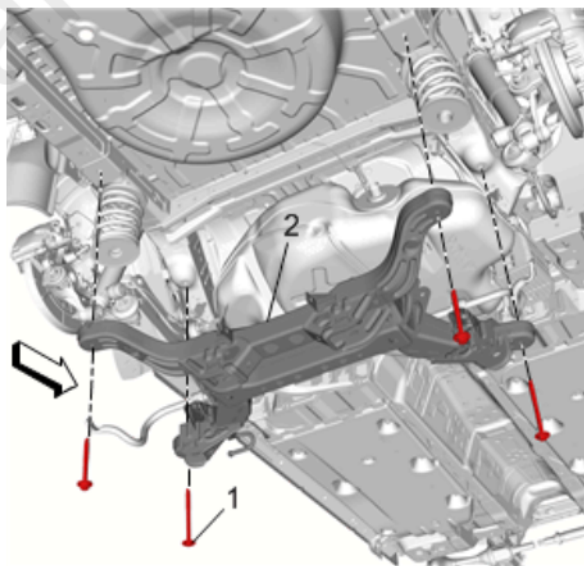


Fig. 34: Rear Suspension Support And Fasteners
Courtesy of GENERAL MOTORS COMPANY

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

4. Install the NEW support fasteners (1) and tighten to 90 N.m (66 lb ft).
5. Tighten the support fastener an additional 120 degrees then 15 degrees.

6. Remove the transmission jack stand.
7. Install the upper control arm inner fasteners. Refer to [Upper Control Arm Replacement](#) .
8. Install the rear suspension links to the support. Refer to [Rear Suspension Link Replacement - Toe Link](#) .
9. Install the lower control arms. Refer to [Lower Control Arm Replacement](#) .
10. Install the park brake cables to the rear support. Refer to [Parking Brake Cable Replacement](#) .
11. Install the rear muffler assembly. Refer to [Exhaust Muffler with Resonator, Exhaust, and Tail Pipe Replacement](#)
12. Connect the stabilizer shaft to the stabilizer shaft links. Refer to [Stabilizer Shaft Link Replacement](#) .
13. Install the left underbody rear air deflector. Refer to [Underbody Rear Air Deflector Replacement - Left Side](#).
14. Install the right underbody rear air deflector. Refer to [Underbody Rear Air Deflector Replacement - Right Side](#).
15. Install the rear tire and wheel assemblies. Refer to [Tire and Wheel Removal and Installation](#) .
16. Lower the vehicle.
17. If the rear support is replaced, realign the rear suspension. Refer to [Wheel Alignment Measurement](#)

DRIVETRAIN AND FRONT SUSPENSION FRAME FRONT INSULATOR REPLACEMENT

Special Tools

- **J-45296-1** Frame Insulator Remover and Installer
- **J-45725-2** Bushing Replacer

For equivalent regional tools, refer to [Special Tools](#).

Removal Procedure

1. Separate the frame from the body approximately 70 mm. Refer to [Drivetrain and Front Suspension Frame Replacement](#).

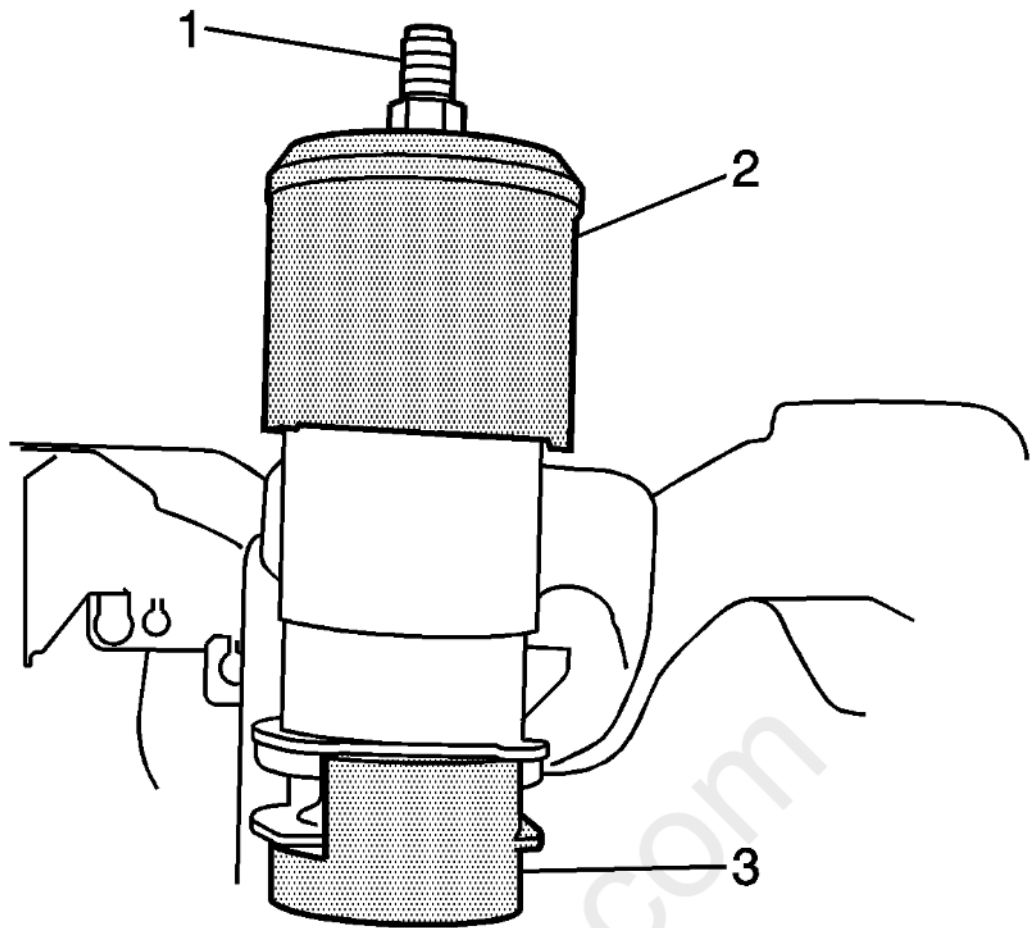


Fig. 35: Bushing & Removal/Installation Tools

Courtesy of GENERAL MOTORS COMPANY

2. Remove the bushings using J-45296-1 remover and installer and J-45725-2 replacer (2).

Installation Procedure

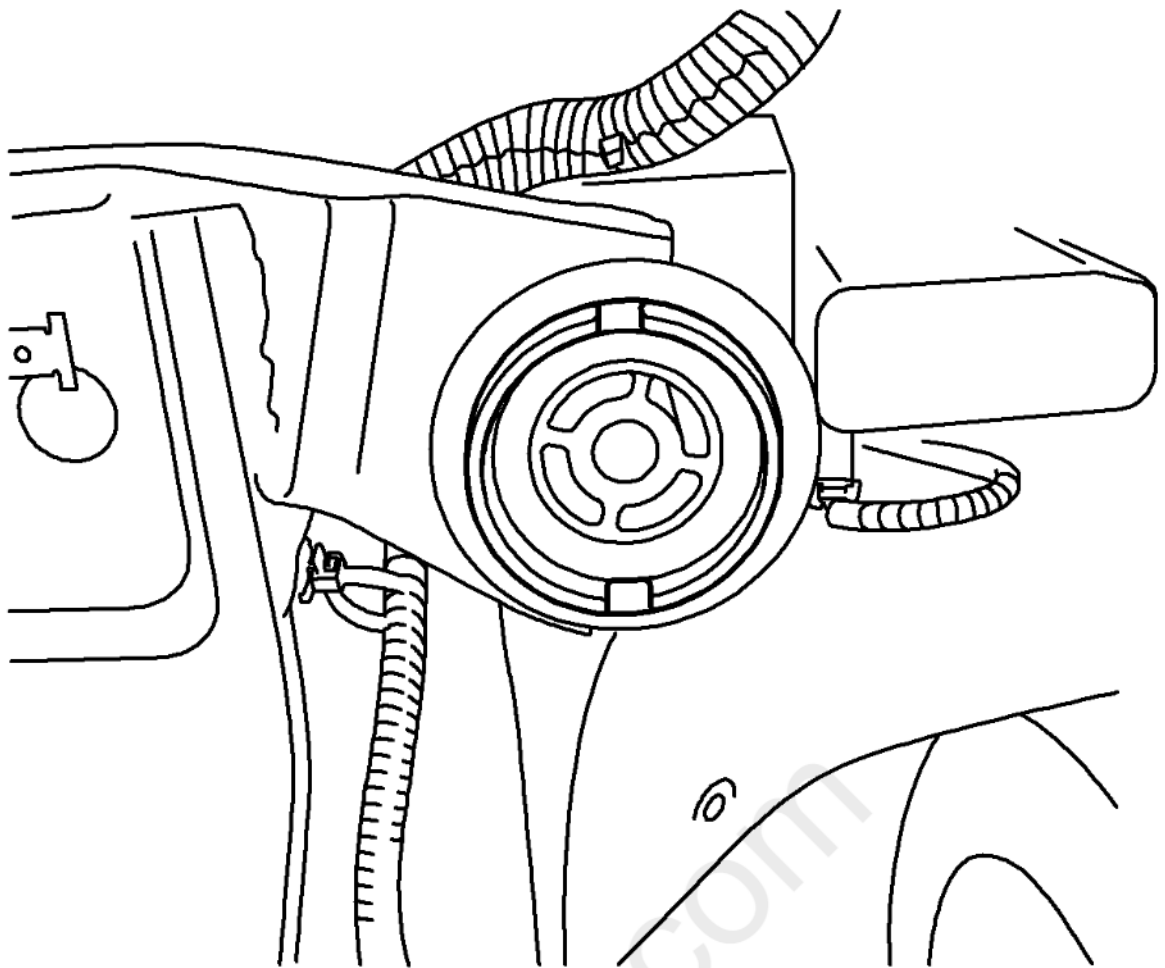


Fig. 36: Locating Front Bushing
Courtesy of GENERAL MOTORS COMPANY

1. Locate the front bushings as shown.

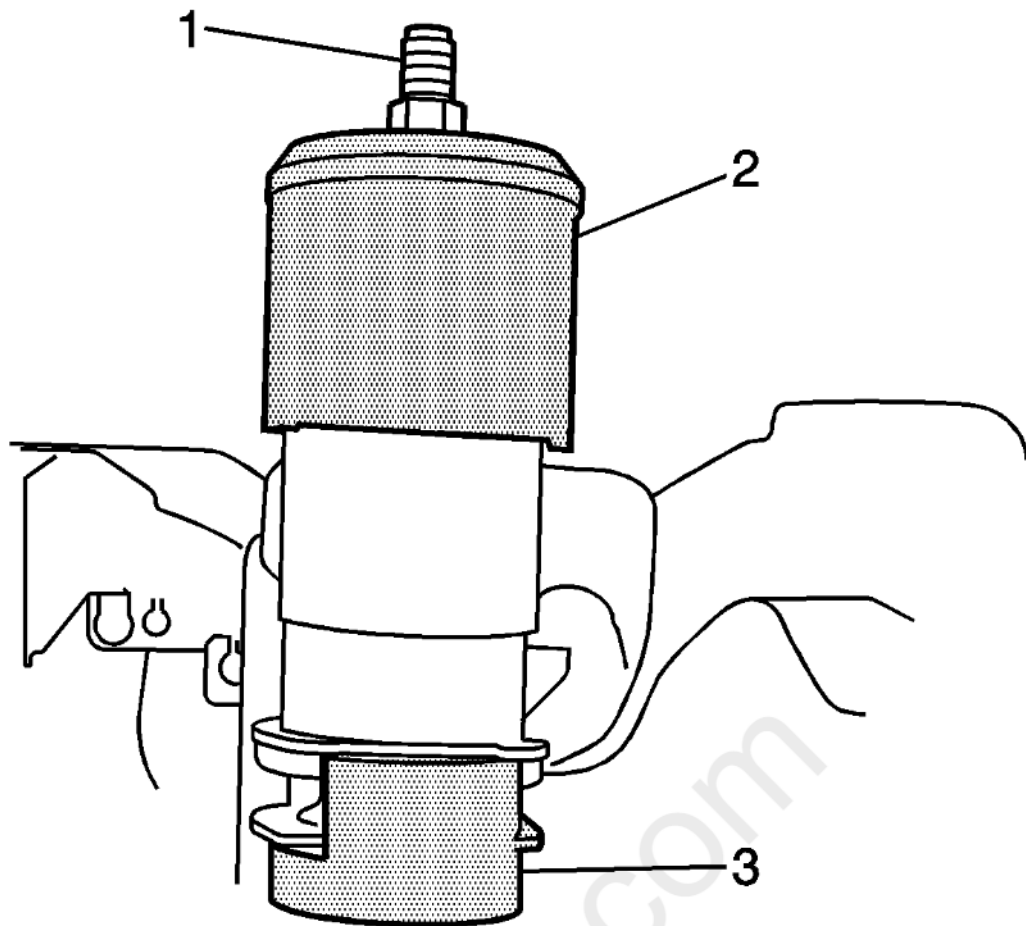


Fig. 37: Bushing & Removal/Installation Tools

Courtesy of GENERAL MOTORS COMPANY

2. Install the bushings using **J-45296-1** remover and installer and **J-45725-2** replacer (2).
3. Install the frame to the body. Refer to **Drivetrain and Front Suspension Frame Replacement**.

DRIVETRAIN AND FRONT SUSPENSION FRAME REAR INSULATOR REPLACEMENT

Special Tools

- **J-45296-1** Frame Insulator Remover and Installer
- **J-45725-2** Bushing Replacer

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

Removal Procedure

1. Separate the frame from the body approximately 70 mm. Refer to **Drivetrain and Front Suspension Frame Replacement**.

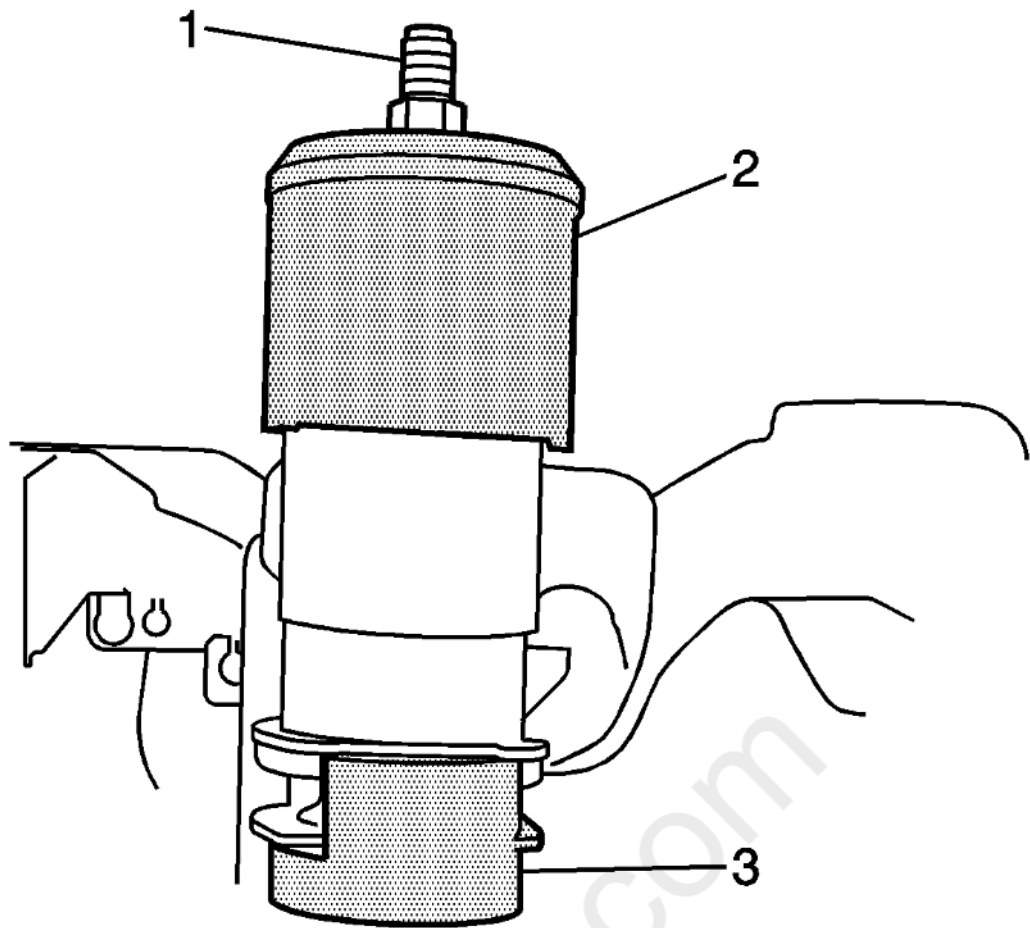


Fig. 38: Bushing & Removal/Installation Tools

Courtesy of GENERAL MOTORS COMPANY

2. Remove the bushings using J-45296-1 remover and installer and J-45725-2 replacer (2).

Installation Procedure

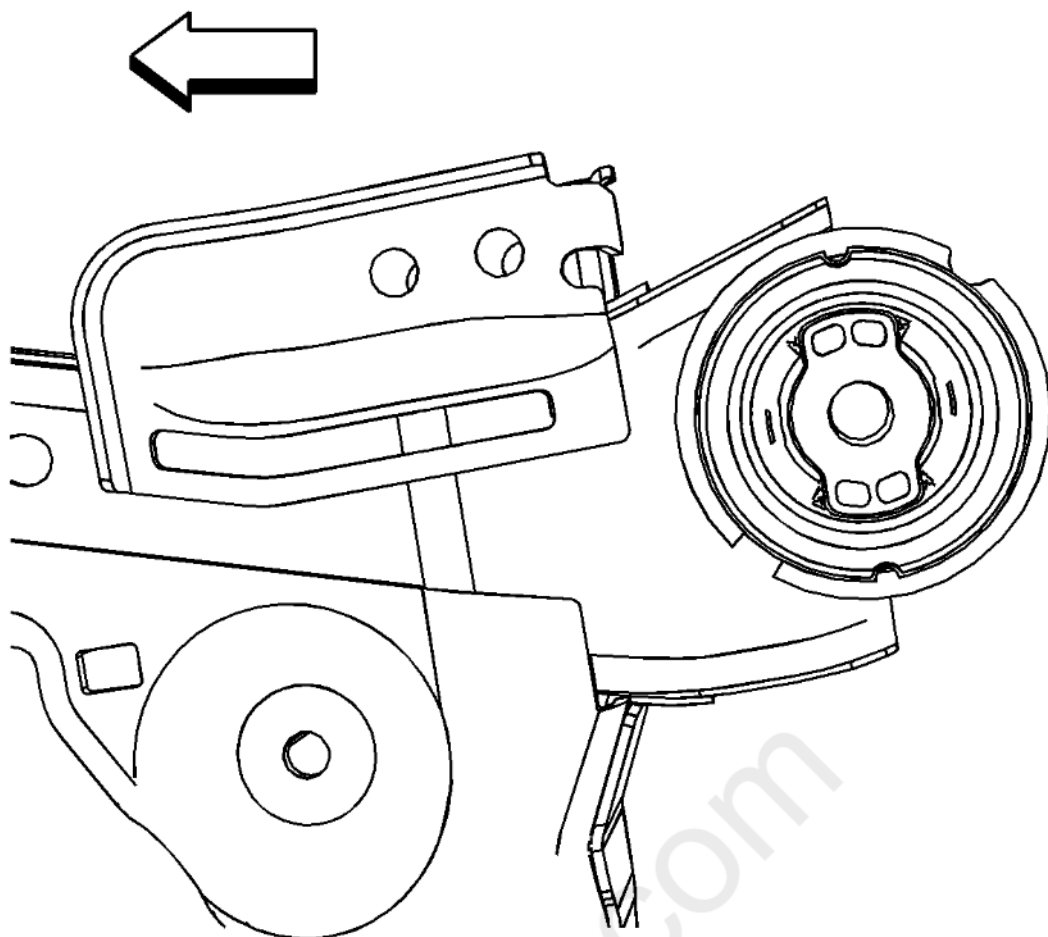


Fig. 39: Rear Bushings

Courtesy of GENERAL MOTORS COMPANY

1. Locate the rear bushings as shown.

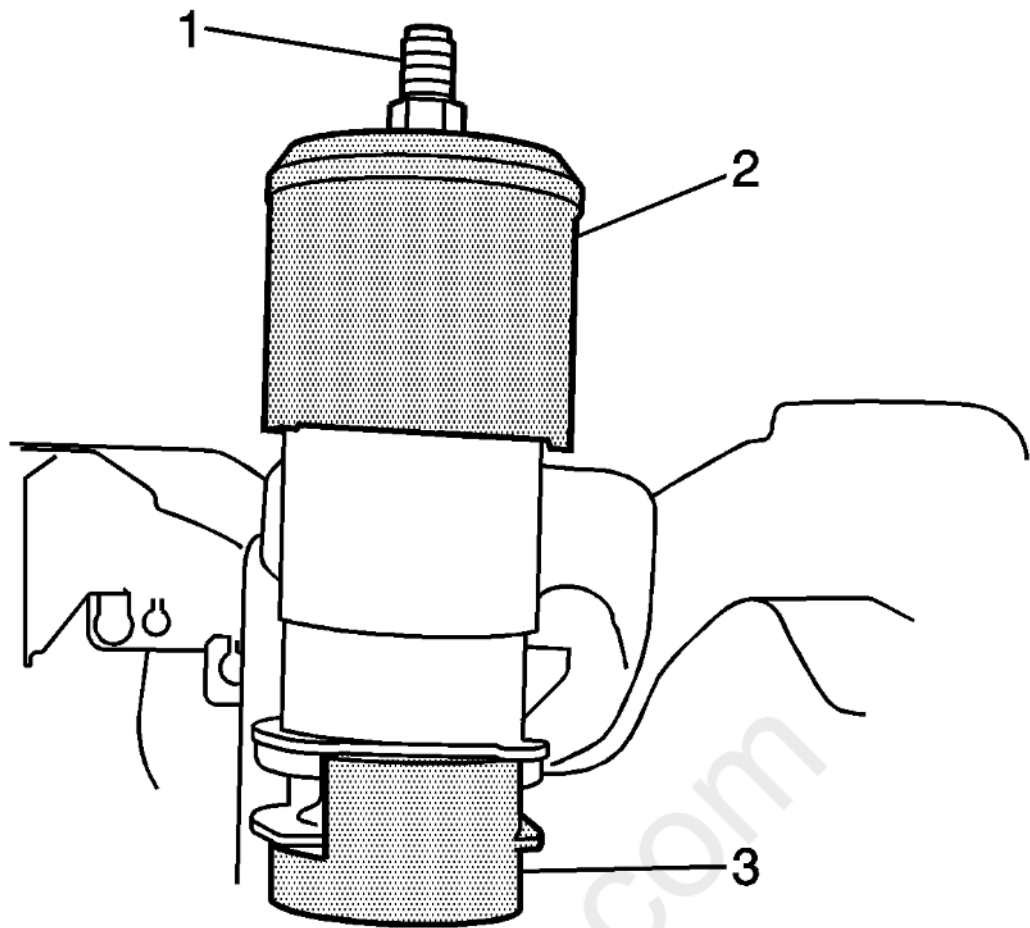


Fig. 40: Bushing & Removal/Installation Tools
 Courtesy of GENERAL MOTORS COMPANY

2. Install the bushings using J-45296-1 remover and installer and J-45725-2 replacer (2).
3. Install the frame to the body. Refer to [Drivetrain and Front Suspension Frame Replacement](#).

FRONT WHEELHOUSE LINER REPLACEMENT

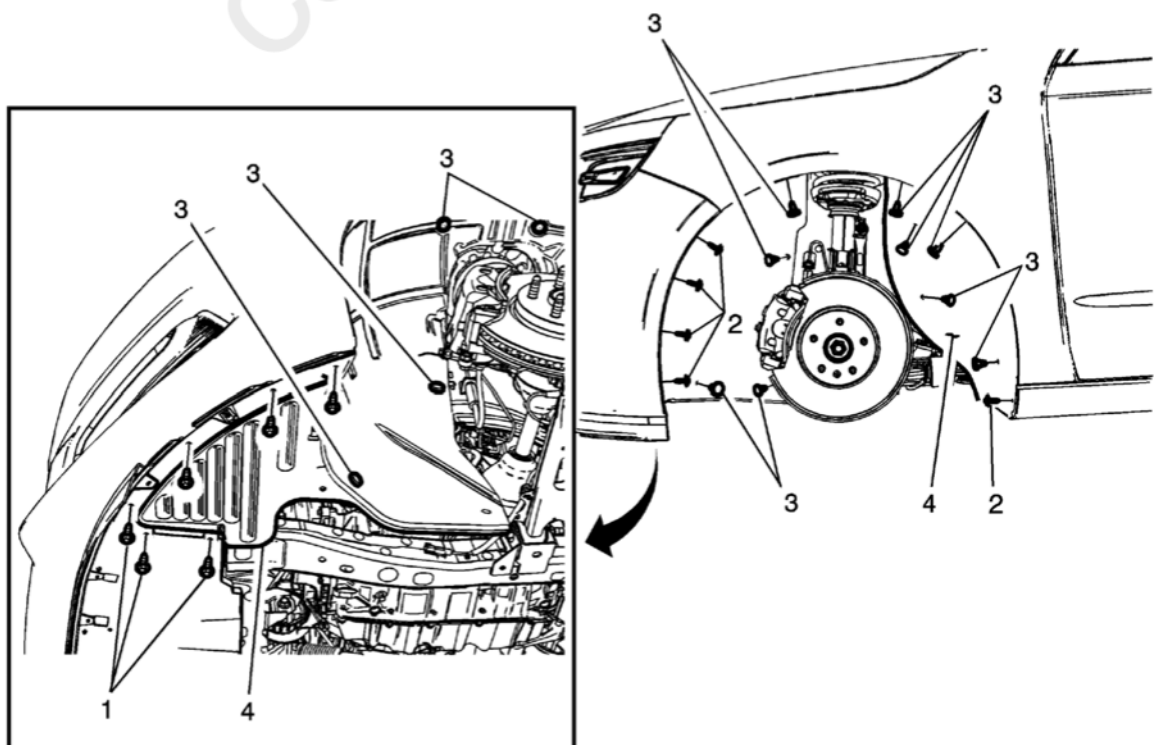


Fig. 41: Front Wheelhouse Liner & Mounting Components
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedures 1. Remove the tire and wheel assembly. Refer to Tire and Wheel Removal and Installation . 2. Remove the left or right tire underbody front air deflector. Refer to Underbody Front Air Deflector Replacement - Left Side (Tire)Underbody Front Air Deflector Replacement - Left Side (XFE), Underbody Front Air Deflector Replacement - Right Side (Tire)Underbody Front Air Deflector Replacement - Right Side (XFE).	
1	Front Wheelhouse Front Liner Screw (Qty: 5) CAUTION: Refer to Fastener Caution .
2	Front Wheelhouse Front Liner Screw
3	Front Wheelhouse Front Liner Push-In Retainer (Qty: 9)
4	Front Wheelhouse Front Liner

REAR WHEELHOUSE LINER REPLACEMENT

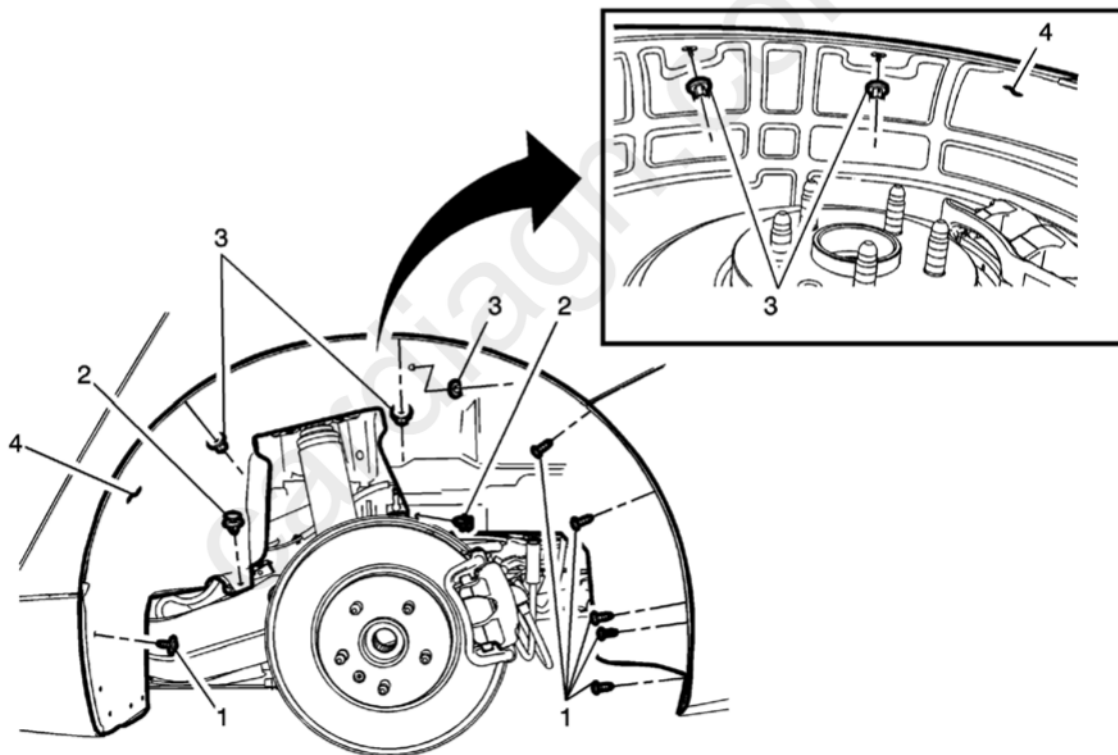


Fig. 42: Rear Wheelhouse Liner & Mounting Components
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedures 1. Remove - Tire and Wheel Removal and Installation 2. Remove - Underbody Rear Air Deflector Replacement (Tire)	

Callout	Component Name
1	Rear Wheelhouse Liner Screw (Qty: 6) CAUTION: Refer to Fastener Caution . Tighten 2.5 N.m (22 lb in)
2	Rear Wheelhouse Liner Retainer (Qty: 2)
3	Rear Wheelhouse Liner Nut (Qty: 5) Tighten 2.5 N.m (22 lb in)
4	Rear Wheelhouse Liner

SPECIAL TOOLS AND EQUIPMENT

SPECIAL TOOLS

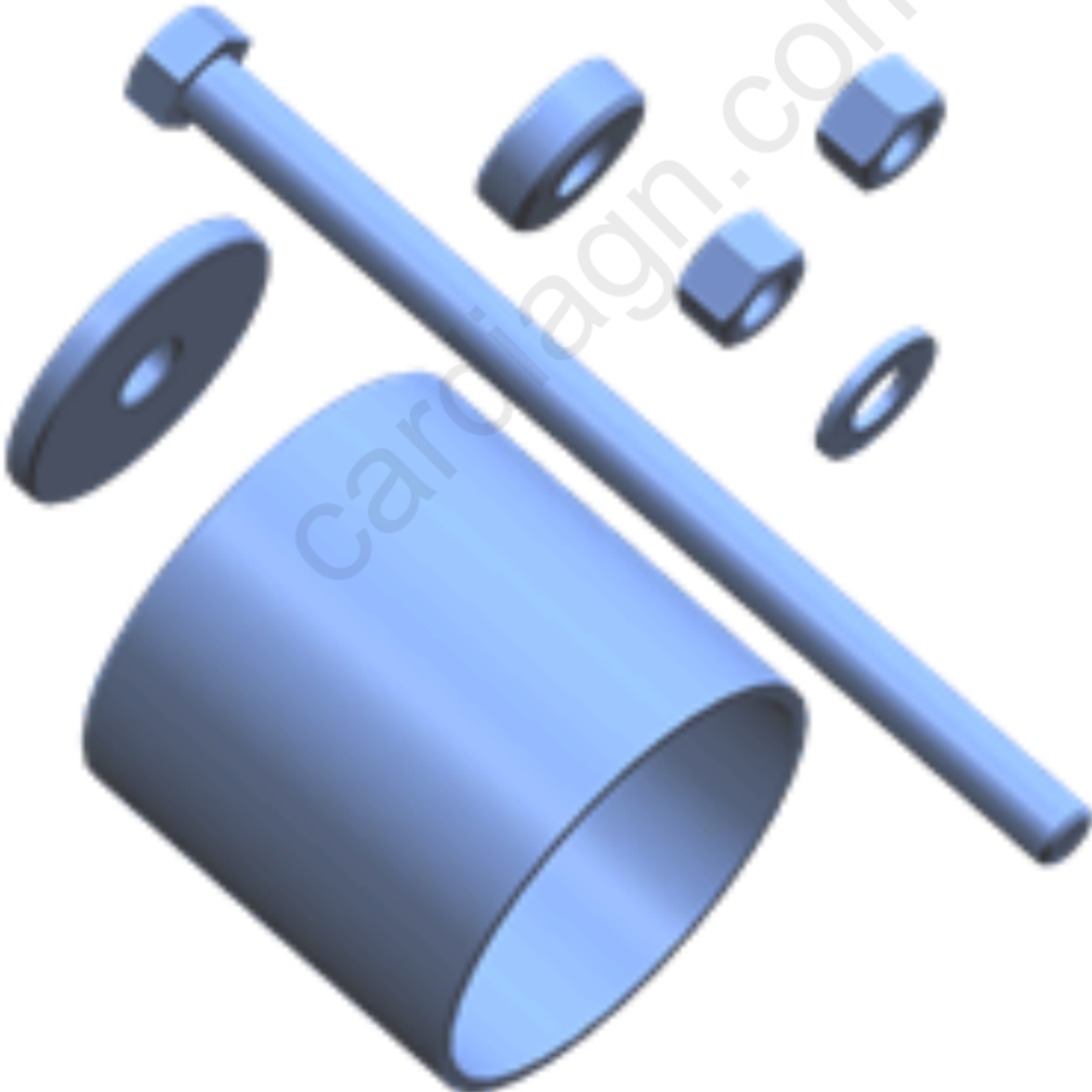
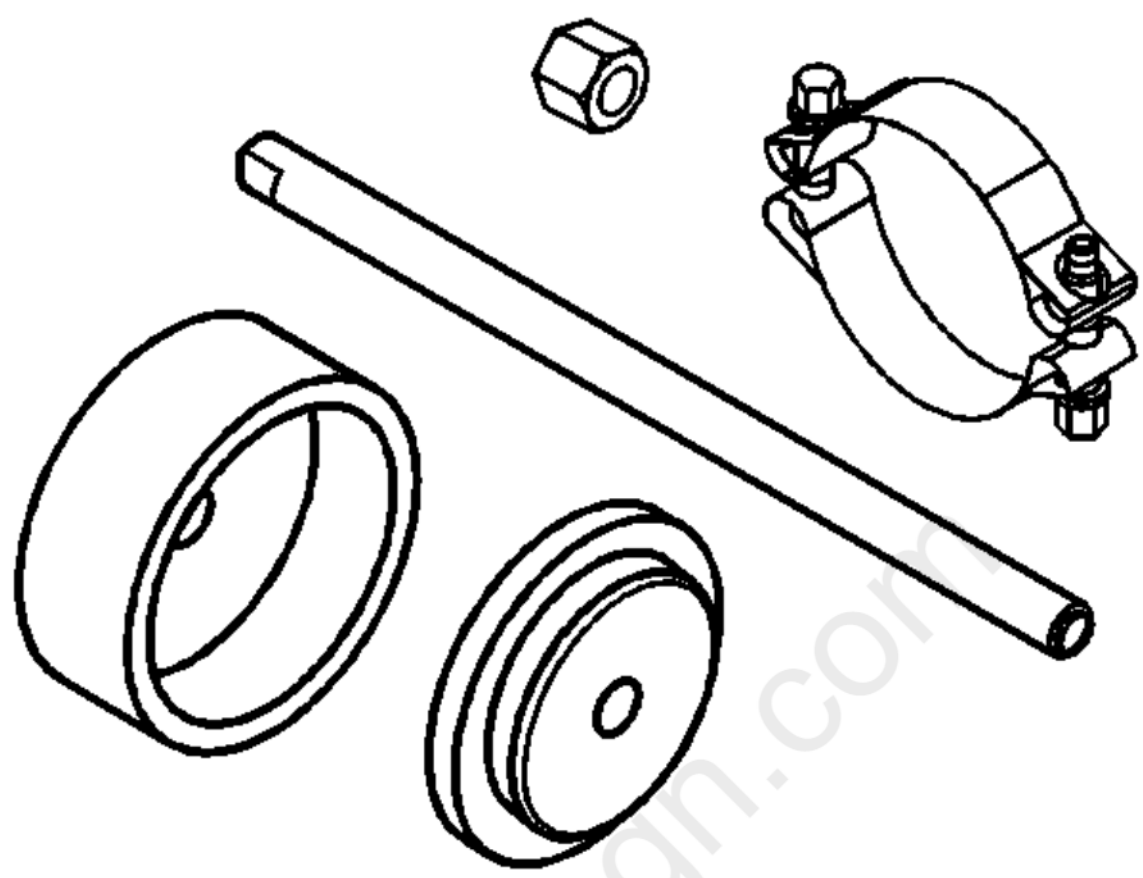
Illustration	Tool Number/Description
	J-45296-1 Frame Insulator Remover and Installer

Illustration	Tool Number/ Description
 A line drawing of a mechanical tool assembly. It consists of a long, thin shaft with a square end on the left. To the left of the shaft is a large, hollow cylindrical bushing. Below the shaft is a smaller, solid cylindrical bushing. Above the shaft is a hex nut. To the right of the shaft is a clamping mechanism consisting of a curved band with two bolts and washers, used to secure the bushings onto the shaft.	J-45725-2 Bushings Replacer