Service Manual: FRAME AND UNDERBODY

SPECIFICATIONS > FASTENER SPECIFICATIONS

Single Use Threaded Fastener/Component Tightening Specifications

NOTE:

All fasteners/components listed in this table MUST BE DISCARDED and replaced with NEW after removal

Application	Specification
	Metric (English)
Drivetrain and Front Suspension Support Bolt	100 N.m (74 lb ft)
Rear Suspension Cradle Bolt	
• First Pass:	100 N.m (74 lb ft)
• Final Pass:	90-105 degrees
Rear Suspension Front Bracket Bolt	58 N.m (43 lb ft)

Reusable Threaded Fastener Tightening Specifications

NOTE:

All fasteners listed in this table can be reused after removal

Application	Specification
	Metric (English)
Body Front Suspension Crossmember Reinforcement Fasteners (Convertible)	58 N.m (43 lb ft)
Engine Mount Nut	70 N.m (52 lb ft)
Floor Panel Number 4 Cross Bar Bolt	22 N.m (16 ft lb)

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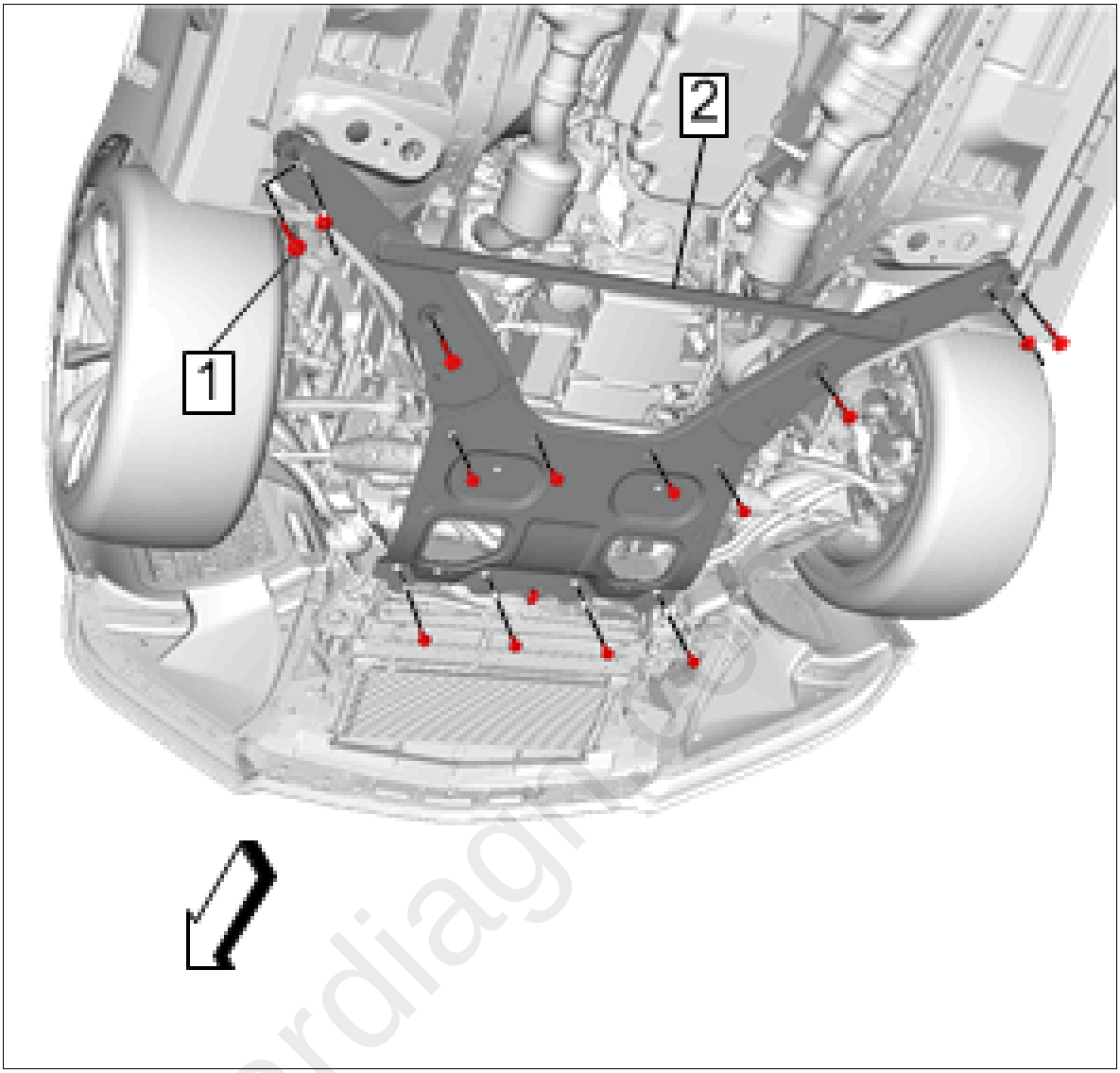
Floor Panel Tunnel Rear Brace (Convertible)	58 N.m (43 lb ft)
Front Brake Rotor Cooling Duct Deflector Bolt	3.3 N.m (29 lb in)
Front Bumper Fascia Bolt	5 N.m (44 lb in)
Front Compartment Air Deflector Fastener (Larger)	5 N.m (44 lb in)
Front Compartment Air Deflector Fastener (Smaller)	2.5 N.m (22 lb in)
Front Compartment Lower Noise Shield Fastener (Larger)	5 N.m (44 lb in)
Front Compartment Lower Noise Shield Fastener (Smaller)	2.5 N.m (22 lb in)
Front Crossmember Brace Bolt (LGX)	22 N.m (16 lb ft)
Front Crossmember Brace Fastener (Convertible-LTG)	22 N.m (16 lb ft)
Front Crossmember Brace Fastener (Coupe)	50 N.m (37 lb ft)
Front Crossmember Brace Frame Bolt (LGX)	22 N.m (16 lb ft)
Front Tire Front Air Deflector Fastener	2.5 N.m (22 lb in)
Front Wheelhouse Liner Fastener	2.5 N.m (22 lb in)
Rear Bumper Fascia Bolt	5 N.m (44 lb ft)
Rear Suspension Rear Bracket Nut (Coupe)	58 N.m (43 lb ft)
Rear Wheelhouse Liner Fastener	2.5 N.m (22 lb in)
Underbody Rear Brace (Convertible)	58 N.m (43 lb ft)

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REPAIR INSTRUCTIONS > FRONT CRADLE SHEAR PLATE REPLACEMENT > REMOVAL PROCEDURE

1. Raise and support the vehicle. Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP)
2. Remove Front Compartment Air Deflector Replacement (Convertible - LGX, LTG) Front Compartment Air Deflector Replacement (Coupe - LGX, LTG) Front Compartment Air Deflector Replacement (Coupe - LT1)
3. Remove Front Compartment Side Noise Shield Replacement

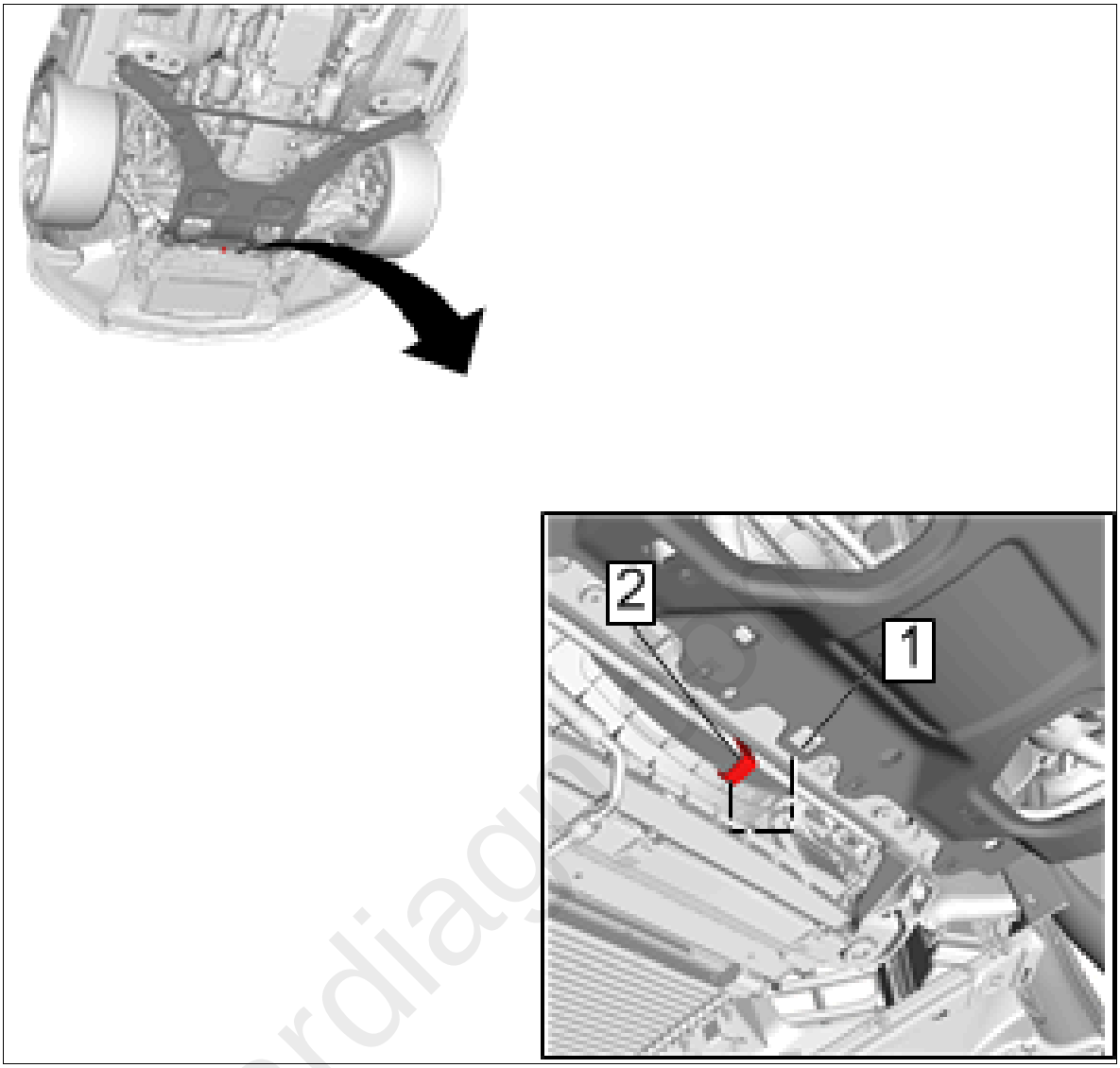
Fig 1: Front Cradle Shear Plate Fastener



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4. Remove Front Cradle Shear Plate Fastener (1)

Fig 2: Front Cradle Shear Plate And Hook

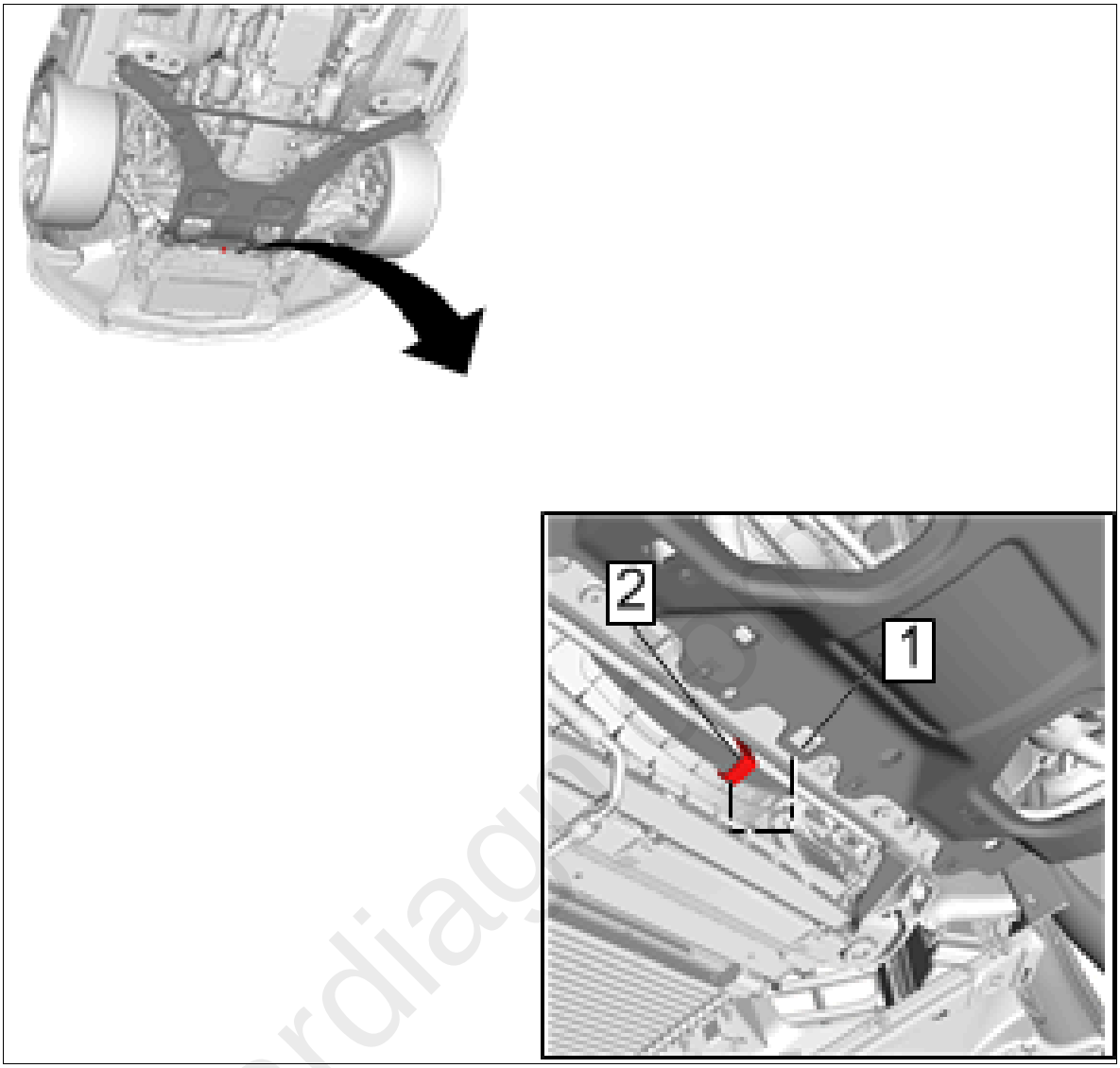


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5. Remove Front Cradle Shear Plate (1) at Front Cradle Shear Plate Hook (2)

REPAIR INSTRUCTIONS > FRONT CRADLE SHEAR PLATE REPLACEMENT > INSTALLATION PROCEDURE

Fig 1: Front Cradle Shear Plate And Hook

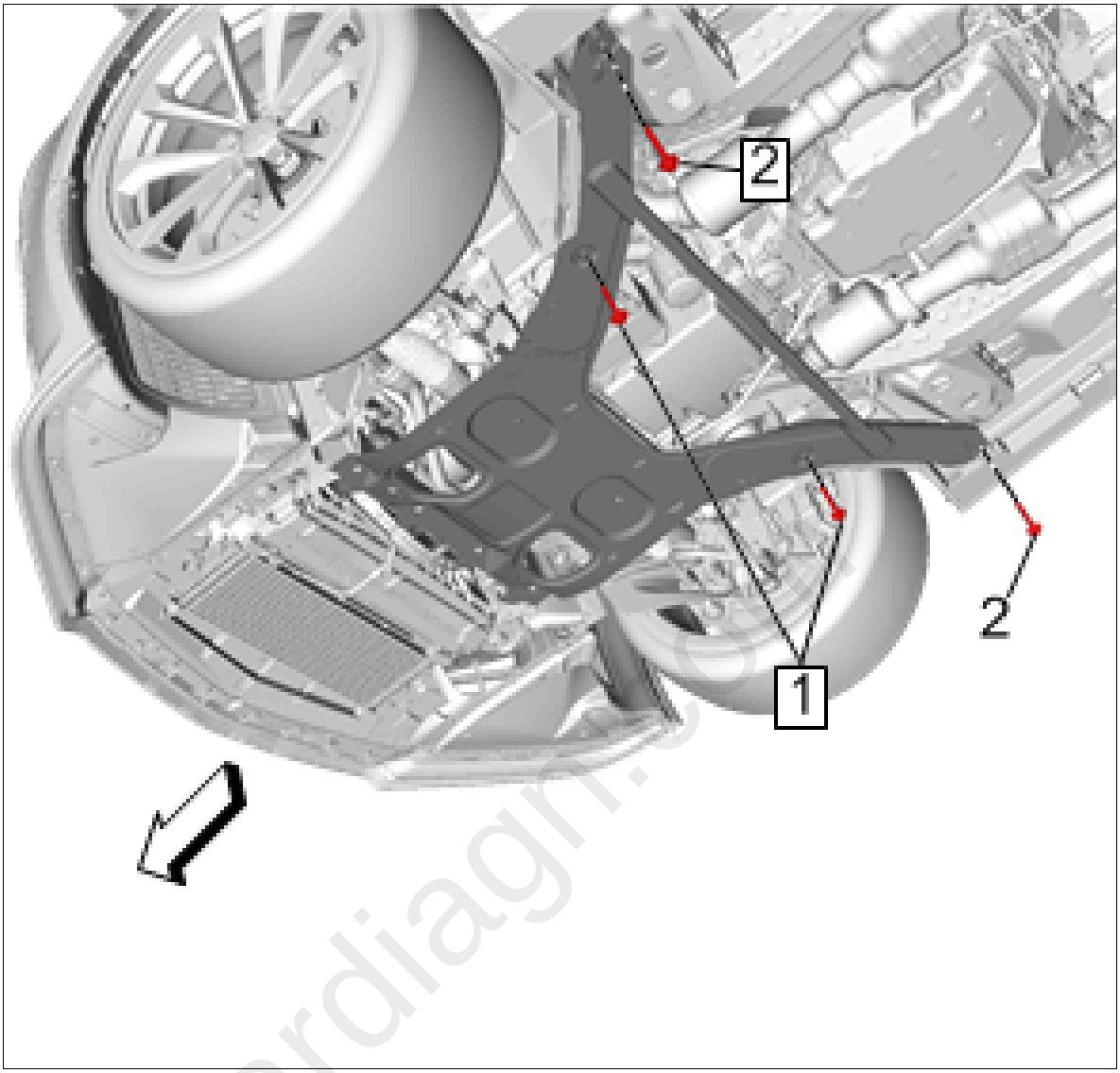


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1. Install Front Cradle Shear Plate (1) at Front Cradle Shear Plate Hook (2)

Fig 2: Front Cradle Shear Plate Alignment Bolts



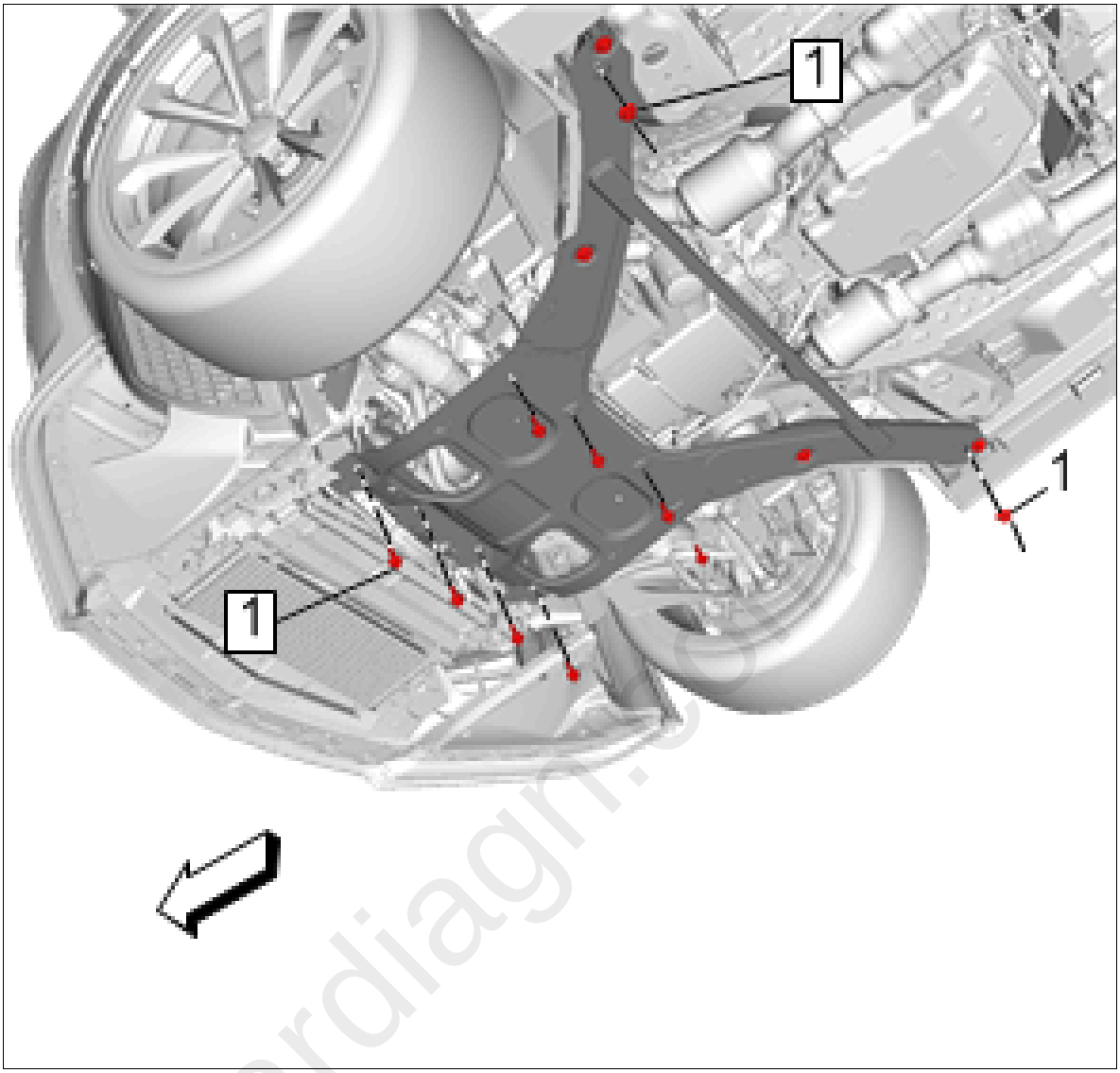
Courtesy of GENERAL MOTORS COMPANY

2. Loosely install the front cradle shear plate alignment bolts (1)

> ⚠ *CAUTION:*
>
> *Refer to Fastener Caution .*

3. Tighten Front Cradle Shear Plate Fastener (2) to 50 N.m (37 lb ft)
4. Tighten the front cradle shear plate alignment bolts (1) to 50 N.m (37 lb ft)

Fig 3: Front Cradle Shear Plate Fasteners

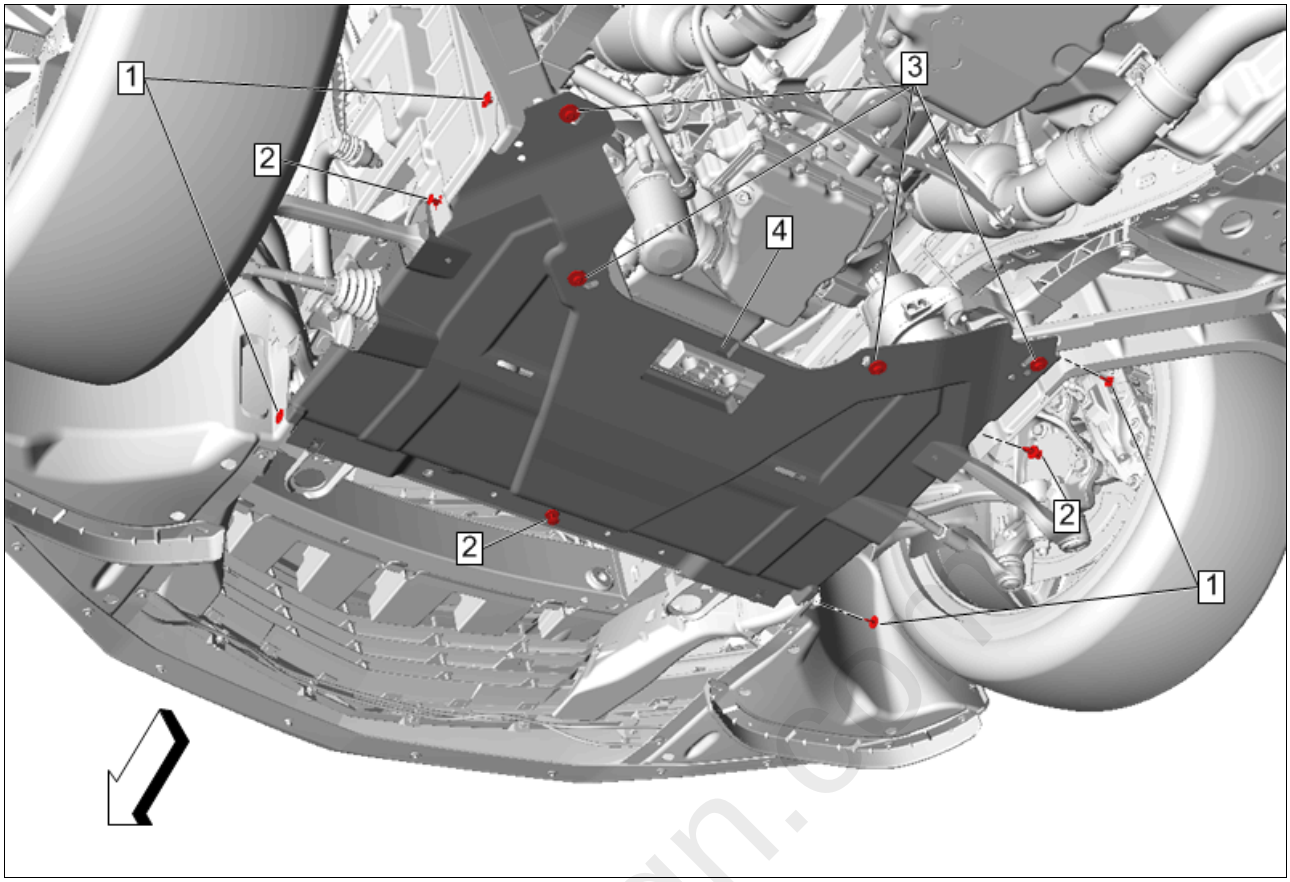


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5. Tighten Front Cradle Shear Plate Fastener (1) to 50 N.m (37 lb ft)
6. Install Front Compartment Side Noise Shield Replacement
7. Install Front Compartment Air Deflector Replacement (Convertible - LGX, LTG) Front Compartment Air Deflector Replacement (Coupe - LGX, LTG) Front Compartment Air Deflector Replacement (Coupe - LT1)
8. Lower the vehicle.

REPAIR INSTRUCTIONS > FRONT COMPARTMENT LOWER NOISE SHIELD REPLACEMENT (COUPE - LGX, LTG)

Fig 1: Front Compartment Lower Noise Shield



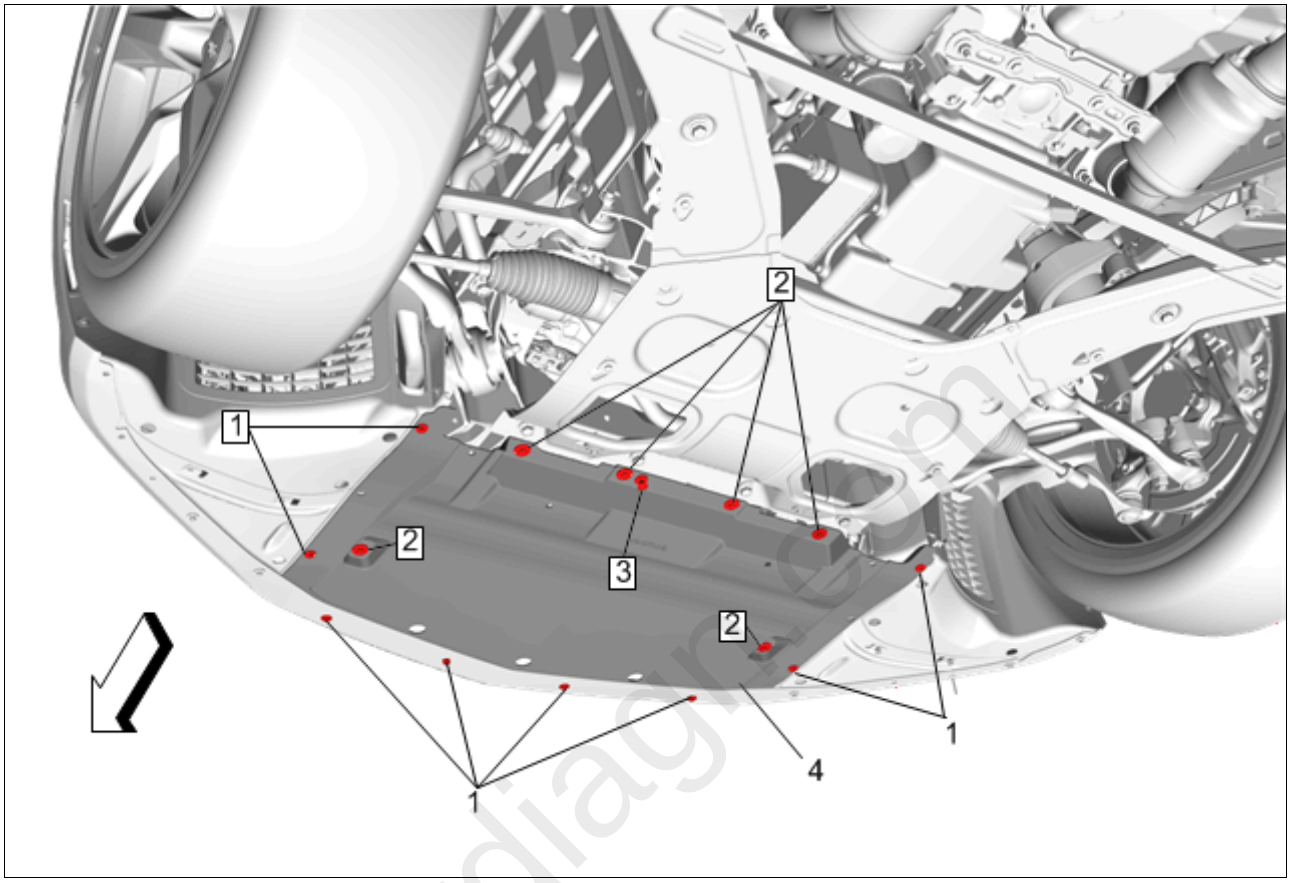
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Front Compartment Air Deflector Replacement (Convertible - LGX, LTG) Front Compartment Air Deflector Replacement (Coupe - LGX, LTG)	
1	Front Compartment Lower Noise Shield Fastener (Qty: 4) *CAUTION:* *Refer to Fastener Caution .* **Tighten** 2.5 N.m (22 lb in)
2	Front Compartment Lower Noise Shield Retainer (Qty: 3)
3	Front Compartment Lower Noise Shield Fastener (Qty: 4) **Tighten** 5 N.m (44 lb in)
4	Front Compartment Lower Noise Shield

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REPAIR INSTRUCTIONS > FRONT COMPARTMENT AIR DEFLECTOR REPLACEMENT (CONVERTIBLE - LGX, LTG)

Fig 1: Front Compartment Air Deflector (Convertible - LGX, LTG)



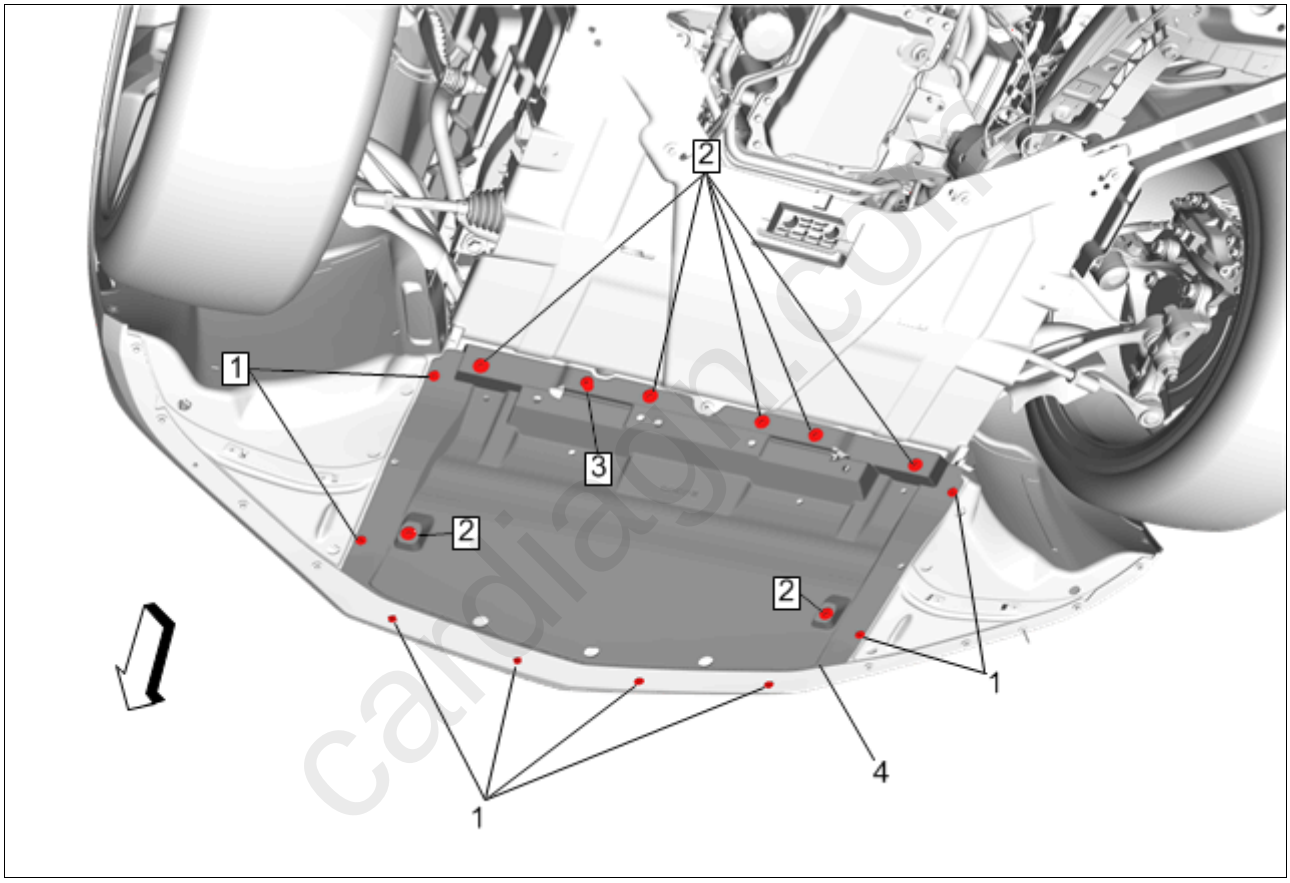
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Front Tire Front Air Deflector Replacement	
1	Front Compartment Air Deflector Fastener (Qty: 8) *CAUTION:* *Refer to Fastener Caution* **Tighten** 2.5 N.m (22 lb in)

2	Front Compartment Air Deflector Fastener (Qty: 6) **Tighten** 5 N.m (44 lb in)
3	Retainer
4	Front Compartment Air Deflector

REPAIR INSTRUCTIONS > FRONT COMPARTMENT AIR DEFLECTOR REPLACEMENT (COUPE - LGX, LTG)

Fig 1: Front Compartment Air Deflector (Coupe - LGX, LTG)



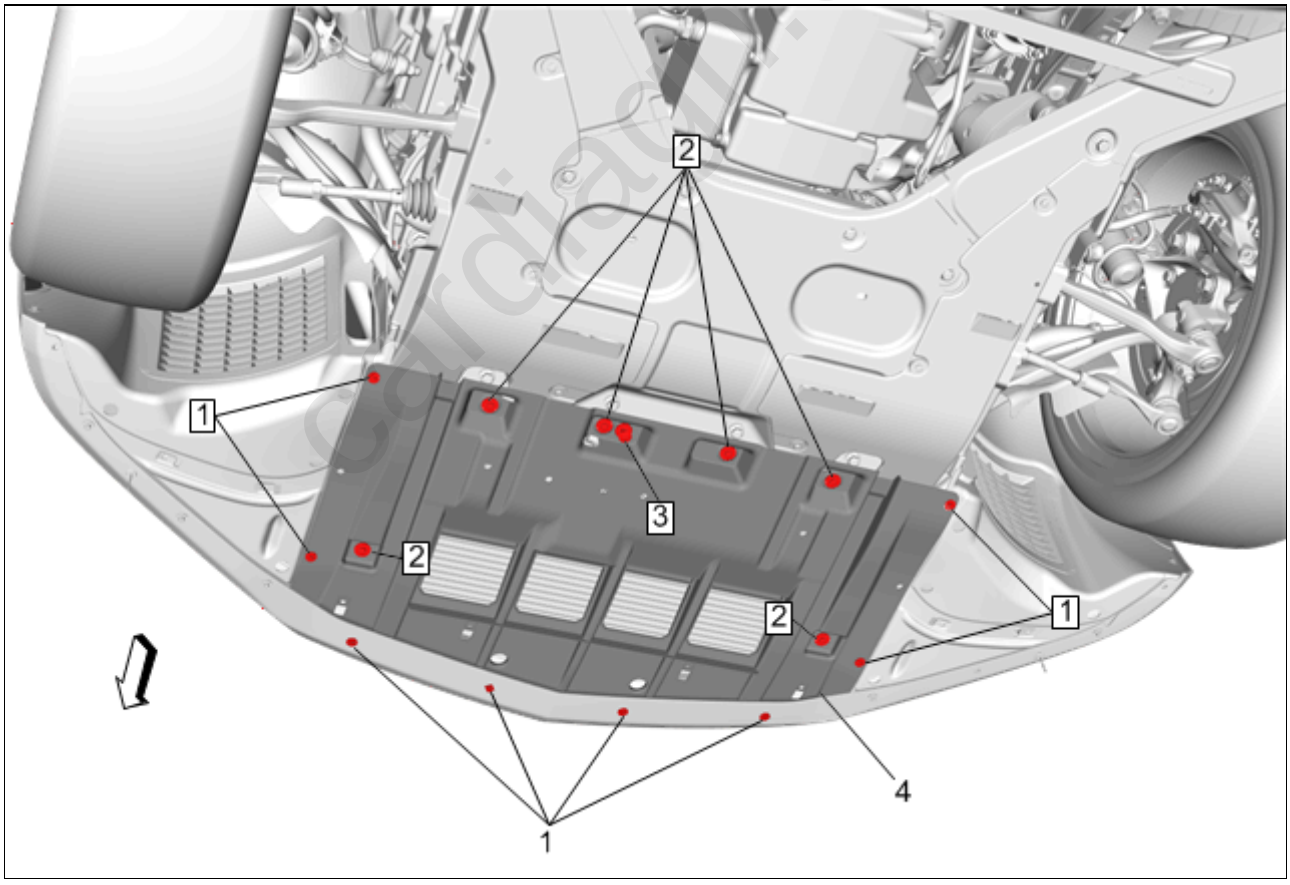
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Front Tire Front Air Deflector Replacement	
1	Front Compartment Air Deflector Fastener (Qty: 8)

	CAUTION: *Refer to Fastener Caution* **Tighten** 2.5 N.m (22 lb in)
2	Front Compartment Air Deflector Fastener (Qty: 5) **Tighten** 5 N.m (44 lb in)
3	Retainer
4	Front Compartment Air Deflector

REPAIR INSTRUCTIONS > FRONT COMPARTMENT AIR DEFLECTOR REPLACEMENT (COUPE - LT1)

Fig 1: Front Compartment Air Deflector (Coupe - LT1)



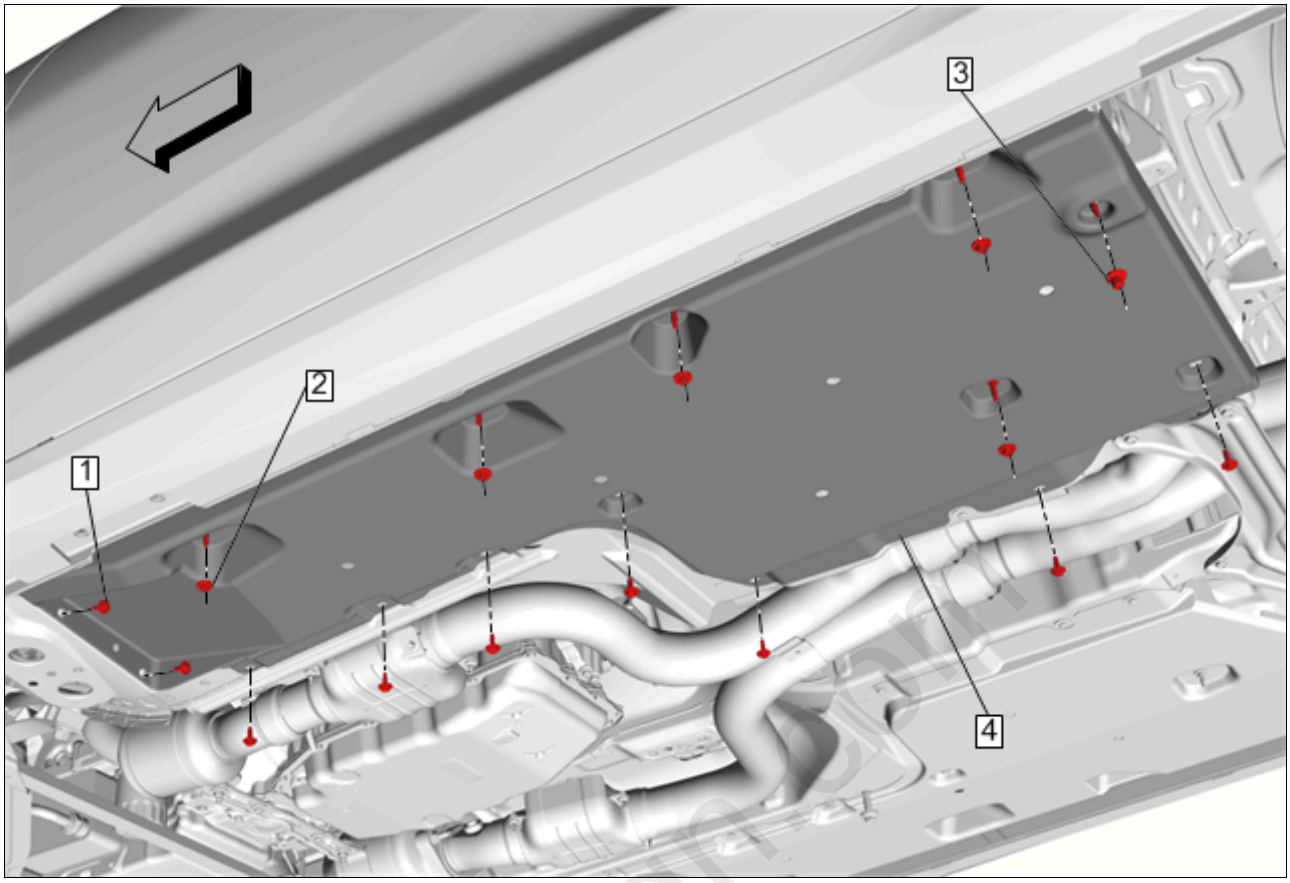
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Front Tire Front Air Deflector Replacement	
1	Front Compartment Air Deflector Fastener (Qty: 8) *CAUTION:* *Refer to Fastener Caution* **Tighten** 2.5 N.m (22 lb in)
2	Front Compartment Air Deflector Fastener (Qty: 6) **Tighten** 5 N.m (44 lb in)
3	Retainer
4	Front Compartment Air Deflector

REPAIR INSTRUCTIONS > UNDERBODY FRONT AIR DEFLECTOR REPLACEMENT - LEFT SIDE

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Fig 1: Underbody Front Air Deflector - Left Side



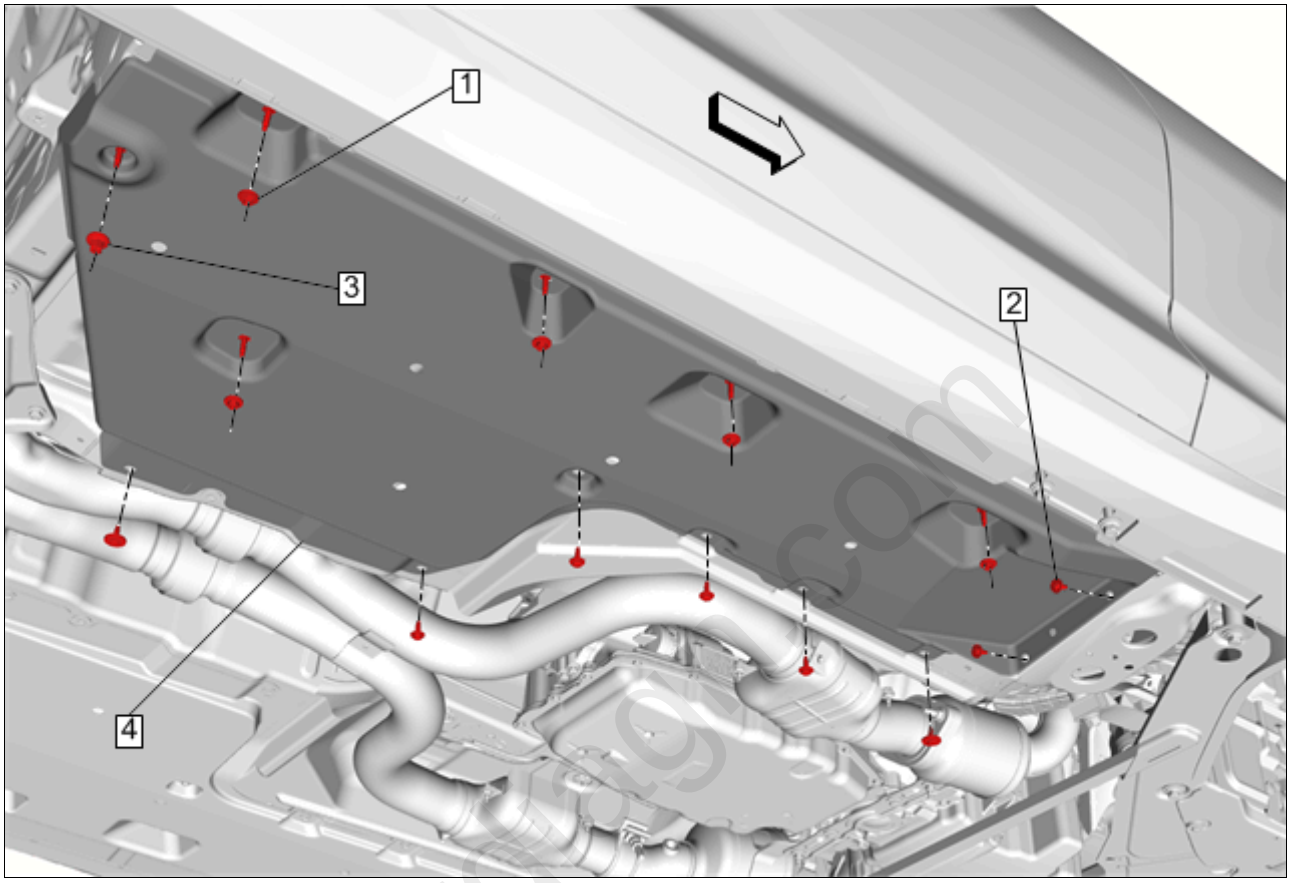
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure { If equipped } Underbody Rear Brace Replacement (Convertible)	
1	Underbody Front Air Deflector Bolt (Qty: 9) *CAUTION:* *Refer to Fastener Caution* **Tighten** 9 N.m (80 lb in)
2	Underbody Front Air Deflector Nut (Qty: 5) **Tighten** 9 N.m (80 lb in)
3	Retainer
4	Underbody Front Air Deflector - Left Side

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REPAIR INSTRUCTIONS > UNDERBODY FRONT AIR DEFLECTOR REPLACEMENT - RIGHT SIDE

Fig 1: Underbody Front Air Deflector - Right Side



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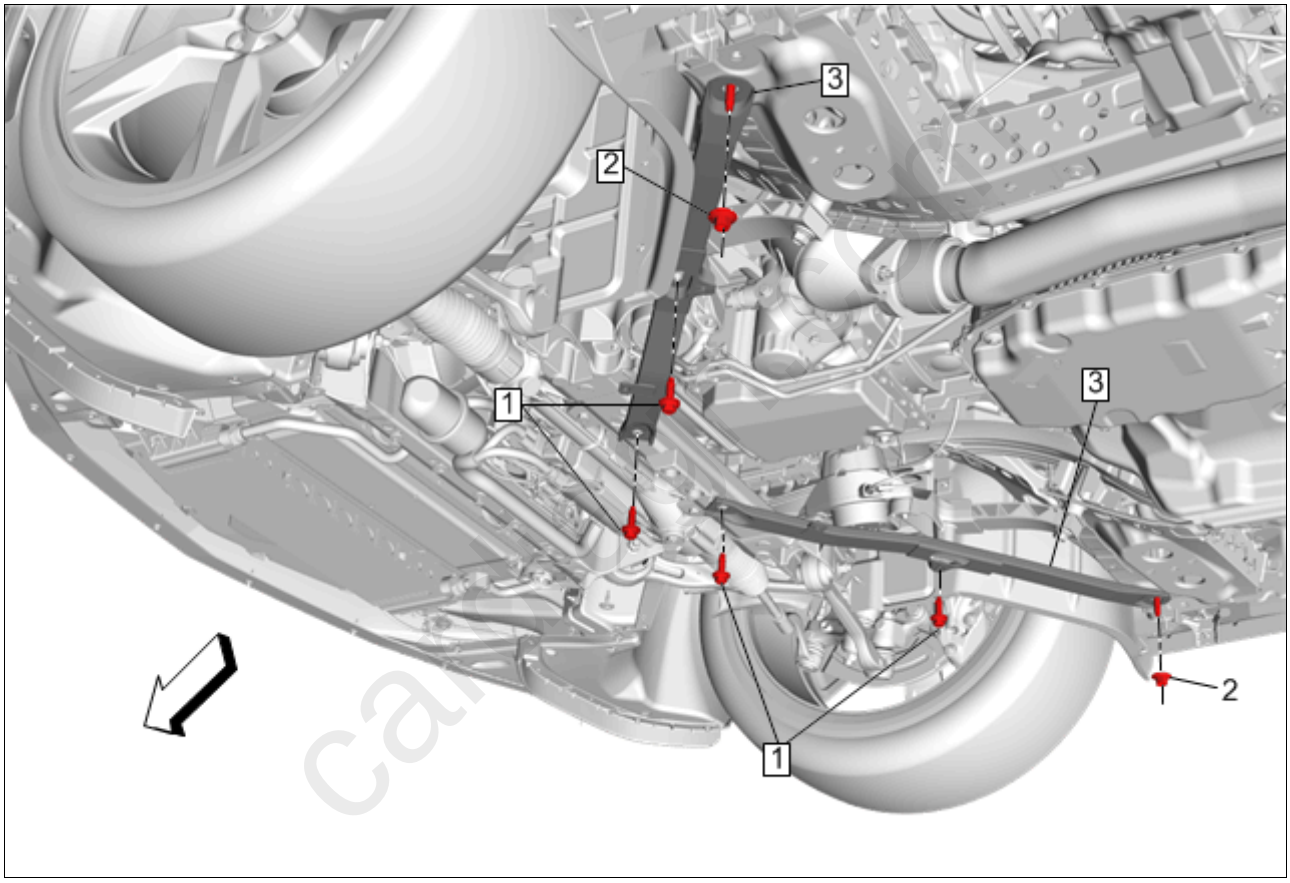
Callout	Component Name
Preliminary Procedure { If equipped } Underbody Rear Brace Replacement (Convertible)	
1	Underbody Front Air Deflector Bolt (Qty: 9) *CAUTION:* *Refer to Fastener Caution* **Tighten** 9 N.m (80 lb in)

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2	Underbody Front Air Deflector Nut (Qty: 5) **Tighten** 9 N.m (80 lb in)
3	Retainer
4	Underbody Front Air Deflector - Right Side

REPAIR INSTRUCTIONS > FRONT CROSSMEMBER BRACE REPLACEMENT (COUPE - LGX, LTG)

Fig 1: Front Crossmember Brace



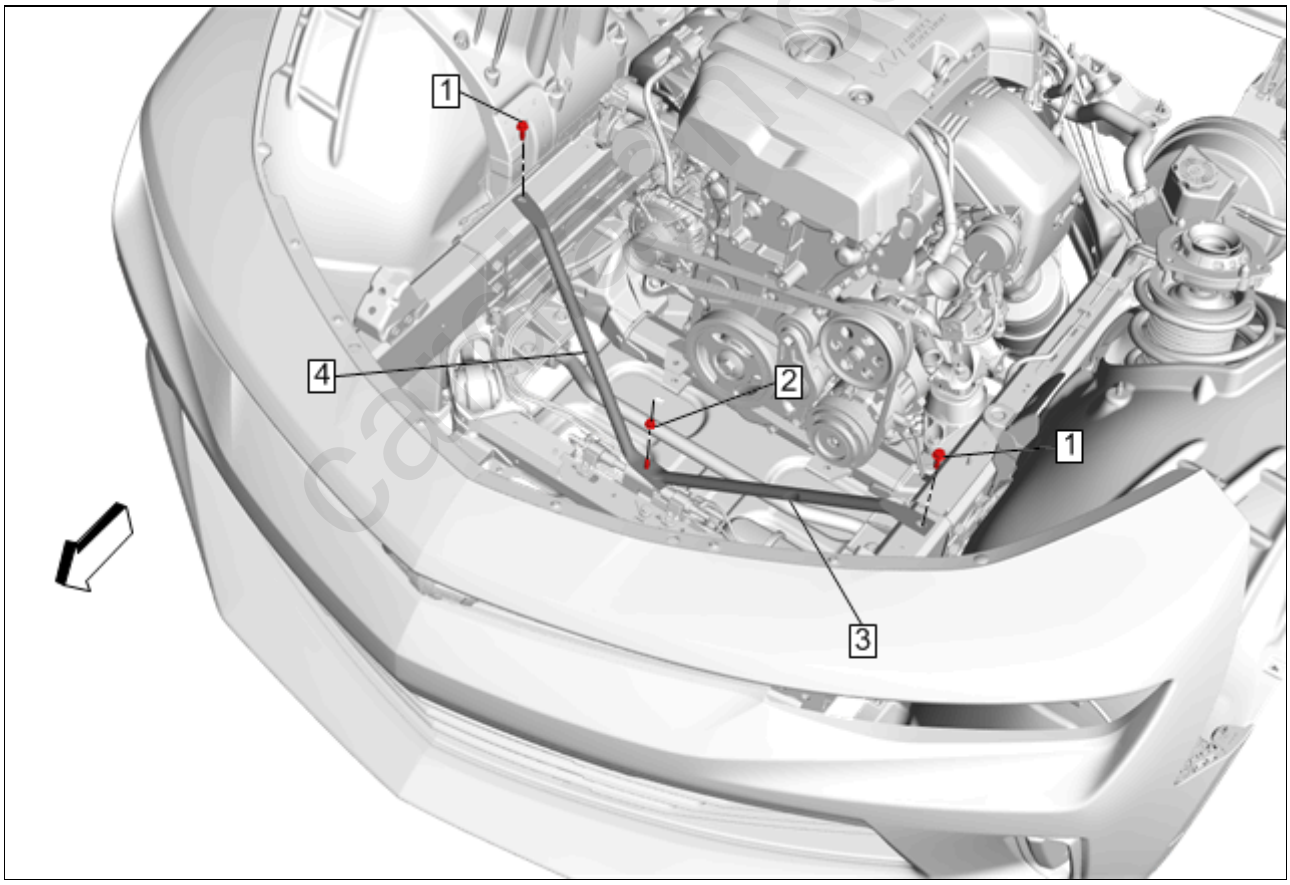
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Front Compartment Lower Noise Shield Replacement (Coupe - LGX, LTG)	
1	Front Crossmember Brace Bolt (Qty: 4)

	CAUTION: *Refer to Fastener Caution .* **Tighten** 50 N.m (37 lb ft)
2	Front Crossmember Brace Nut (Qty: 2) **Tighten** 50 N.m (37 lb ft)
3	Front Crossmember Brace (Qty: 2)

REPAIR INSTRUCTIONS > FRONT CROSSMEMBER BRACE REPLACEMENT (CONVERTIBLE - LTG)

Fig 1: Front Crossmember Brace (Convertible - LTG)



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Callout	Component Name

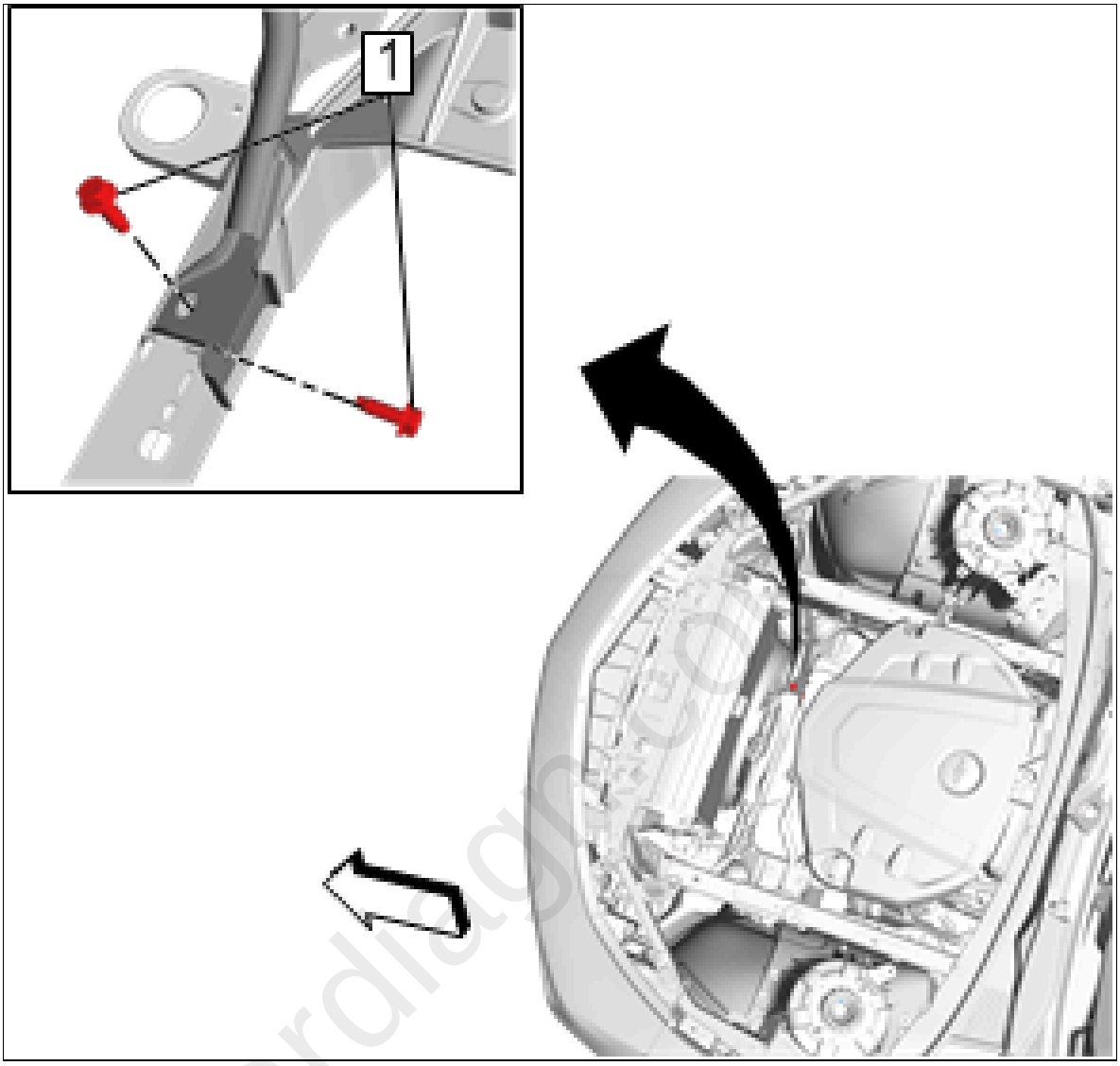
Preliminary Procedure Front Wheelhouse Liner Replacement	
1	Front Crossmember Brace Bolt (Qty: 2) *CAUTION:* *Refer to Fastener Caution .* **Tighten** 22 N.m (16 lb ft)
2	Front Crossmember Brace Nut **Tighten** 22 N.m (16 lb ft)
3	Front Crossmember Brace - Left
4	Front Crossmember Brace - Right

REPAIR INSTRUCTIONS > FRONT CROSSMEMBER BRACE REPLACEMENT (CONVERTIBLE - LGX) > REMOVAL PROCEDURE

1. Raise and support the vehicle. Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP)

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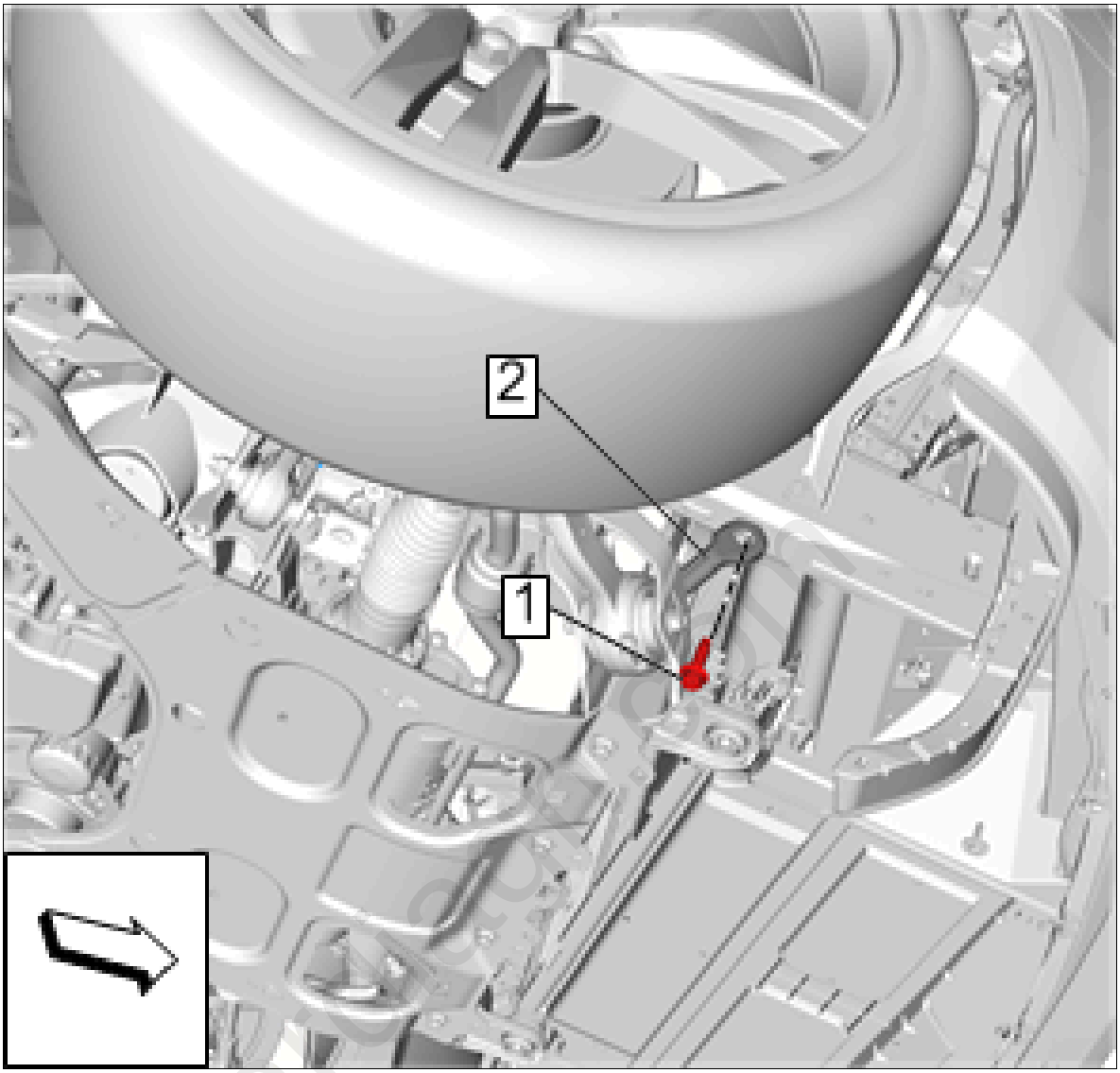
Fig 1: Front Crossmember Brace Bolt



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2. Remove Front Crossmember Brace Bolt (1) (Qty: 2)
3. Remove Front Wheelhouse Liner Replacement

Fig 2: Front Crossmember Brace Bolt

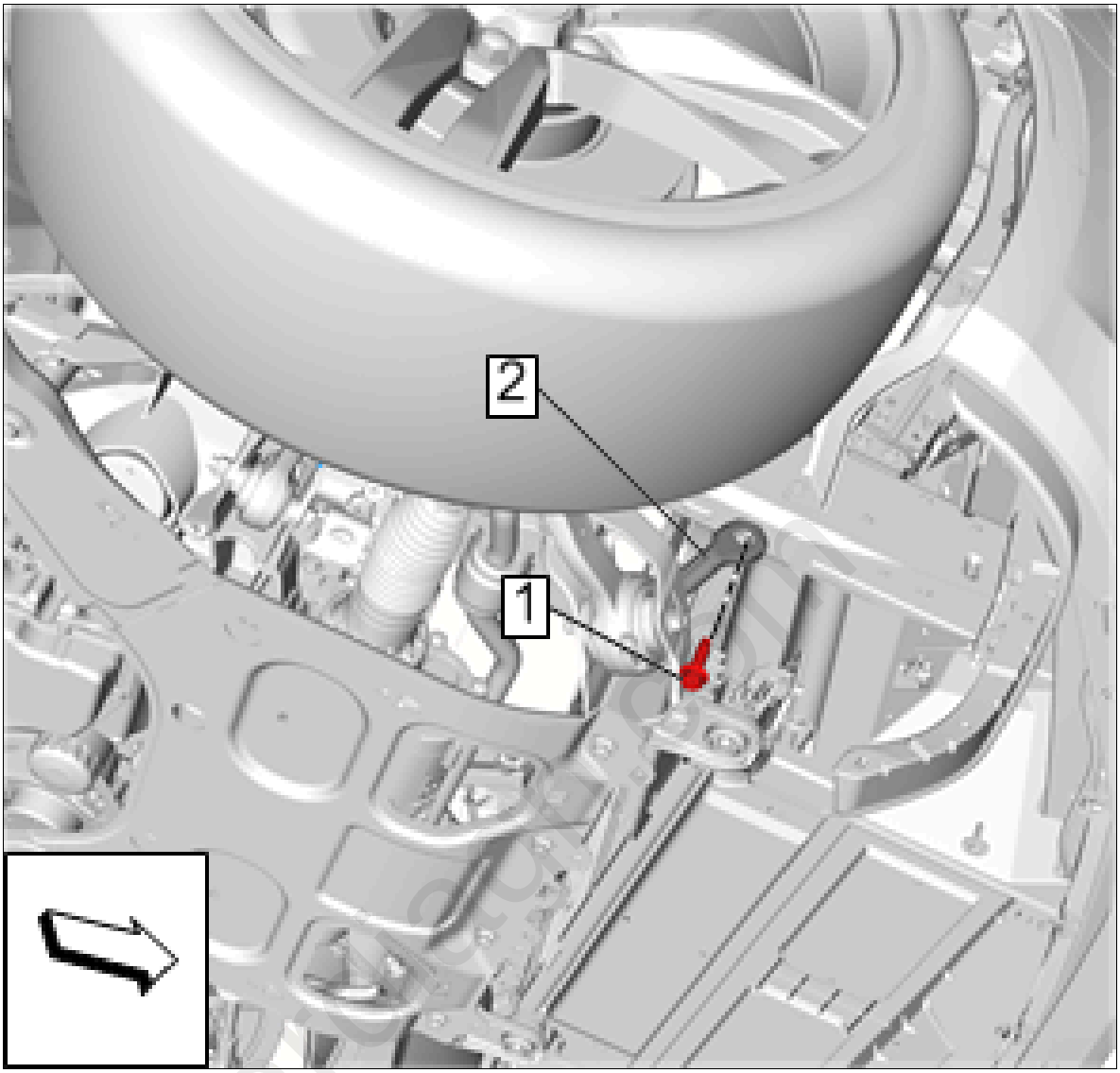


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4. Remove Front Crossmember Brace Bolt (1)
5. Remove Front Crossmember Brace (2)

REPAIR INSTRUCTIONS > FRONT CROSSMEMBER BRACE REPLACEMENT (CONVERTIBLE - LGX) > INSTALLATION PROCEDURE

Fig 1: Front Crossmember Brace



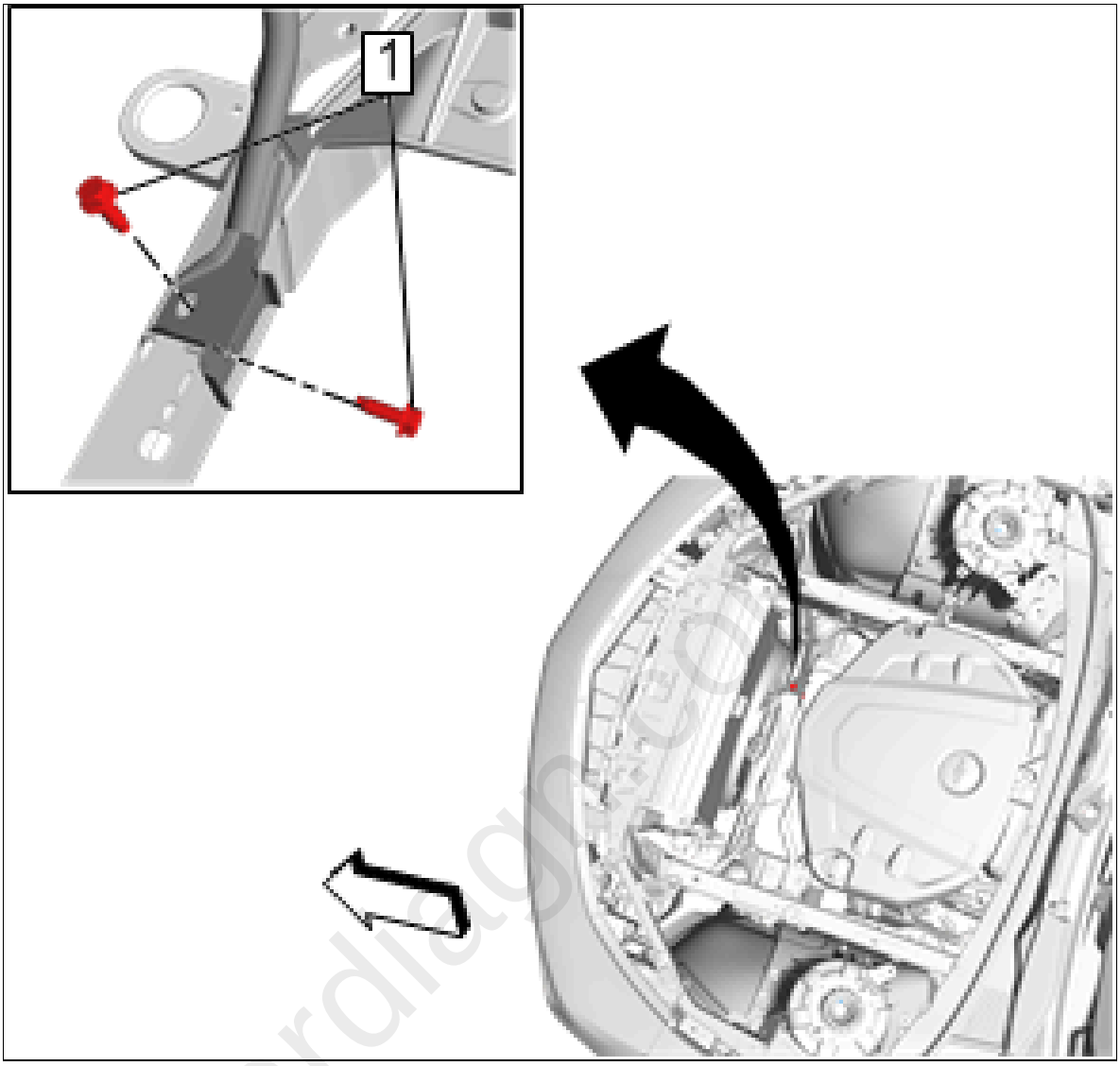
Courtesy of GENERAL MOTORS COMPANY

1. Install Front Crossmember Brace (2)

> ⚠ *CAUTION:*
>
> *Refer to Fastener Caution*

2. Install Front Crossmember Brace Bolt (1) and tighten to 100 N.m (74 lb ft)
3. Install Front Wheelhouse Liner Replacement

Fig 2: Front Crossmember Brace Bolt



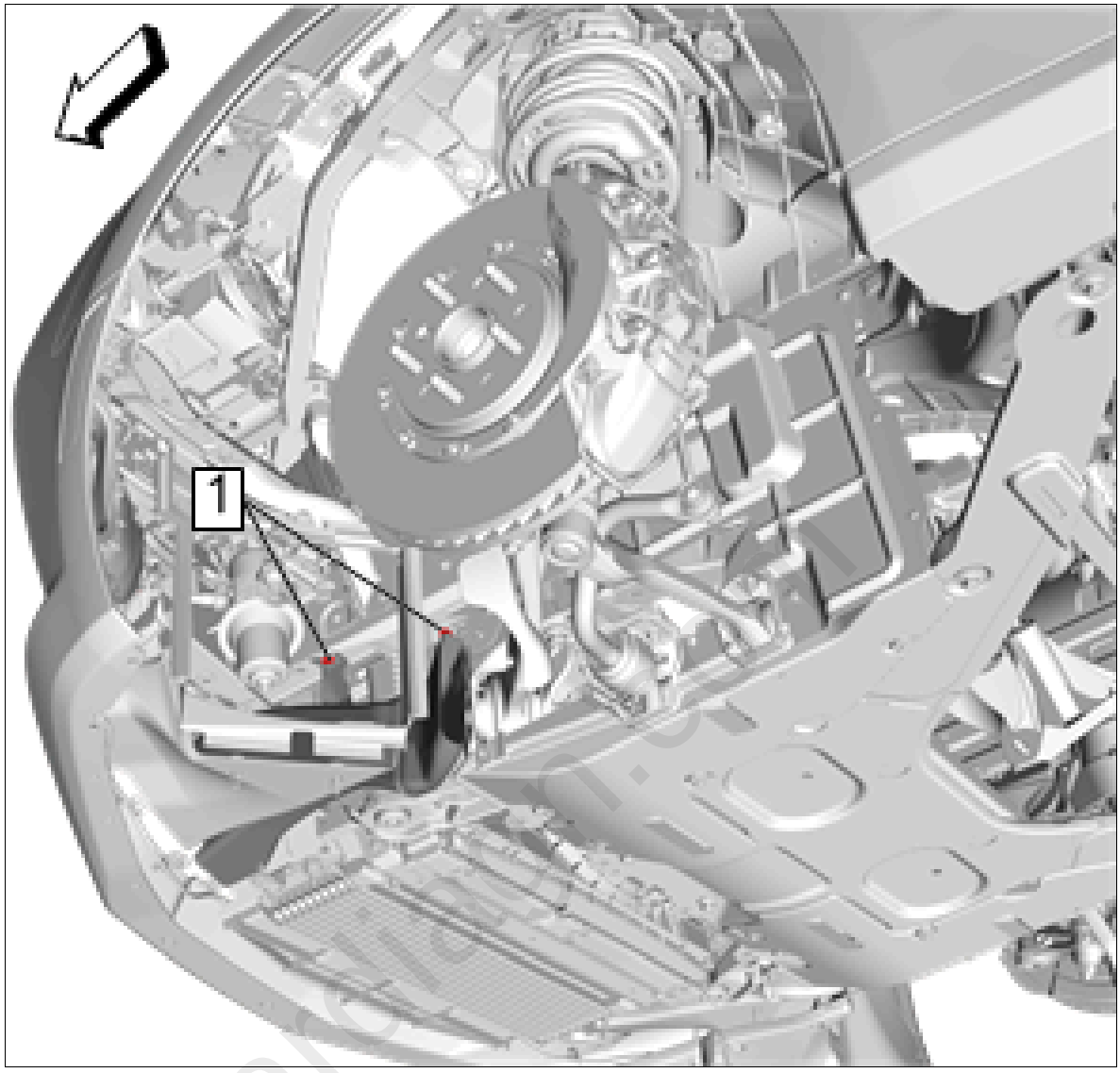
Courtesy of GENERAL MOTORS COMPANY

4. Install Front Crossmember Brace Bolt (1) (Qty: 2) and tighten to 22 N.m (16 lb ft)
5. Lower the vehicle.

REPAIR INSTRUCTIONS > FRONT CROSSMEMBER BRACE REPLACEMENT (RIGHT SIDE - LT1) > REMOVAL PROCEDURE

1. Raise and support the vehicle. Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP)

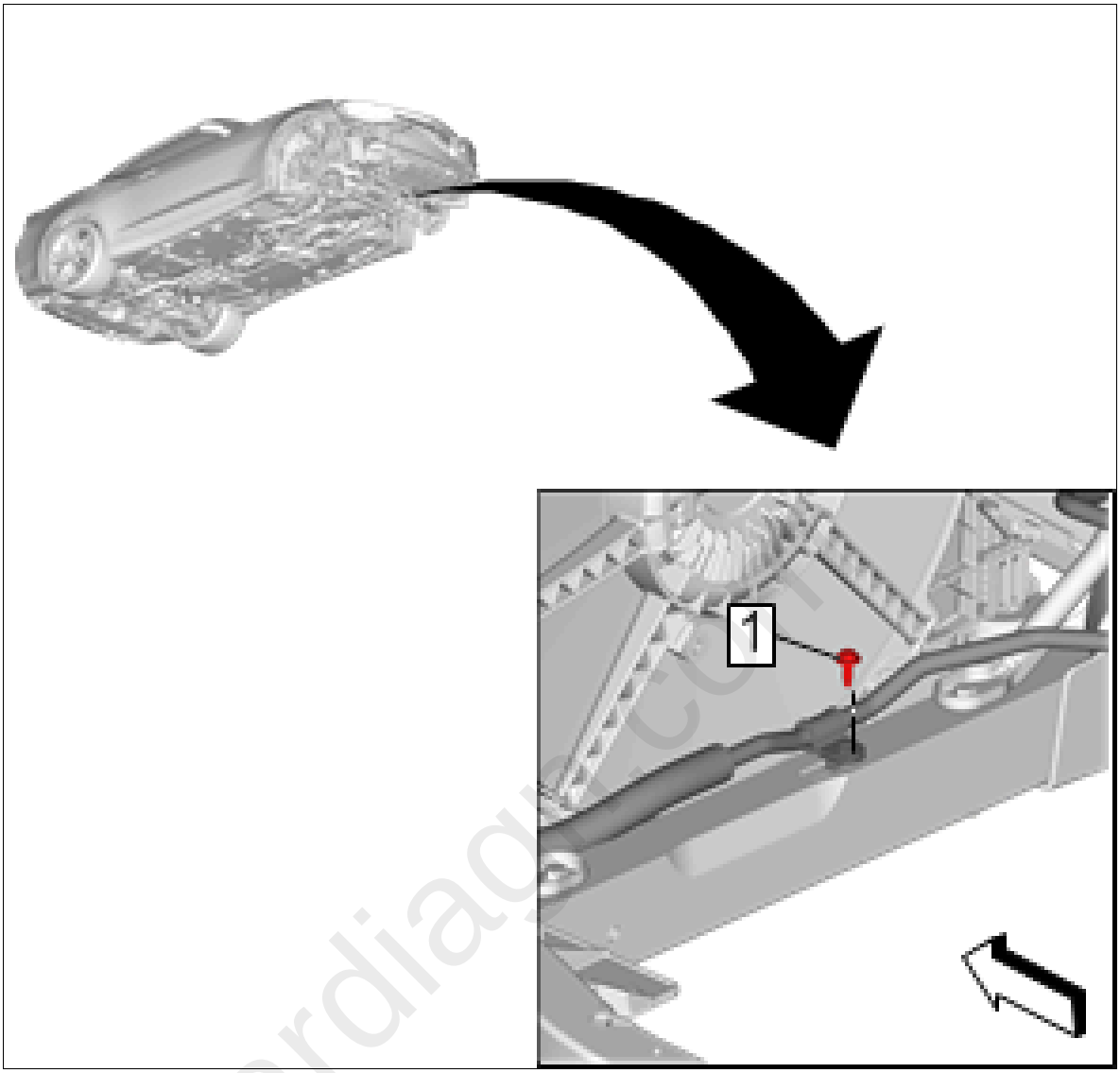
Fig 1: Front Brake Rotor Cooling Duct



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2. Reposition Front Brake Rotor Cooling Duct - Front Brake Rotor Cooling Duct Replacement (J6G)

Fig 2: Transmission Fluid Cooler Pipe Clip Bolt

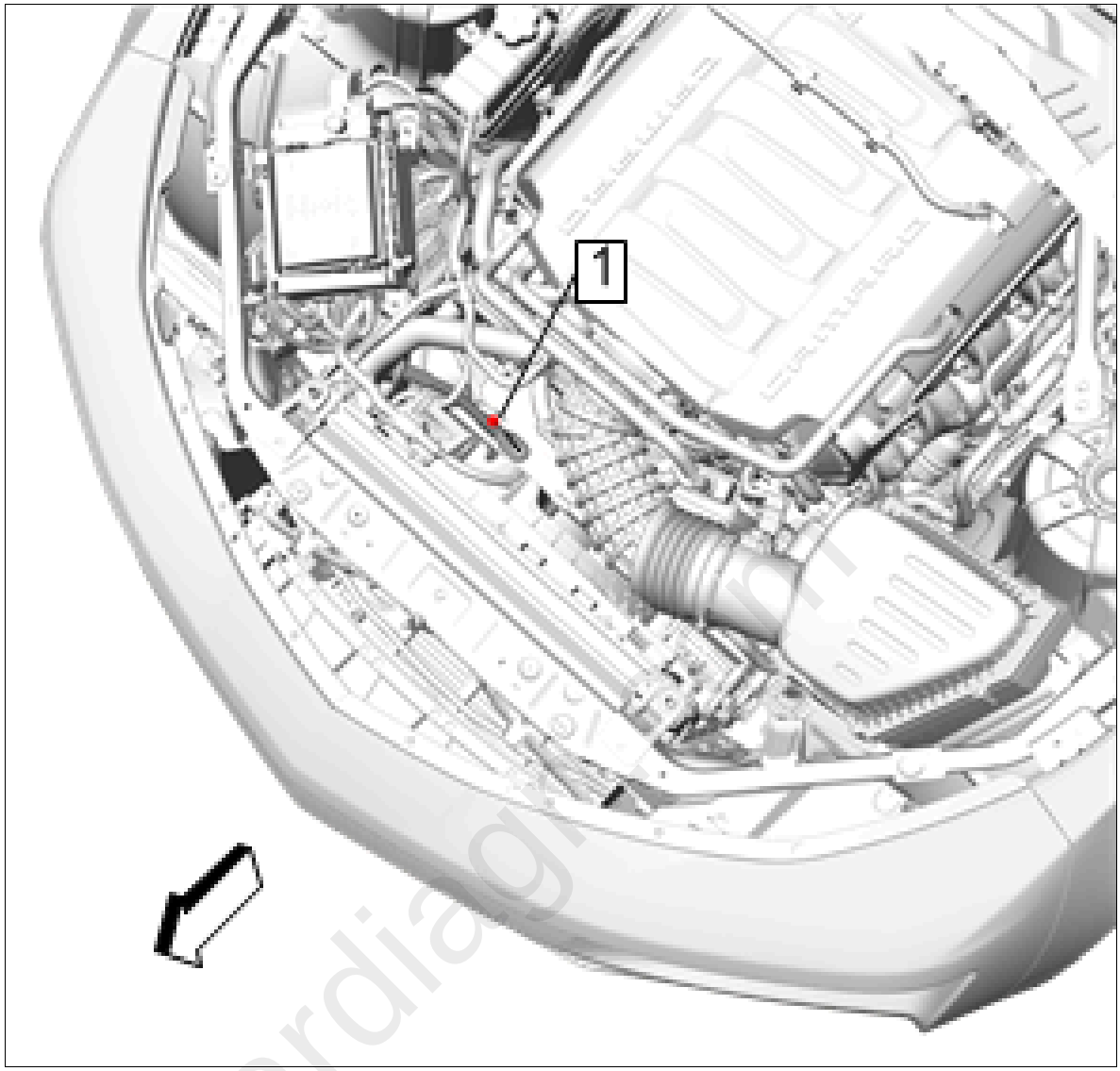


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3. Remove Transmission Fluid Cooler Pipe Clip Bolt (1) at Drivetrain and Front Suspension Cradle

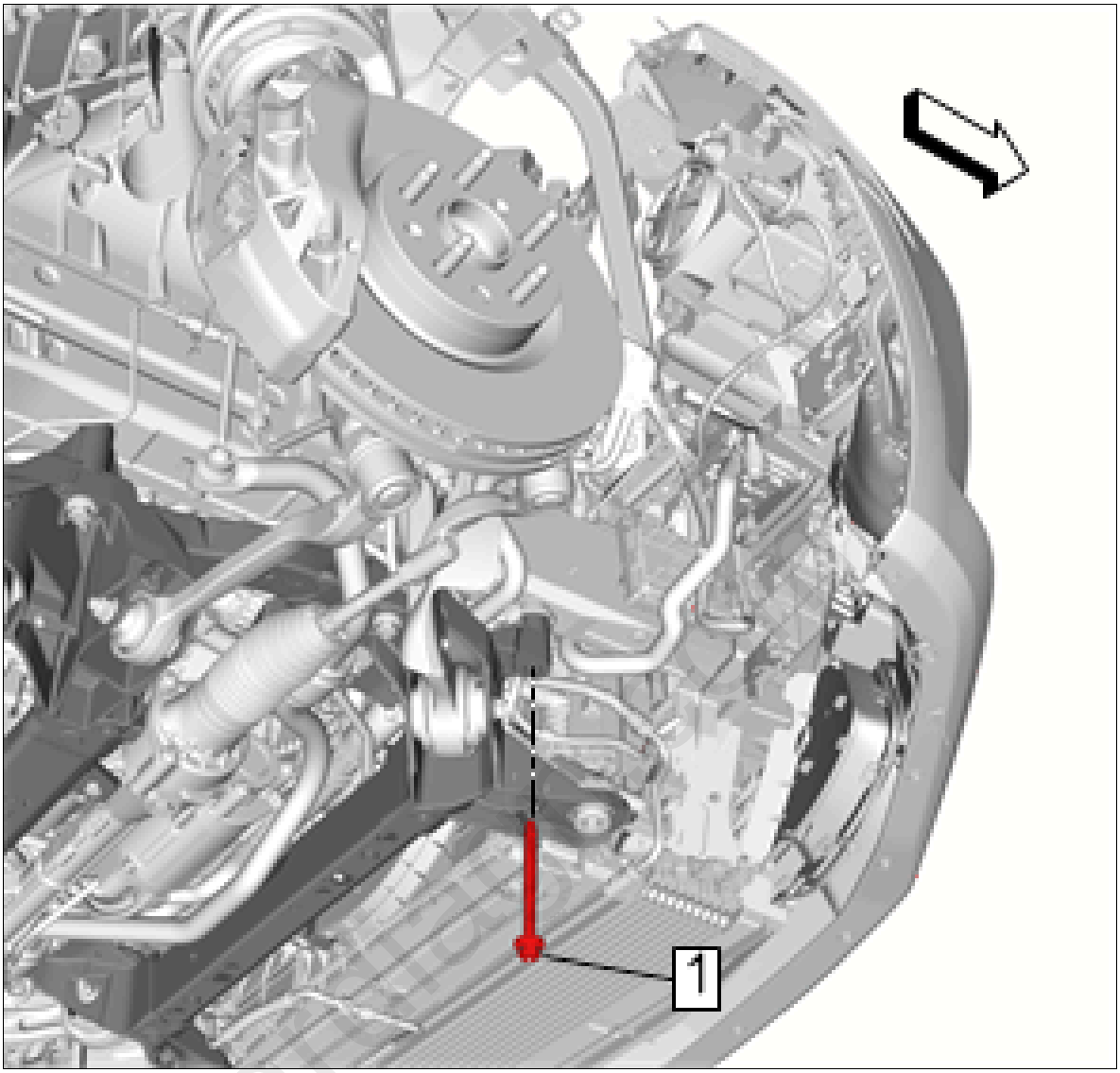
Fig 3: Front Crossmember Brace Bolt



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4. Remove Front Crossmember Brace Bolt (1)

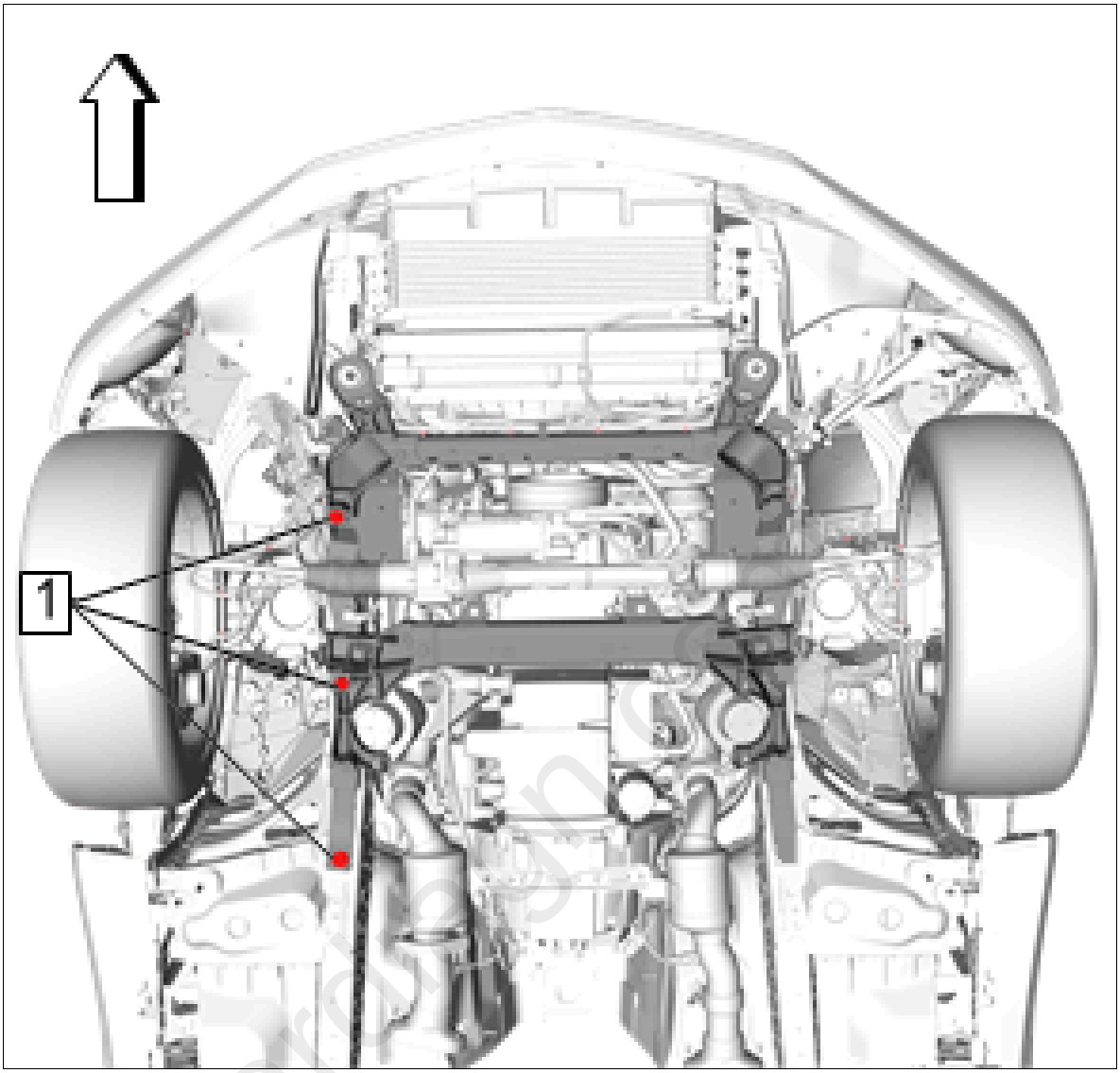
Fig 4: Front Crossmember Brace Bolt



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5. Remove Front Crossmember Brace Bolt (1)

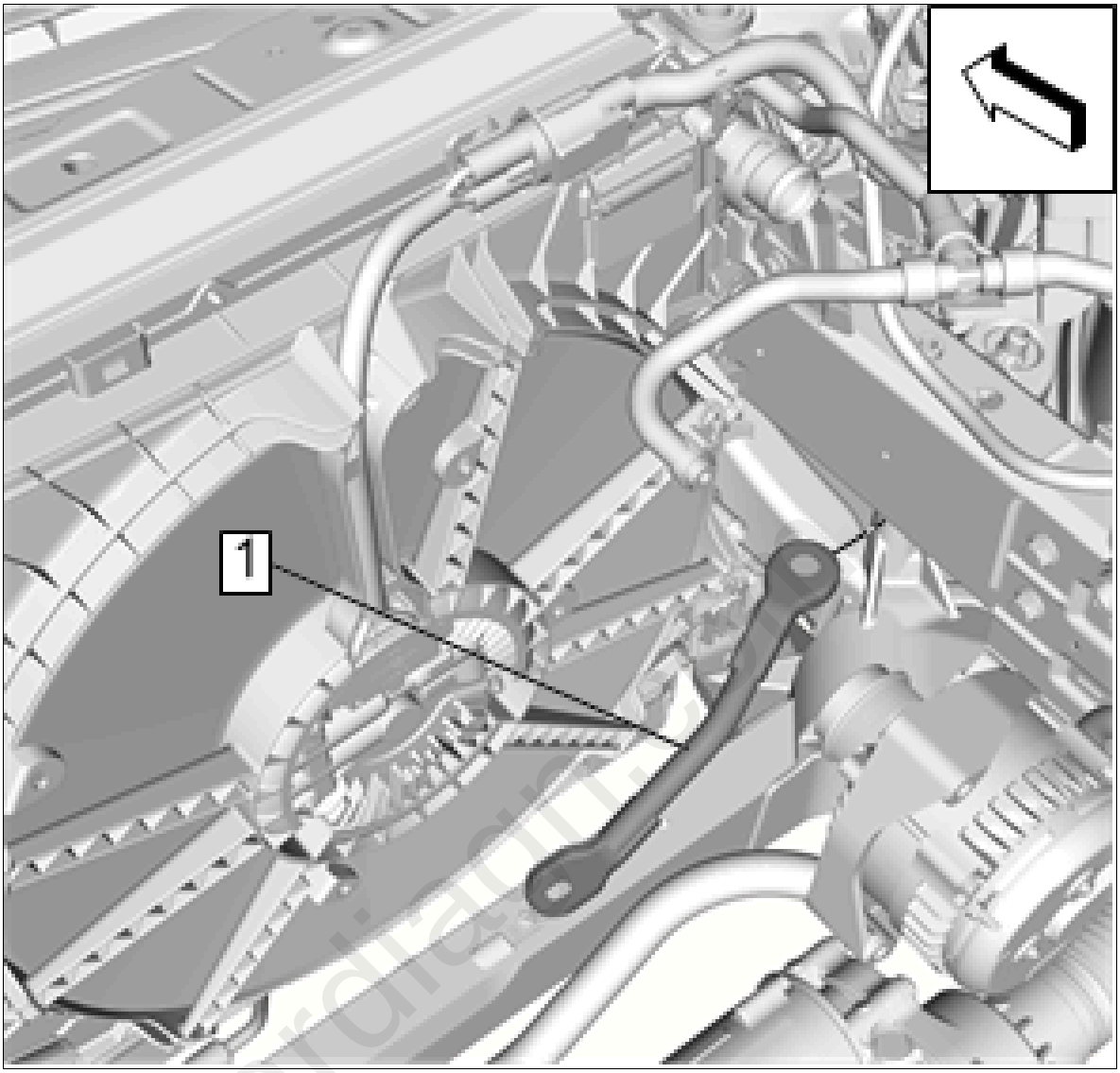
Fig 5: Drivetrain And Front Suspension Cradle Bolts



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6. Loosen the drivetrain and front suspension cradle bolts. (1)

Fig 6: Front Crossmember Brace

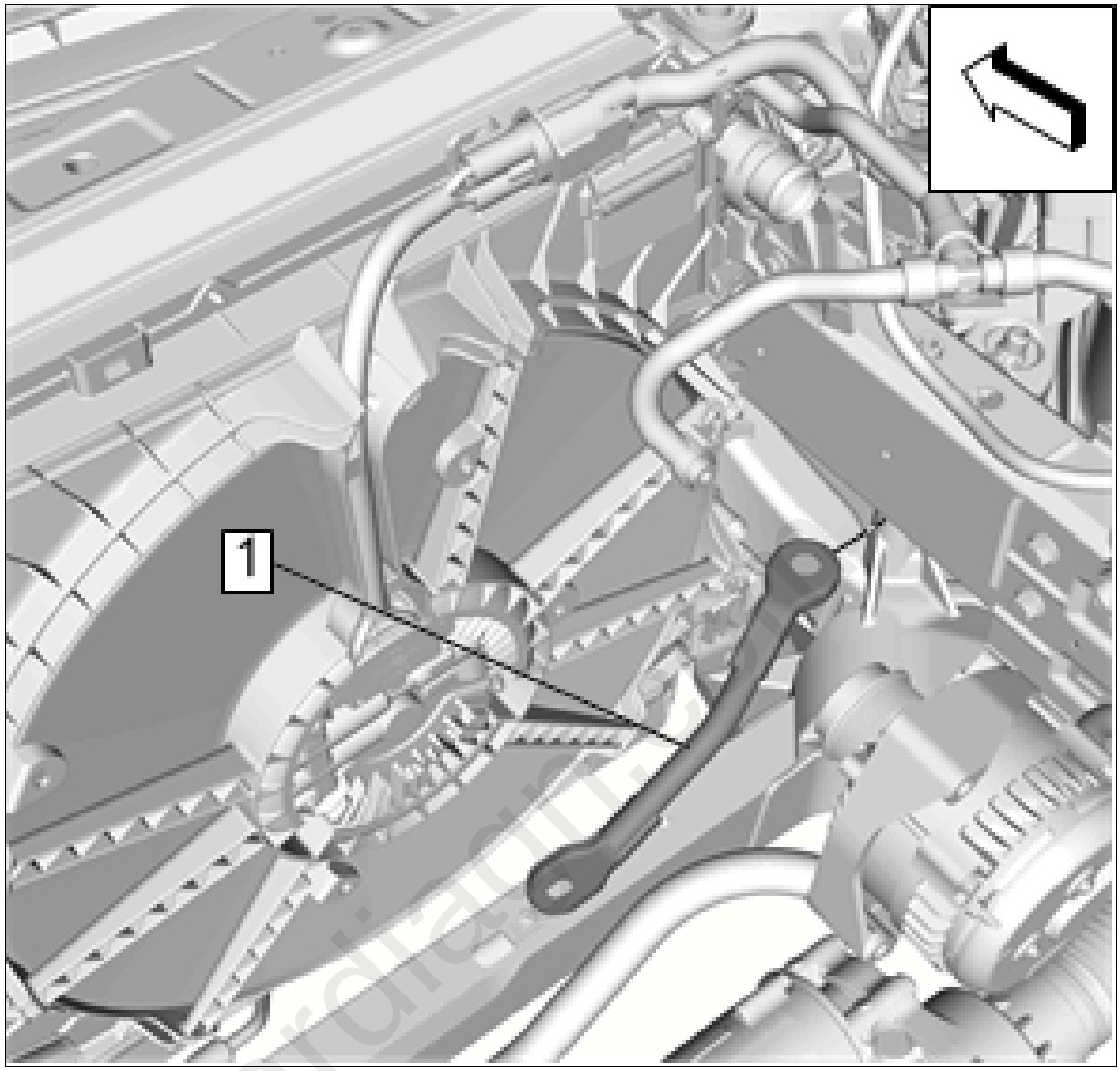


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7. Remove Front Crossmember Brace (1)

REPAIR INSTRUCTIONS > FRONT CROSSMEMBER BRACE REPLACEMENT (RIGHT SIDE - LT1) > INSTALLATION PROCEDURE

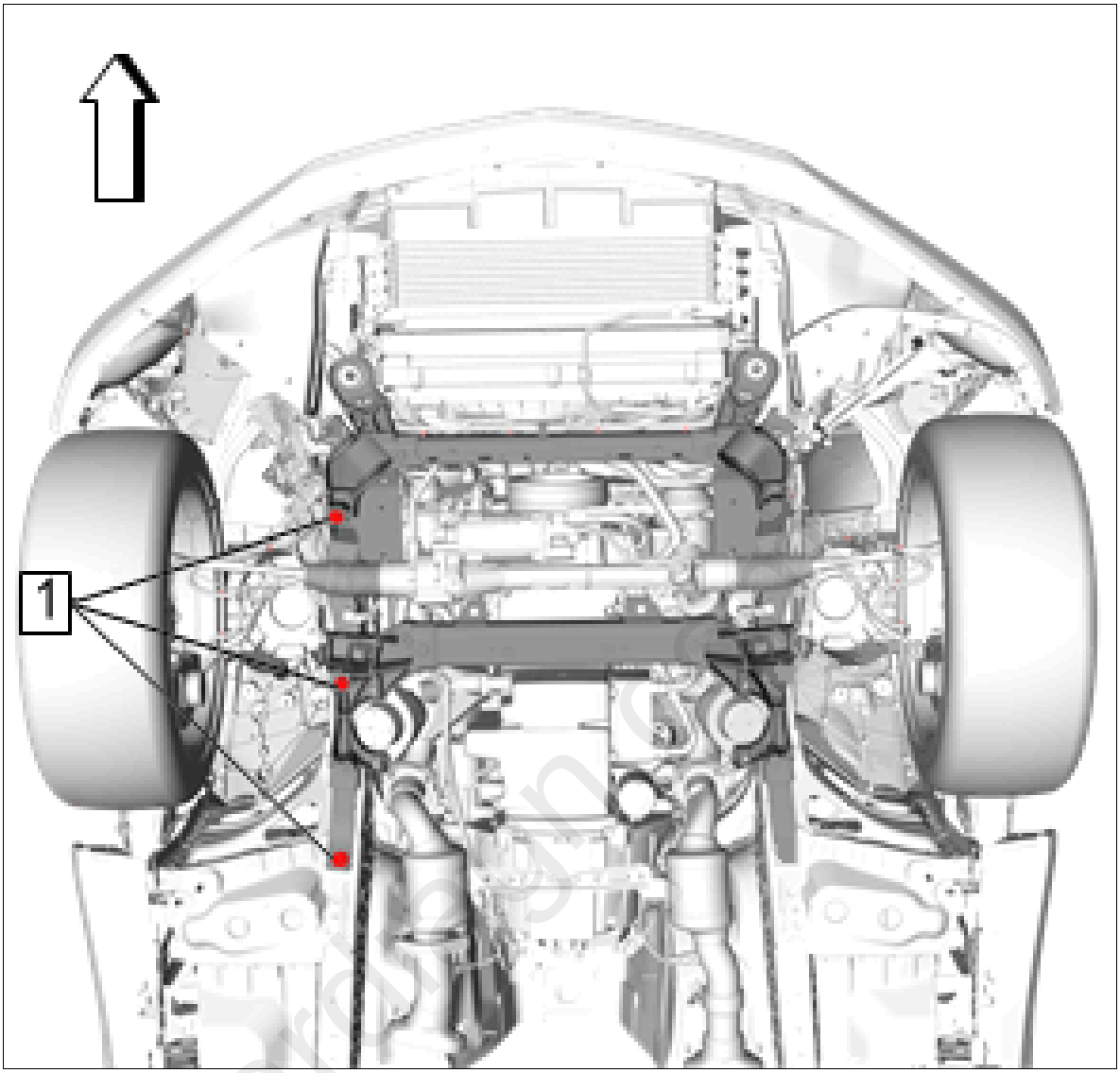
Fig 1: Front Crossmember Brace



Courtesy of GENERAL MOTORS COMPANY

1. Install Front Crossmember Brace (1)

Fig 2: Drivetrain and Front Suspension Cradle Bolt

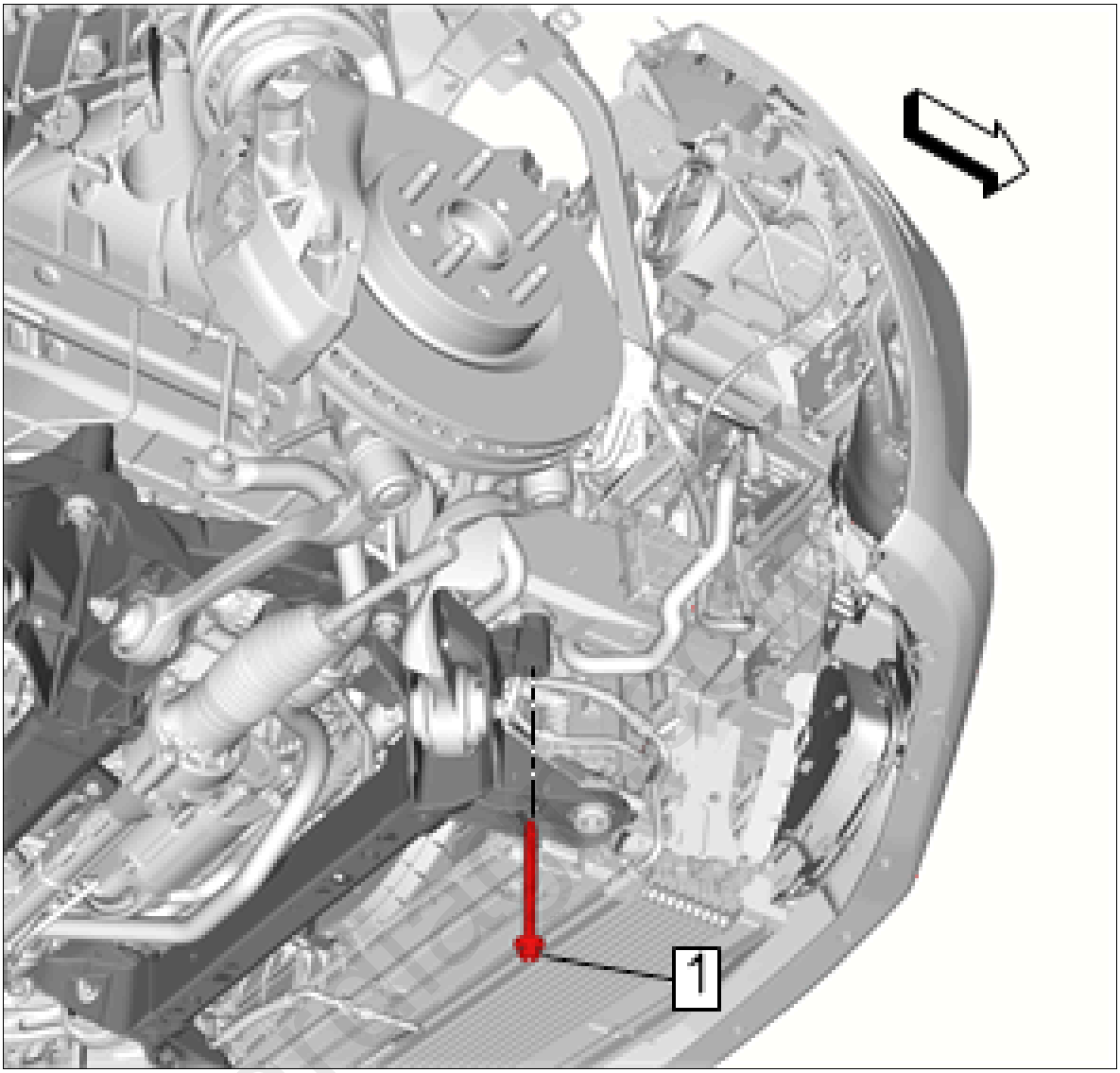


Courtesy of GENERAL MOTORS COMPANY

> ⚠ *CAUTION:*
>
> *Refer to Fastener Caution*

2. Tighten Drivetrain and Front Suspension Cradle Bolt (1) to 100 N.m (74 lb ft)

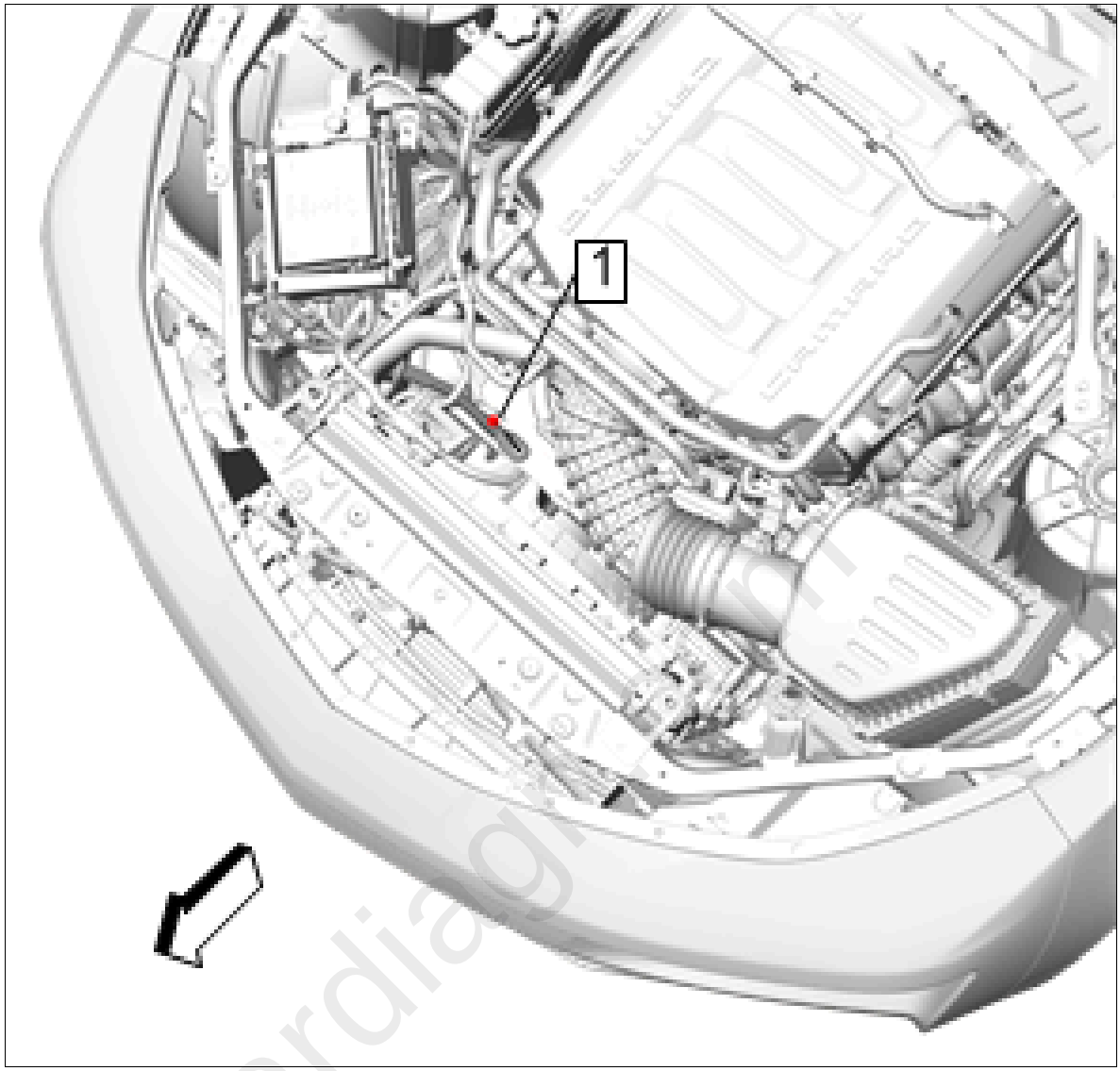
Fig 3: Front Crossmember Brace Bolt



Courtesy of GENERAL MOTORS COMPANY

3. Install Front Crossmember Brace Bolt (1) and tighten to 100 N.m (74 lb ft)

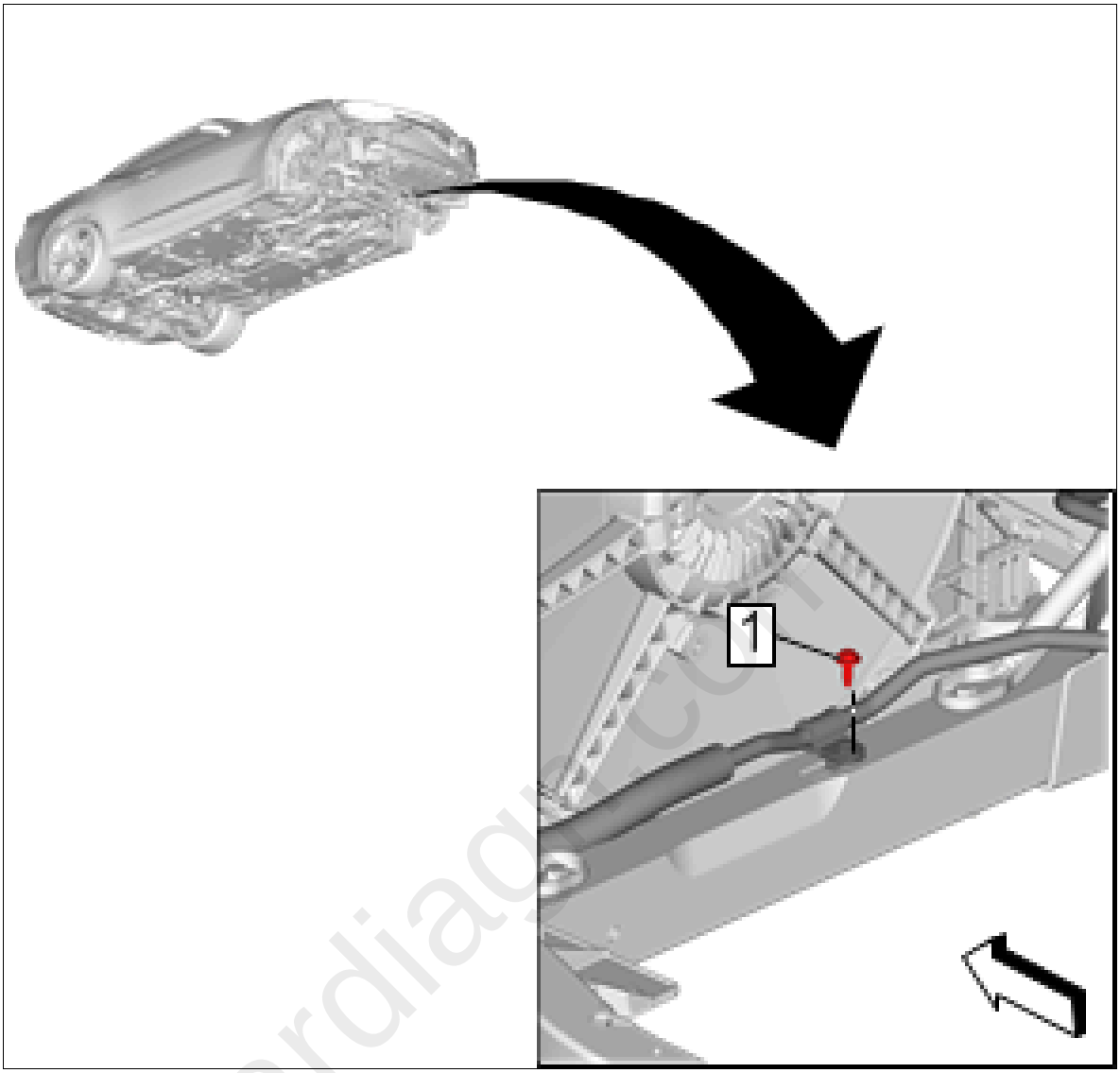
Fig 4: Front Crossmember Brace Bolt



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4. Install Front Crossmember Brace Bolt (1) and tighten to 22 N.m (16 lb ft)

Fig 5: Transmission Fluid Cooler Pipe Clip Bolt

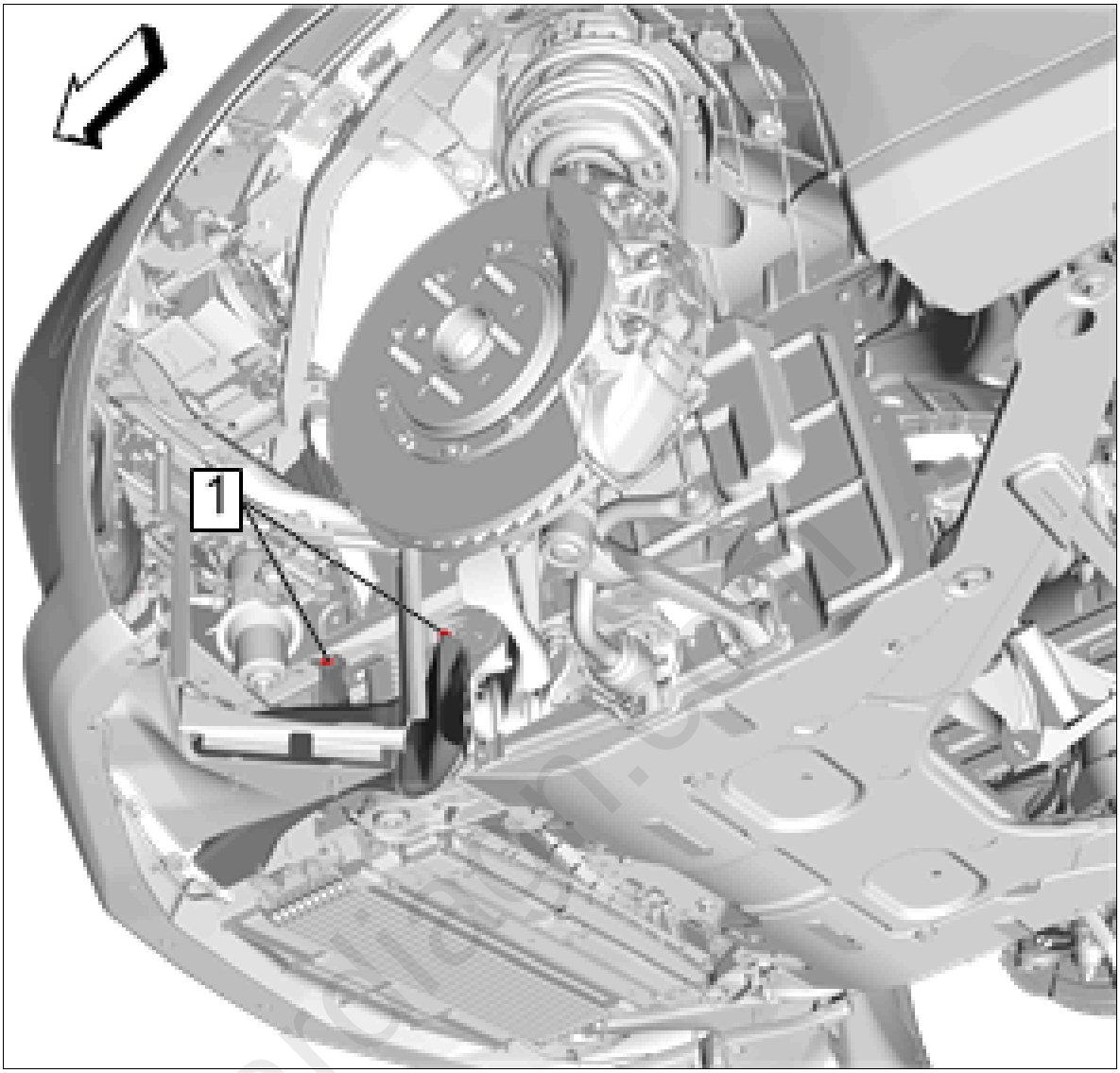


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5. Install Transmission Fluid Cooler Pipe Clip Bolt (1) at Drivetrain and Front Suspension Cradle

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Fig 6: Front Brake Rotor Cooling Duct

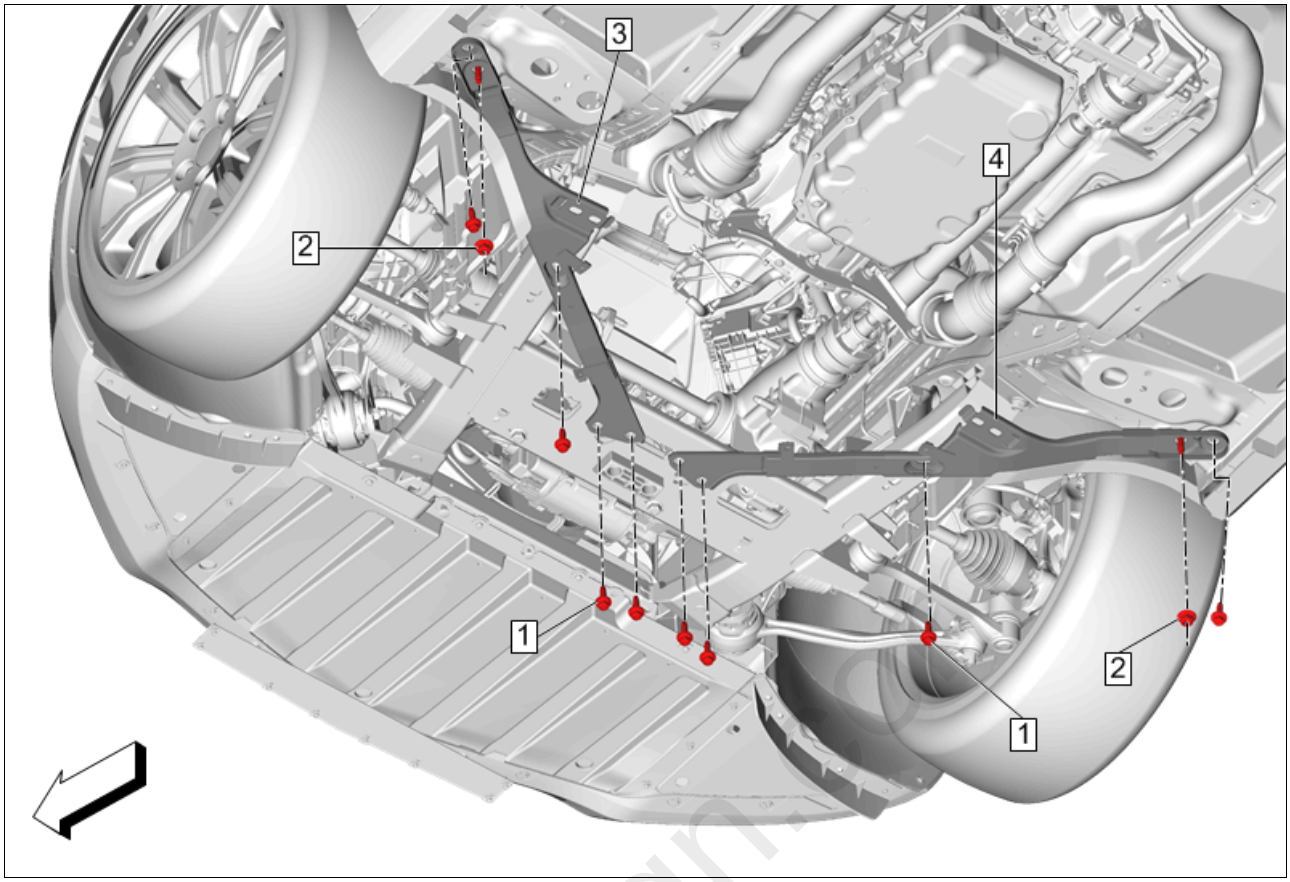


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6. Install Front Brake Rotor Cooling Duct - Front Brake Rotor Cooling Duct Replacement (J6G)
7. Lower the vehicle.

REPAIR INSTRUCTIONS > FRONT CROSSMEMBER BRACE REPLACEMENT (AWD)

Fig 1: Front Crossmember Brace (AWD)



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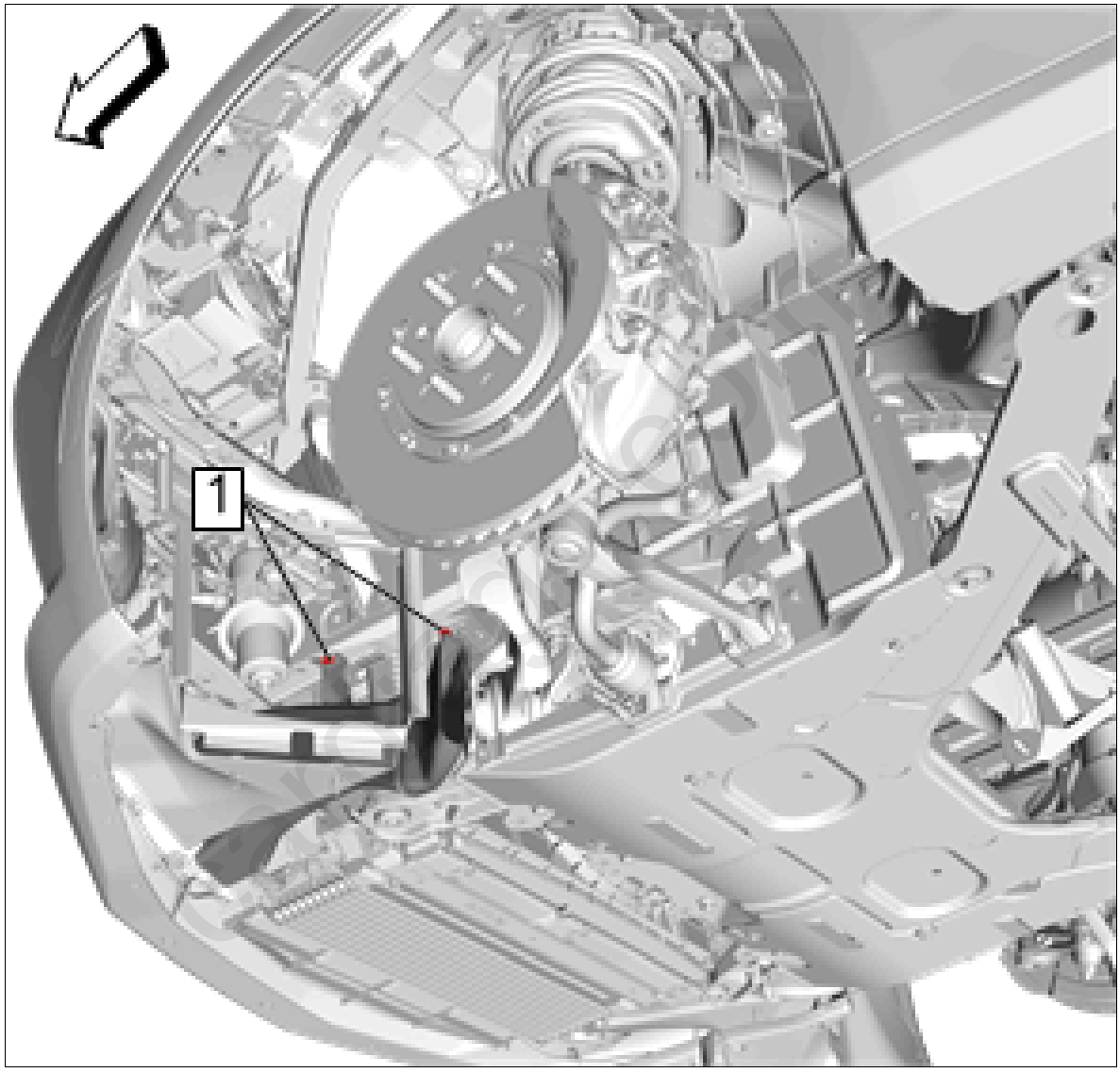
Callout	Component Name
Preliminary Procedure Front Compartment Lower Noise Shield Replacement (Coupe - LGX, LTG)	
1	Front Crossmember Brace Bolt (Qty: 8) *CAUTION:* *Refer to Fastener Caution* **Tighten** 50 N.m (37 lb ft)
2	Front Crossmember Brace Nut (Qty: 2) **Tighten** 50 N.m (37 lb ft)
3	Front Crossmember Brace - Left Side
4	Front Crossmember Brace - Right Side

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REPAIR INSTRUCTIONS > FRONT CROSSMEMBER BRACE REPLACEMENT (LEFT SIDE - LT1) > REMOVAL PROCEDURE

1. Raise and support the vehicle. Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP)

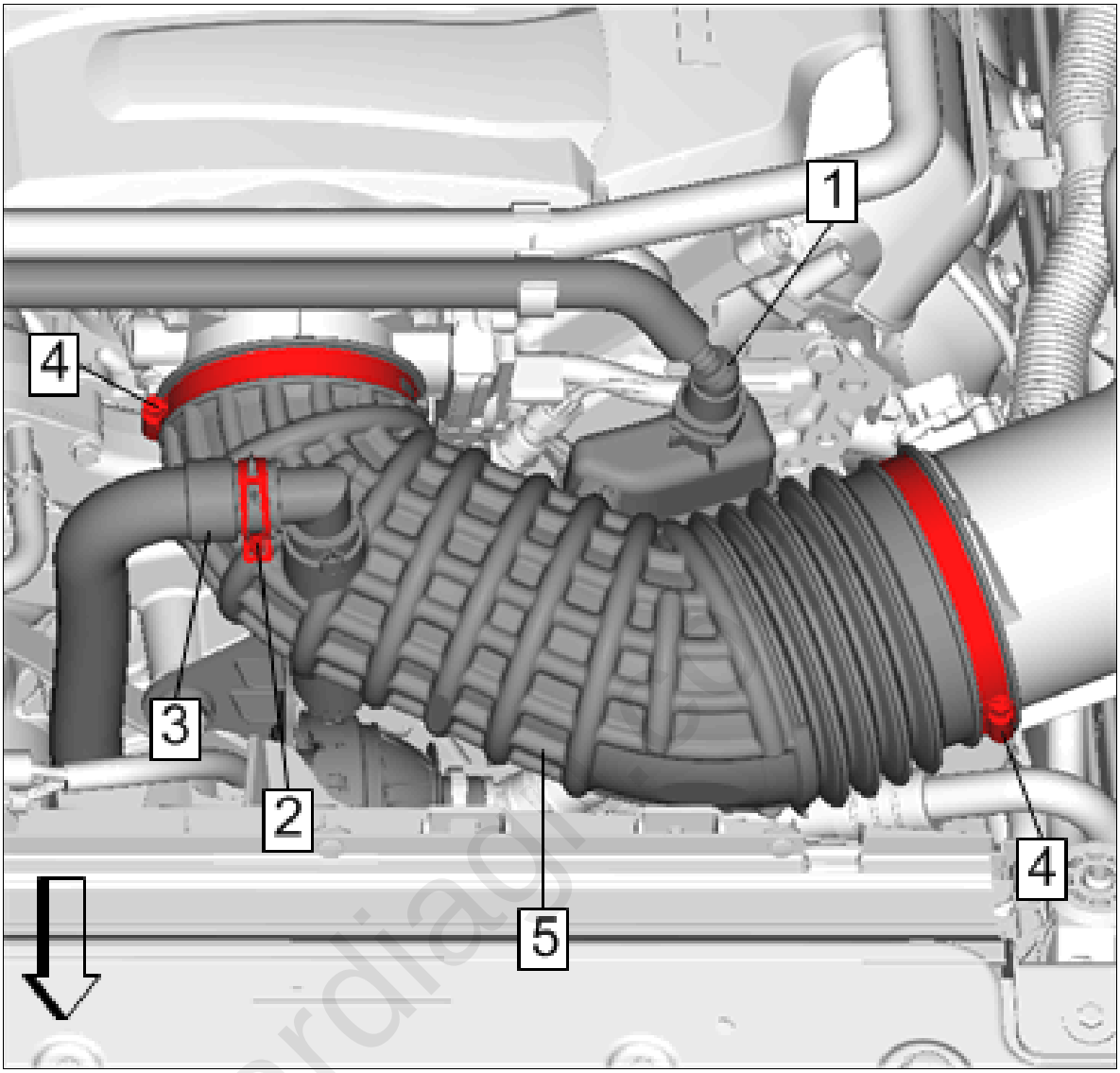
   Fig 1: Front Brake Rotor Cooling Duct



   Courtesy of GENERAL MOTORS COMPANY

2. Reposition Front Brake Rotor Cooling Duct - Front Brake Rotor Cooling Duct Replacement (J6G)

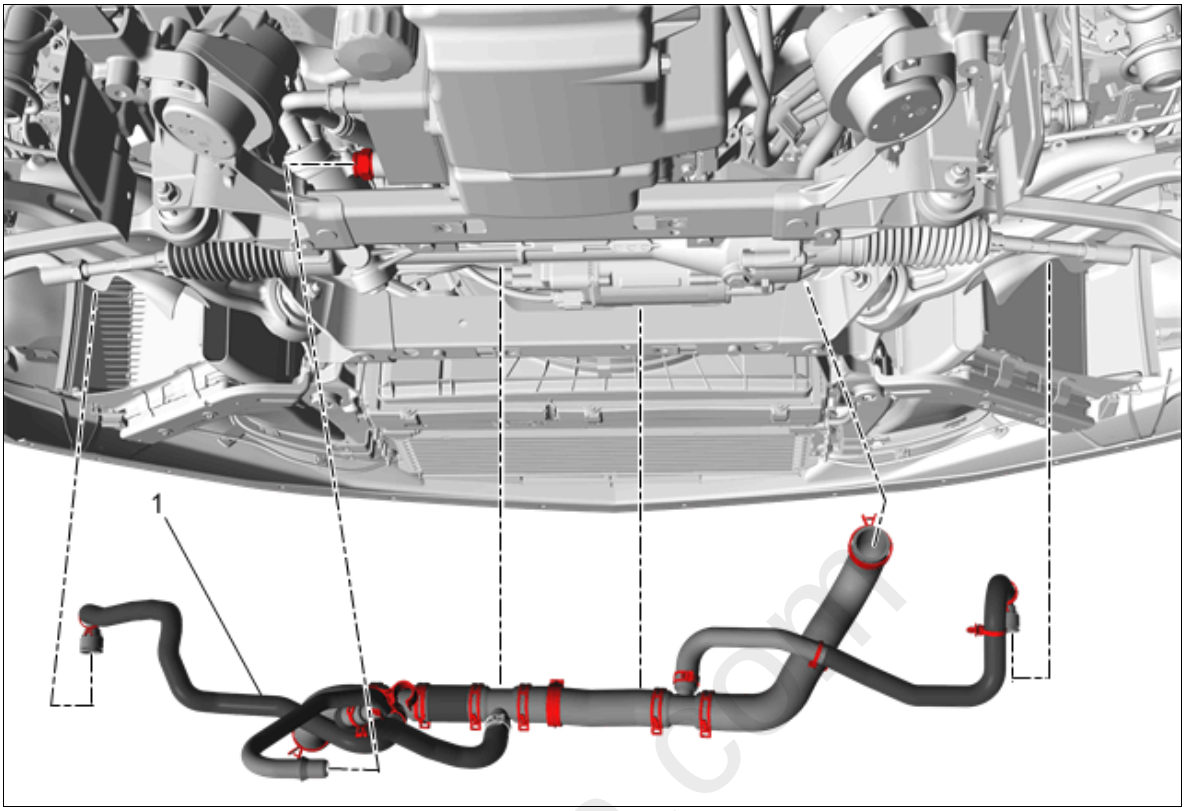
Fig 2: Air Cleaner Resonator



Courtesy of GENERAL MOTORS COMPANY

3. Remove Air Cleaner Resonator (5) - Air Cleaner Resonator Replacement (Air Cleaner Outlet Duct to Engine)Air Cleaner Resonator Replacement (Diagonal Brace to Air Cleaner Resonator)Air Cleaner Resonator Replacement (Dash to Diagonal Brace)

Fig 3: Radiator Outlet Hose

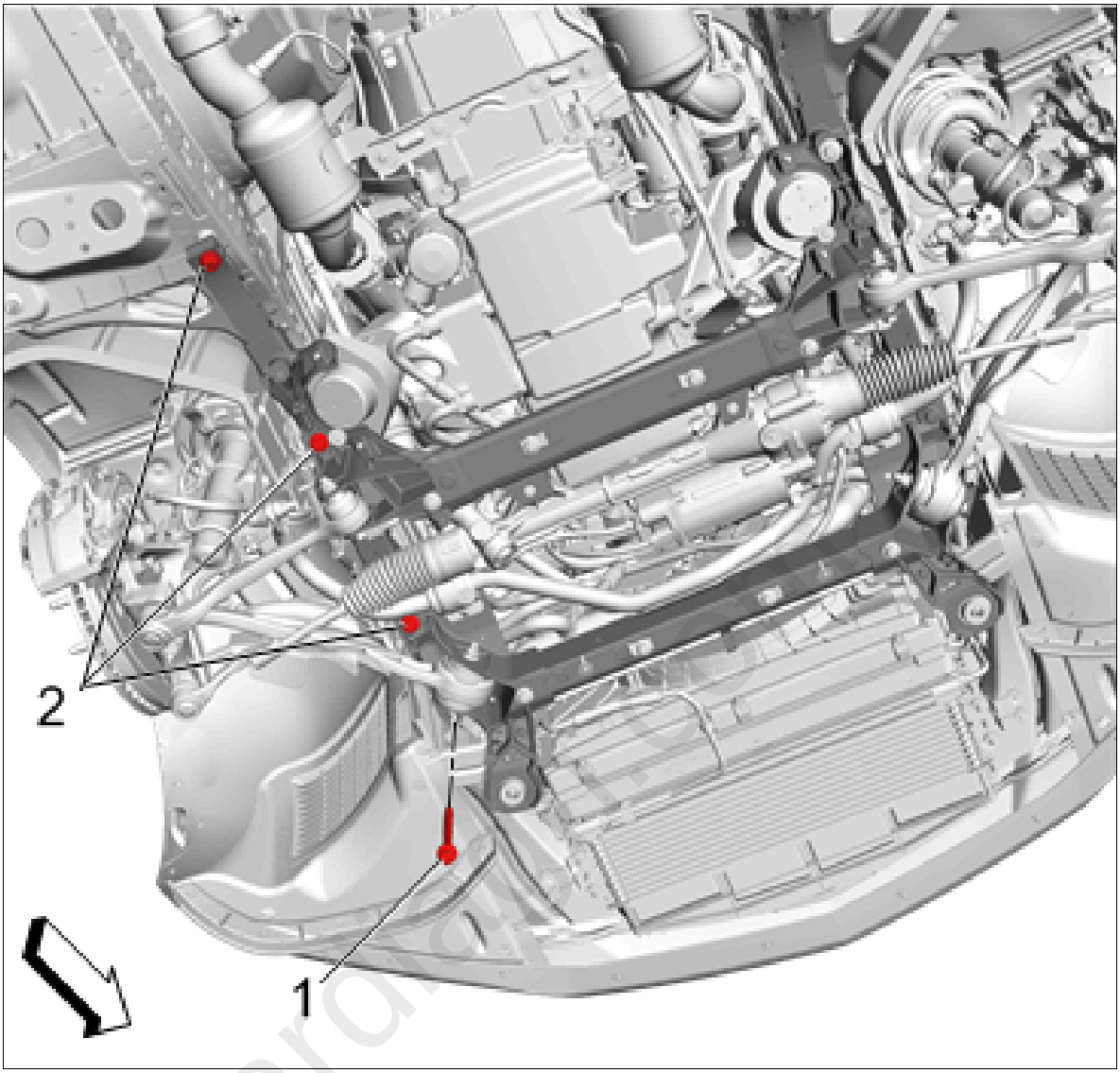


Courtesy of GENERAL MOTORS COMPANY

4. Remove Radiator Outlet Hose (1) - Radiator Outlet Hose Replacement (LT1 V18 V03)

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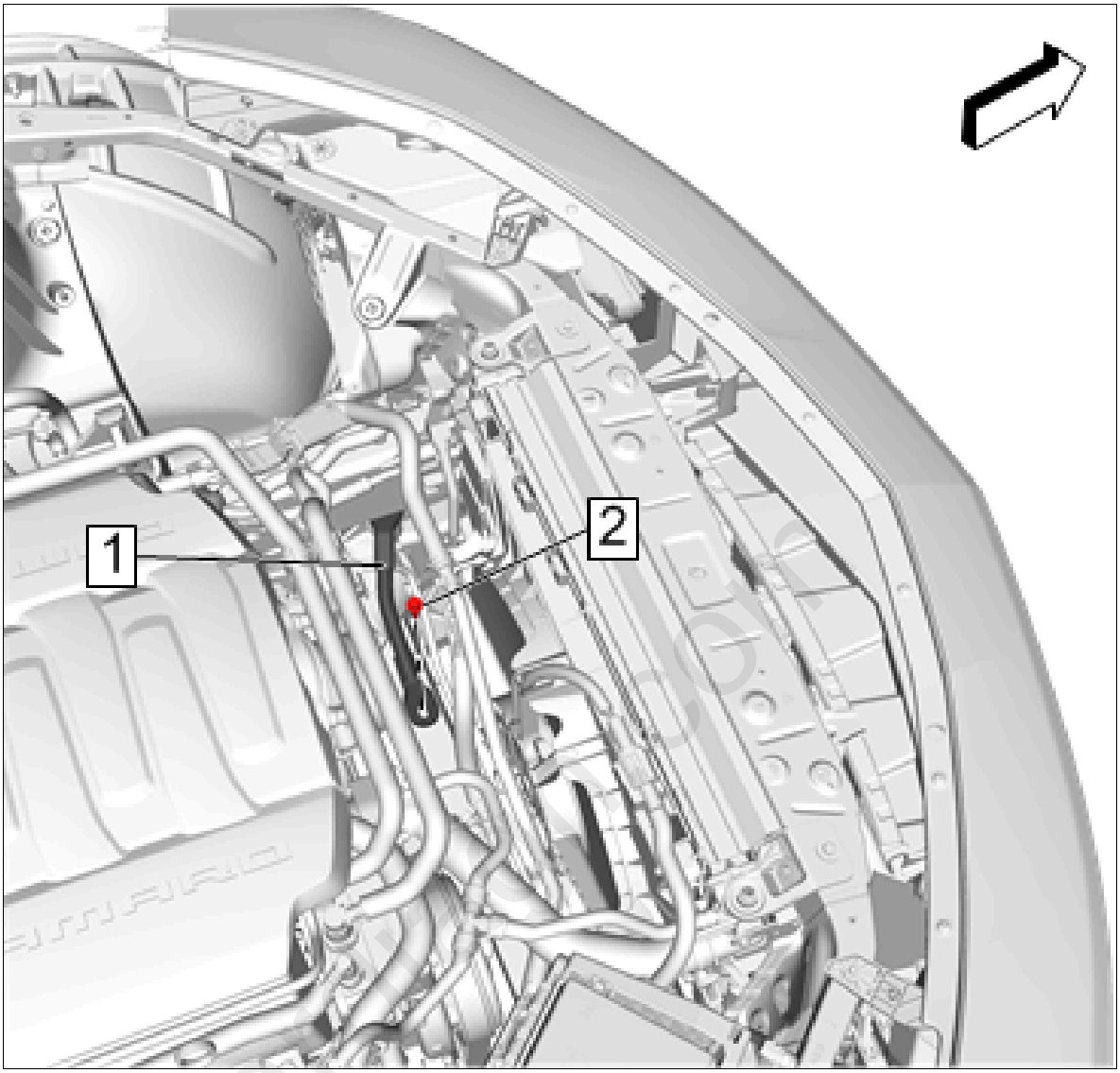
Fig 4: Drivetrain And Front Suspension Cradle Front Bolt



Courtesy of GENERAL MOTORS COMPANY

5. Remove Drivetrain and Front Suspension Cradle Front Bolt (1)
6. Loosen Drivetrain and Front Suspension Cradle Bolt (2) (Qty: 3)

Fig 5: Front Crossmember Brace Bolt

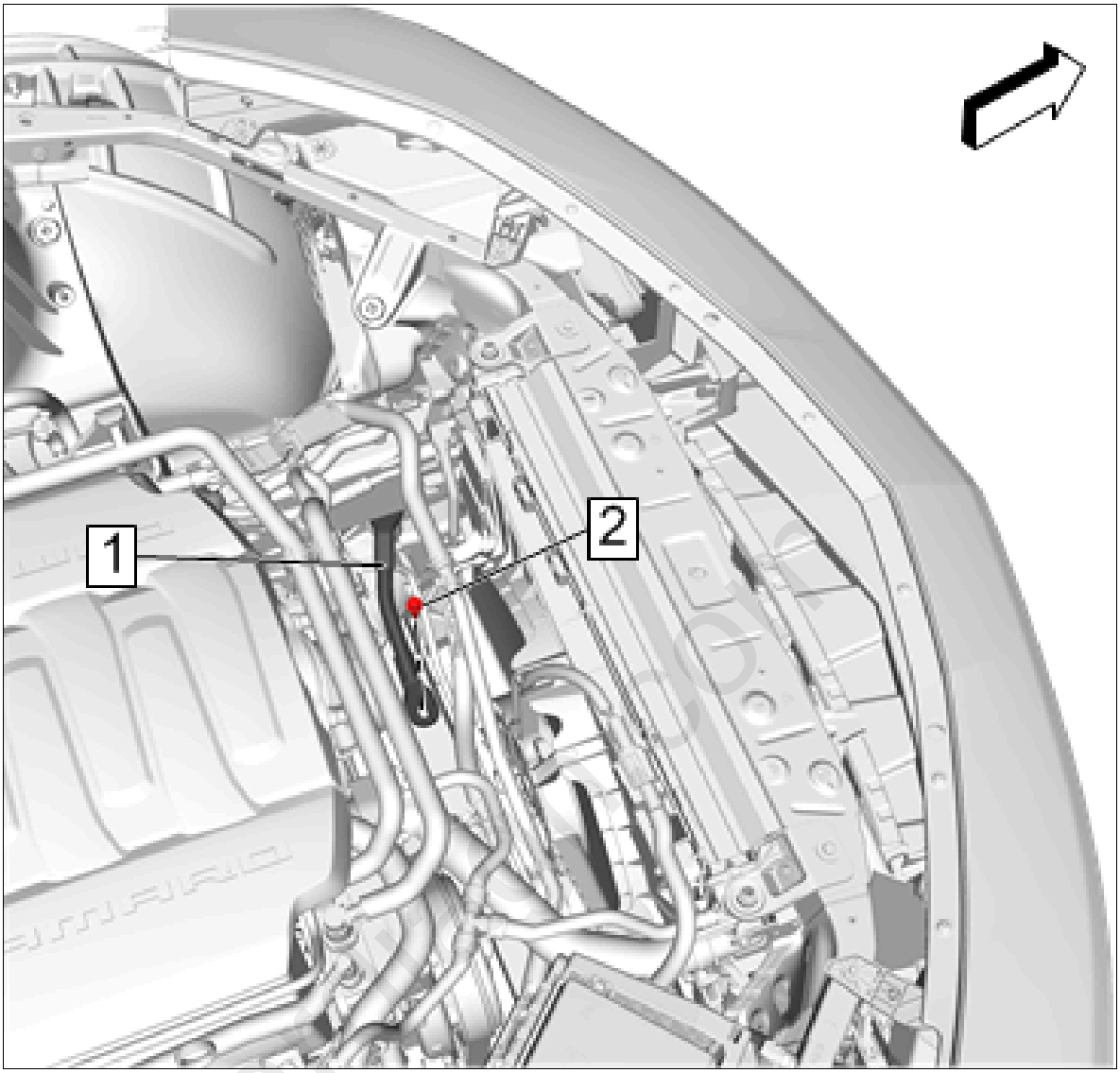


Courtesy of GENERAL MOTORS COMPANY

7. Remove Front Crossmember Brace Bolt (2)
8. Remove Front Crossmember Brace (1)

REPAIR INSTRUCTIONS > FRONT CROSSMEMBER BRACE REPLACEMENT (LEFT SIDE - LT1) > INSTALLATION PROCEDURE

Fig 1: Front Crossmember Brace



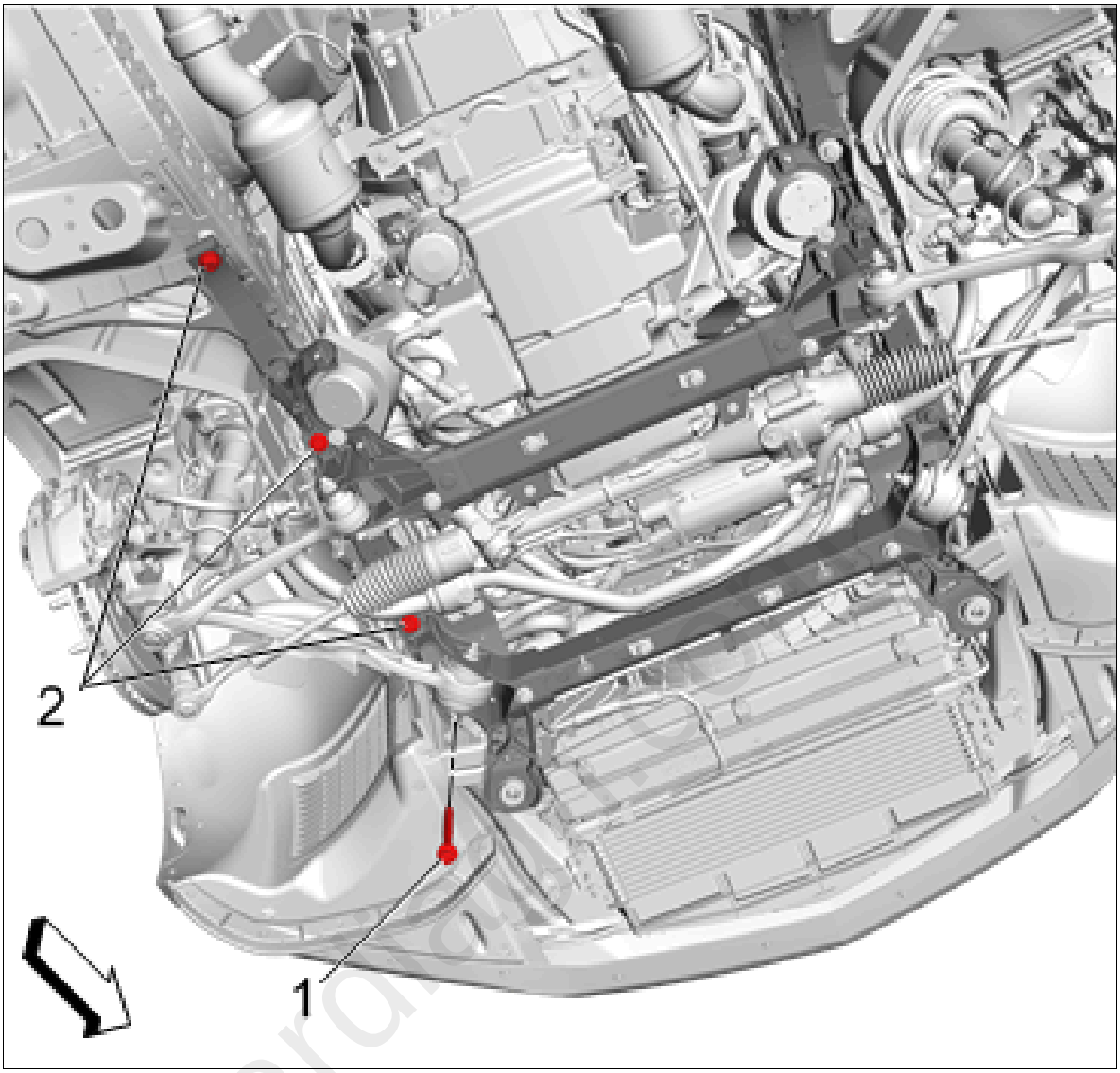
Courtesy of GENERAL MOTORS COMPANY

1. Install Front Crossmember Brace (1)

> ⚠ *CAUTION:*
>
> *Refer to Fastener Caution*

2. Install Front Crossmember Brace Bolt (2) and tighten to 22 N.m (16 lb ft)

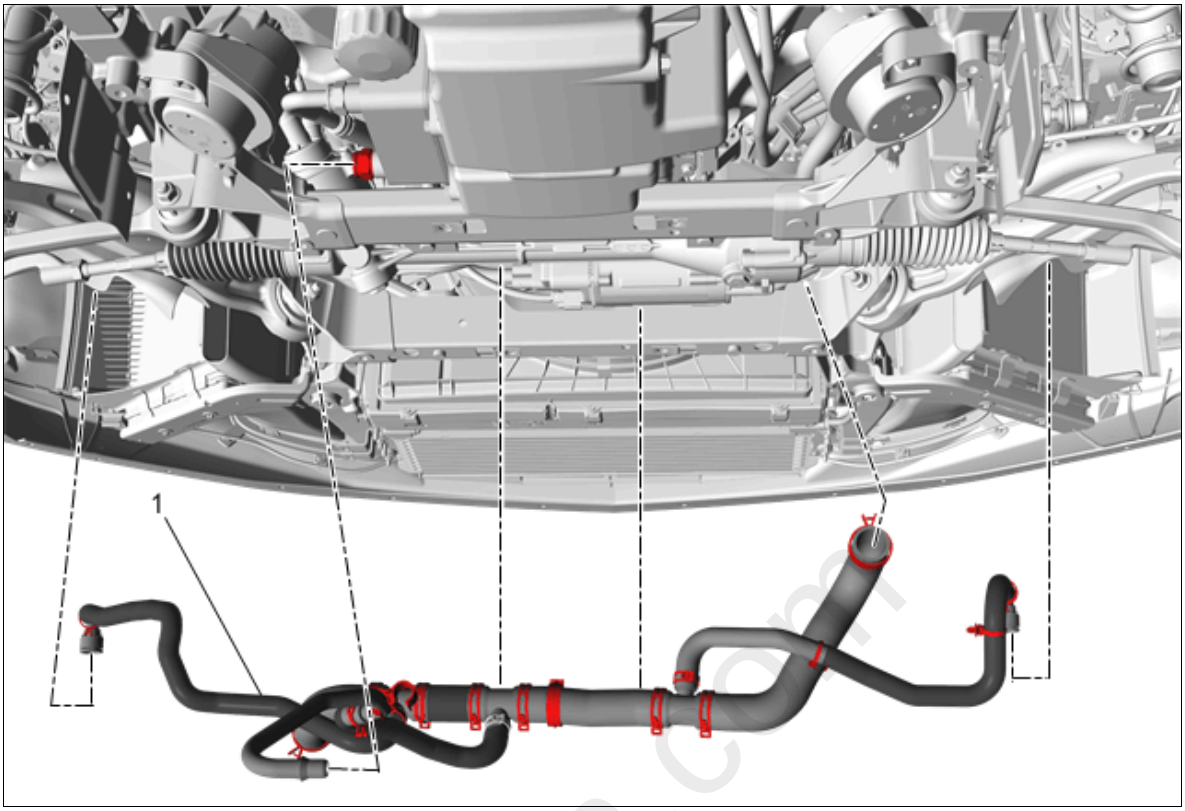
Fig 2: Drivetrain And Front Suspension Cradle Front Bolt



Courtesy of GENERAL MOTORS COMPANY

3. Install Drivetrain and Front Suspension Cradle Front Bolt (1) and tighten to 100 N.m (74 lb ft)
4. Tighten Drivetrain and Front Suspension Cradle Bolt (2) (Qty: 3) to 100 N.m (74 lb ft)
5. Lower the vehicle.

Fig 3: Radiator Outlet Hose

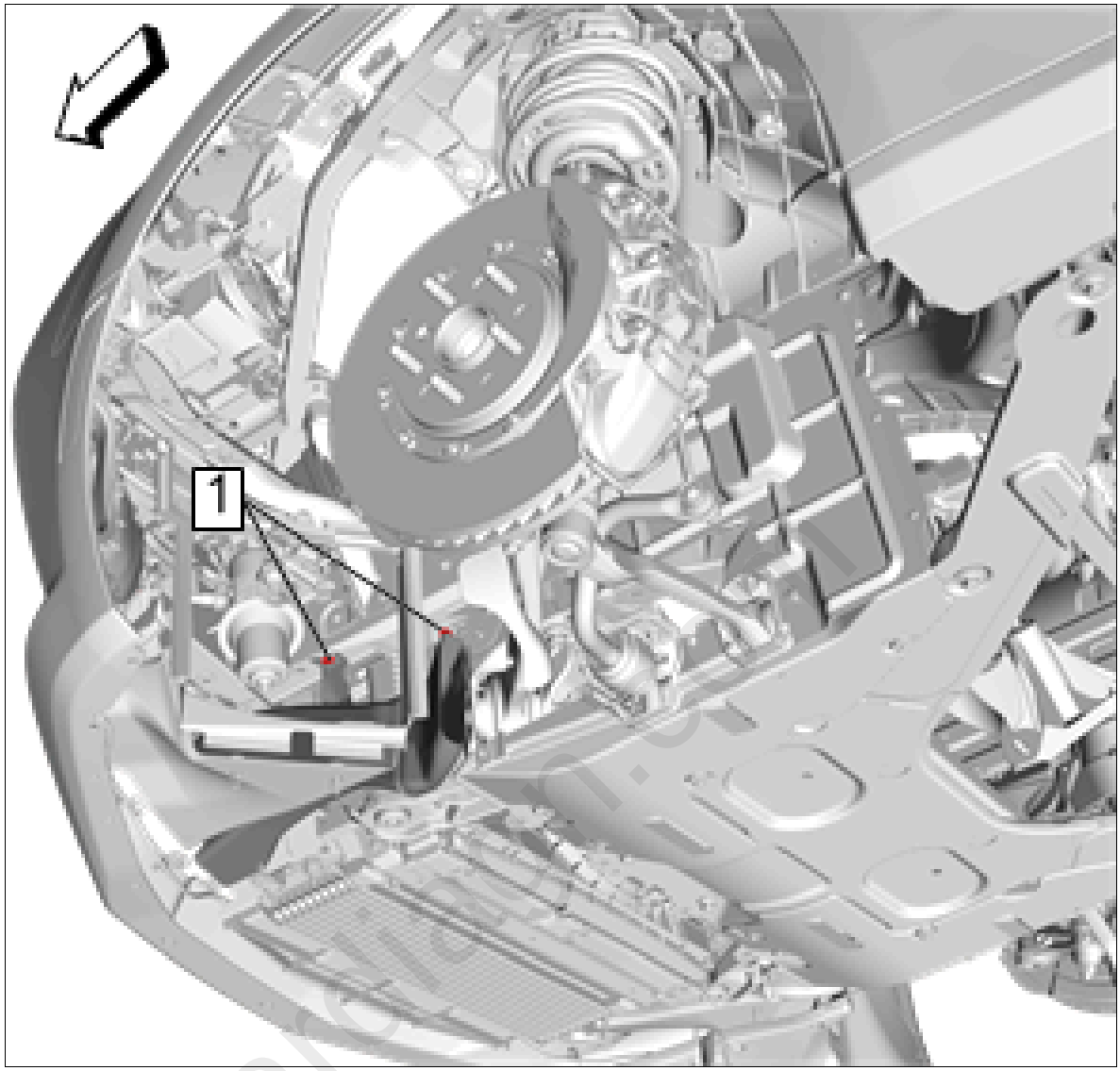


Courtesy of GENERAL MOTORS COMPANY

6. Remove Radiator Outlet Hose (1) - Radiator Outlet Hose Replacement (LT1 V18 V03)

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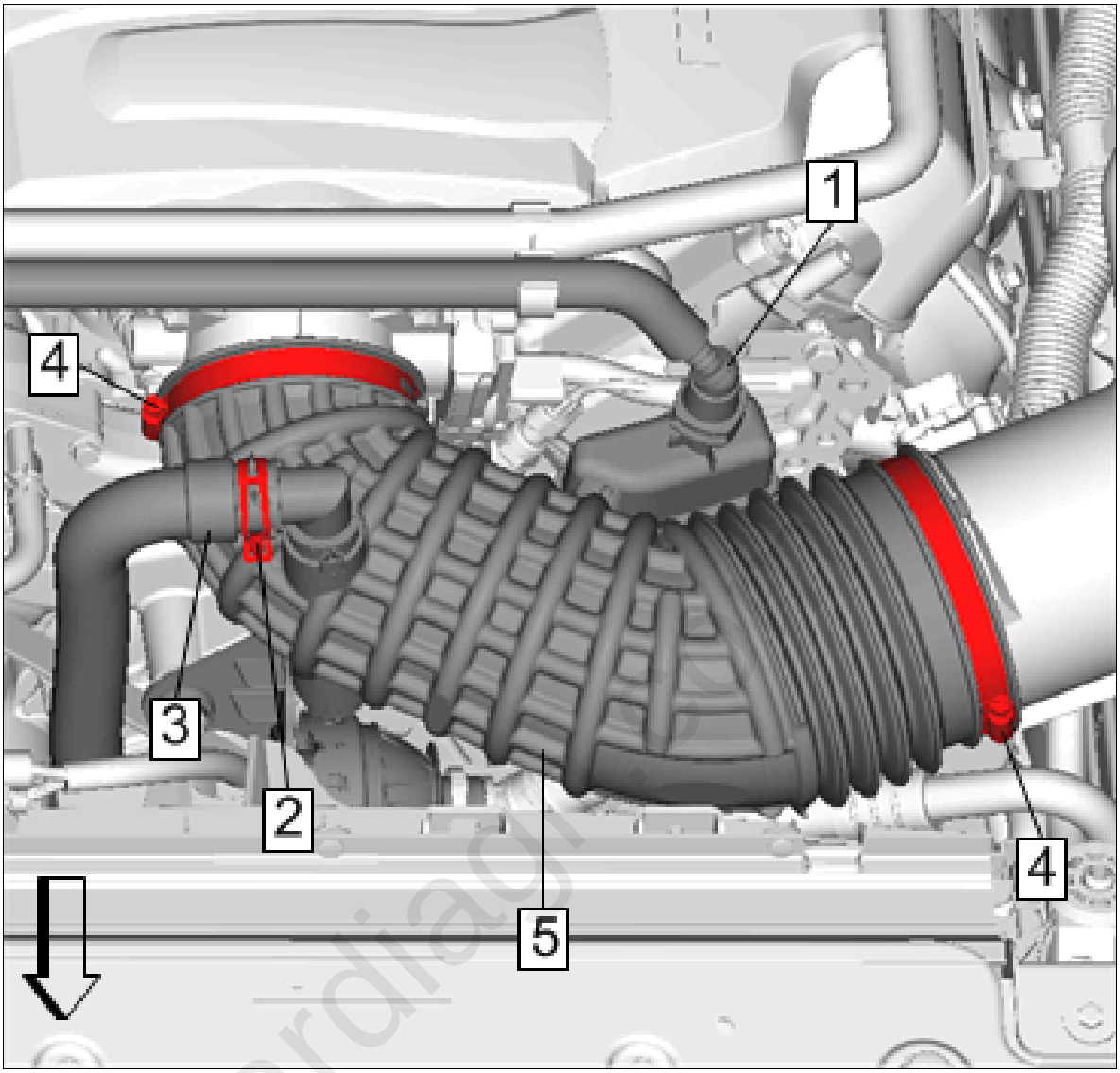
Fig 4: Front Brake Rotor Cooling Duct



Courtesy of GENERAL MOTORS COMPANY

7. Install Front Brake Rotor Cooling Duct - Front Brake Rotor Cooling Duct Replacement (J6G)

Fig 5: Air Cleaner Resonator

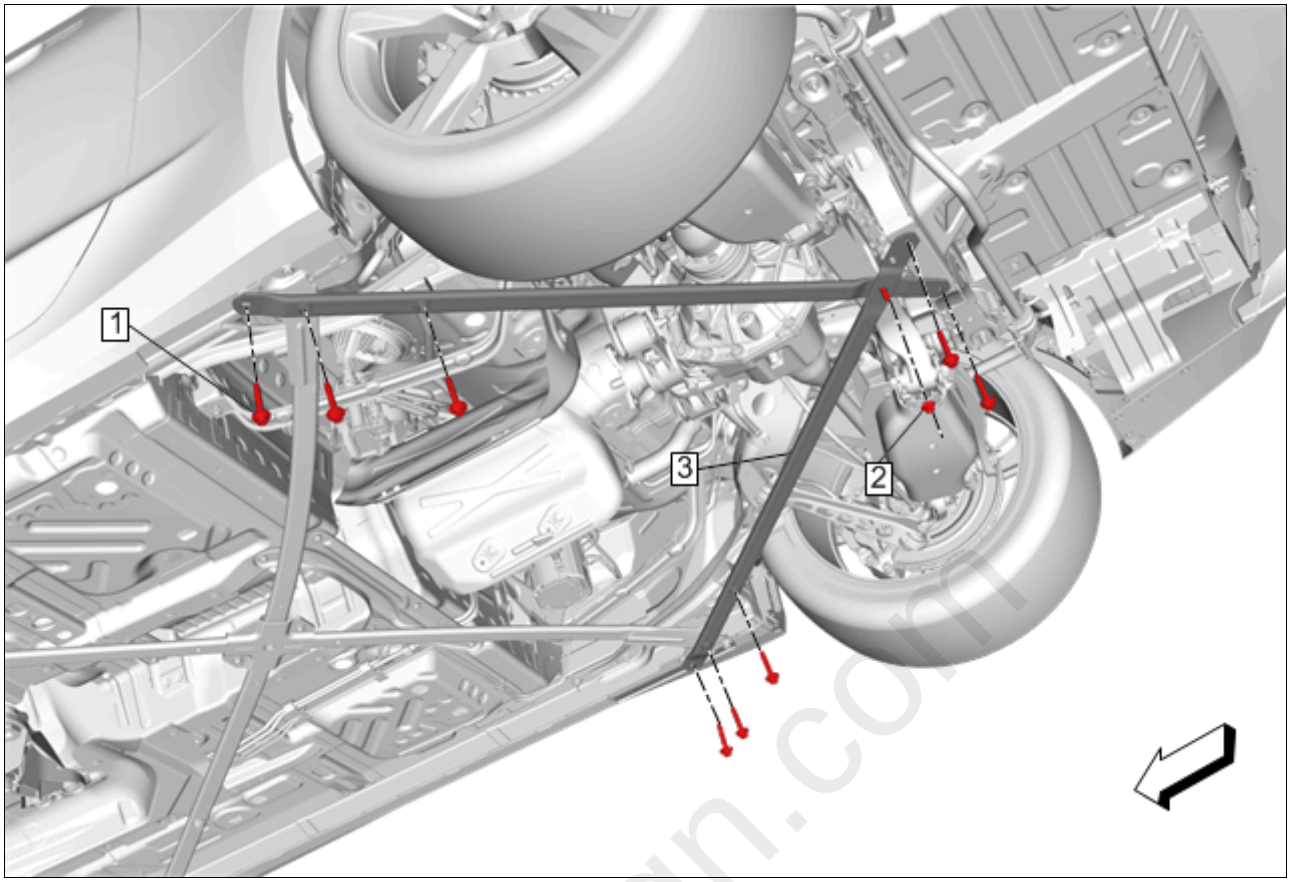


Courtesy of GENERAL MOTORS COMPANY

8. Remove Air Cleaner Resonator (5) - Air Cleaner Resonator Replacement (Air Cleaner Outlet Duct to Engine)Air Cleaner Resonator Replacement (Diagonal Brace to Air Cleaner Resonator)Air Cleaner Resonator Replacement (Dash to Diagonal Brace)

REPAIR INSTRUCTIONS > FLOOR PANEL TUNNEL REAR BRACE REPLACEMENT (CONVERTIBLE)

Fig 1: Floor Panel Tunnel Rear Brace (Convertible)



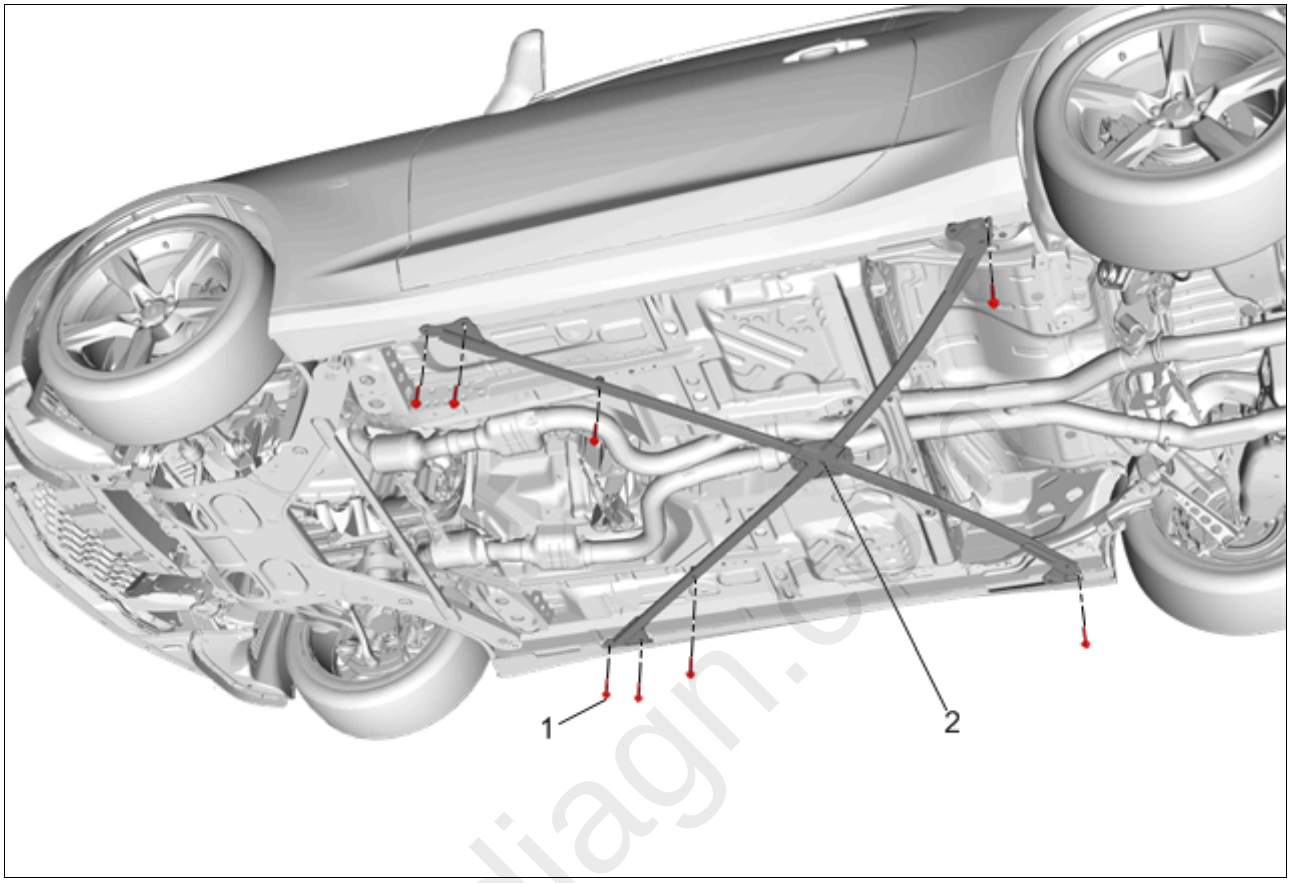
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Raise and support the vehicle. Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP)	
1	Fastener (Qty: 8) *CAUTION:* *Refer to Fastener Caution* **Tighten** 58 N.m (43 lb ft)
2	Fastener **Tighten** 58 N.m (43 lb ft)
3	Floor Panel Tunnel Rear Brace

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REPAIR INSTRUCTIONS > UNDERBODY REAR BRACE REPLACEMENT (CONVERTIBLE)

Fig 1: Underbody Rear Brace (Convertible)



Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Floor Panel Tunnel Rear Brace Replacement (Convertible)	
1	Fastener (Qty: 8) *CAUTION:* *Refer to Fastener Caution* **Tighten** 58 N.m (43 lb ft)
2	Underbody Rear Brace

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REPAIR INSTRUCTIONS > DRIVETRAIN AND FRONT SUSPENSION CRADLE REPLACEMENT (LTG)

Special Tools

EN-39580 Engine Support Stand

Equivalent regional tools:Special Tools

REPAIR INSTRUCTIONS > DRIVETRAIN AND FRONT SUSPENSION CRADLE REPLACEMENT (LTG) > REMOVAL PROCEDURE

NOTE:

Suspension components attached to the frame use Torque-to-Yield fasteners and must be DISCARDED and replaced with NEW Torque Angle Yield (TAY) fasteners. The frame to body fasteners are not TAY fasteners.

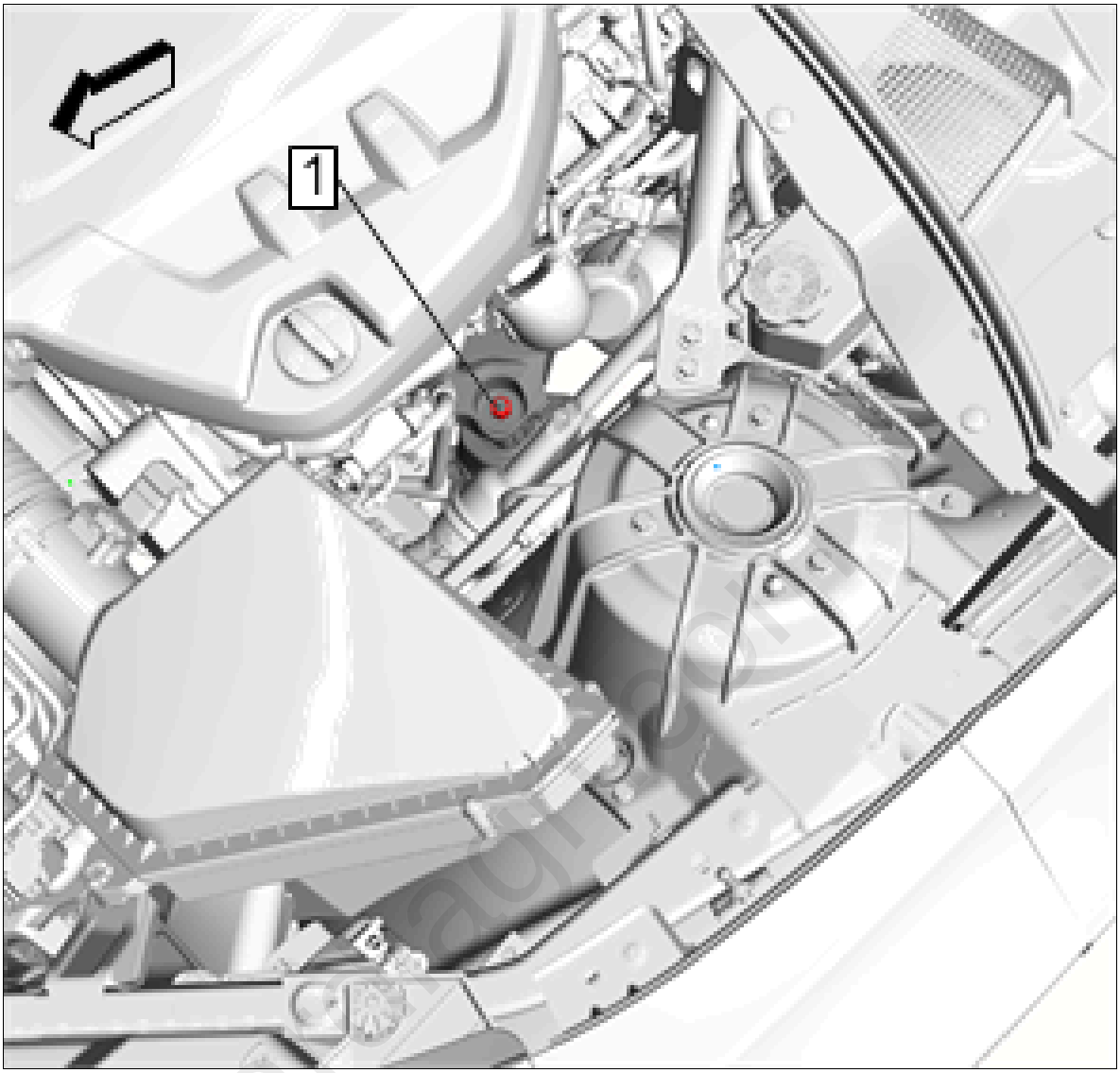
NOTE:

Vehicle alignment is not required if the cradle is being lowered or dropped to perform another procedure. This vehicle is equipped with a cradle to body aligning feature: cradle to body through holes or self-aligning pins that are part of the cradle or body. Only align if replacing the cradle with a NEW part and transferring components.

1. Using mechanics wire, support the radiator and AC condenser assembly to the vehicle body.
2. Install the engine support fixture. Engine Support Fixture

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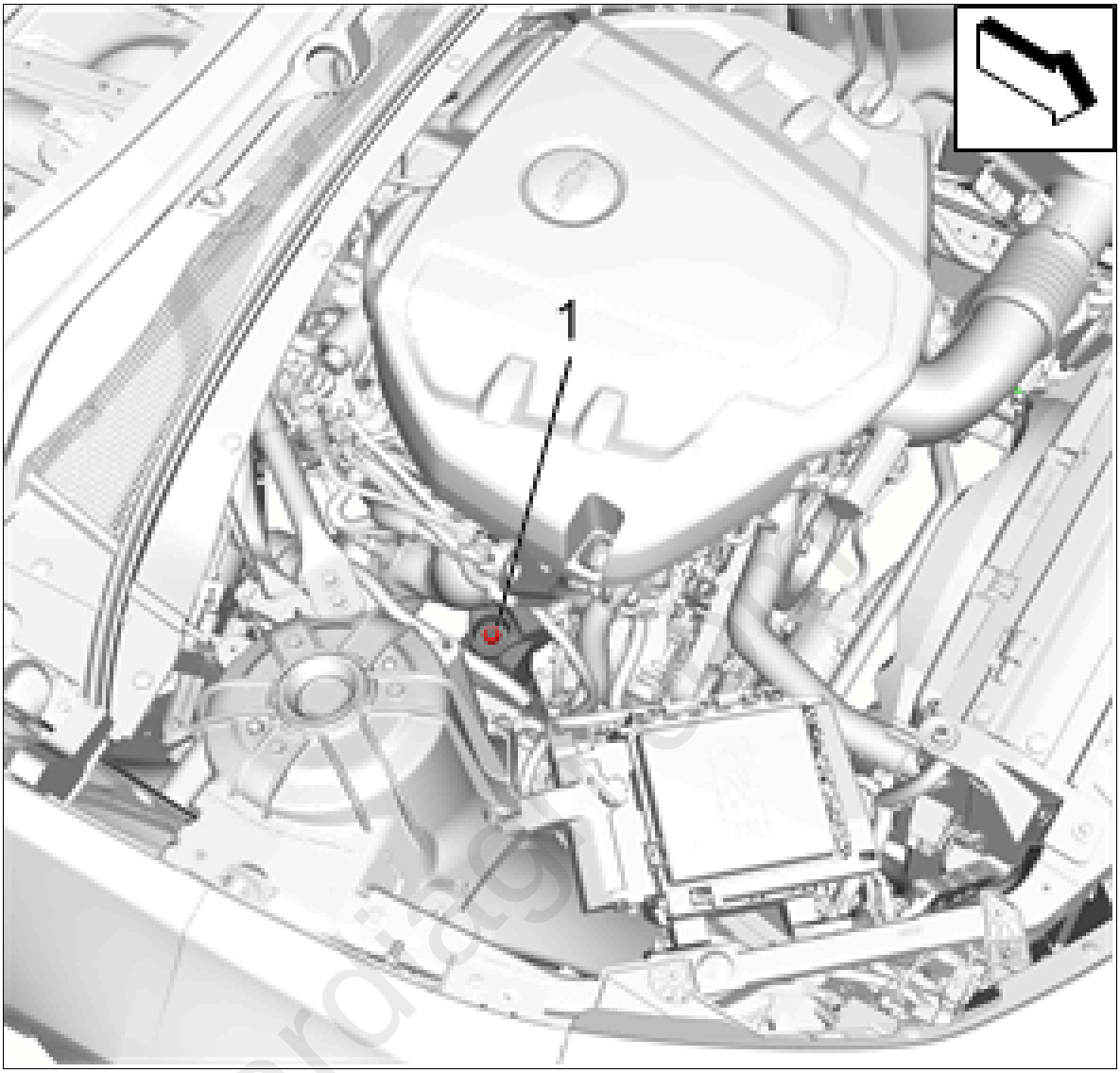
Fig 1: Left Side Engine Mount Nut



Courtesy of GENERAL MOTORS COMPANY

3. Remove Engine Mount Nut - Left Side (1)

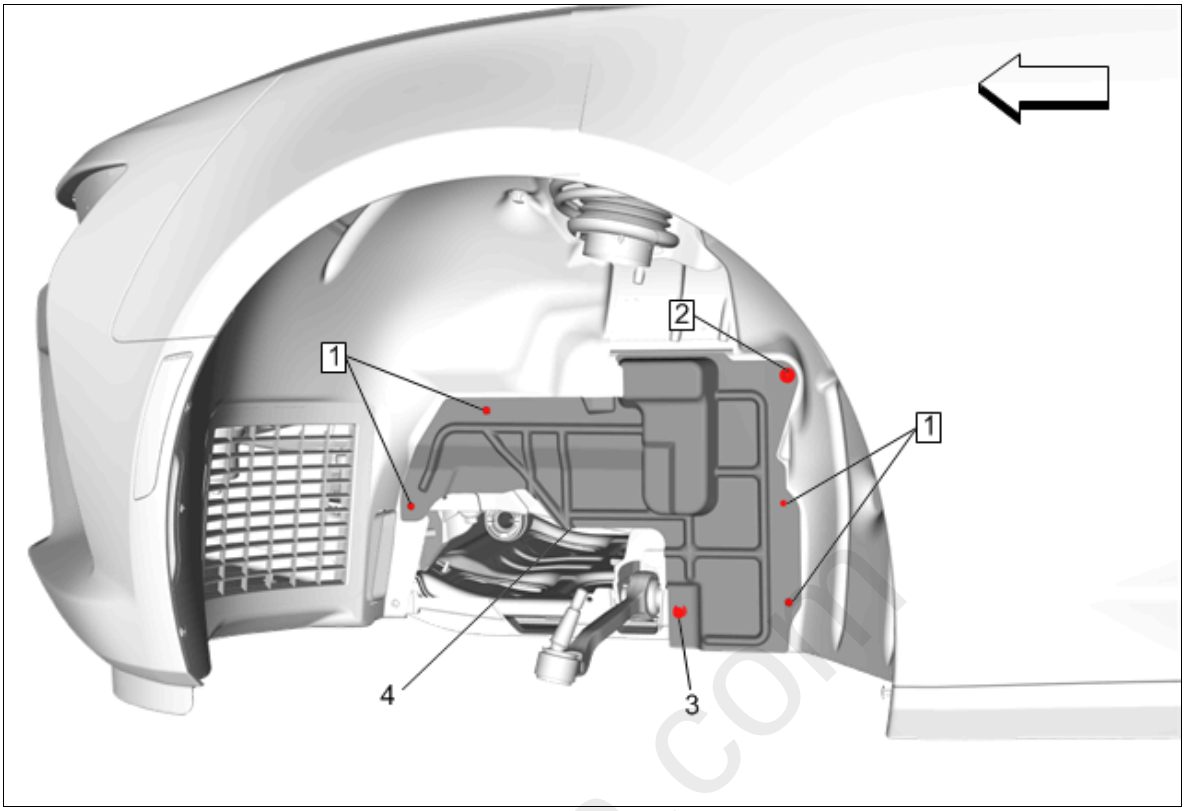
Fig 2: Right Side Engine Mount Nut



Courtesy of GENERAL MOTORS COMPANY

4. Remove Engine Mount Nut - Right Side (1)
5. Raise and support the vehicle. Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP)
6. Remove the front wheels. Tire and Wheel Removal and Installation .

Fig 3: Front Wheelhouse Splash Shield

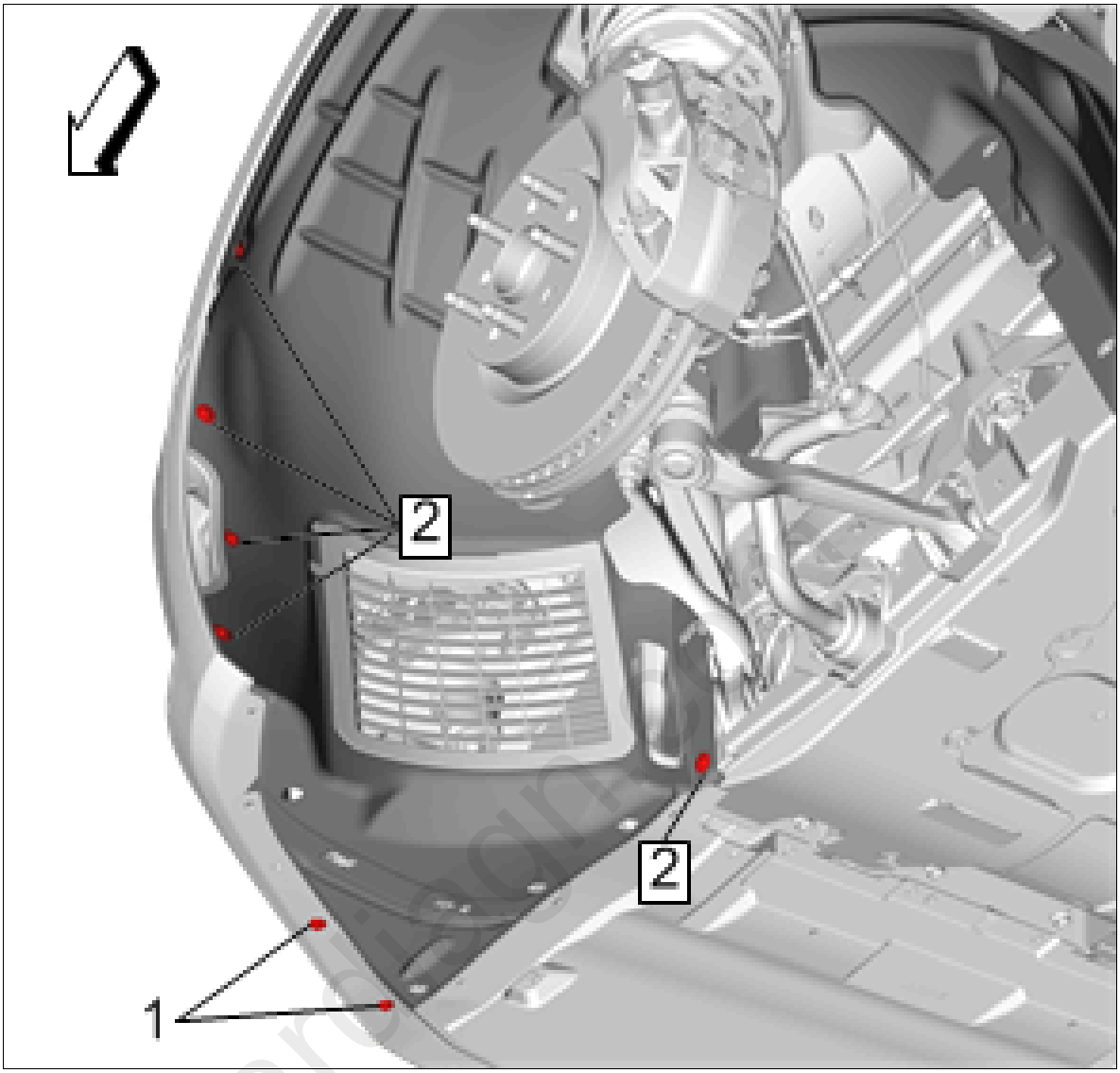


Courtesy of GENERAL MOTORS COMPANY

7. Remove Front Wheelhouse Splash Shield (4) - Front Wheelhouse Splash Shield Replacement

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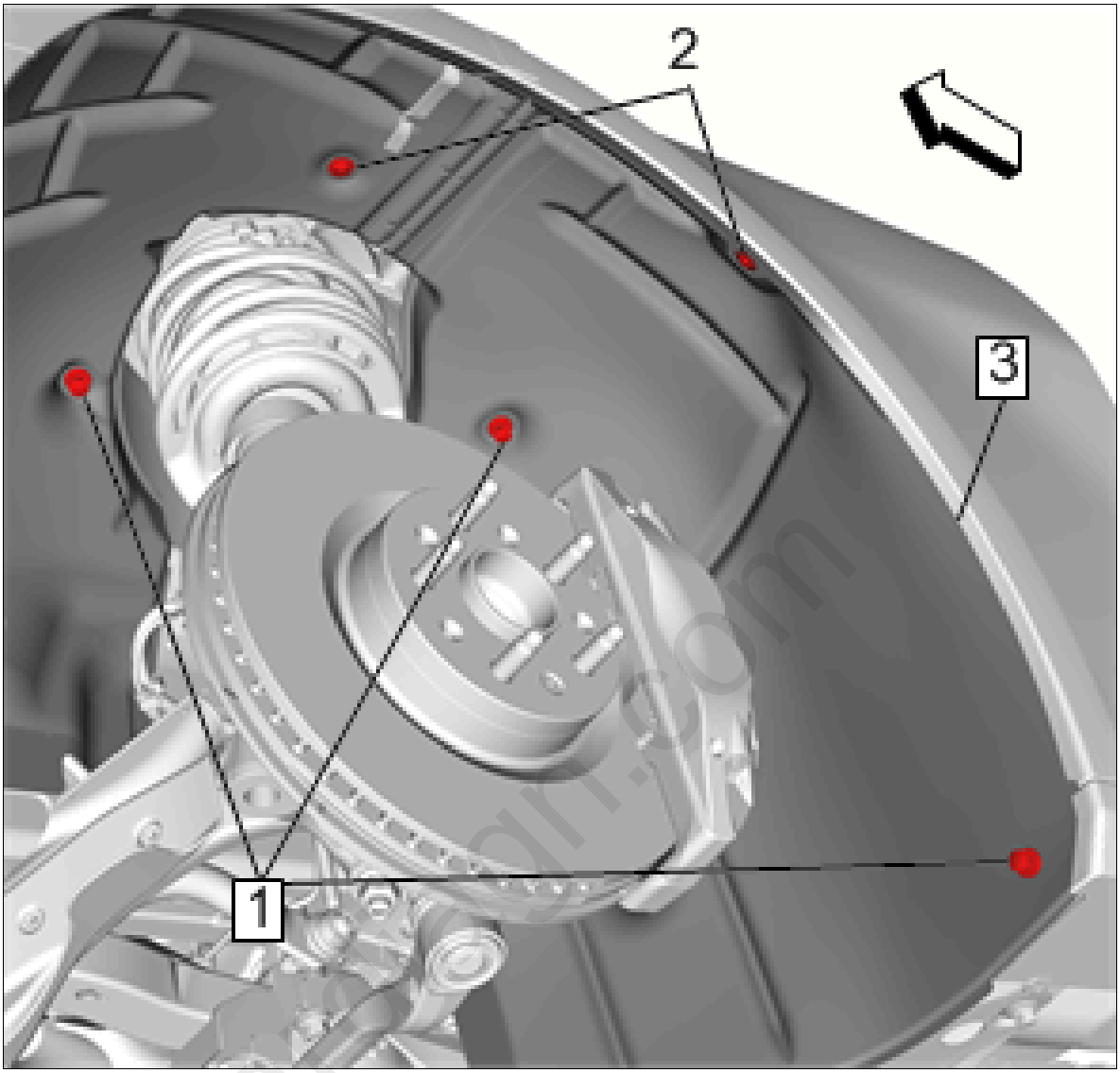
Fig 4: Front Bumper Fascia Bolt



Courtesy of GENERAL MOTORS COMPANY

8. Remove Front Bumper Fascia Bolt (1) (Qty: 2)
9. Remove Front Wheelhouse Liner Screw (2) (Qty: 5)

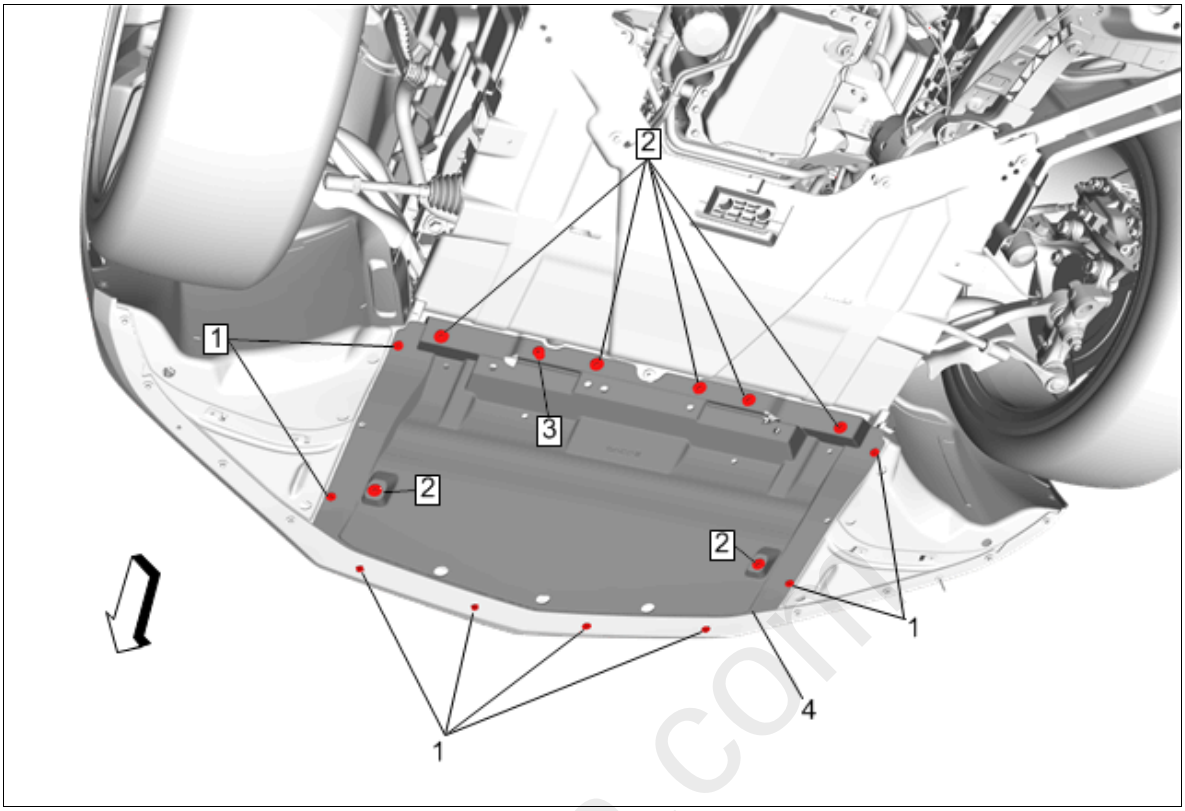
Fig 5: Front Wheelhouse Liner Retainer



Courtesy of GENERAL MOTORS COMPANY

10. Remove Front Wheelhouse Liner Retainer (1) (Qty: 3)
11. Remove Front Wheelhouse Liner Screw (2) (Qty: 2)
12. Remove Front Wheelhouse Liner (3)

Fig 6: Front Compartment Air Deflector

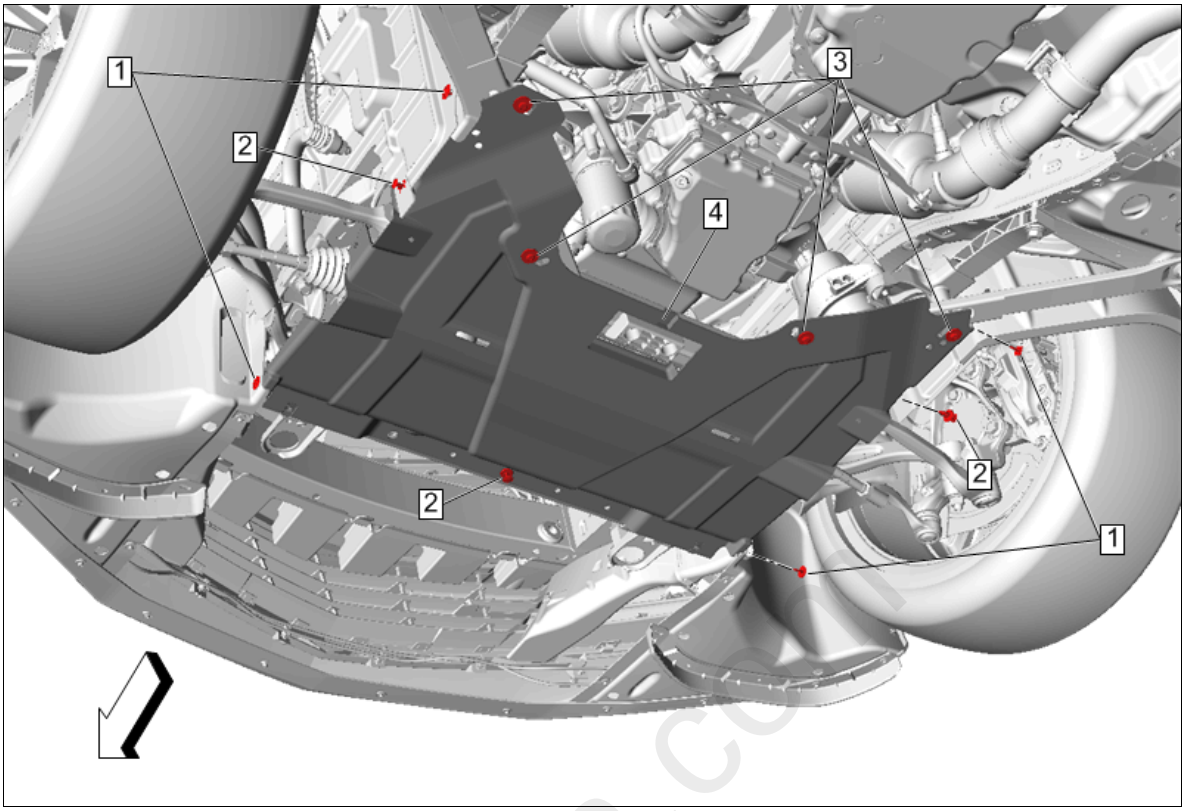


Courtesy of GENERAL MOTORS COMPANY

13. Remove Front Compartment Air Deflector (4) - Front Compartment Air Deflector Replacement (Convertible - LGX, LTG) Front Compartment Air Deflector Replacement (Coupe - LGX, LTG)

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Fig 7: Front Compartment Lower Noise Shield

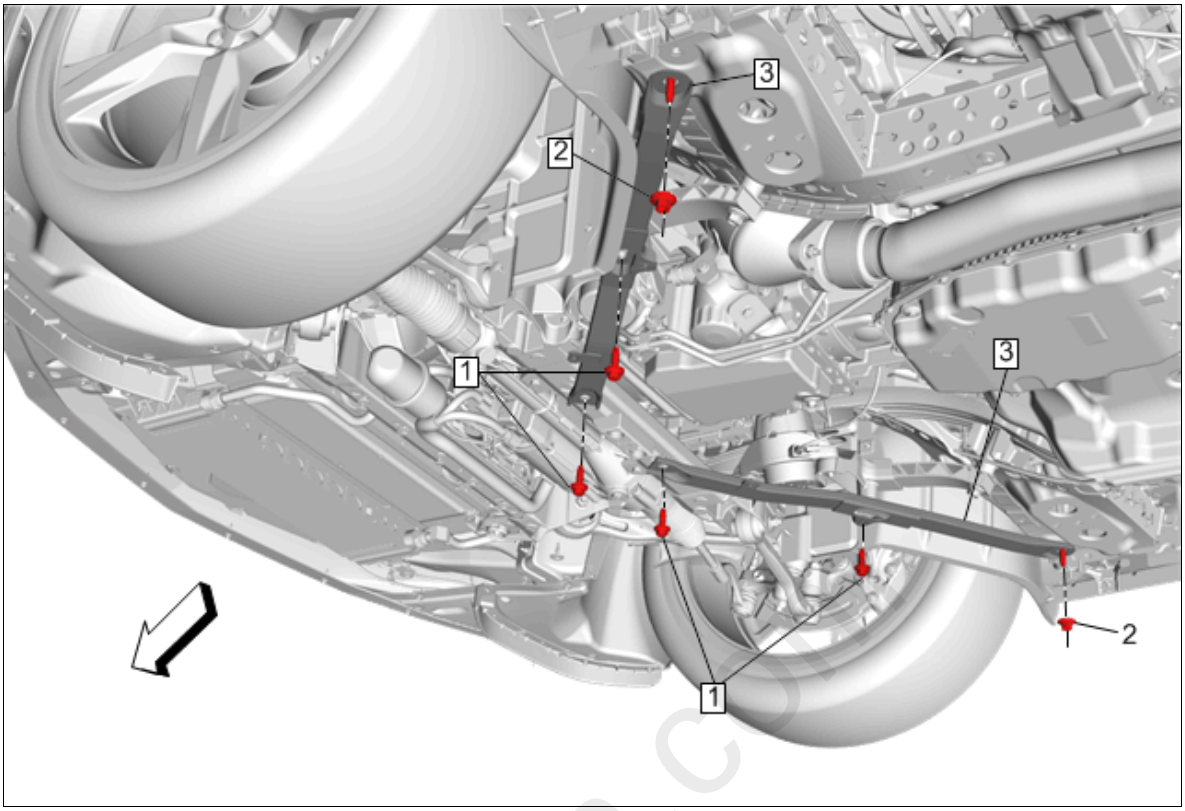


Courtesy of GENERAL MOTORS COMPANY

14. Remove Front Compartment Lower Noise Shield (4) - Front Compartment Lower Noise Shield Replacement (Coupe - LGX, LTG)

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Fig 8: Front Crossmember Brace

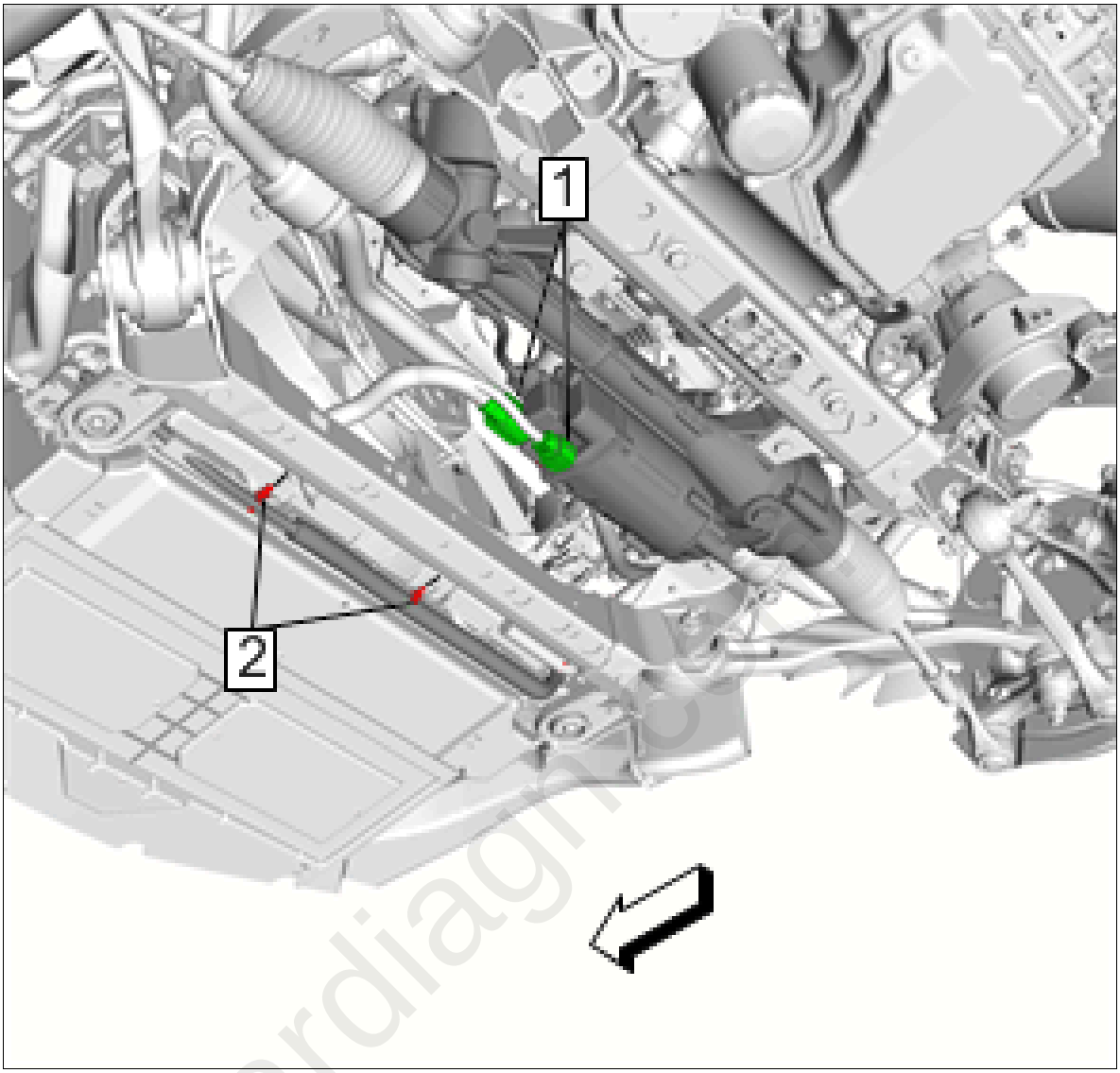


Courtesy of GENERAL MOTORS COMPANY

15. Remove Front Crossmember Brace (3) - Front Crossmember Brace Replacement (Coupe - LGX, LTG) Front Crossmember Brace Replacement (Convertible - LTG)

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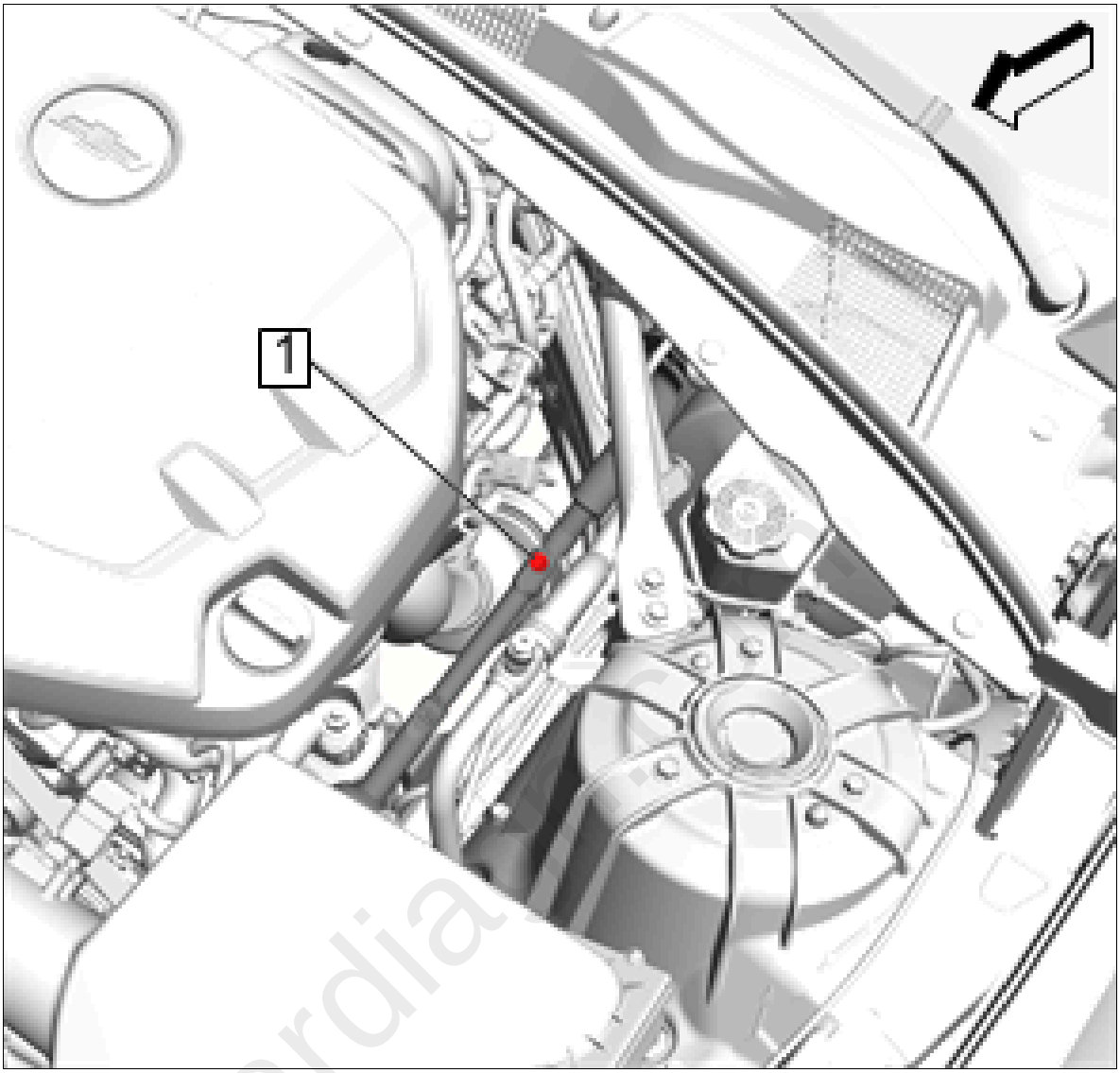
Fig 9: Steering Gear Electrical Connectors



Courtesy of GENERAL MOTORS COMPANY

16. Disconnect the steering gear electrical connectors (1)
17. Remove the wiring harness retainers from the frame (2)

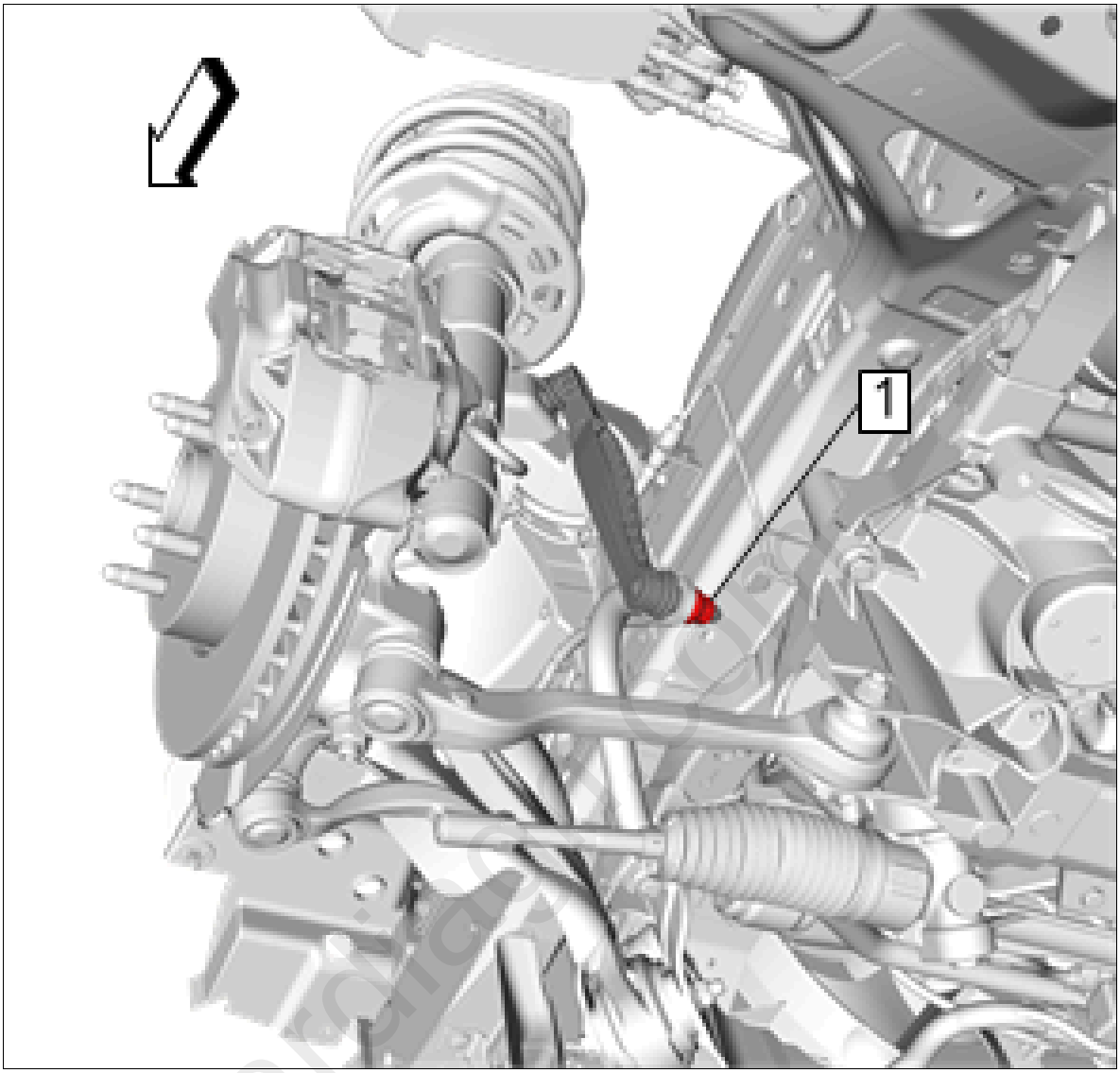
Fig 10: Intermediate Steering Shaft From Steering Column Shaft



Courtesy of GENERAL MOTORS COMPANY

18. Disconnect the intermediate steering shaft from the steering column shaft (1) - Mid Intermediate Steering Shaft Replacement

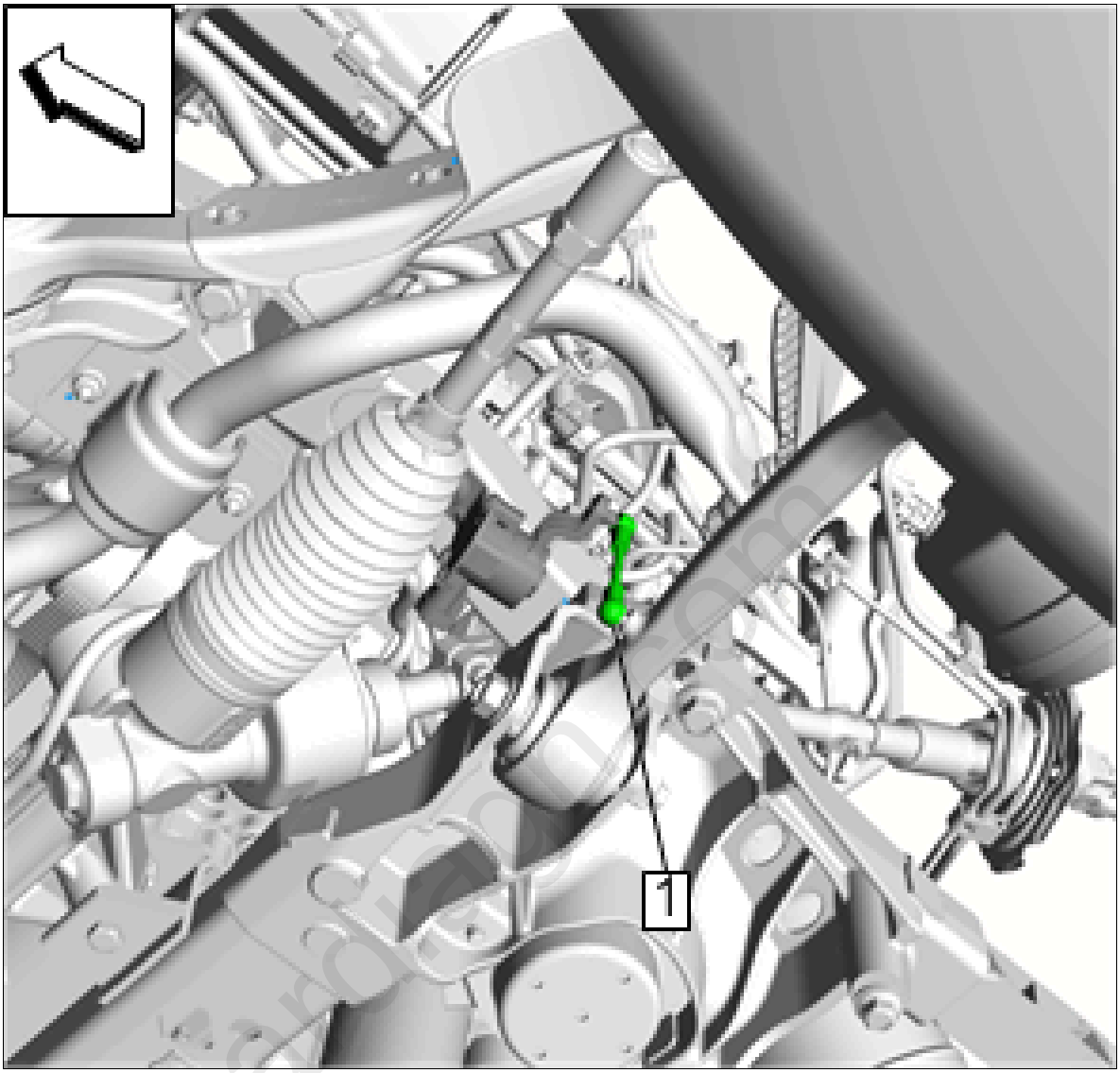
Fig 11: Right And Left Lower Stabilizer Shaft Links From Stabilizer Bar



Courtesy of GENERAL MOTORS COMPANY

19. Disconnect the right and left lower stabilizer shaft links from the stabilizer bar (1) - Stabilizer Shaft Link Replacement (LGX, LTG)

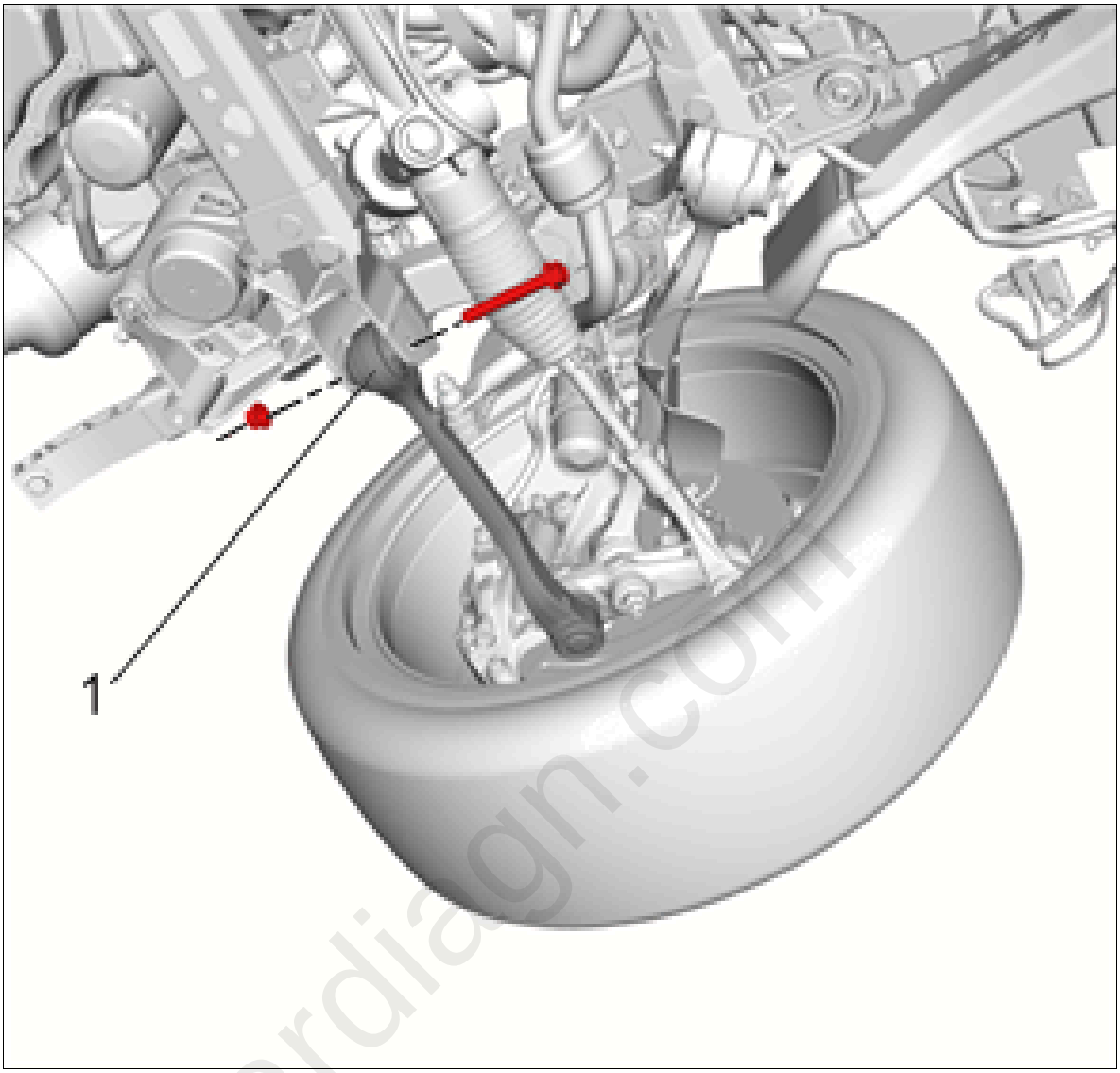
Fig 12: Front Suspension Automatic Forward Lighting Position Sensor Arms From Lower Control Rear Links



Courtesy of GENERAL MOTORS COMPANY

20. Disconnect the front suspension automatic forward lighting position sensor arms (1) from the lower control rear links.
21. Disconnect the electrical connector from the front suspension automatic forward lighting position sensor.

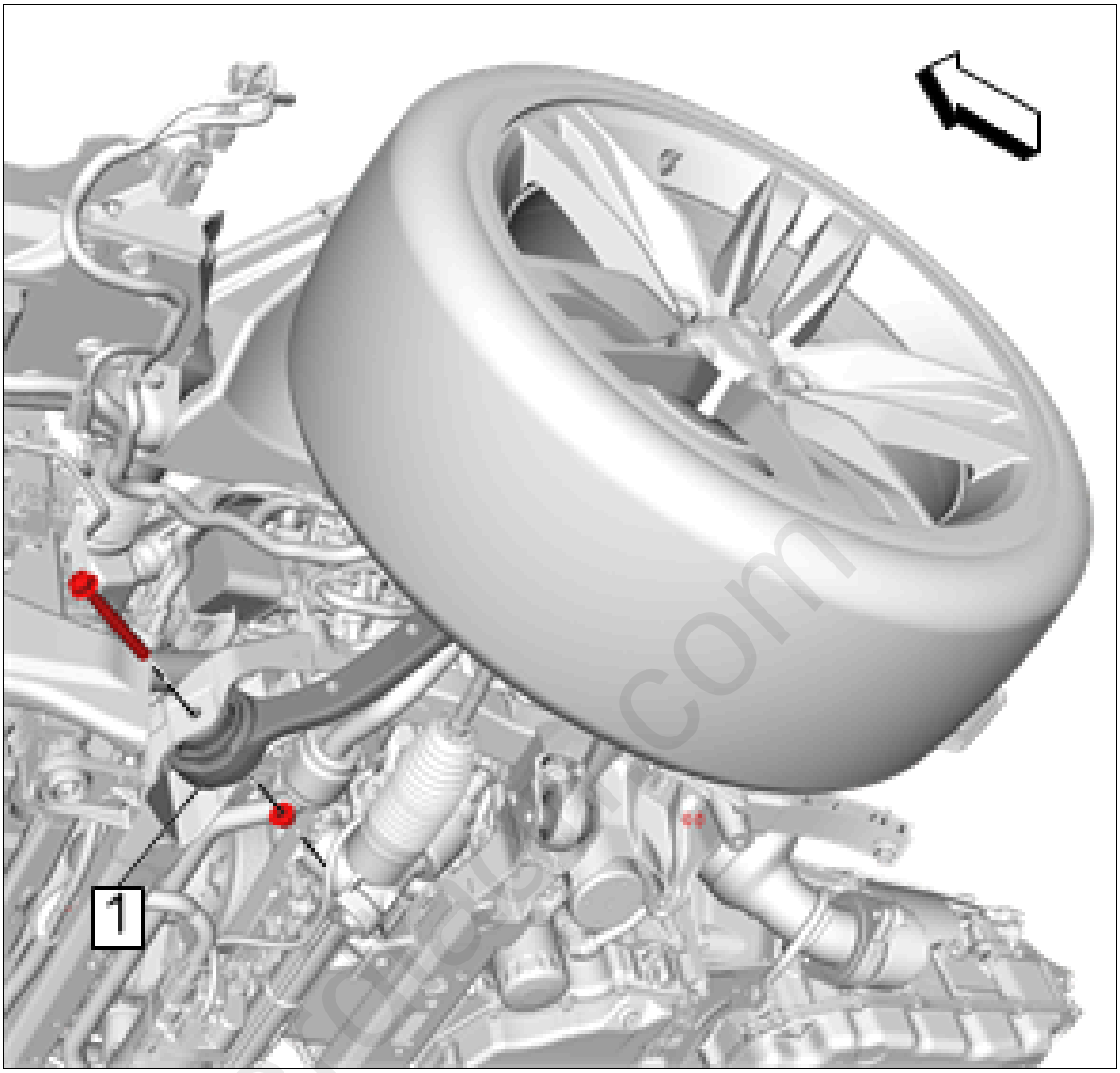
Fig 13: Front Lower Control Rear Links From Front Suspension Frame



Courtesy of GENERAL MOTORS COMPANY

22. Disconnect the front lower control rear links from the front suspension frame (1) - Front Lower Control Rear Link Replacement (LGX, LTG)

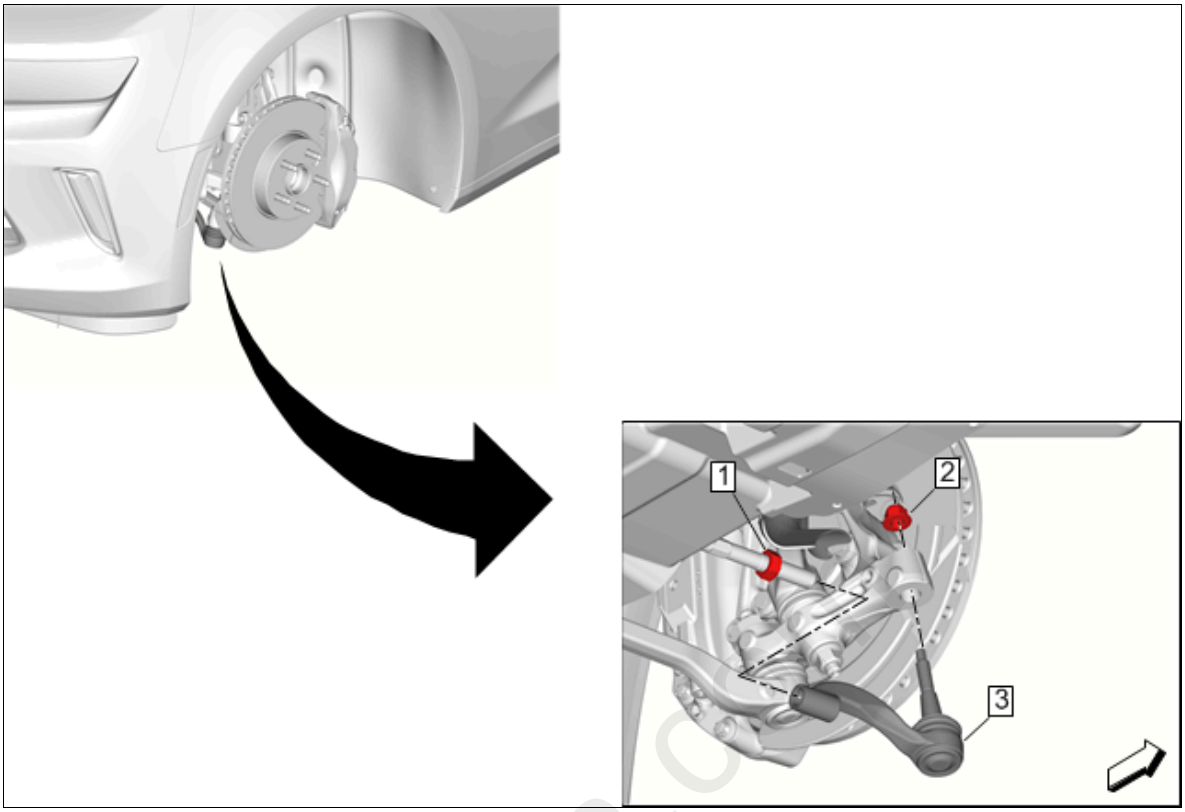
Fig 14: Front Lower Control Front Links From Front Suspension Frame



Courtesy of GENERAL MOTORS COMPANY

23. Disconnect the front lower control front links from the front suspension frame (1) - Front Lower Control Front Link Replacement (LGX or LTG, Without V18)Front Lower Control Front Link Replacement (LGX or LTG, With V18)

Fig 15: Steering Linkage Outer Tie Rod

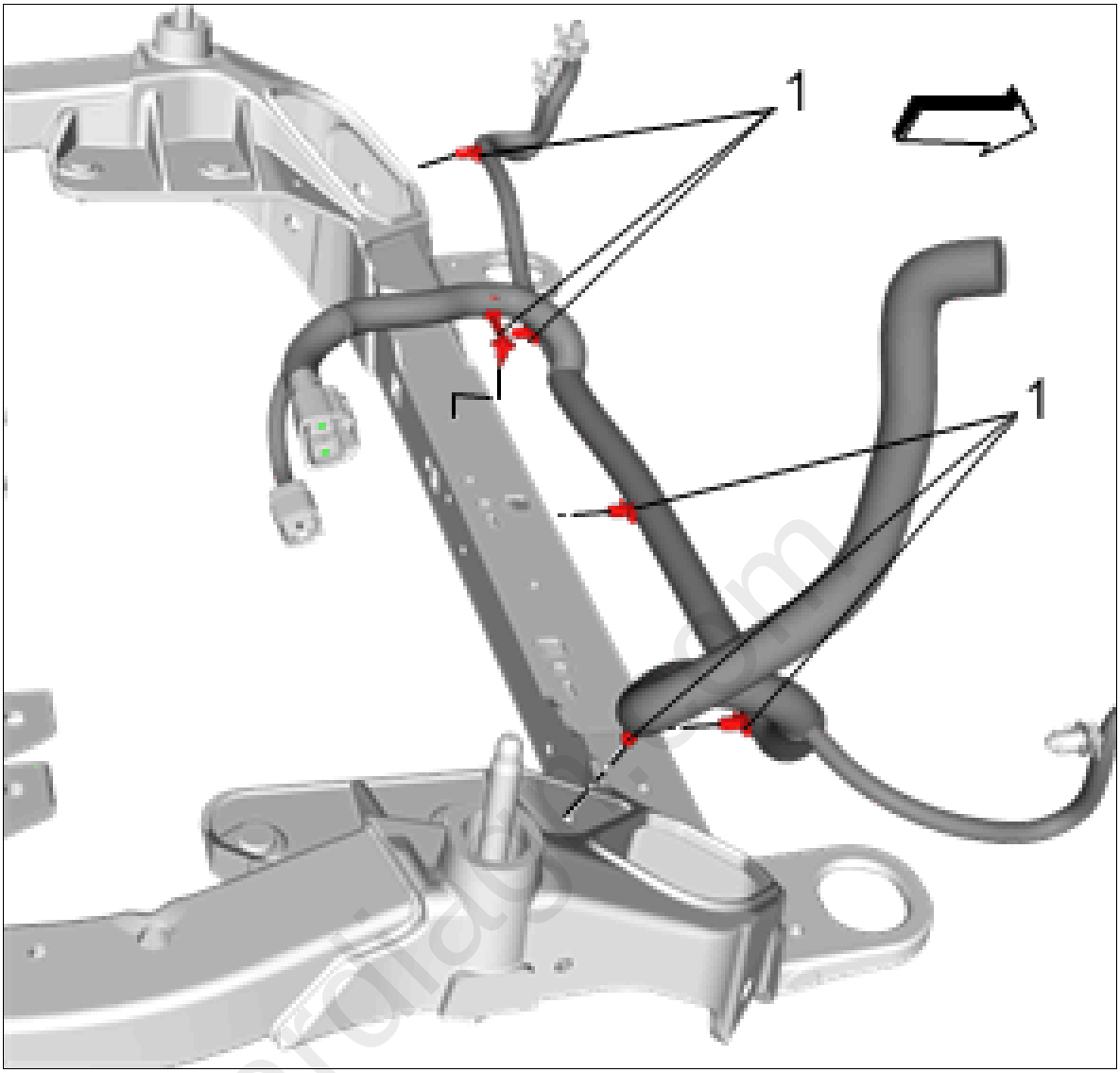


Courtesy of GENERAL MOTORS COMPANY

24. Remove Steering Linkage Outer Tie Rod (3) - Steering Linkage Outer Tie Rod Replacement

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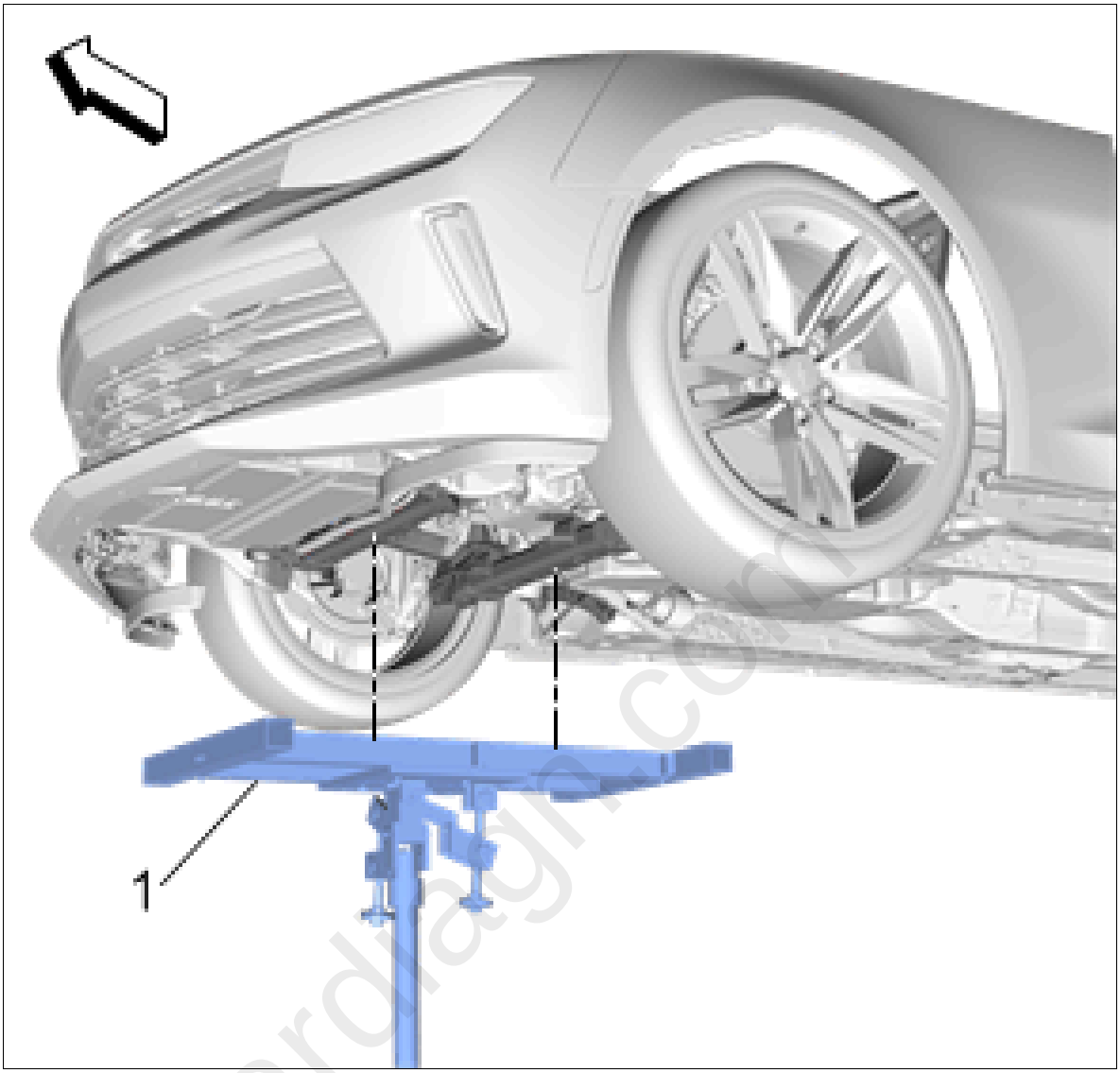
Fig 16: Wiring Harness Retainers From Frame



Courtesy of GENERAL MOTORS COMPANY

25. Remove the wiring harness retainers from the frame (1)

Fig 17: Stand Under Drivetrain And Front Suspension Cradle



Courtesy of GENERAL MOTORS COMPANY

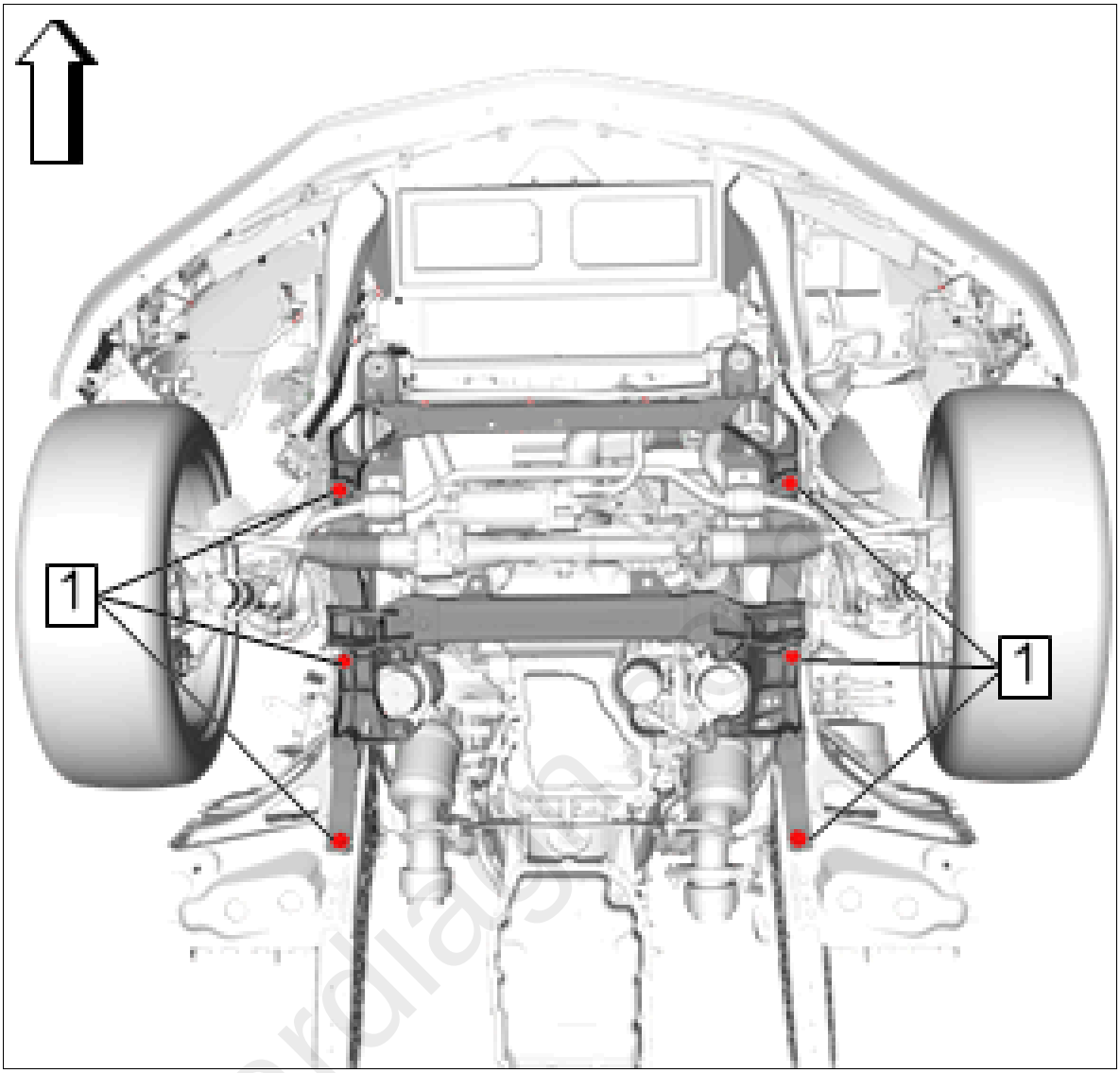
26. Install **J-39580** stand under the drivetrain and front suspension cradle.

    (1)

27. Lower the vehicle until the drivetrain and front suspension frame is resting lightly on the jackstands.

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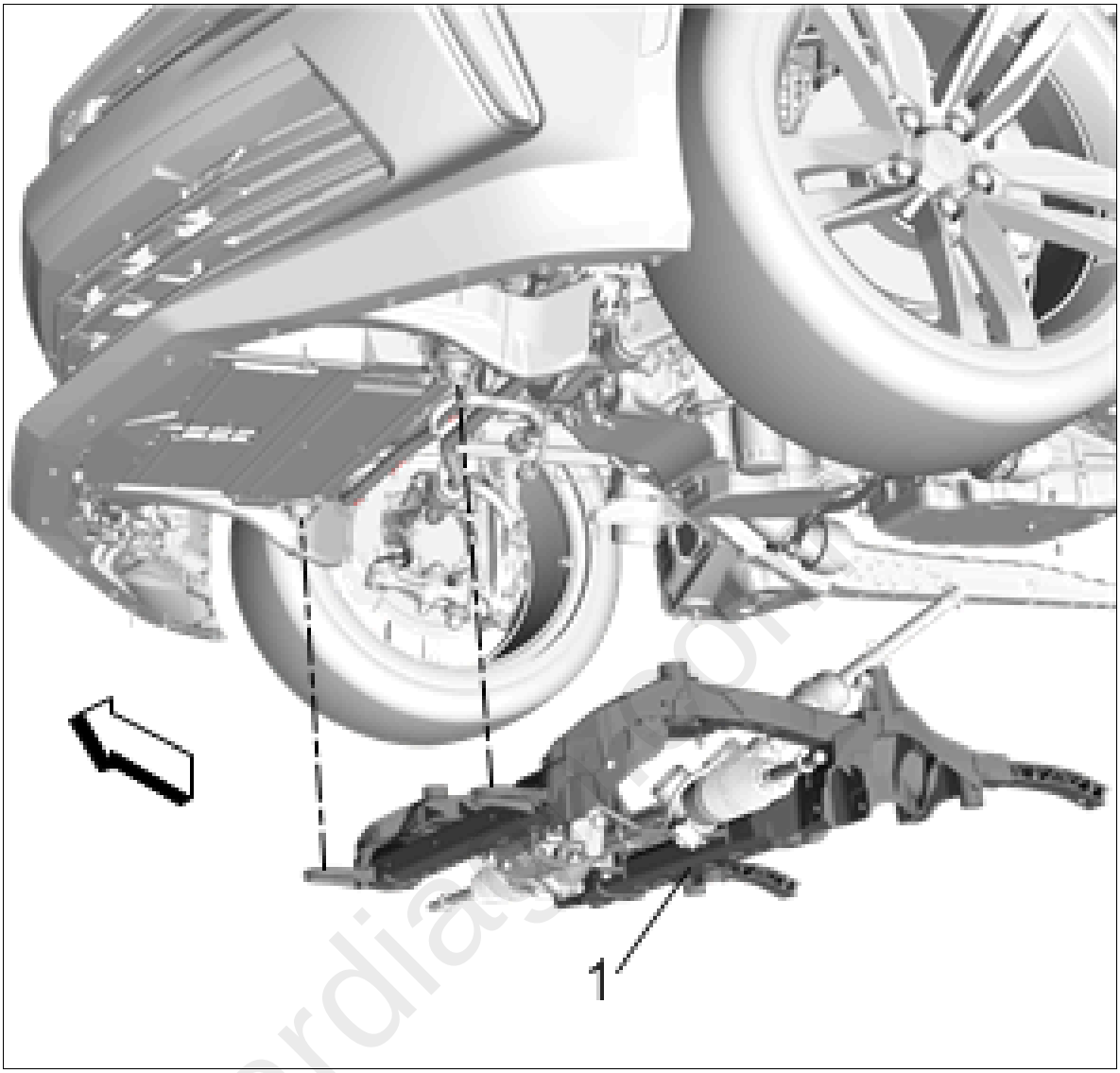
Fig 18: Drivetrain and Front Suspension Support Bolt



Courtesy of GENERAL MOTORS COMPANY

28. Remove Drivetrain and Front Suspension Support Bolt (1) (Qty: 6) and DISCARD the bolts.
29. With the aid of an assistant, carefully raise the body from the frame.
30. Ensure when raising the body the following items are clear from the frame:
    1. Vacuum lines
    2. Steering knuckles
    3. Electrical wiring harnesses
    4. Oil coolers lines

Fig 19: Drivetrain And Front Suspension Frame

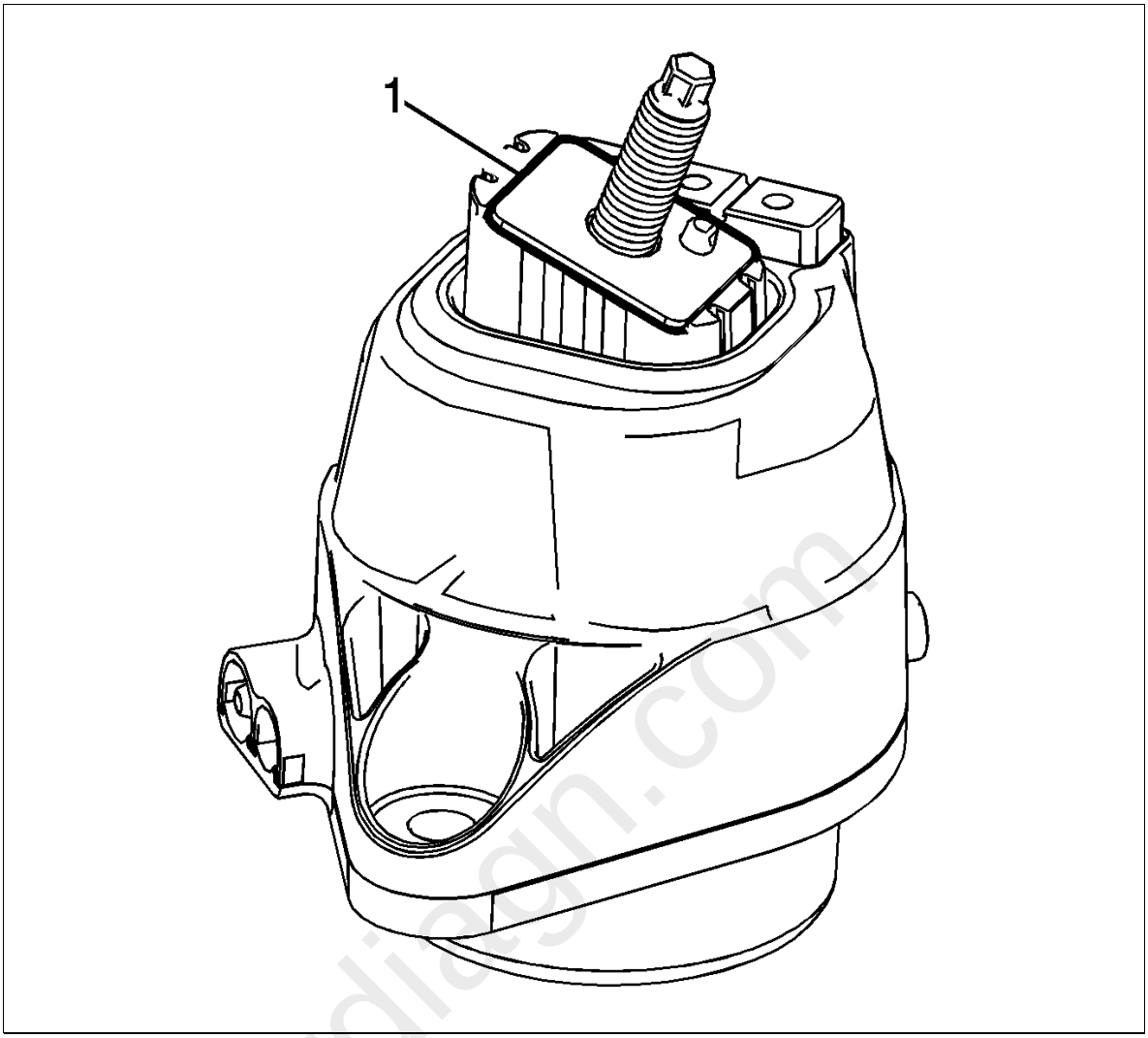


Courtesy of GENERAL MOTORS COMPANY

31. Remove the drivetrain and front suspension frame (1)
32. Transfer components as necessary.

REPAIR INSTRUCTIONS > DRIVETRAIN AND FRONT SUSPENSION CRADLE REPLACEMENT (LTG) > INSTALLATION PROCEDURE

Fig 1: Phenolic Spacer



Courtesy of GENERAL MOTORS COMPANY

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⚠ *CAUTION:*

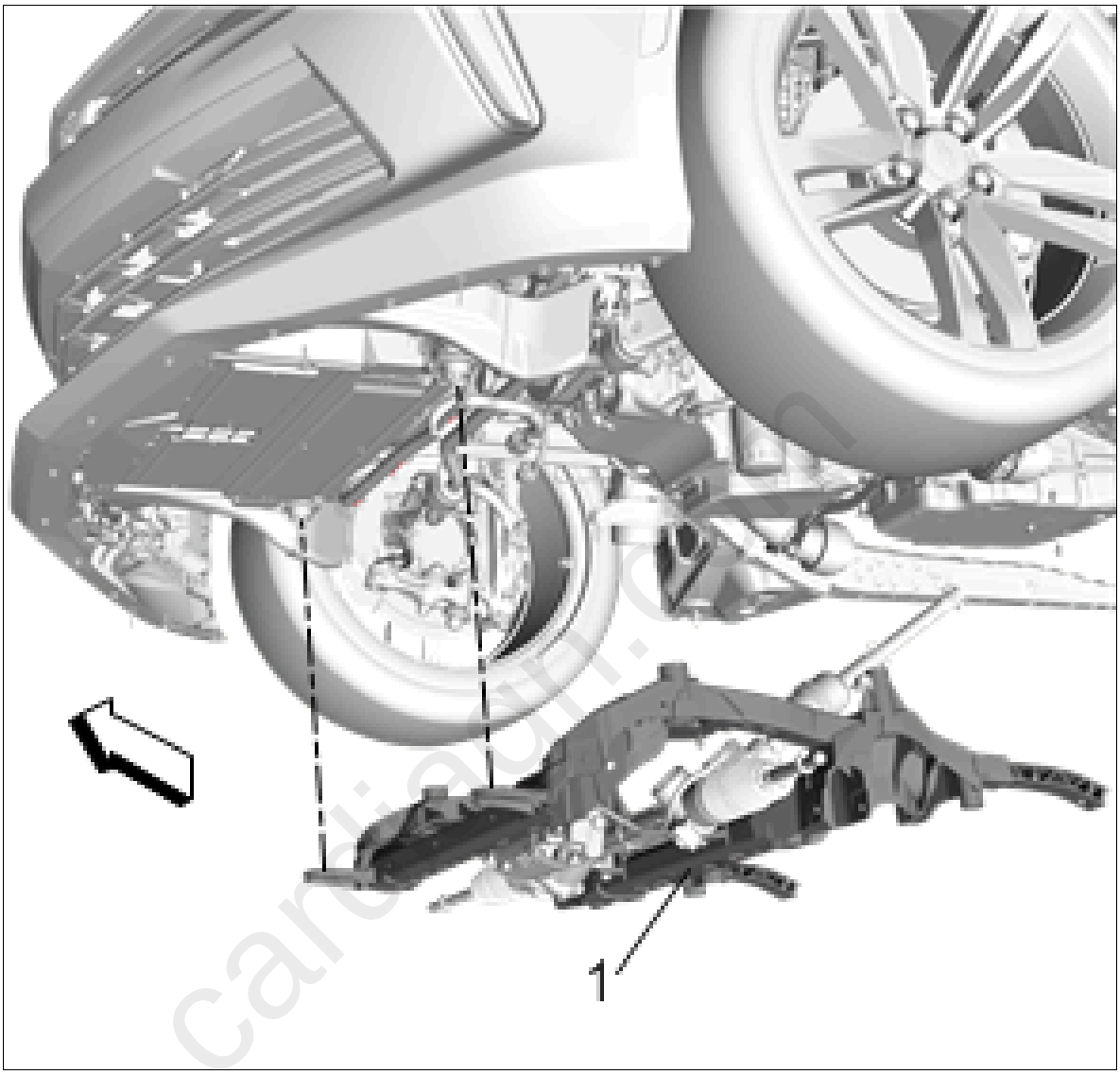
Phenolic spacer must be present to prevent galvanic/corrosive reaction and/or excessive temperature conduction between engine mount bracket and engine mount. Replace mount if phenolic spacer is missing or damaged. Failure to ensure phenolic spacer is intact and not damaged can lead to premature failure of engine mount and/or engine mount bracket.

NOTE:

Suspension components attached to the frame use Torque-to-Yield fasteners and must be DISCARDED and replaced with NEW Torque Angle Yield (TAY) fasteners. The frame to body fasteners are not TAY fasteners.

1. Inspect the engine mount to ensure the phenolic spacer (1) is in place and not damaged.
2. With the aid of an assistant, position and secure the NEW frame assembly to the support fixture.

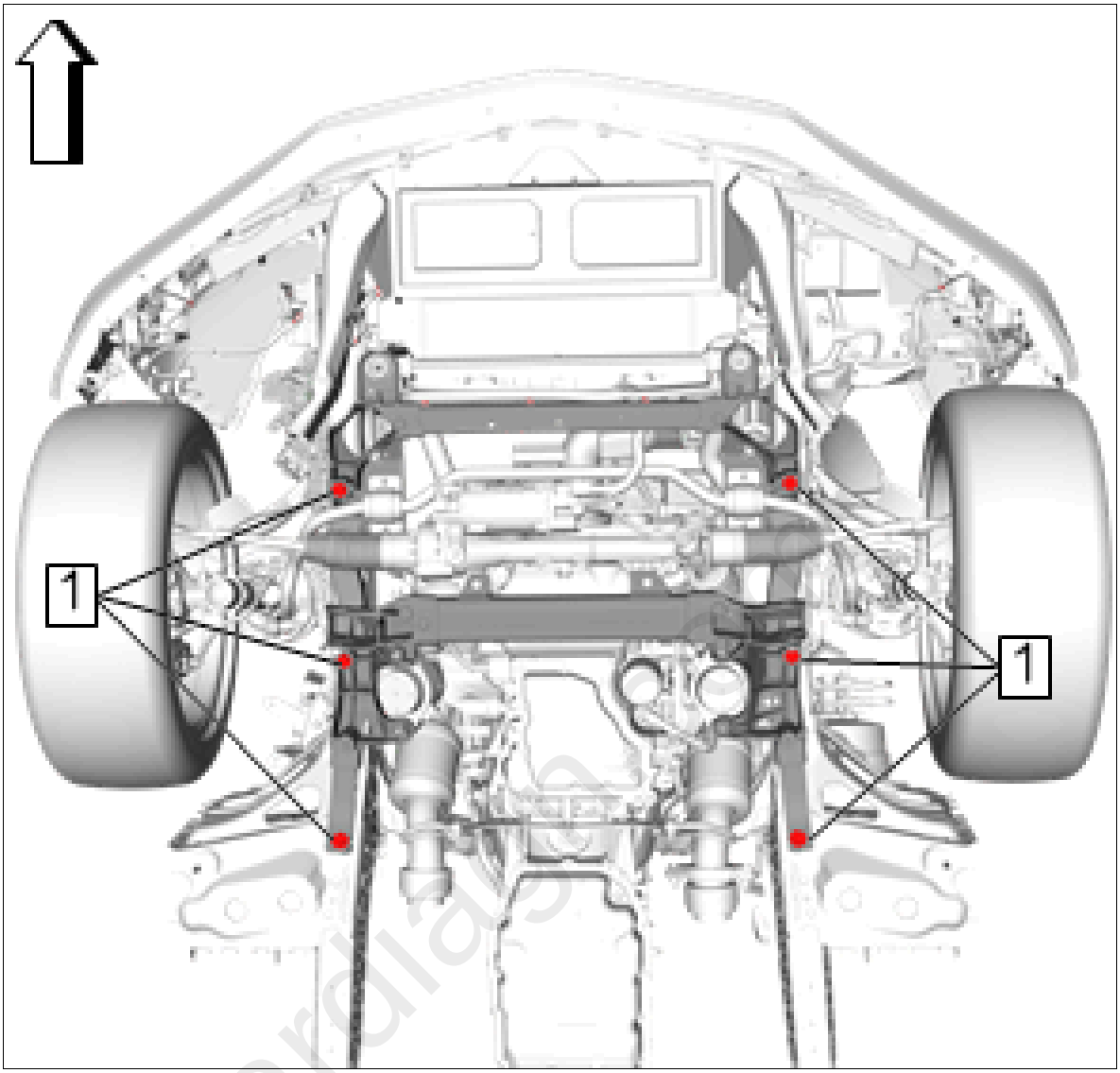
Fig 2: Drivetrain And Front Suspension Frame



Courtesy of GENERAL MOTORS COMPANY

3. With the aid of an assistant, carefully lower the body to the frame (1)
4. Ensure the following components are clear from the frame:
    1. Vacuum lines
    2. Steering knuckles
    3. Electrical wiring harnesses
    4. Oil cooler lines

Fig 3: Drivetrain and Front Suspension Support Bolt



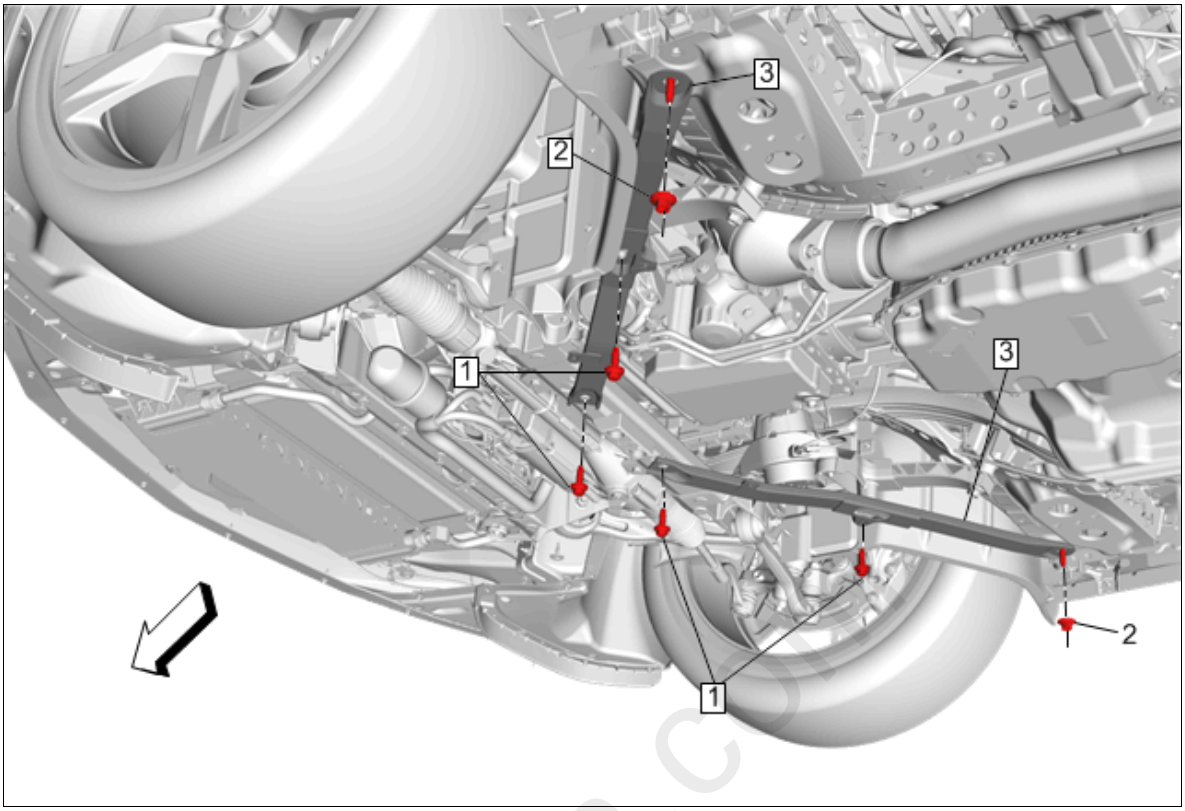
Courtesy of GENERAL MOTORS COMPANY

> ⚠ *CAUTION:*
>
> *Refer to Fastener Caution*

5. Install NEW Drivetrain and Front Suspension Support Bolt (1) (Qty: 6) and tighten to 100 N.m (74 lb ft)

6. Remove the **J-39580** stand from under the vehicle.

Fig 4: Front Crossmember Brace

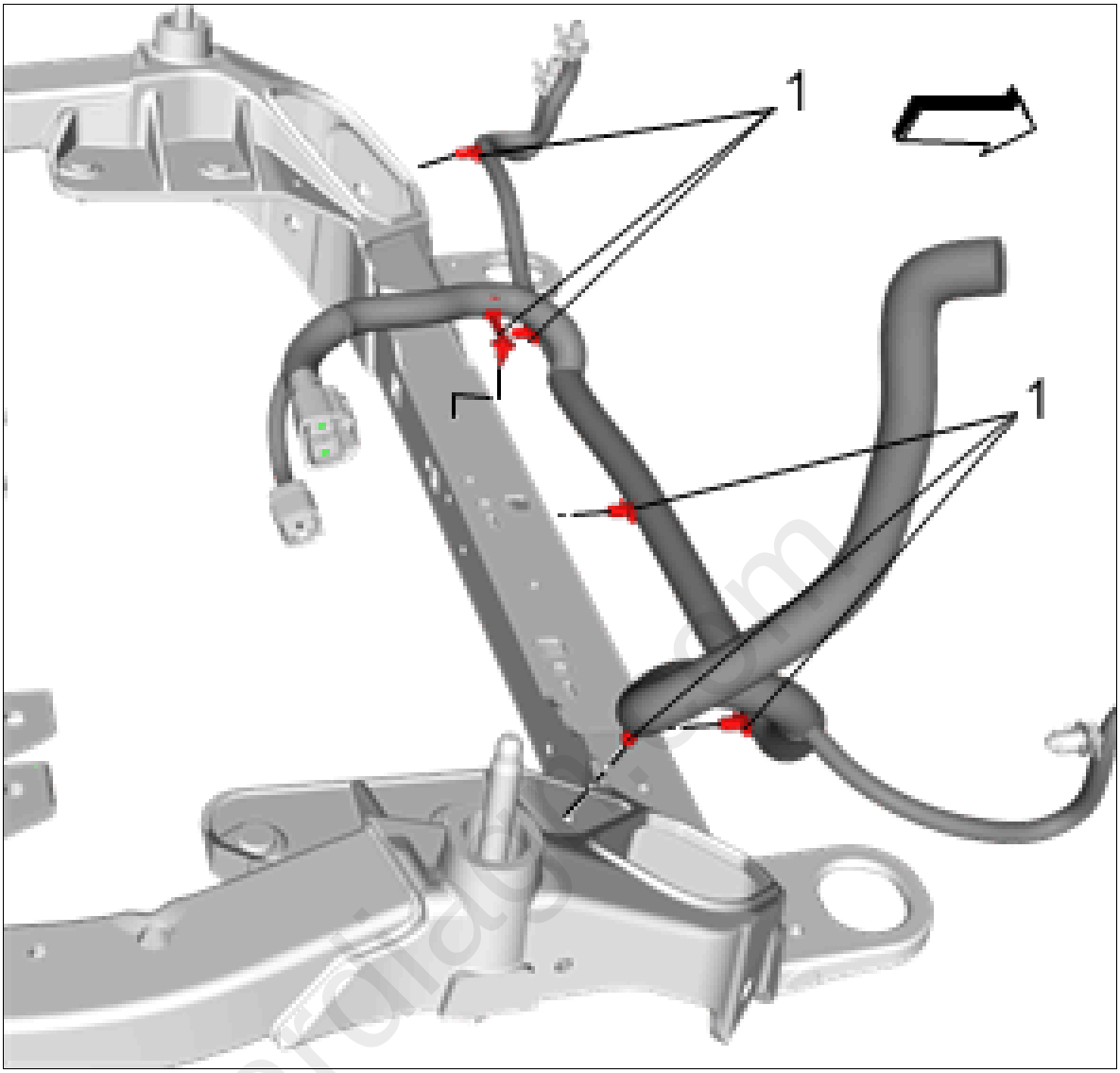


Courtesy of GENERAL MOTORS COMPANY

7. Install Front Crossmember Brace (3) - Front Crossmember Brace Replacement (Coupe - LGX, LTG) Front Crossmember Brace Replacement (Convertible - LTG)

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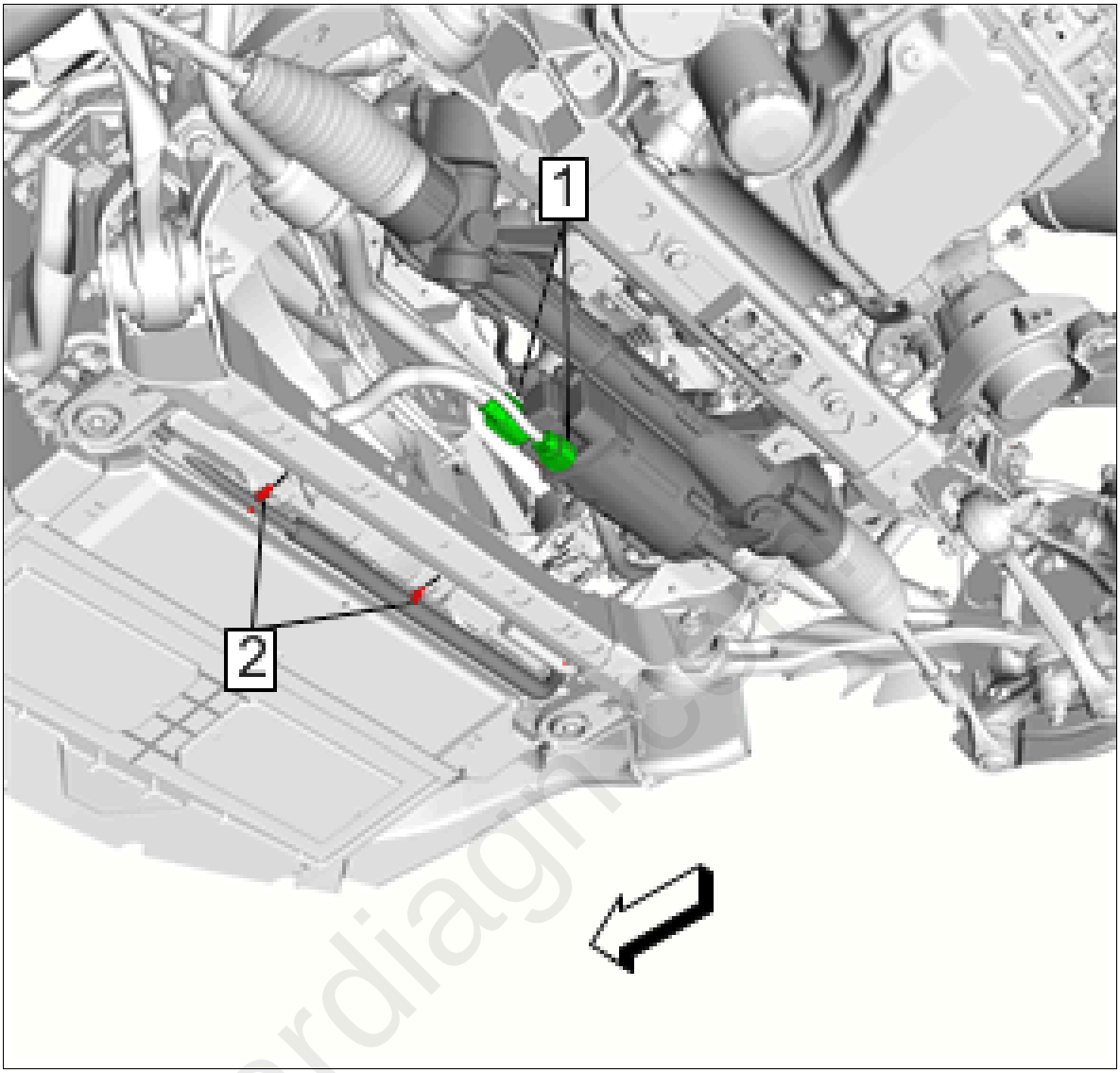
Fig 5: Wiring Harness Retainers From Frame



Courtesy of GENERAL MOTORS COMPANY

8. Install the wiring harness retainers to the frame (1)

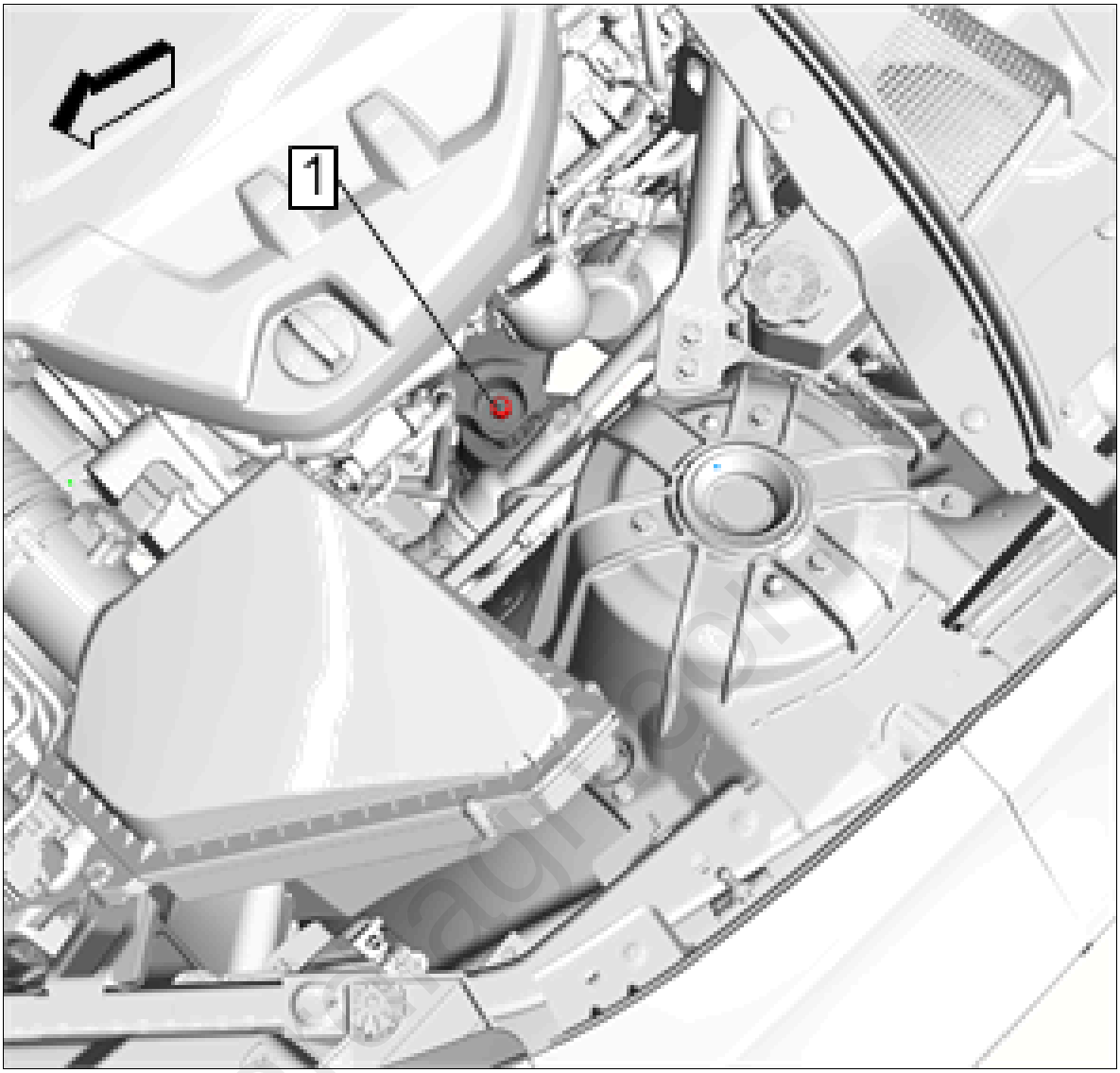
Fig 6: Steering Gear Electrical Connectors



Courtesy of GENERAL MOTORS COMPANY

9. Connect the steering gear electrical connectors (1)

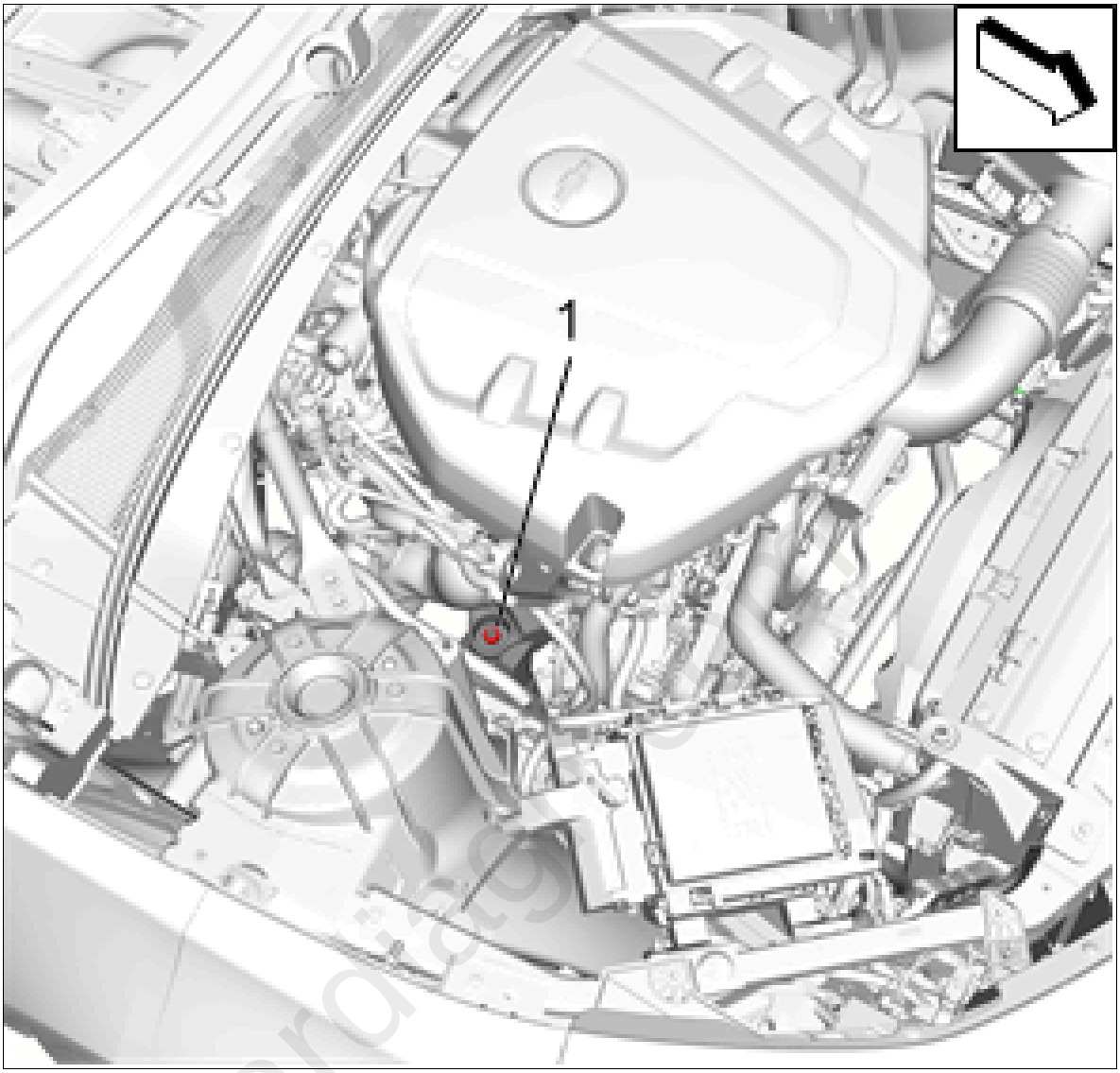
Fig 7: Left Side Engine Mount Nut



Courtesy of GENERAL MOTORS COMPANY

10. Install Engine Mount Nut - Left Side (1) and tighten to 70 N.m (52 lb ft)

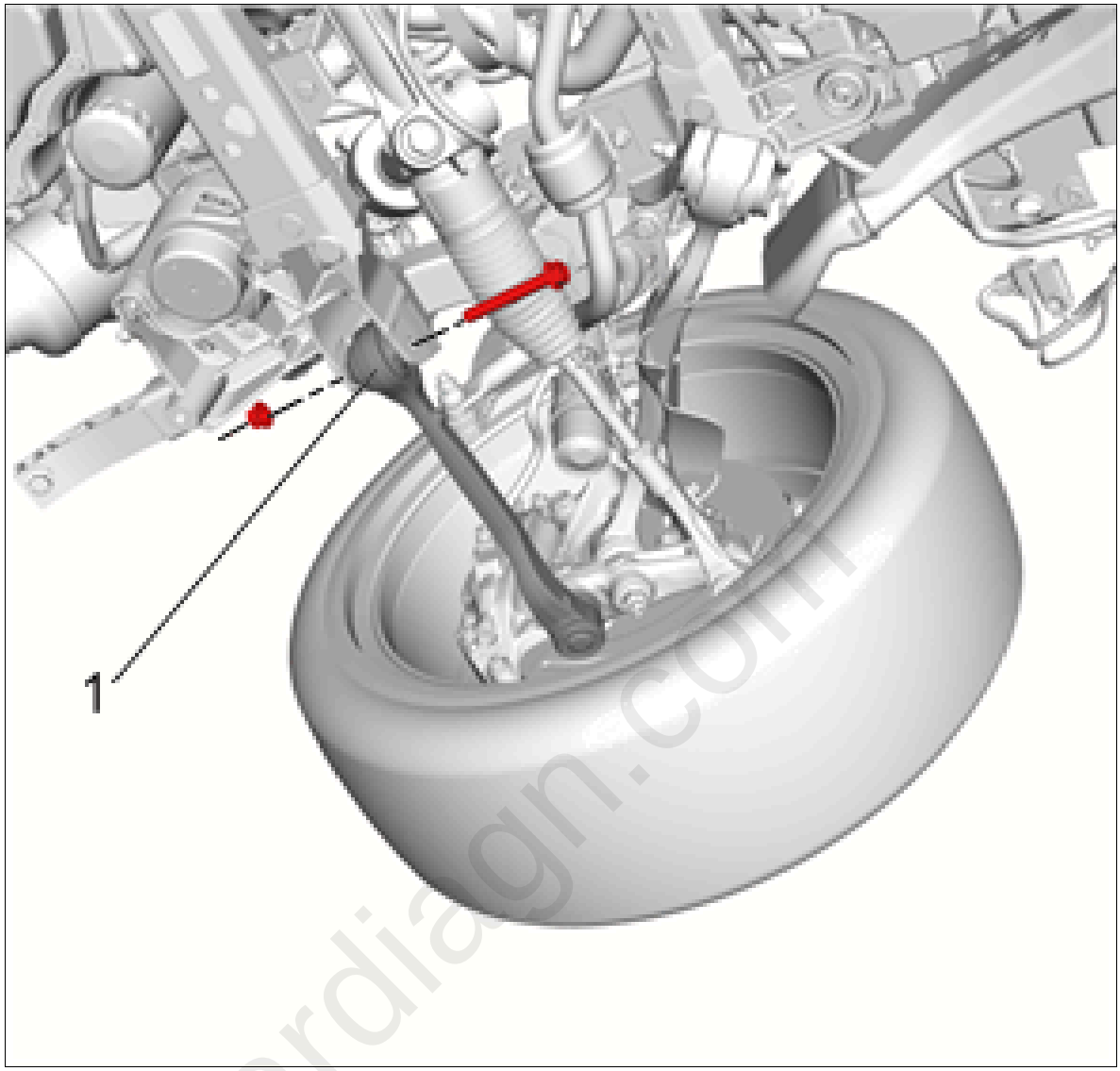
Fig 8: Right Side Engine Mount Nut



Courtesy of GENERAL MOTORS COMPANY

11. Install Engine Mount Nut - Right Side (1) and tighten to 70 N.m (52 lb ft)

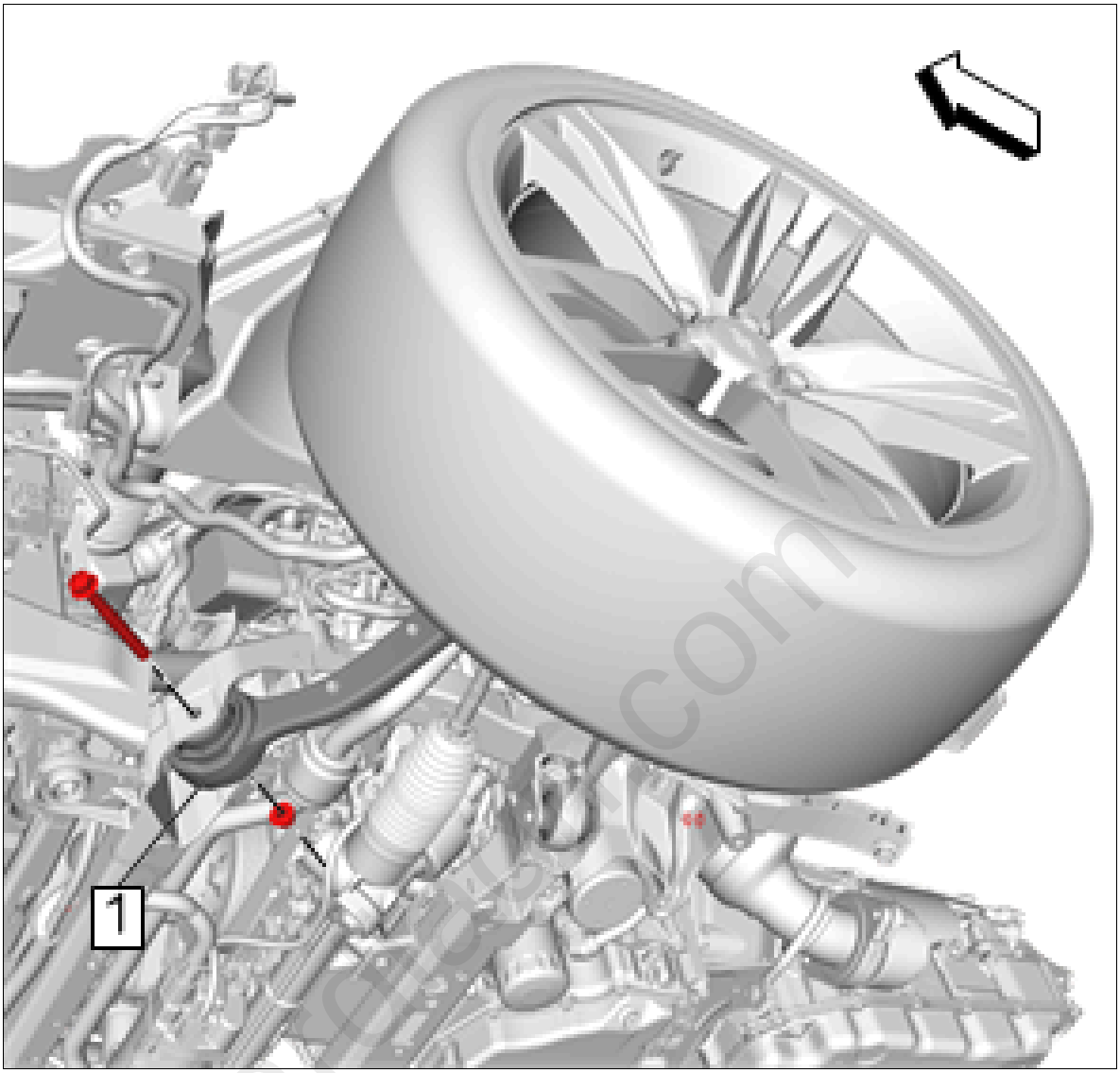
Fig 9: Front Lower Control Rear Links From Front Suspension Frame



Courtesy of GENERAL MOTORS COMPANY

12. Install Front Lower Control Rear Link (1) - Front Lower Control Rear Link Replacement (LGX, LTG)

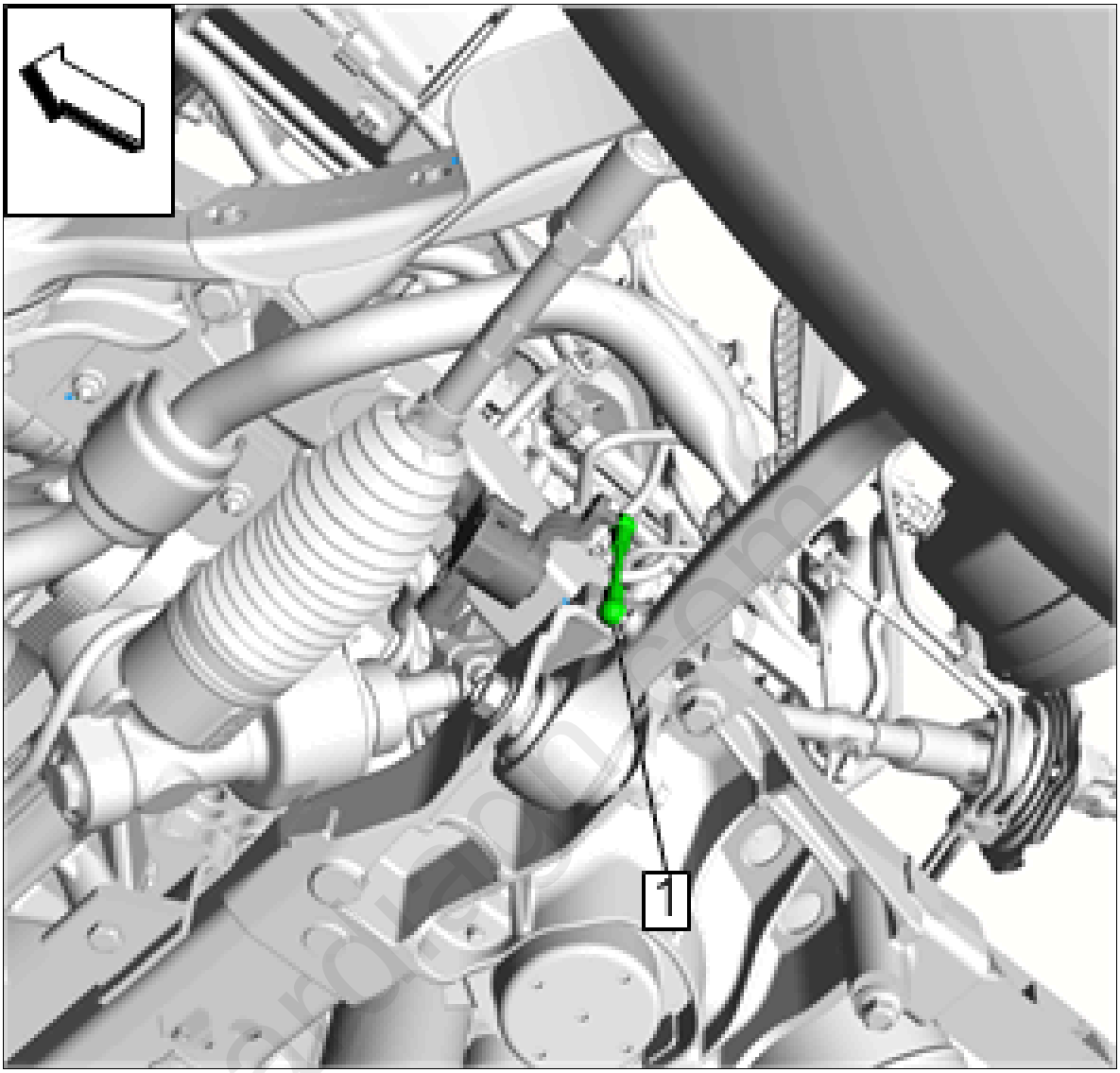
Fig 10: Front Lower Control Front Links From Front Suspension Frame



Courtesy of GENERAL MOTORS COMPANY

13. Install Front Lower Control Front Link (1) - Front Lower Control Front Link Replacement (LGX or LTG, Without V18)Front Lower Control Front Link Replacement (LGX or LTG, With V18)

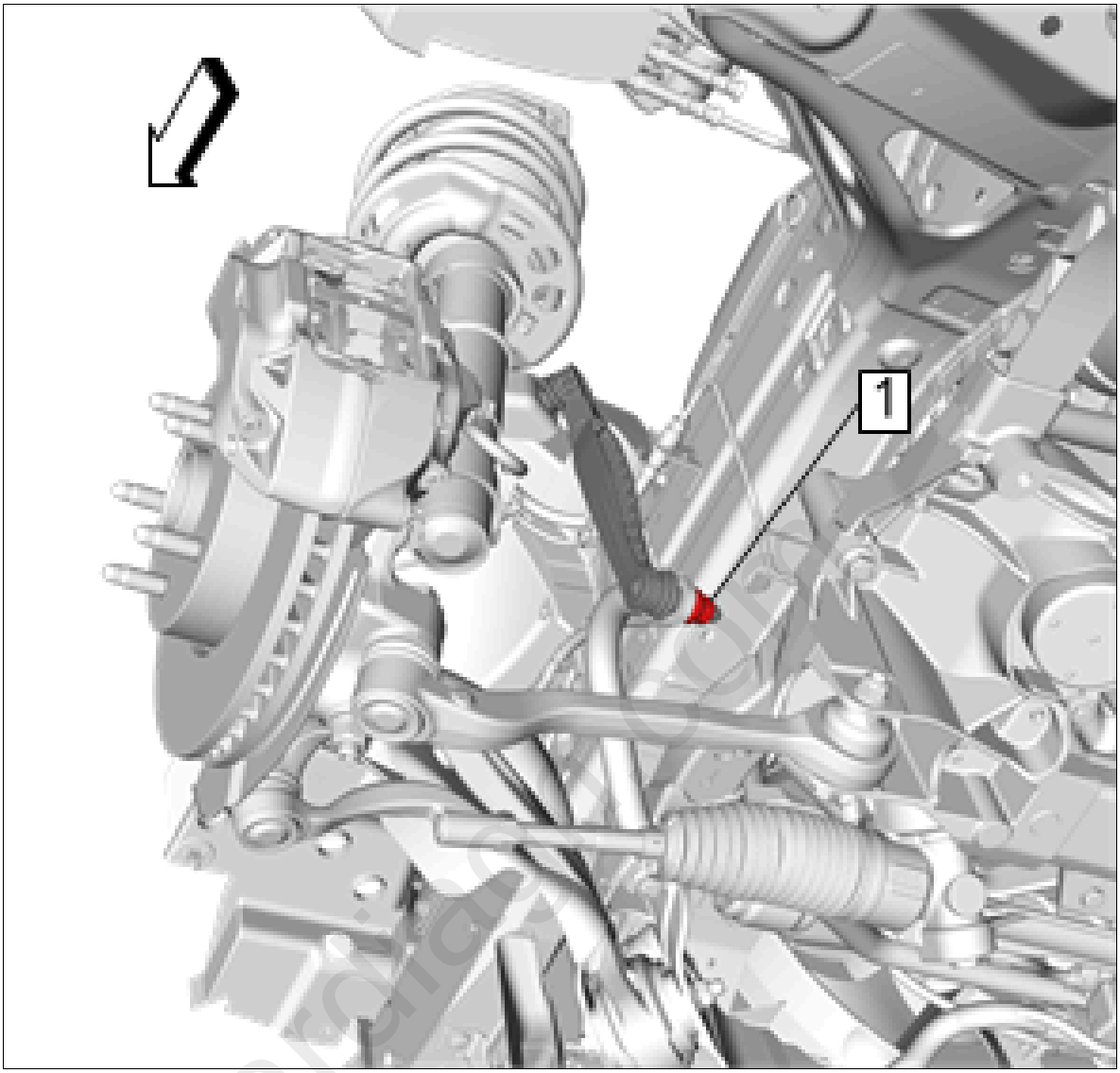
Fig 11: Front Suspension Automatic Forward Lighting Position Sensor Arms From Lower Control Rear Links



Courtesy of GENERAL MOTORS COMPANY

14. Connect the front suspension automatic forward lighting position sensor arm (1) to the lower control rear link.
15. Connect the electrical connector to the front suspension automatic forward lighting position sensor.

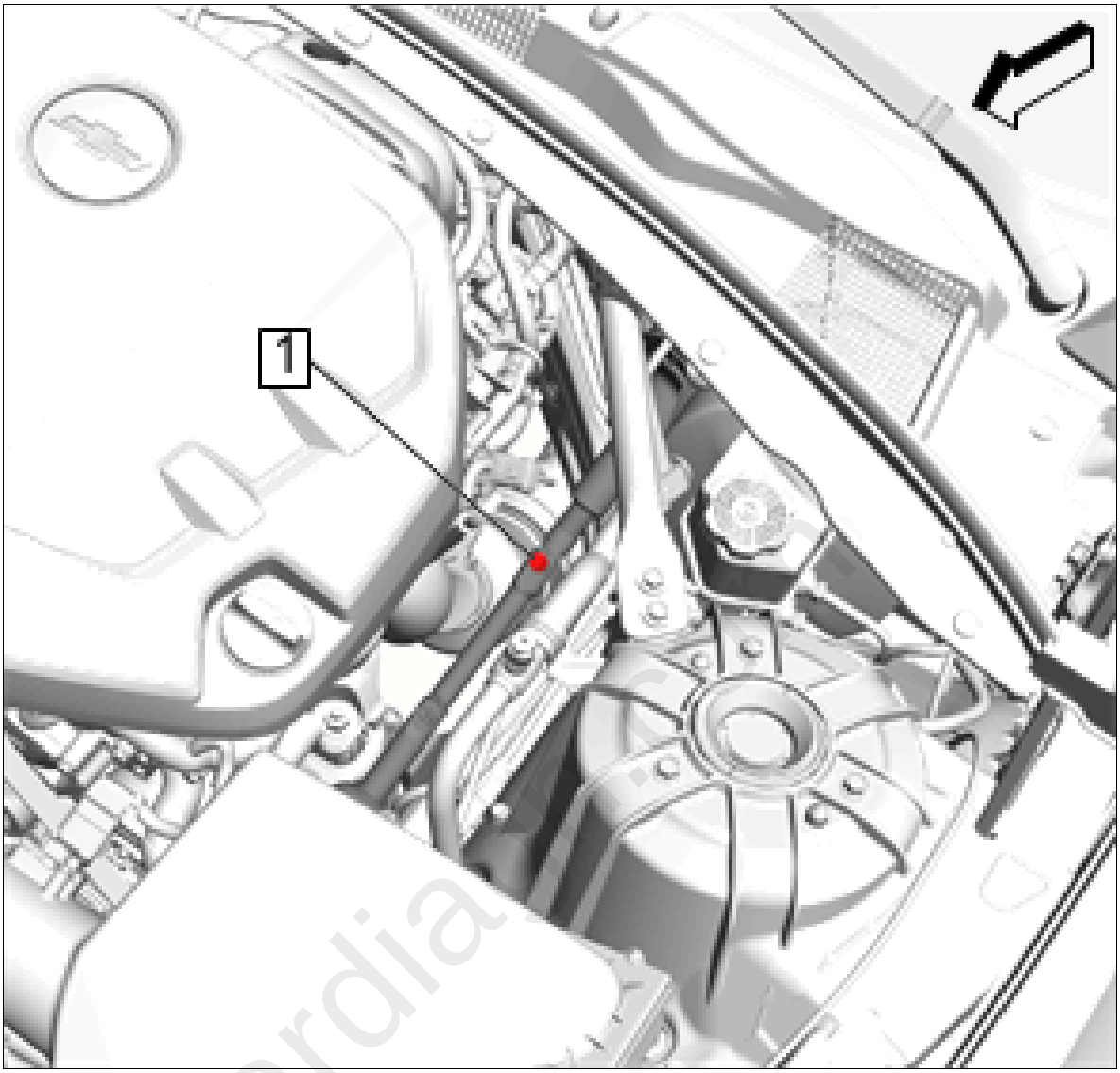
Fig 12: Right And Left Lower Stabilizer Shaft Links From Stabilizer Bar



Courtesy of GENERAL MOTORS COMPANY

16. Connect the right and left lower stabilizer shaft links to the stabilizer bar (1) - Stabilizer Shaft Link Replacement (LGX, LTG)

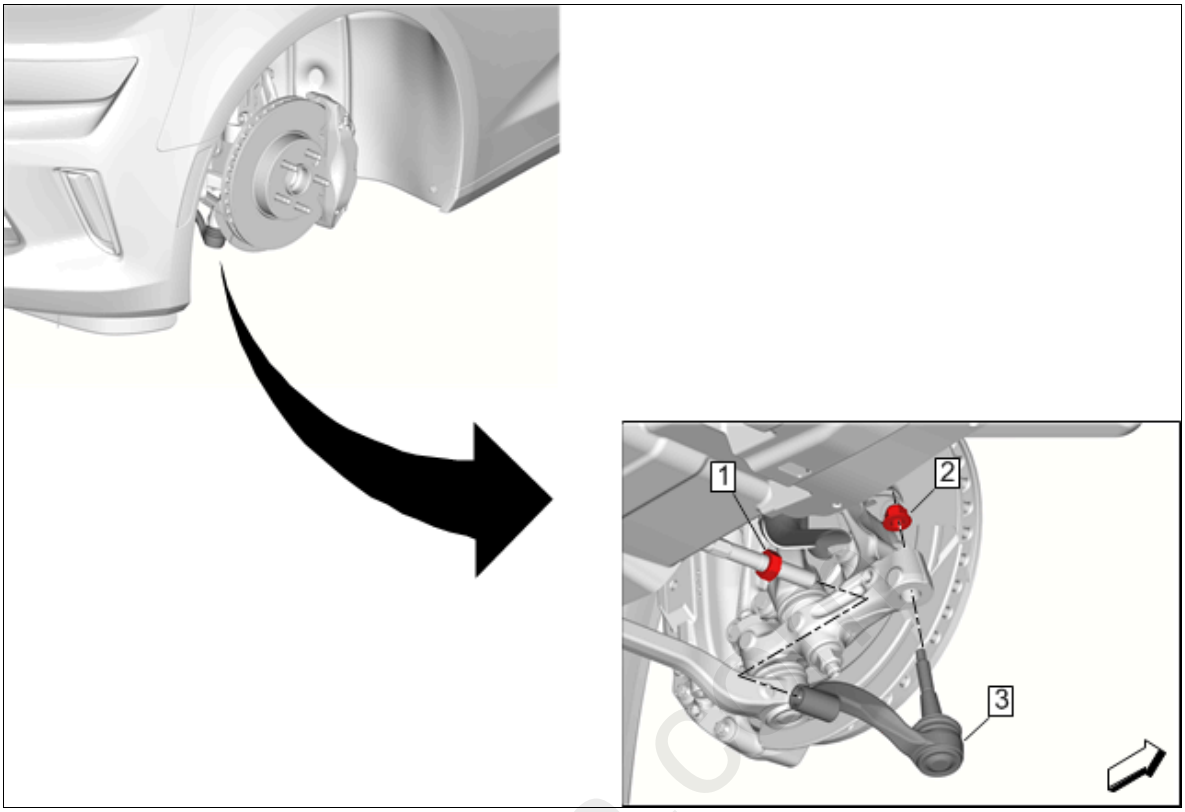
Fig 13: Intermediate Steering Shaft From Steering Column Shaft



Courtesy of GENERAL MOTORS COMPANY

17. Connect the intermediate steering shaft to the steering column (1) - Mid Intermediate Steering Shaft Replacement

Fig 14: Steering Linkage Outer Tie Rod

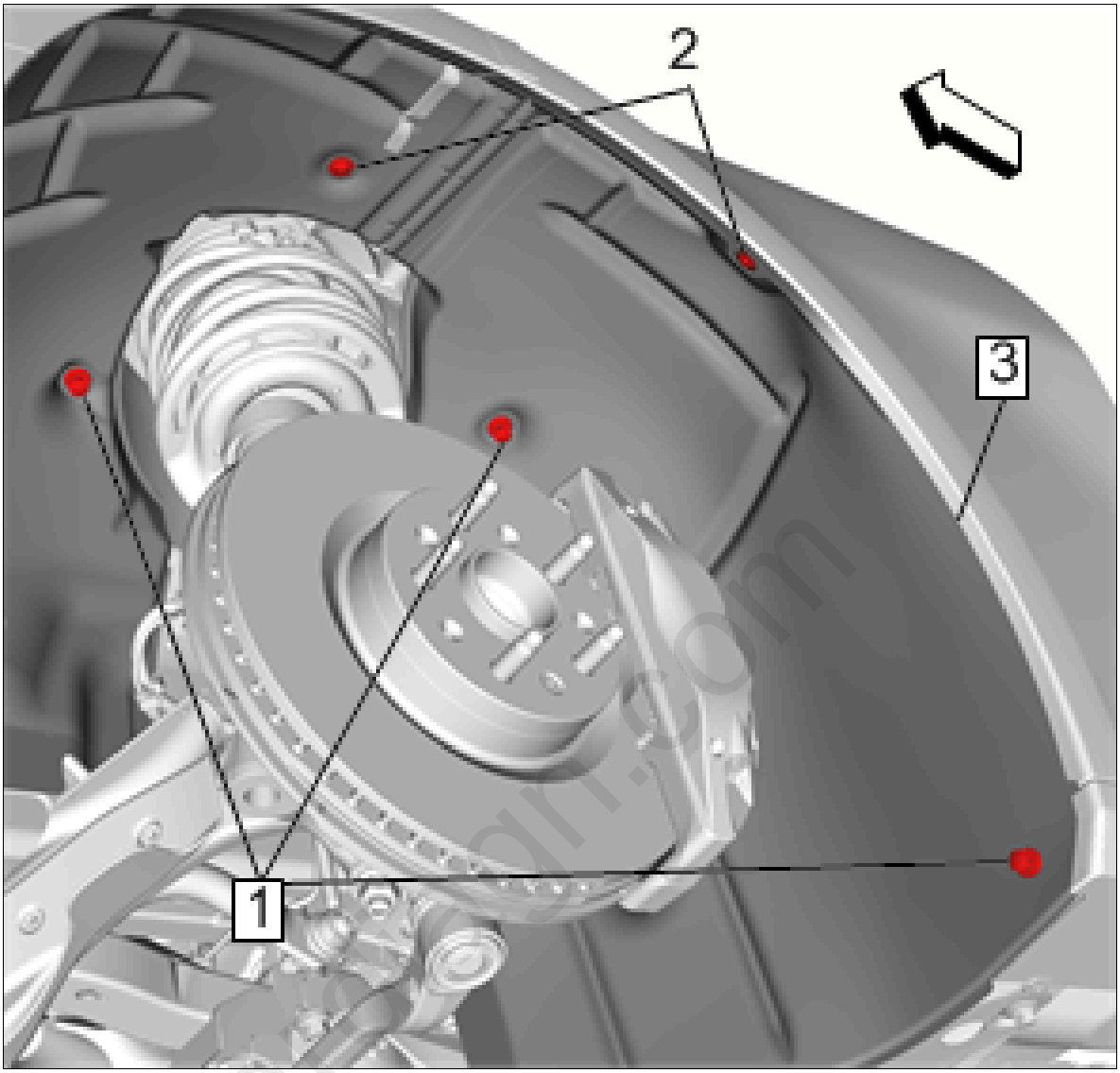


Courtesy of GENERAL MOTORS COMPANY

18. Install Steering Linkage Outer Tie Rod (3) - Steering Linkage Outer Tie Rod Replacement

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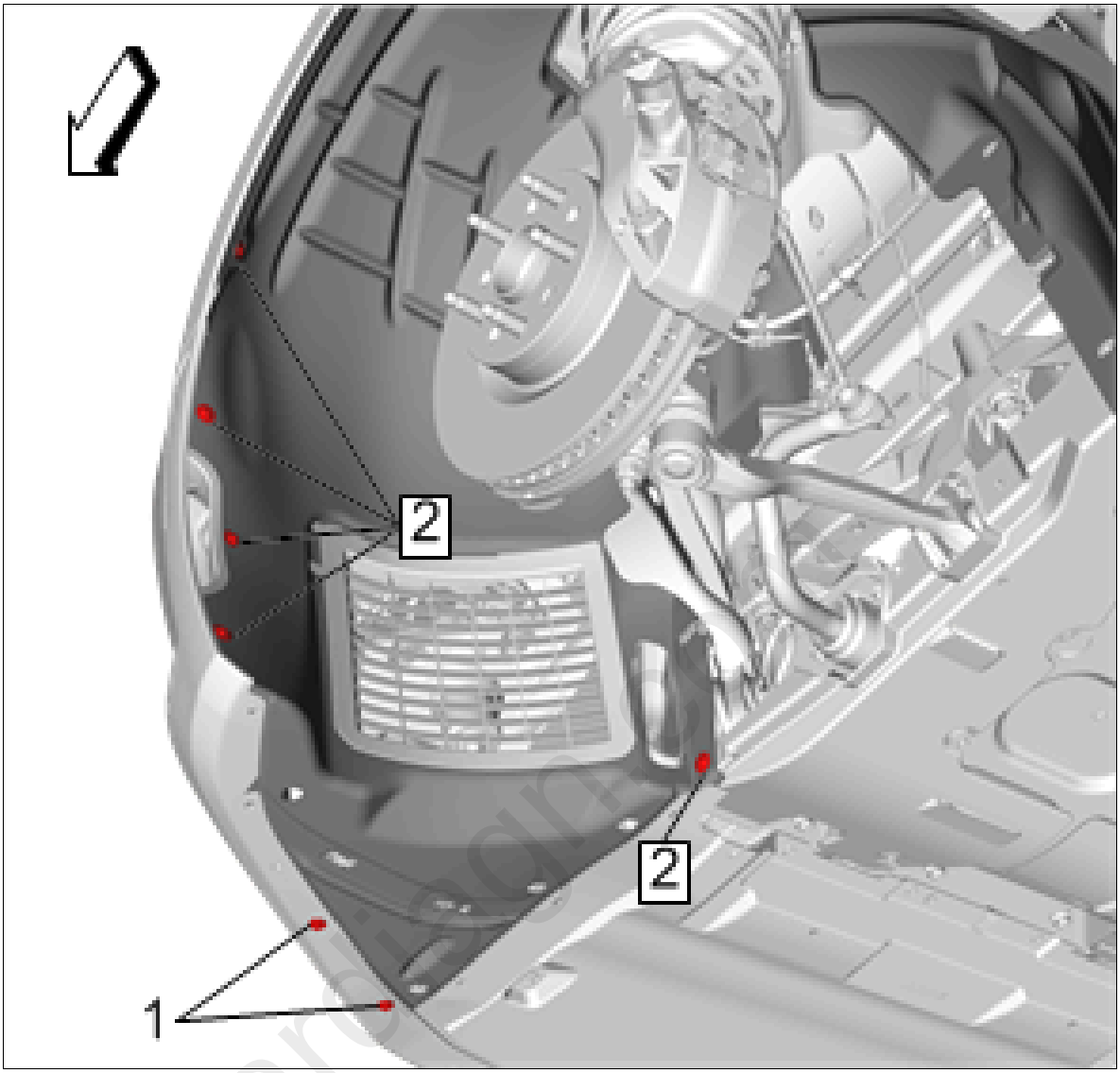
Fig 15: Front Wheelhouse Liner Retainer



Courtesy of GENERAL MOTORS COMPANY

19. Install Front Wheelhouse Liner (3)
20. Install Front Wheelhouse Liner Retainer (2) (Qty: 2)
21. Install Front Wheelhouse Liner Screw (1) (Qty: 3) and tighten to 2.5 N.m (22 lb in)

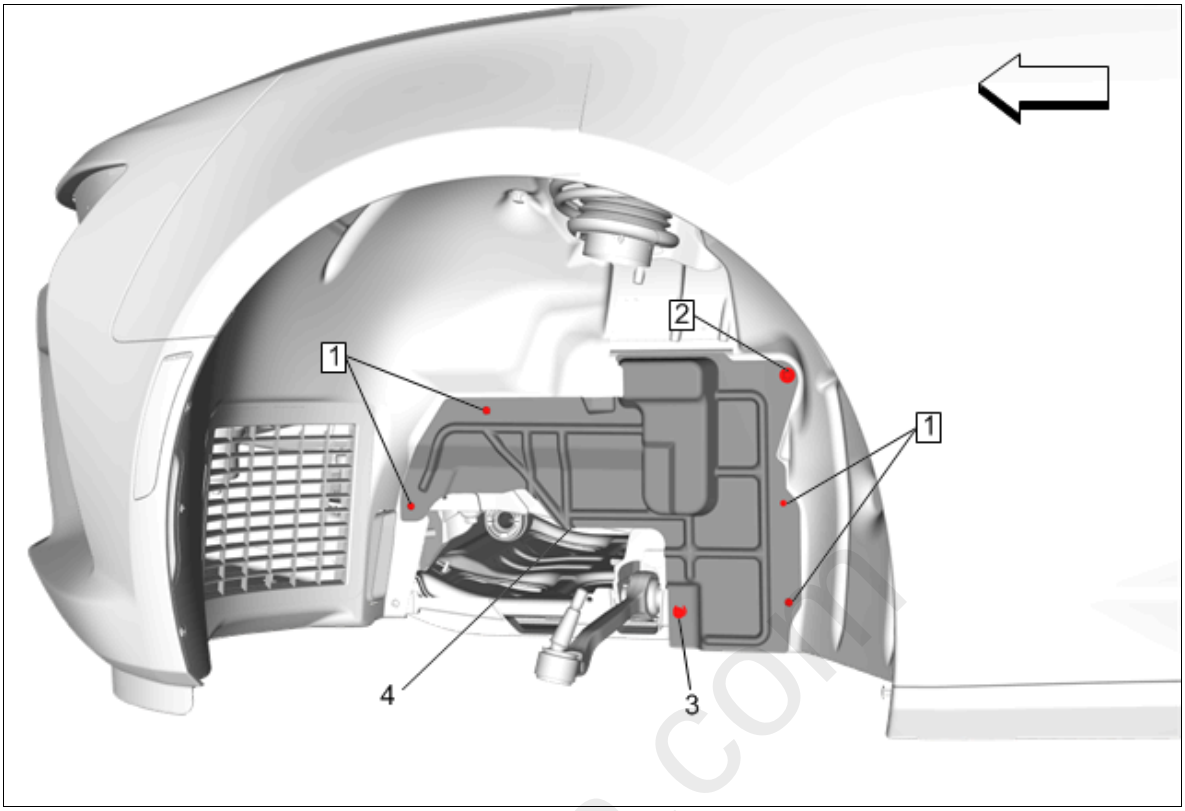
Fig 16: Front Bumper Fascia Bolt



Courtesy of GENERAL MOTORS COMPANY

22. Install Front Wheelhouse Liner Screw (2) (Qty: 5) and tighten to 2.5 N.m (22 lb in)
23. Install Front Bumper Fascia Bolt (1) (Qty: 2) and tighten to 5 N.m (44 lb in)

Fig 17: Front Wheelhouse Splash Shield

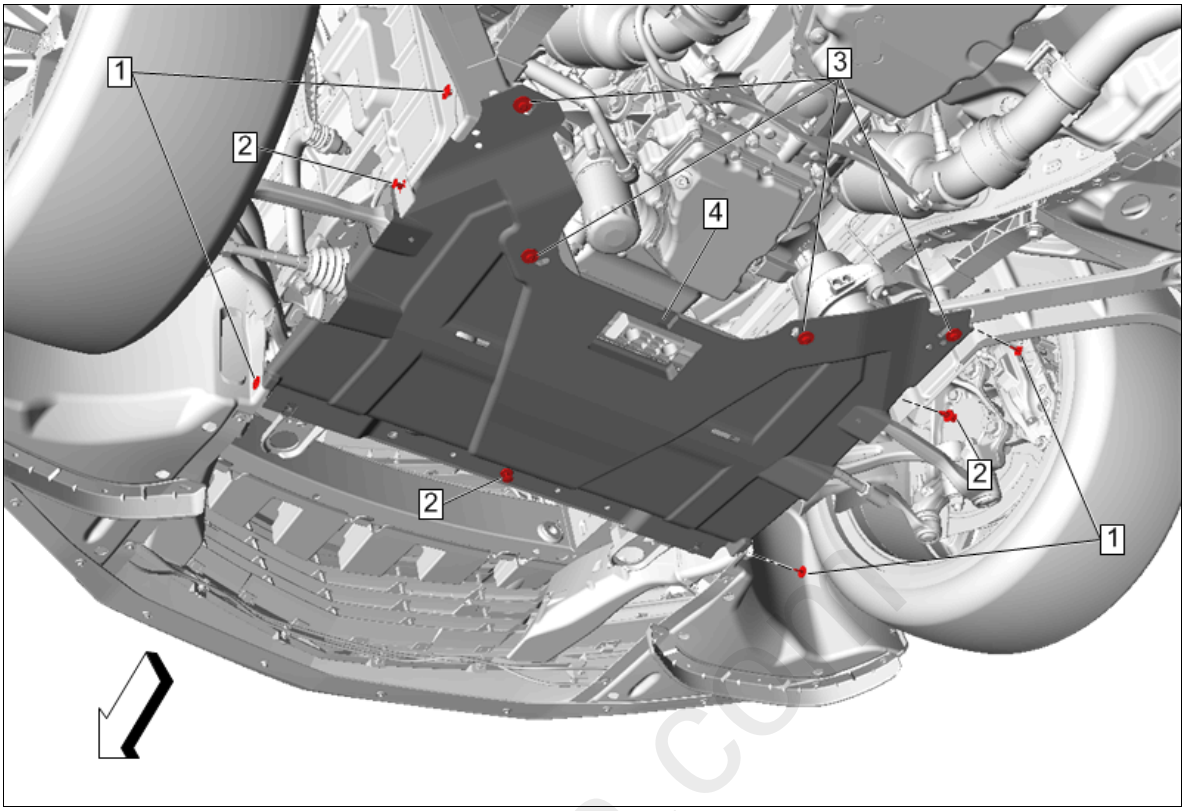


Courtesy of GENERAL MOTORS COMPANY

24. Install Front Wheelhouse Splash Shield (4) - Front Wheelhouse Splash Shield Replacement

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Fig 18: Front Compartment Lower Noise Shield

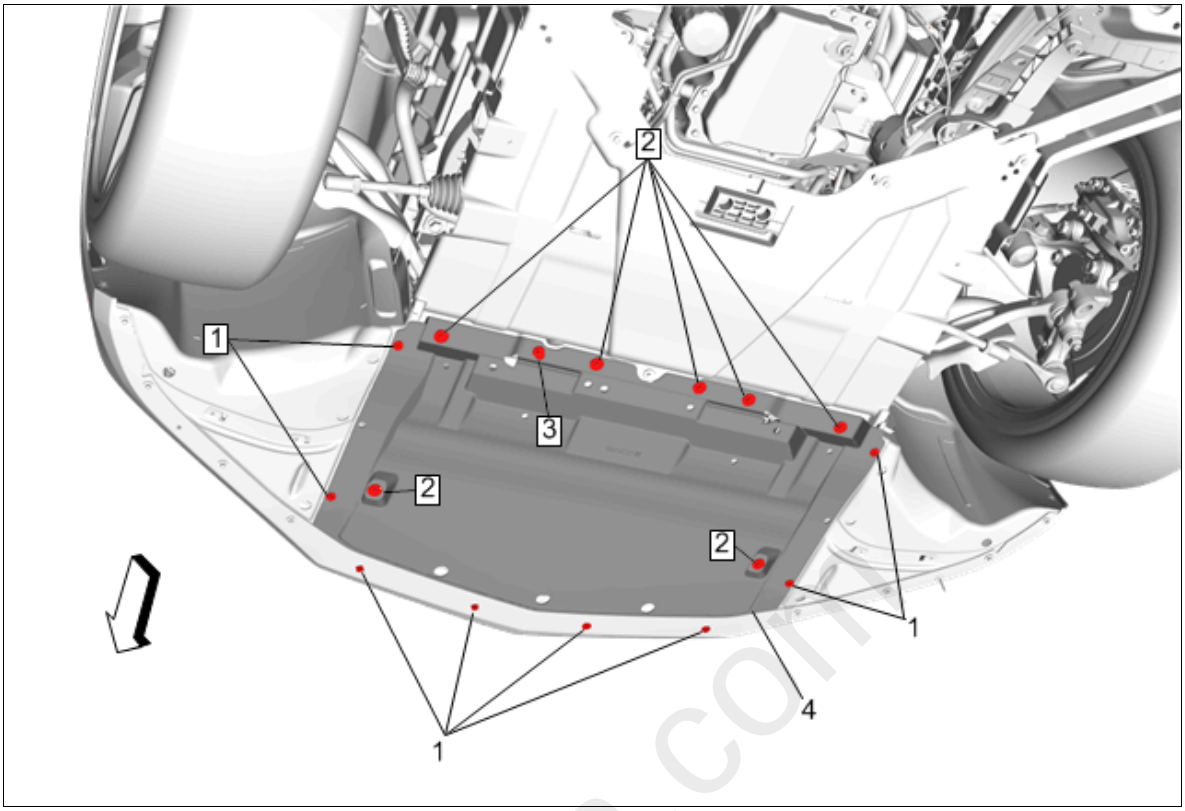


Courtesy of GENERAL MOTORS COMPANY

25. Install Front Compartment Lower Noise Shield (4) - Front Compartment Lower Noise Shield Replacement (Coupe - LGX, LTG)

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Fig 19: Front Compartment Air Deflector



Courtesy of GENERAL MOTORS COMPANY

26. Front Compartment Air Deflector (4) - Front Compartment Air Deflector Replacement (Convertible - LGX, LTG) Front Compartment Air Deflector Replacement (Coupe - LGX, LTG)
27. Install the front tires and wheels. Tire and Wheel Removal and Installation
28. Lower the vehicle.
29. Remove the engine support fixture.
30. Align the vehicle only if replacing the drivetrain and front suspension frame. Wheel Alignment Measurement

REPAIR INSTRUCTIONS > DRIVETRAIN AND FRONT SUSPENSION CRADLE REPLACEMENT (LT1)

Special Tools

EN-39580 Support Stand

Equivalent regional tools:Special Tools

REPAIR INSTRUCTIONS > DRIVETRAIN AND FRONT SUSPENSION CRADLE

REPLACEMENT (LT1) > REMOVAL PROCEDURE

NOTE:

Suspension components attached to the frame use Torque-to-Yield fasteners and must be DISCARDED and replaced with NEW Torque Angle Yield (TAY) fasteners. The frame to body fasteners are not TAY fasteners.

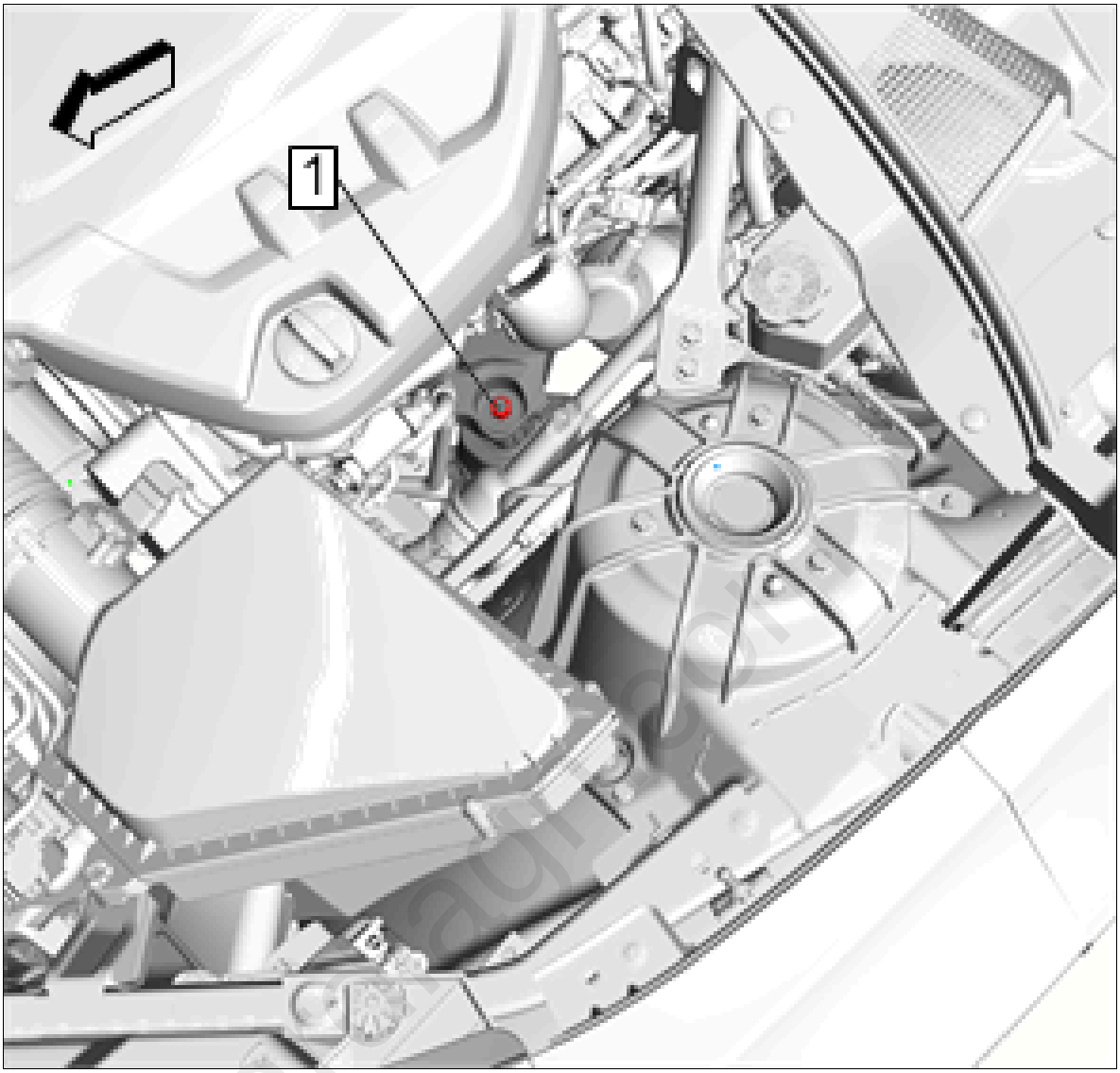
NOTE:

Vehicle alignment is not required if the cradle is being lowered or dropped to perform another procedure. This vehicle is equipped with a cradle to body aligning feature: cradle to body through holes or self-aligning pins that are part of the cradle or body. Only align if replacing the cradle with a NEW part and transferring components.

1. Using mechanics wire, support the radiator and AC condenser assembly to the vehicle body.
2. Install the engine support fixture. Engine Support Fixture

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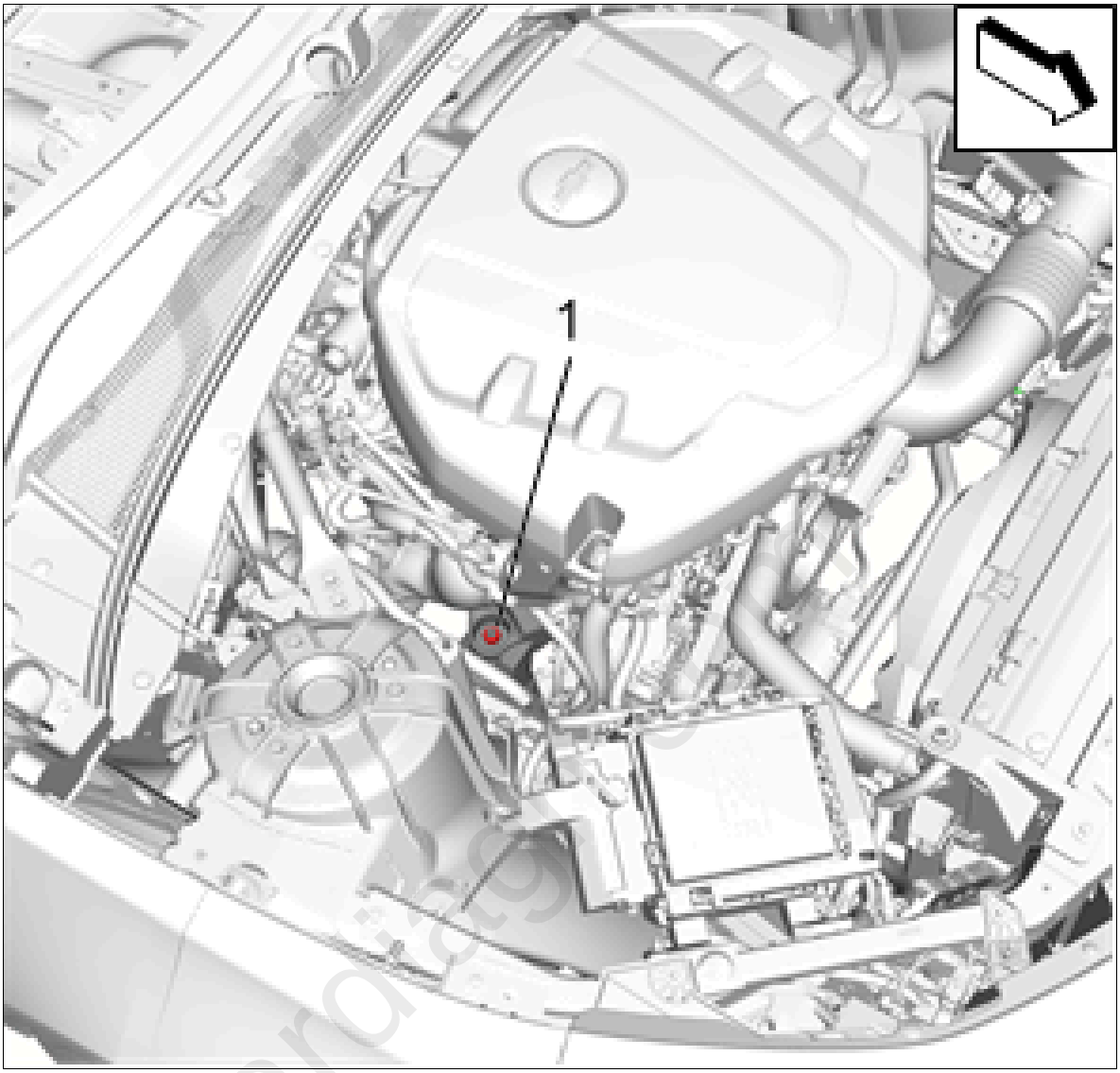
Fig 1: Left Side Engine Mount Nut



Courtesy of GENERAL MOTORS COMPANY

3. Remove Engine Mount Nut - Left Side (1)

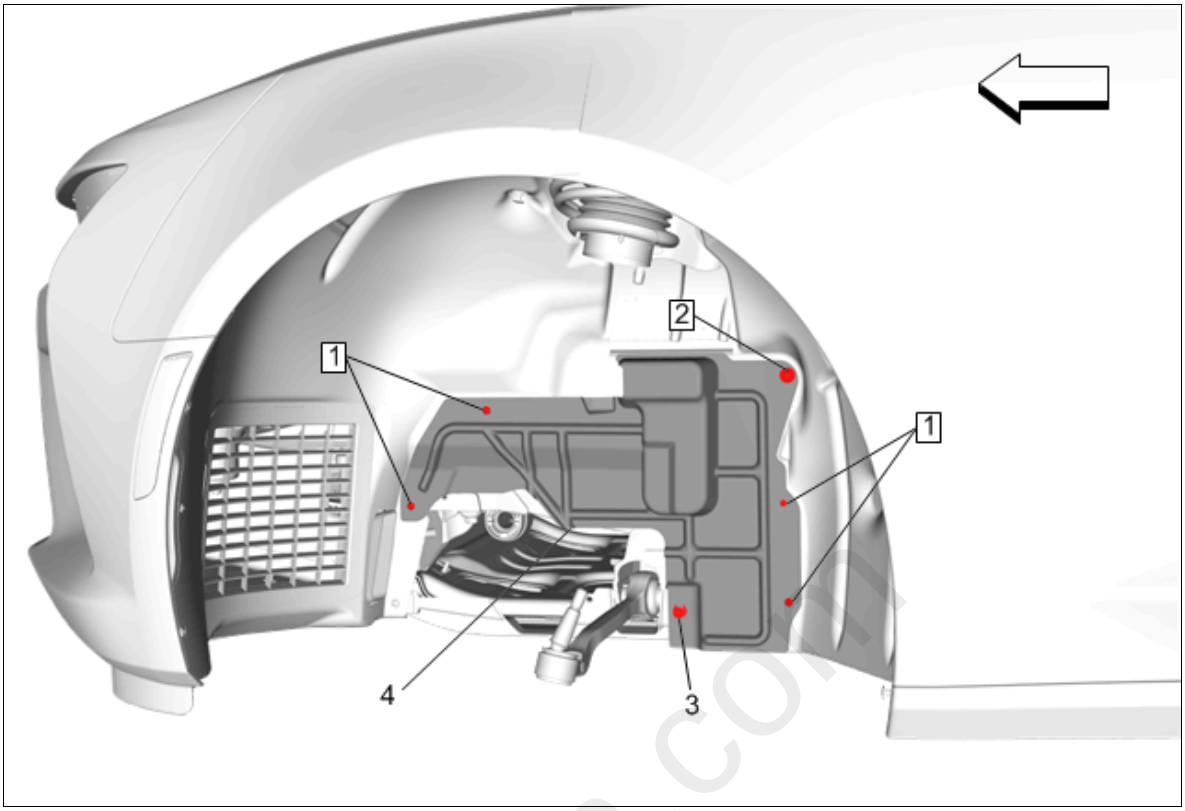
Fig 2: Right Side Engine Mount Nut



Courtesy of GENERAL MOTORS COMPANY

4. Remove Engine Mount Nut - Right Side (1)
5. Raise and support the vehicle. Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP)
6. Remove the front wheels. Tire and Wheel Removal and Installation

Fig 3: Front Wheelhouse Splash Shield

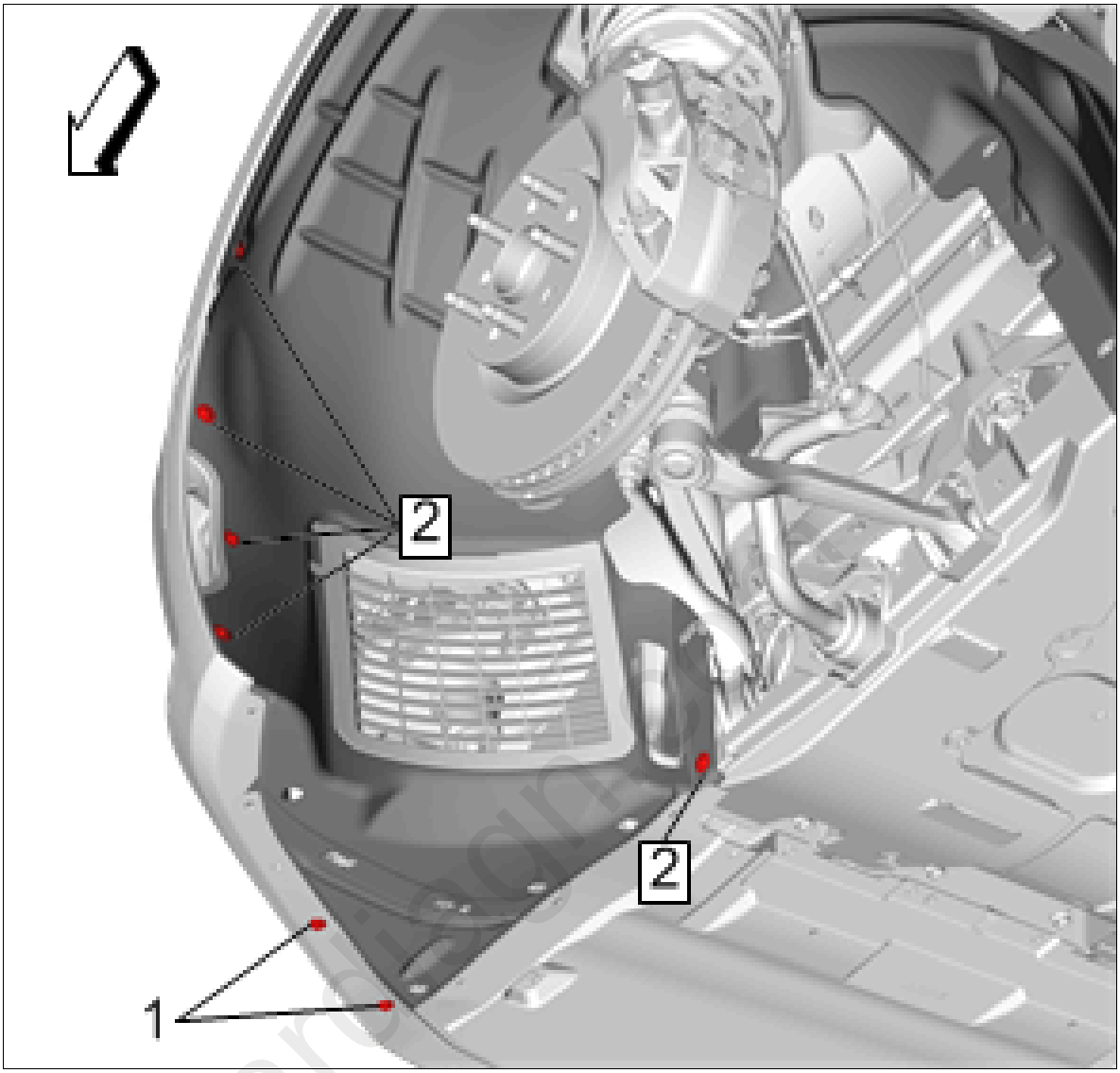


Courtesy of GENERAL MOTORS COMPANY

7. Remove Front Wheelhouse Splash Shield Replacement (4).

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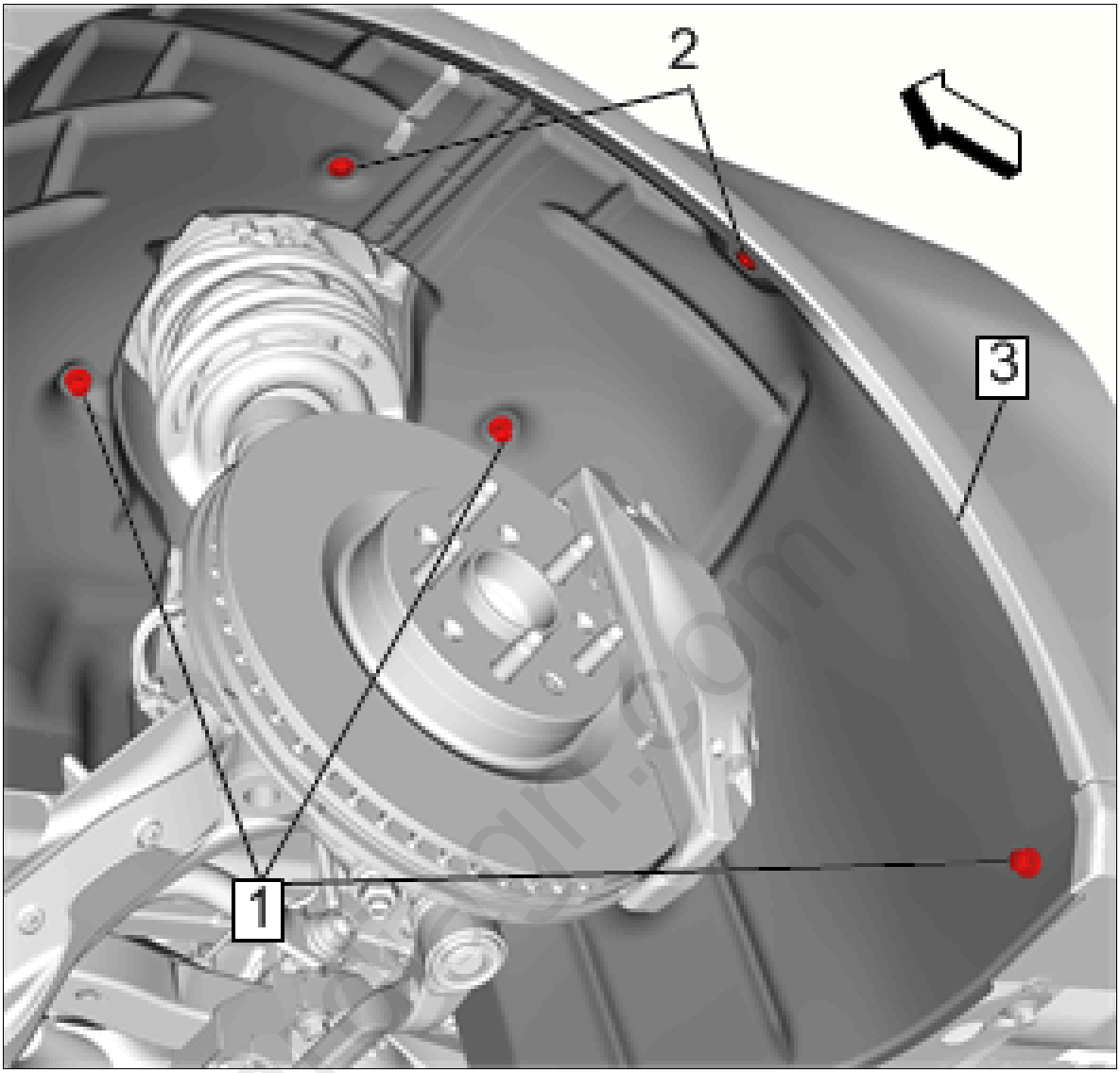
Fig 4: Front Bumper Fascia Bolt



Courtesy of GENERAL MOTORS COMPANY

8. Remove Front Bumper Fascia Bolt (1) (Qty: 2)
9. Remove Front Wheelhouse Liner Screw (2) (Qty: 5)

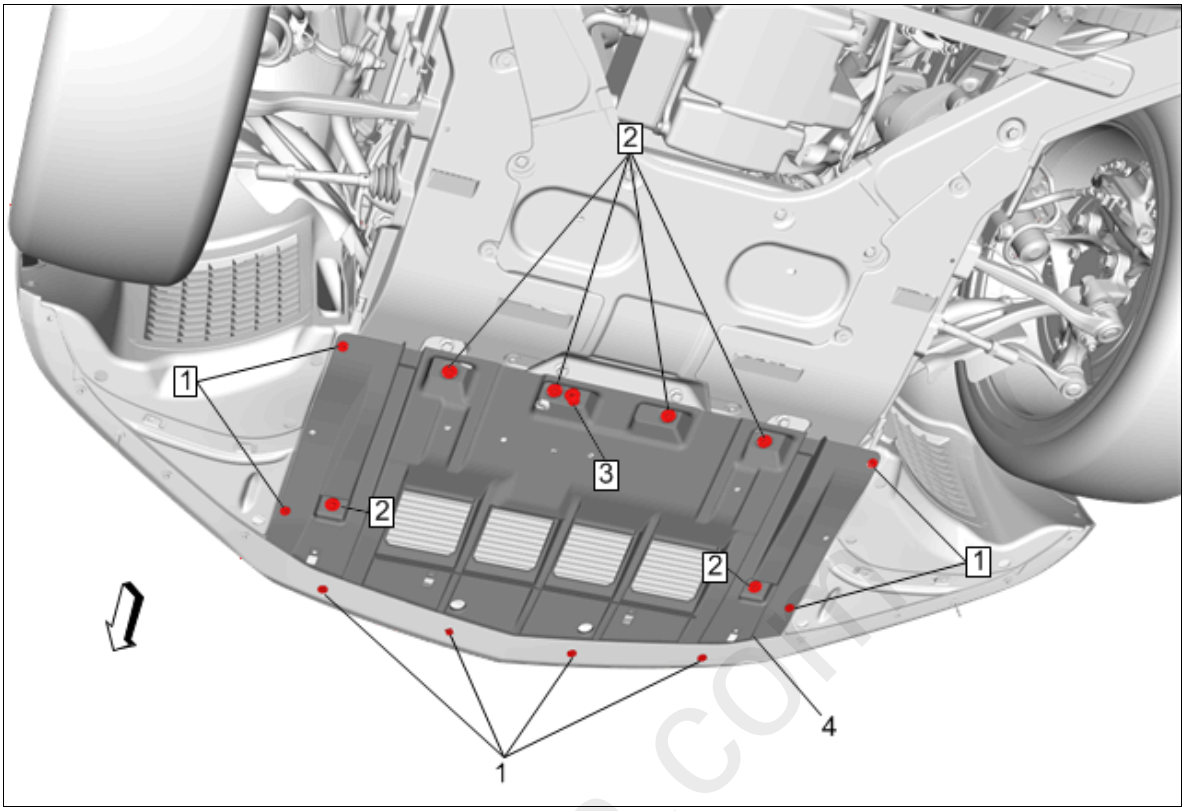
Fig 5: Front Wheelhouse Liner Retainer



Courtesy of GENERAL MOTORS COMPANY

10. Remove Front Wheelhouse Liner Retainer (1) (Qty: 3)
11. Remove Front Wheelhouse Liner Screw (2) (Qty: 2)
12. Remove Front Wheelhouse Liner (3)

Fig 6: Front Compartment Air Deflector

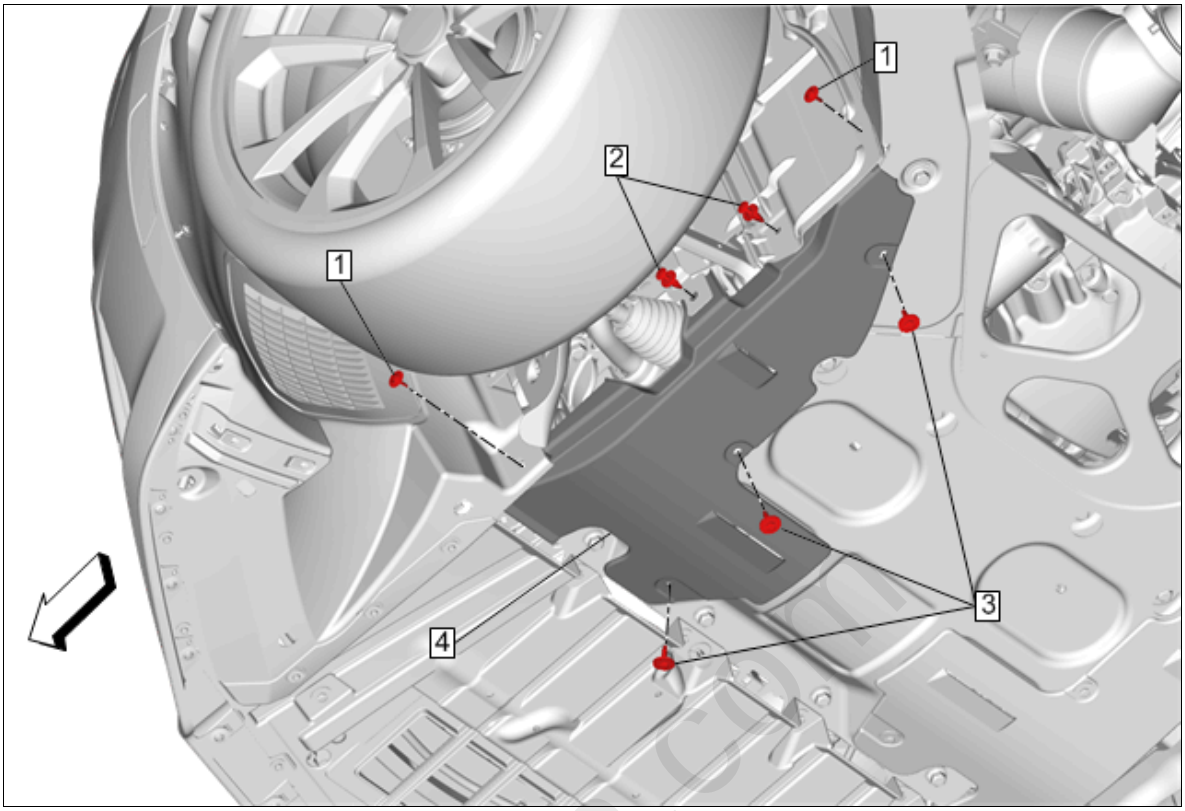


Courtesy of GENERAL MOTORS COMPANY

13. Remove Front Compartment Air Deflector Replacement (Coupe - LT1) (4)

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Fig 7: Front Compartment Lower Noise Shield

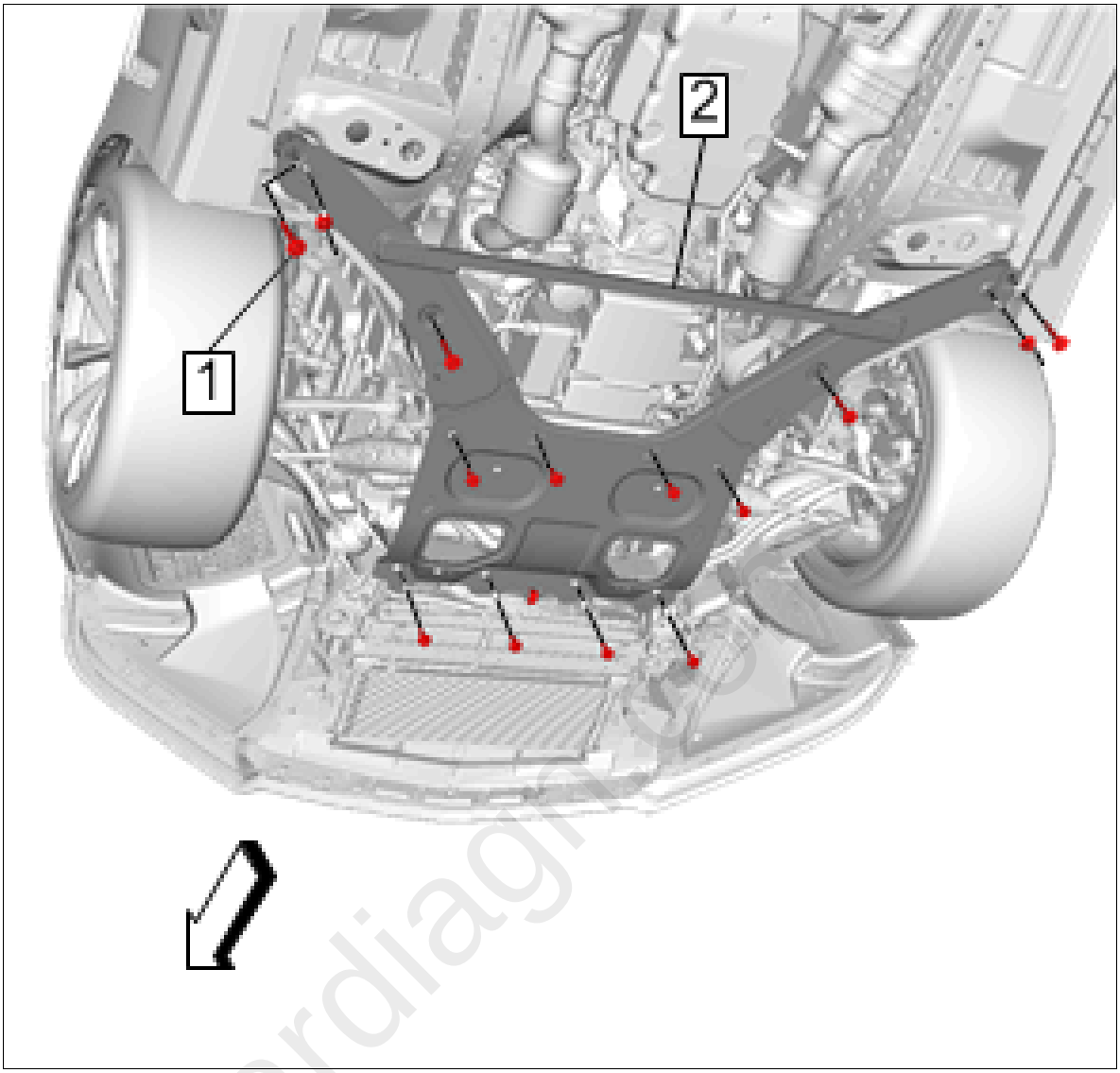


Courtesy of GENERAL MOTORS COMPANY

14. Remove Front Compartment Lower Noise Shield Replacement (Coupe - LGX, LTG) (4)

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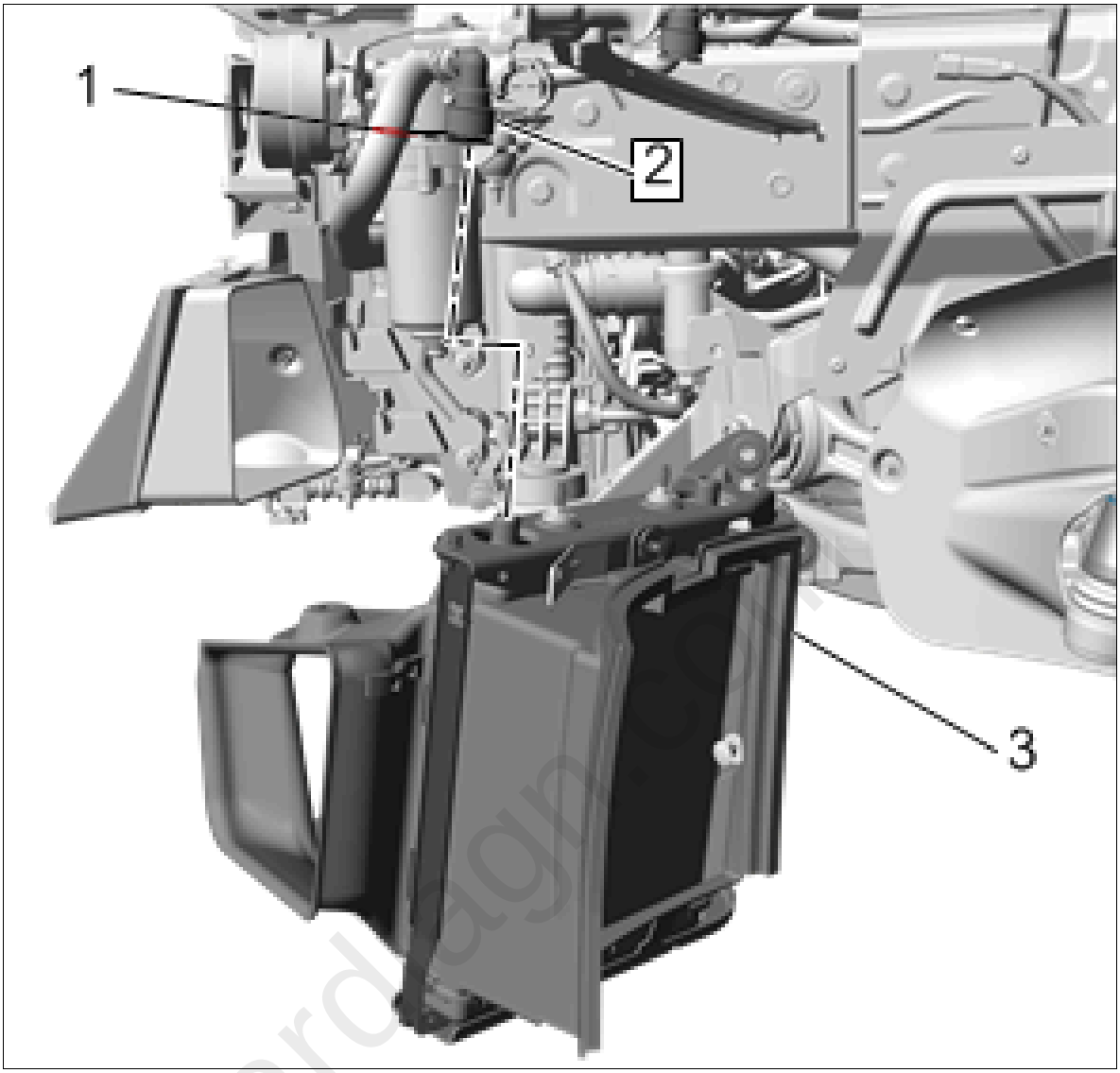
Fig 8: Front Cradle Shear Plate Fastener



Courtesy of GENERAL MOTORS COMPANY

15. Remove Front Cradle Shear Plate Replacement (2)

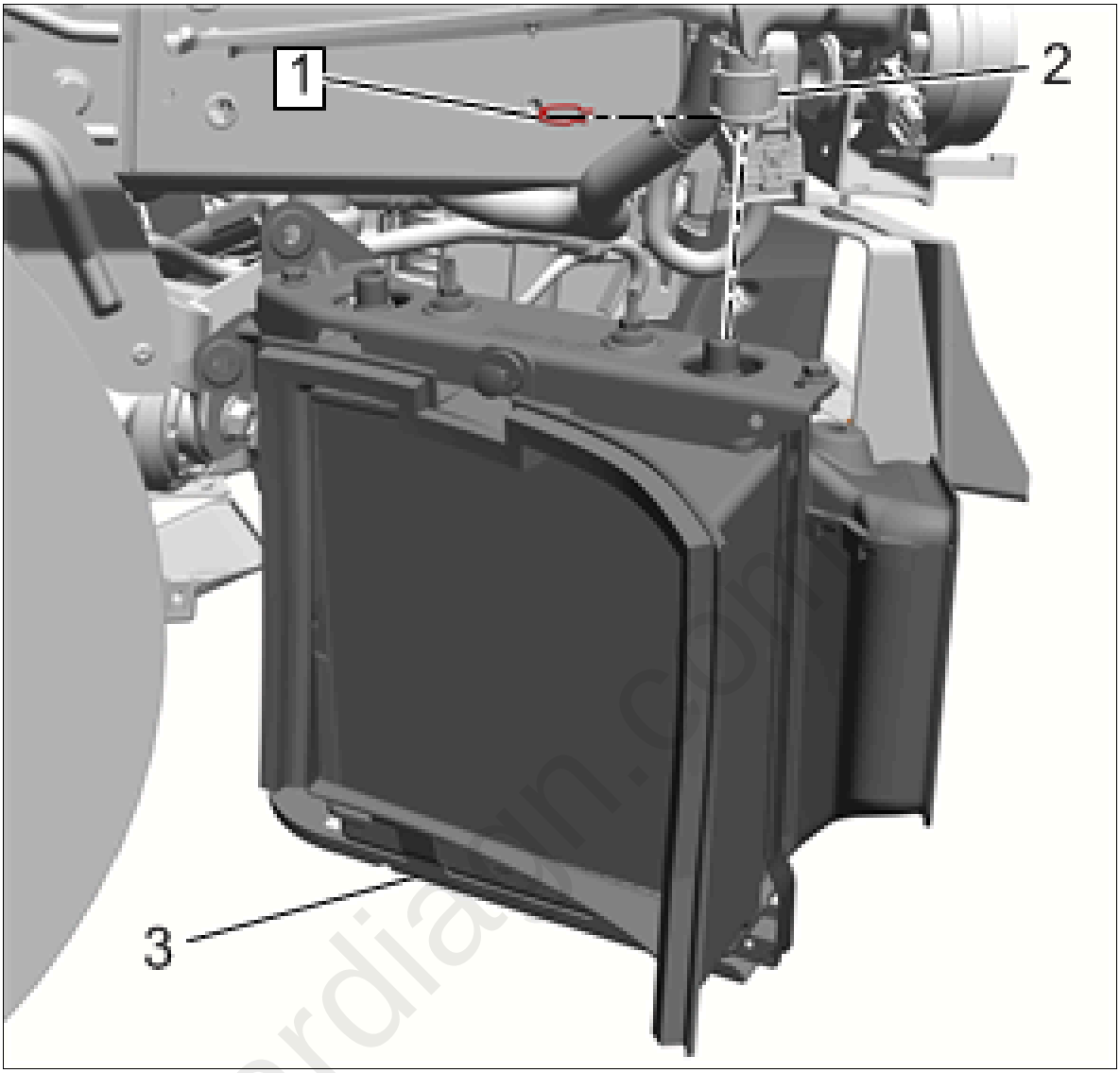
Fig 9: Charge Air Cooler Replacement - Left Side



Courtesy of GENERAL MOTORS COMPANY

16. Remove Charge Air Cooler Replacement - Left Side (LT1 V18) (3)

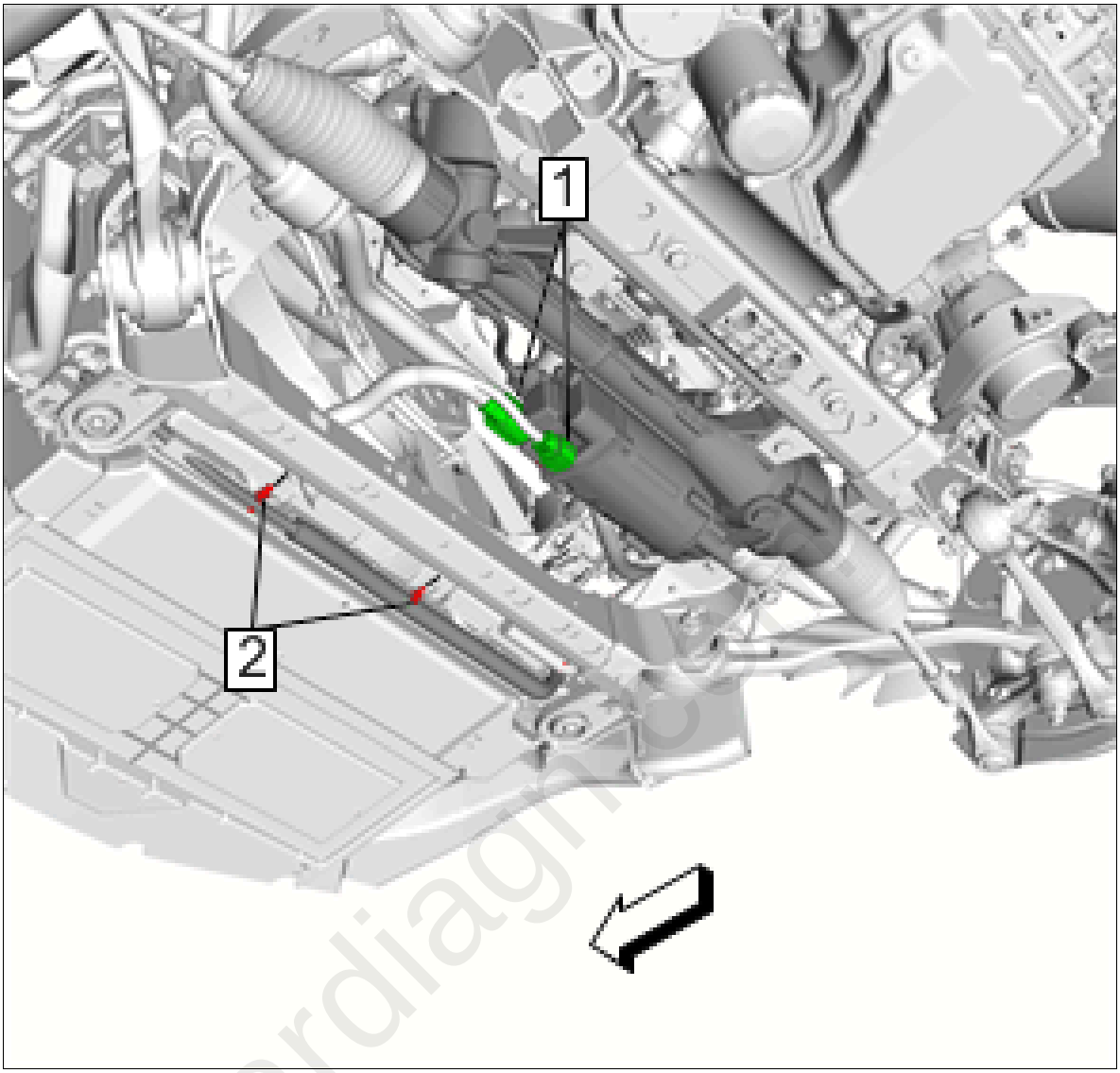
Fig 10: Charge Air Cooler Replacement - Right Side



Courtesy of GENERAL MOTORS COMPANY

17. Remove Charge Air Cooler Replacement - Right Side (LGX with V18, LT1) (3)

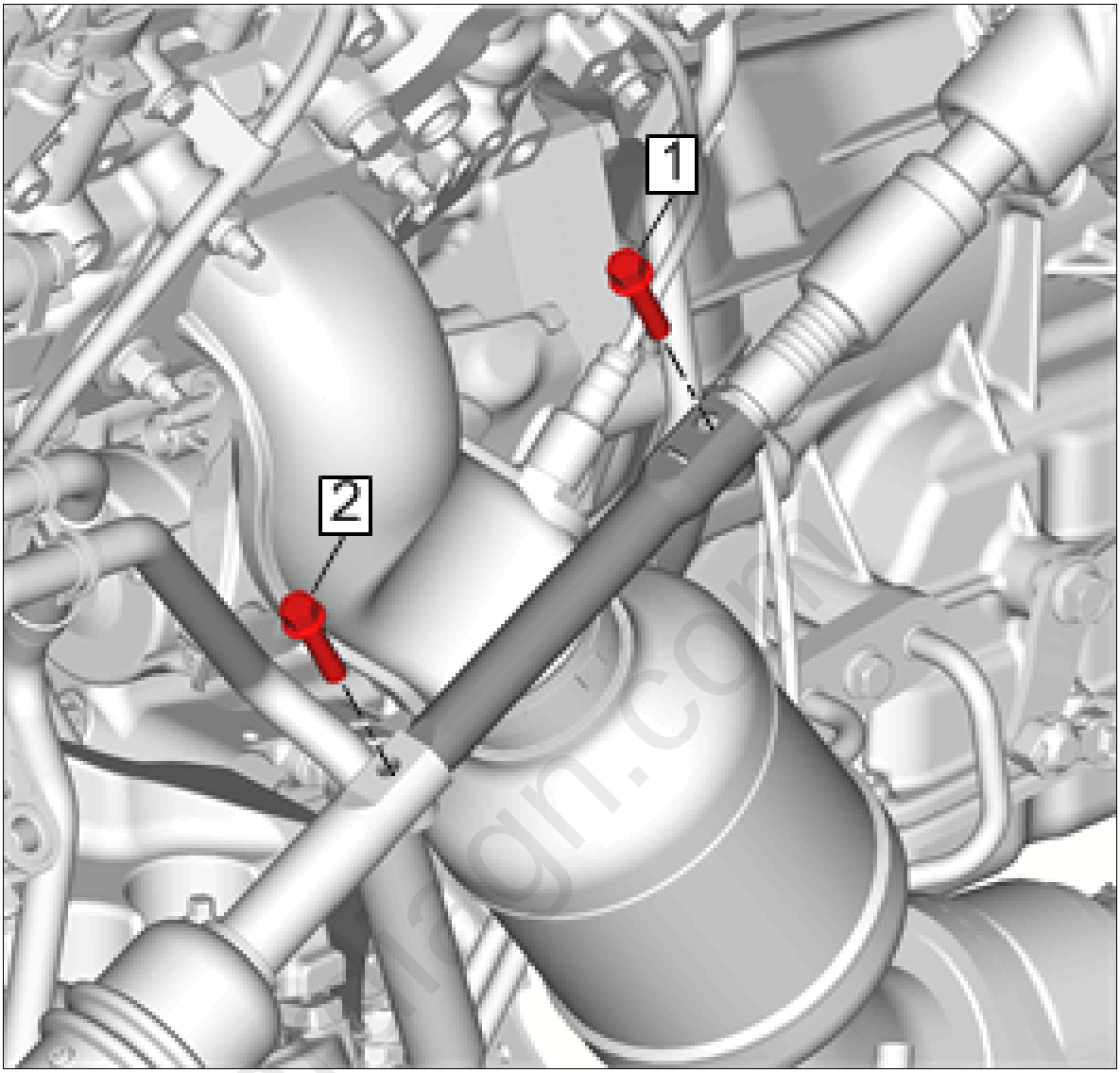
Fig 11: Steering Gear Electrical Connectors



Courtesy of GENERAL MOTORS COMPANY

18. Disconnect the steering gear electrical connectors (1)
19. Remove the wiring harness retainers from the frame (2)

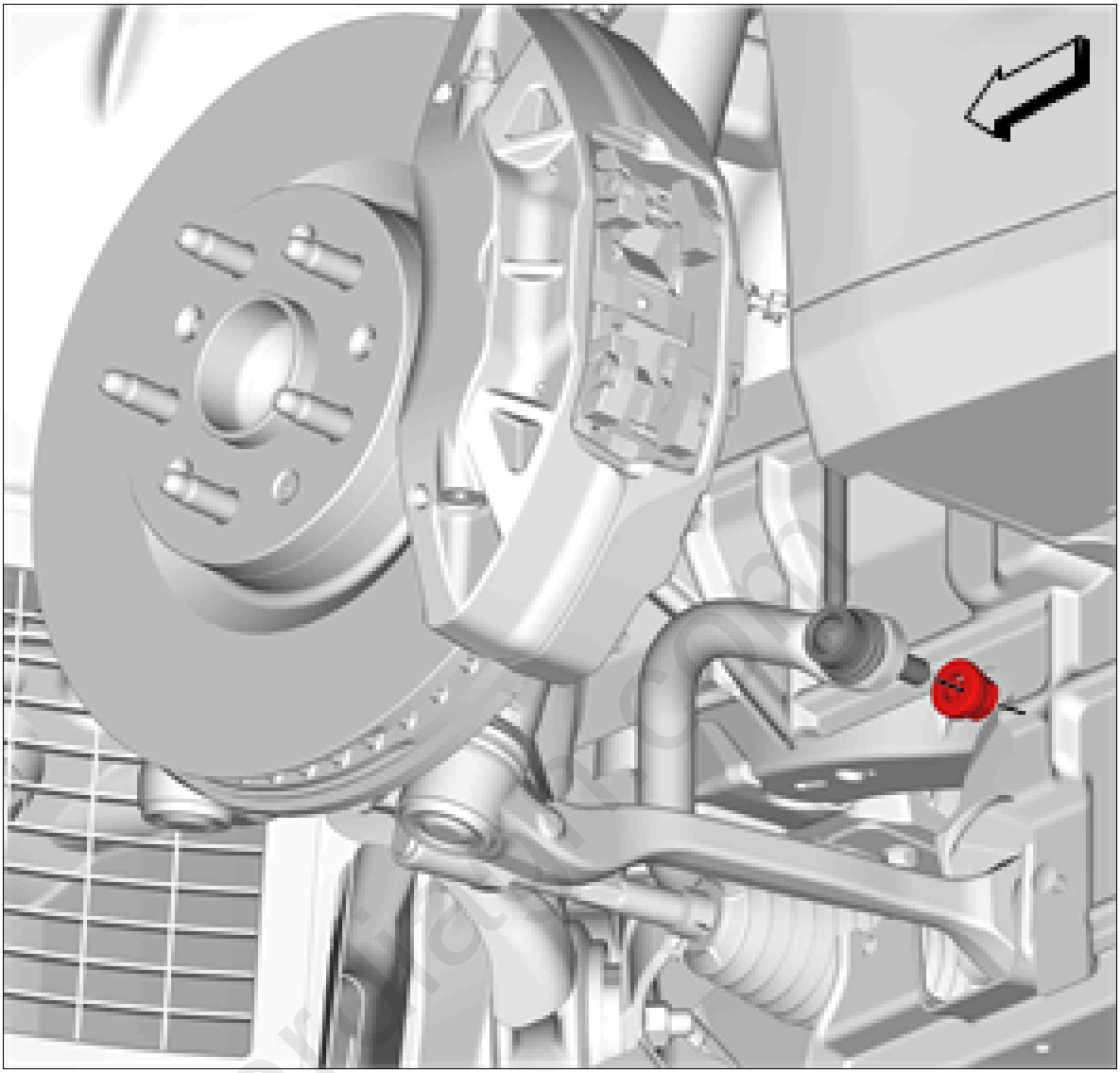
Fig 12: Mid Intermediate Steering Shaft Bolt And Intermediate Steering Shaft Upper Bolt



Courtesy of GENERAL MOTORS COMPANY

20. Disconnect the intermediate steering shaft from the steering column shaft (1) - Mid Intermediate Steering Shaft Replacement

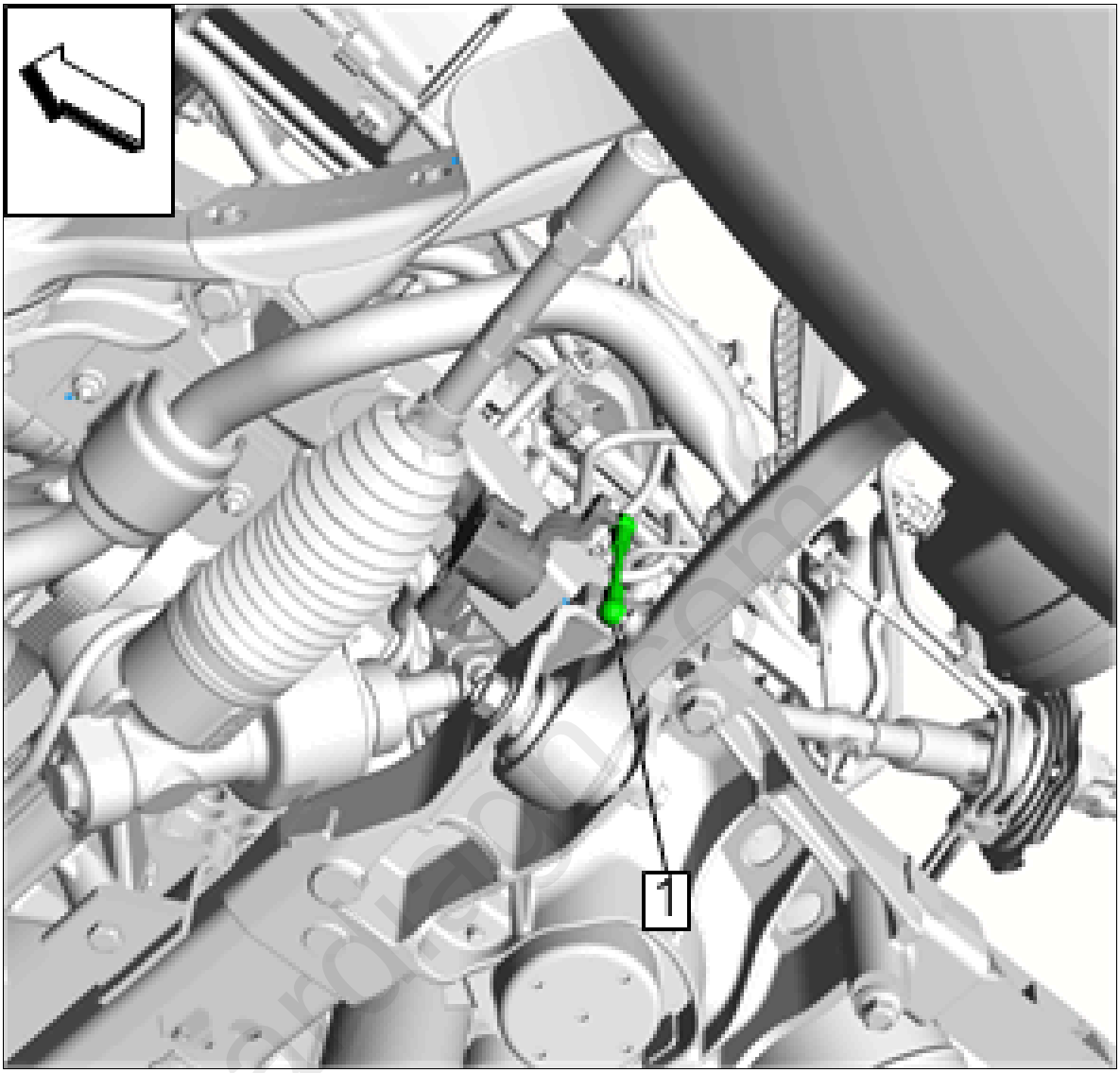
Fig 13: Front Stabilizer Shaft Link Nut



Courtesy of GENERAL MOTORS COMPANY

21. Disconnect the right and left lower stabilizer shaft links from the stabilizer bar (1) - Stabilizer Shaft Link Replacement (LT1)

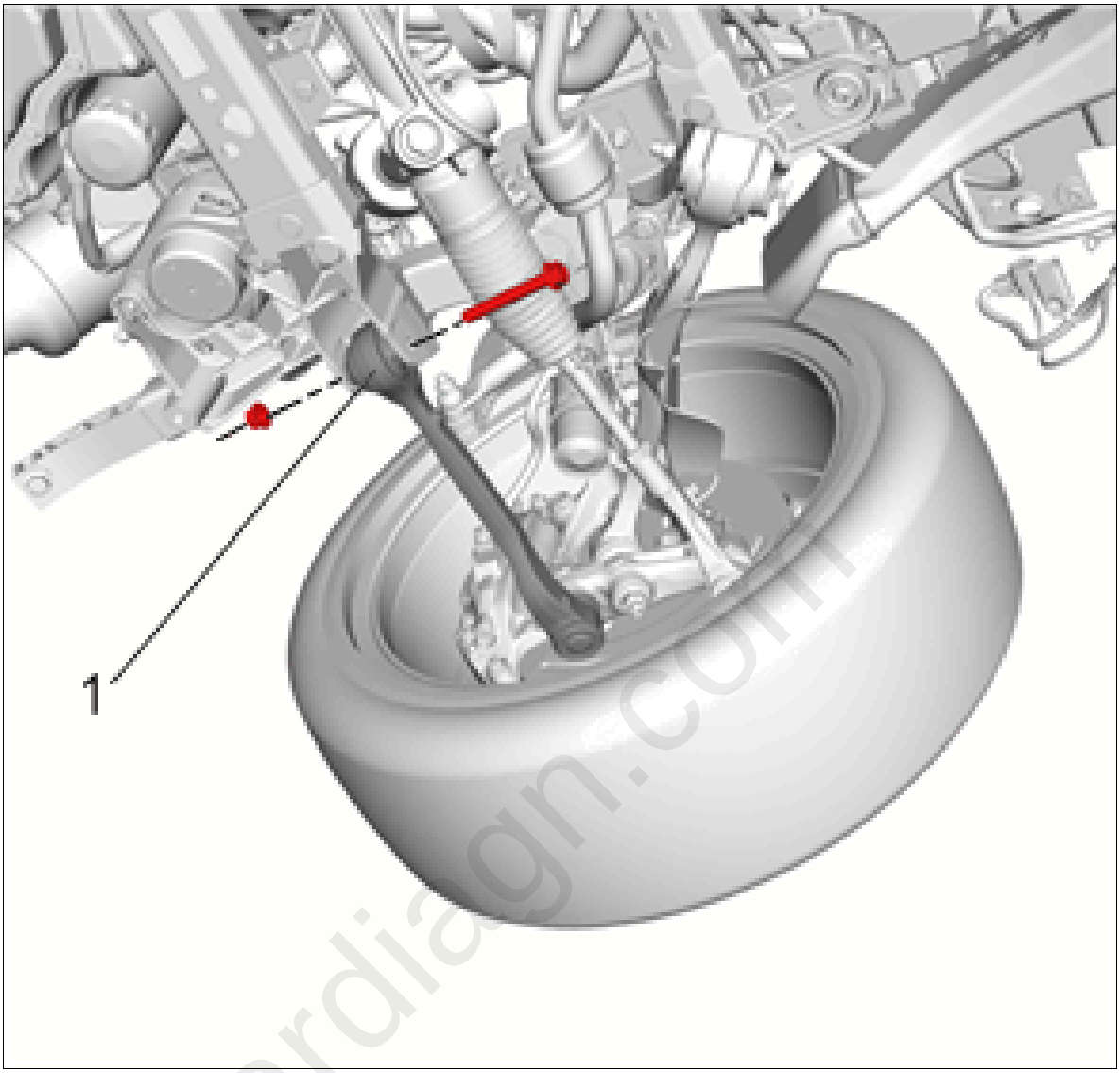
Fig 14: Front Suspension Automatic Forward Lighting Position Sensor Arms From Lower Control Rear Links



Courtesy of GENERAL MOTORS COMPANY

22. Disconnect the front suspension automatic forward lighting position sensor arm (1) from the lower control rear link.
23. Disconnect the electrical connector from the front suspension automatic forward lighting position sensor.

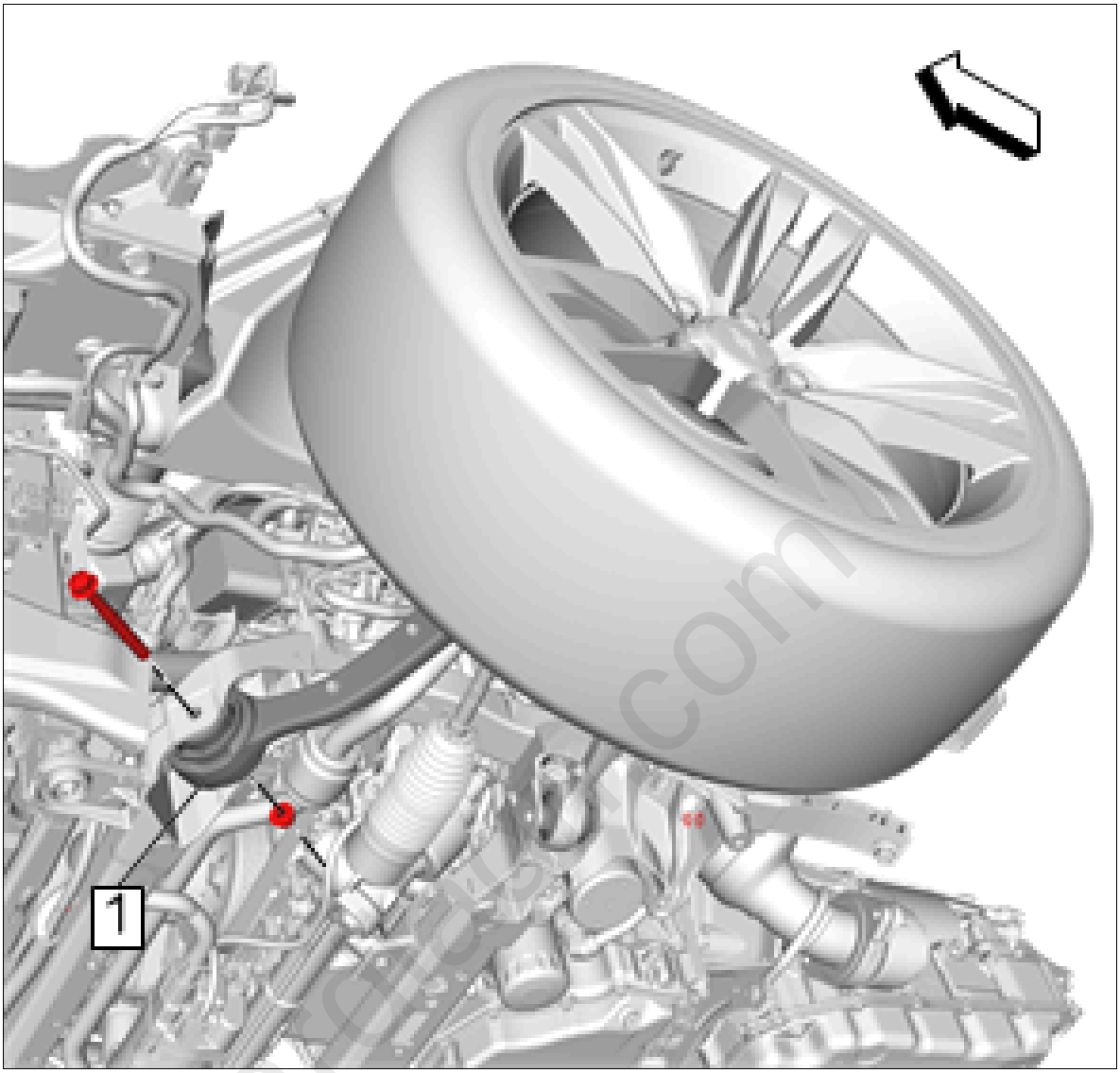
Fig 15: Front Lower Control Rear Links From Front Suspension Frame



Courtesy of GENERAL MOTORS COMPANY

24. Disconnect the front lower control rear links from the front suspension frame. Front Lower Control Rear Link Replacement (LT1)

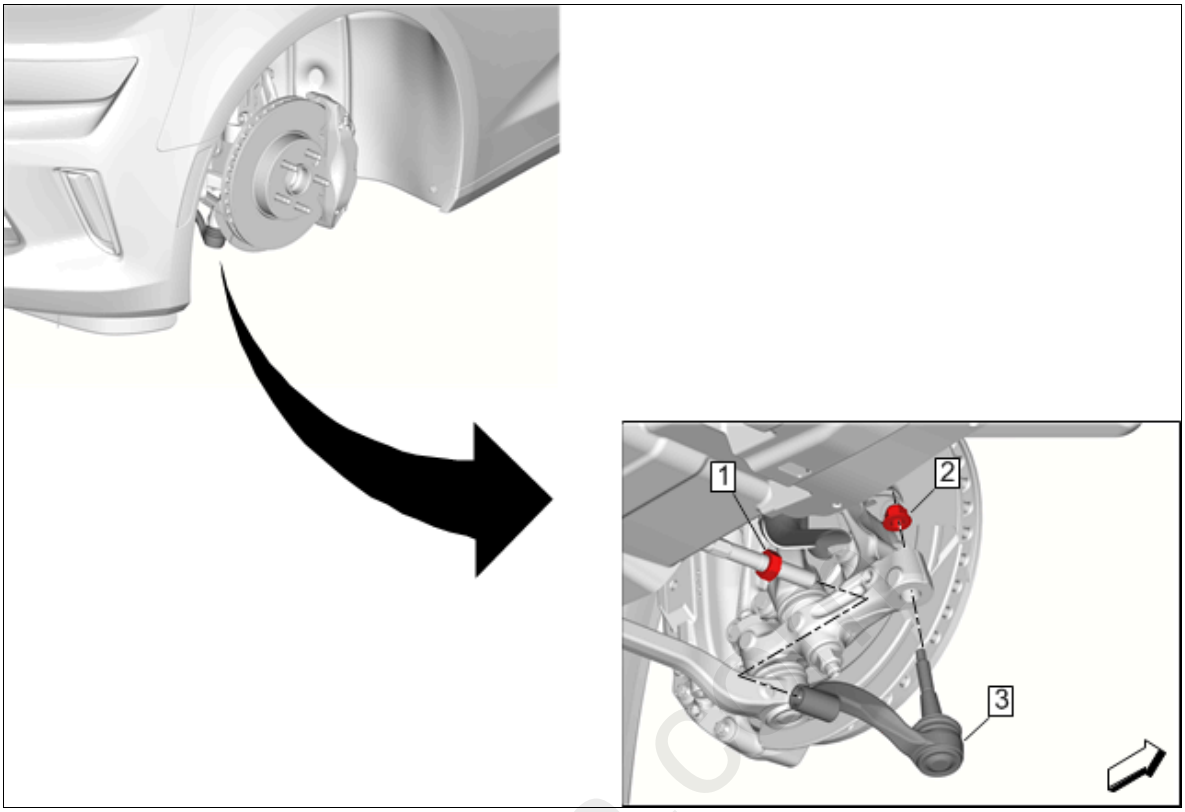
Fig 16: Front Lower Control Front Links From Front Suspension Frame



Courtesy of GENERAL MOTORS COMPANY

25. Disconnect the front lower control front links from the front suspension frame. Front Lower Control Front Link Replacement (LT1, Without V18)Front Lower Control Front Link Replacement (LT1, With V18)

Fig 17: Steering Linkage Outer Tie Rod

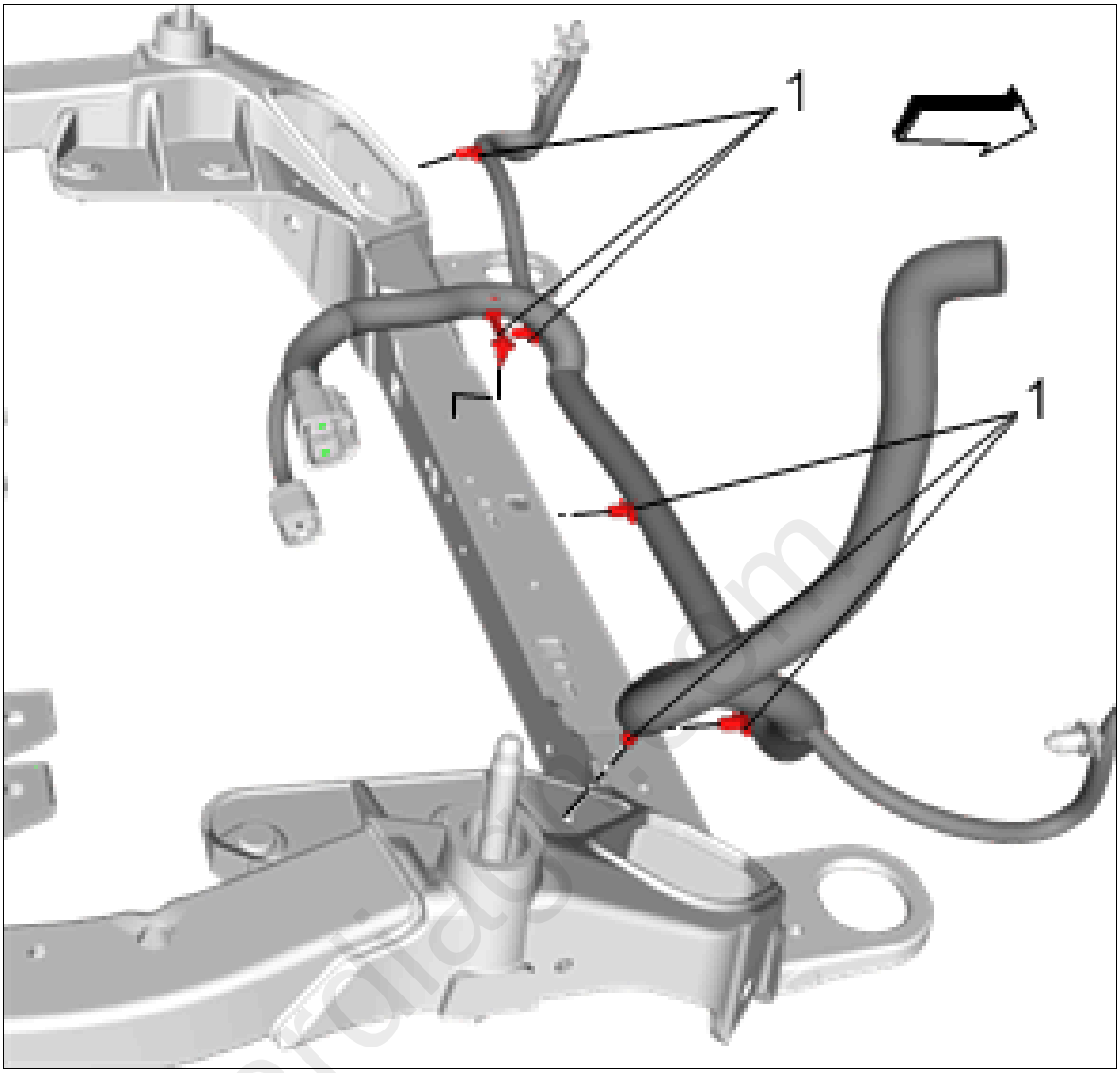


Courtesy of GENERAL MOTORS COMPANY

26. Remove Steering Linkage Outer Tie Rod (3) - Steering Linkage Outer Tie Rod Replacement

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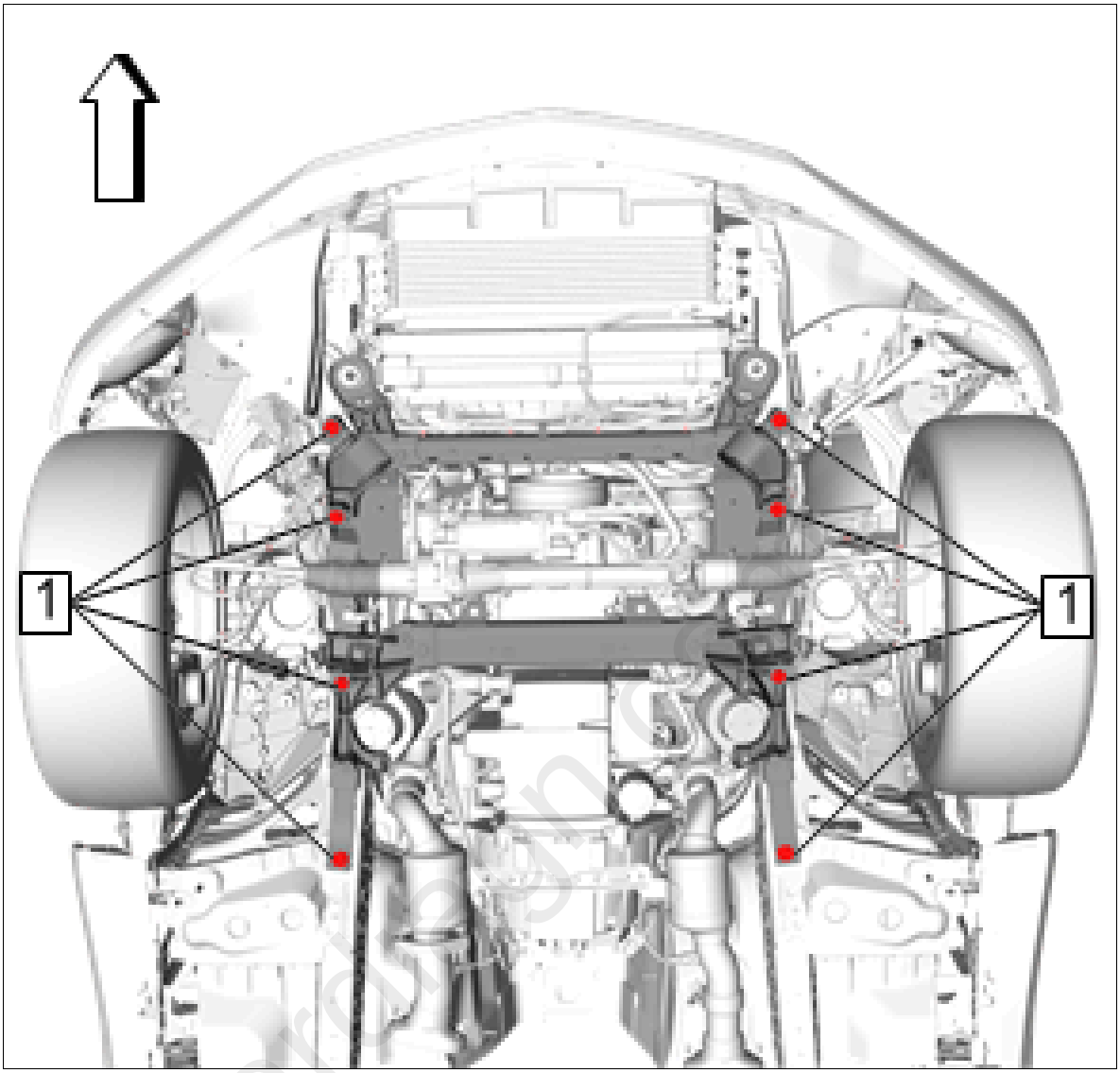
Fig 18: Wiring Harness Retainers From Frame



Courtesy of GENERAL MOTORS COMPANY

27. Remove the wiring harness retainers from the frame (1)

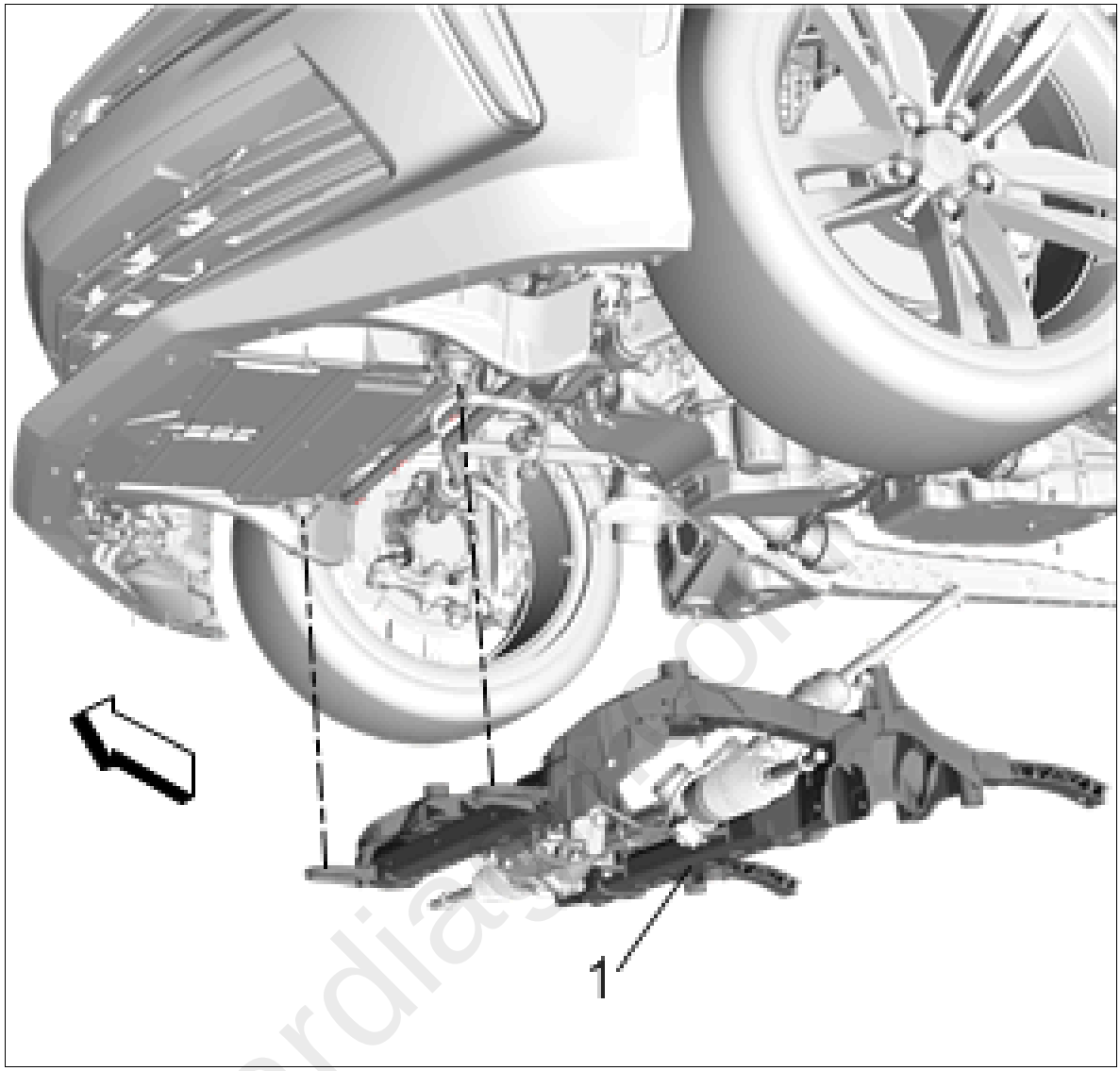
Fig 19: Stand Under Drivetrain And Front Suspension Cradle



Courtesy of GENERAL MOTORS COMPANY

28. Install **J-39580** stand under the drivetrain and front suspension cradle.
29. Lower the vehicle until the drivetrain and front suspension frame is resting lightly on the jackstands.
30. Remove Drivetrain and Front Suspension Support Bolt (1) (Qty: 8) and DISCARD the bolts.
31. With the aid of an assistant, carefully raise the body from the frame.
32. Ensure when raising the body the following items are clear from the frame:
    1. Vacuum lines
    2. Steering knuckles
    3. Electrical wiring harnesses
    4. Oil coolers lines

Fig 20: Drivetrain And Front Suspension Frame

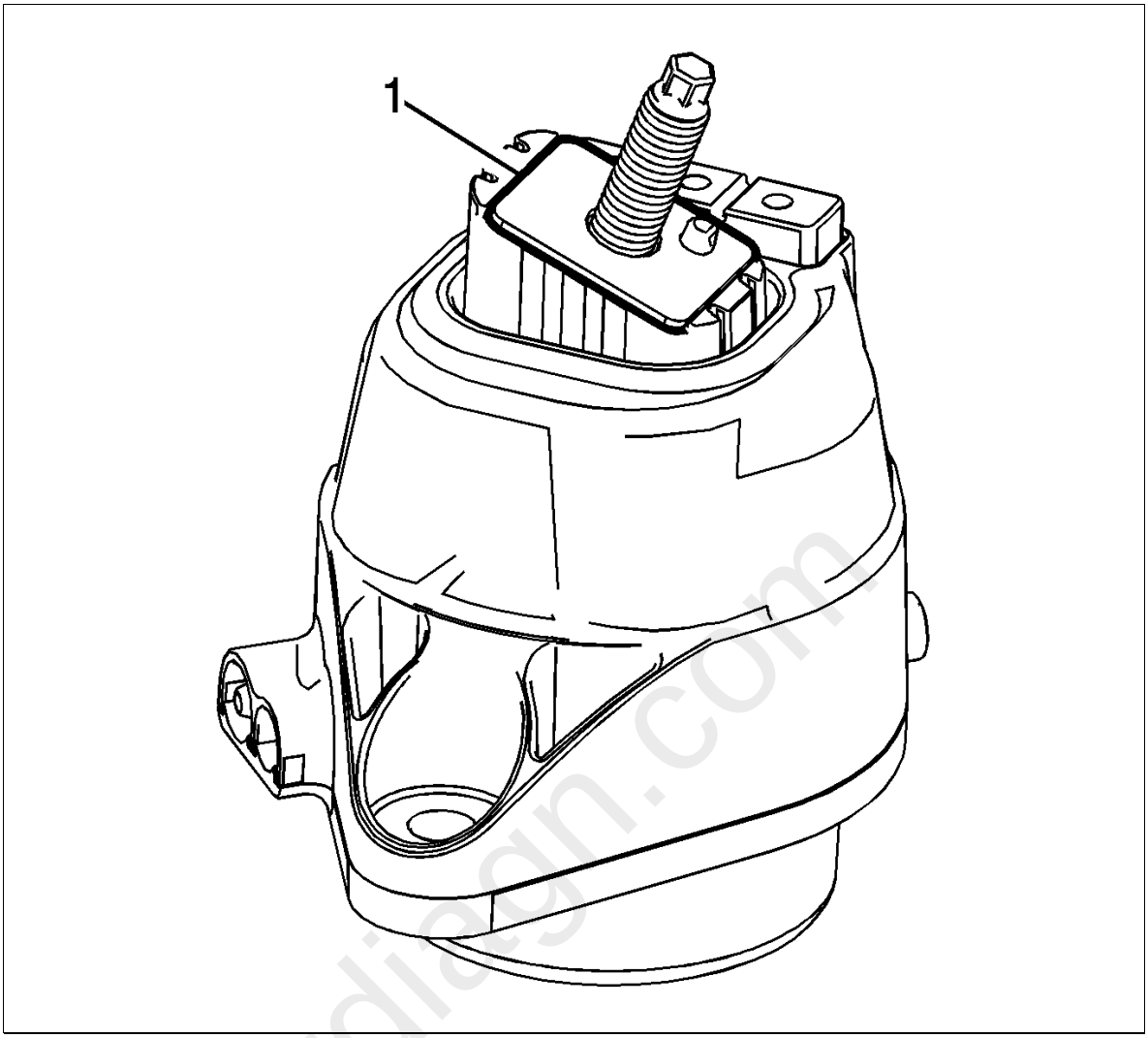


Courtesy of GENERAL MOTORS COMPANY

33. Remove the drivetrain and front suspension frame (1)
34. Transfer components as necessary.

REPAIR INSTRUCTIONS > DRIVETRAIN AND FRONT SUSPENSION CRADLE REPLACEMENT (LT1) > INSTALLATION PROCEDURE

Fig 1: Phenolic Spacer



Courtesy of GENERAL MOTORS COMPANY

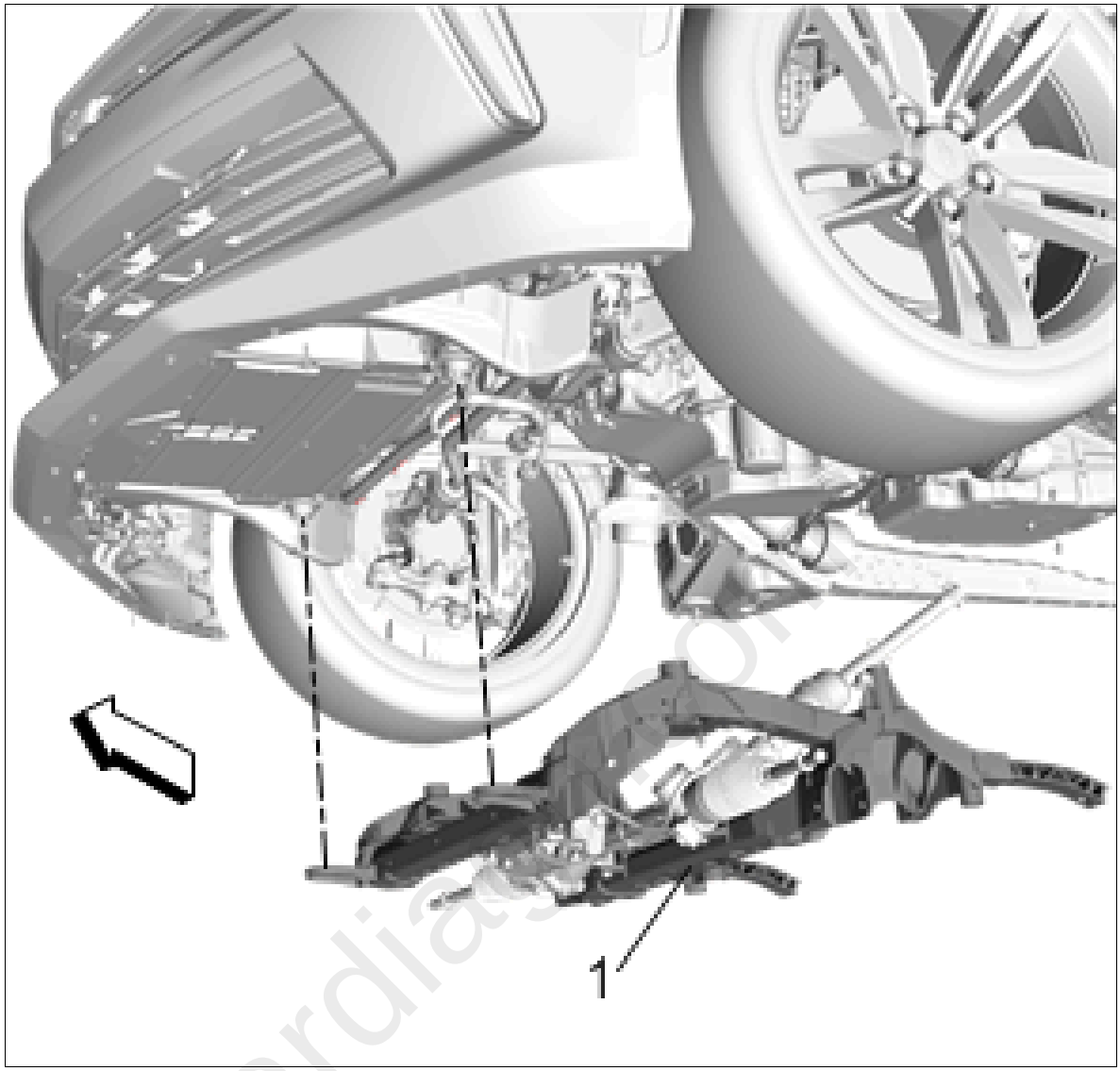
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⚠ *CAUTION:*

Phenolic spacer must be present to prevent galvanic/corrosive reaction and/or excessive temperature conduction between engine mount bracket and engine mount. Replace mount if phenolic spacer is missing or damaged. Failure to ensure phenolic spacer is intact and not damaged can lead to premature failure of engine mount and/or engine mount bracket.

1. With the aid of an assistant, position and secure the NEW frame assembly to the support fixture.

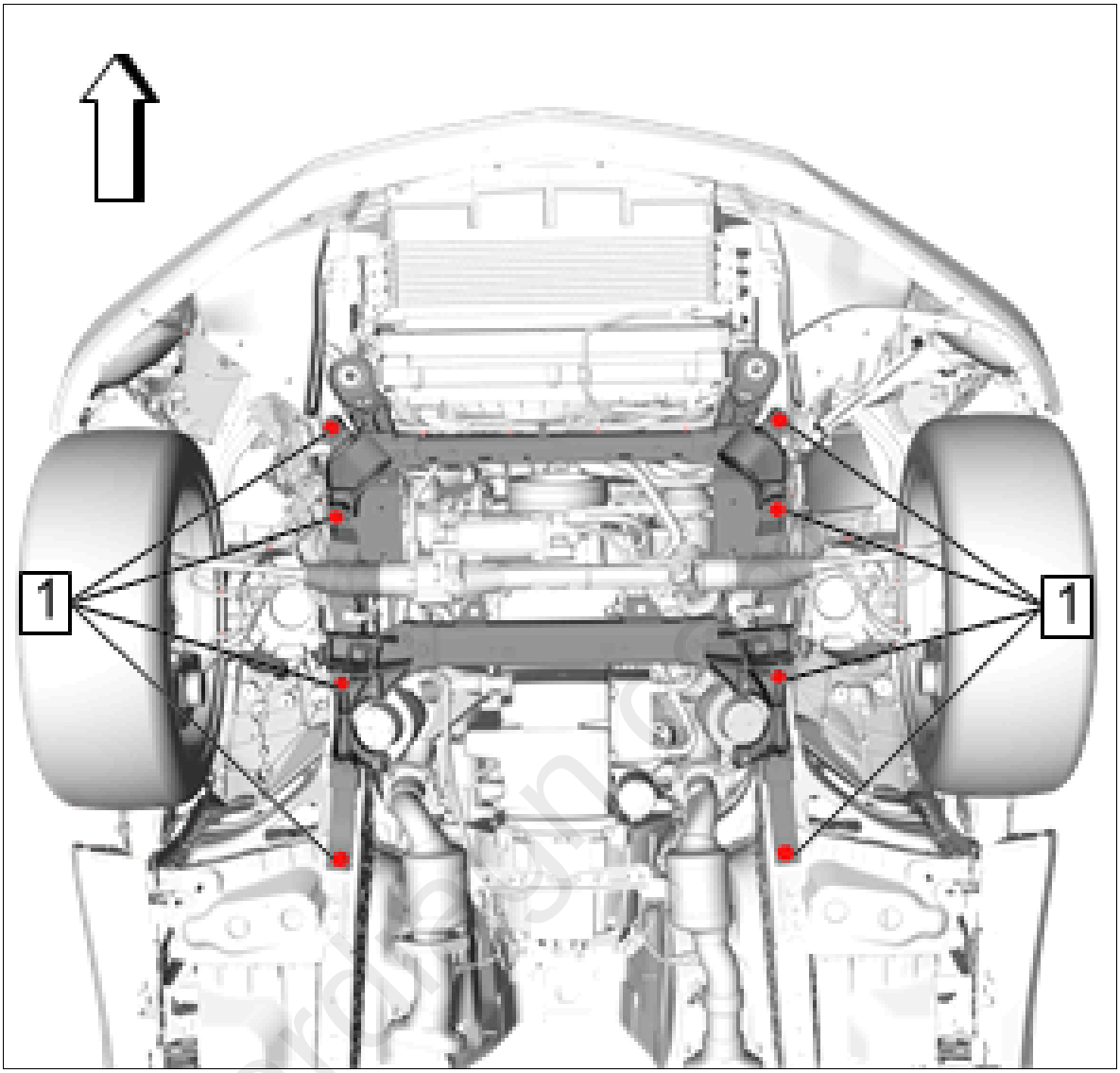
Fig 2: Drivetrain And Front Suspension Frame



Courtesy of GENERAL MOTORS COMPANY

2. With the aid of an assistant, carefully lower the body to the frame (1)
3. Ensure the following components are clear from the frame:
    1. Vacuum lines
    2. Steering knuckles
    3. Electrical wiring harnesses
    4. Oil cooler lines

Fig 3: Drivetrain and Front Suspension Support Bolt



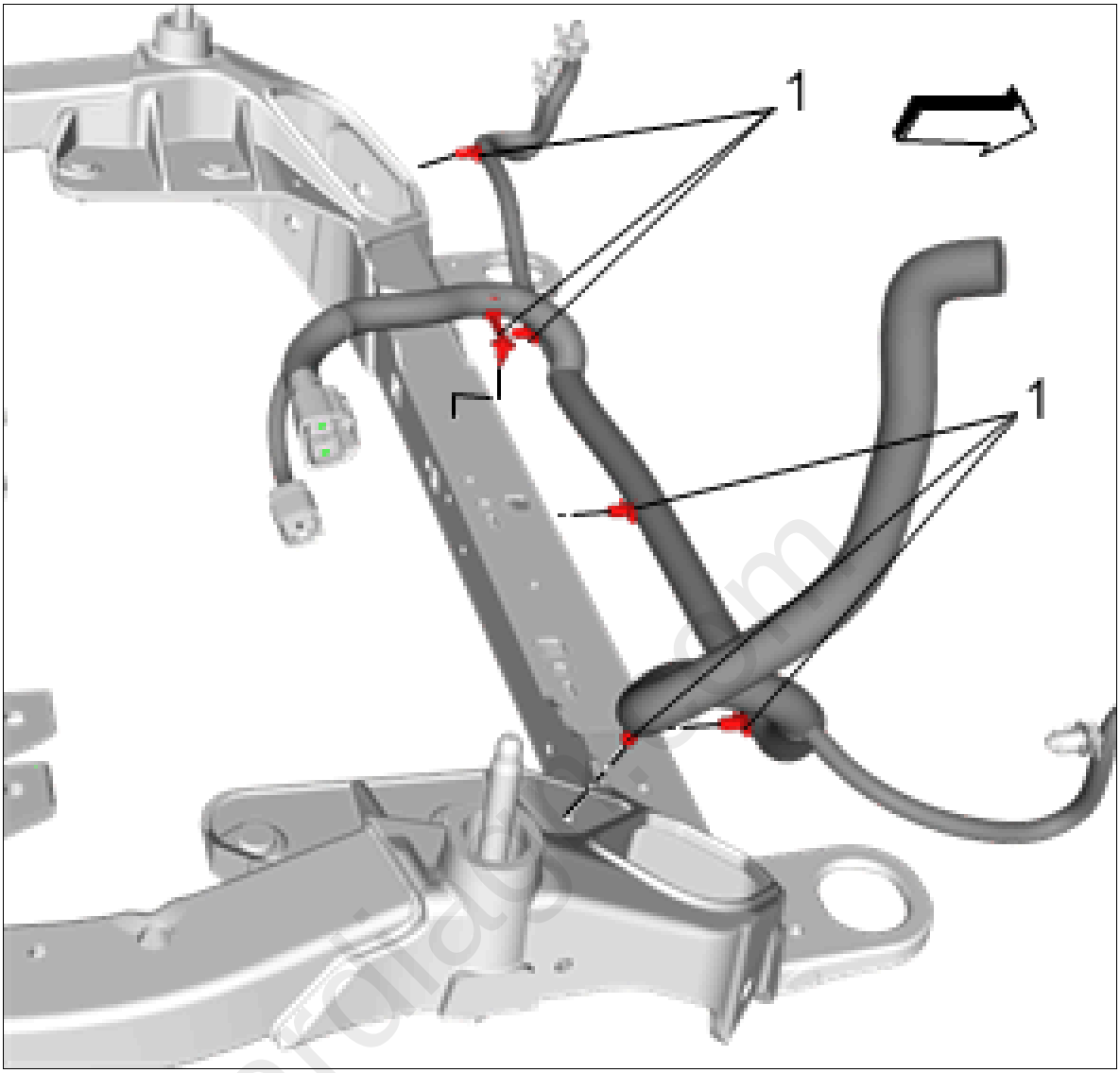
Courtesy of GENERAL MOTORS COMPANY

> ⚠ *CAUTION:*
>
> *Refer to Fastener Caution*

4. Install NEW Drivetrain and Front Suspension Support Bolt (1) (Qty: 8) and tighten to 100 N.m (74 lb ft)

5. Remove the **J-39580** stand from under the vehicle.

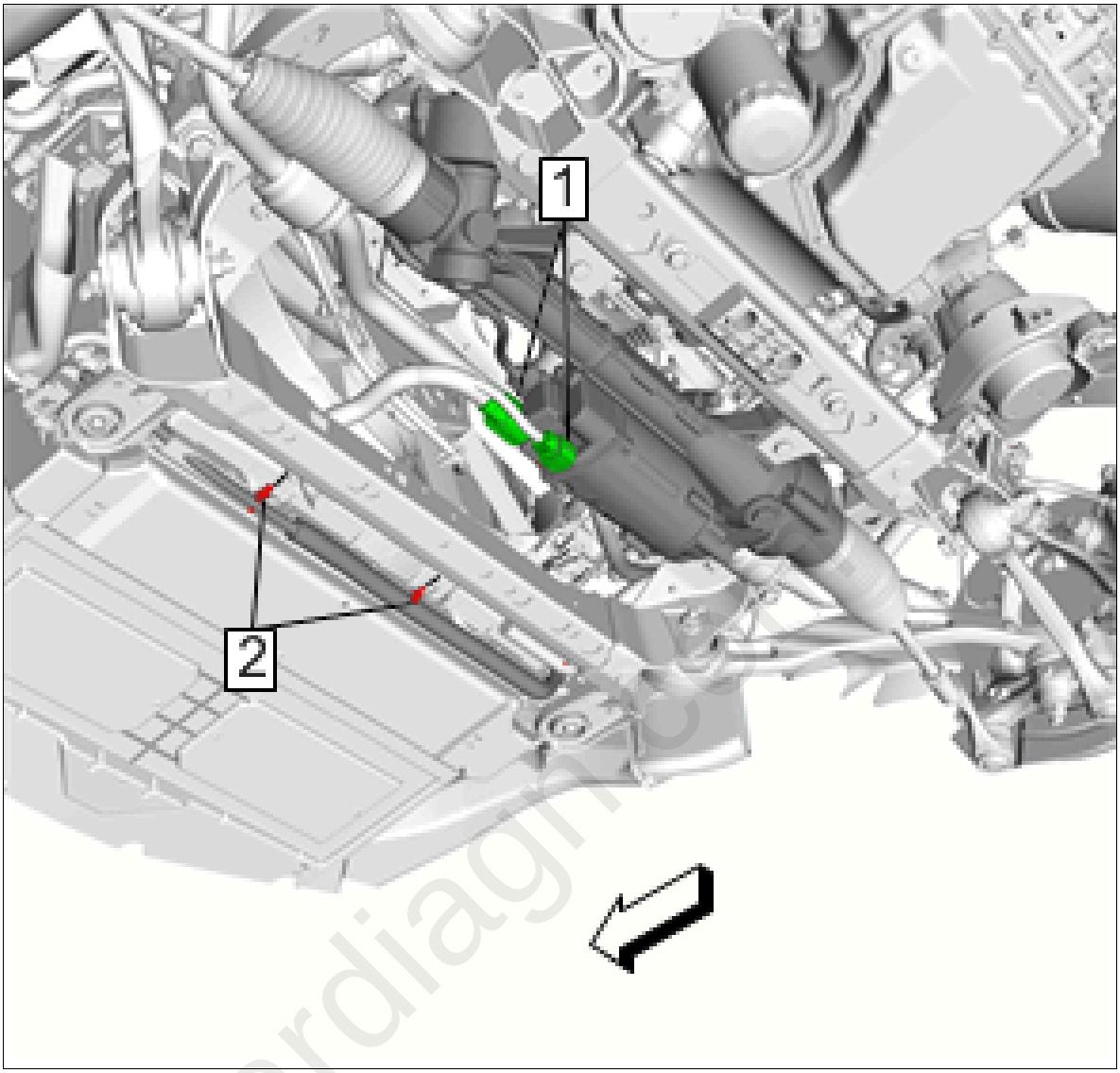
Fig 4: Wiring Harness Retainers From Frame



Courtesy of GENERAL MOTORS COMPANY

6. Install the wiring harness retainers to the frame (1)

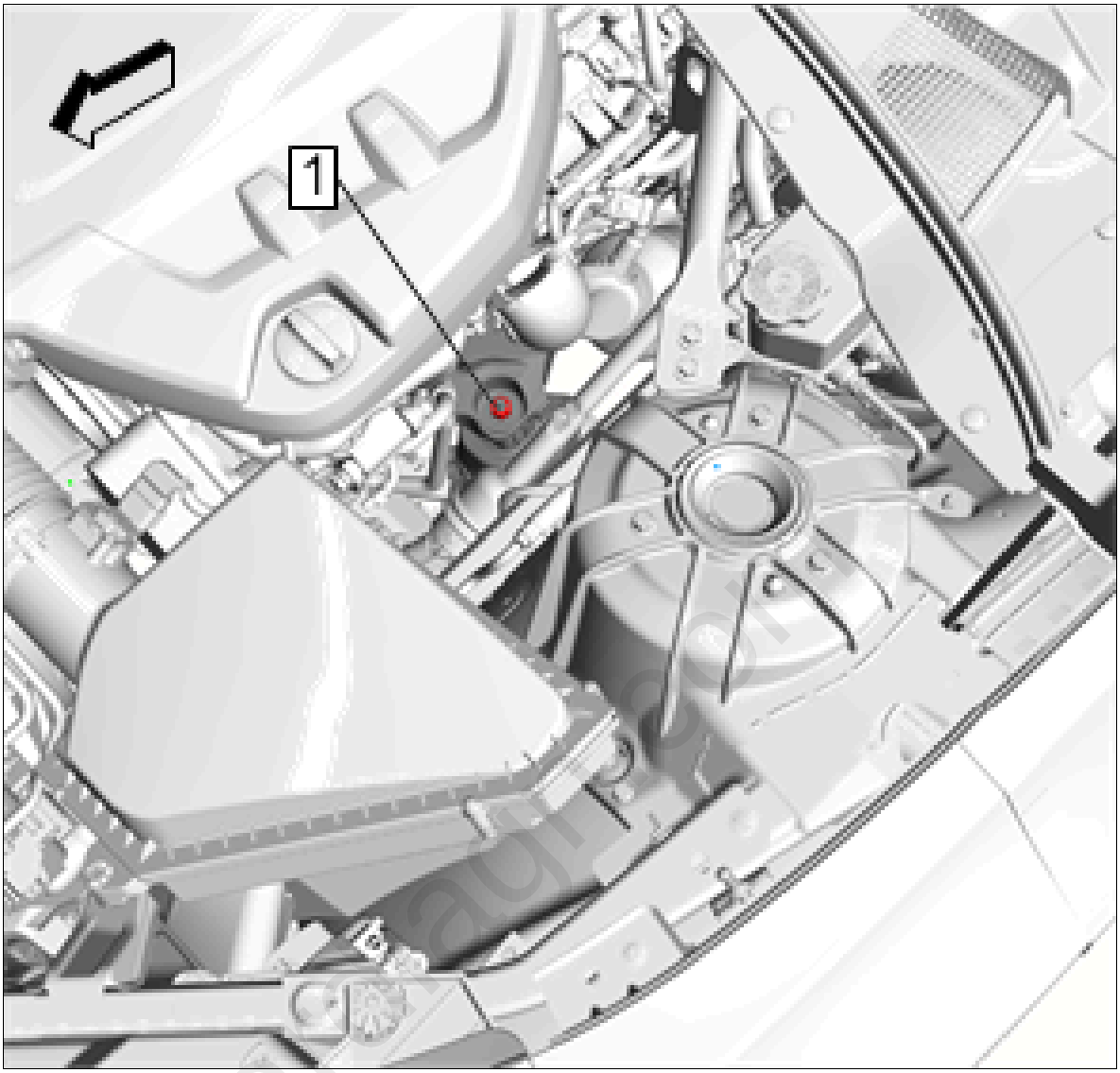
Fig 5: Steering Gear Electrical Connectors



Courtesy of GENERAL MOTORS COMPANY

7. Connect the steering gear electrical connectors (1)

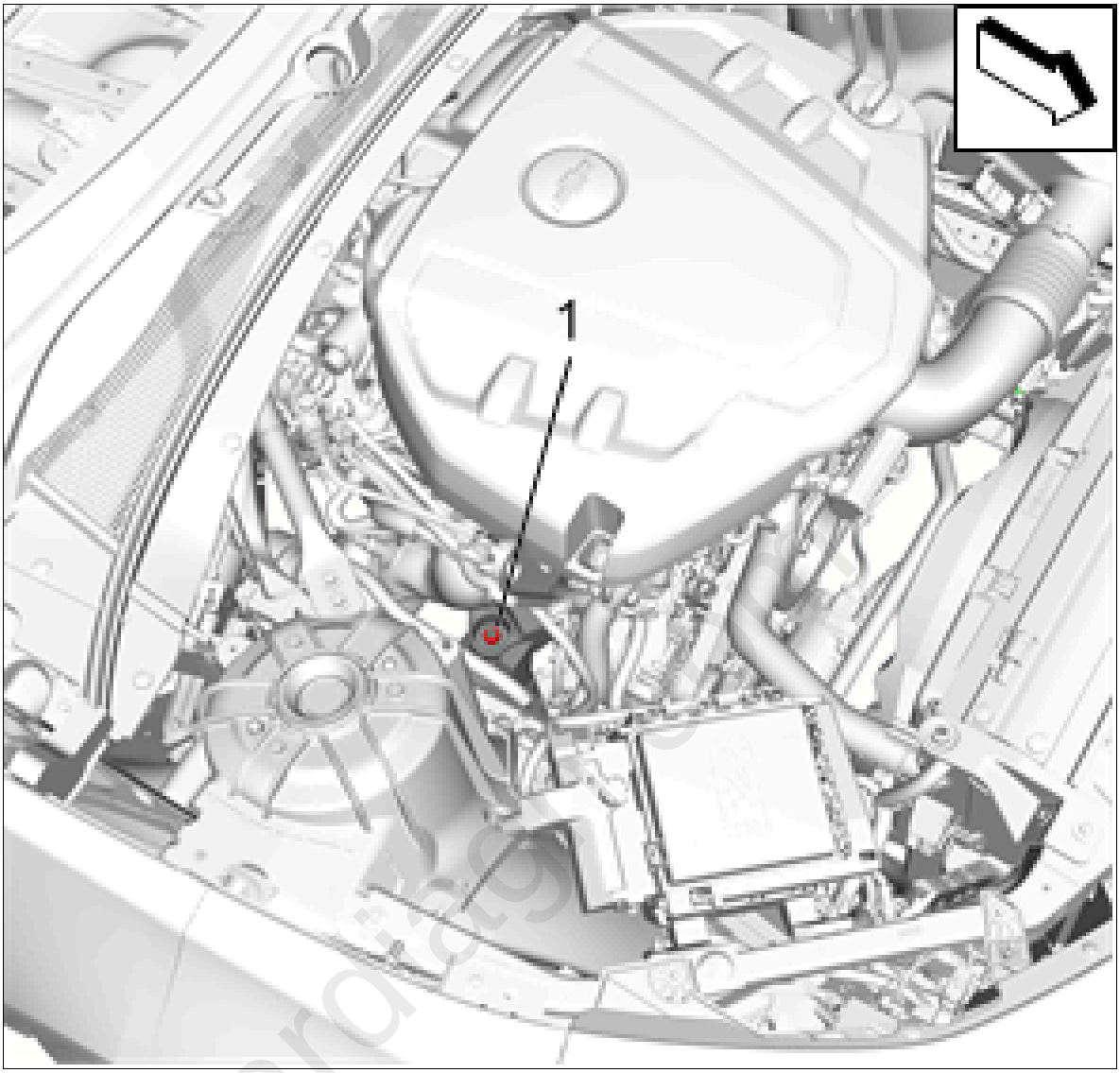
Fig 6: Left Side Engine Mount Nut



Courtesy of GENERAL MOTORS COMPANY

8. Install Engine Mount Nut - Left Side (1) and tighten to 70 N.m (52 lb ft)

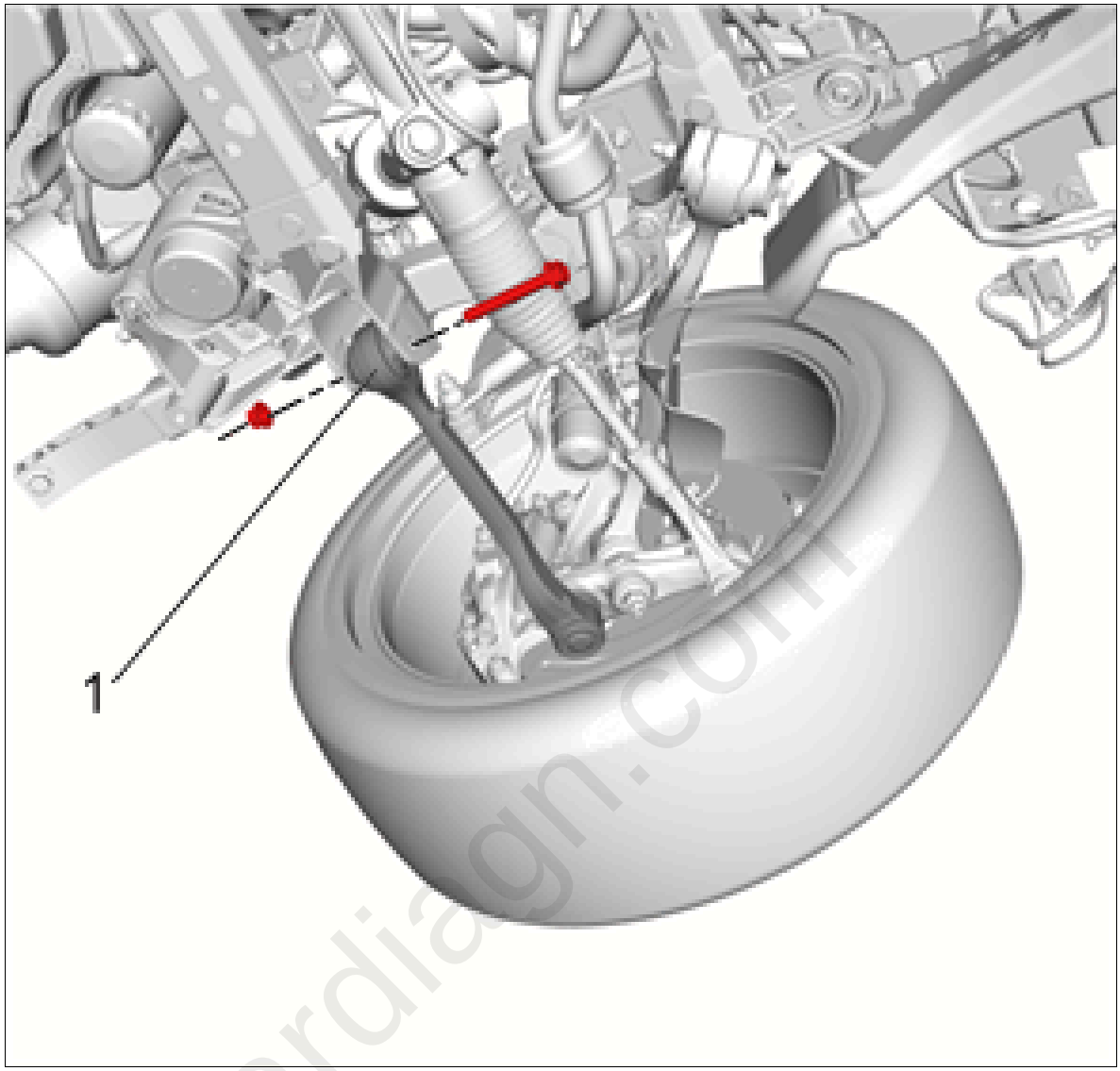
Fig 7: Right Side Engine Mount Nut



Courtesy of GENERAL MOTORS COMPANY

9. Install Engine Mount Nut - Right Side (1) and tighten to 70 N.m (52 lb ft)

Fig 8: Front Lower Control Rear Links From Front Suspension Frame

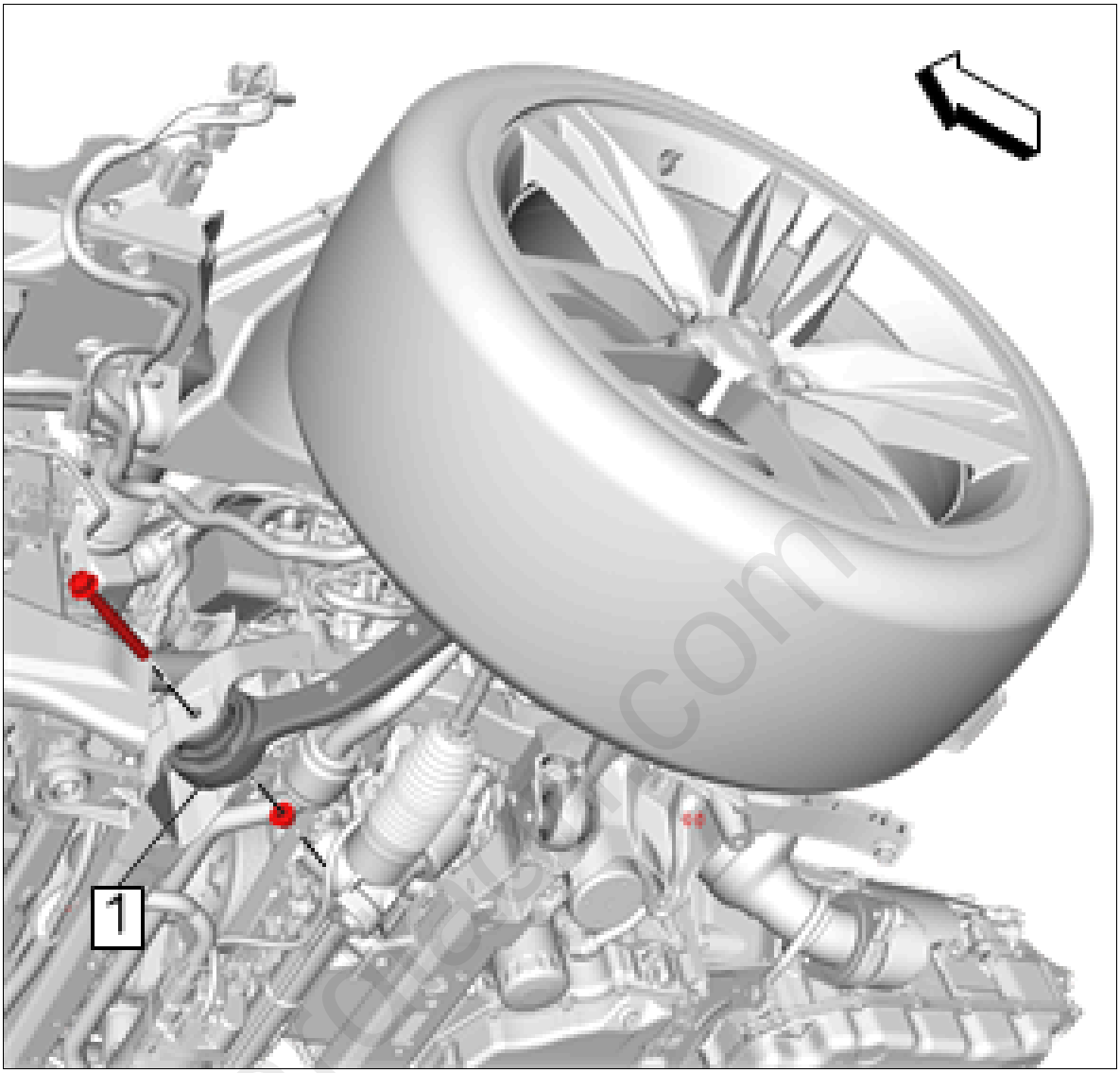


Courtesy of GENERAL MOTORS COMPANY

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10. Connect the front lower control rear links to the front suspension frame (1) Front Lower Control Rear Link Replacement (LT1)

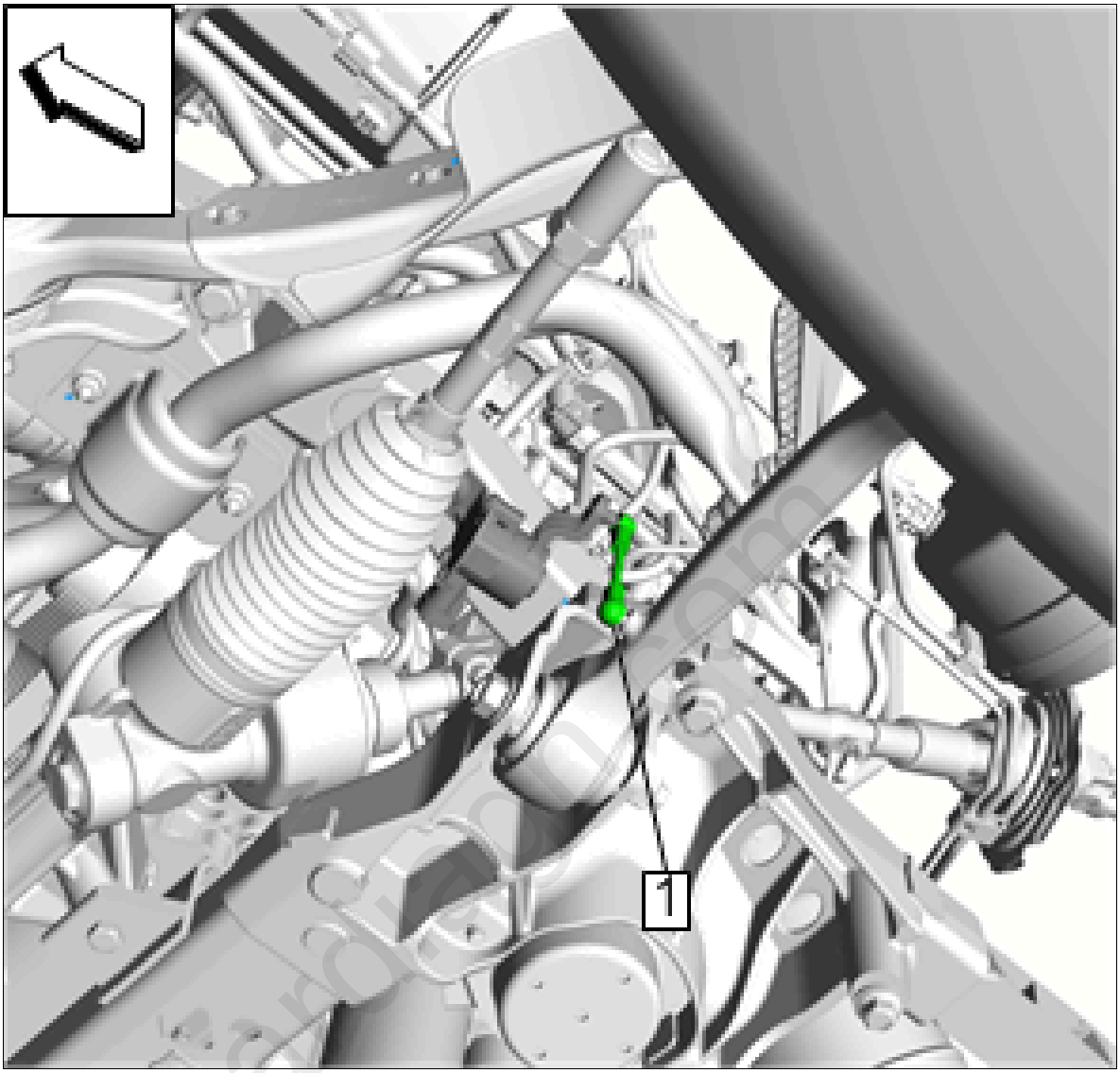
Fig 9: Front Lower Control Front Links From Front Suspension Frame



Courtesy of GENERAL MOTORS COMPANY

11. Connect the front lower control front links to the front suspension frame (1) Front Lower Control Front Link Replacement (LT1, Without V18)Front Lower Control Front Link Replacement (LT1, With V18)

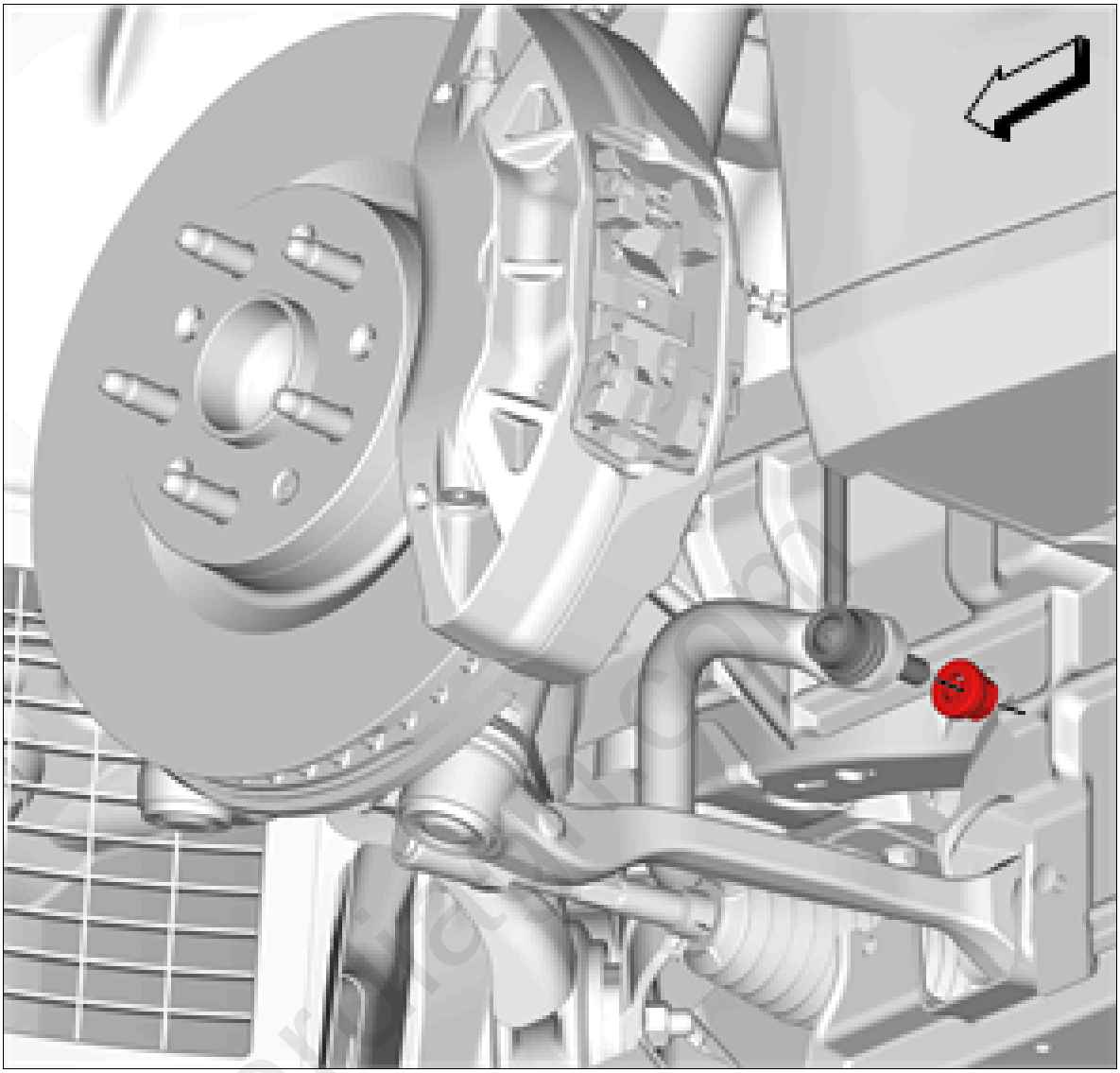
Fig 10: Front Suspension Automatic Forward Lighting Position Sensor Arms From Lower Control Rear Links



Courtesy of GENERAL MOTORS COMPANY

12. Connect the front suspension automatic forward lighting position sensor arm (1) to the lower control rear link.
13. Connect the electrical connector to the front suspension automatic forward lighting position sensor.

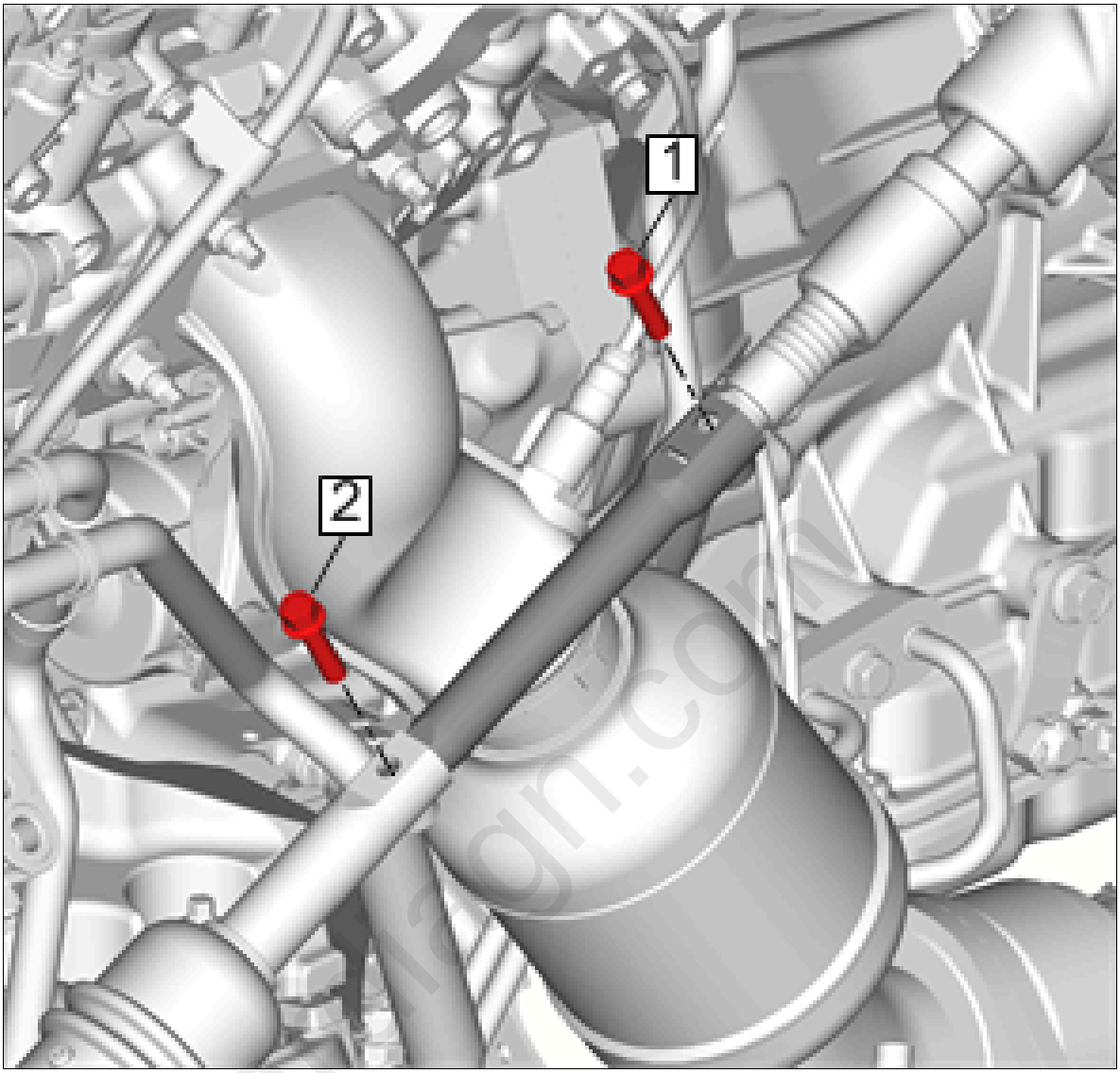
Fig 11: Front Stabilizer Shaft Link Nut



Courtesy of GENERAL MOTORS COMPANY

14. Connect the right and left lower stabilizer shaft links from the stabilizer bar (1) Stabilizer Shaft Link Replacement (LT1)

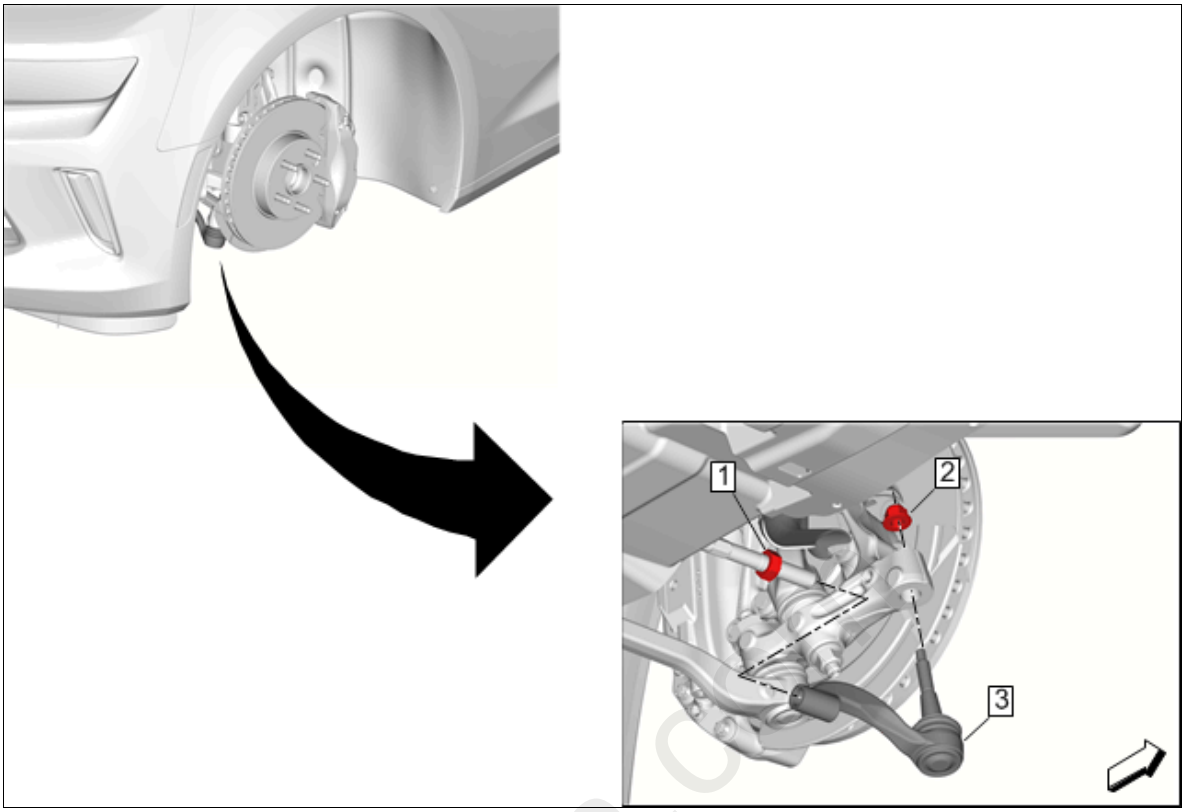
Fig 12: Mid Intermediate Steering Shaft Bolt And Intermediate Steering Shaft Upper Bolt



Courtesy of GENERAL MOTORS COMPANY

15. Connect the intermediate steering shaft to the steering column (1) Mid Intermediate Steering Shaft Replacement

Fig 13: Steering Linkage Outer Tie Rod

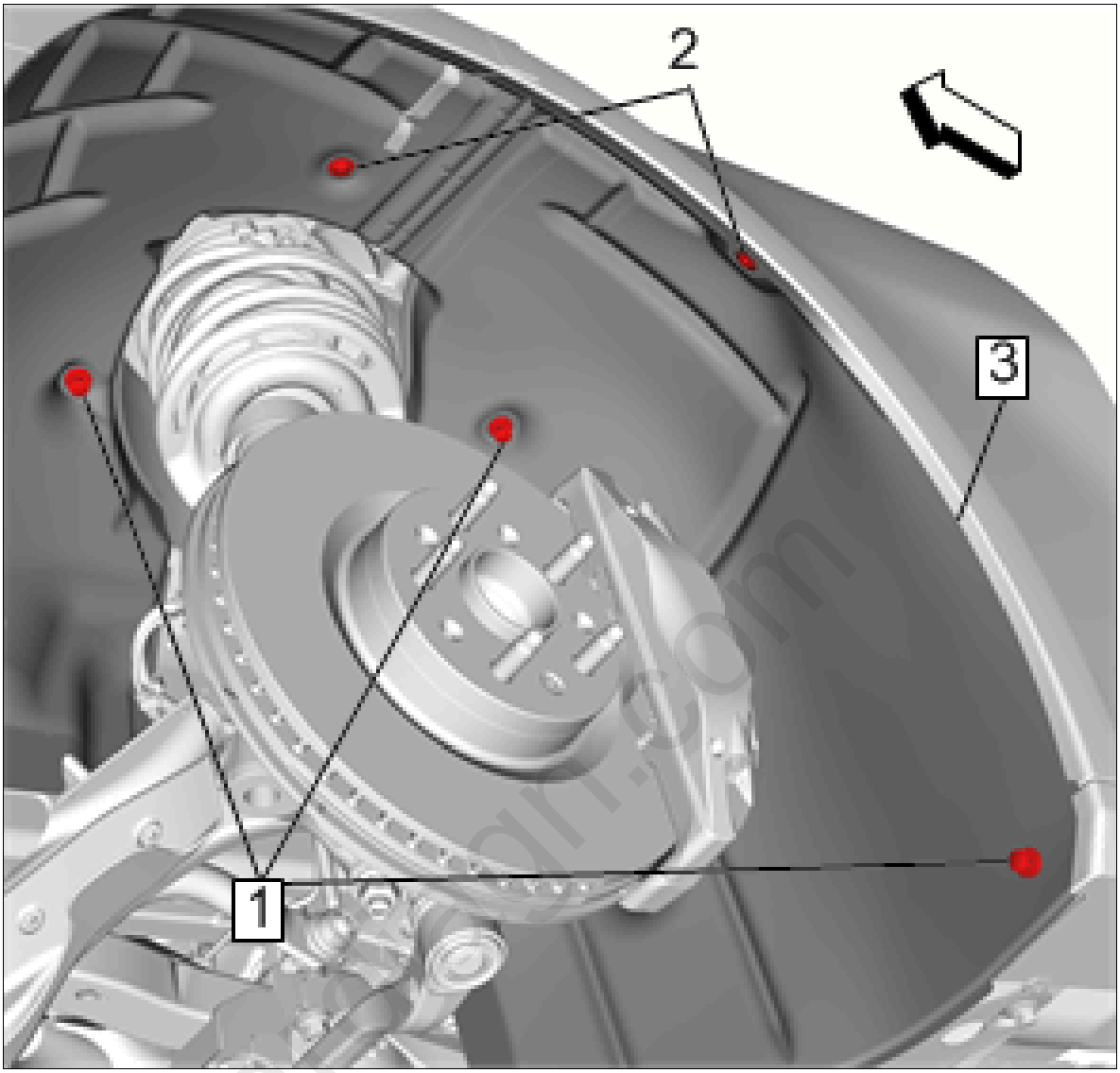


Courtesy of GENERAL MOTORS COMPANY

16. Install Steering Linkage Outer Tie Rod (3) - Steering Linkage Outer Tie Rod Replacement

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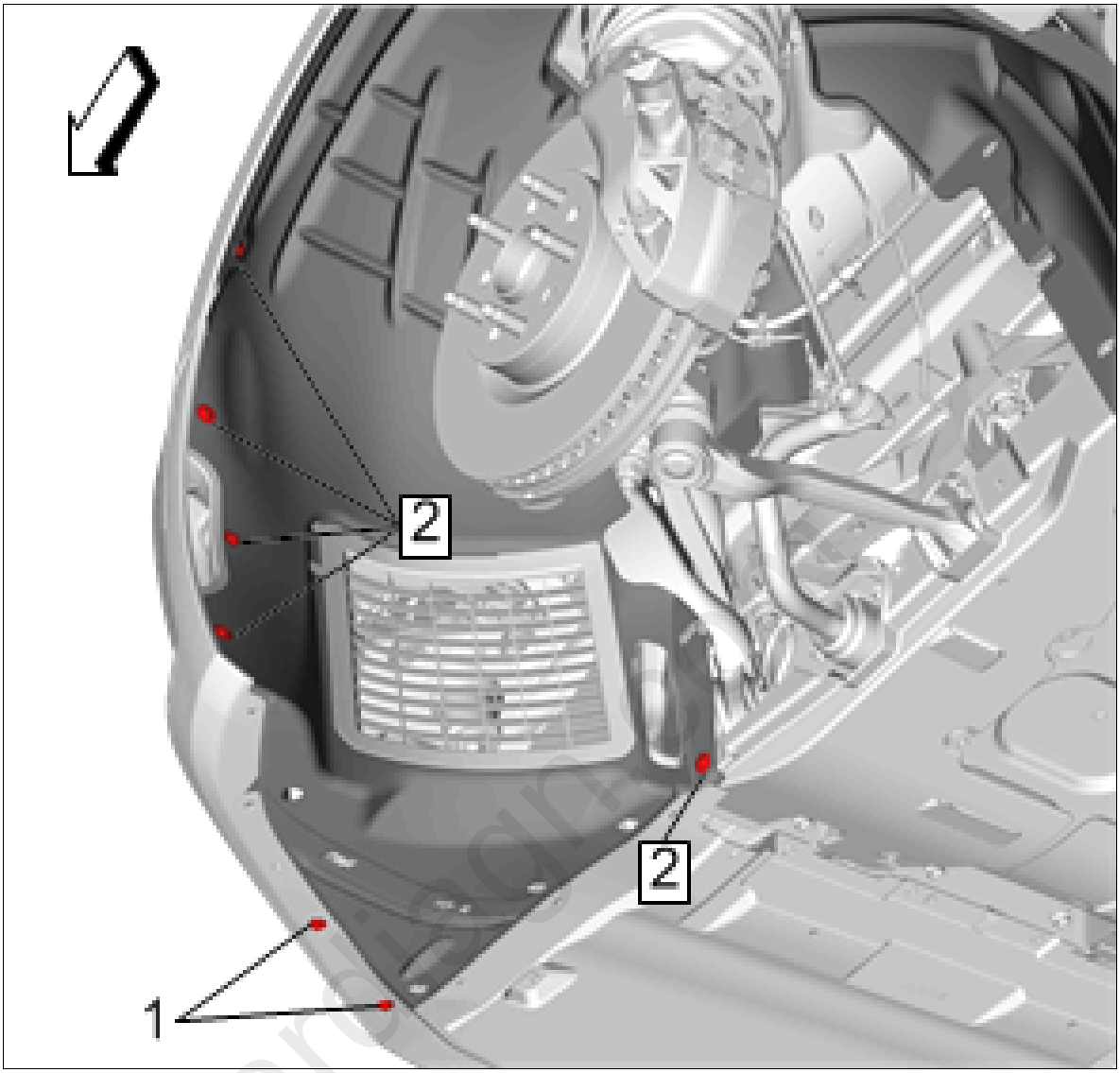
Fig 14: Front Wheelhouse Liner Retainer



Courtesy of GENERAL MOTORS COMPANY

17. Install Front Wheelhouse Liner Retainer (1) (Qty: 3)
18. Install Front Wheelhouse Liner Screw (2) (Qty: 2) and tighten to 2.5 N.m (22 lb in)

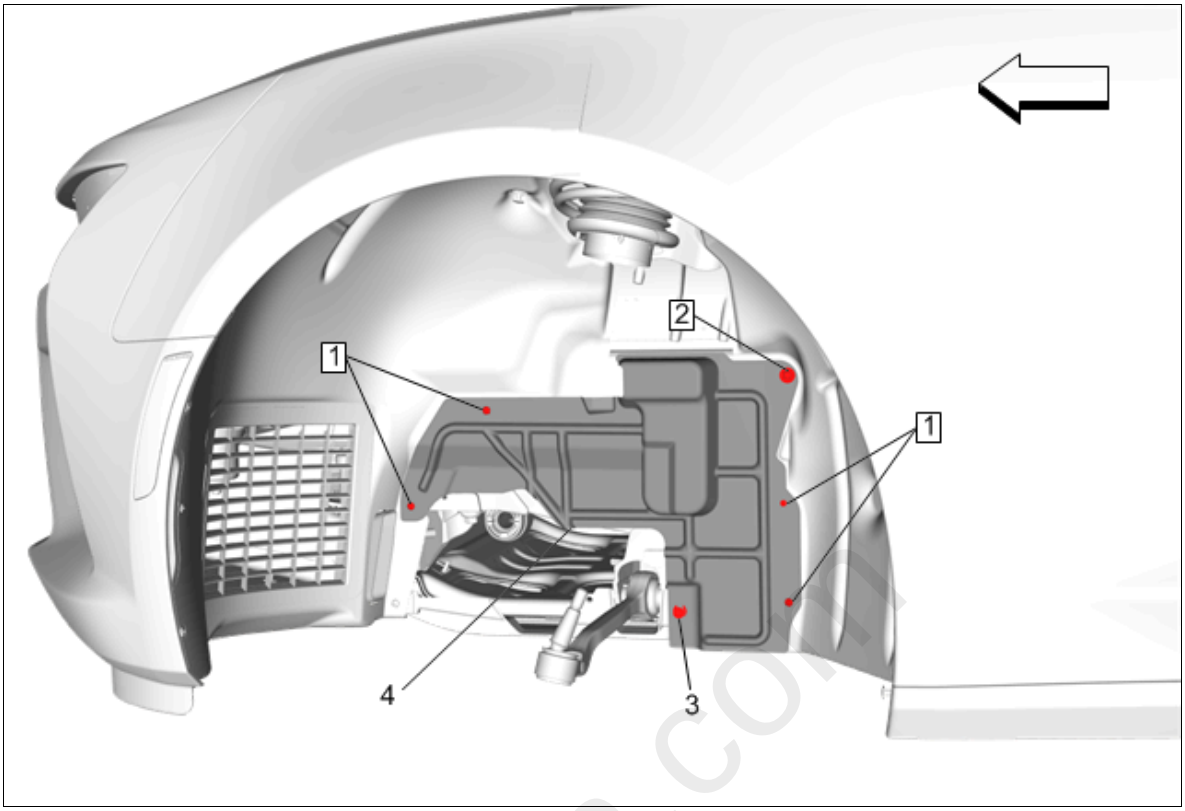
Fig 15: Front Bumper Fascia Bolt



Courtesy of GENERAL MOTORS COMPANY

19. Install Front Wheelhouse Liner Screw (2) (Qty: 5) and tighten to 2.5 N.m (22 lb in)
20. Install Front Bumper Fascia Bolt (1) (Qty: 2) and tighten to 5 N.m (44 lb in)

Fig 16: Front Wheelhouse Splash Shield

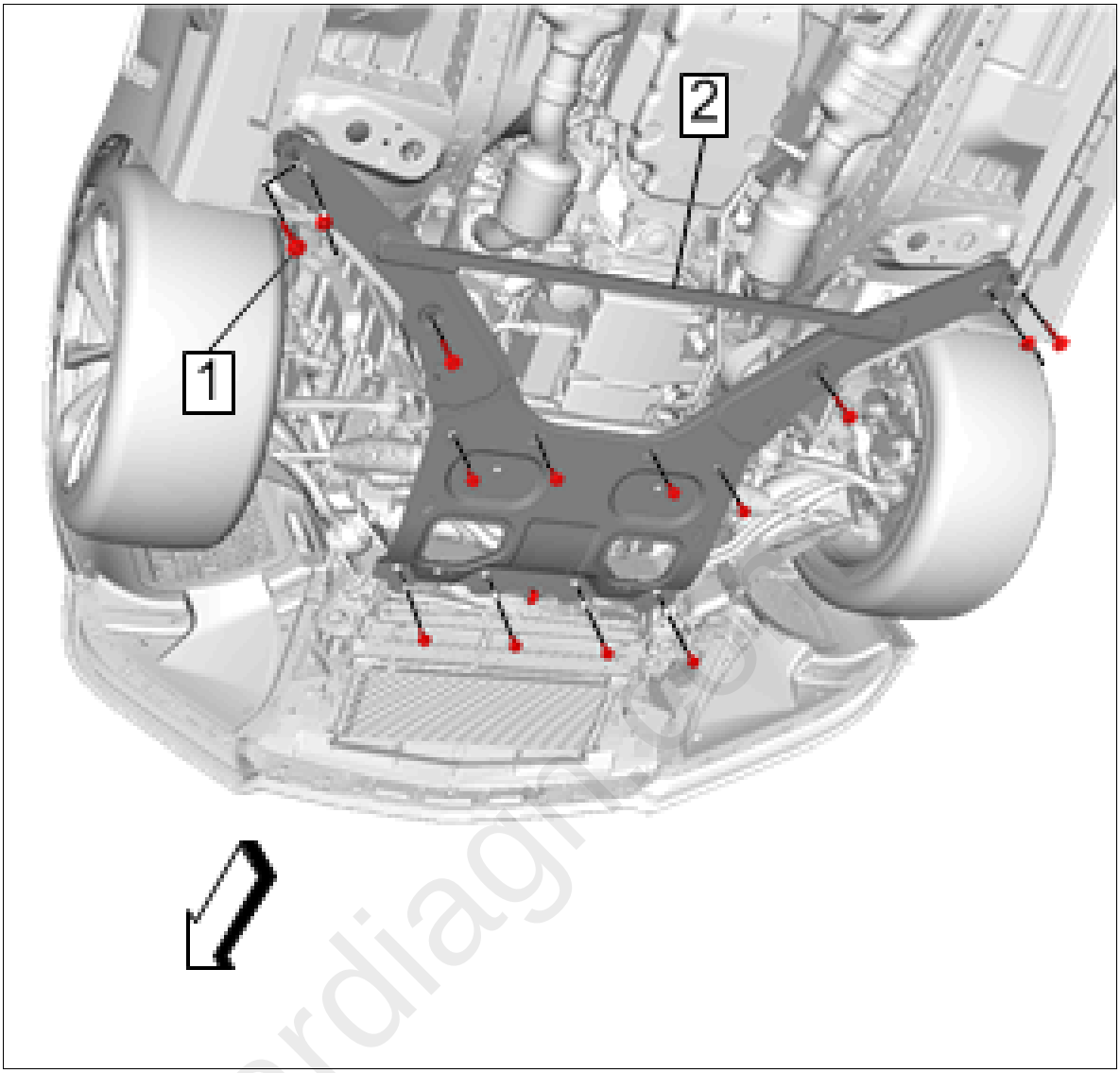


Courtesy of GENERAL MOTORS COMPANY

21. Install Front Wheelhouse Splash Shield Replacement (4)

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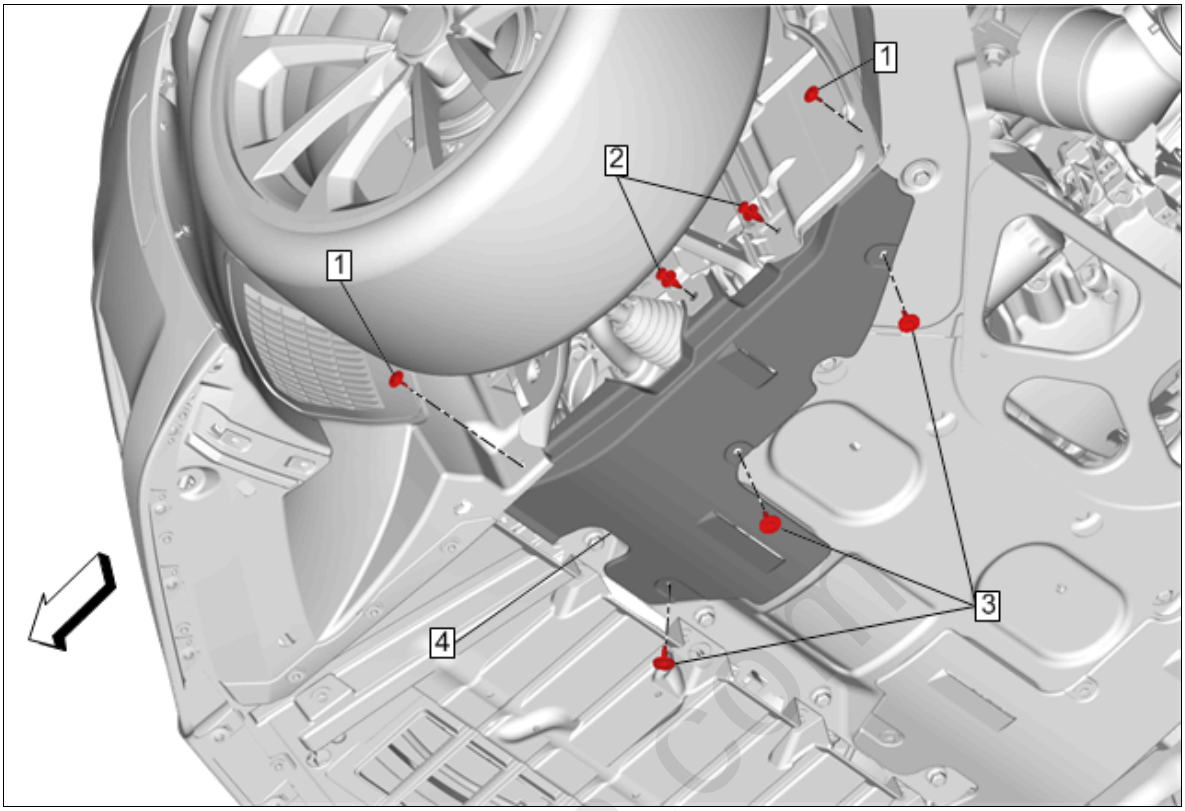
Fig 17: Front Cradle Shear Plate Fastener



Courtesy of GENERAL MOTORS COMPANY

22. Install Front Cradle Shear Plate Replacement (2)

Fig 18: Front Compartment Lower Noise Shield

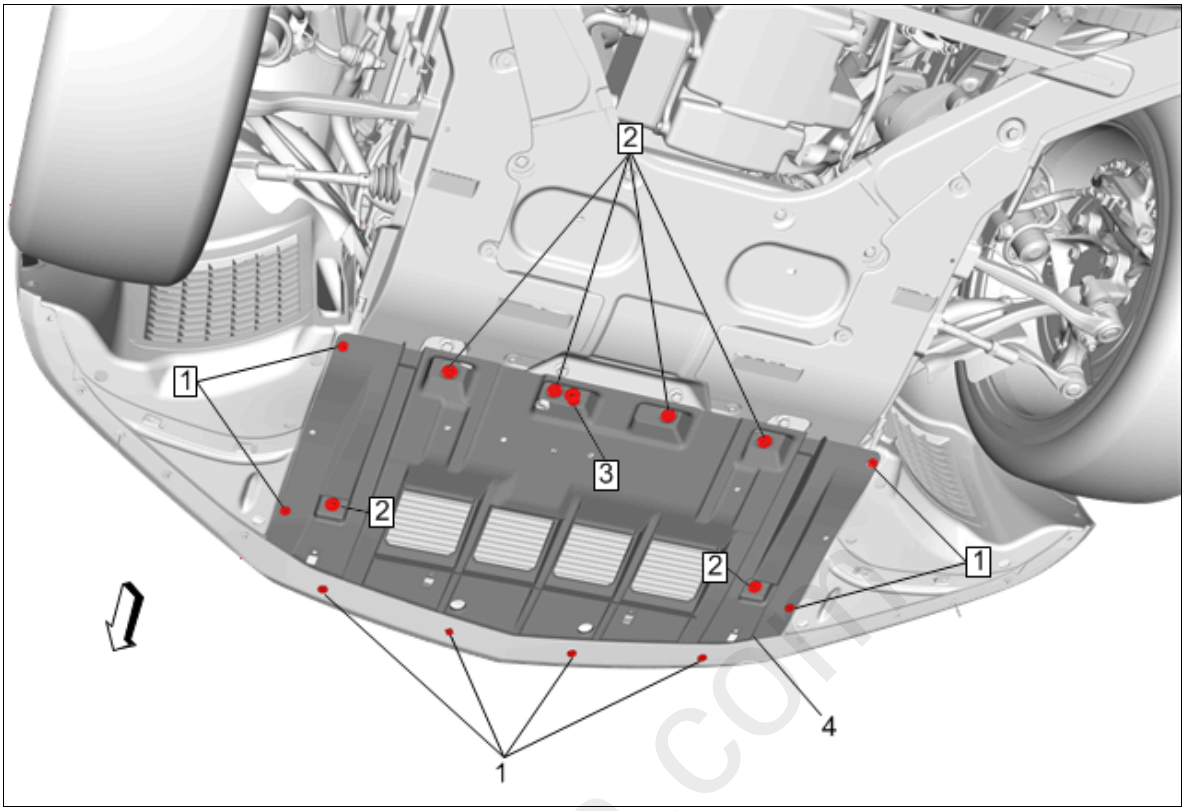


Courtesy of GENERAL MOTORS COMPANY

23. Install Front Compartment Lower Noise Shield Replacement (Coupe - LGX, LTG) (4)

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Fig 19: Front Compartment Air Deflector



Courtesy of GENERAL MOTORS COMPANY

24. Install Front Compartment Air Deflector Replacement (Coupe - LT1) (4)
25. Install the front tires and wheels. Tire and Wheel Removal and Installation
26. Lower the vehicle.
27. Remove the engine support fixture.
28. Align the vehicle only if replacing the drivetrain and front suspension frame. Wheel Alignment Measurement

REPAIR INSTRUCTIONS > DRIVETRAIN AND FRONT SUSPENSION CRADLE REPLACEMENT (LGX)

Special Tools

EN-39580 Engine Support Stand

Equivalent regional tools:Special Tools

REPAIR INSTRUCTIONS > DRIVETRAIN AND FRONT SUSPENSION CRADLE REPLACEMENT (LGX) > REMOVAL PROCEDURE

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NOTE:

Suspension components attached to the frame use Torque-to-Yield fasteners and must be DISCARDED and replaced with NEW Torque Angle Yield (TAY) fasteners. The frame to body fasteners are not TAY fasteners.

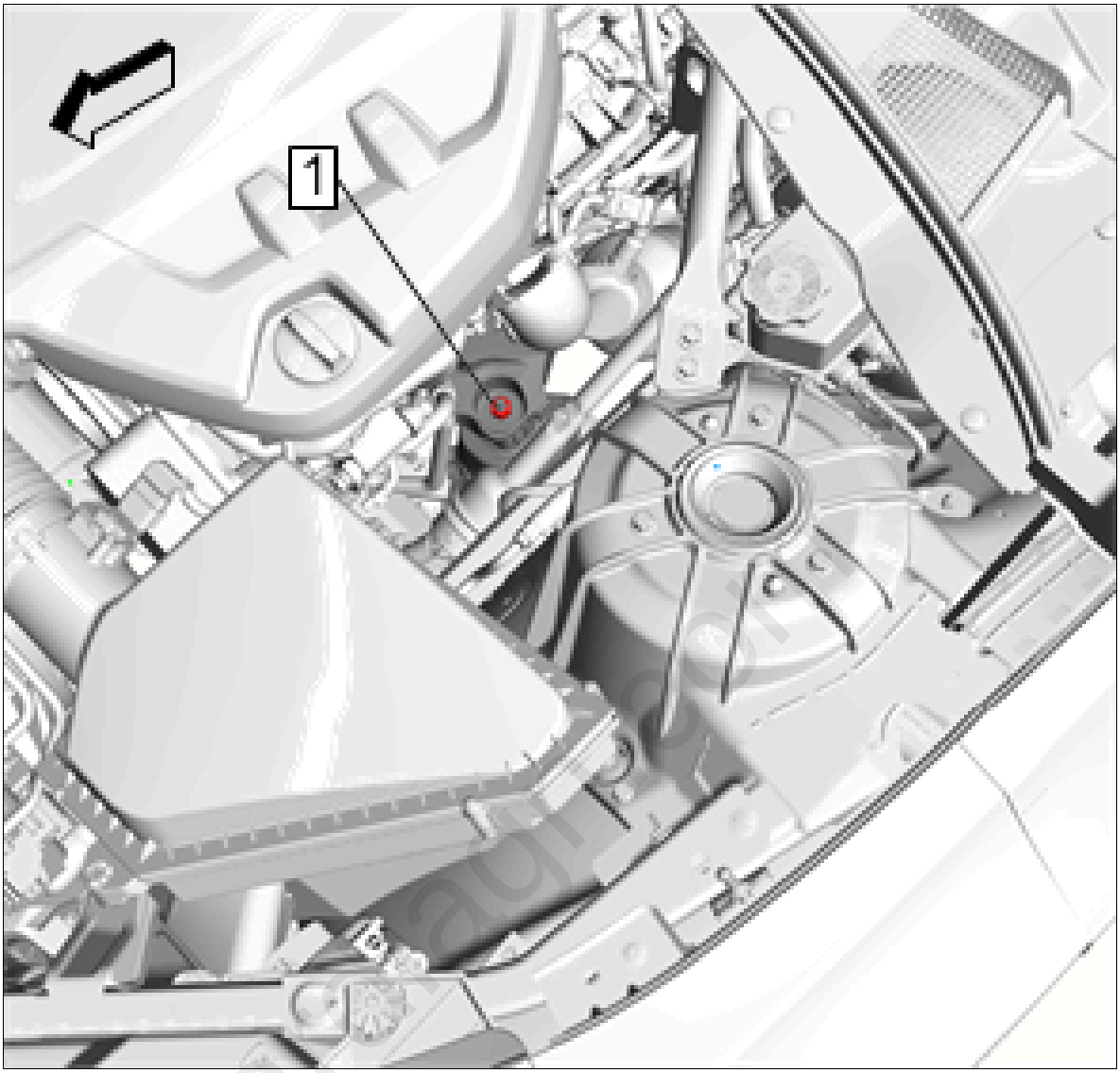
NOTE:

Vehicle alignment is not required if the cradle is being lowered or dropped to perform another procedure. This vehicle is equipped with a cradle to body aligning feature: cradle to body through holes or self-aligning pins that are part of the cradle or body. Only align if replacing the cradle with a NEW part and transferring components.

1. Install the engine support fixture. Engine Support Fixture
2. Using mechanics wire, support the radiator and AC condenser assembly to the vehicle body.

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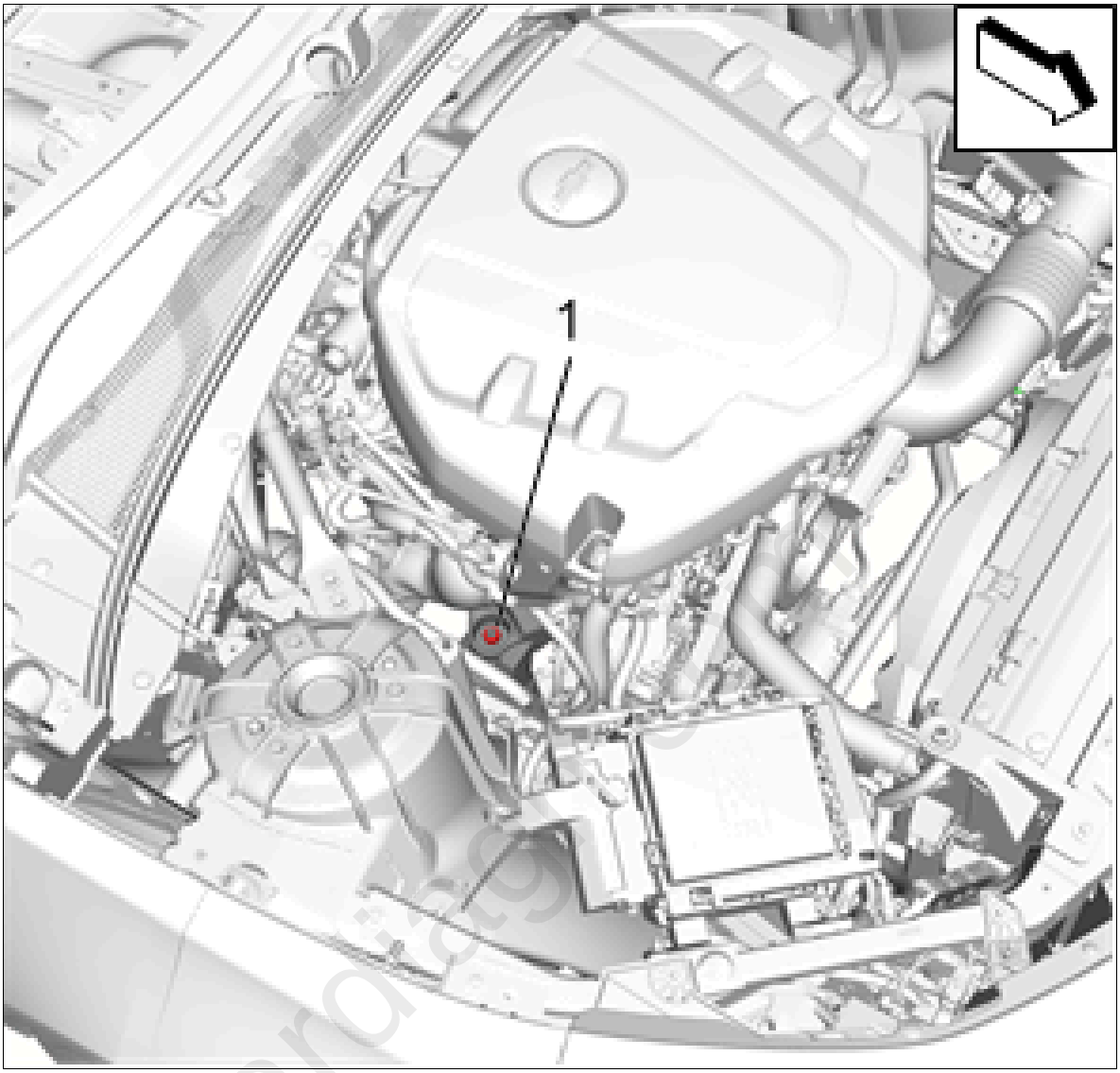
Fig 1: Left Side Engine Mount Nut



Courtesy of GENERAL MOTORS COMPANY

3. Remove Engine Mount Nut - Left Side (1)

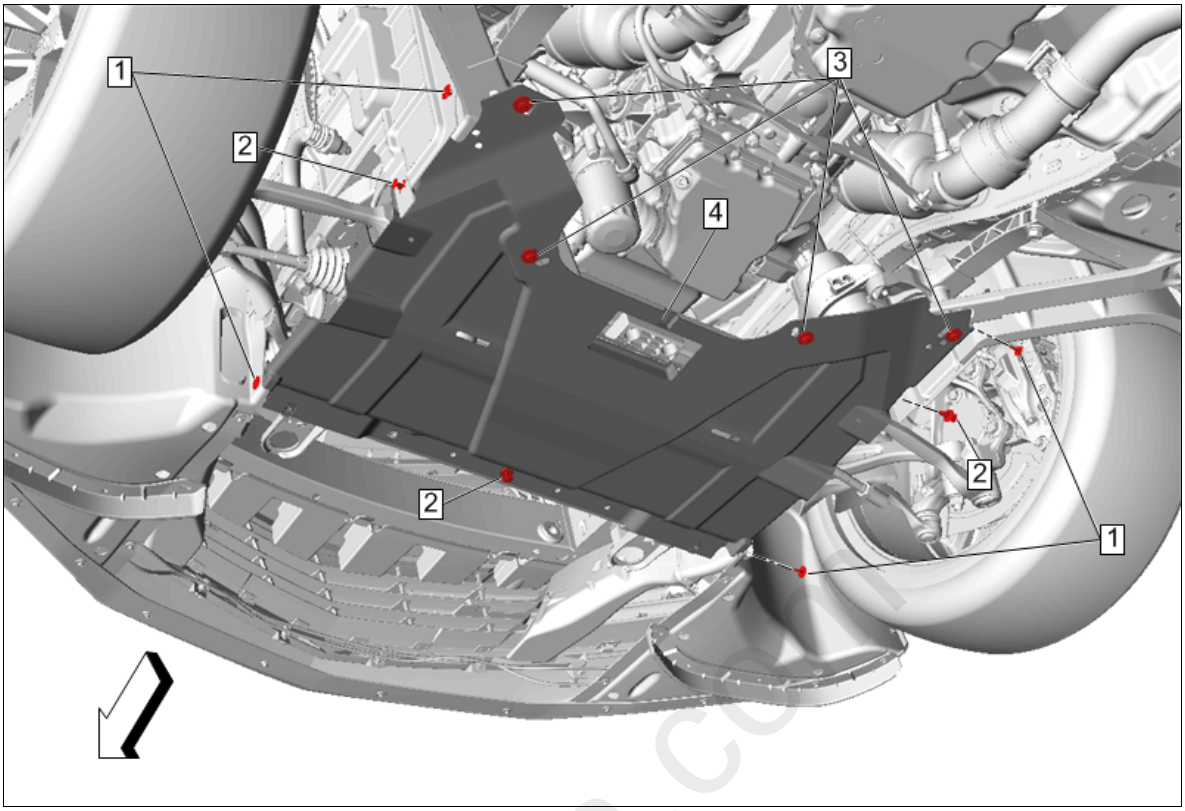
Fig 2: Right Side Engine Mount Nut



Courtesy of GENERAL MOTORS COMPANY

4. Remove Engine Mount Nut - Right Side (1)

Fig 3: Front Compartment Lower Noise Shield

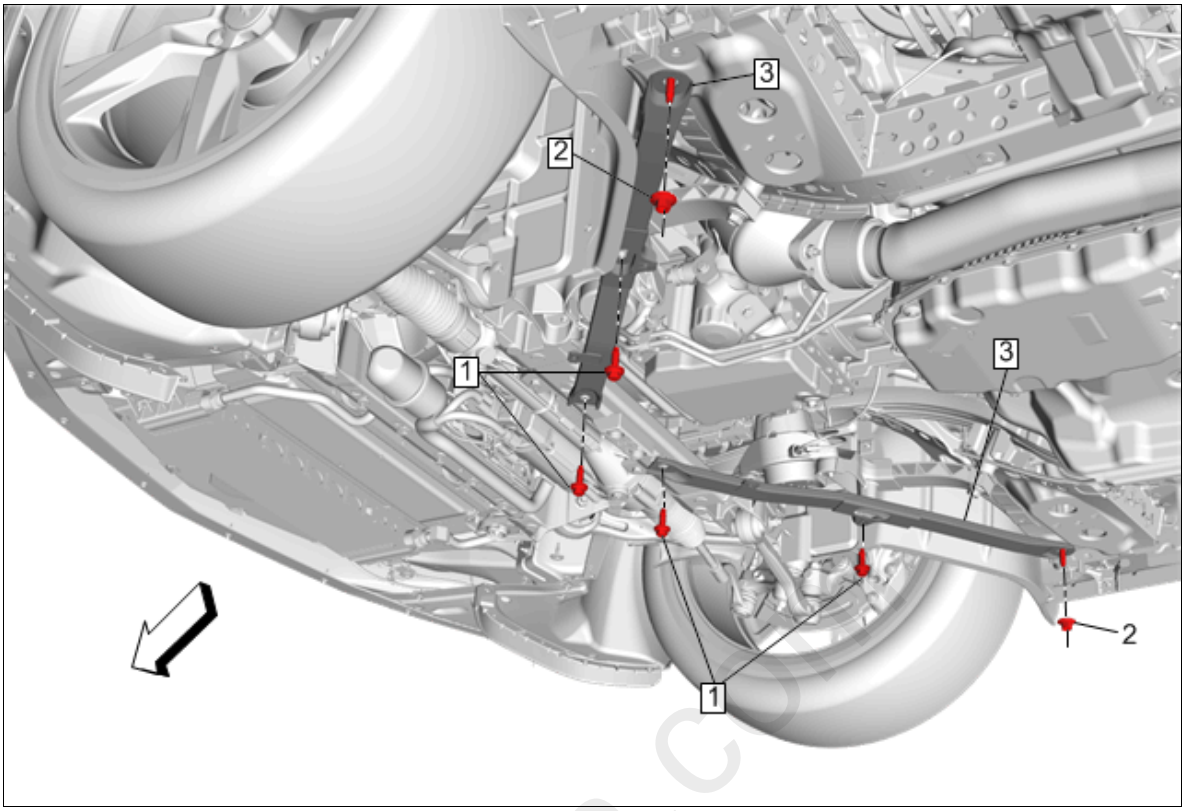


Courtesy of GENERAL MOTORS COMPANY

5. Remove Front Compartment Lower Noise Shield (4) - Front Compartment Lower Noise Shield Replacement (Coupe - LGX, LTG)

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Fig 4: Front Crossmember Brace

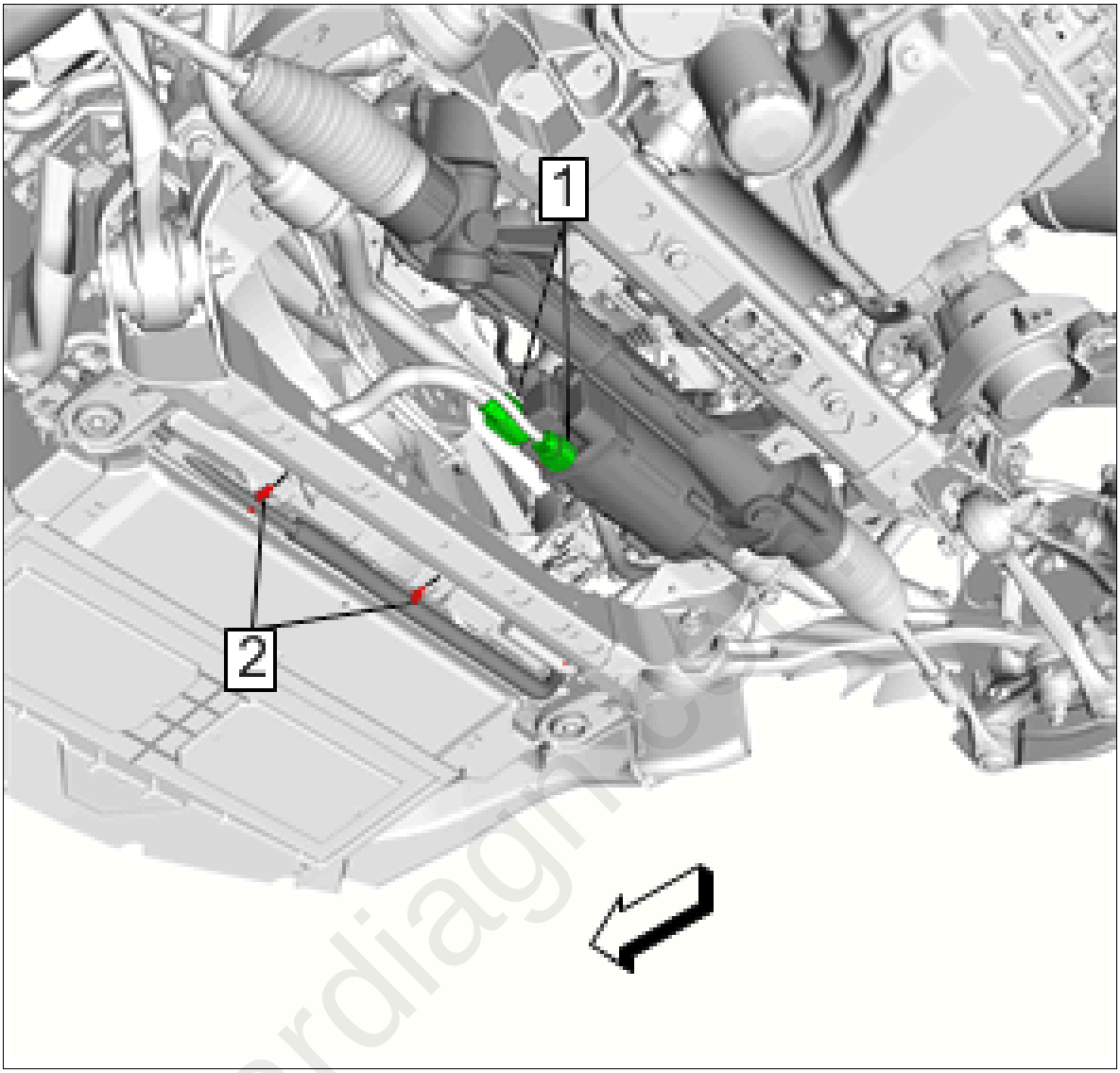


Courtesy of GENERAL MOTORS COMPANY

6. Remove Front Crossmember Brace (3) - Front Crossmember Brace Replacement (Coupe - LGX, LTG) Front Crossmember Brace Replacement (Convertible - LGX)

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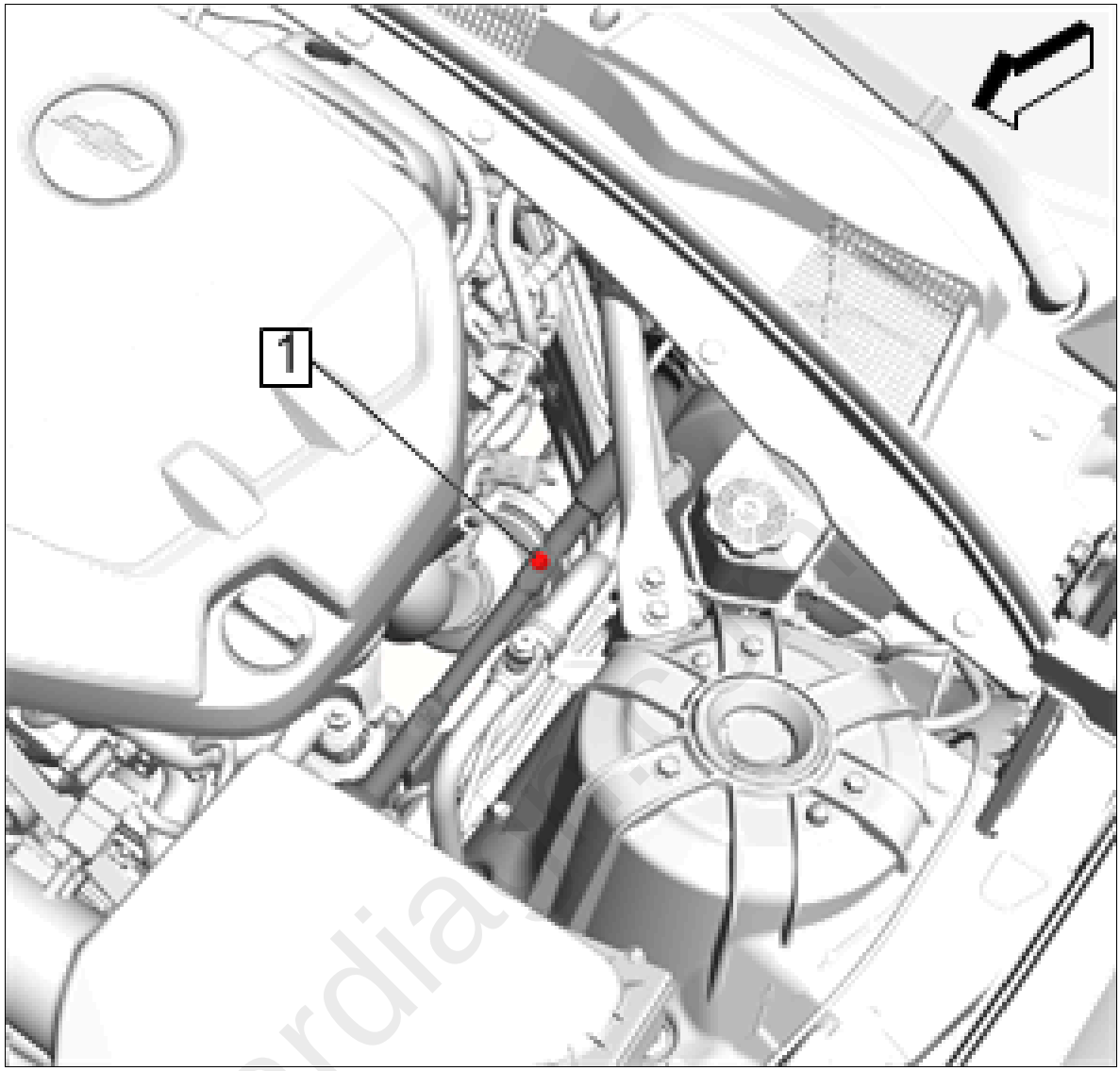
Fig 5: Steering Gear Electrical Connectors



Courtesy of GENERAL MOTORS COMPANY

7. Disconnect the steering gear electrical connectors (1)
8. Remove the wiring harness retainers from the frame (2)

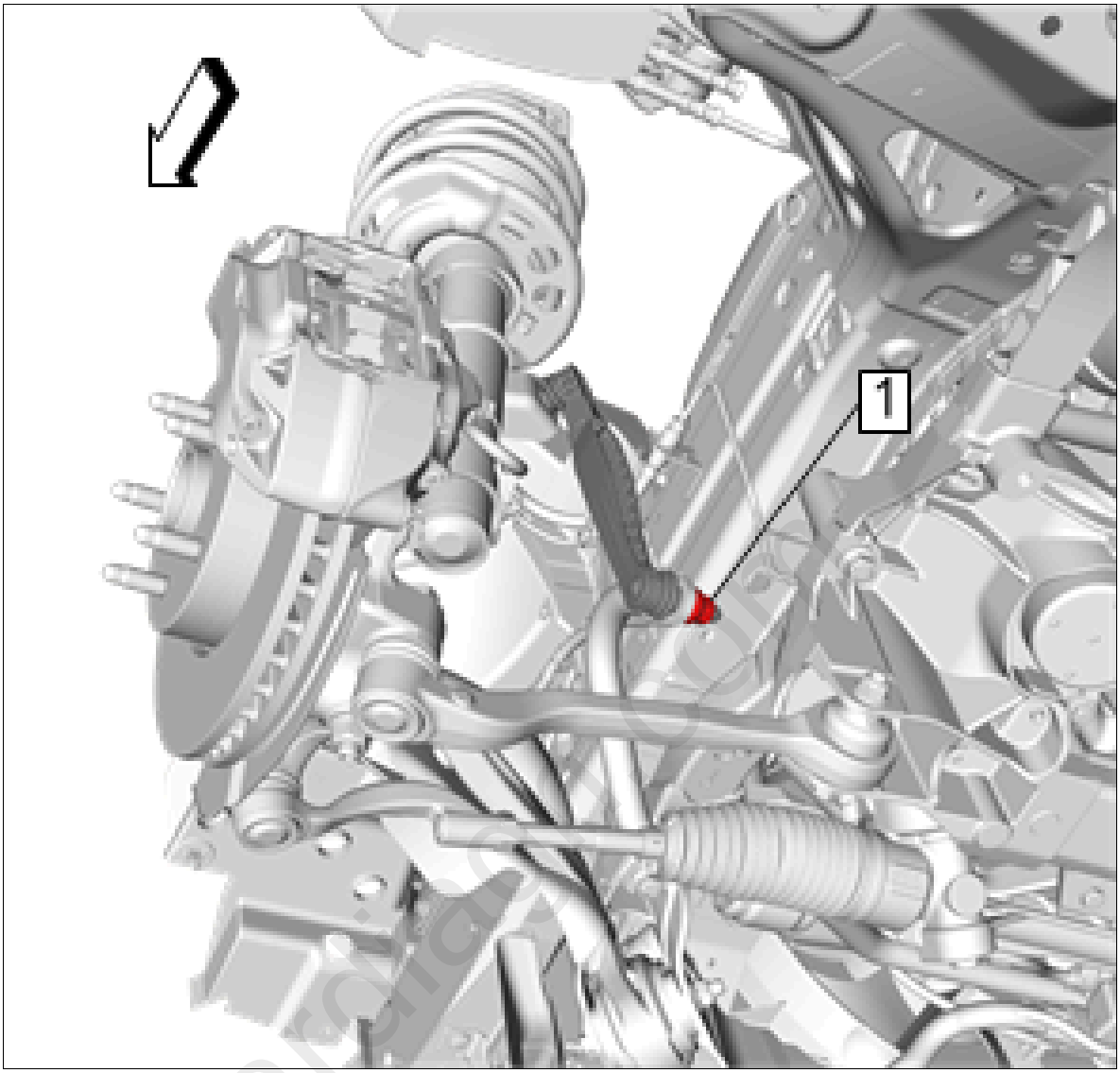
Fig 6: Intermediate Steering Shaft From Steering Column Shaft



Courtesy of GENERAL MOTORS COMPANY

9. Disconnect the intermediate steering shaft from the steering column shaft (1) - Mid Intermediate Steering Shaft Replacement

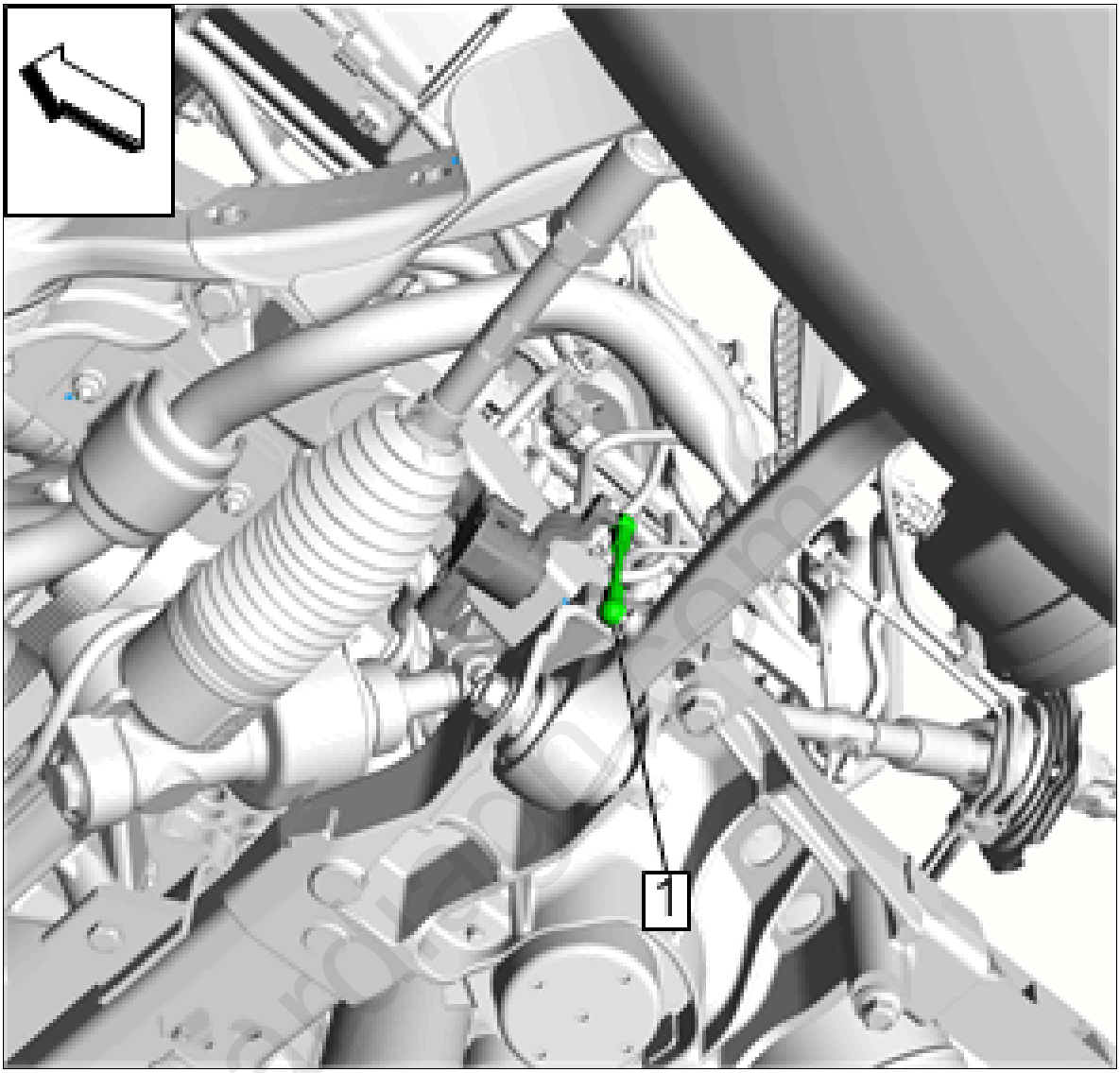
Fig 7: Right And Left Lower Stabilizer Shaft Links From Stabilizer Bar



Courtesy of GENERAL MOTORS COMPANY

10. Disconnect the right and left lower stabilizer shaft links from the stabilizer bar (1) - Stabilizer Shaft Link Replacement (LGX, LTG)

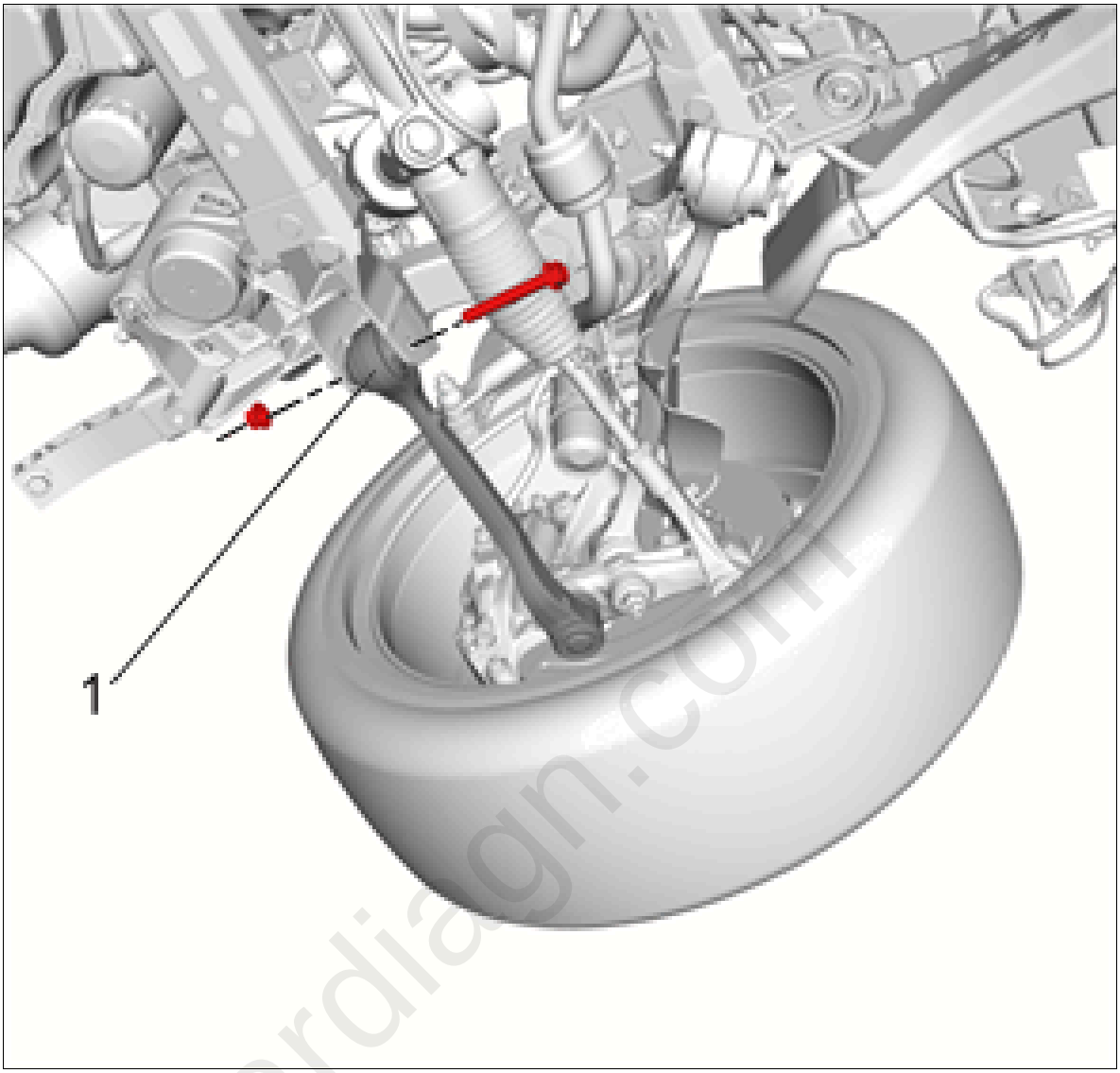
Fig 8: Front Suspension Automatic Forward Lighting Position Sensor Arms From Lower Control Rear Links



Courtesy of GENERAL MOTORS COMPANY

11. Disconnect the front suspension automatic forward lighting position sensor arms (1) from the lower control rear links.
12. Disconnect the electrical connector from the front suspension automatic forward lighting position sensor.

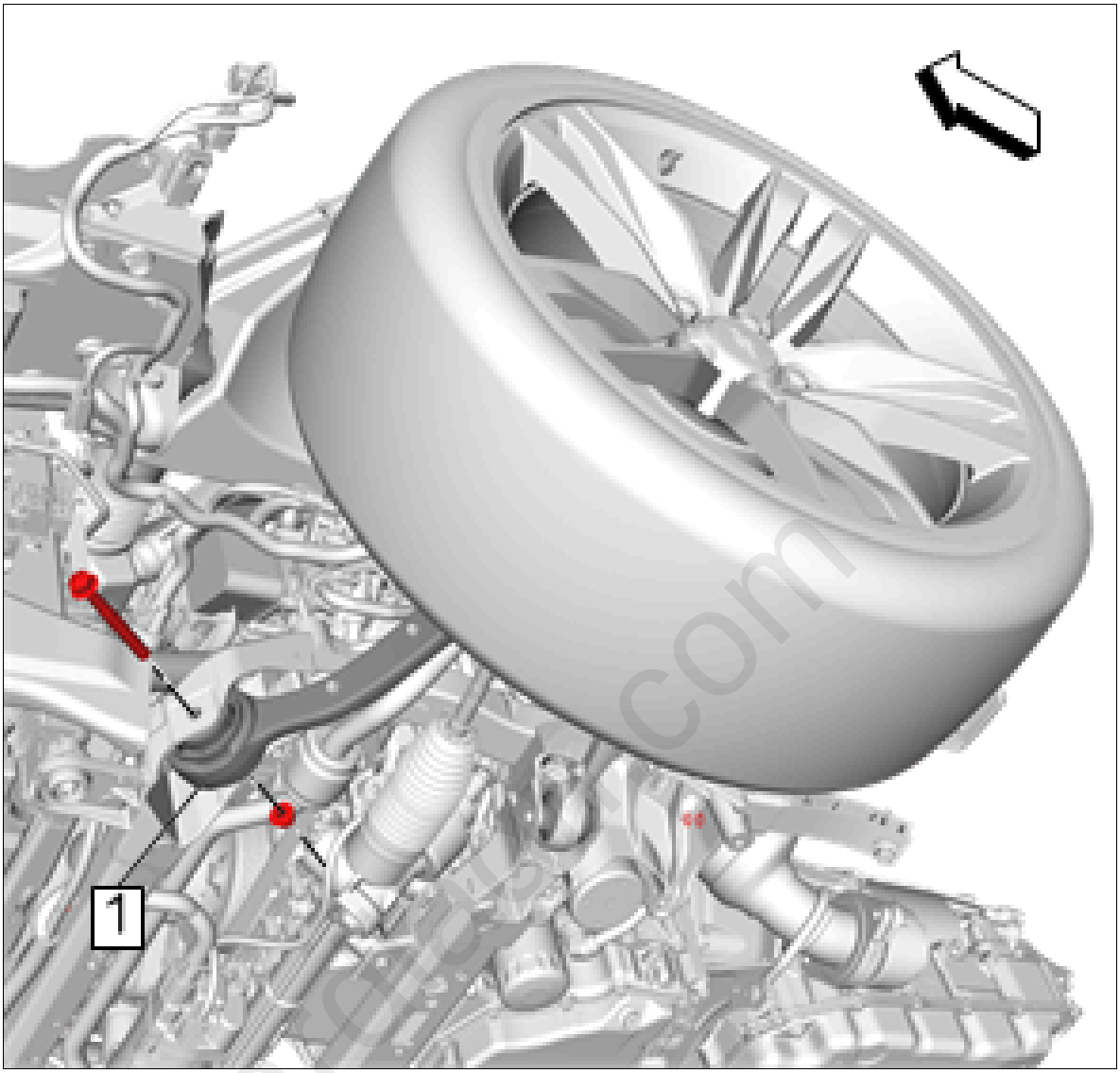
Fig 9: Front Lower Control Rear Links From Front Suspension Frame



Courtesy of GENERAL MOTORS COMPANY

13. Disconnect the front lower control rear links from the front suspension frame (1) - Front Lower Control Rear Link Replacement (LGX, LTG)

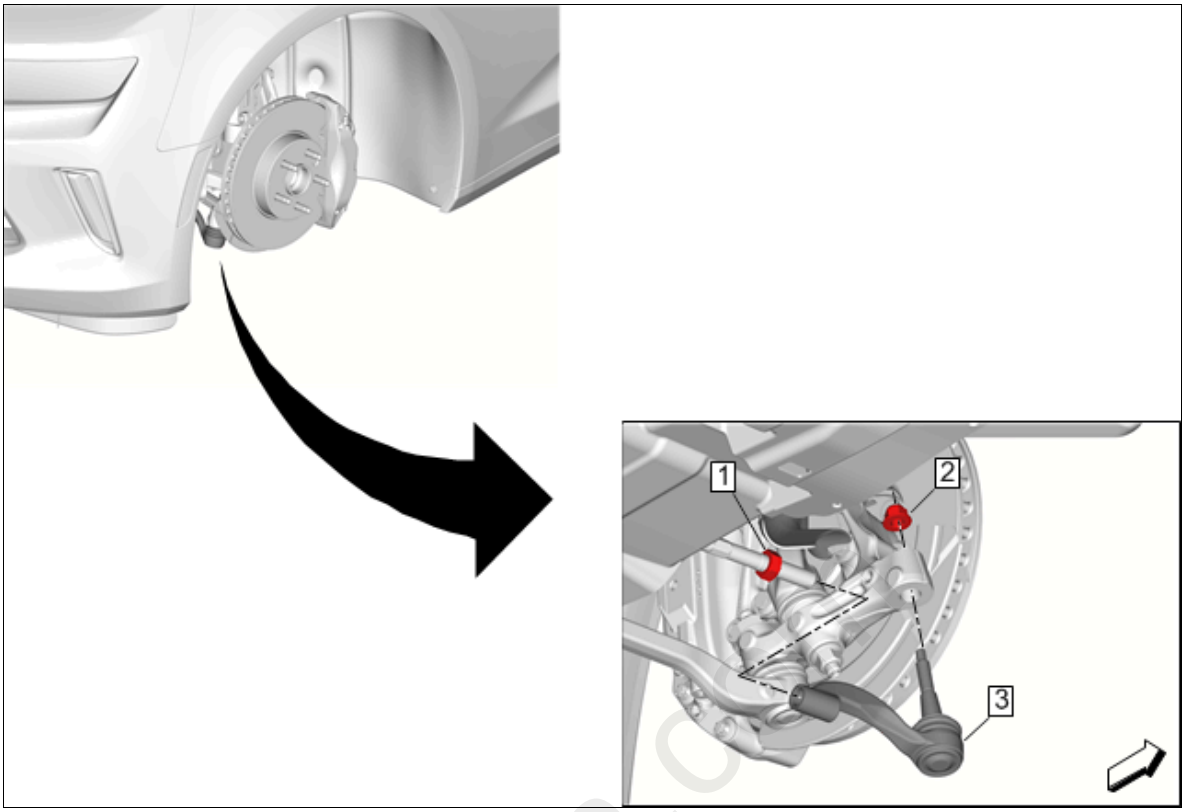
Fig 10: Front Lower Control Front Links From Front Suspension Frame



Courtesy of GENERAL MOTORS COMPANY

14. Disconnect the front lower control front links from the front suspension frame (1) - Front Lower Control Front Link Replacement (LGX or LTG, Without V18)Front Lower Control Front Link Replacement (LGX or LTG, With V18)

Fig 11: Steering Linkage Outer Tie Rod

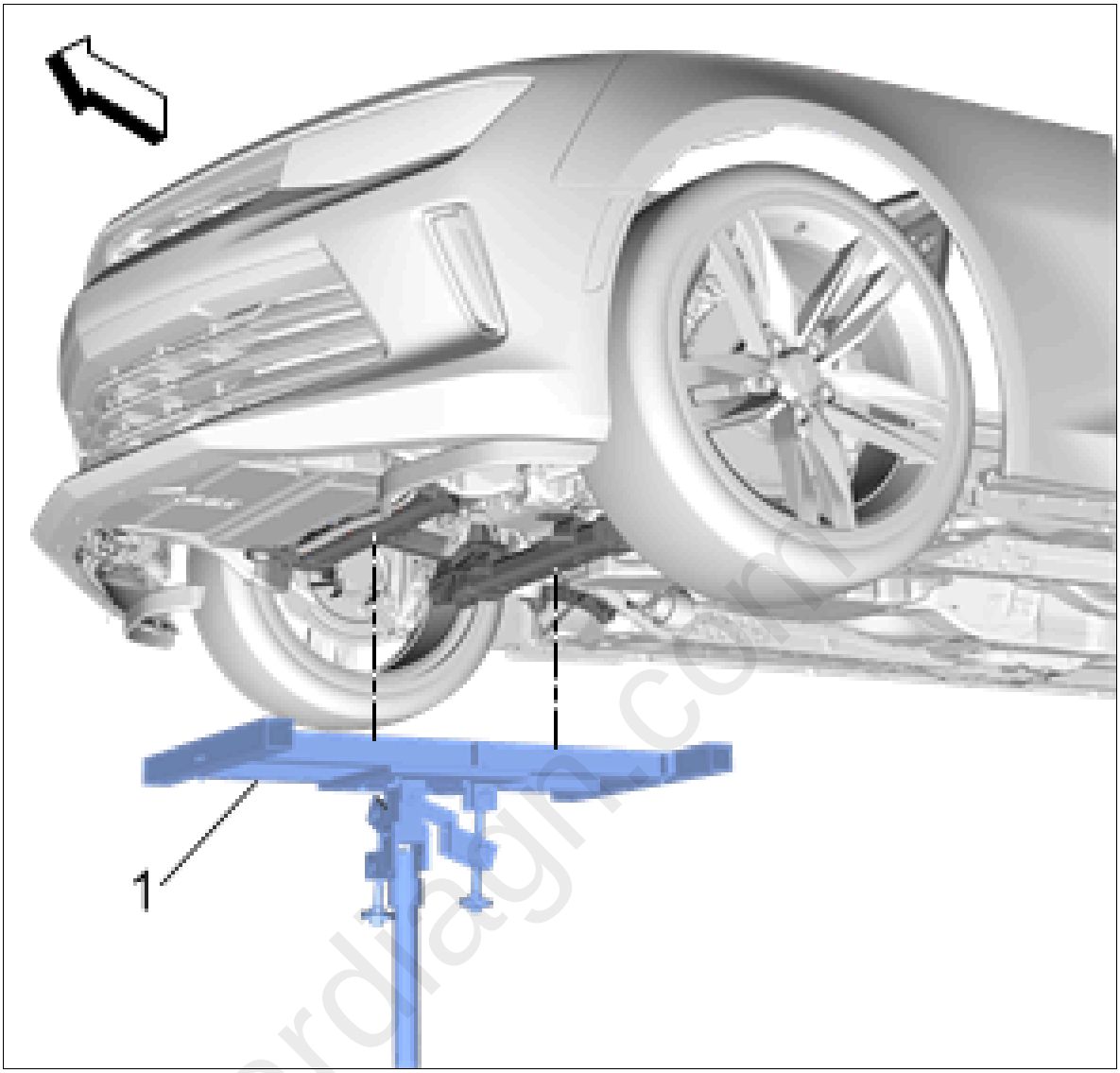


Courtesy of GENERAL MOTORS COMPANY

15. Remove Steering Linkage Outer Tie Rod (3) - Steering Linkage Outer Tie Rod Replacement

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Fig 12: Stand Under Drivetrain And Front Suspension Cradle



Courtesy of GENERAL MOTORS COMPANY

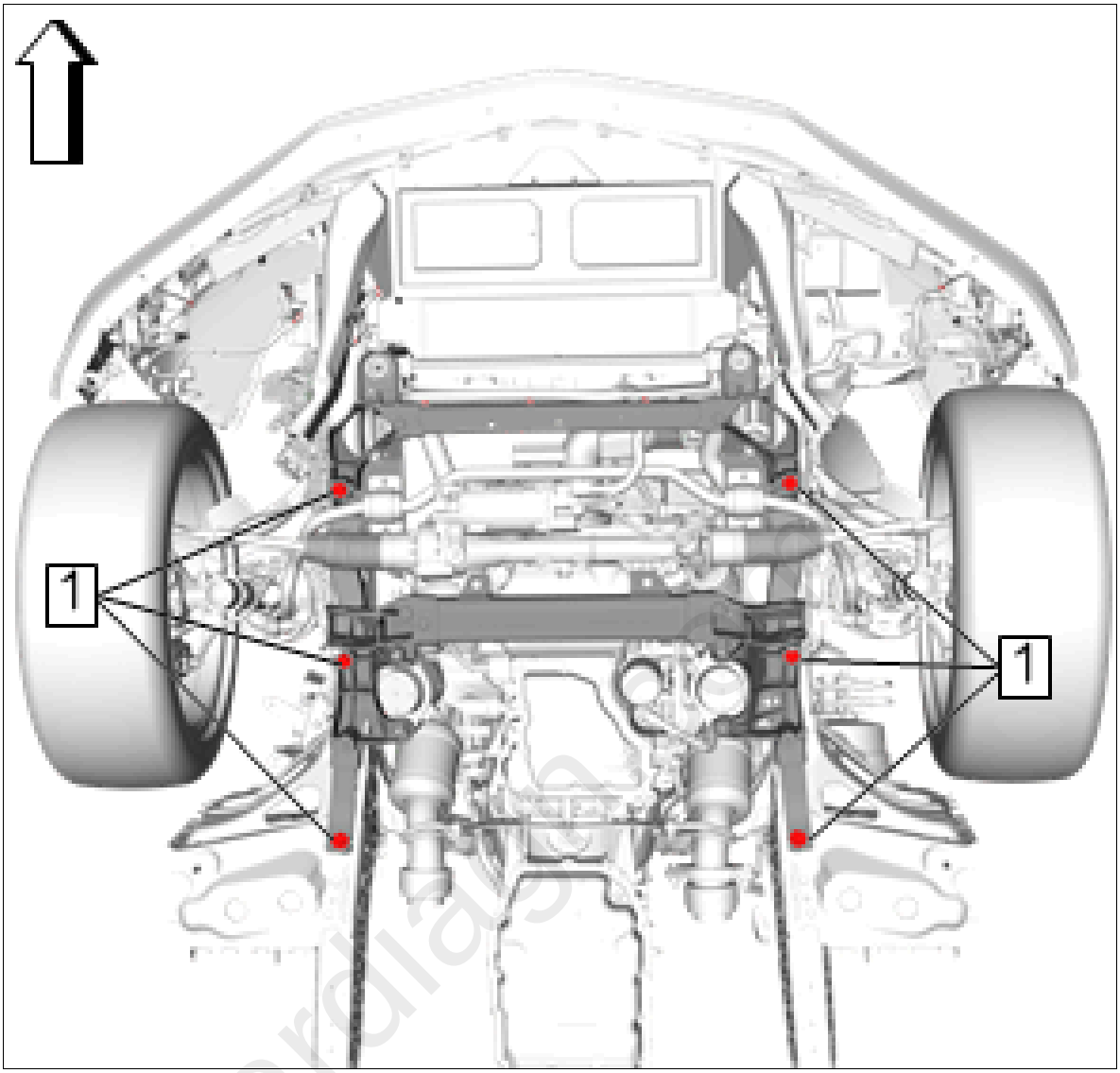
16. Install **J-39580** stand under the drivetrain and front suspension cradle.

    (1)

17. Lower the vehicle until the drivetrain and front suspension frame is resting lightly on the jackstands.

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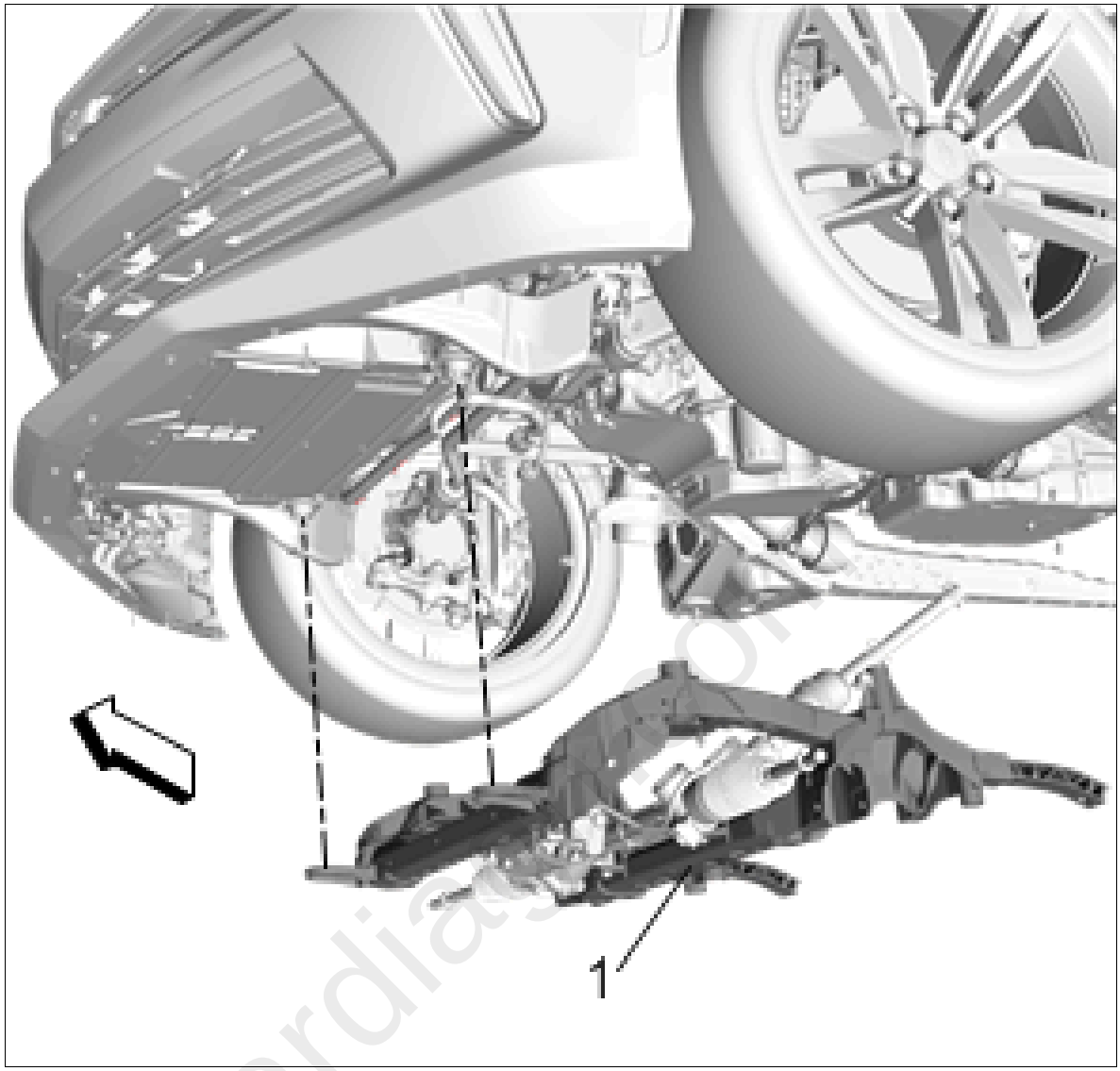
Fig 13: Drivetrain And Front Suspension Support Bolt



Courtesy of GENERAL MOTORS COMPANY

18. Remove Drivetrain and Front Suspension Support Bolt (1) (Qty: 6) and DISCARD the bolts.
19. With the aid of an assistant, carefully raise the body from the frame.
20. Ensure when raising the body the following items are clear from the frame:
    1. Vacuum lines
    2. Steering knuckles
    3. Electrical wiring harnesses
    4. Oil coolers lines

Fig 14: Drivetrain And Front Suspension Frame

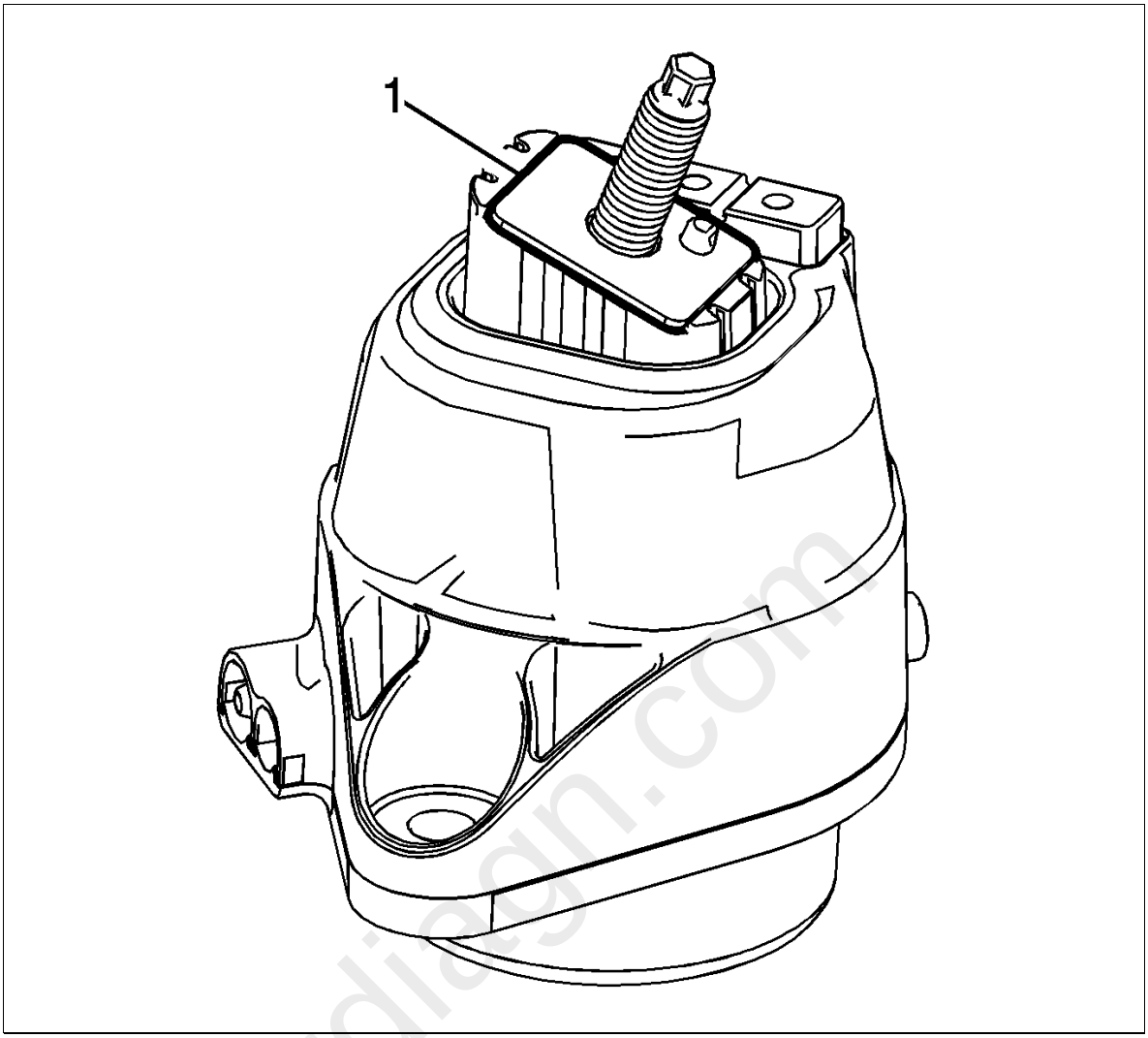


Courtesy of GENERAL MOTORS COMPANY

21. Remove the drivetrain and front suspension frame (1)
22. Transfer components as necessary.

REPAIR INSTRUCTIONS > DRIVETRAIN AND FRONT SUSPENSION CRADLE REPLACEMENT (LGX) > INSTALLATION PROCEDURE

Fig 1: Phenolic Spacer



Courtesy of GENERAL MOTORS COMPANY

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⚠ *CAUTION:*

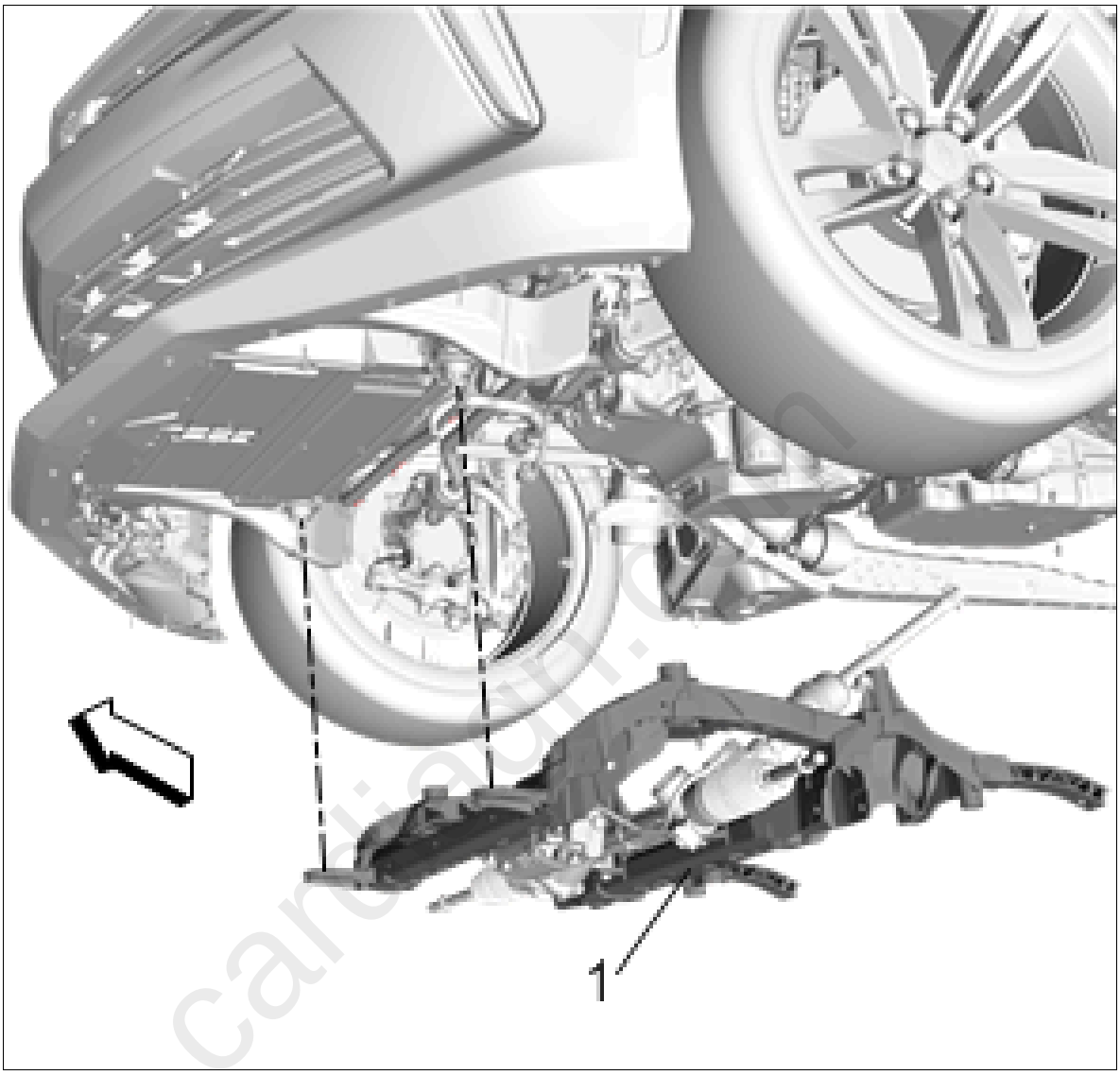
Phenolic spacer must be present to prevent galvanic/corrosive reaction and/or excessive temperature conduction between engine mount bracket and engine mount. Replace mount if phenolic spacer is missing or damaged. Failure to ensure phenolic spacer is intact and not damaged can lead to premature failure of engine mount and/or engine mount bracket.

NOTE:

Suspension components attached to the frame use Torque-to-Yield fasteners and must be DISCARDED and replaced with NEW Torque Angle Yield (TAY) fasteners. The frame to body fasteners are not TAY fasteners.

1. Inspect the engine mount to ensure the phenolic spacer (1) is in place and not damaged.
2. With the aid of an assistant, position and secure the NEW frame assembly to the support fixture.

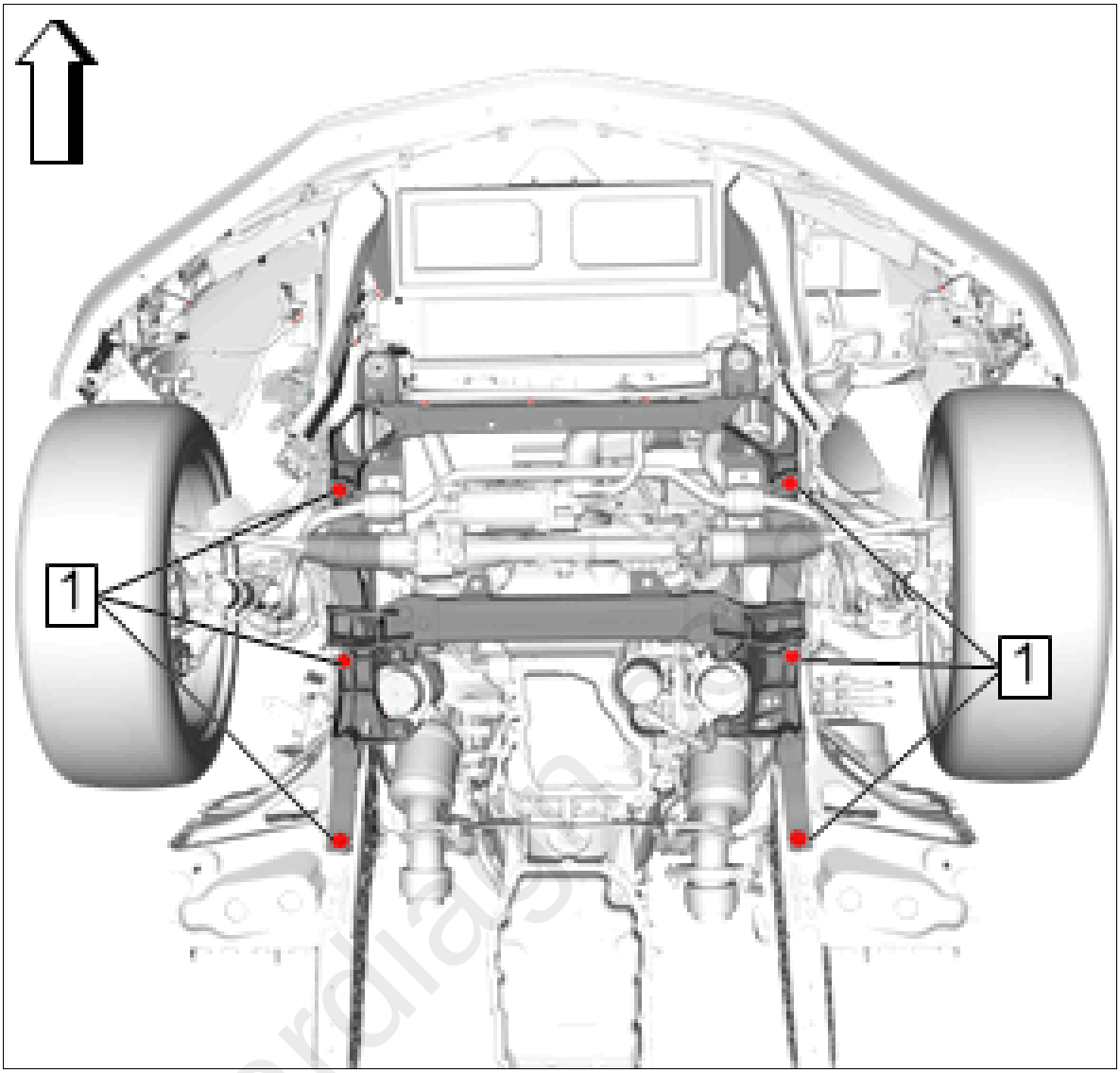
Fig 2: Drivetrain And Front Suspension Frame



Courtesy of GENERAL MOTORS COMPANY

3. With the aid of an assistant, carefully lower the body to the frame (1)
4. Ensure the following components are clear from the frame:
    1. Vacuum lines
    2. Steering knuckles
    3. Electrical wiring harnesses
    4. Oil cooler lines

Fig 3: Drivetrain and Front Suspension Support Bolt



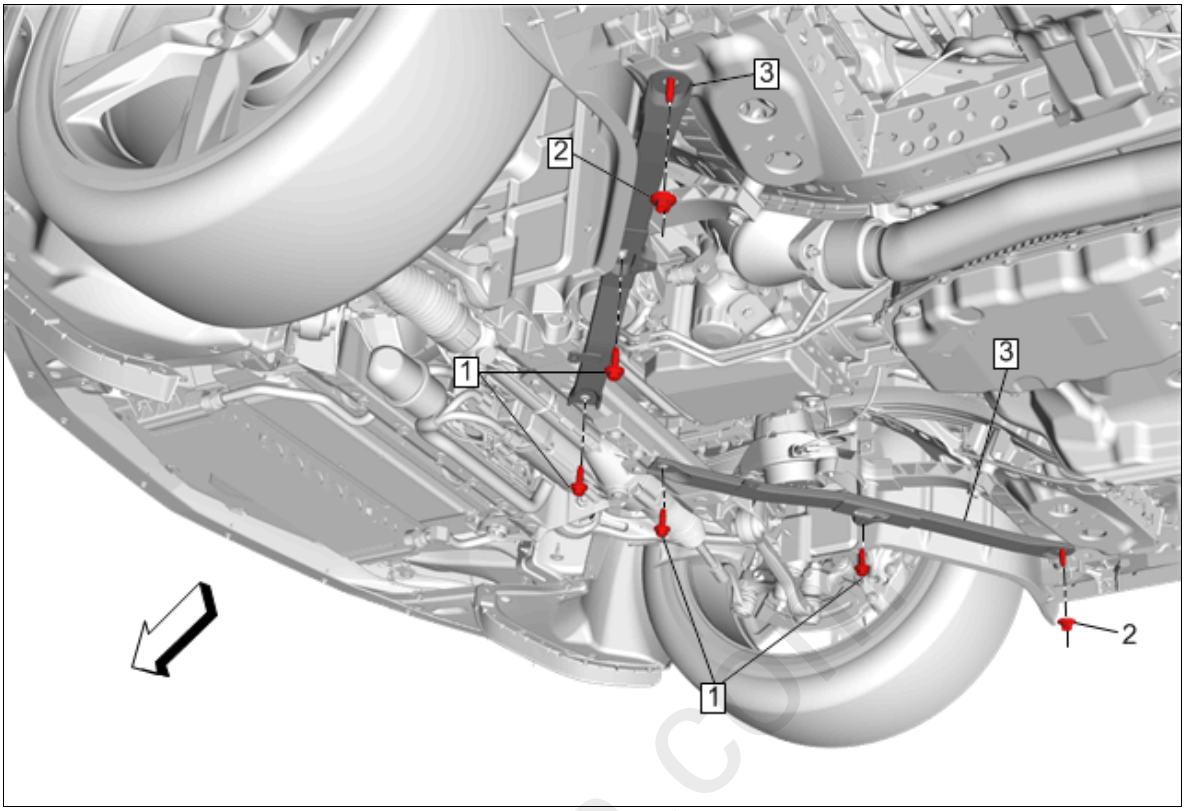
Courtesy of GENERAL MOTORS COMPANY

> ⚠ *CAUTION:*
>
> *Refer to Fastener Caution*

5. Install NEW Drivetrain and Front Suspension Support Bolt (1) (Qty: 6) and tighten to 100 N.m (74 lb ft)

6. Remove the **J-39580** stand from under the vehicle.

Fig 4: Front Crossmember Brace

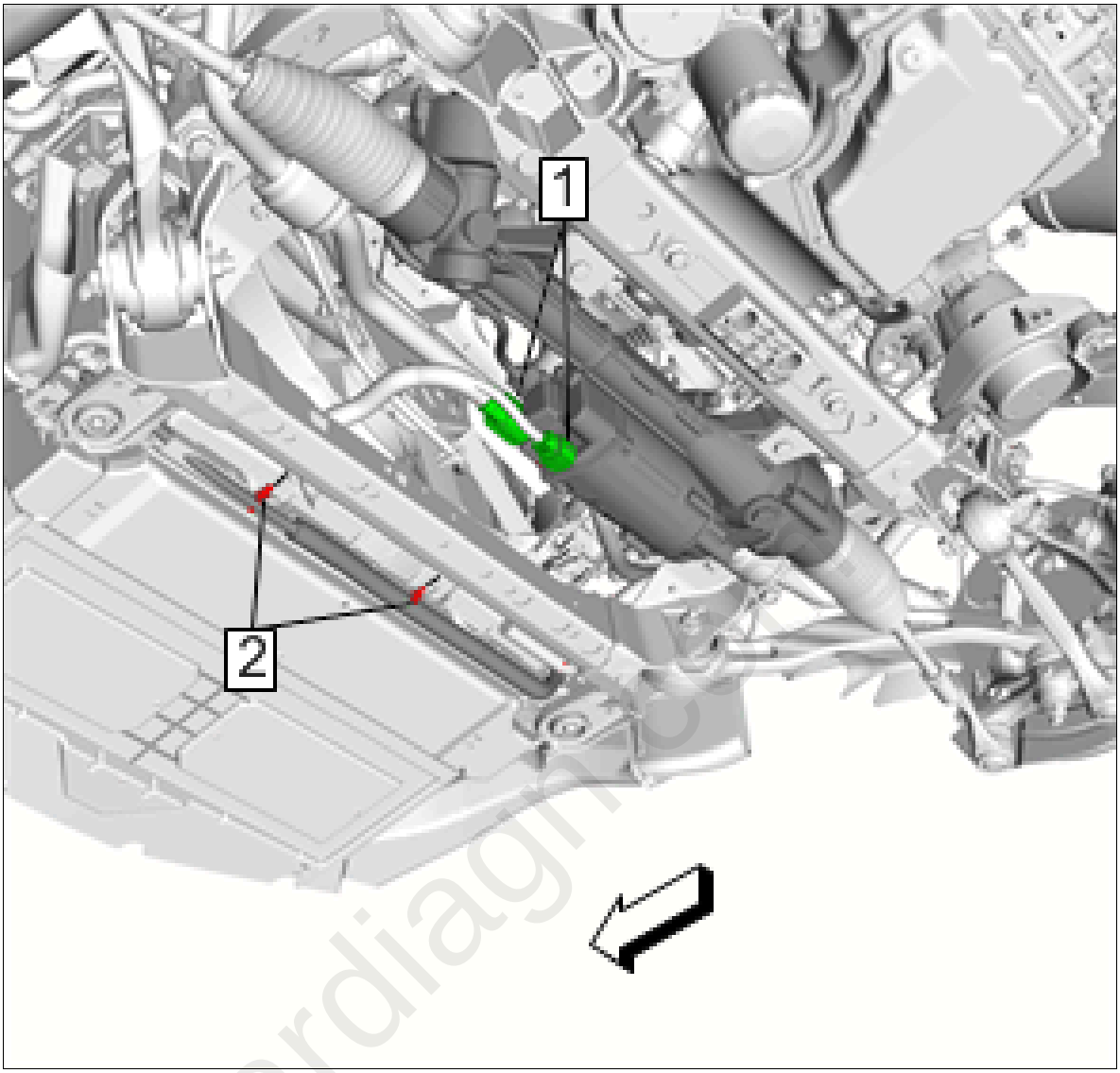


Courtesy of GENERAL MOTORS COMPANY

7. Install Front Crossmember Brace (3) - Front Crossmember Brace Replacement (Coupe - LGX, LTG) Front Crossmember Brace Replacement (Convertible - LGX)

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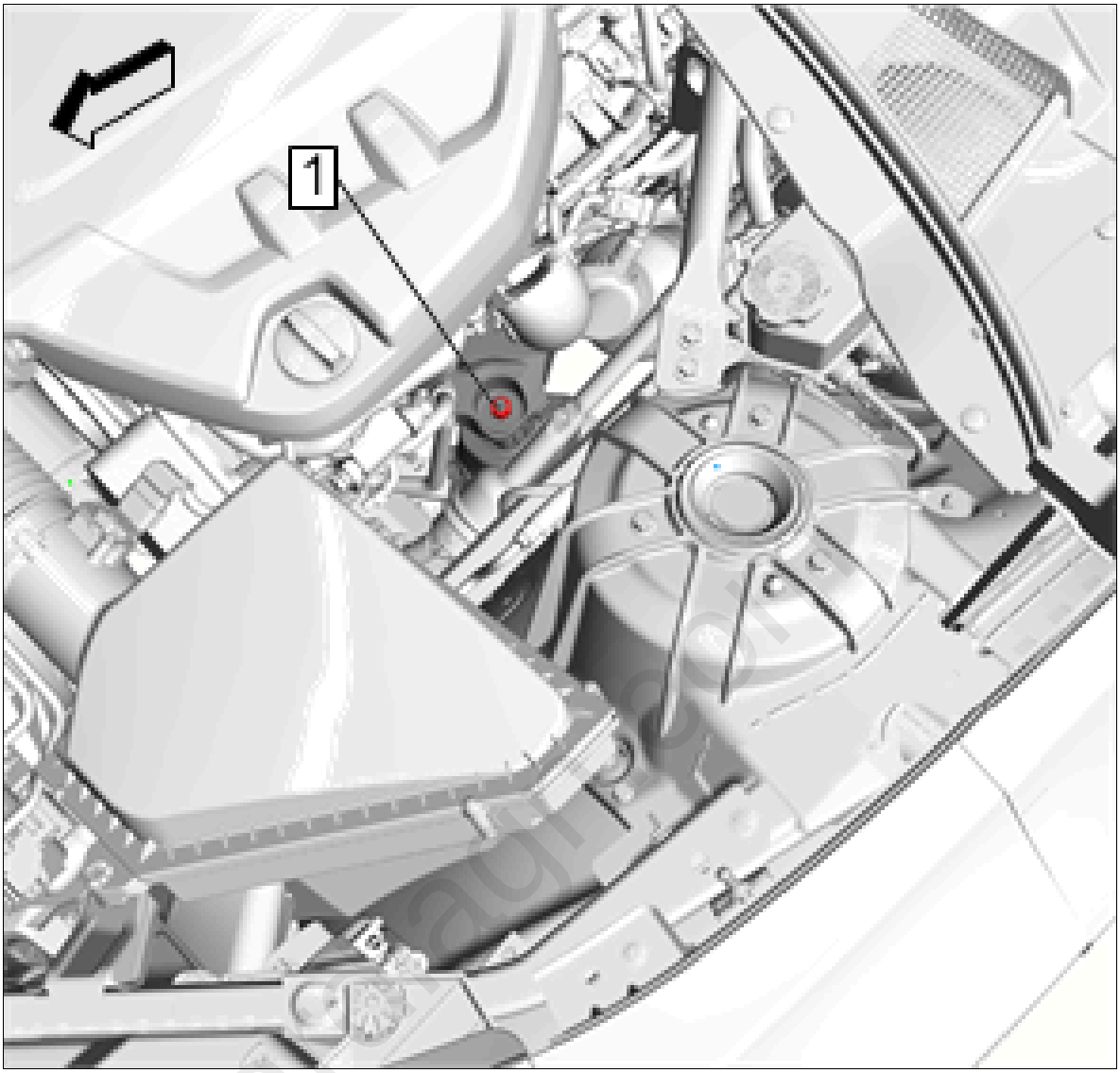
Fig 5: Steering Gear Electrical Connectors



Courtesy of GENERAL MOTORS COMPANY

8. Connect the steering gear electrical connectors (1)

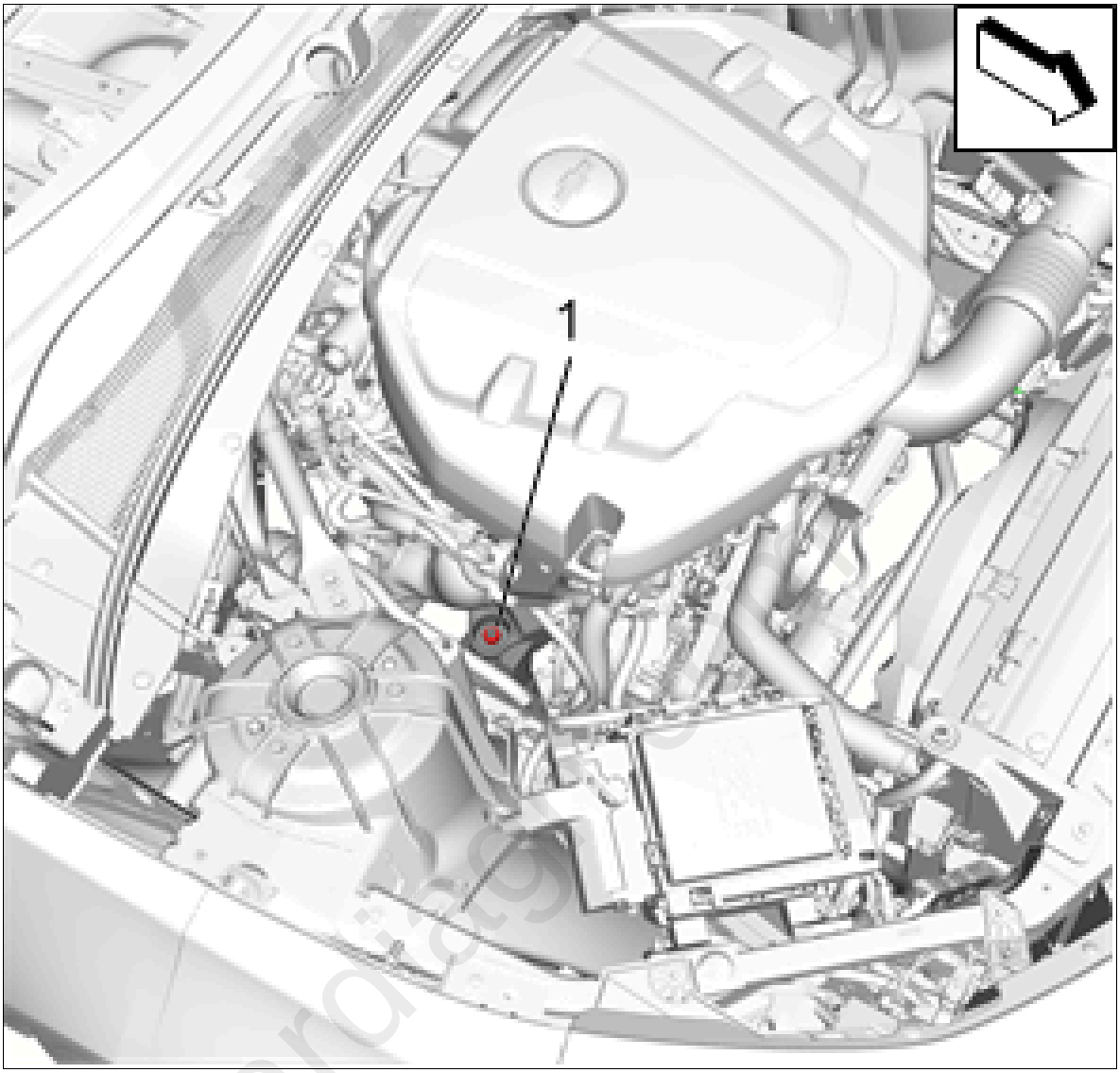
Fig 6: Left Side Engine Mount Nut



Courtesy of GENERAL MOTORS COMPANY

9. Install Engine Mount Nut - Left Side (1) and tighten to 70 N.m (52 lb ft)

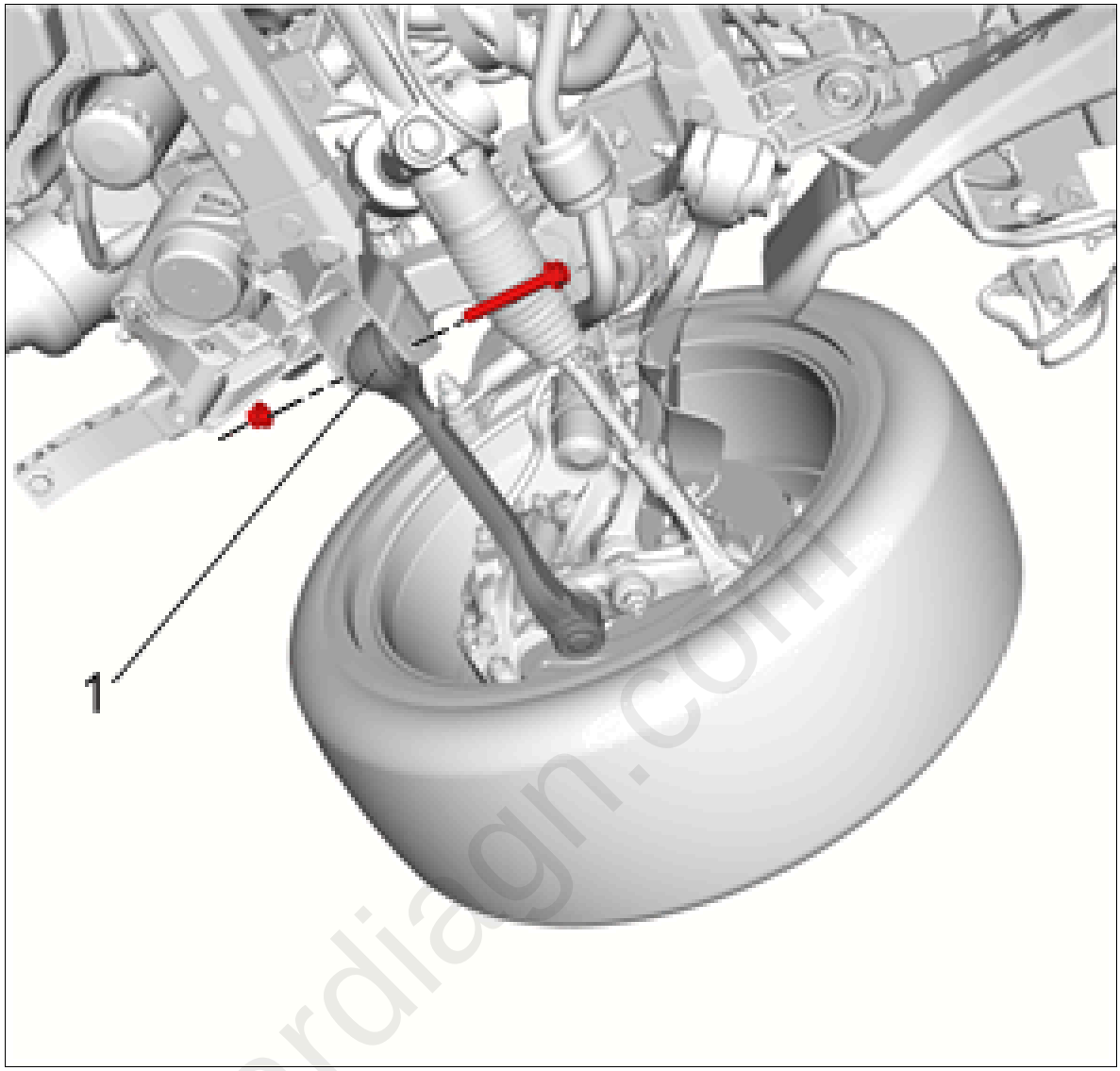
Fig 7: Right Side Engine Mount Nut



Courtesy of GENERAL MOTORS COMPANY

10. Install Engine Mount Nut - Right Side (1) and tighten to 70 N.m (52 lb ft)

Fig 8: Front Lower Control Rear Links From Front Suspension Frame

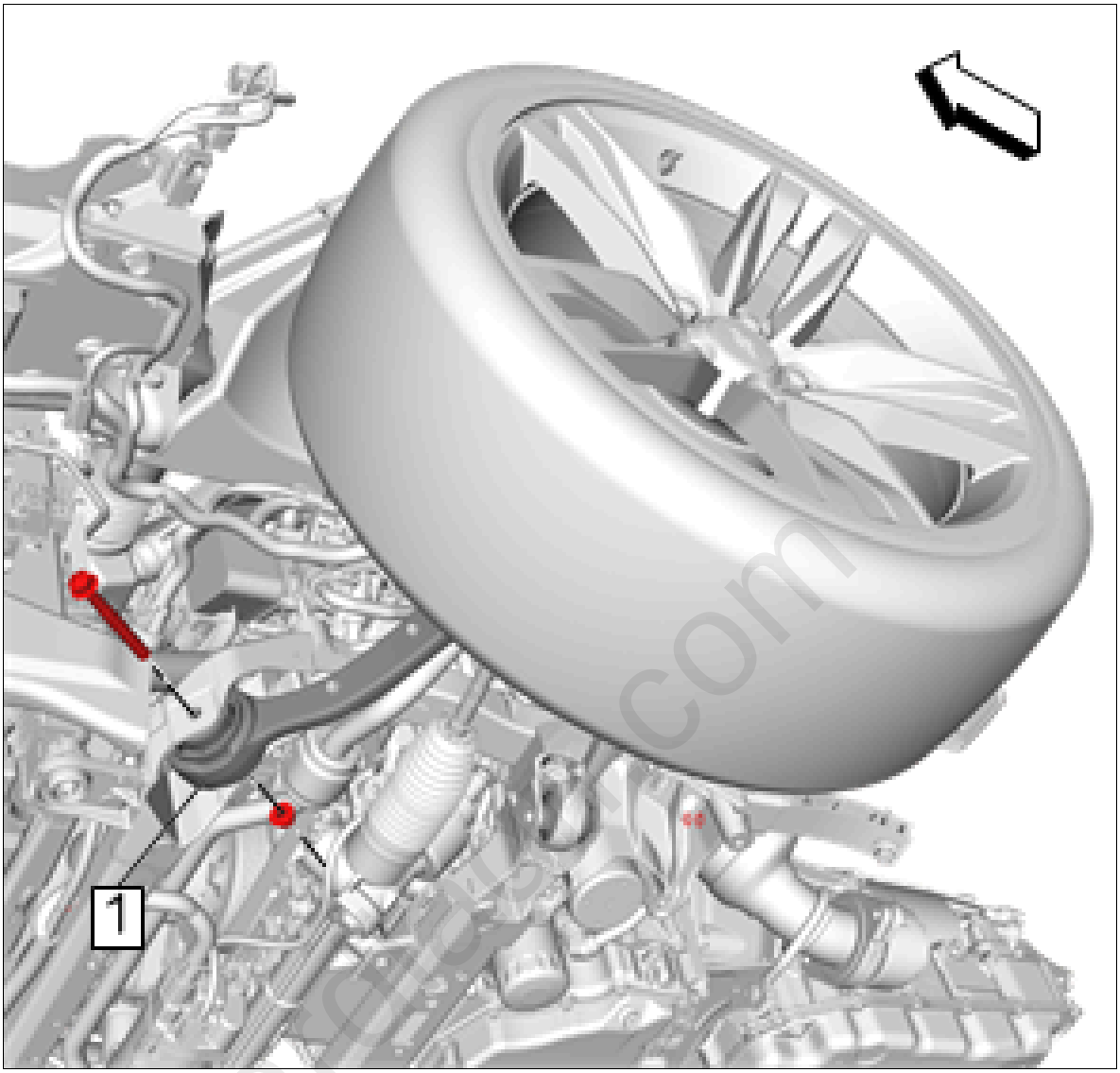


Courtesy of GENERAL MOTORS COMPANY

11. Install Front Lower Control Rear Link (1) - Front Lower Control Rear Link Replacement (LGX, LTG)

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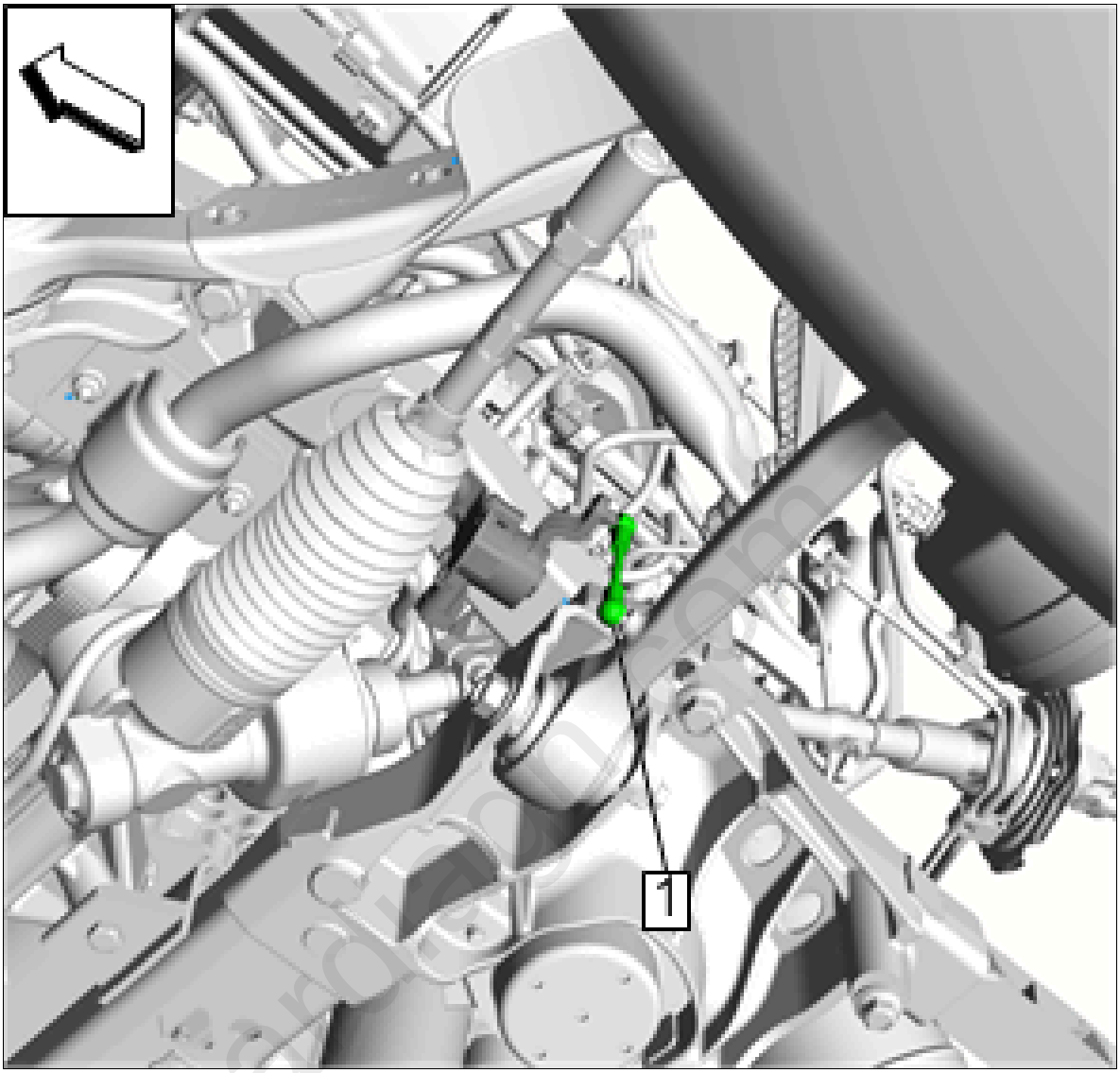
Fig 9: Front Lower Control Front Links From Front Suspension Frame



Courtesy of GENERAL MOTORS COMPANY

12. Install Front Lower Control Front Link (1) - Front Lower Control Front Link Replacement (LGX or LTG, Without V18)Front Lower Control Front Link Replacement (LGX or LTG, With V18)

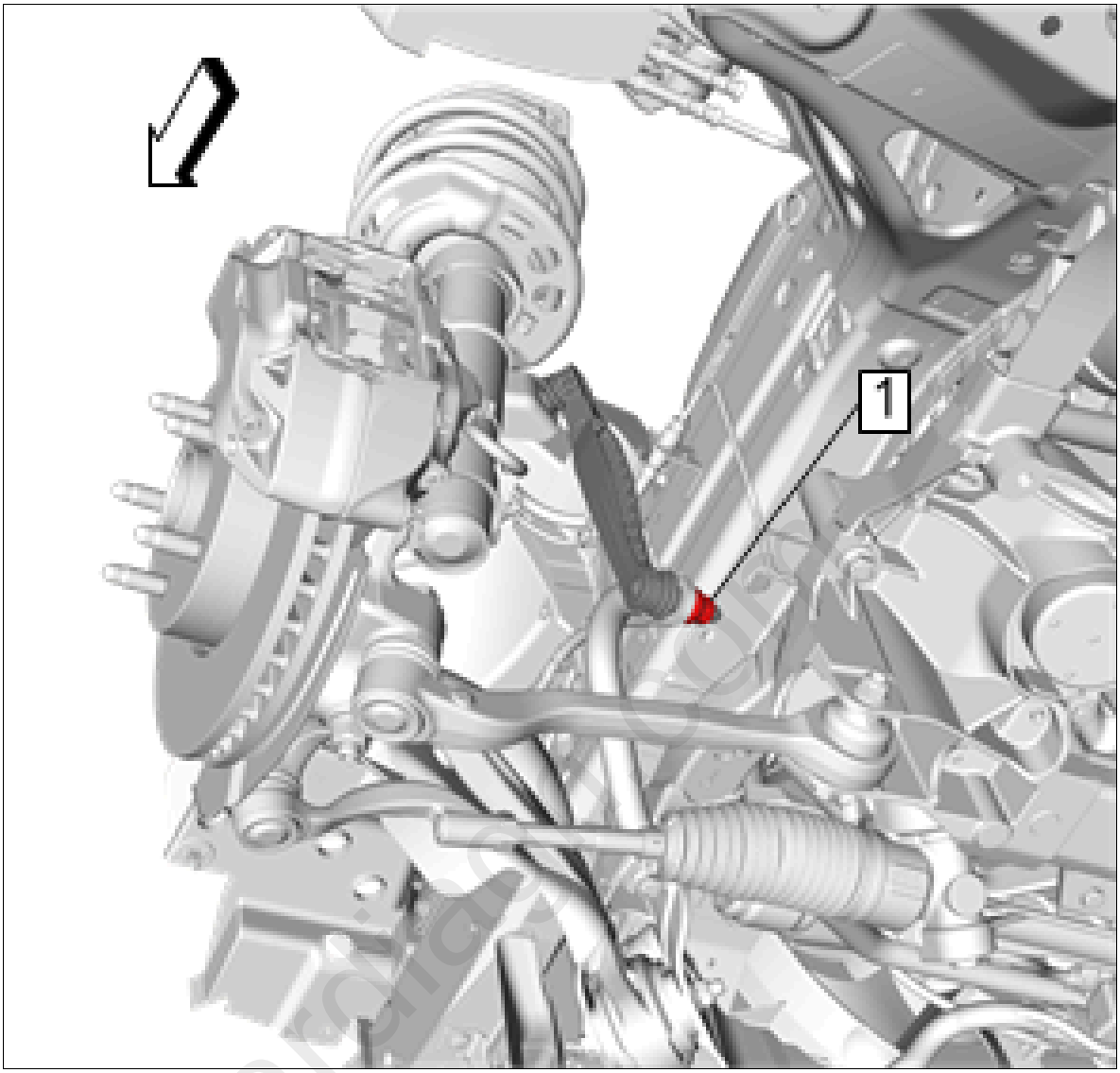
Fig 10: Front Suspension Automatic Forward Lighting Position Sensor Arms From Lower Control Rear Links



Courtesy of GENERAL MOTORS COMPANY

13. Connect the front suspension automatic forward lighting position sensor arm (1) to the lower control rear link.
14. Connect the electrical connector to the front suspension automatic forward lighting position sensor.

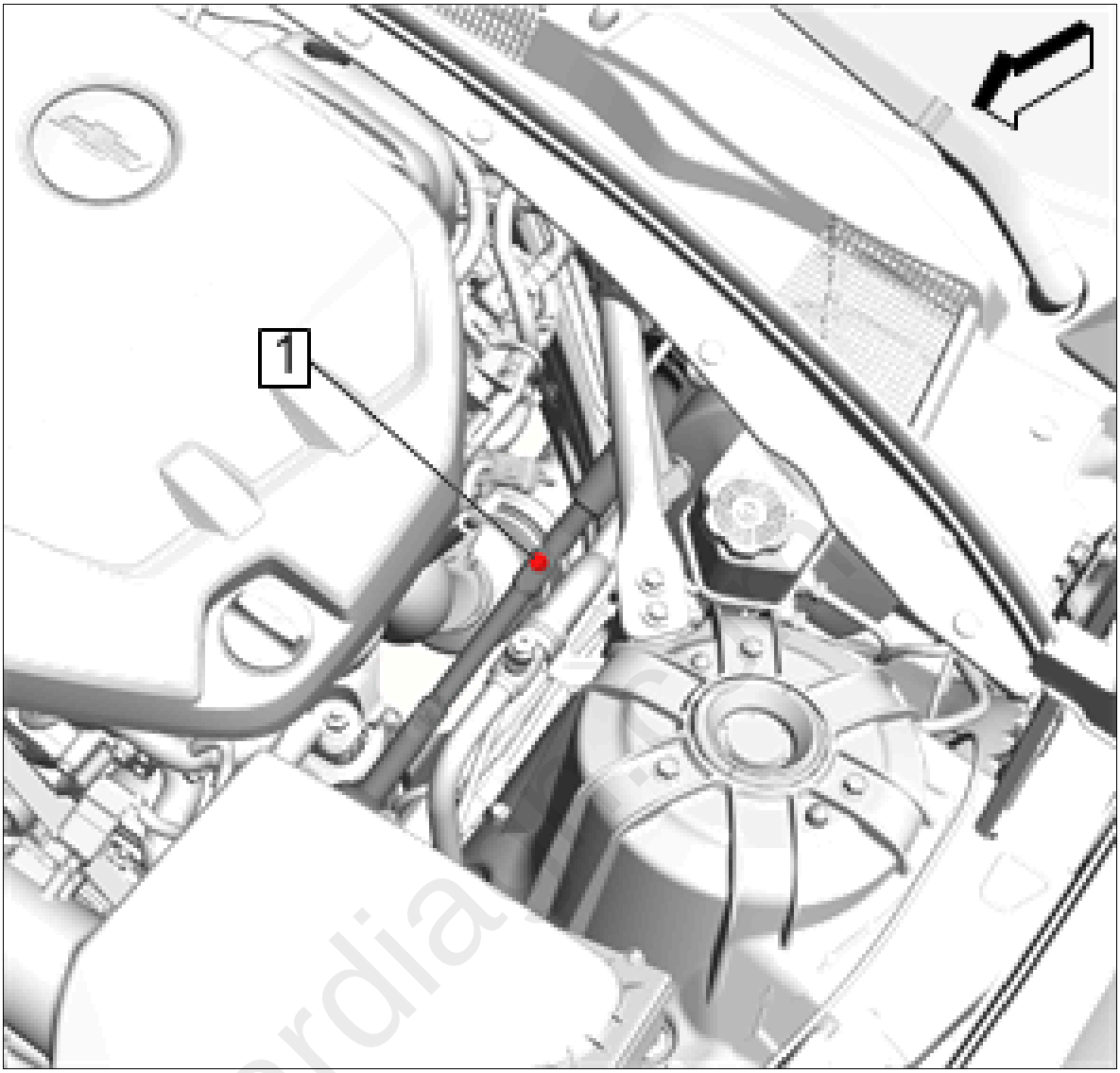
Fig 11: Right And Left Lower Stabilizer Shaft Links From Stabilizer Bar



Courtesy of GENERAL MOTORS COMPANY

15. Connect the right and left lower stabilizer shaft links to the stabilizer bar (1) - Stabilizer Shaft Link Replacement (LGX, LTG)

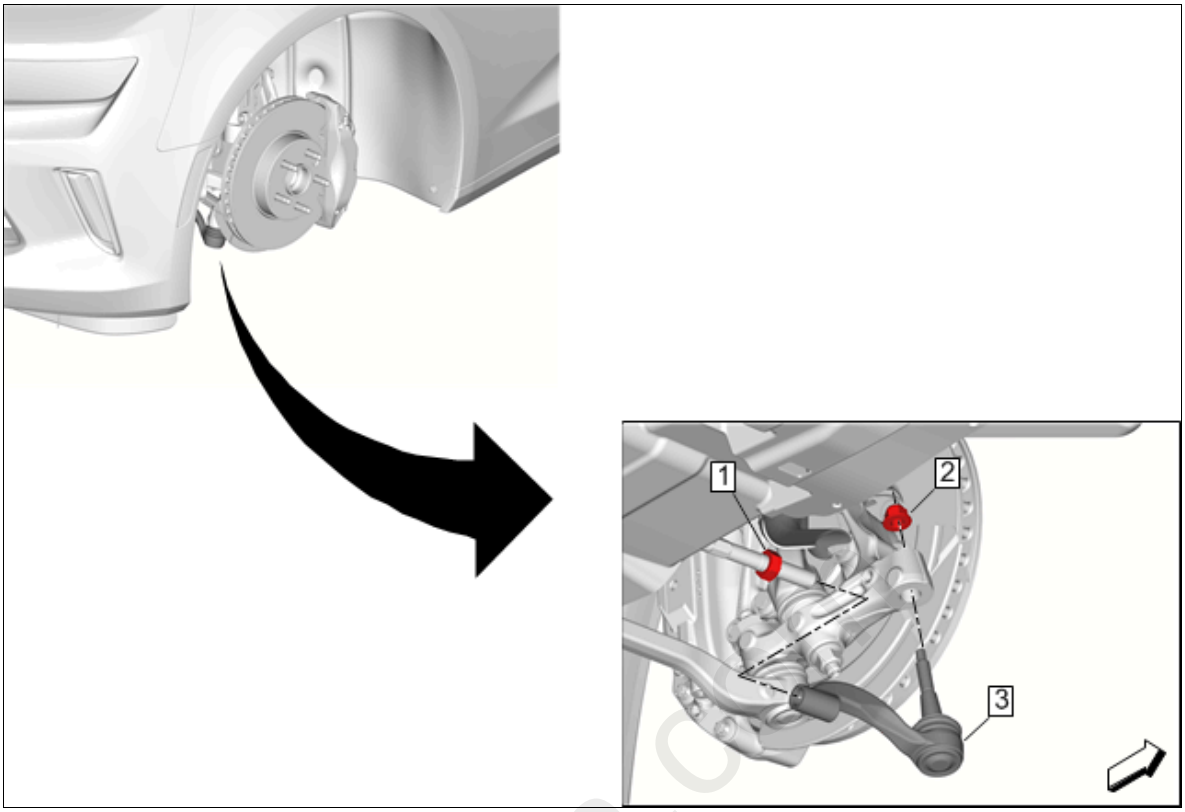
Fig 12: Intermediate Steering Shaft From Steering Column Shaft



Courtesy of GENERAL MOTORS COMPANY

16. Connect the intermediate steering shaft to the steering column (1) - Mid Intermediate Steering Shaft Replacement

Fig 13: Steering Linkage Outer Tie Rod

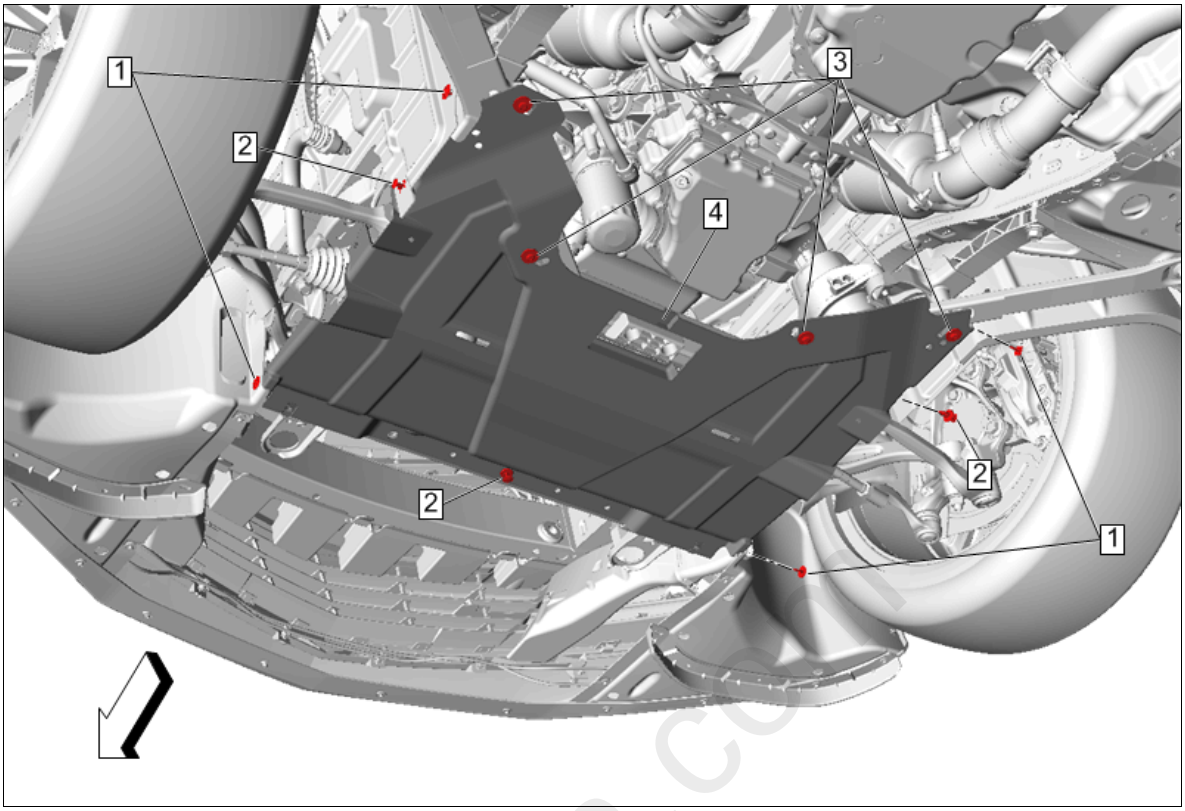


Courtesy of GENERAL MOTORS COMPANY

17. Install Steering Linkage Outer Tie Rod (3) - Steering Linkage Outer Tie Rod Replacement

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Fig 14: Front Compartment Lower Noise Shield



Courtesy of GENERAL MOTORS COMPANY

18. Install Front Compartment Lower Noise Shield (4) - Front Compartment Lower Noise Shield Replacement (Coupe - LGX, LTG)
19. Remove the engine support fixture.
20. Align the vehicle only if replacing the drivetrain and front suspension frame. Wheel Alignment Measurement

REPAIR INSTRUCTIONS > DRIVETRAIN AND FRONT SUSPENSION CRADLE REMOVAL AND INSTALLATION (LT1)

Special Tools

EN-39580 Support Stand

Equivalent regional tools:Special Tools

REPAIR INSTRUCTIONS > DRIVETRAIN AND FRONT SUSPENSION CRADLE REMOVAL AND INSTALLATION (LT1) > REMOVAL PROCEDURE

NOTE:

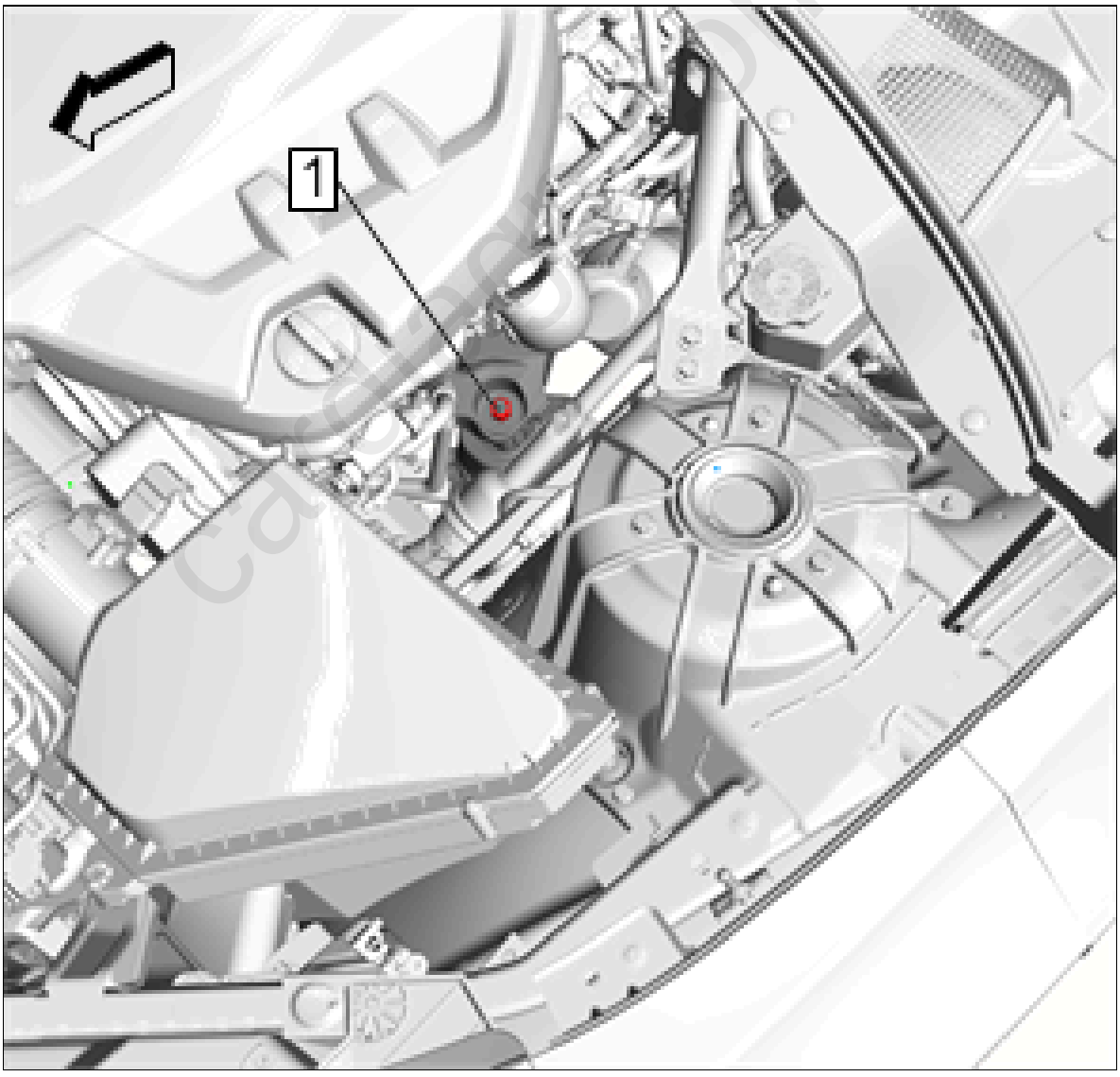
Suspension components attached to the frame use Torque-to-Yield fasteners and must be DISCARDED and replaced with NEW Torque Angle Yield (TAY) fasteners. The frame to body fasteners are not TAY fasteners.

NOTE:

Vehicle alignment is not required if the cradle is being lowered or dropped to perform another procedure. This vehicle is equipped with a cradle to body aligning feature: cradle to body through holes or self-aligning pins that are part of the cradle or body. Only align if replacing the cradle with a NEW part and transferring components.

1. Using mechanics wire, support the radiator and AC condenser assembly to the vehicle body.
2. Install the engine support fixture. Engine Support Fixture

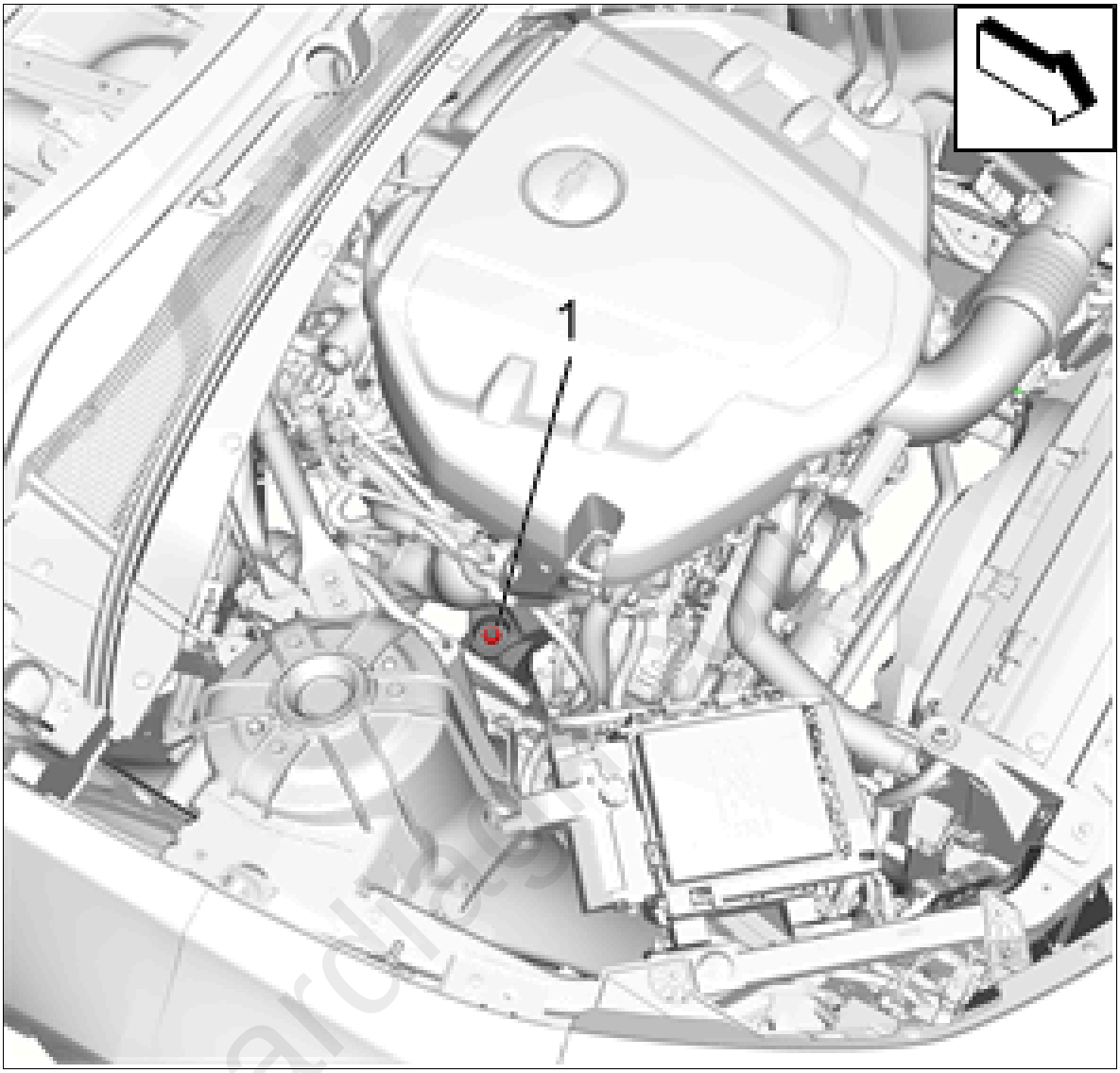
Fig 1: Left Side Engine Mount Nut



Courtesy of GENERAL MOTORS COMPANY

3. Remove Engine Mount Nut - Left Side (1)

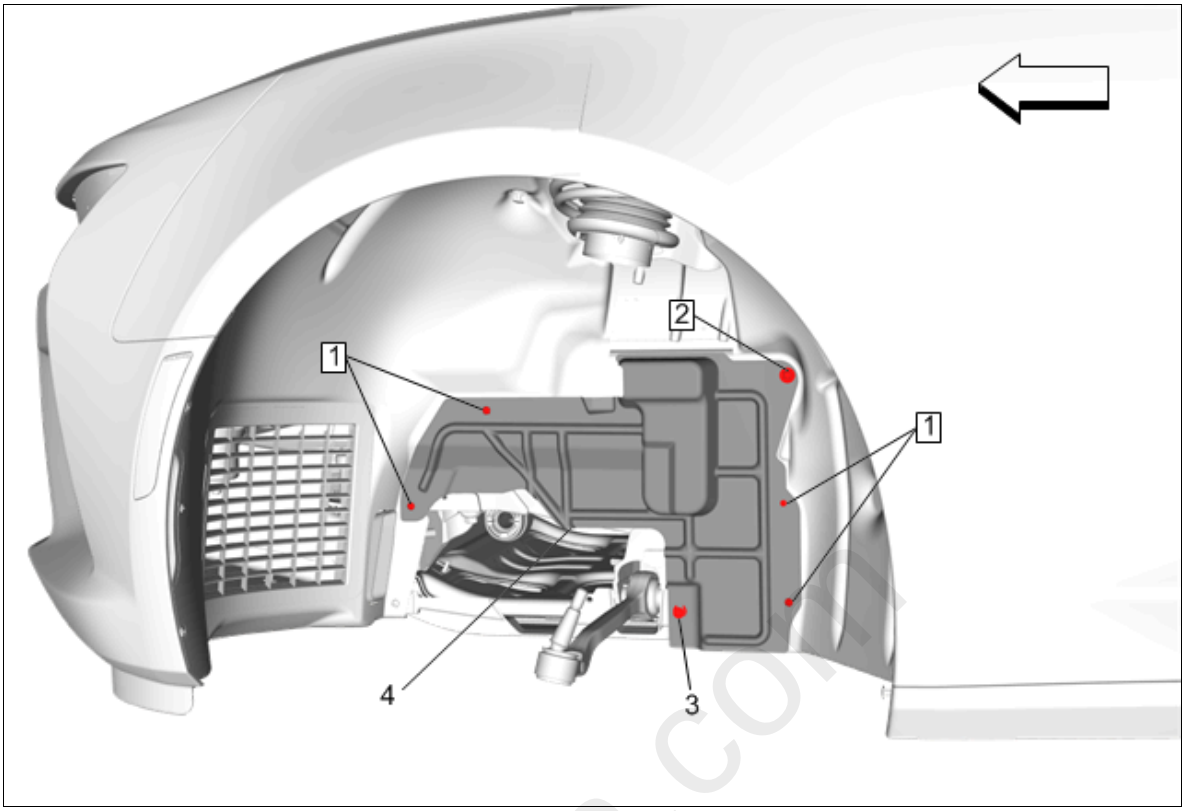
Fig 2: Right Side Engine Mount Nut



Courtesy of GENERAL MOTORS COMPANY

4. Remove Engine Mount Nut - Right Side (1)
5. Raise and support the vehicle. Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP)
6. Remove the front wheels. Tire and Wheel Removal and Installation

Fig 3: Front Wheelhouse Splash Shield

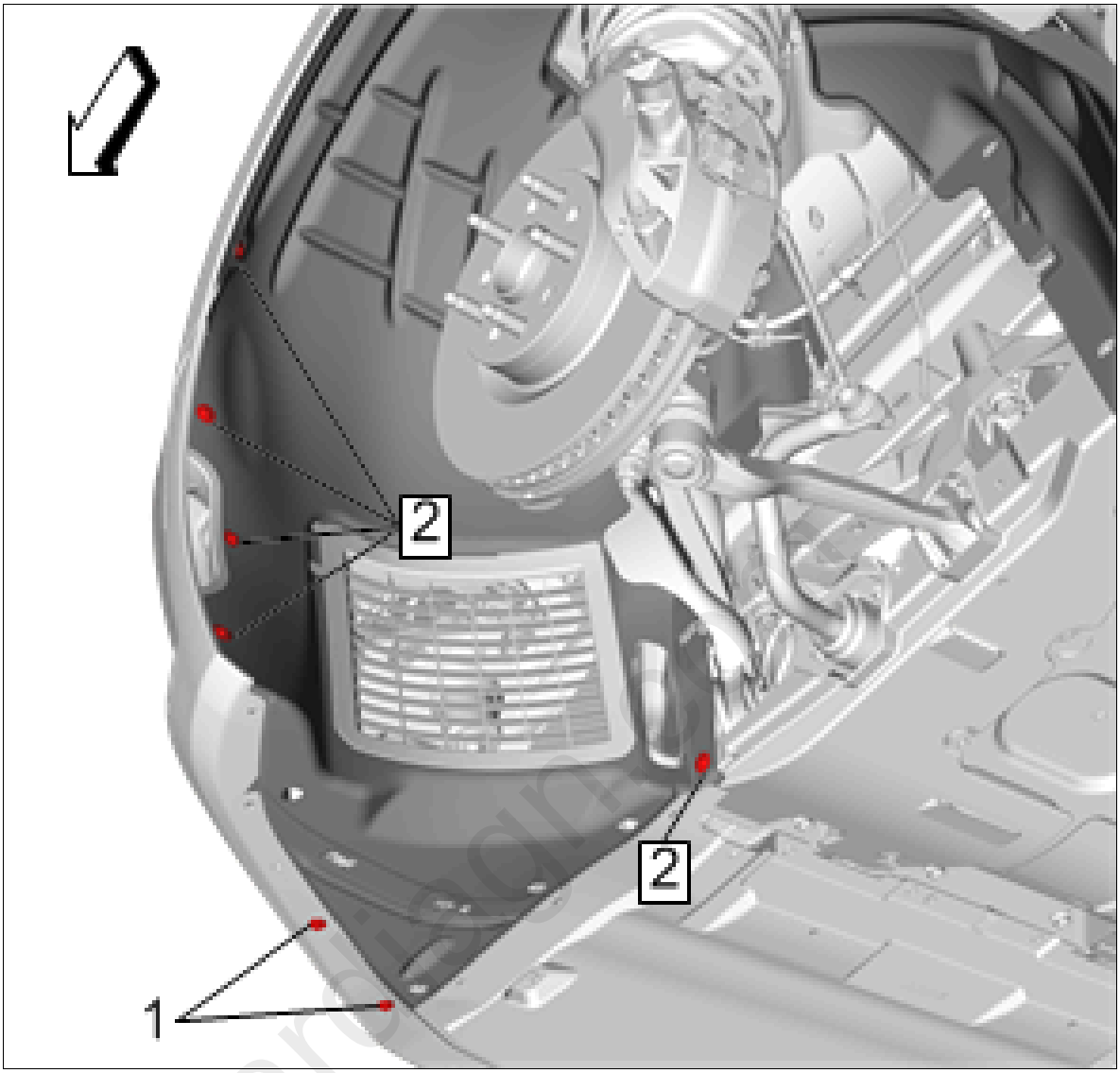


Courtesy of GENERAL MOTORS COMPANY

7. Remove Front Wheelhouse Splash Shield Replacement (4)

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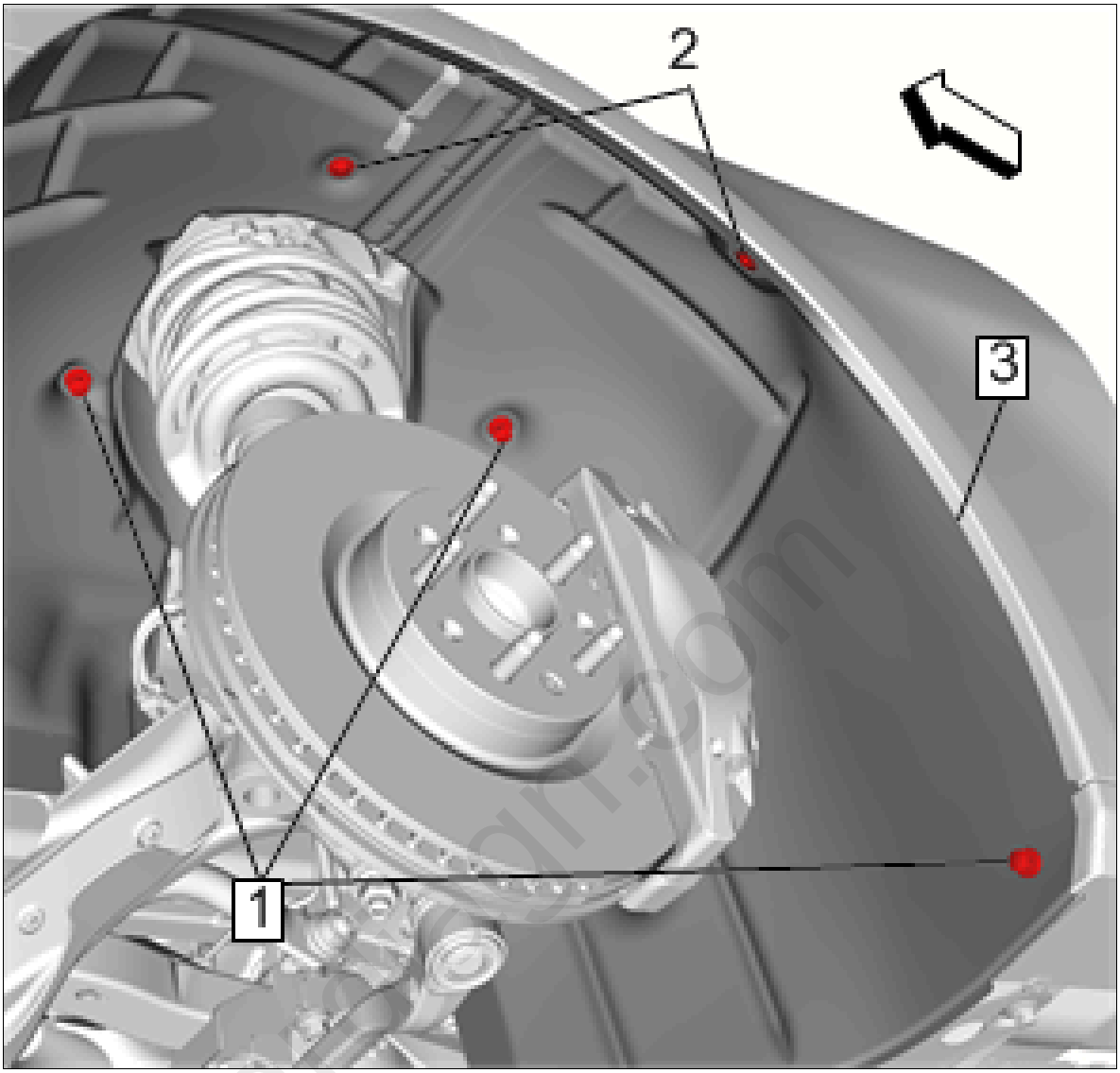
Fig 4: Front Bumper Fascia Bolt



Courtesy of GENERAL MOTORS COMPANY

8. Remove Front Bumper Fascia Bolt (1) (Qty: 2)
9. Remove Front Wheelhouse Liner Screw (2) (Qty: 5)

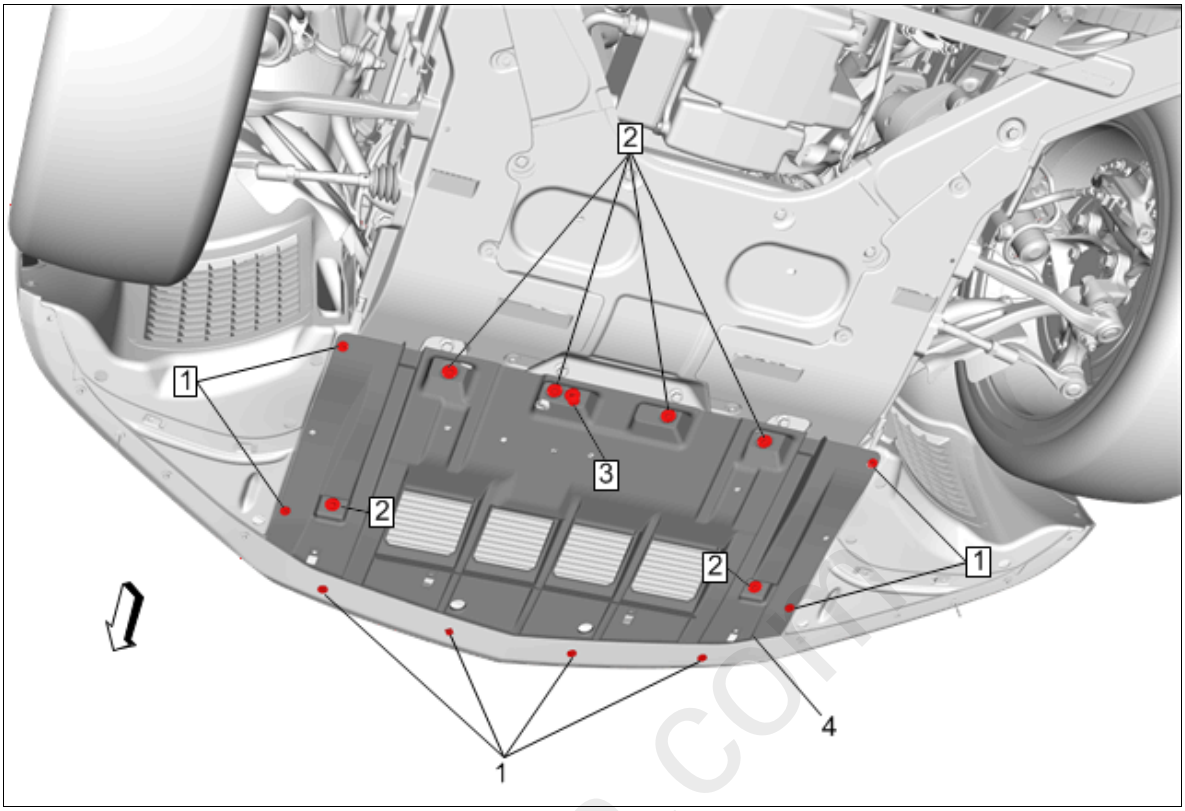
Fig 5: Front Wheelhouse Liner Retainer



Courtesy of GENERAL MOTORS COMPANY

10. Remove Front Wheelhouse Liner Retainer (1) (Qty: 3)
11. Remove Front Wheelhouse Liner Screw (2) (Qty: 2)
12. Remove Front Wheelhouse Liner (3)

Fig 6: Front Compartment Air Deflector

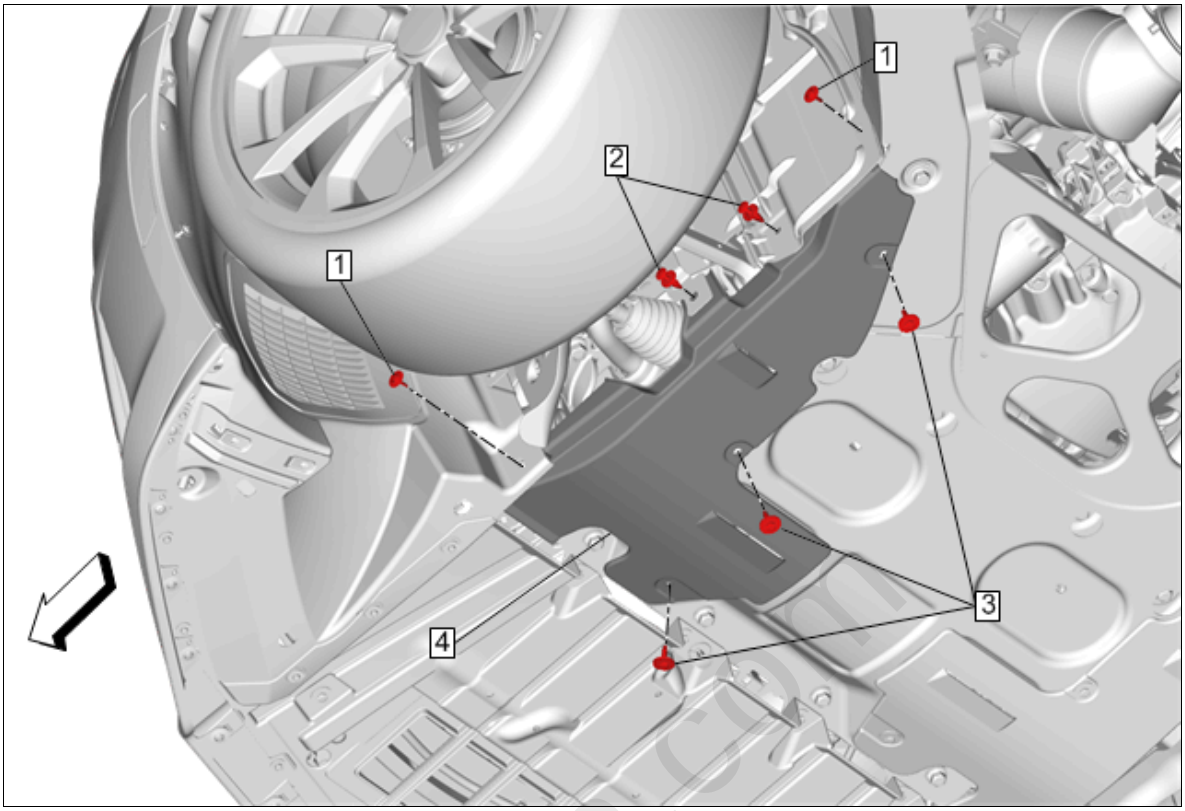


Courtesy of GENERAL MOTORS COMPANY

13. Remove Front Compartment Air Deflector Replacement (Coupe - LT1) (4)

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Fig 7: Front Compartment Lower Noise Shield

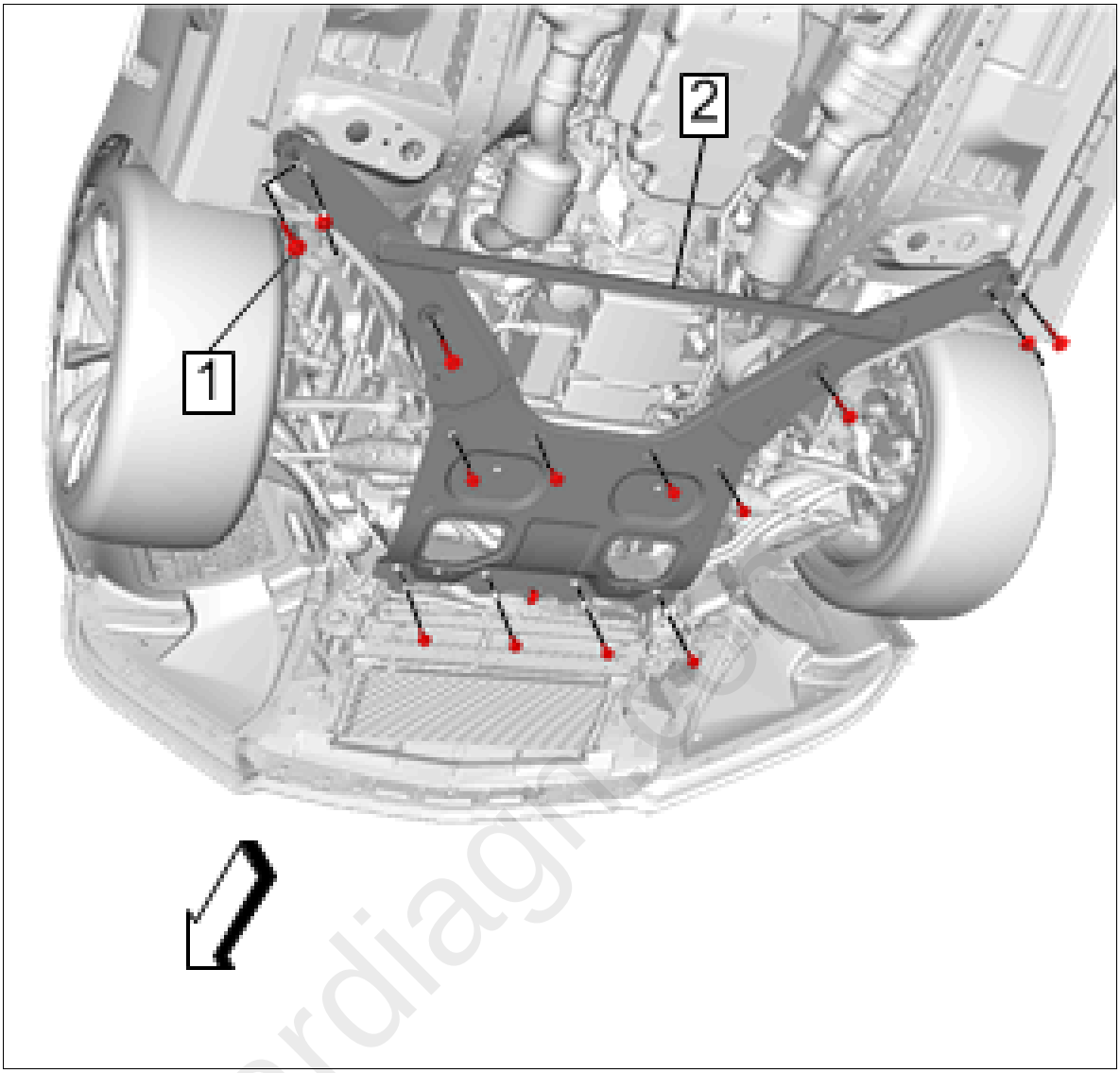


Courtesy of GENERAL MOTORS COMPANY

14. Remove Front Compartment Lower Noise Shield Replacement (Coupe - LGX, LTG) (4)

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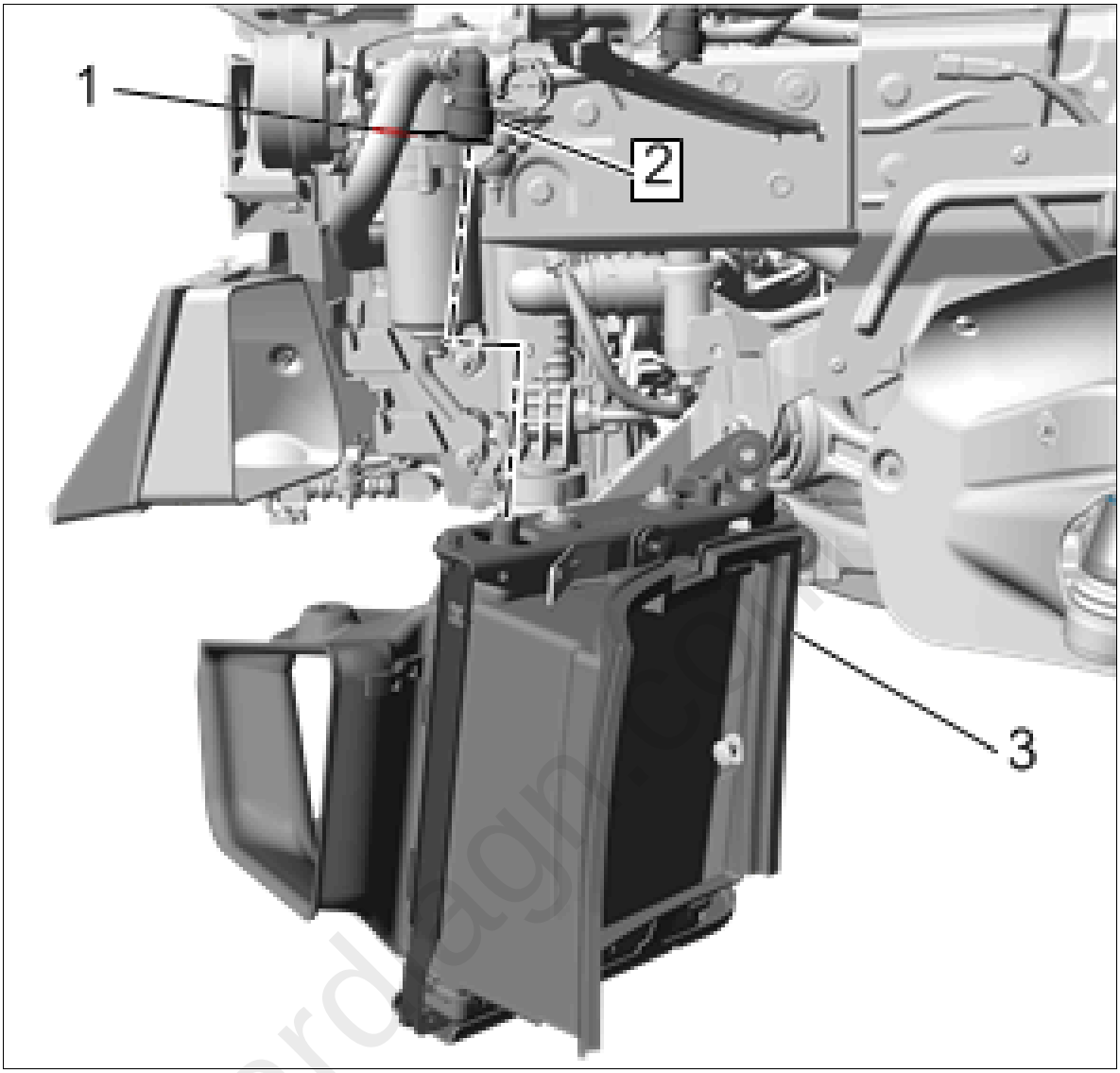
Fig 8: Front Cradle Shear Plate Fastener



Courtesy of GENERAL MOTORS COMPANY

15. Remove Front Cradle Shear Plate Replacement (2)

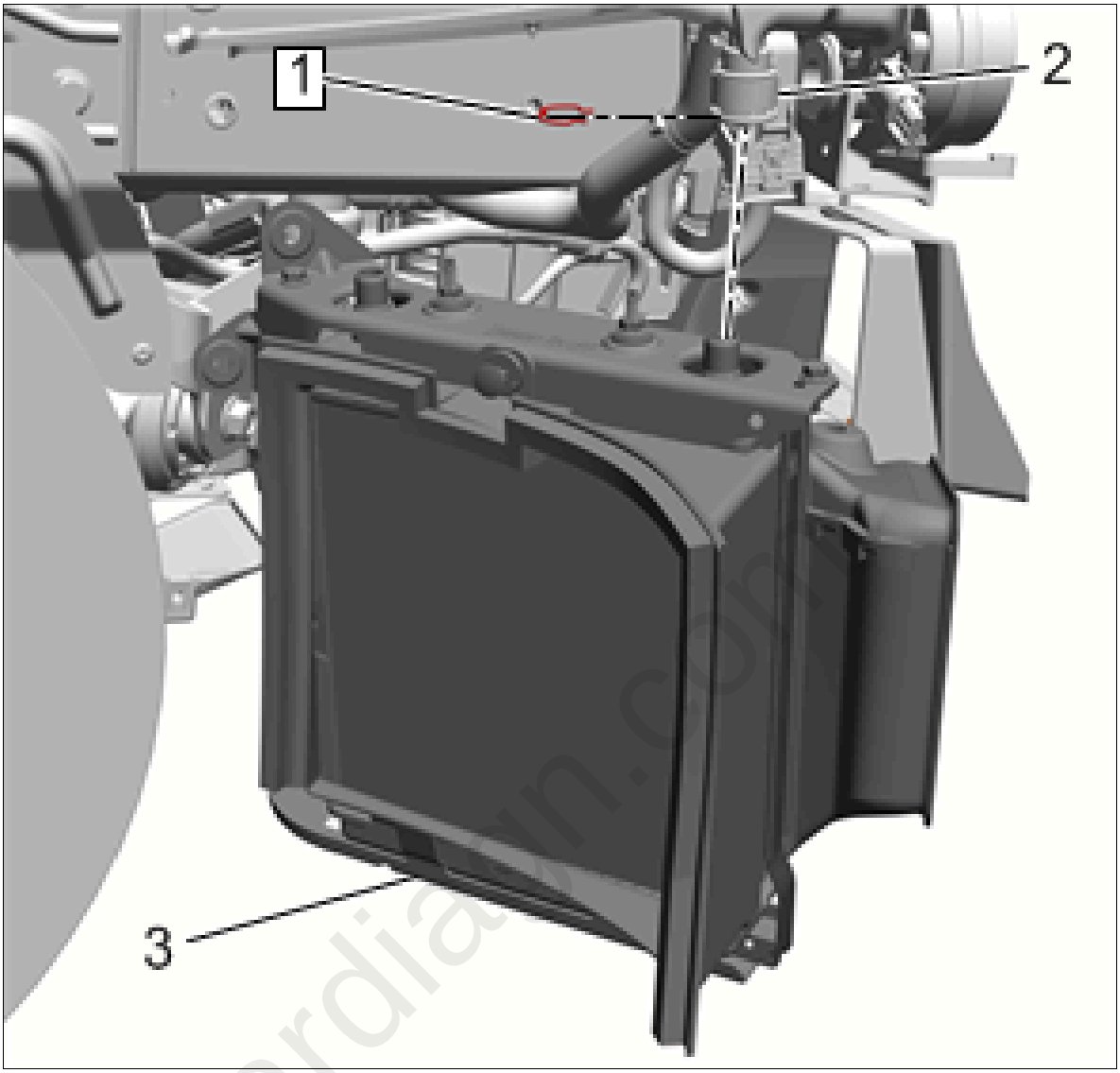
Fig 9: Charge Air Cooler Replacement - Left Side



Courtesy of GENERAL MOTORS COMPANY

16. Remove Charge Air Cooler Replacement - Left Side (LT1 V18) (3)

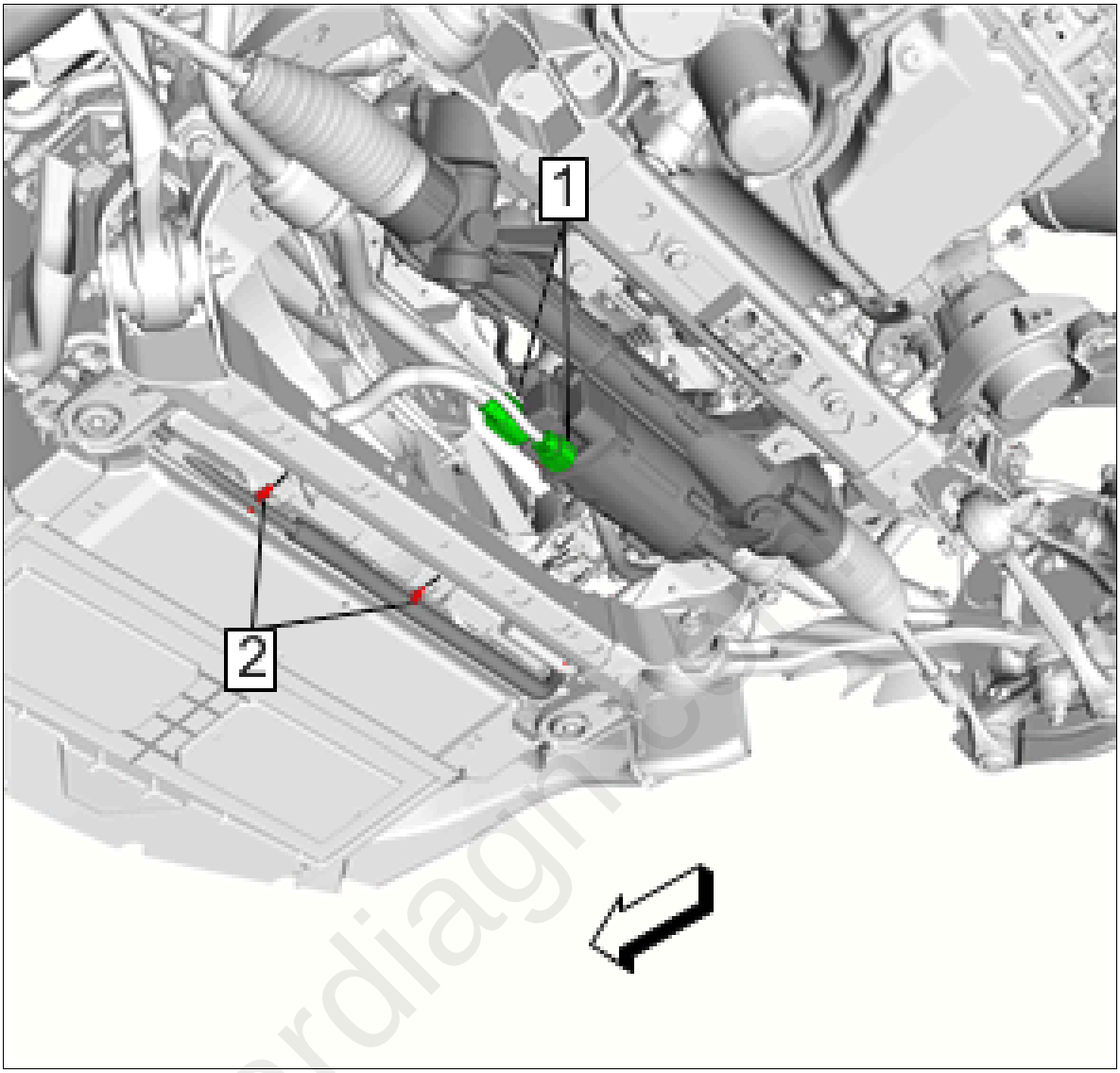
Fig 10: Charge Air Cooler Replacement - Right Side



Courtesy of GENERAL MOTORS COMPANY

17. Remove Charge Air Cooler Replacement - Right Side (LGX with V18, LT1) (3)

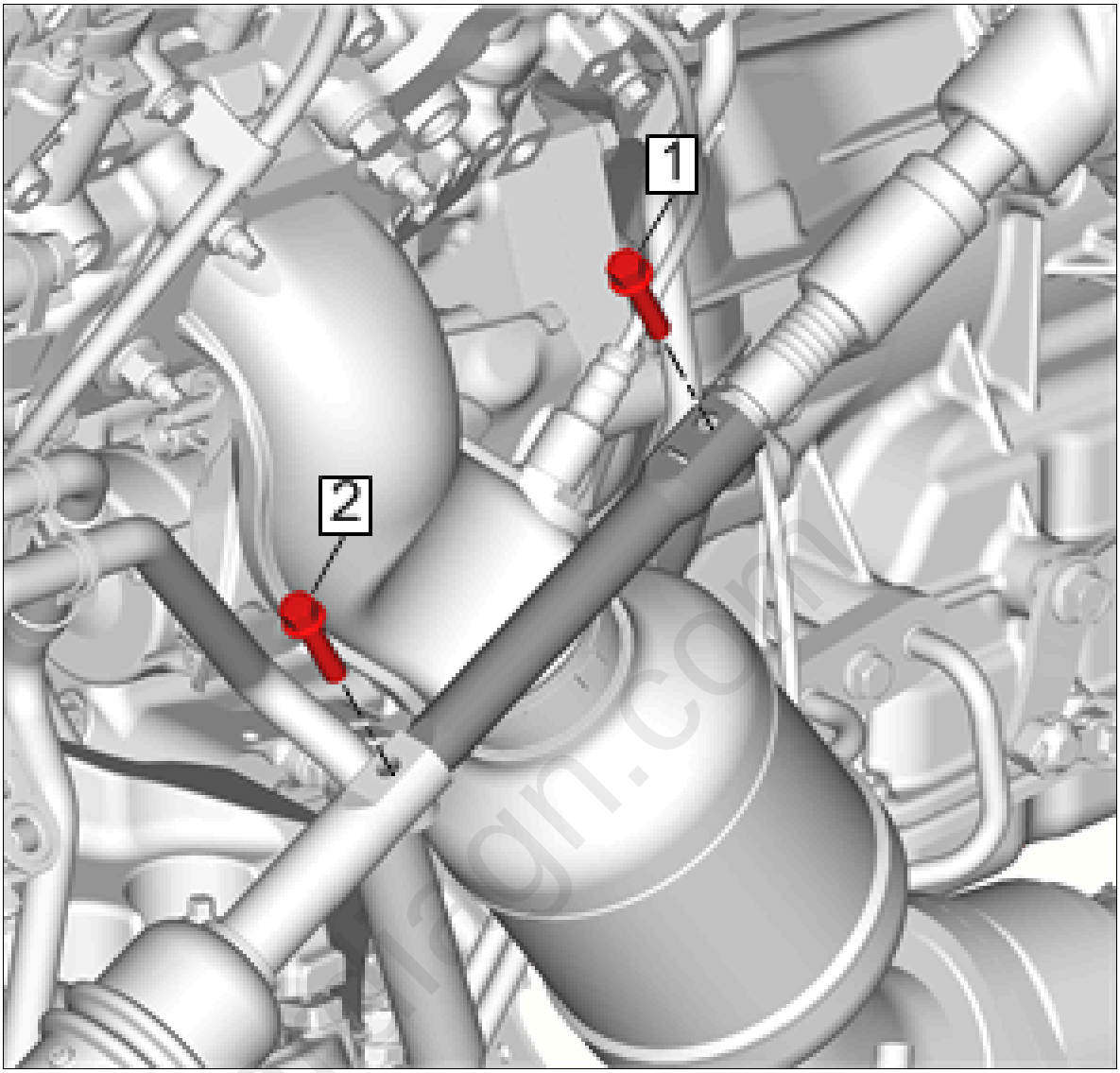
Fig 11: Steering Gear Electrical Connectors



Courtesy of GENERAL MOTORS COMPANY

18. Disconnect the steering gear electrical connectors (1)
19. Remove the wiring harness retainers from the frame (2)

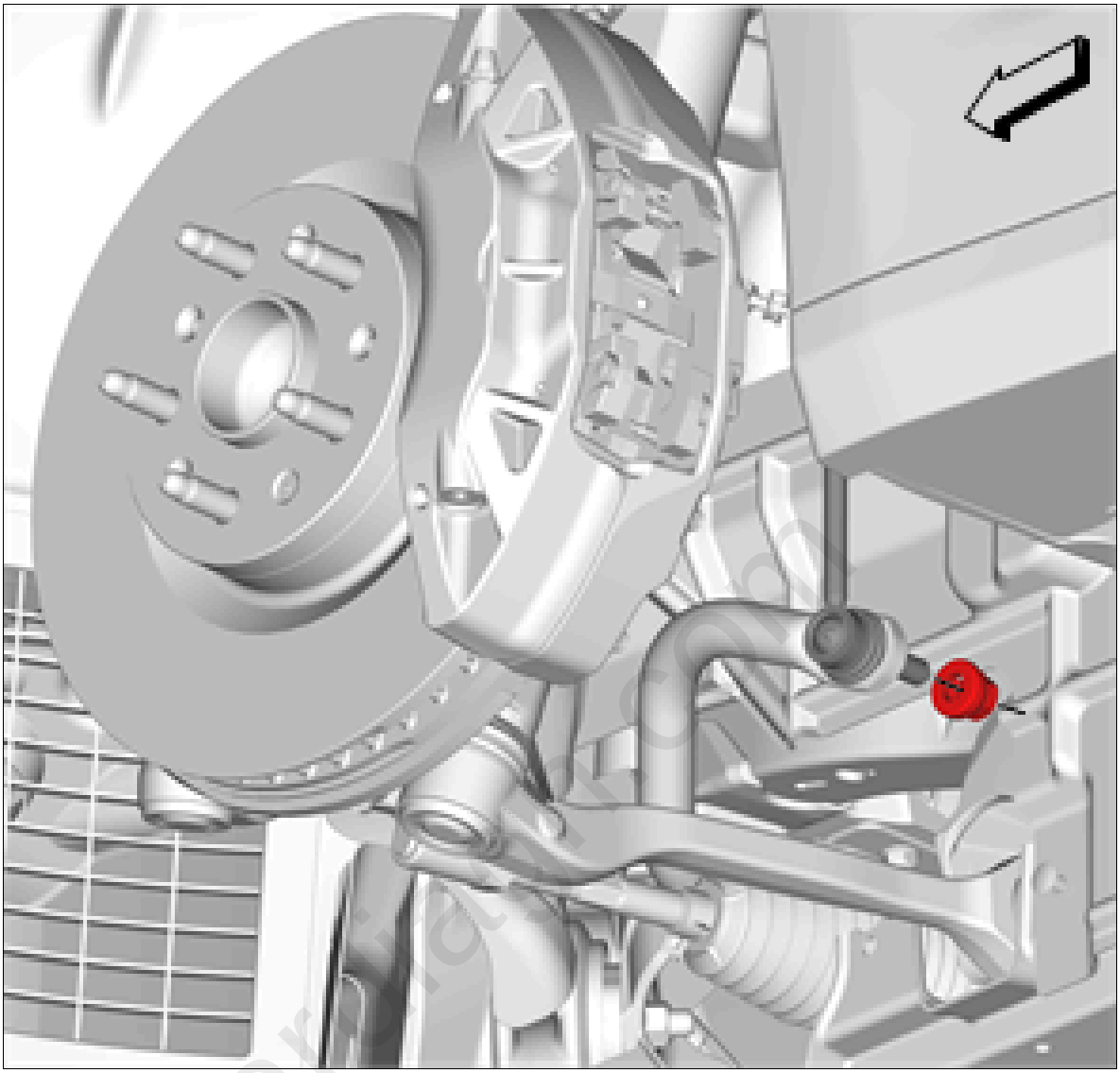
Fig 12: Mid Intermediate Steering Shaft Bolt And Intermediate Steering Shaft Upper Bolt



Courtesy of GENERAL MOTORS COMPANY

20. Disconnect the intermediate steering shaft from the steering column shaft (1) - Mid Intermediate Steering Shaft Replacement

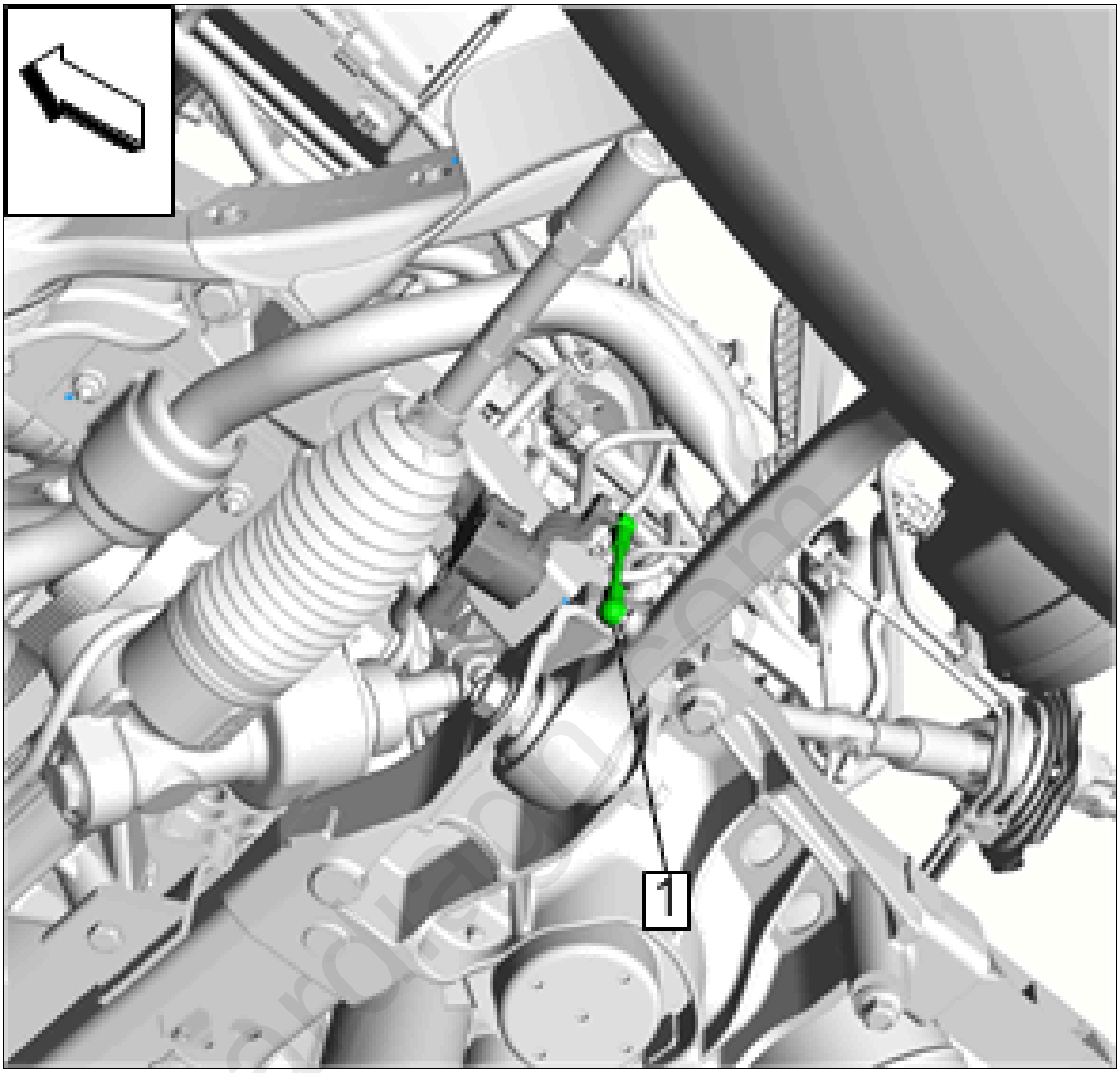
Fig 13: Front Stabilizer Shaft Link Nut



Courtesy of GENERAL MOTORS COMPANY

21. Disconnect the right and left lower stabilizer shaft links from the stabilizer bar - Stabilizer Shaft Link Replacement (LT1)

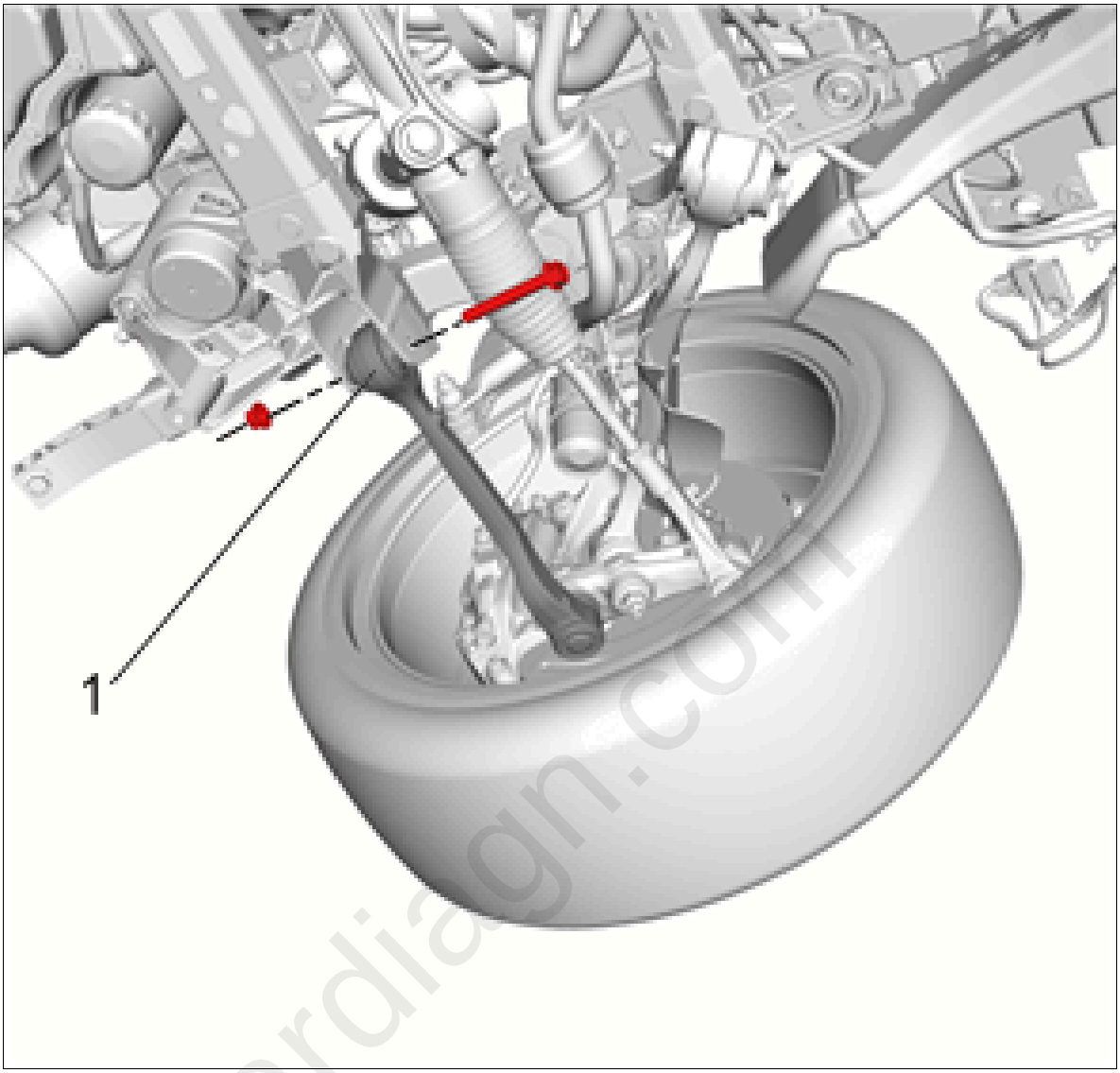
Fig 14: Front Suspension Automatic Forward Lighting Position Sensor Arms From Lower Control Rear Links



Courtesy of GENERAL MOTORS COMPANY

22. Disconnect the front suspension automatic forward lighting position sensor arm (1) from the lower control rear link.
23. Disconnect the electrical connector from the front suspension automatic forward lighting position sensor.

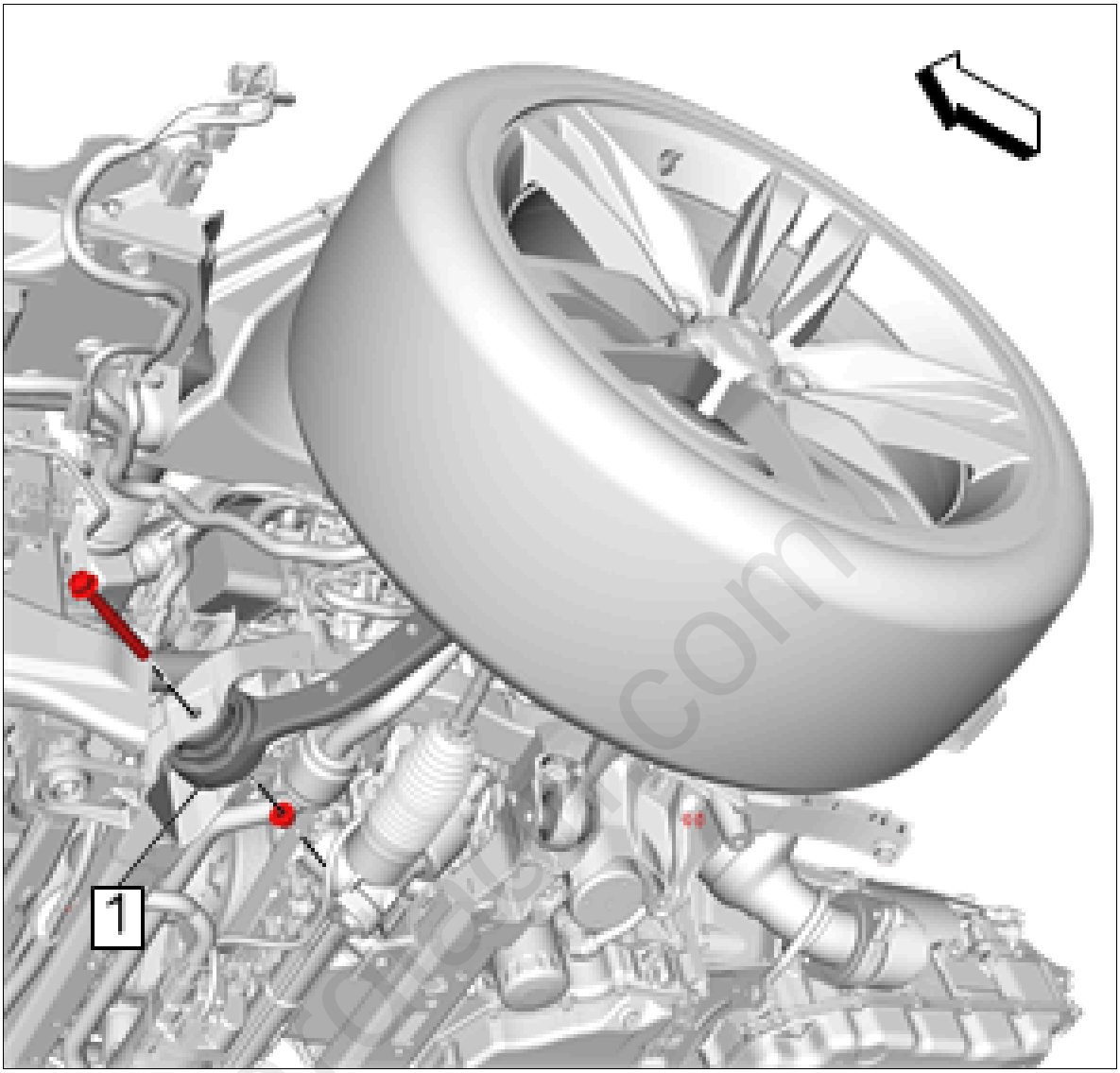
Fig 15: Front Lower Control Rear Links From Front Suspension Frame



Courtesy of GENERAL MOTORS COMPANY

24. Disconnect the front lower control rear links from the front suspension frame. Front Lower Control Rear Link Replacement (LT1)

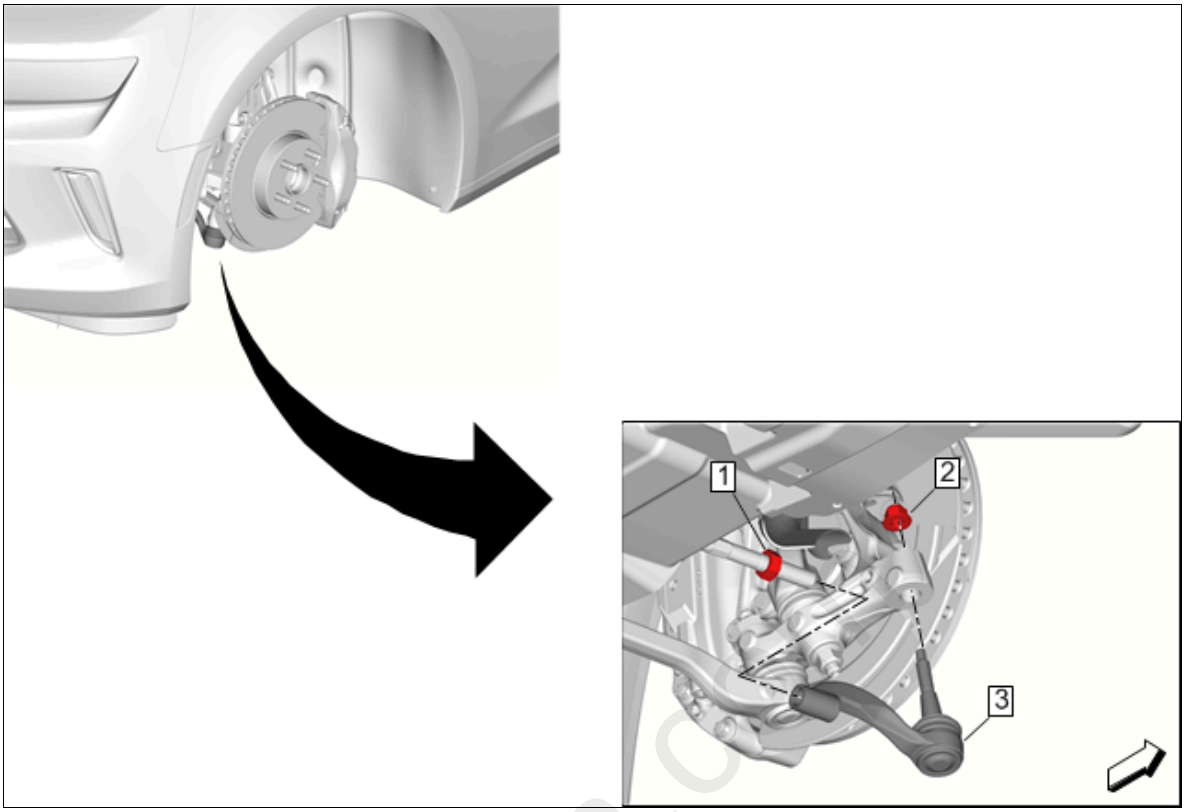
Fig 16: Front Lower Control Front Links From Front Suspension Frame



Courtesy of GENERAL MOTORS COMPANY

25. Disconnect the front lower control front links from the front suspension frame. Front Lower Control Front Link Replacement (LT1, Without V18)Front Lower Control Front Link Replacement (LT1, With V18)

Fig 17: Steering Linkage Outer Tie Rod

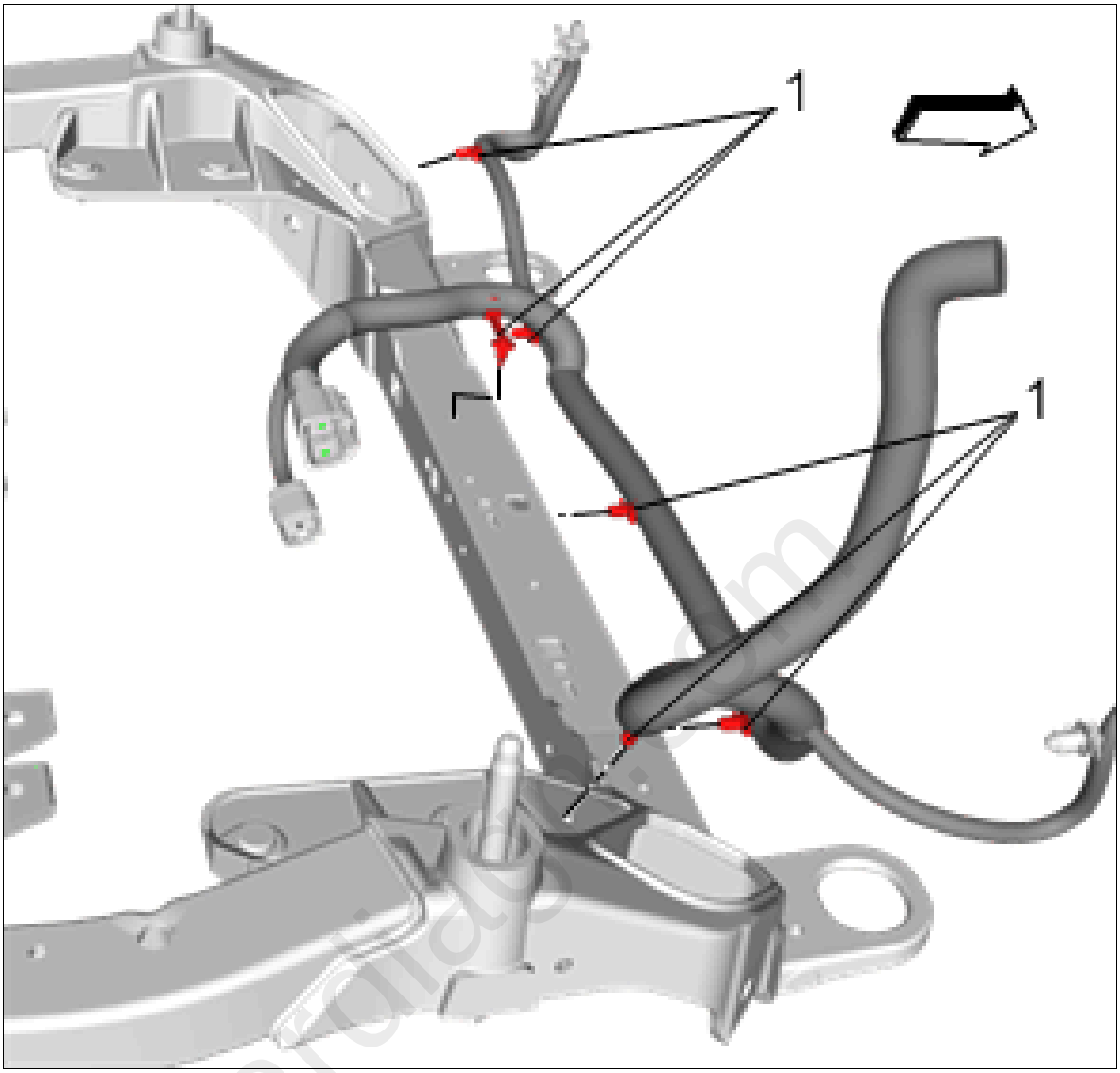


Courtesy of GENERAL MOTORS COMPANY

26. Remove Steering Linkage Outer Tie Rod (3) - Steering Linkage Outer Tie Rod Replacement

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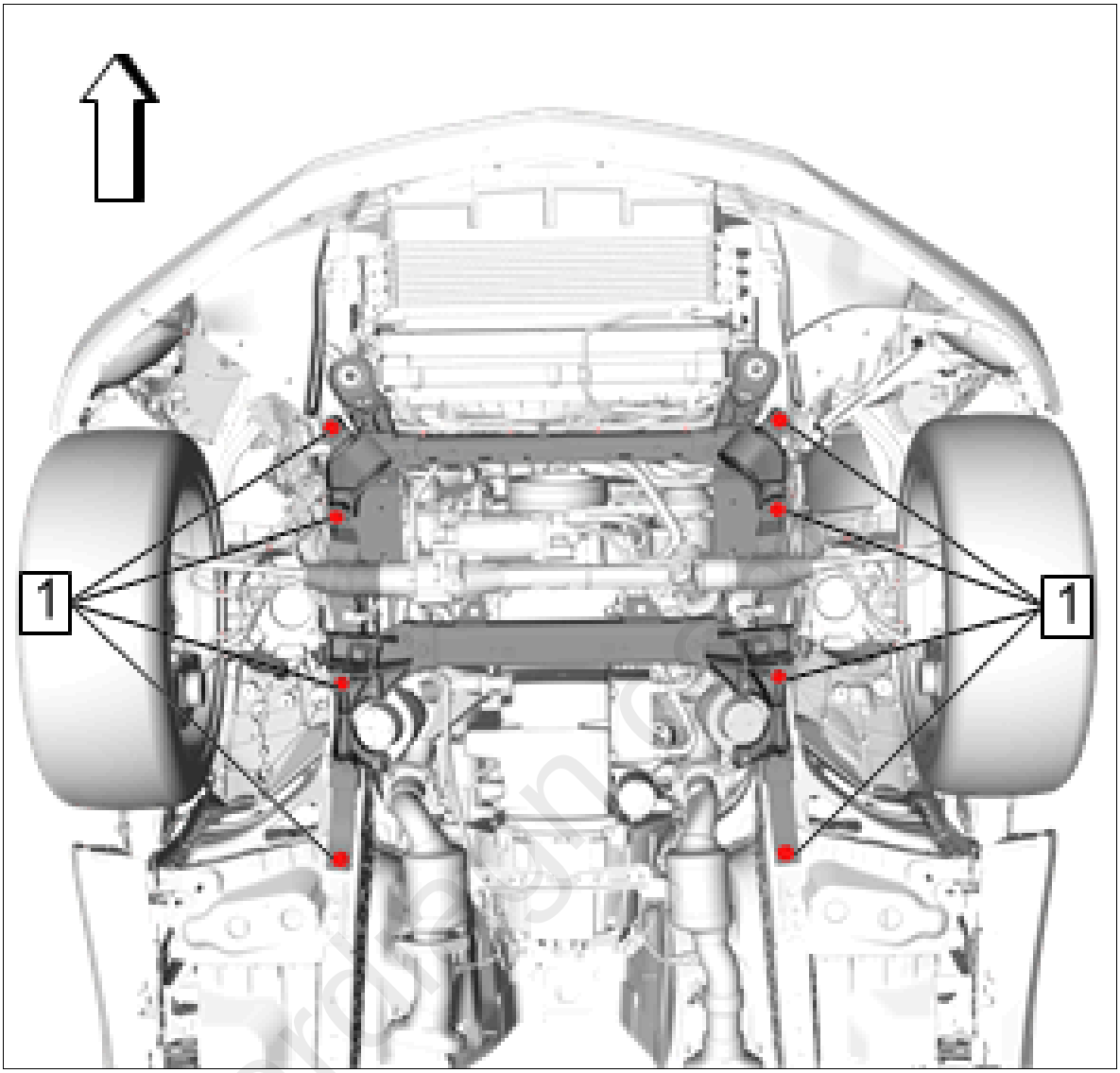
Fig 18: Wiring Harness Retainers From Frame



Courtesy of GENERAL MOTORS COMPANY

27. Remove the wiring harness retainers from the frame (1)

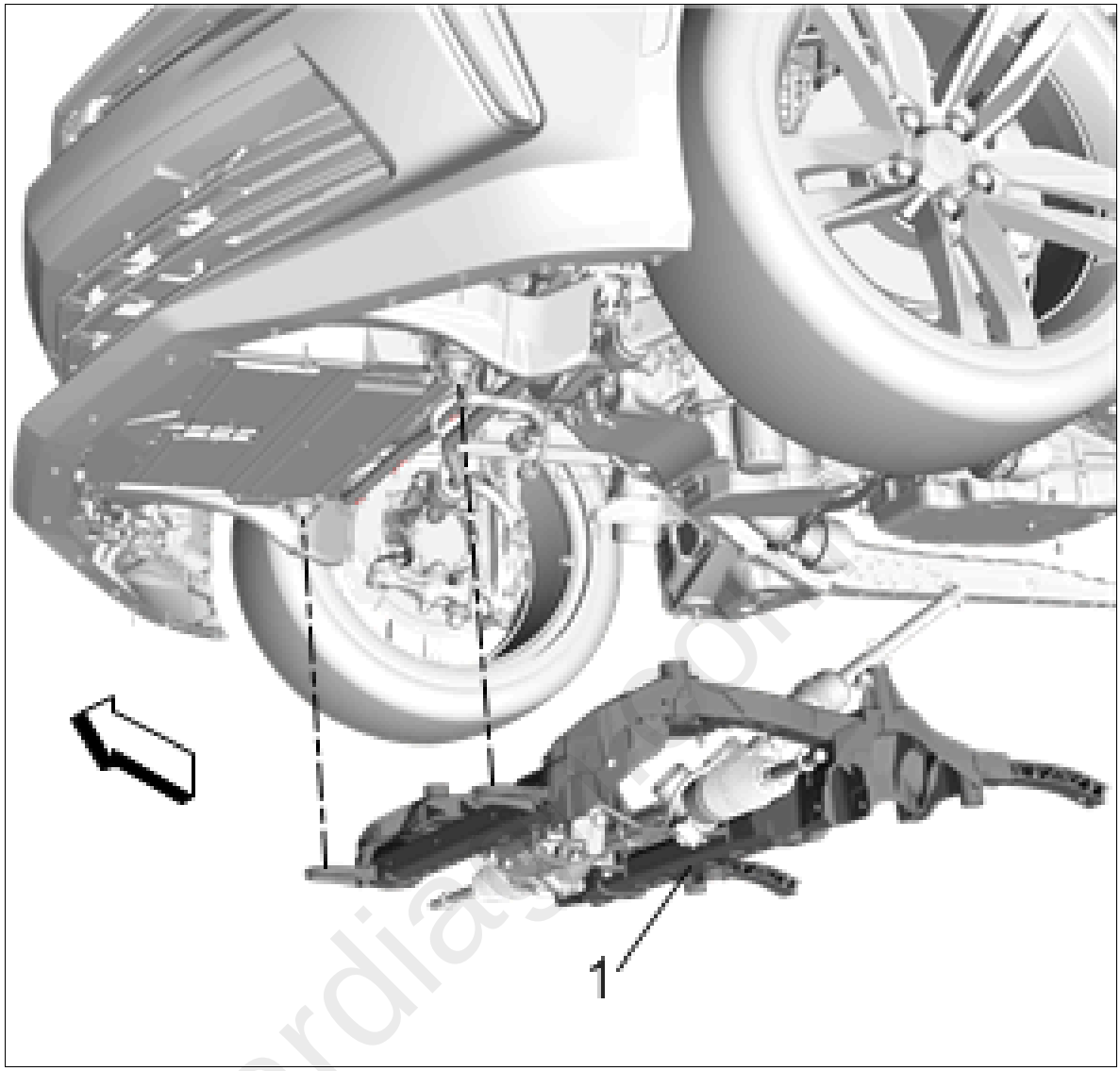
Fig 19: Stand Under Drivetrain And Front Suspension Cradle



Courtesy of GENERAL MOTORS COMPANY

28. Install **J-39580** stand under the drivetrain and front suspension cradle.
29. Lower the vehicle until the drivetrain and front suspension frame is resting lightly on the jackstands.
30. Remove Drivetrain and Front Suspension Support Bolt (1) (Qty: 8)
31. With the aid of an assistant, carefully raise the body from the frame.
32. Ensure when raising the body the following items are clear from the frame:
    1. Vacuum lines
    2. Steering knuckles
    3. Electrical wiring harnesses
    4. Oil coolers lines

Fig 20: Drivetrain And Front Suspension Frame

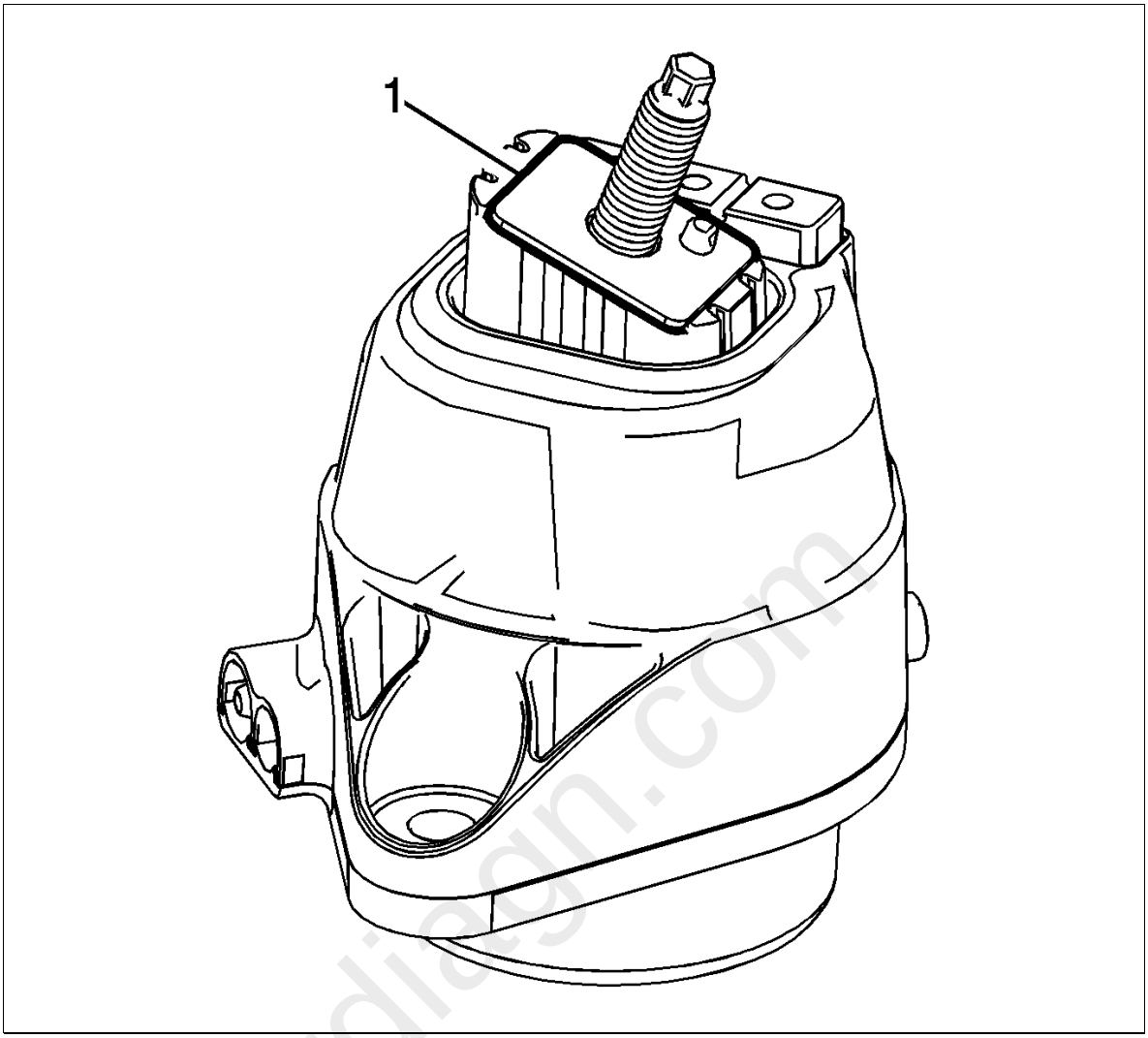


Courtesy of GENERAL MOTORS COMPANY

33. Remove the drivetrain and front suspension frame (1)

REPAIR INSTRUCTIONS > DRIVETRAIN AND FRONT SUSPENSION CRADLE REMOVAL AND INSTALLATION (LT1) > INSTALLATION PROCEDURE

Fig 1: Phenolic Spacer



Courtesy of GENERAL MOTORS COMPANY

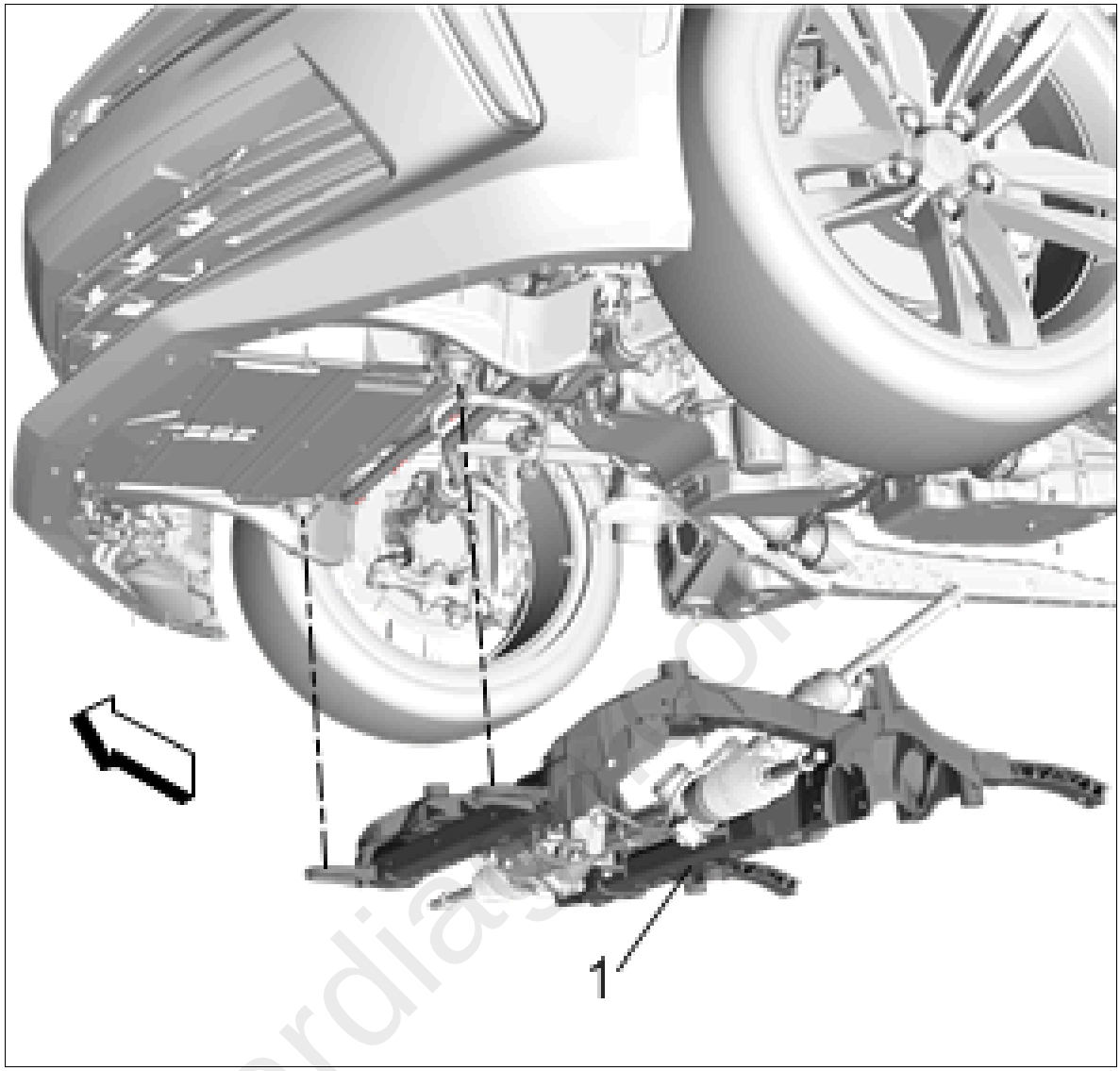
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⚠ *CAUTION:*

Phenolic spacer must be present to prevent galvanic/corrosive reaction and/or excessive temperature conduction between engine mount bracket and engine mount. Replace mount if phenolic spacer is missing or damaged. Failure to ensure phenolic spacer is intact and not damaged can lead to premature failure of engine mount and/or engine mount bracket.

1. Inspect the engine mount to ensure the phenolic spacer (1) is in place and not damaged.
2. With the aid of an assistant, position and secure the frame assembly to the support fixture.

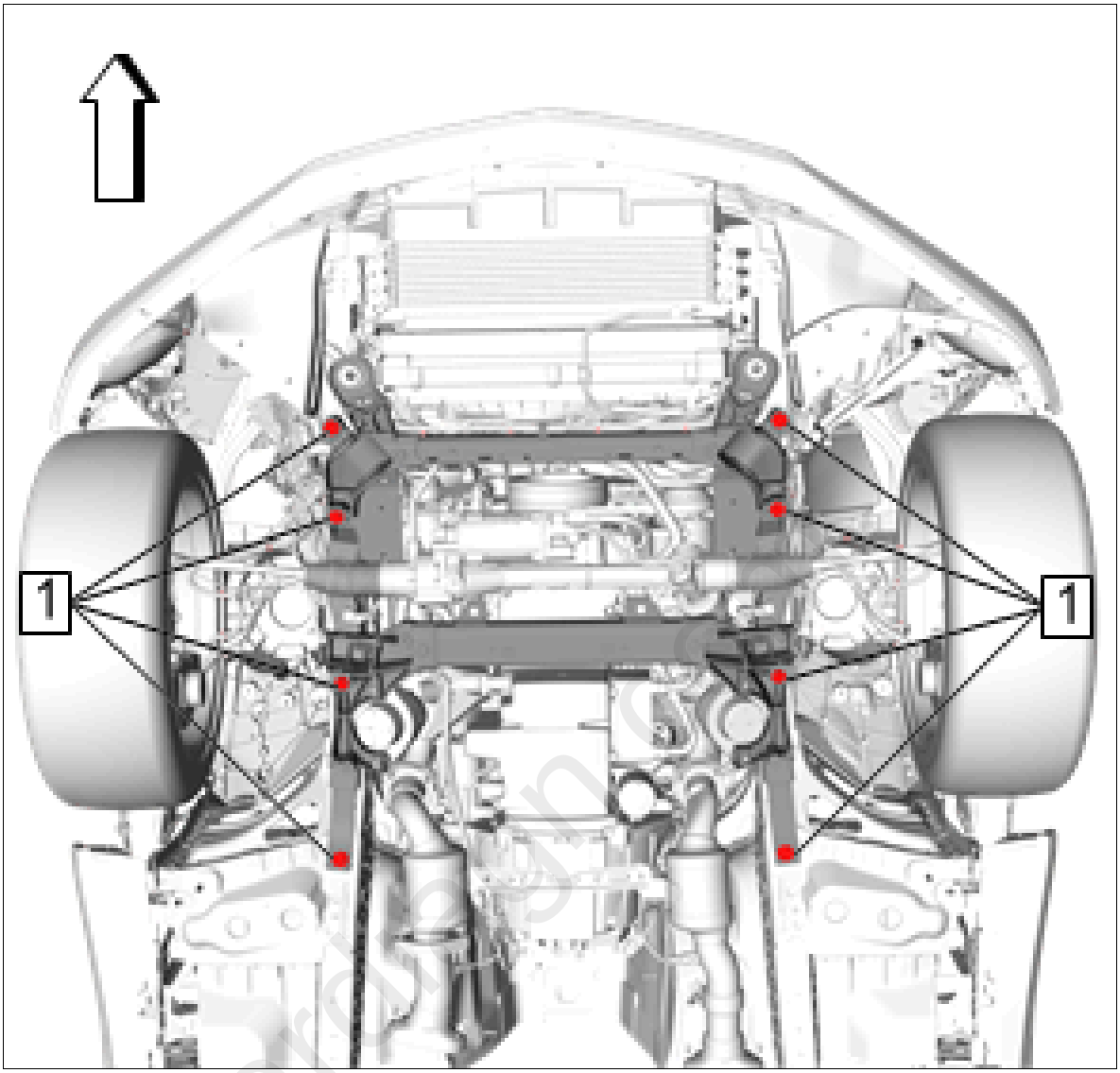
Fig 2: Drivetrain And Front Suspension Frame



Courtesy of GENERAL MOTORS COMPANY

3. With the aid of an assistant, carefully lower the body to the frame (1)
4. Ensure the following components are clear from the frame:
    1. Vacuum lines
    2. Steering knuckles
    3. Electrical wiring harnesses
    4. Oil cooler lines

Fig 3: Drivetrain and Front Suspension Support Bolt



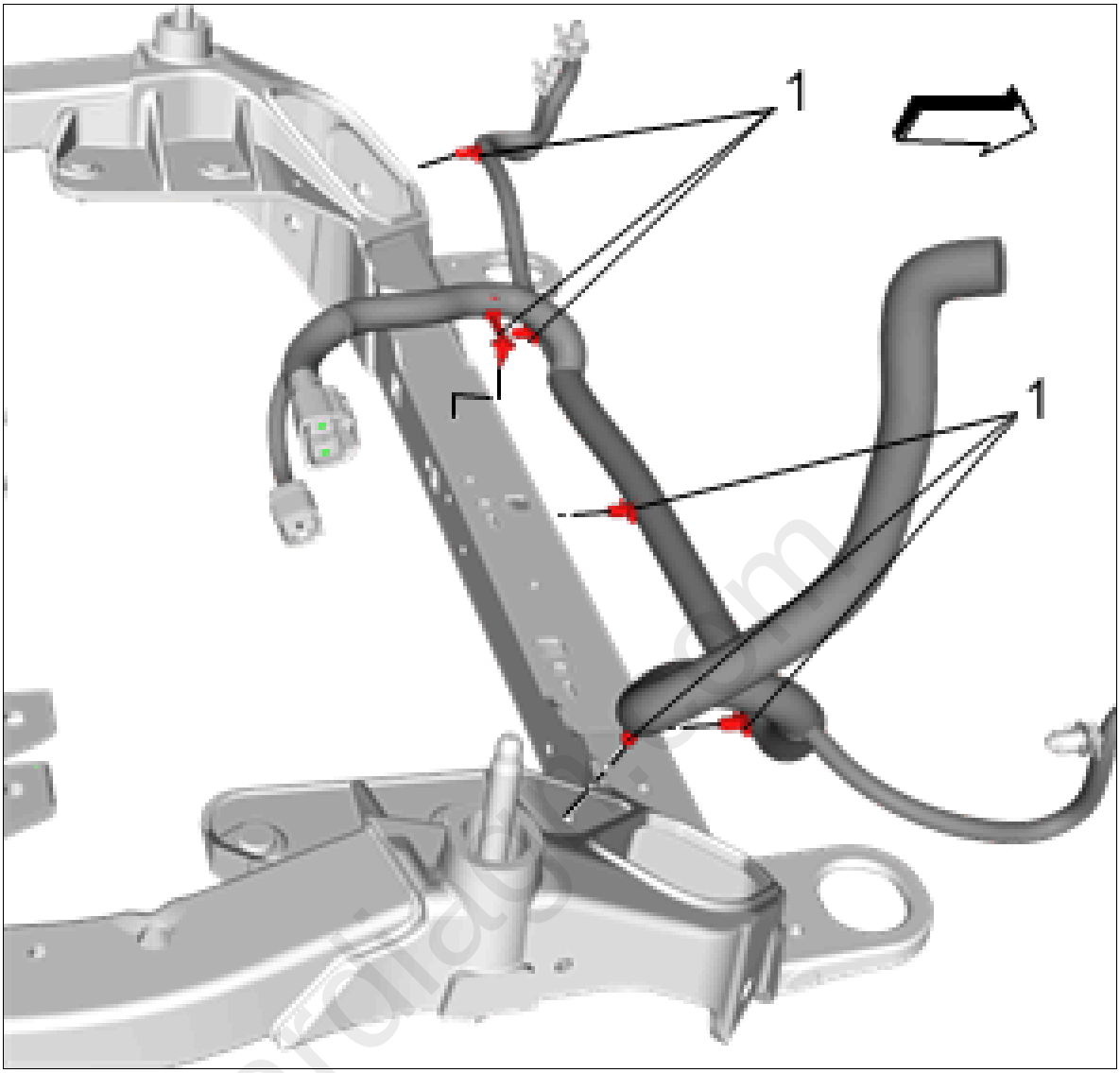
Courtesy of GENERAL MOTORS COMPANY

> ⚠ *CAUTION:*
>
> *Refer to Fastener Caution*

5. Install Drivetrain and Front Suspension Support Bolt (1) (Qty: 8) and tighten to 100 N.m (74 lb ft)

6. Remove the **J-39580** stand from under the vehicle.

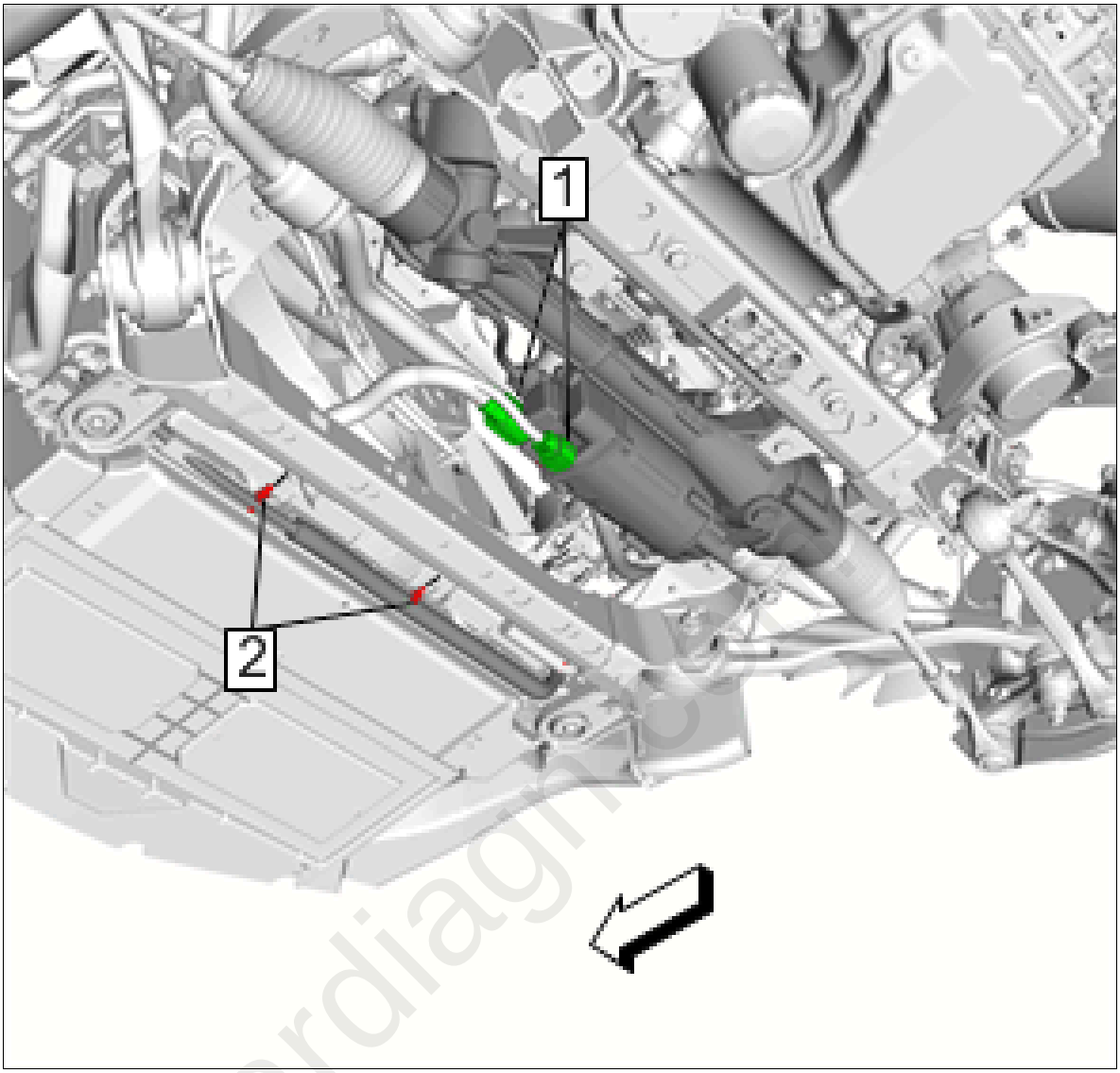
Fig 4: Wiring Harness Retainers From Frame



Courtesy of GENERAL MOTORS COMPANY

7. Install the wiring harness retainers to the frame (1)

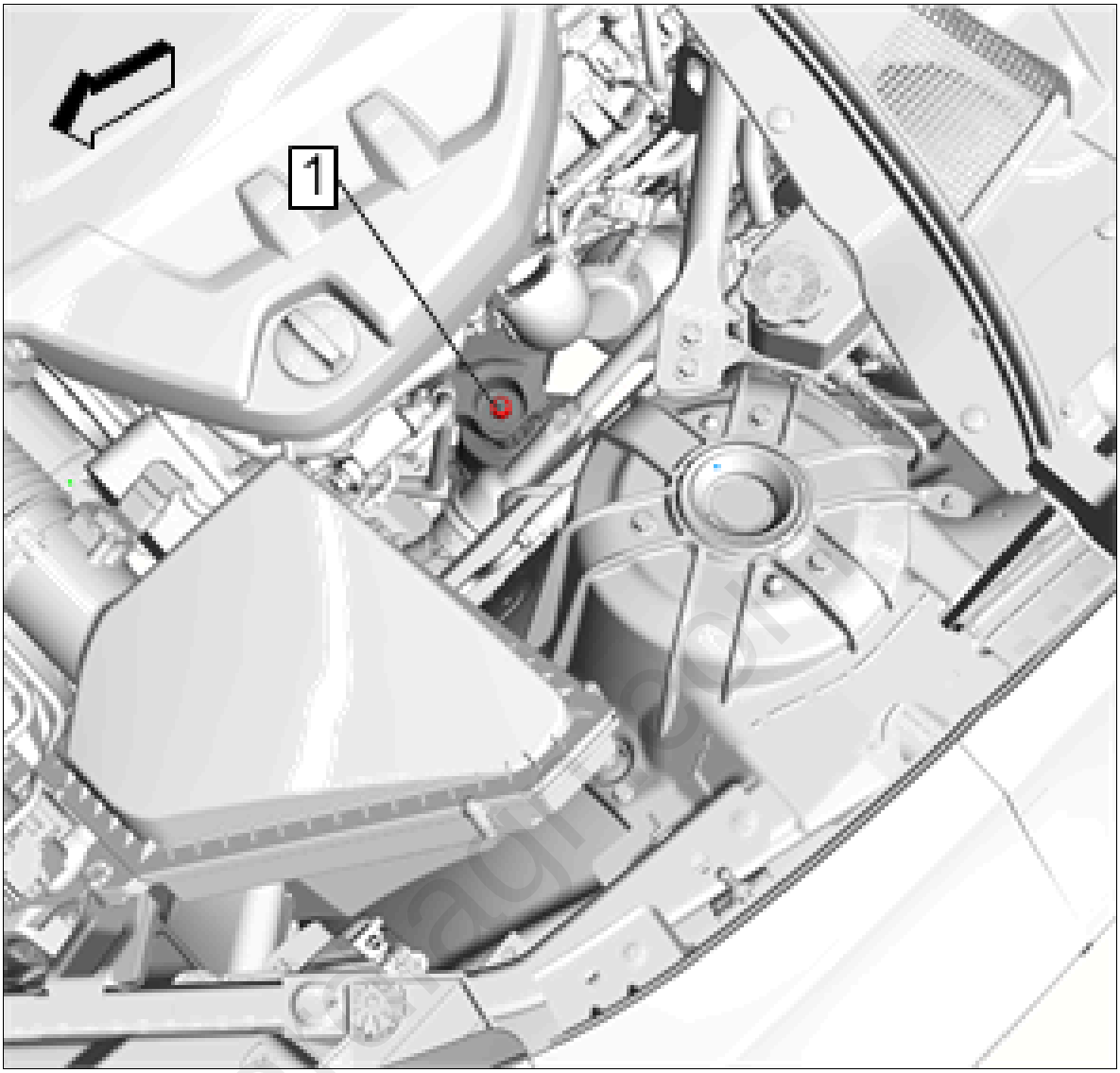
Fig 5: Steering Gear Electrical Connectors



Courtesy of GENERAL MOTORS COMPANY

8. Connect the steering gear electrical connectors (1)

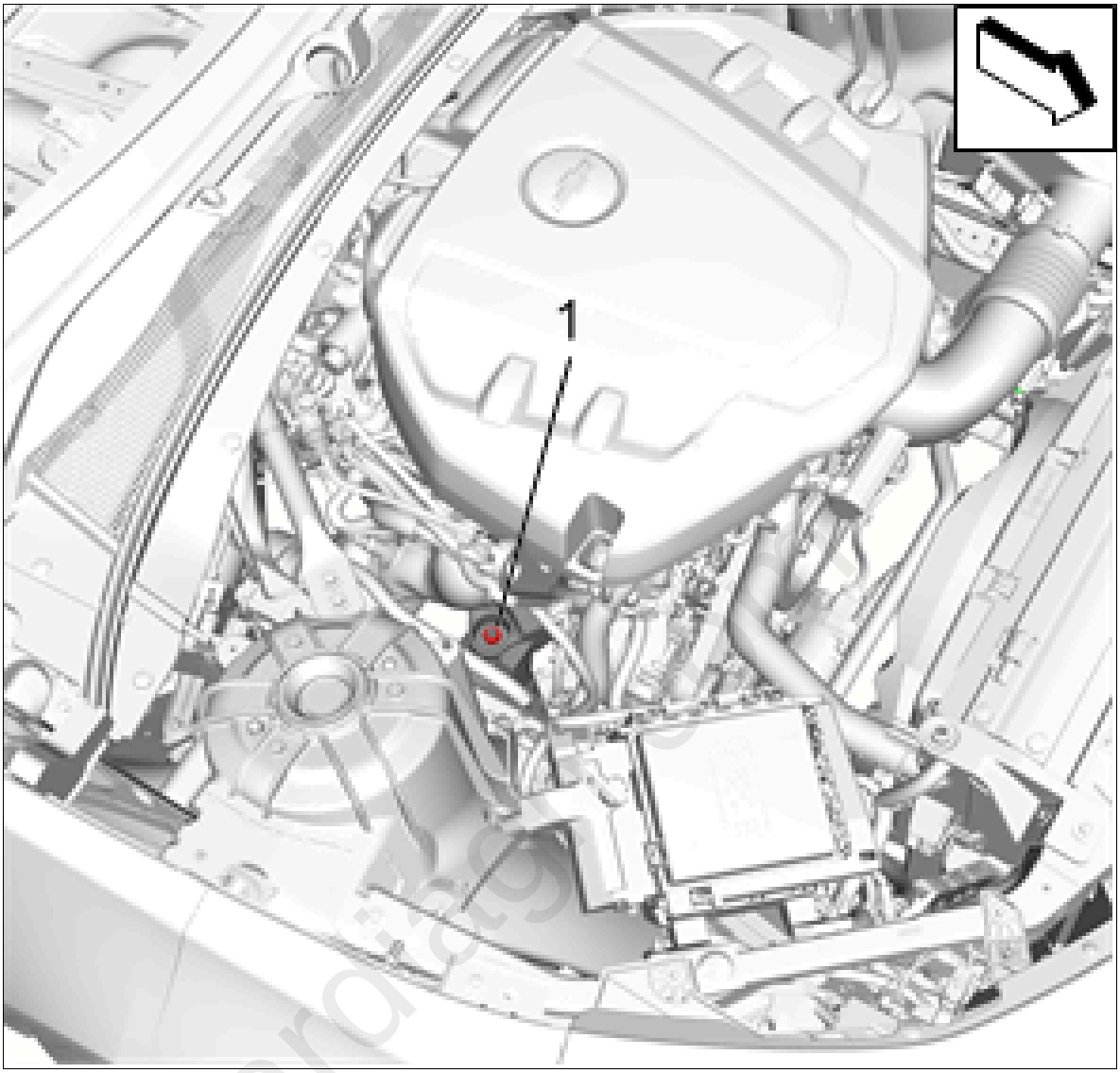
Fig 6: Left Side Engine Mount Nut



Courtesy of GENERAL MOTORS COMPANY

9. Install Engine Mount Nut - Left Side (1) and tighten to 70 N.m (52 lb ft)

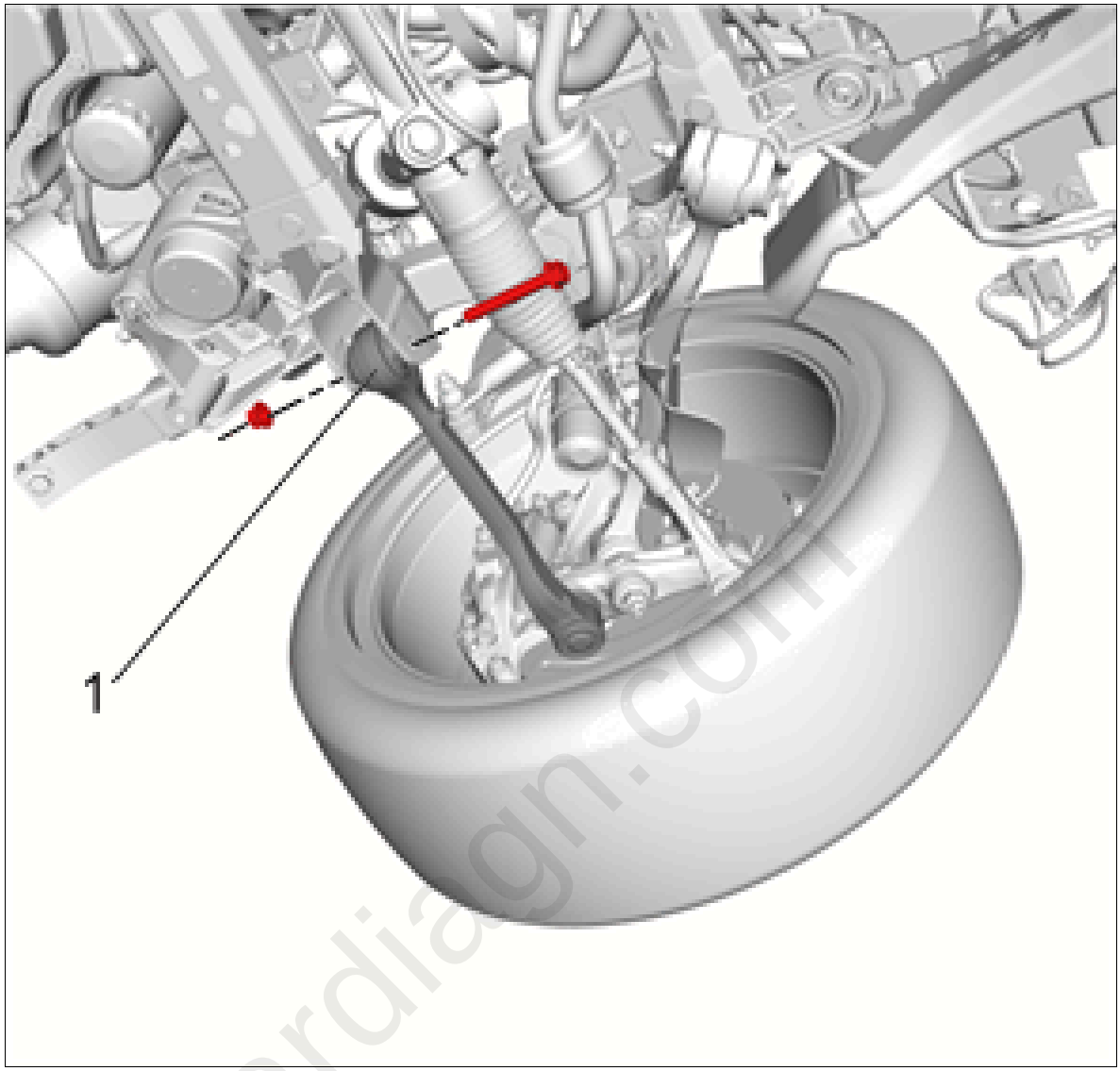
Fig 7: Right Side Engine Mount Nut



Courtesy of GENERAL MOTORS COMPANY

10. Install Engine Mount Nut - Right Side (1) and tighten to 70 N.m (52 lb ft)

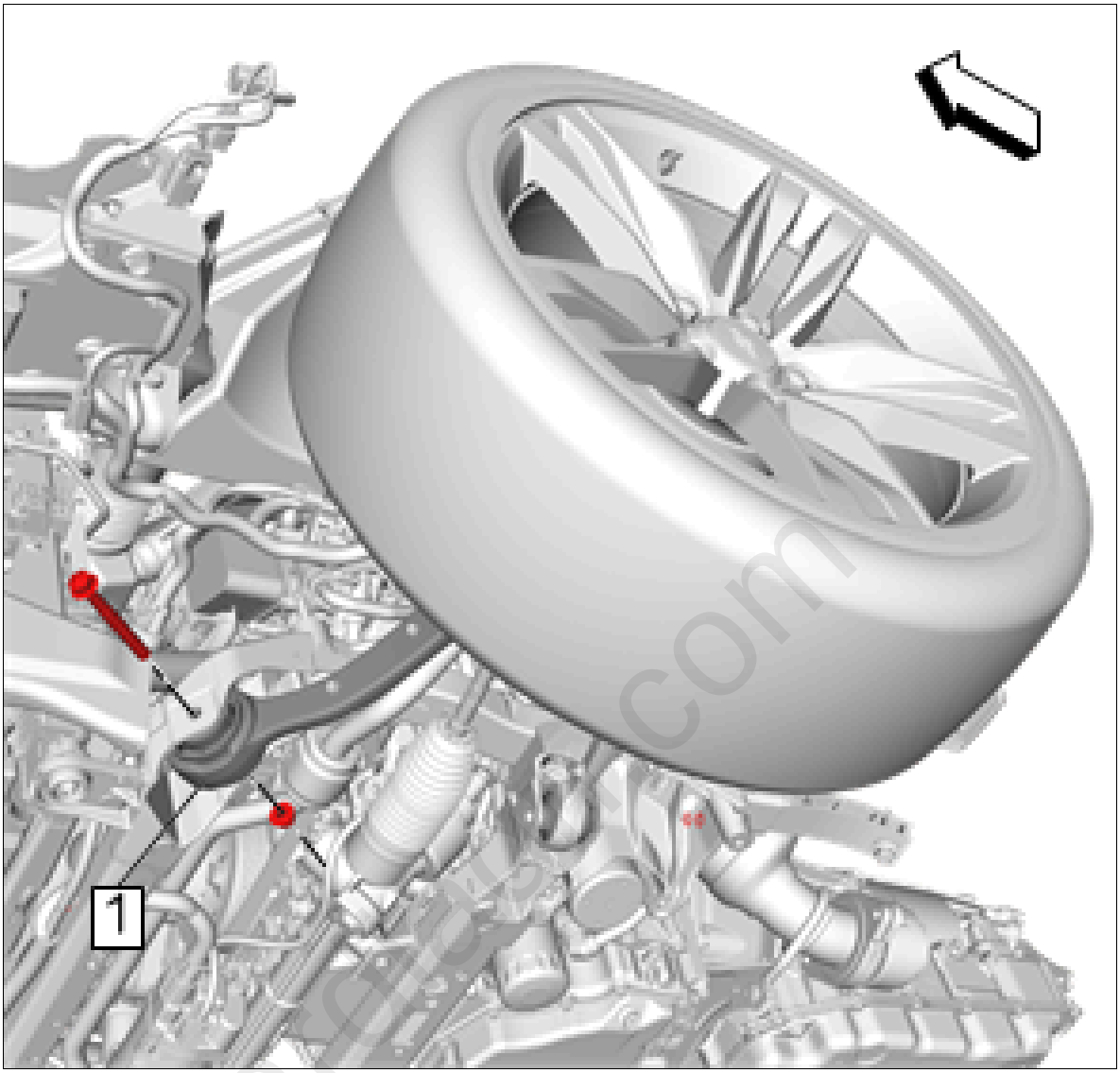
Fig 8: Front Lower Control Rear Links From Front Suspension Frame



Courtesy of GENERAL MOTORS COMPANY

11. Connect the front lower control rear links to the front suspension frame (1) - Front Lower Control Rear Link Replacement (LT1)

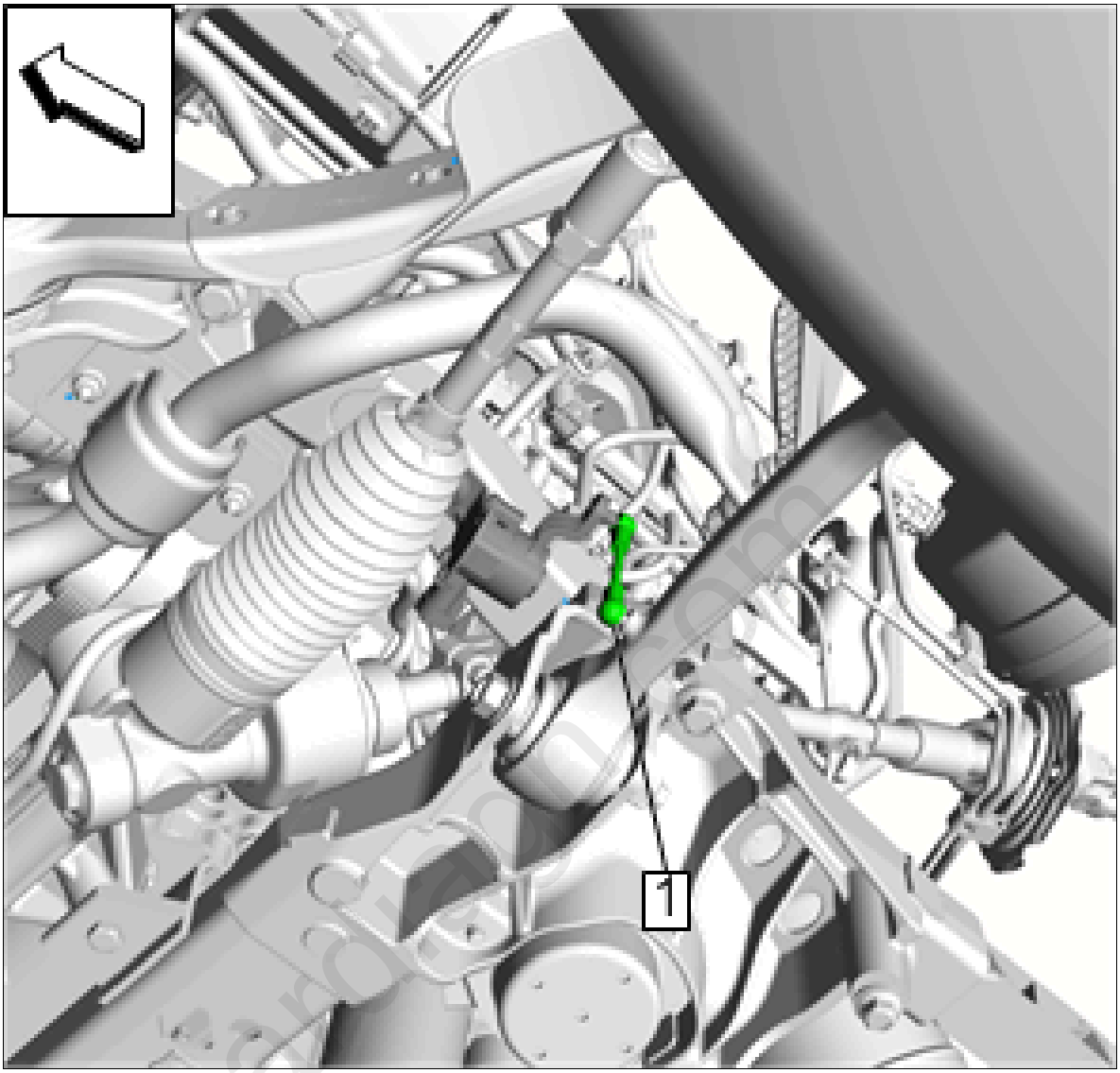
Fig 9: Front Lower Control Front Links From Front Suspension Frame



Courtesy of GENERAL MOTORS COMPANY

12. Connect the front lower control front links to the front suspension frame (1) - Front Lower Control Front Link Replacement (LT1, Without V18)Front Lower Control Front Link Replacement (LT1, With V18)

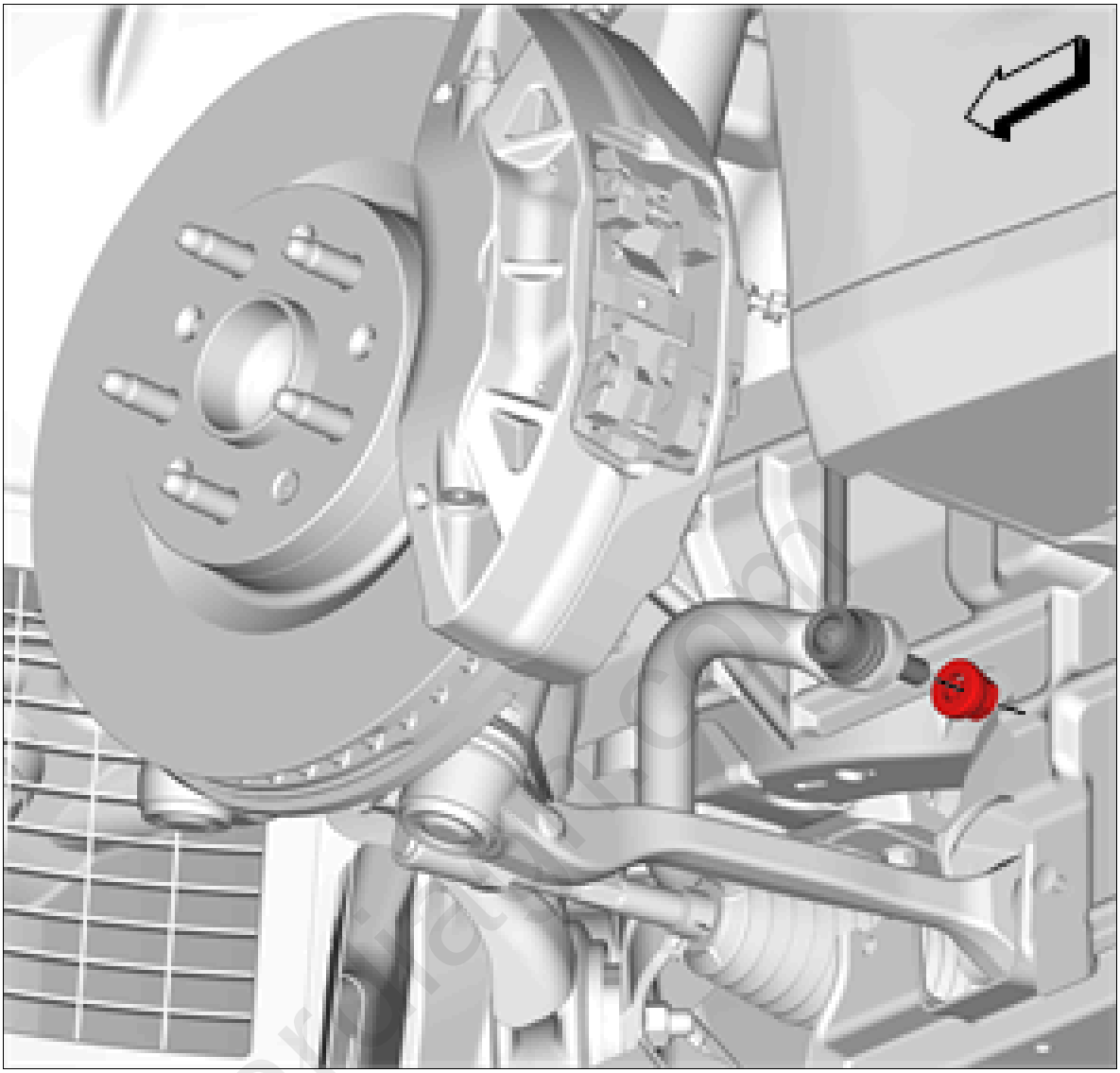
Fig 10: Front Suspension Automatic Forward Lighting Position Sensor Arms From Lower Control Rear Links



Courtesy of GENERAL MOTORS COMPANY

13. Connect the front suspension automatic forward lighting position sensor arm (1) to the lower control rear link.
14. Connect the electrical connector to the front suspension automatic forward lighting position sensor.

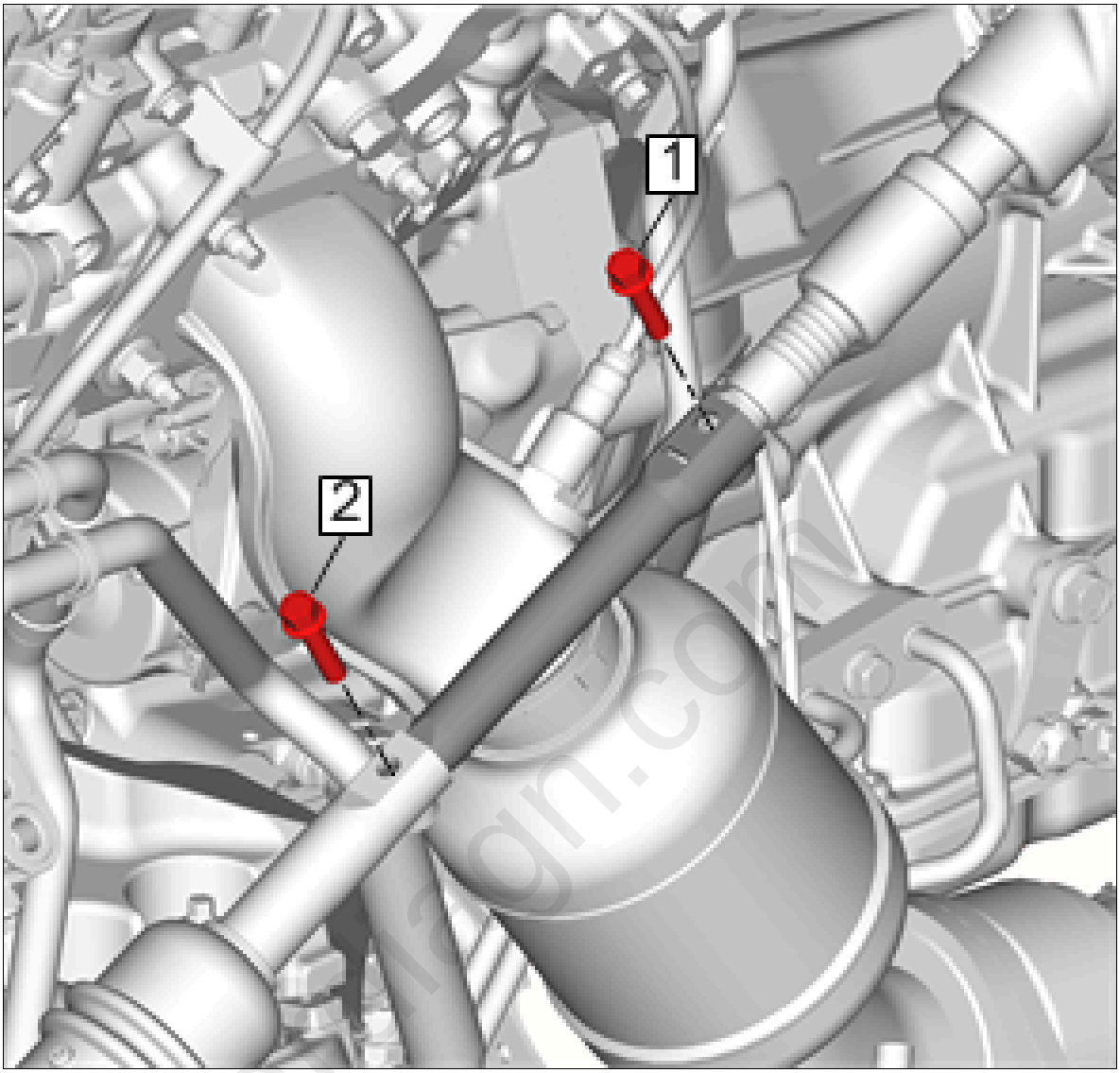
Fig 11: Front Stabilizer Shaft Link Nut



Courtesy of GENERAL MOTORS COMPANY

15. Connect the right and left lower stabilizer shaft links from the stabilizer bar (1) - Stabilizer Shaft Link Replacement (LT1)

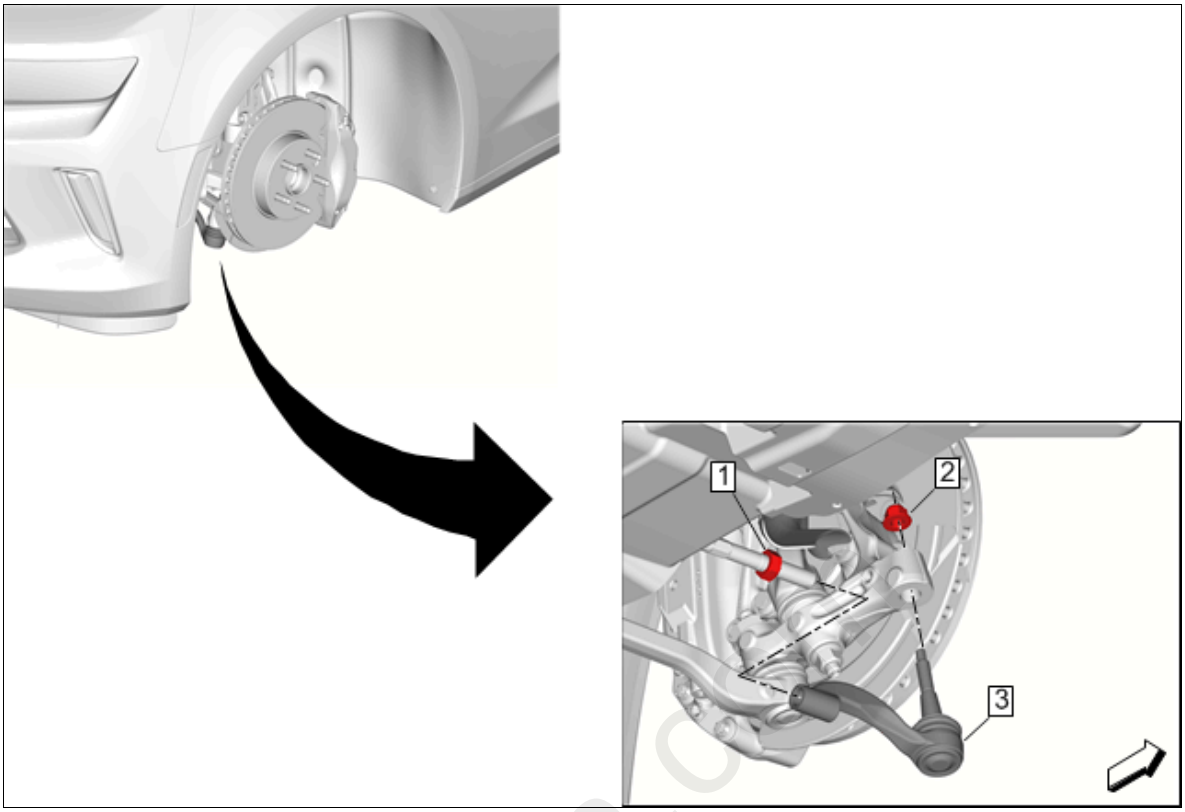
Fig 12: Mid Intermediate Steering Shaft Bolt And Intermediate Steering Shaft Upper Bolt



Courtesy of GENERAL MOTORS COMPANY

16. Connect the intermediate steering shaft to the steering column (1) - Mid Intermediate Steering Shaft Replacement

Fig 13: Steering Linkage Outer Tie Rod

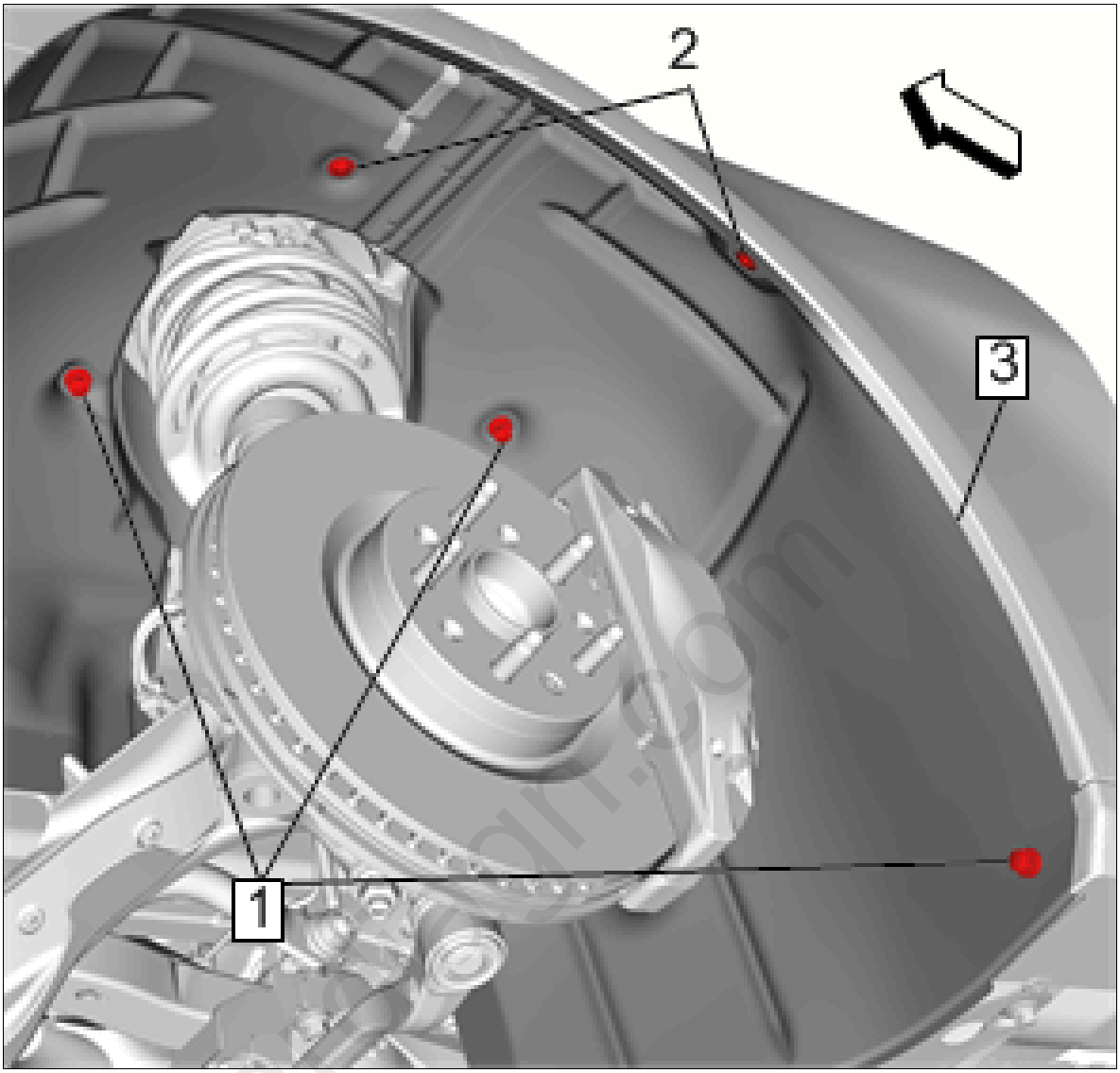


Courtesy of GENERAL MOTORS COMPANY

17. Install Steering Linkage Outer Tie Rod (3) - Steering Linkage Outer Tie Rod Replacement

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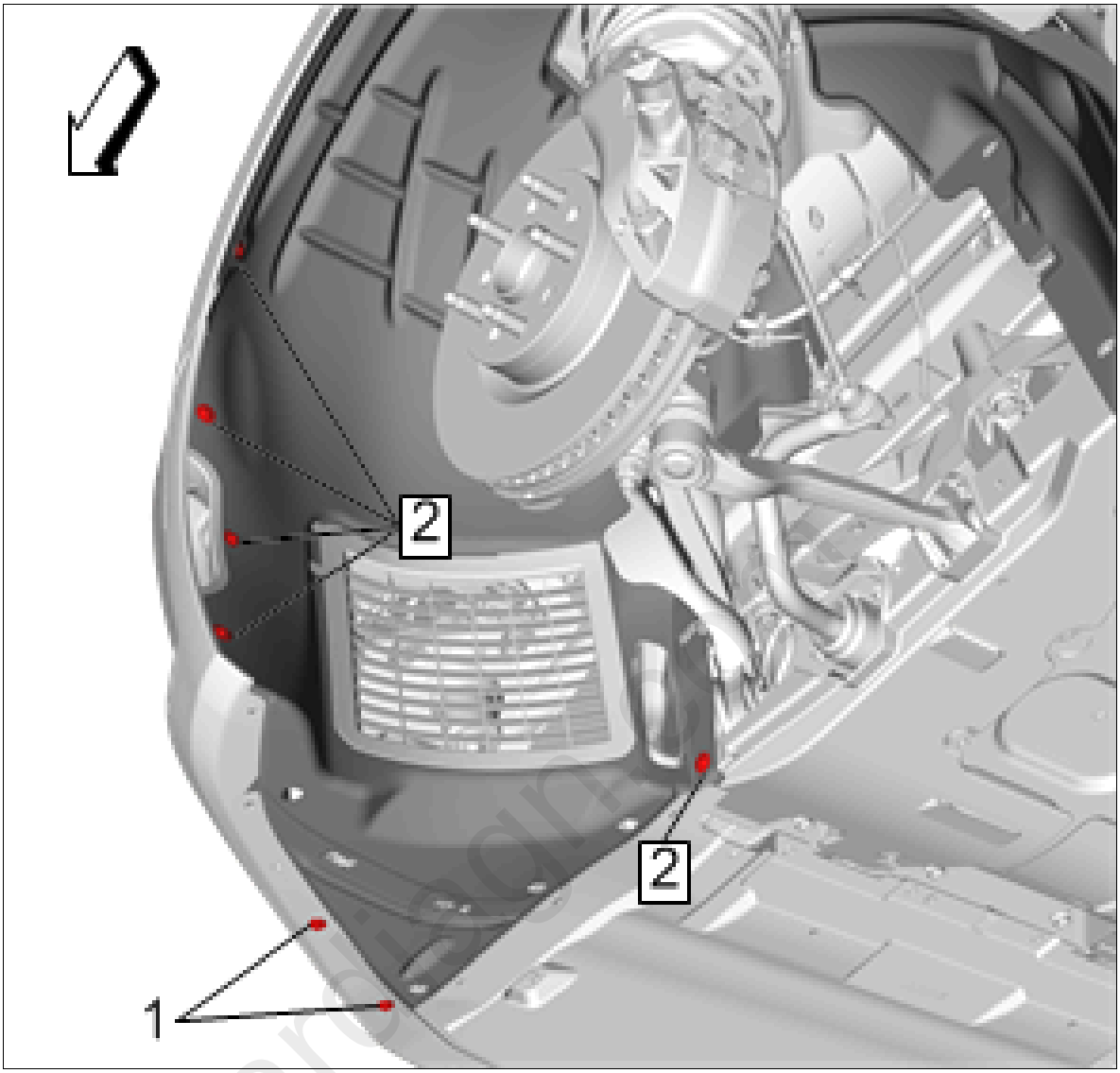
Fig 14: Front Wheelhouse Liner Retainer



Courtesy of GENERAL MOTORS COMPANY

18. Install Front Wheelhouse Liner Retainer (1) (Qty: 3)
19. Install Front Wheelhouse Liner Screw (2) (Qty: 2) and tighten to 2.5 N.m (22 lb in)

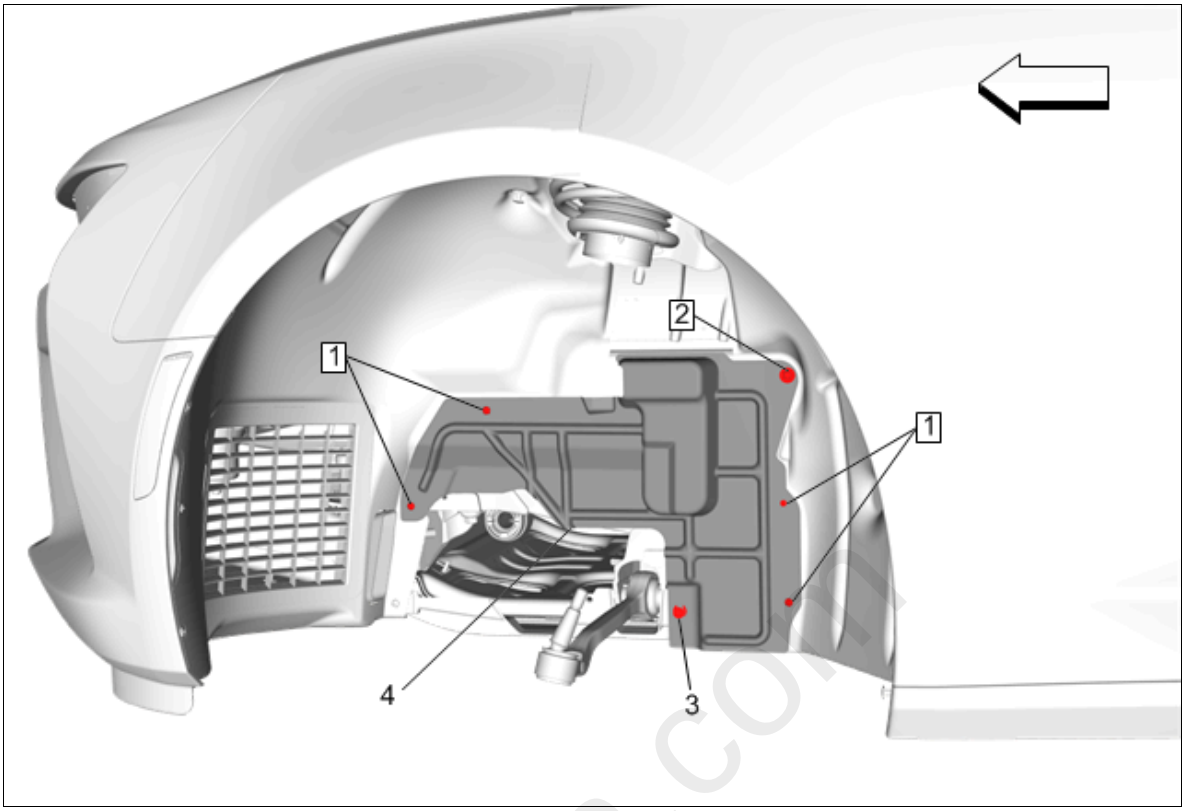
Fig 15: Front Bumper Fascia Bolt



Courtesy of GENERAL MOTORS COMPANY

20. Install Front Wheelhouse Liner Screw (2) (Qty: 5) and tighten to 2.5 N.m (22 lb in)
21. Install Front Bumper Fascia Bolt (1) (Qty: 2) and tighten to 5 N.m (44 lb in)

Fig 16: Front Wheelhouse Splash Shield

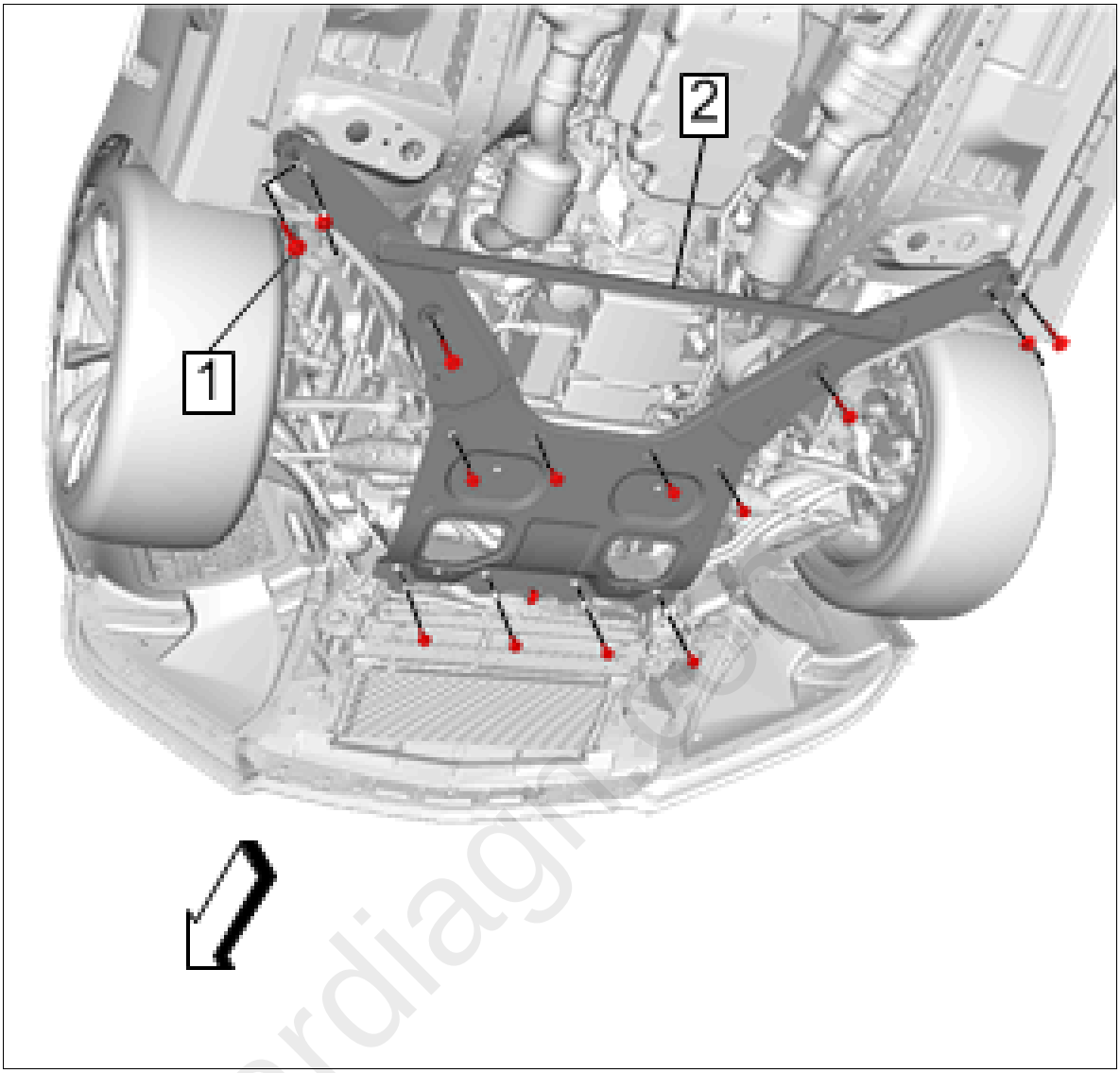


Courtesy of GENERAL MOTORS COMPANY

22. Install Front Wheelhouse Splash Shield Replacement (4)

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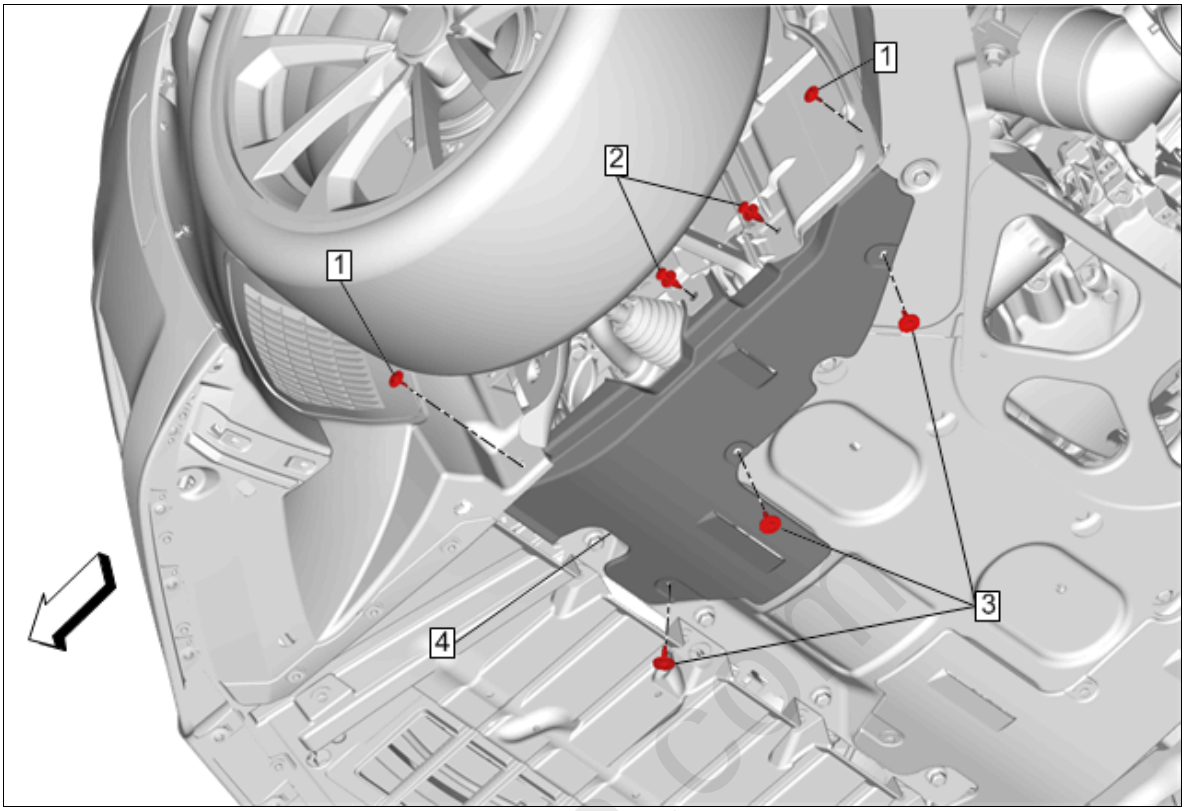
Fig 17: Front Cradle Shear Plate Fastener



Courtesy of GENERAL MOTORS COMPANY

23. Install Front Cradle Shear Plate Replacement (2)

Fig 18: Front Compartment Lower Noise Shield

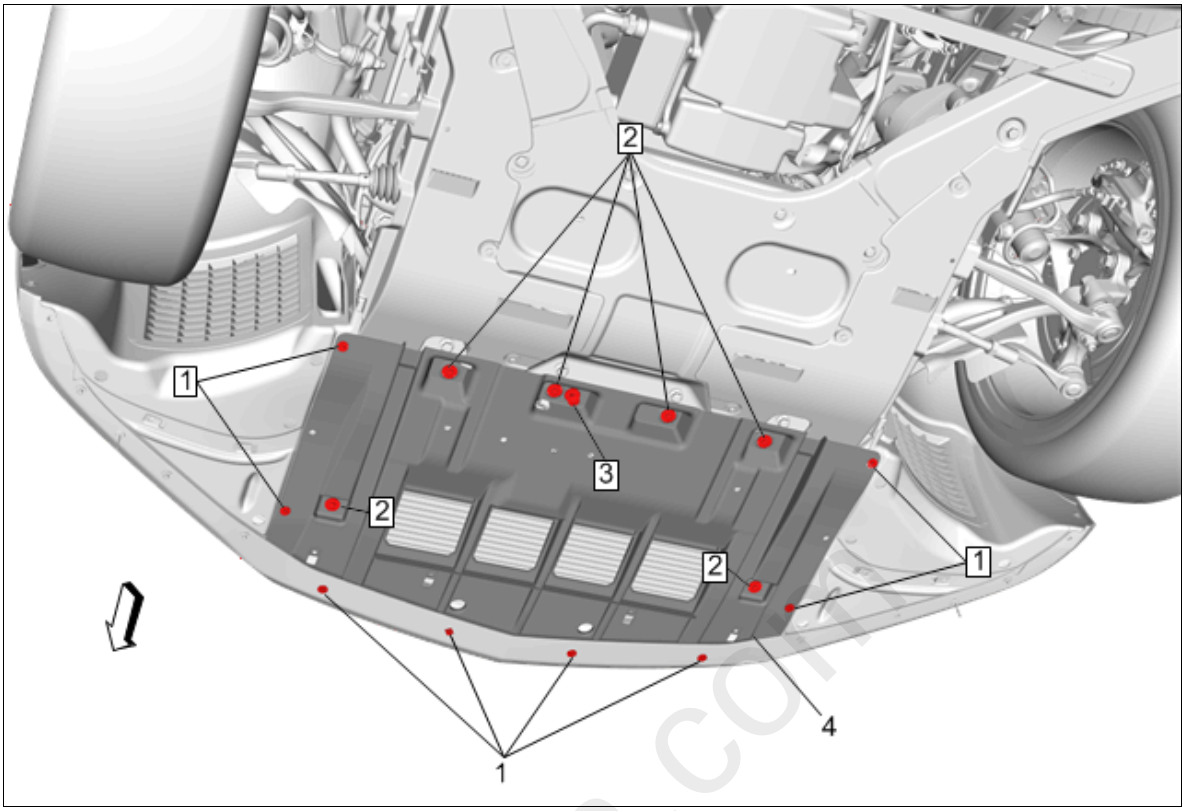


Courtesy of GENERAL MOTORS COMPANY

24. Install Front Compartment Lower Noise Shield Replacement (Coupe - LGX, LTG) (4)

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Fig 19: Front Compartment Air Deflector



Courtesy of GENERAL MOTORS COMPANY

25. Install Front Compartment Air Deflector Replacement (Coupe - LT1) (4)
26. Install the front tires and wheels. Tire and Wheel Removal and Installation
27. Lower the vehicle.
28. Remove the engine support fixture.

REPAIR INSTRUCTIONS > DRIVETRAIN AND FRONT SUSPENSION CRADLE REMOVAL AND INSTALLATION (LTG)

Special Tools

EN-39580 Engine Support Stand

Equivalent regional tools:Special Tools

REPAIR INSTRUCTIONS > DRIVETRAIN AND FRONT SUSPENSION CRADLE REMOVAL AND INSTALLATION (LTG) > REMOVAL PROCEDURE

NOTE:

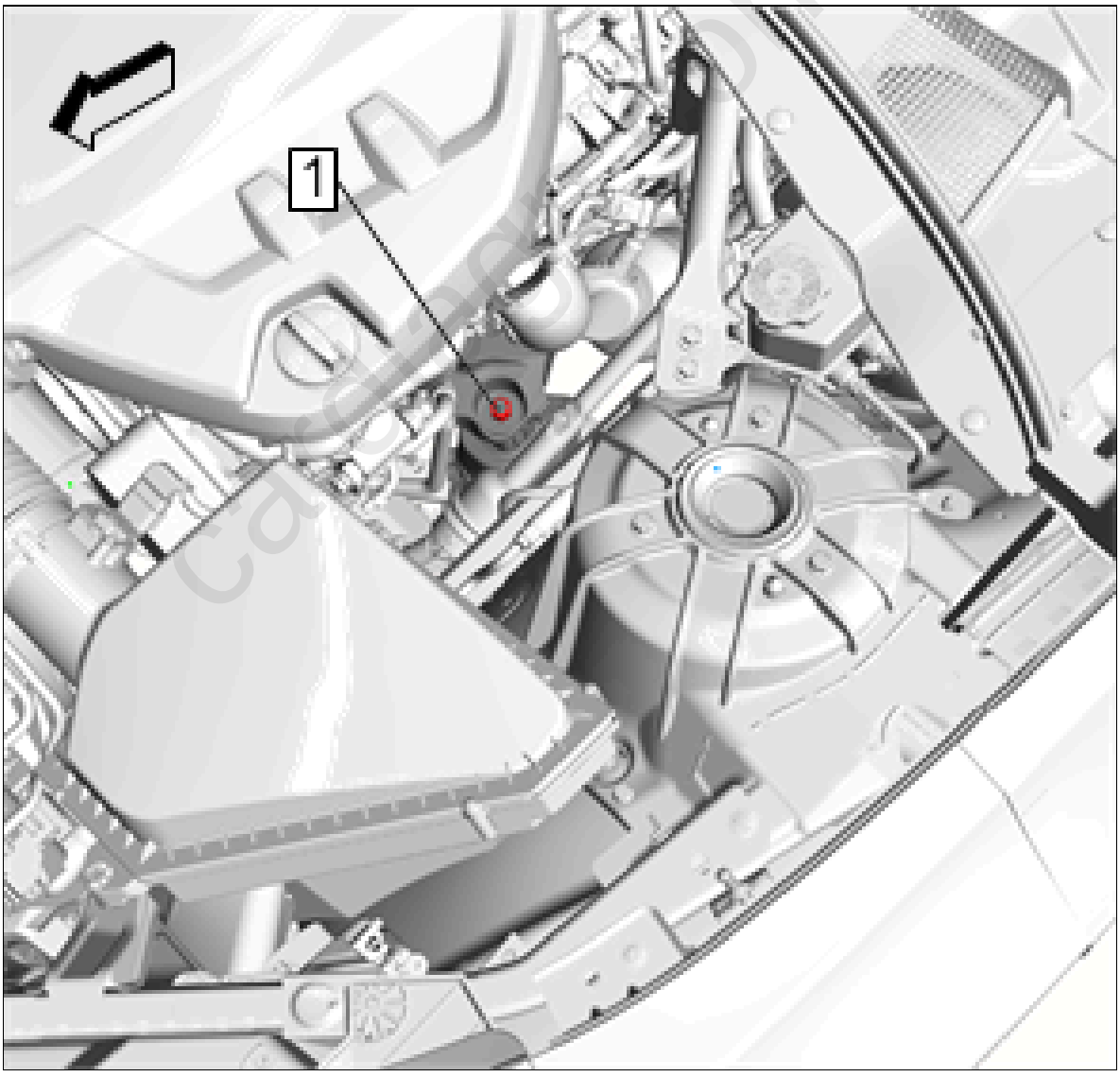
Suspension components attached to the frame use Torque-to-Yield fasteners and must be DISCARDED and replaced with NEW Torque Angle Yield (TAY) fasteners. The frame to body fasteners are not TAY fasteners.

NOTE:

Vehicle alignment is not required if the cradle is being lowered or dropped to perform another procedure. This vehicle is equipped with a cradle to body aligning feature: cradle to body through holes or self-aligning pins that are part of the cradle or body. Only align if replacing the cradle with a NEW part and transferring components.

1. Using mechanics wire, support the radiator and AC condenser assembly to the vehicle body.
2. Install the engine support fixture. Engine Support Fixture

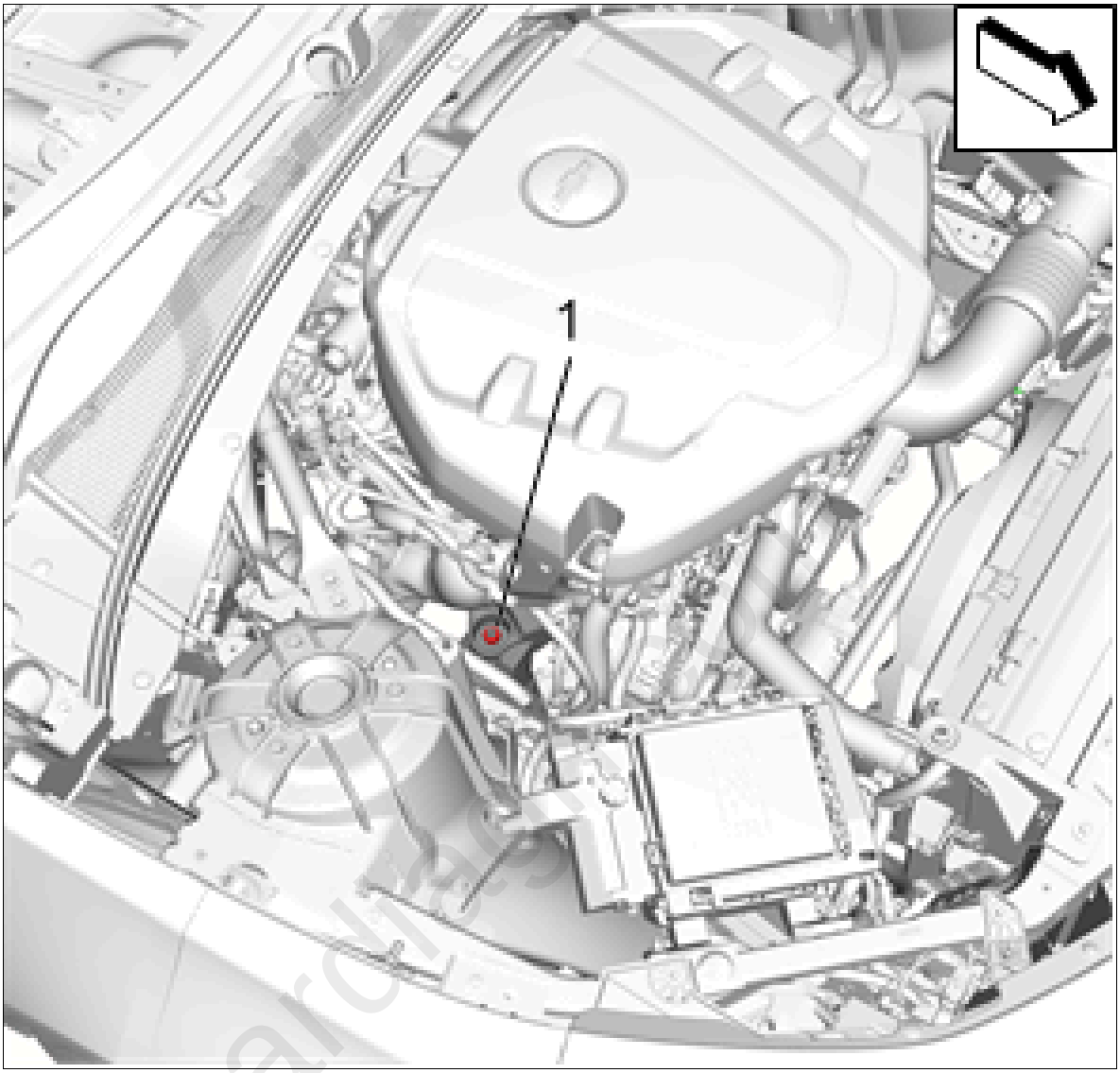
Fig 1: Left Side Engine Mount Nut



Courtesy of GENERAL MOTORS COMPANY

3. Remove Engine Mount Nut - Left Side (1)

Fig 2: Right Side Engine Mount Nut



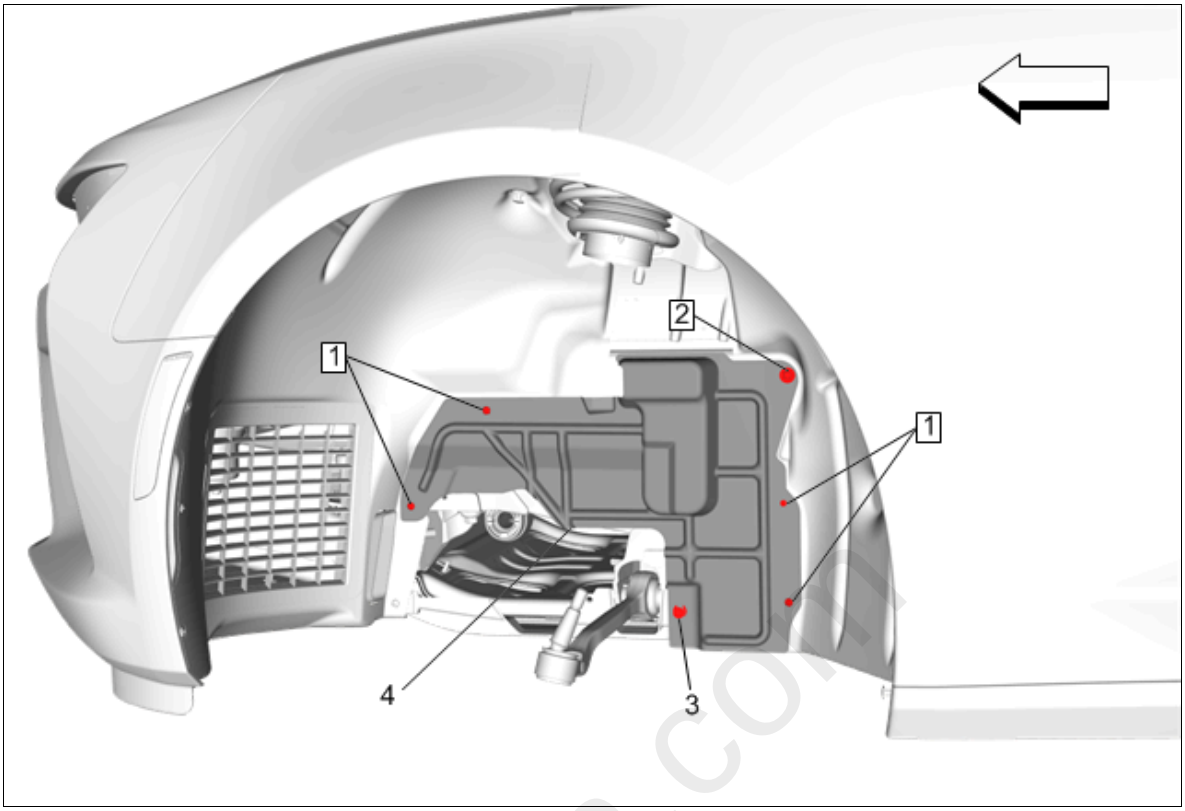
Courtesy of GENERAL MOTORS COMPANY

4. Remove Engine Mount Nut - Right Side (1)

5. Raise and support the vehicle. Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP)

6. Remove the front wheels. Tire and Wheel Removal and Installation .

Fig 3: Front Wheelhouse Splash Shield

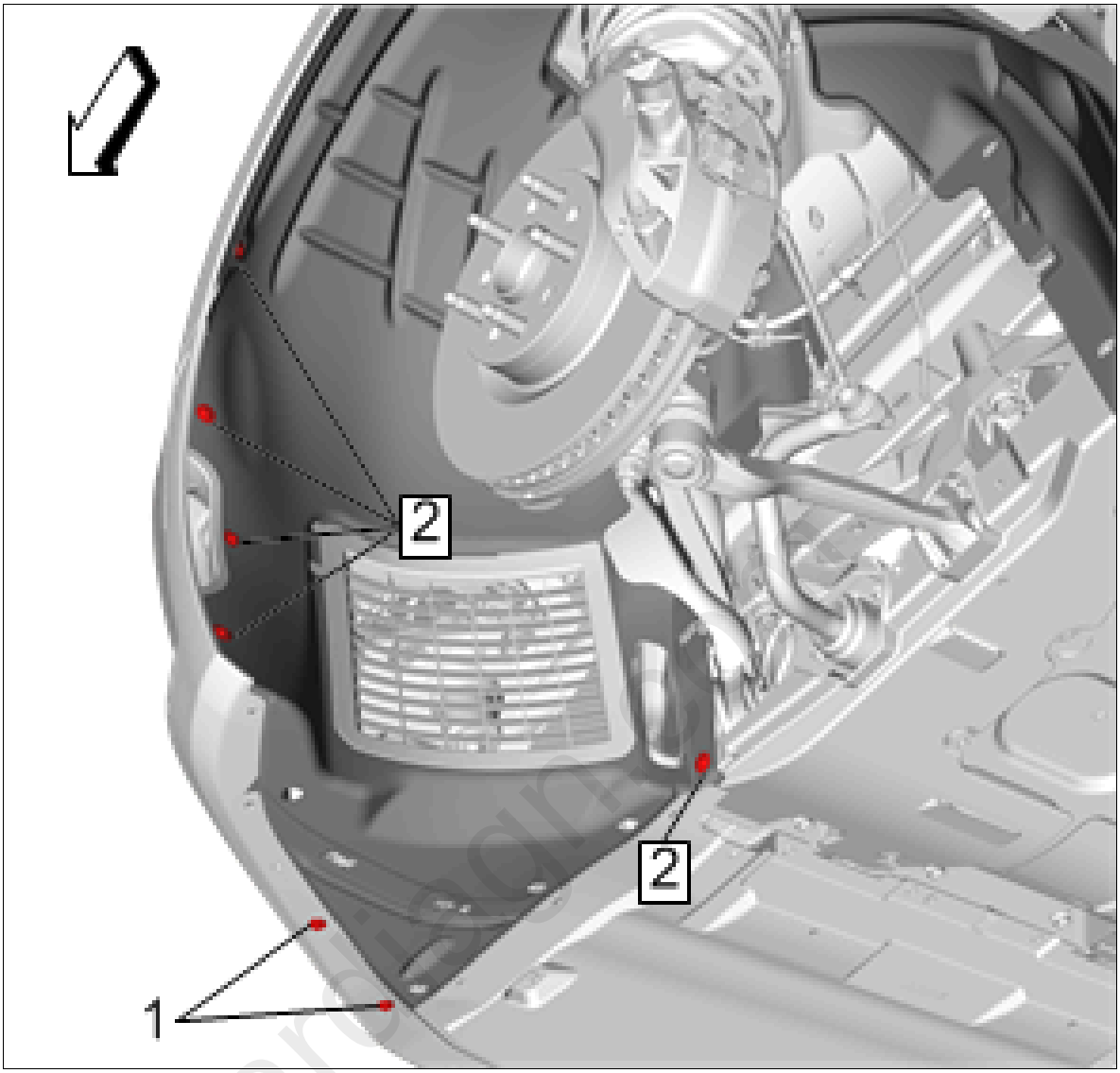


Courtesy of GENERAL MOTORS COMPANY

7. Remove Front Wheelhouse Splash Shield (4) - Front Wheelhouse Splash Shield Replacement

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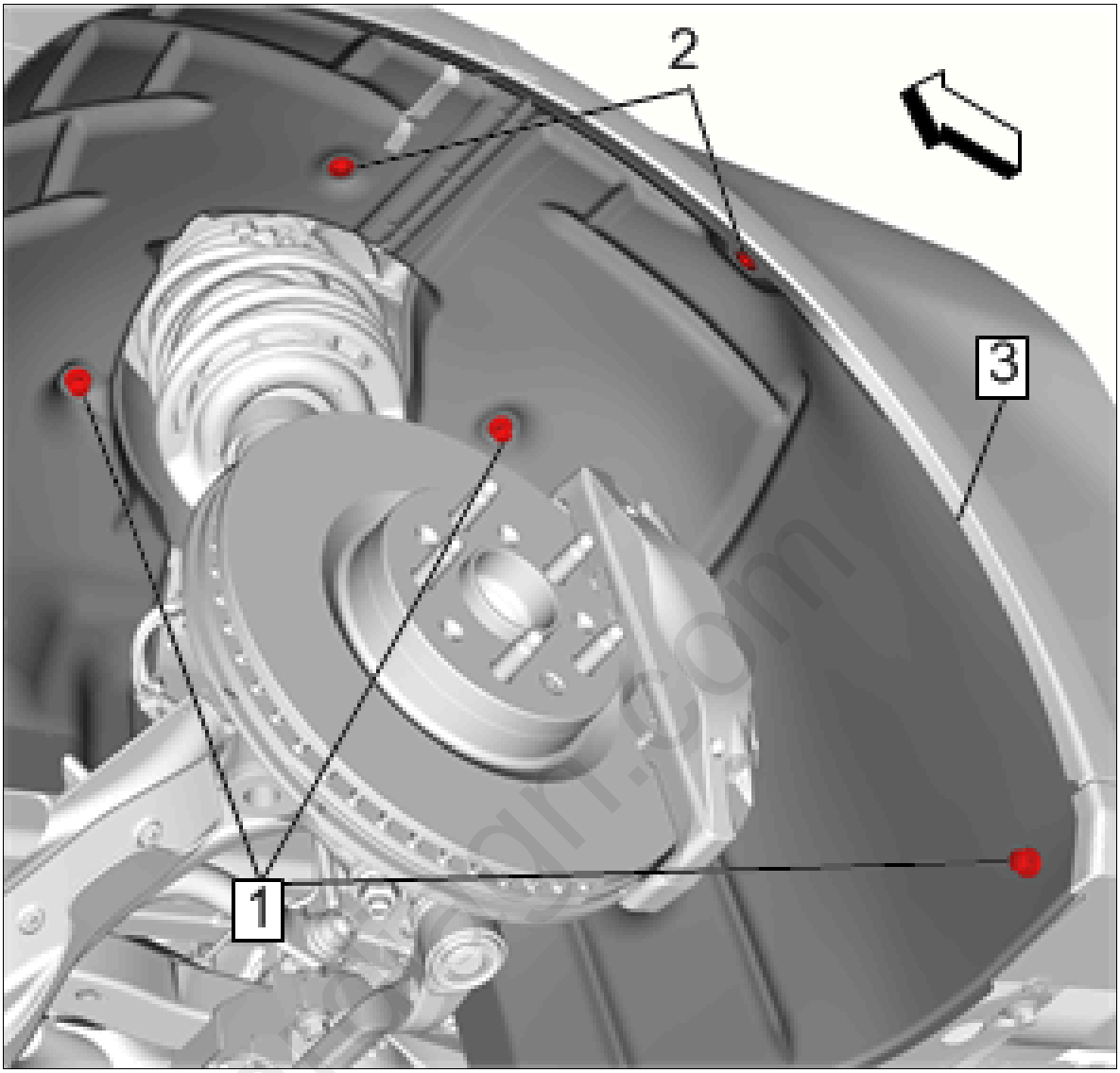
Fig 4: Front Bumper Fascia Bolt



Courtesy of GENERAL MOTORS COMPANY

8. Remove Front Bumper Fascia Bolt (1) (Qty: 2)
9. Remove Front Wheelhouse Liner Screw (2) (Qty: 5)

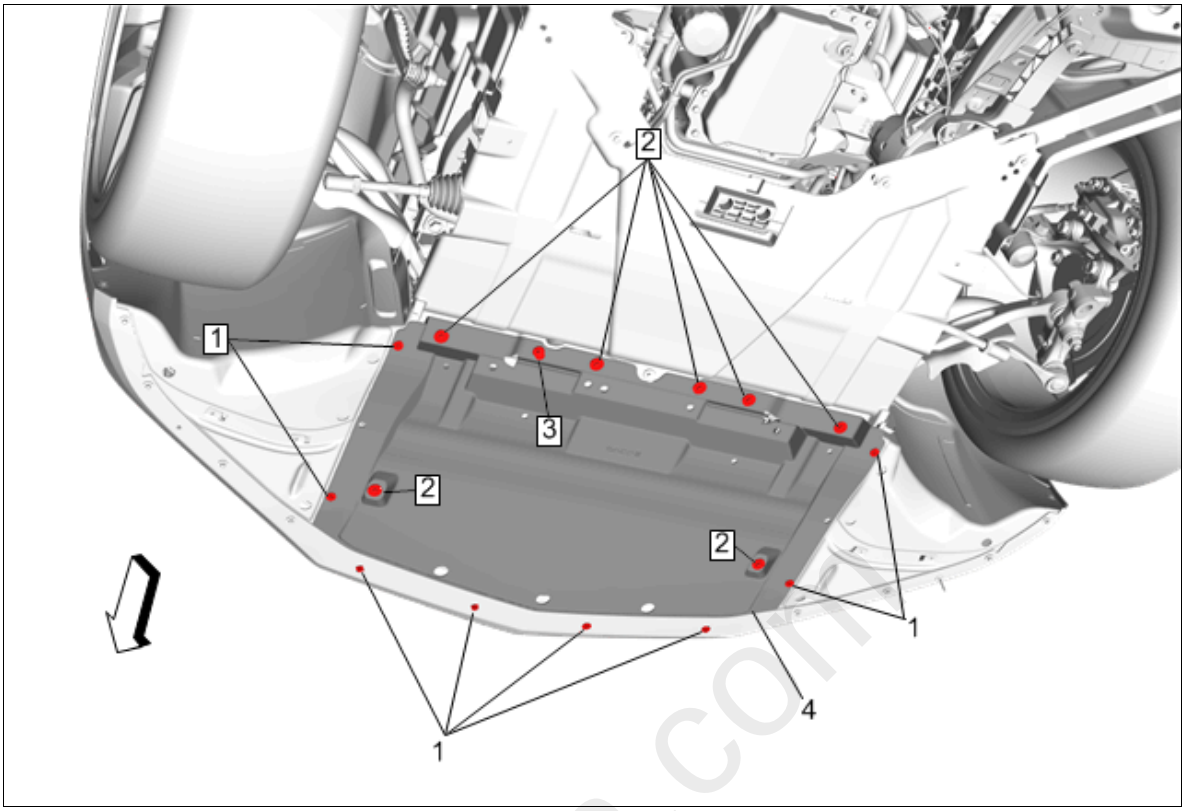
Fig 5: Front Wheelhouse Liner Retainer



Courtesy of GENERAL MOTORS COMPANY

10. Remove Front Wheelhouse Liner Retainer (1) (Qty: 3)
11. Remove Front Wheelhouse Liner Screw (2) (Qty: 2)
12. Remove Front Wheelhouse Liner (3)

Fig 6: Front Compartment Air Deflector

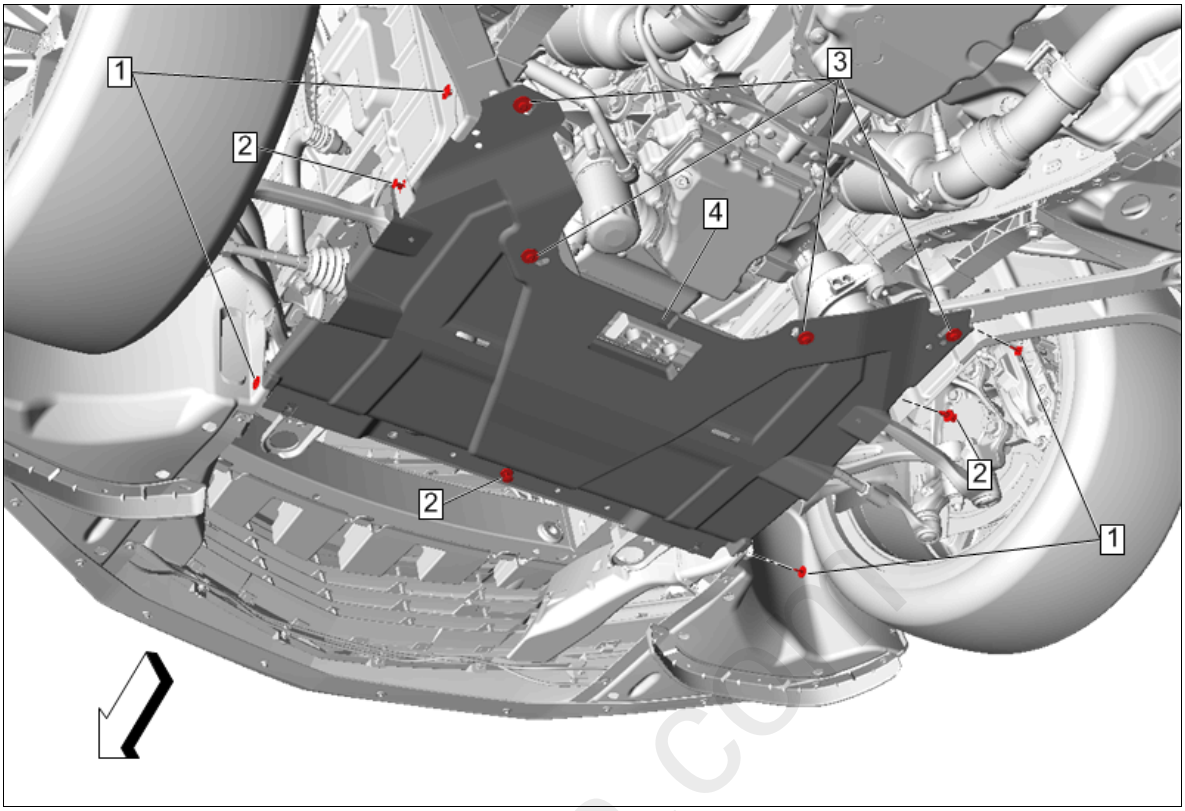


Courtesy of GENERAL MOTORS COMPANY

13. Remove Front Compartment Air Deflector (4) - Front Compartment Air Deflector Replacement (Convertible - LGX, LTG) Front Compartment Air Deflector Replacement (Coupe - LGX, LTG)

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Fig 7: Front Compartment Lower Noise Shield

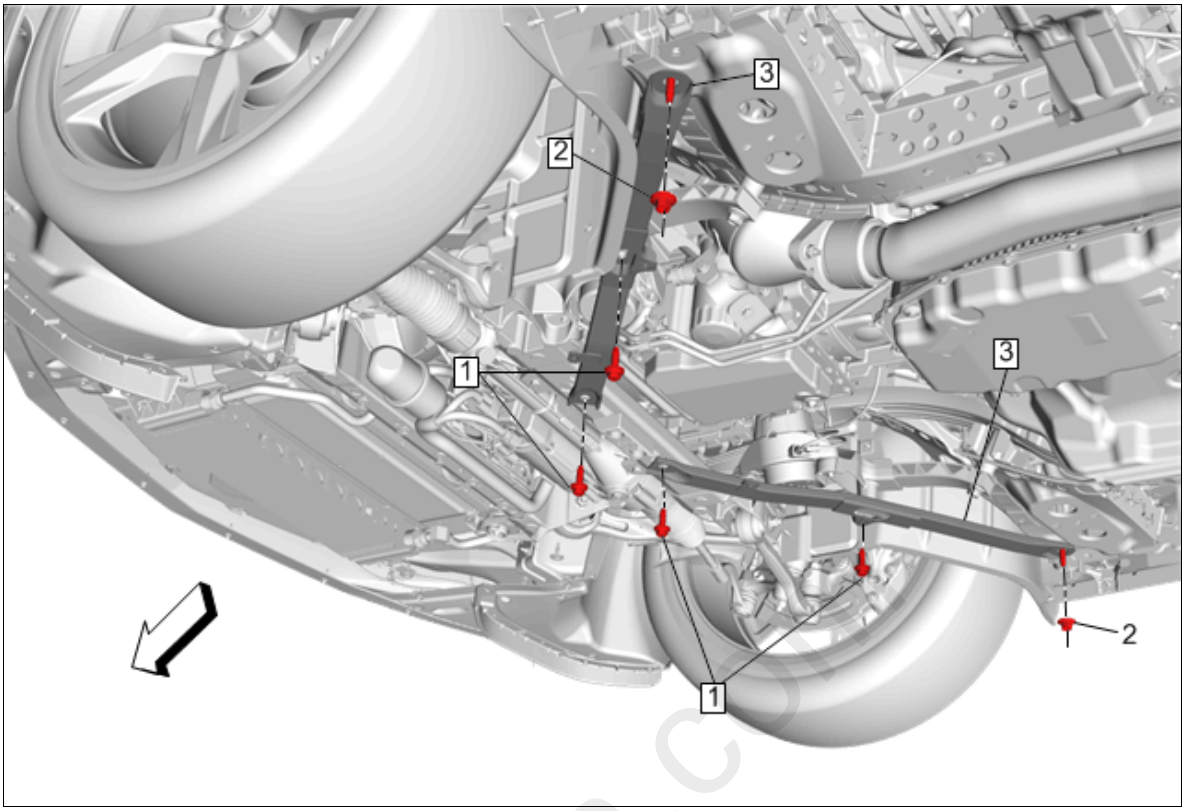


Courtesy of GENERAL MOTORS COMPANY

14. Remove Front Compartment Lower Noise Shield (4) - Front Compartment Lower Noise Shield Replacement (Coupe - LGX, LTG)

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Fig 8: Front Crossmember Brace

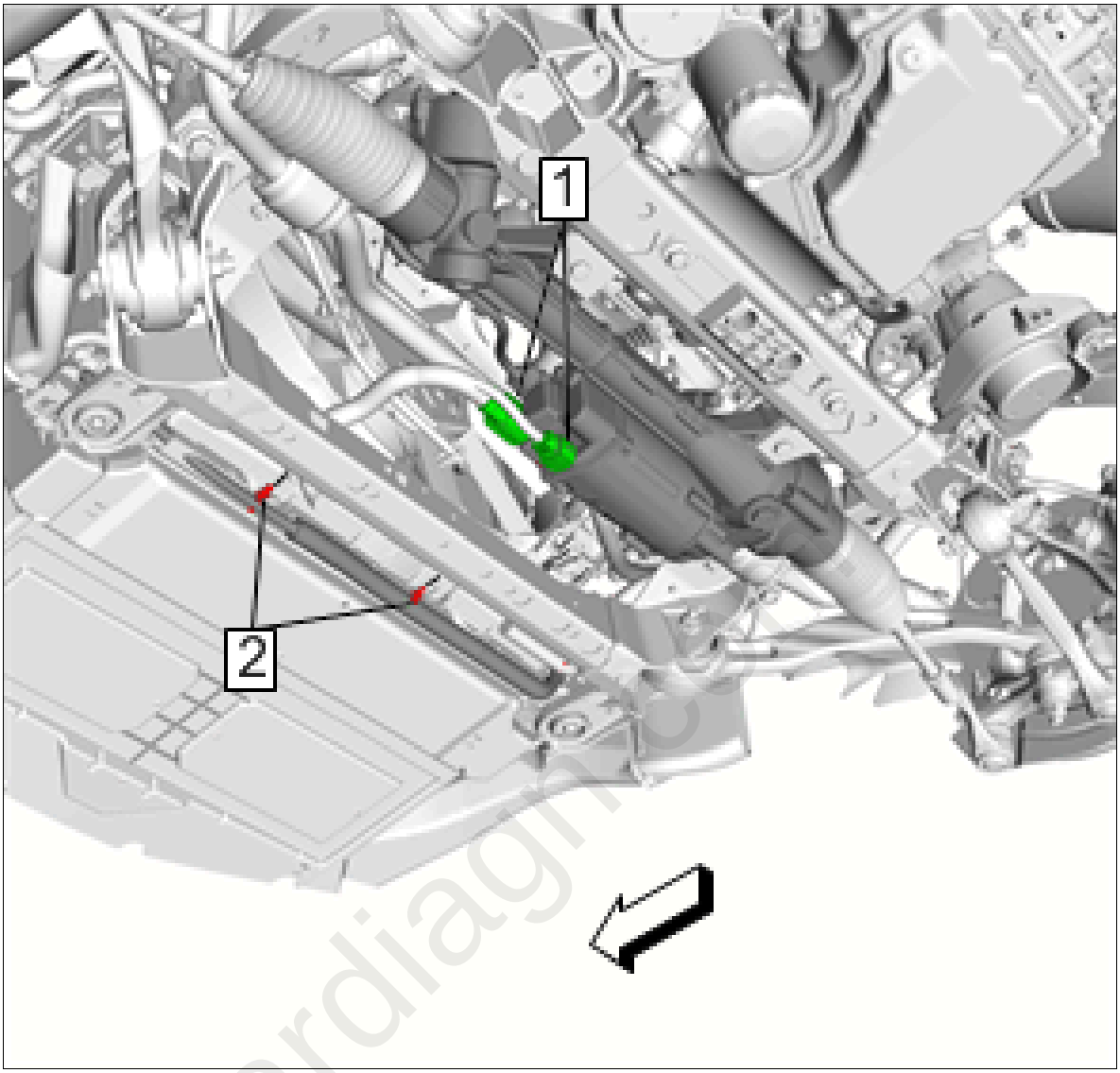


Courtesy of GENERAL MOTORS COMPANY

15. Remove Front Crossmember Brace (3) - Front Crossmember Brace Replacement (Coupe - LGX, LTG) Front Crossmember Brace Replacement (Convertible - LTG)

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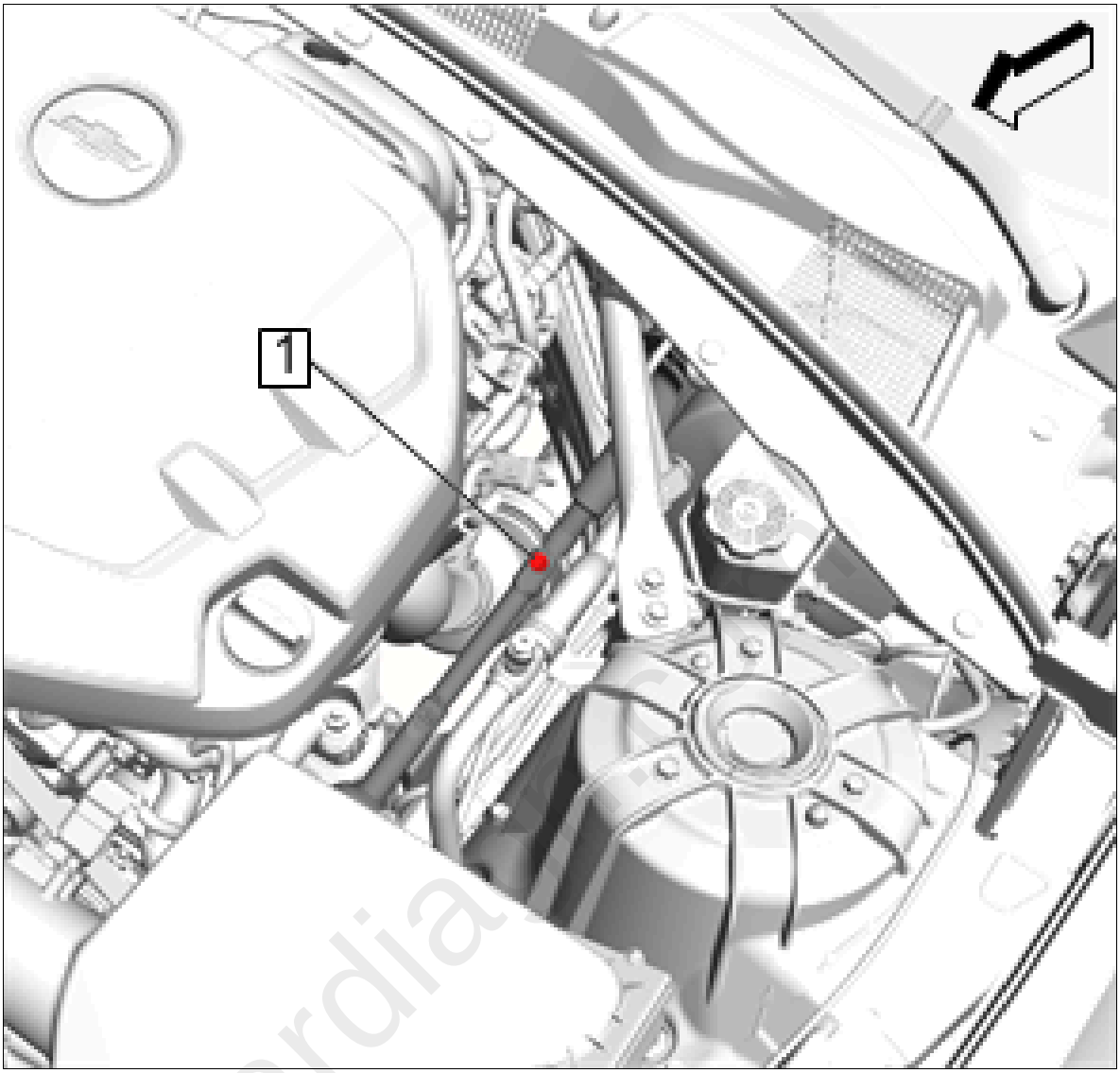
Fig 9: Steering Gear Electrical Connectors



Courtesy of GENERAL MOTORS COMPANY

16. Disconnect the steering gear electrical connectors (1)
17. Remove the wiring harness retainers from the frame (2)

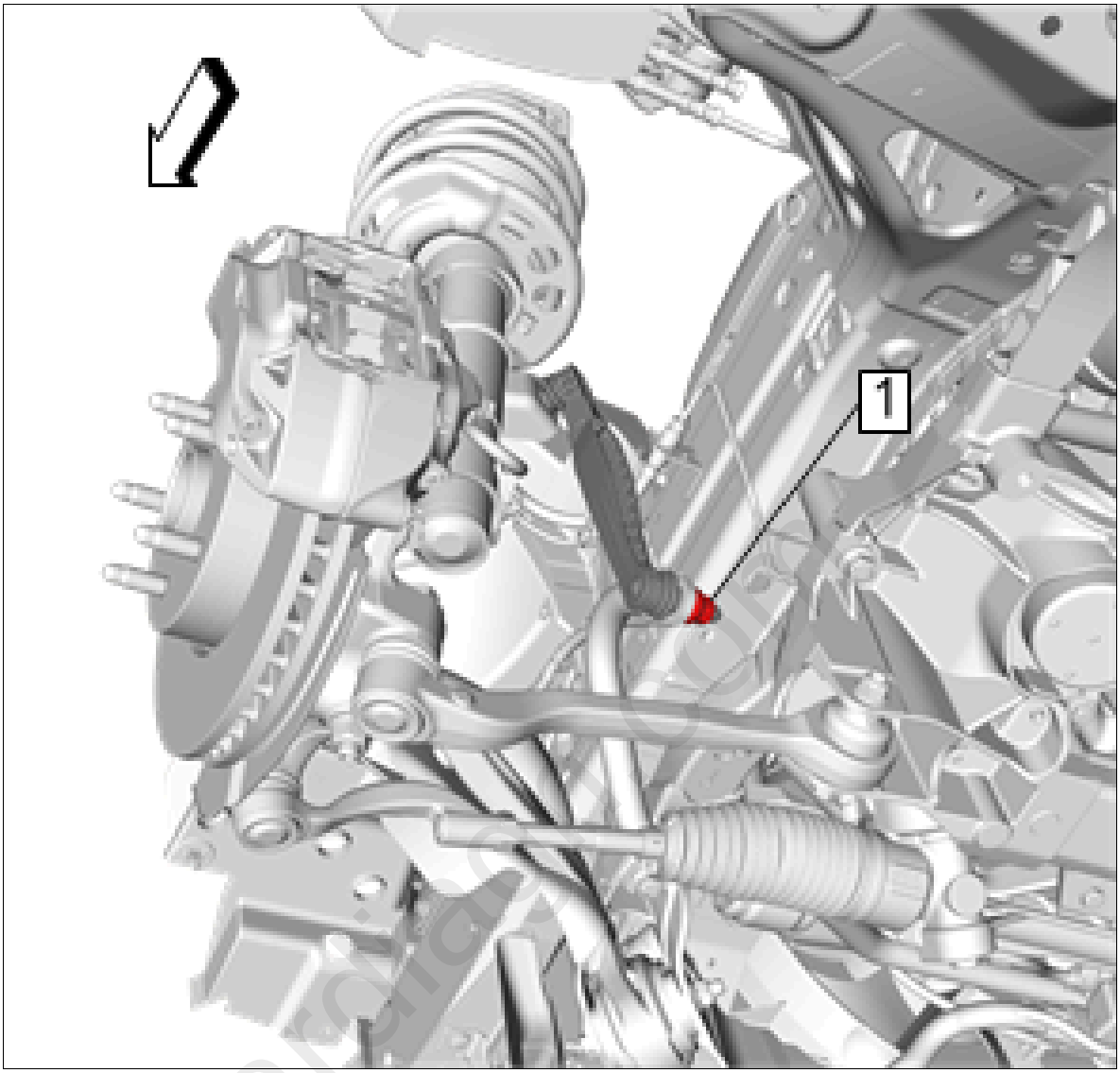
Fig 10: Intermediate Steering Shaft From Steering Column Shaft



Courtesy of GENERAL MOTORS COMPANY

18. Disconnect the intermediate steering shaft from the steering column shaft (1) - Mid Intermediate Steering Shaft Replacement

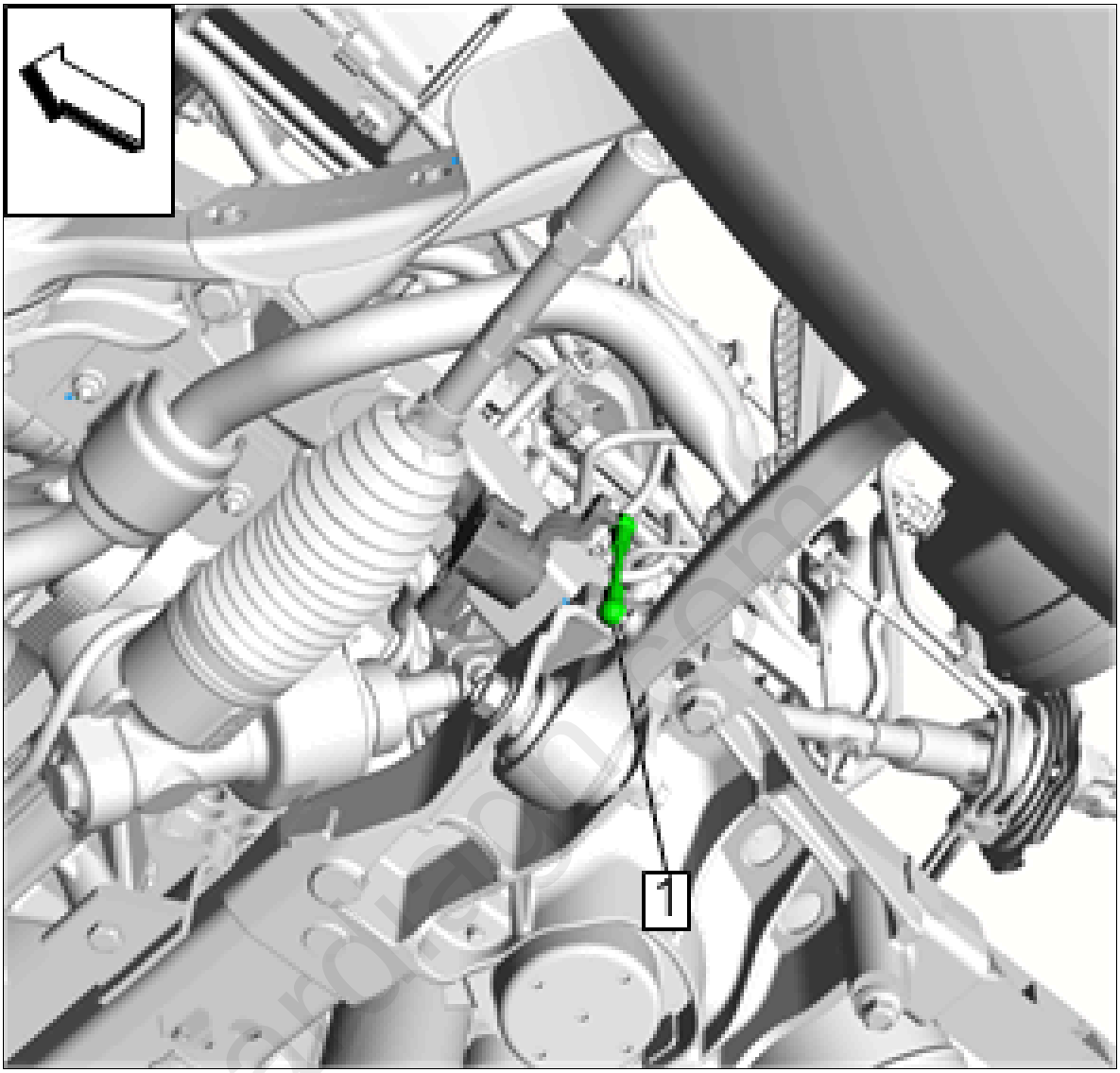
Fig 11: Right And Left Lower Stabilizer Shaft Links From Stabilizer Bar



Courtesy of GENERAL MOTORS COMPANY

19. Disconnect the right and left lower stabilizer shaft links from the stabilizer bar (1) - Stabilizer Shaft Link Replacement (LGX, LTG)

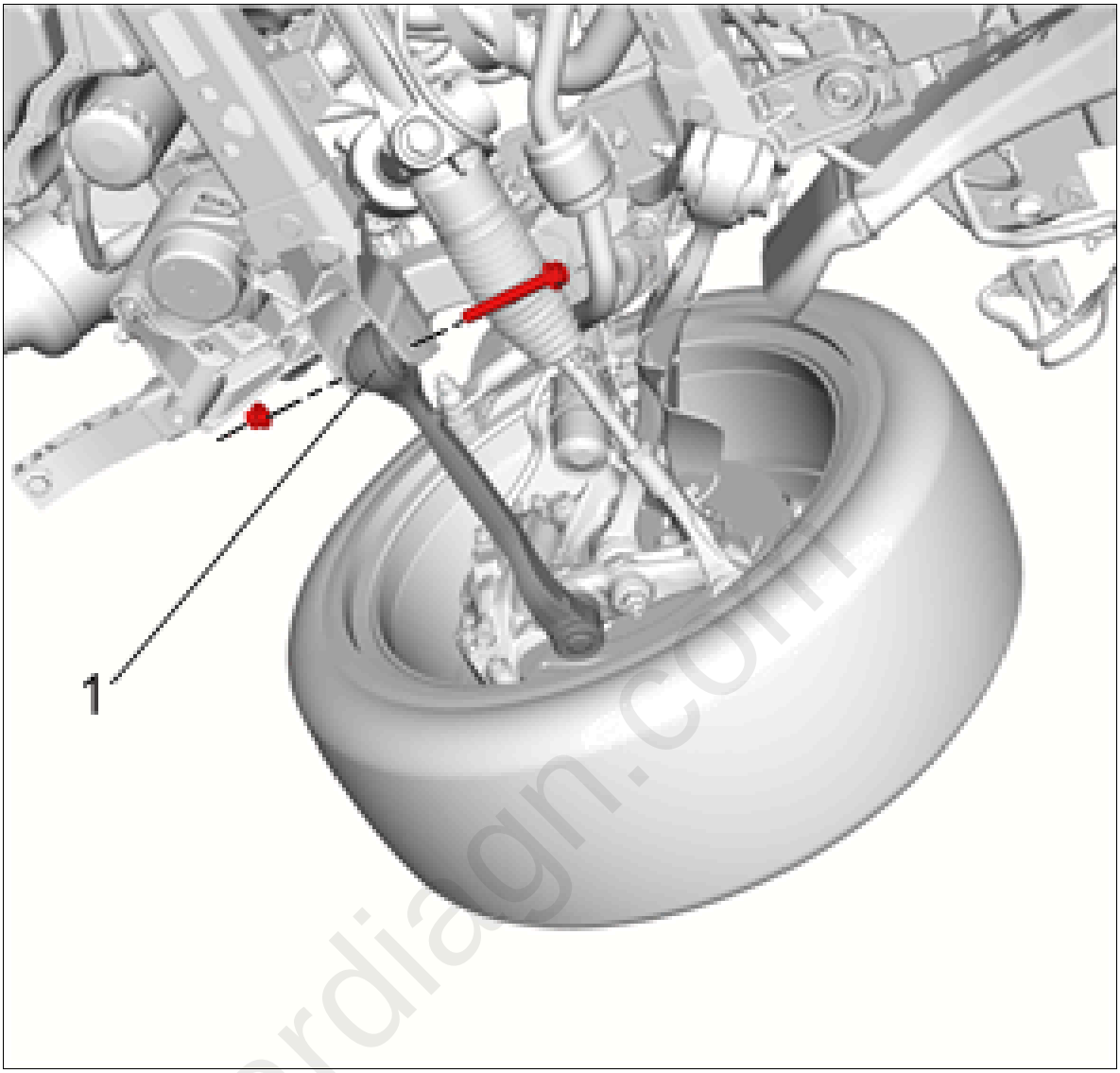
Fig 12: Front Suspension Automatic Forward Lighting Position Sensor Arms From Lower Control Rear Links



Courtesy of GENERAL MOTORS COMPANY

20. Disconnect the front suspension automatic forward lighting position sensor arms (1) from the lower control rear links.
21. Disconnect the electrical connector from the front suspension automatic forward lighting position sensor.

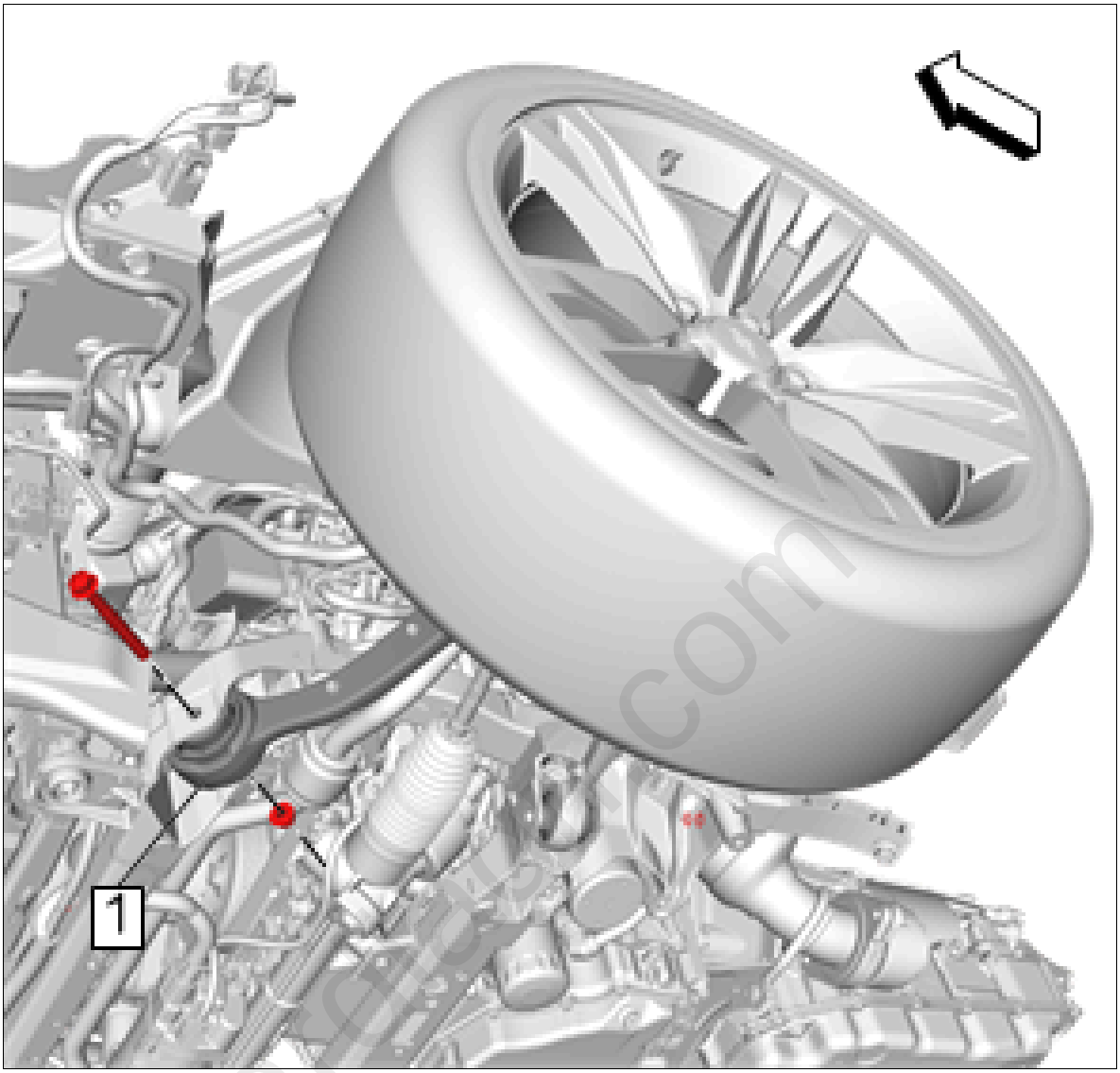
Fig 13: Front Lower Control Rear Links From Front Suspension Frame



Courtesy of GENERAL MOTORS COMPANY

22. Disconnect the front lower control rear links from the front suspension frame (1) - Front Lower Control Rear Link Replacement (LGX, LTG)

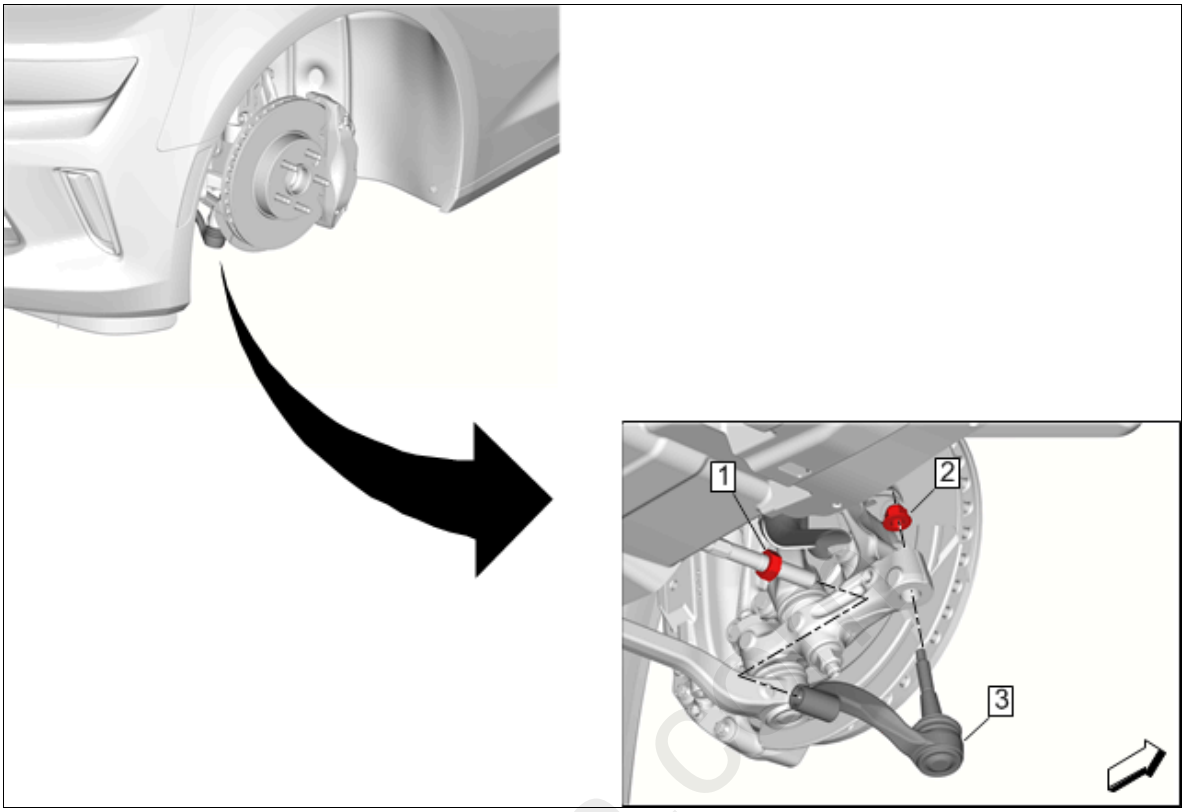
Fig 14: Front Lower Control Front Links From Front Suspension Frame



Courtesy of GENERAL MOTORS COMPANY

23. Disconnect the front lower control front links from the front suspension frame (1) - Front Lower Control Front Link Replacement (LGX or LTG, Without V18)Front Lower Control Front Link Replacement (LGX or LTG, With V18)

Fig 15: Steering Linkage Outer Tie Rod

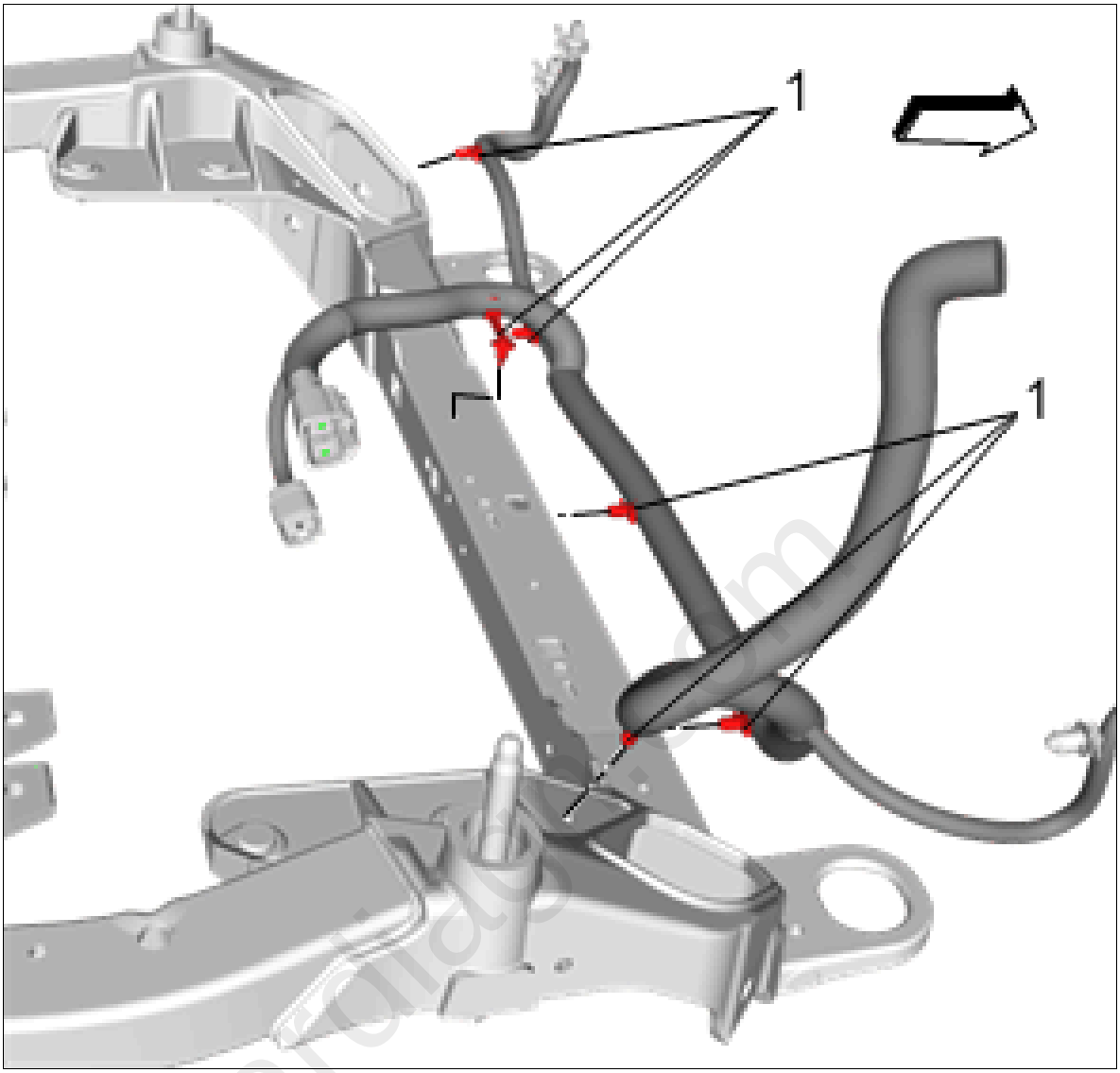


Courtesy of GENERAL MOTORS COMPANY

24. Remove Steering Linkage Outer Tie Rod (3) - Steering Linkage Outer Tie Rod Replacement

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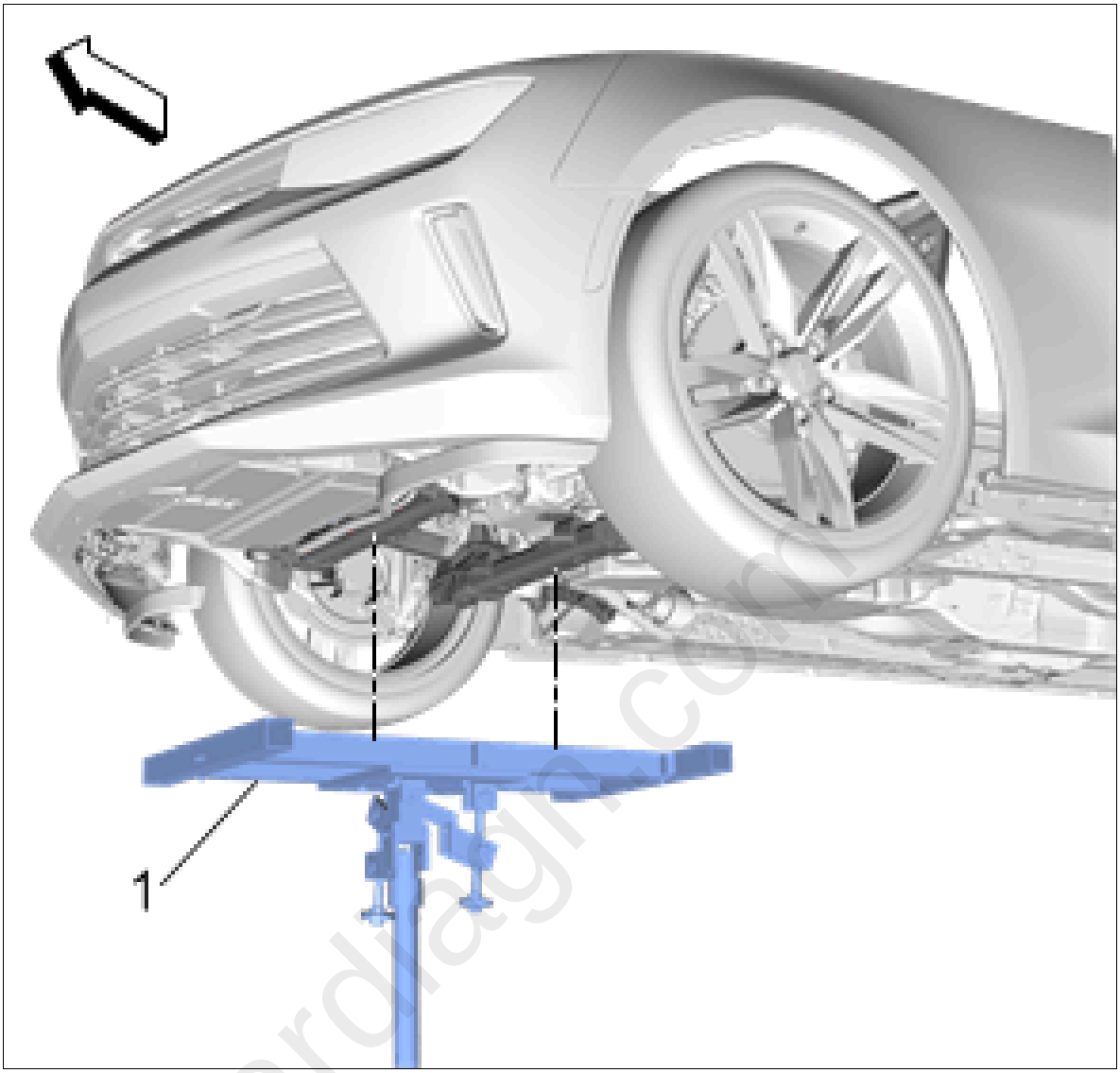
Fig 16: Wiring Harness Retainers From Frame



Courtesy of GENERAL MOTORS COMPANY

25. Remove the wiring harness retainers from the frame (1)

Fig 17: Stand Under Drivetrain And Front Suspension Cradle



Courtesy of GENERAL MOTORS COMPANY

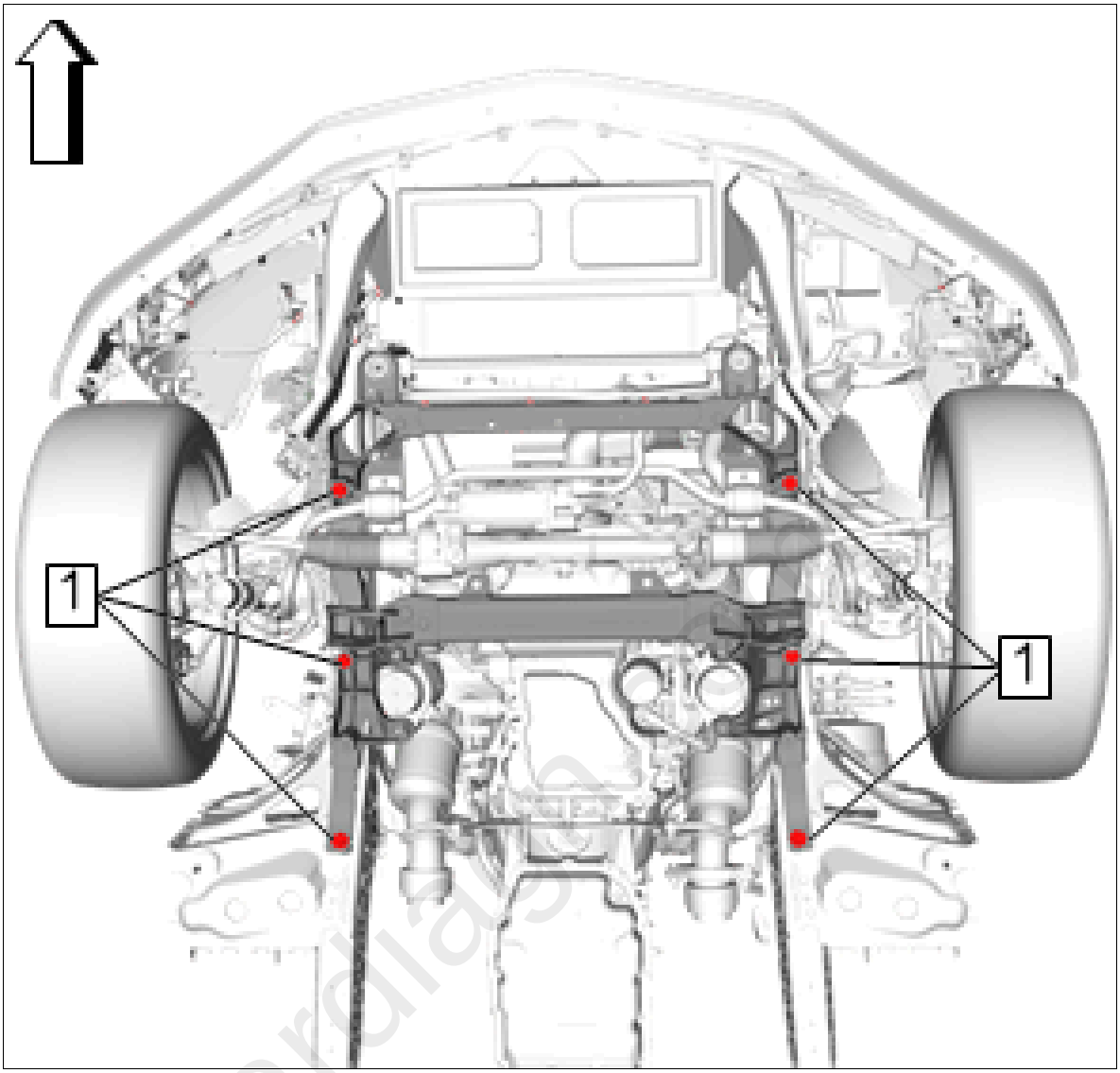
26. Install **J-39580** stand under the drivetrain and front suspension cradle.

    (1)

27. Lower the vehicle until the drivetrain and front suspension frame is resting lightly on the jackstands.

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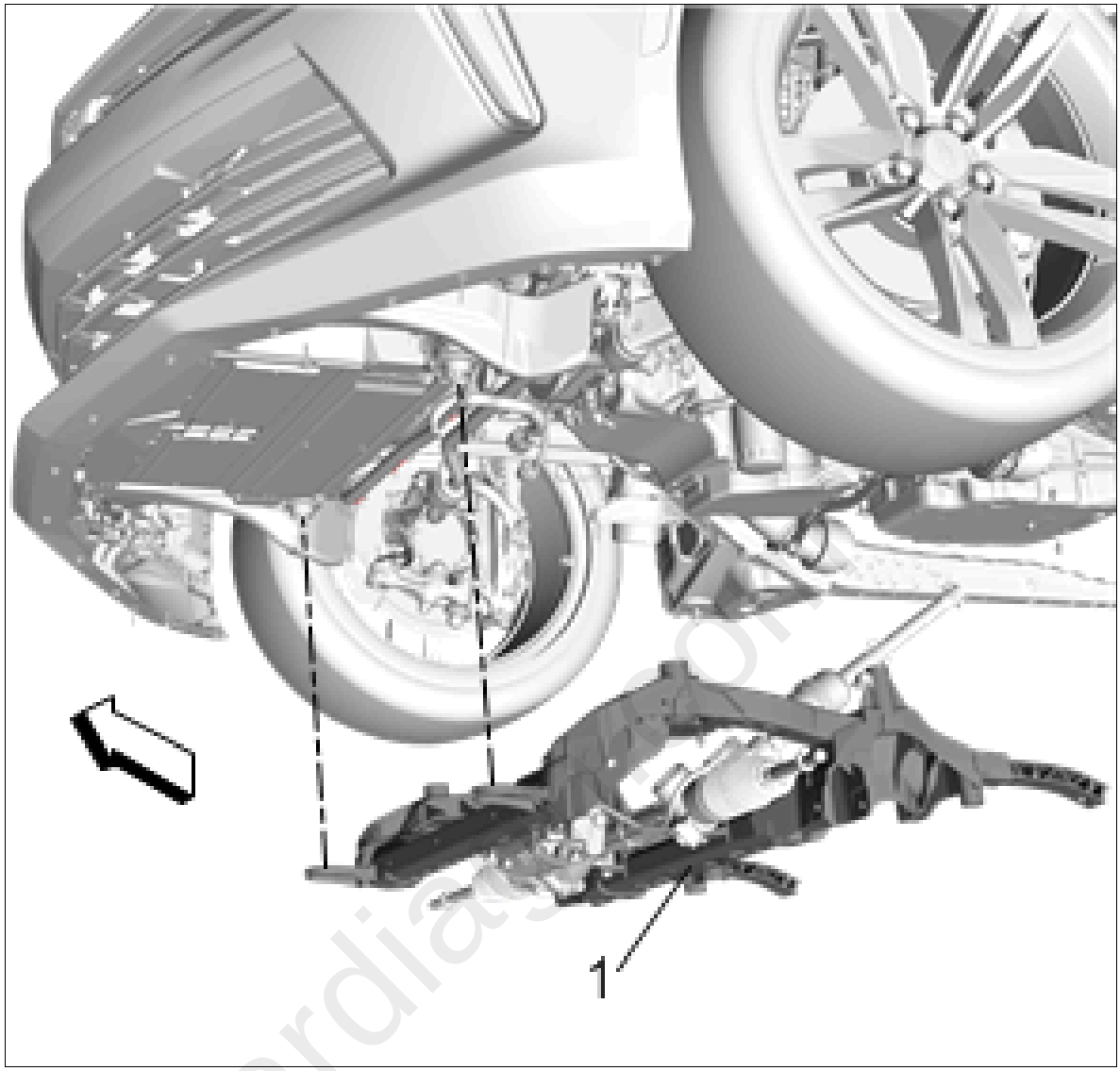
Fig 18: Drivetrain and Front Suspension Support Bolt



Courtesy of GENERAL MOTORS COMPANY

28. Remove Drivetrain and Front Suspension Support Bolt (1) (Qty: 6)
29. With the aid of an assistant, carefully raise the body from the frame.
30. Ensure when raising the body the following items are clear from the frame:
    1. Vacuum lines
    2. Steering knuckles
    3. Electrical wiring harnesses
    4. Oil coolers lines

Fig 19: Drivetrain And Front Suspension Frame

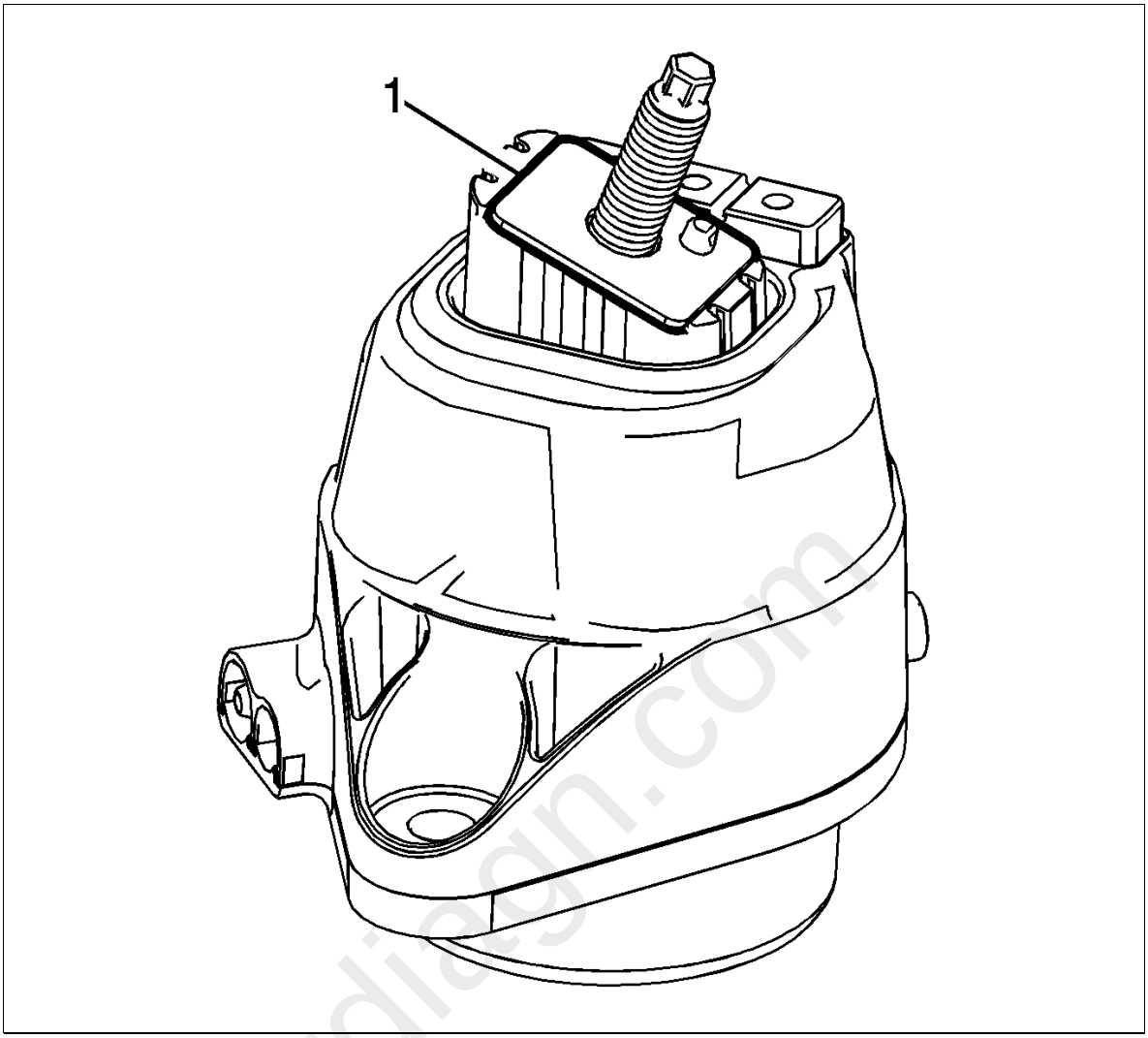


Courtesy of GENERAL MOTORS COMPANY

31. Remove the drivetrain and front suspension frame (1)

REPAIR INSTRUCTIONS > DRIVETRAIN AND FRONT SUSPENSION CRADLE REMOVAL AND INSTALLATION (LTG) > INSTALLATION PROCEDURE

Fig 1: Phenolic Spacer



Courtesy of GENERAL MOTORS COMPANY

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⚠ *CAUTION:*

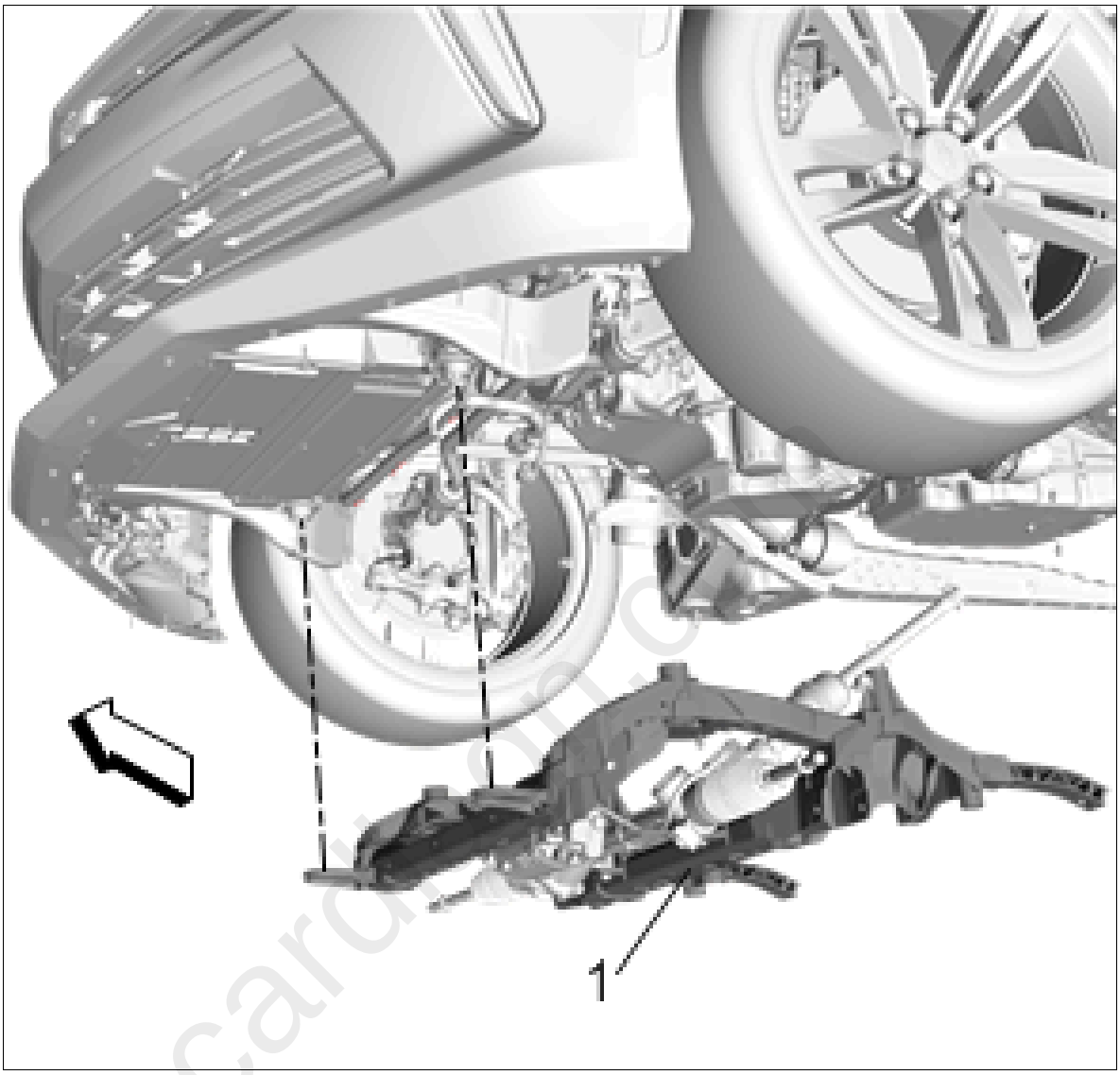
Phenolic spacer must be present to prevent galvanic/corrosive reaction and/or excessive temperature conduction between engine mount bracket and engine mount. Replace mount if phenolic spacer is missing or damaged. Failure to ensure phenolic spacer is intact and not damaged can lead to premature failure of engine mount and/or engine mount bracket.

NOTE:

Suspension components attached to the frame use Torque-to-Yield fasteners and must be DISCARDED and replaced with NEW Torque Angle Yield (TAY) fasteners. The frame to body fasteners are not TAY fasteners.

1. Inspect the engine mount to ensure the phenolic spacer (1) is in place and not damaged.
2. With the aid of an assistant, position and secure the frame assembly to the support fixture.

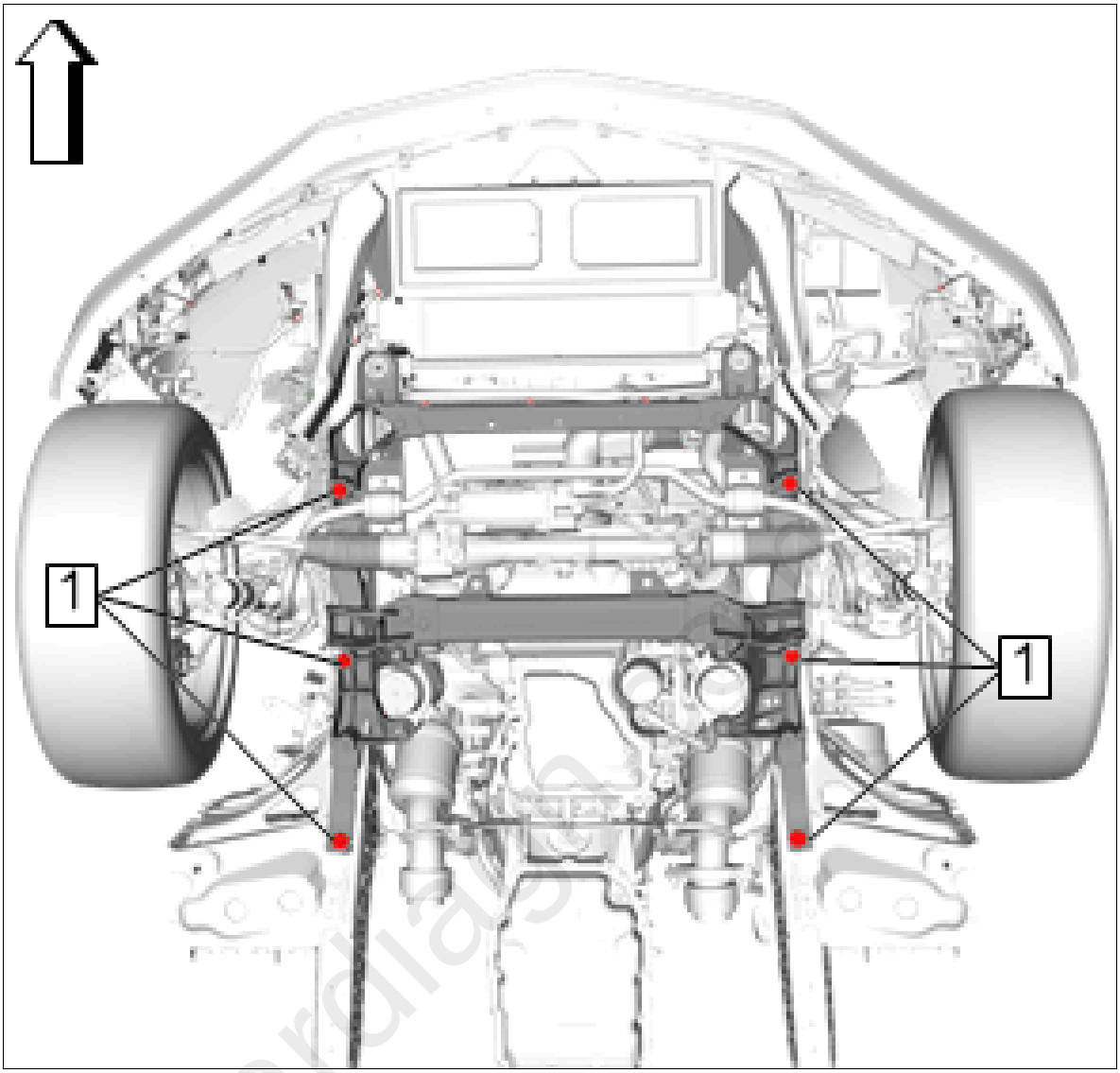
Fig 2: Drivetrain And Front Suspension Frame



Courtesy of GENERAL MOTORS COMPANY

3. With the aid of an assistant, carefully lower the body to the frame (1)
4. Ensure the following components are clear from the frame:
    1. Vacuum lines
    2. Steering knuckles
    3. Electrical wiring harnesses
    4. Oil cooler lines

Fig 3: Drivetrain and Front Suspension Support Bolt



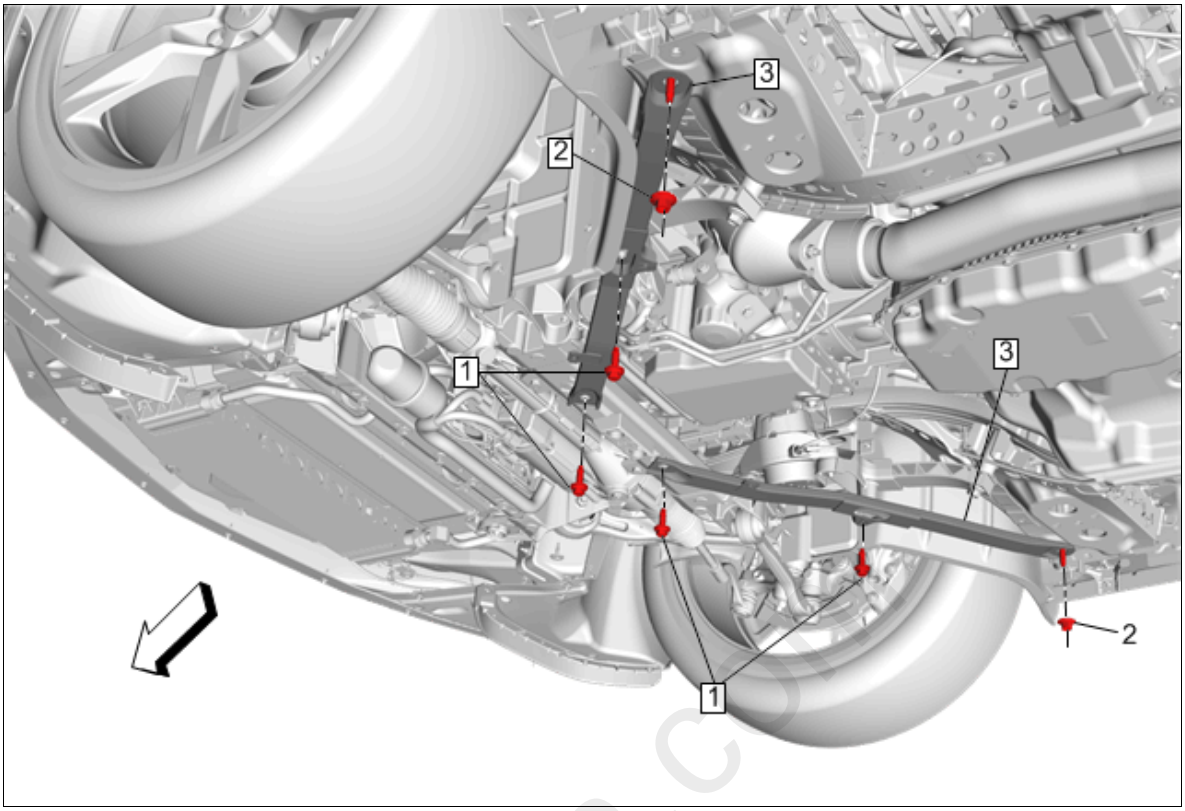
Courtesy of GENERAL MOTORS COMPANY

> ⚠ *CAUTION:*
>
> *Refer to Fastener Caution*

5. Install Drivetrain and Front Suspension Support Bolt (1) (Qty: 6) and tighten to 100 N.m (74 lb ft)

6. Remove the **J-39580** stand from under the vehicle.

Fig 4: Front Crossmember Brace

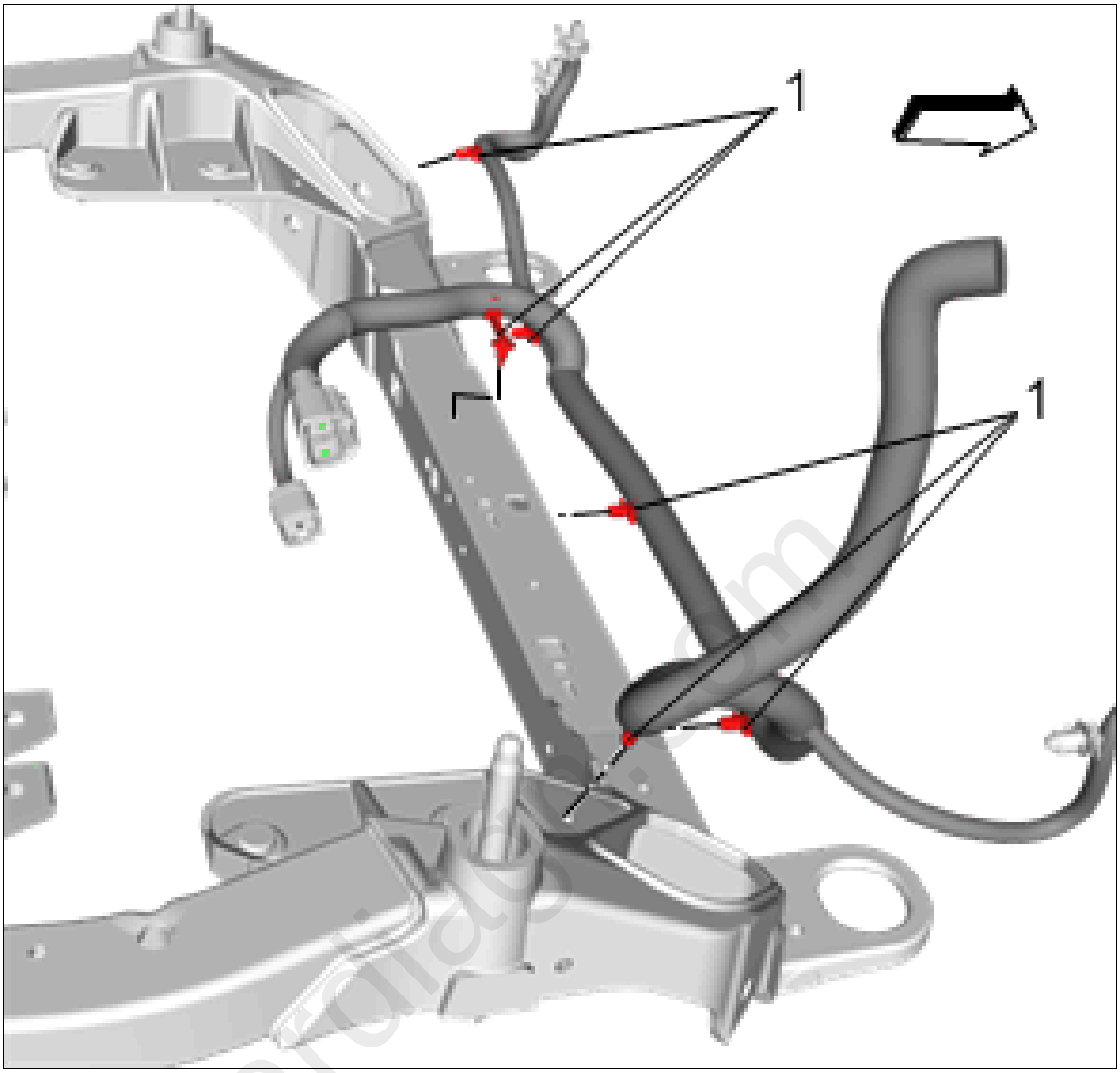


Courtesy of GENERAL MOTORS COMPANY

7. Install Front Crossmember Brace (3) - Front Crossmember Brace Replacement (Coupe - LGX, LTG) Front Crossmember Brace Replacement (Convertible - LTG)

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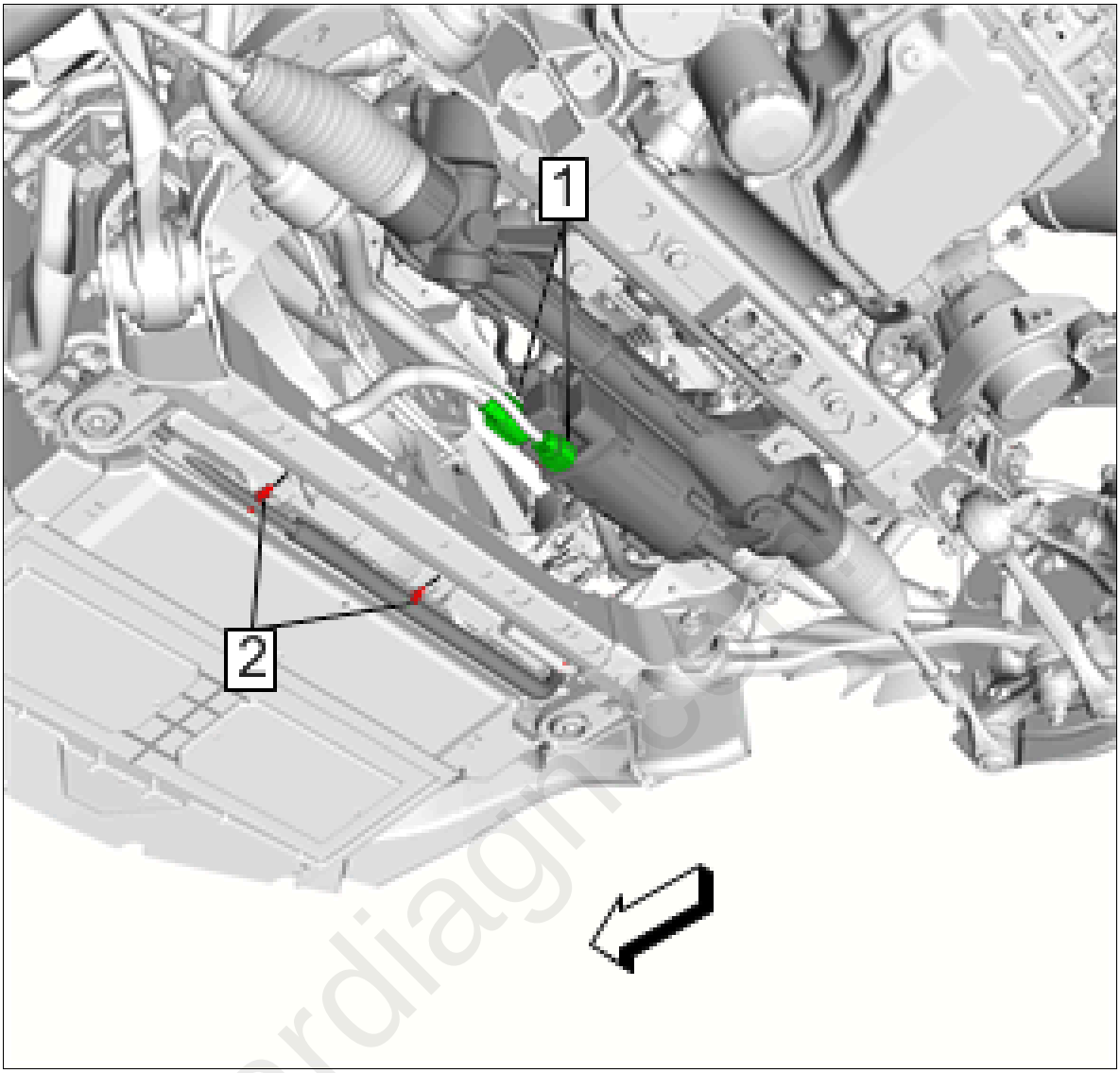
Fig 5: Wiring Harness Retainers From Frame



Courtesy of GENERAL MOTORS COMPANY

8. Install the wiring harness retainers to the frame (1)

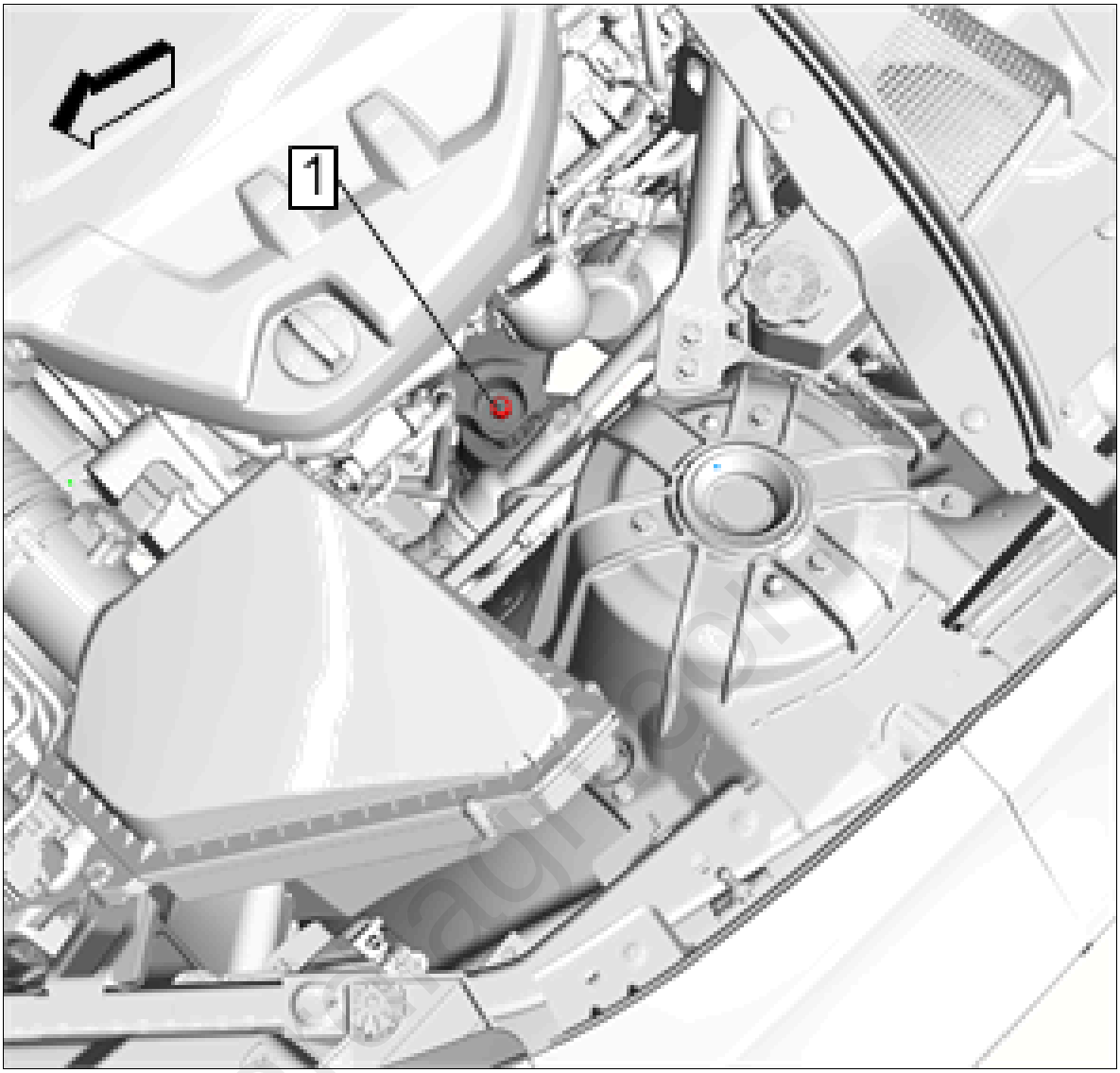
Fig 6: Steering Gear Electrical Connectors



Courtesy of GENERAL MOTORS COMPANY

9. Connect the steering gear electrical connectors (1)

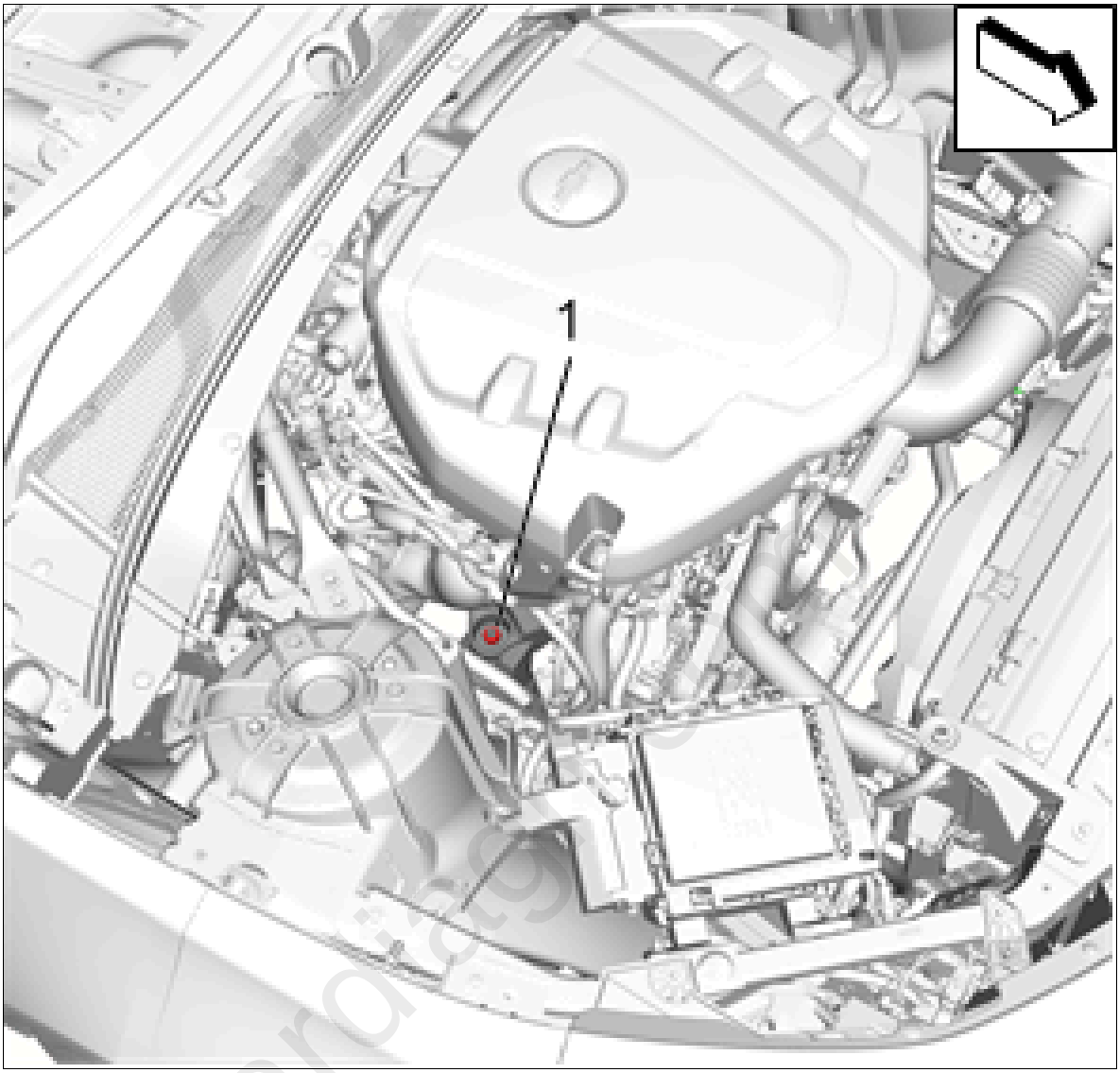
Fig 7: Left Side Engine Mount Nut



Courtesy of GENERAL MOTORS COMPANY

10. Install Engine Mount Nut - Left Side (1) and tighten to 70 N.m (52 lb ft)

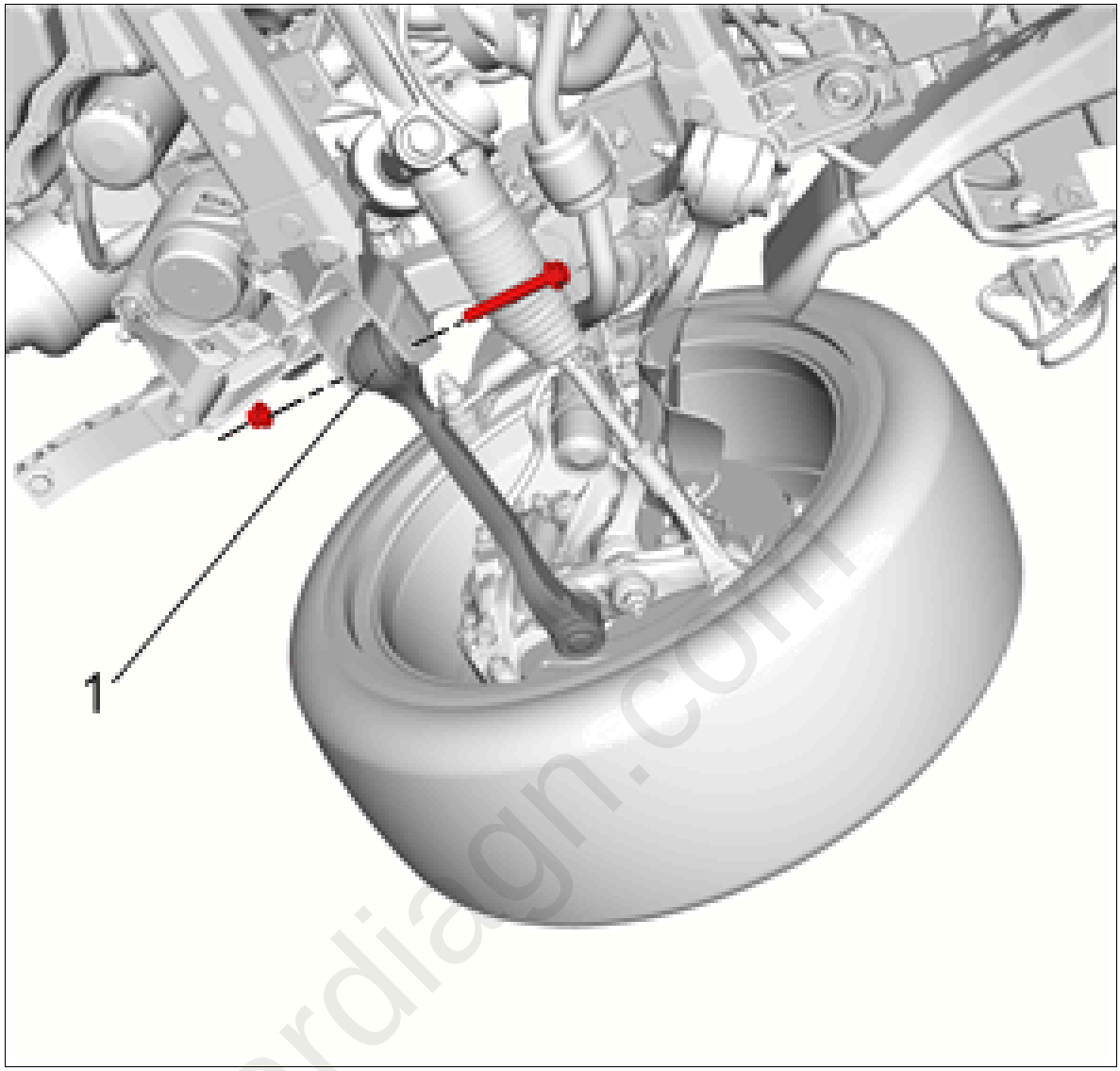
Fig 8: Right Side Engine Mount Nut



Courtesy of GENERAL MOTORS COMPANY

11. Install Engine Mount Nut - Right Side (1) and tighten to 70 N.m (52 lb ft)

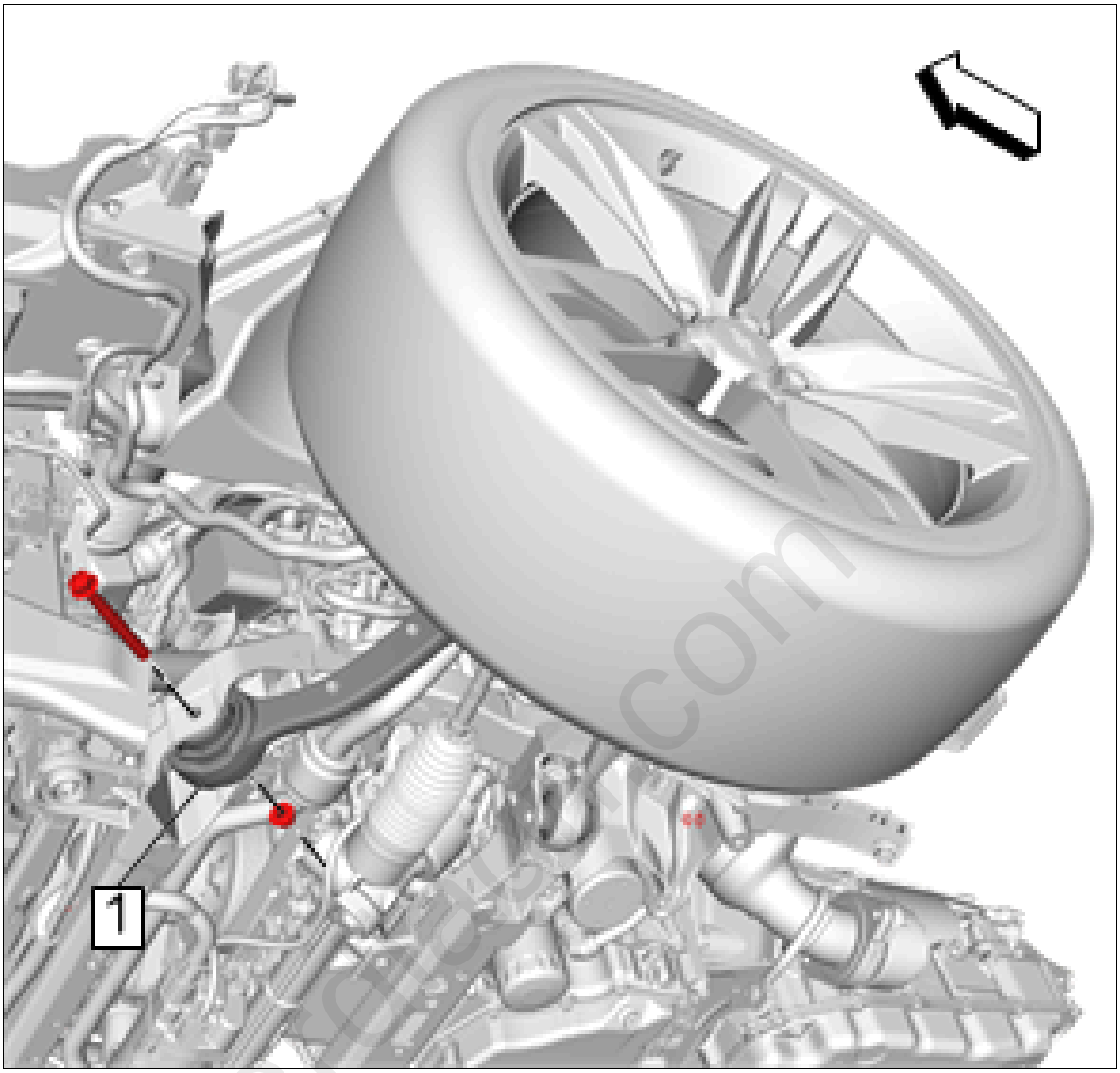
Fig 9: Front Lower Control Rear Links From Front Suspension Frame



Courtesy of GENERAL MOTORS COMPANY

12. Install Front Lower Control Rear Link (1) - Front Lower Control Rear Link Replacement (LGX, LTG)

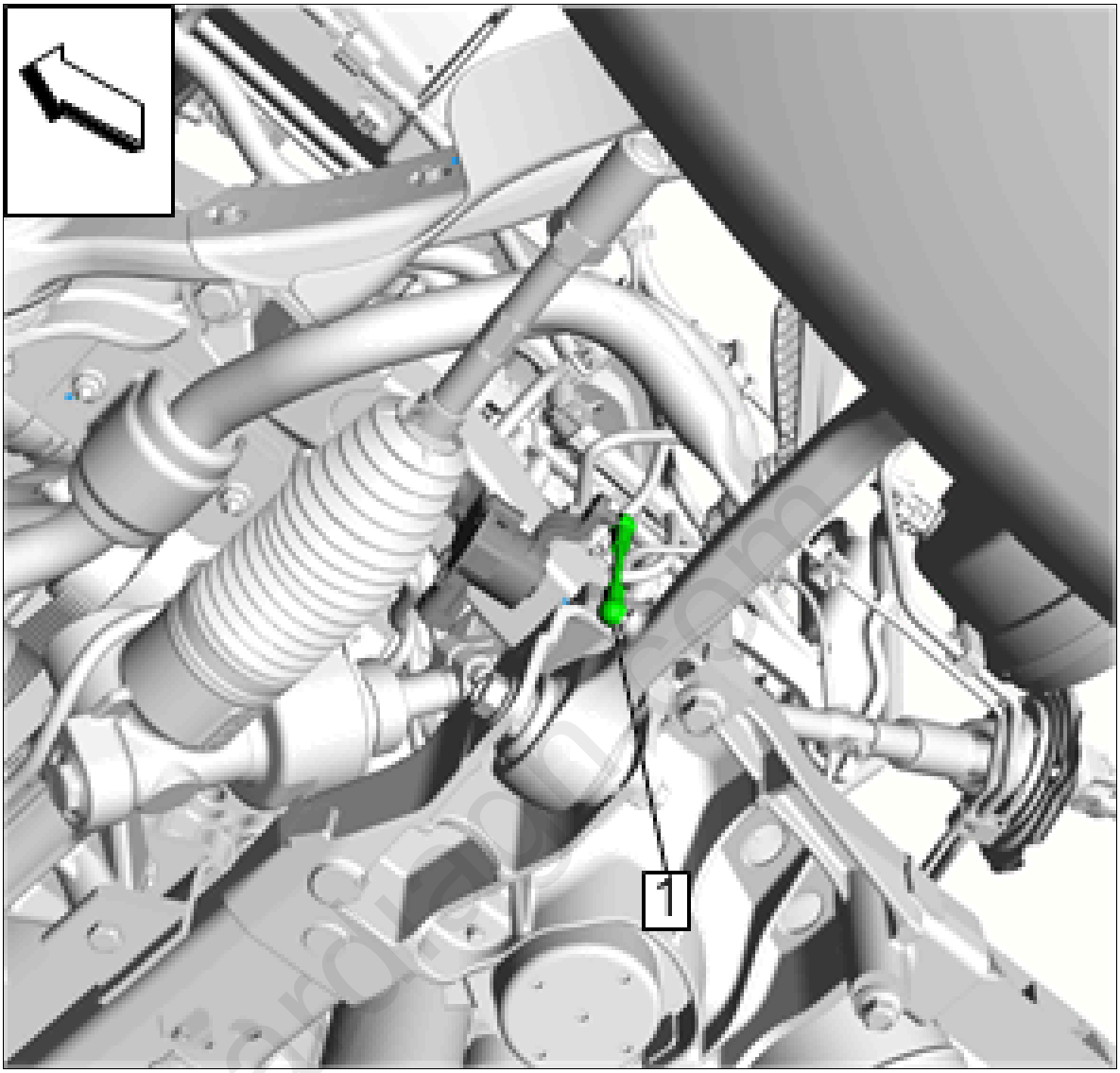
Fig 10: Front Lower Control Front Links From Front Suspension Frame



Courtesy of GENERAL MOTORS COMPANY

13. Install Front Lower Control Front Link (1) - Front Lower Control Front Link Replacement (LGX or LTG, Without V18)Front Lower Control Front Link Replacement (LGX or LTG, With V18)

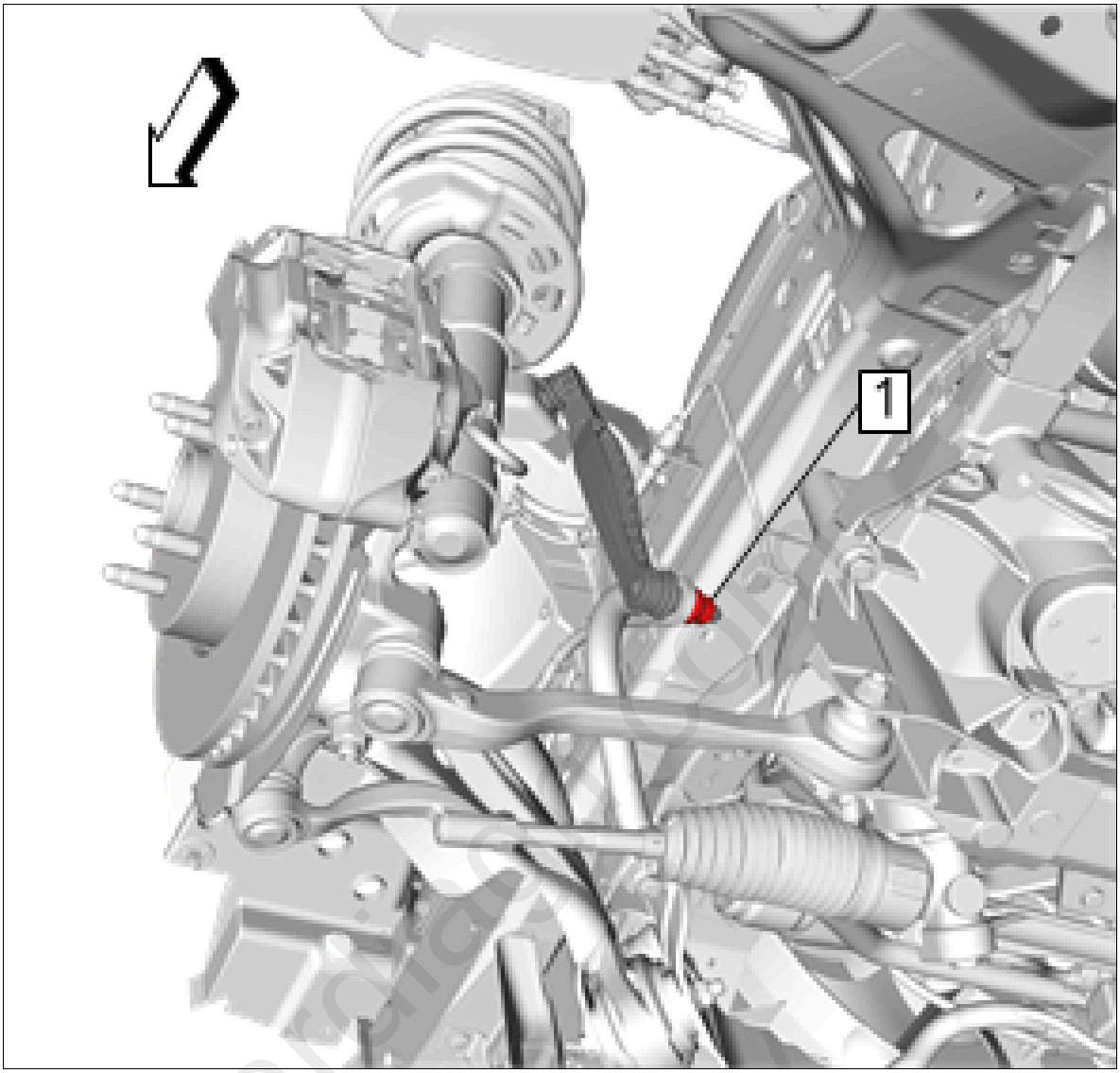
Fig 11: Front Suspension Automatic Forward Lighting Position Sensor Arms From Lower Control Rear Links



Courtesy of GENERAL MOTORS COMPANY

14. Connect the front suspension automatic forward lighting position sensor arm (1) to the lower control rear link.
15. Connect the electrical connector to the front suspension automatic forward lighting position sensor.

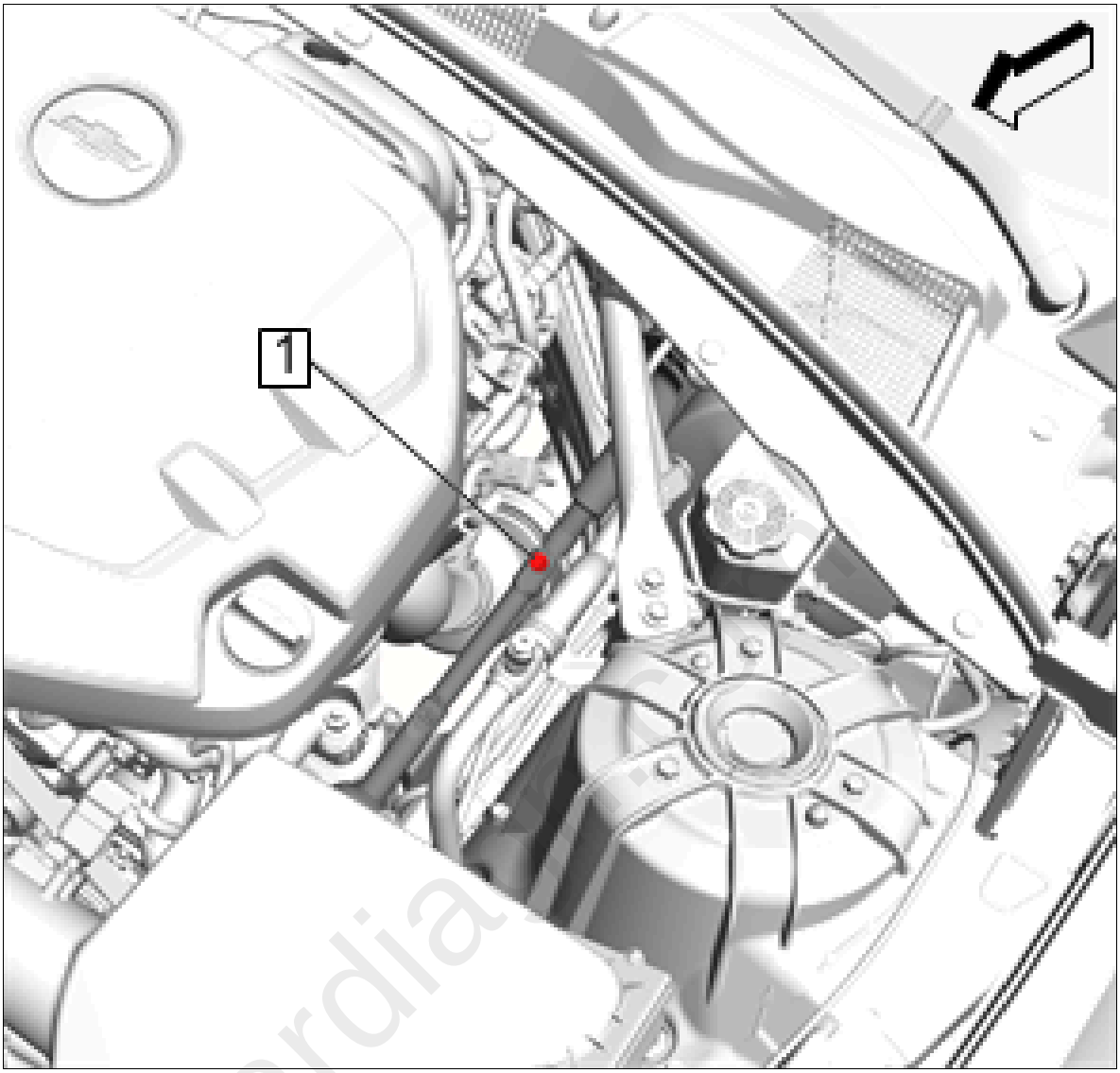
Fig 12: Right And Left Lower Stabilizer Shaft Links From Stabilizer Bar



Courtesy of GENERAL MOTORS COMPANY

16. Connect the right and left lower stabilizer shaft links to the stabilizer bar (1) - Stabilizer Shaft Link Replacement (LGX, LTG)

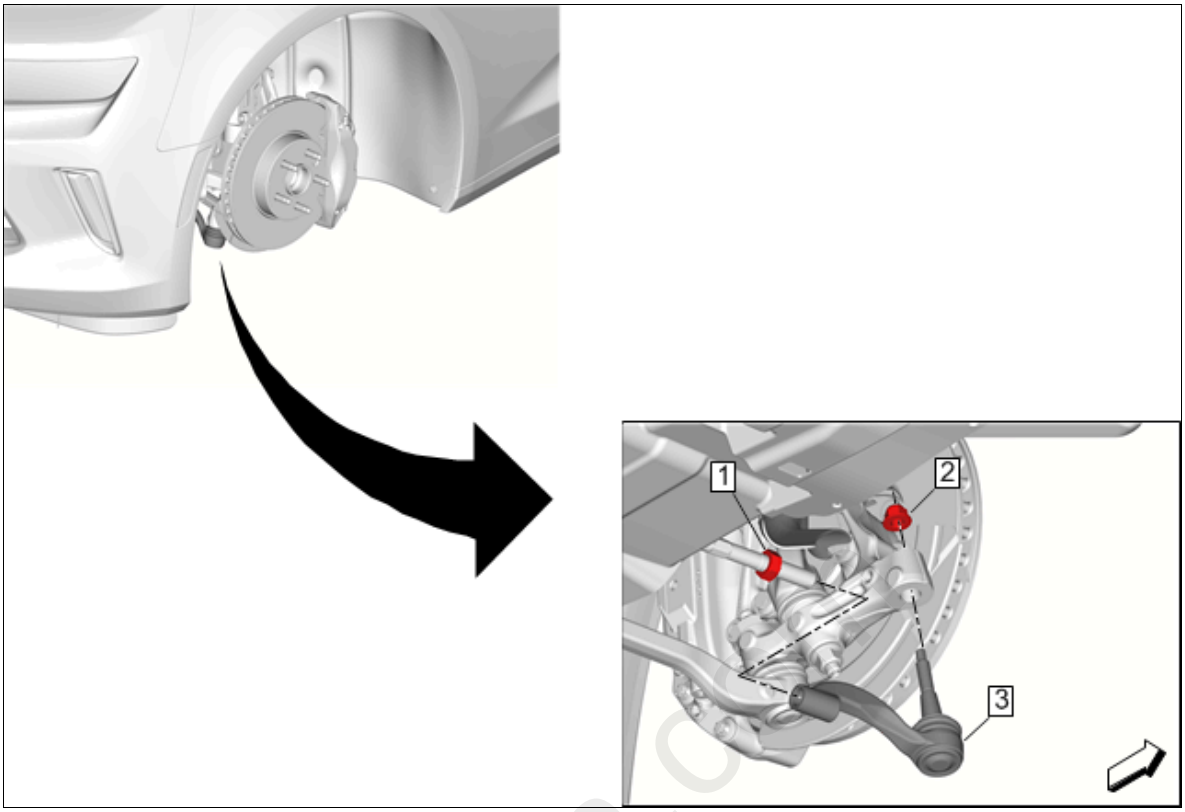
Fig 13: Intermediate Steering Shaft From Steering Column Shaft



Courtesy of GENERAL MOTORS COMPANY

17. Connect the intermediate steering shaft to the steering column (1) - Mid Intermediate Steering Shaft Replacement

Fig 14: Steering Linkage Outer Tie Rod

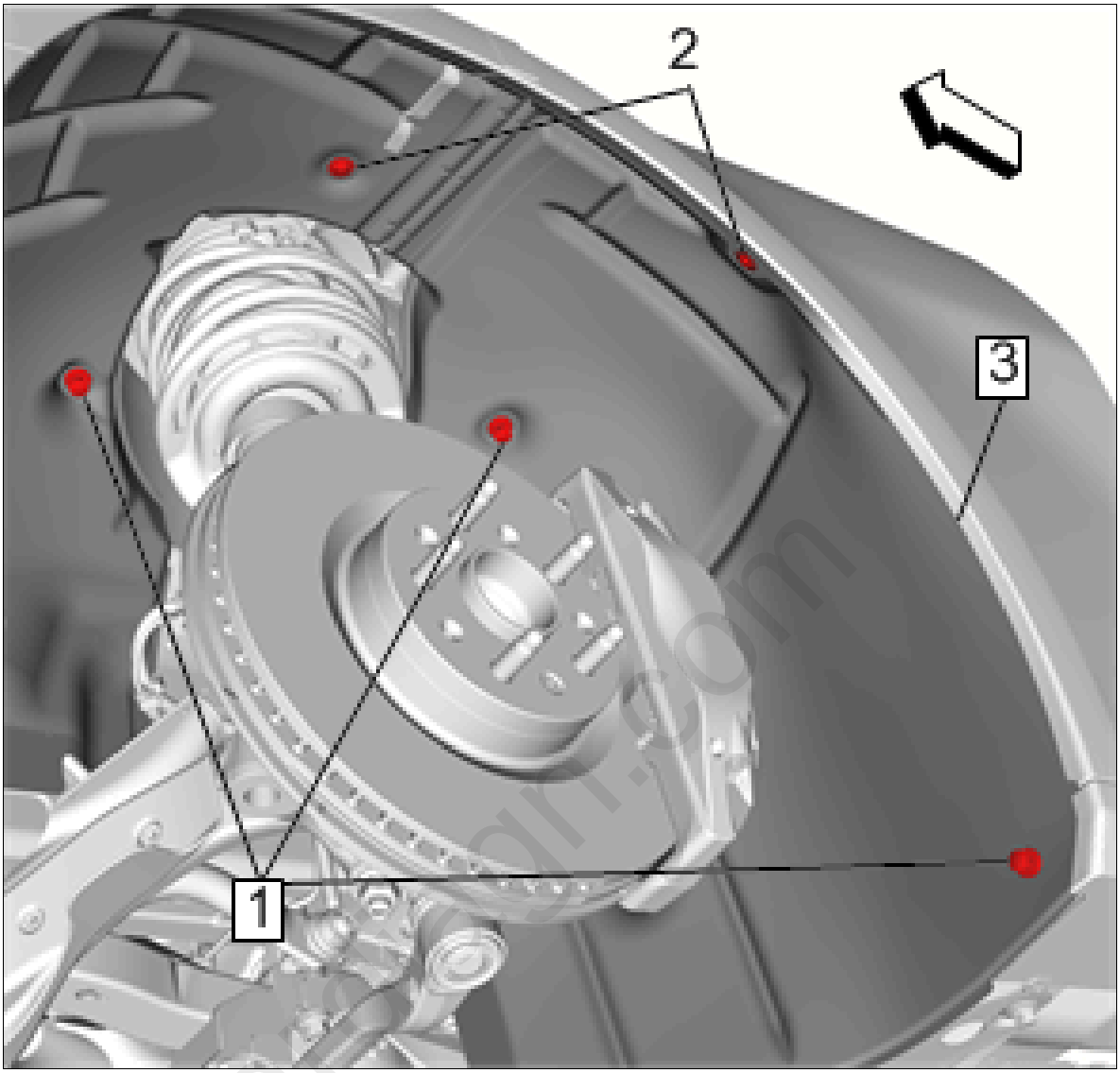


Courtesy of GENERAL MOTORS COMPANY

18. Install Steering Linkage Outer Tie Rod (3) - Steering Linkage Outer Tie Rod Replacement

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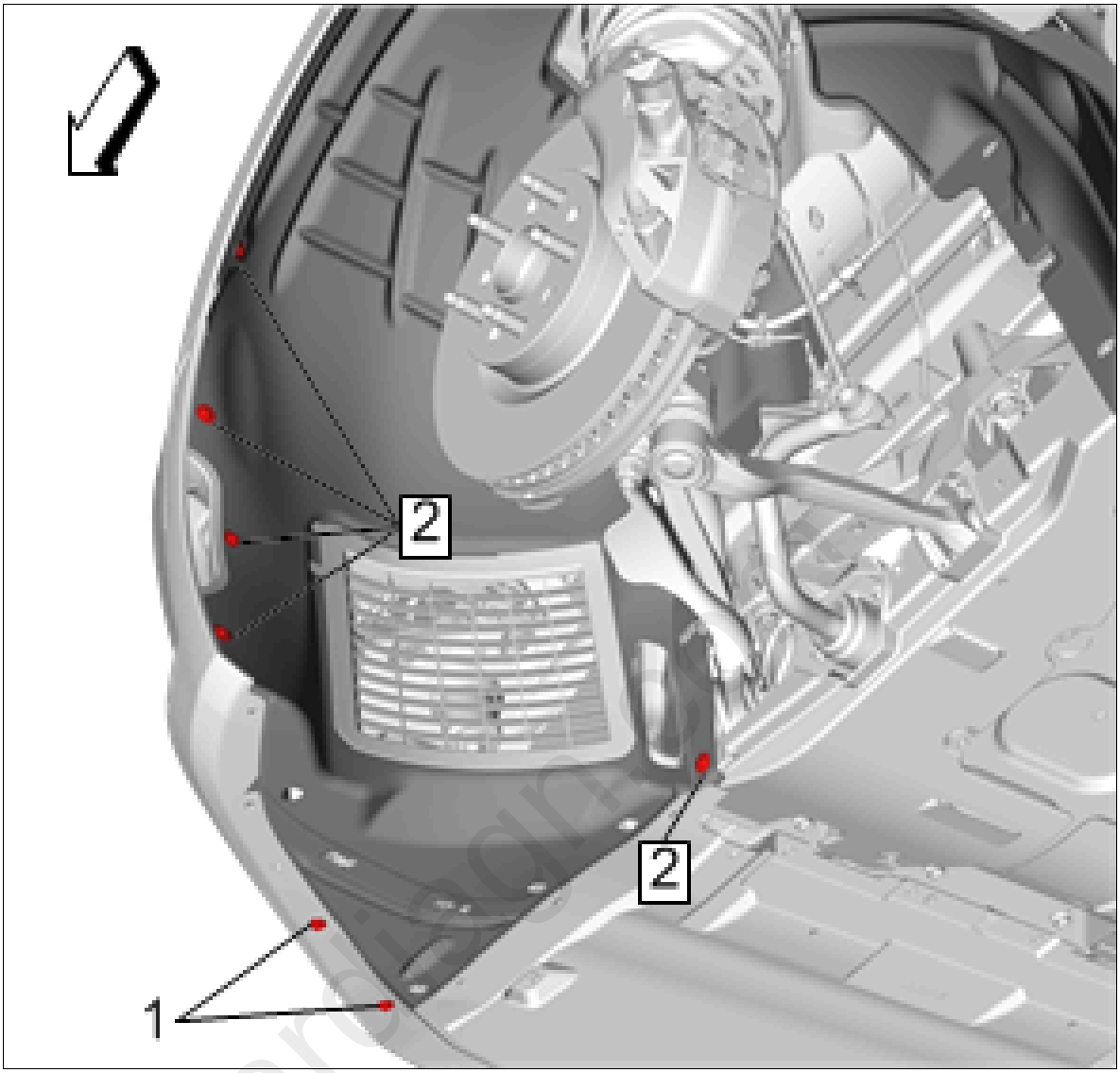
Fig 15: Front Wheelhouse Liner Retainer



Courtesy of GENERAL MOTORS COMPANY

19. Install Front Wheelhouse Liner (3)
20. Install Front Wheelhouse Liner Retainer (1) (Qty: 3)
21. Install Front Wheelhouse Liner Screw (2) (Qty: 2) and tighten to 2.5 N.m (22 lb in)

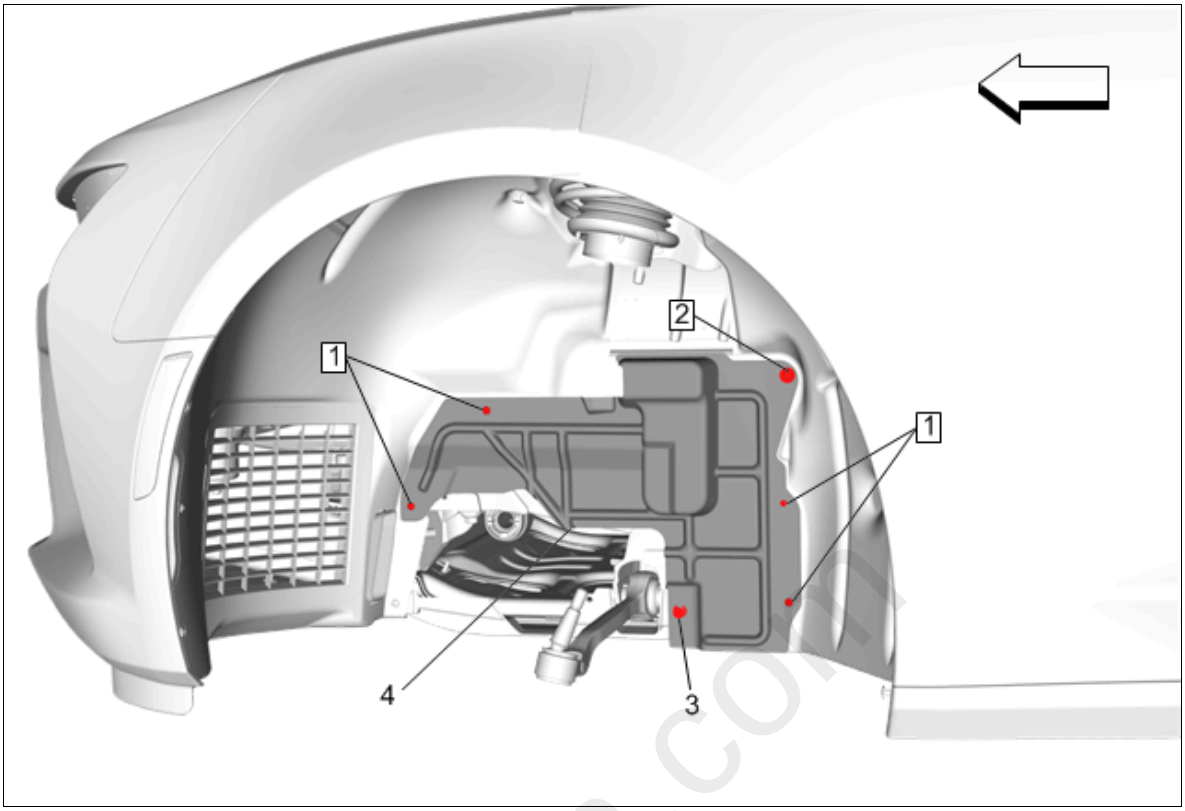
Fig 16: Front Bumper Fascia Bolt



Courtesy of GENERAL MOTORS COMPANY

22. Install Front Wheelhouse Liner Screw (2) (Qty: 5) and tighten to 2.5 N.m (22 lb in)
23. Install Front Bumper Fascia Bolt (1) (Qty: 2) and tighten to 5 N.m (44 lb in)

Fig 17: Front Wheelhouse Splash Shield

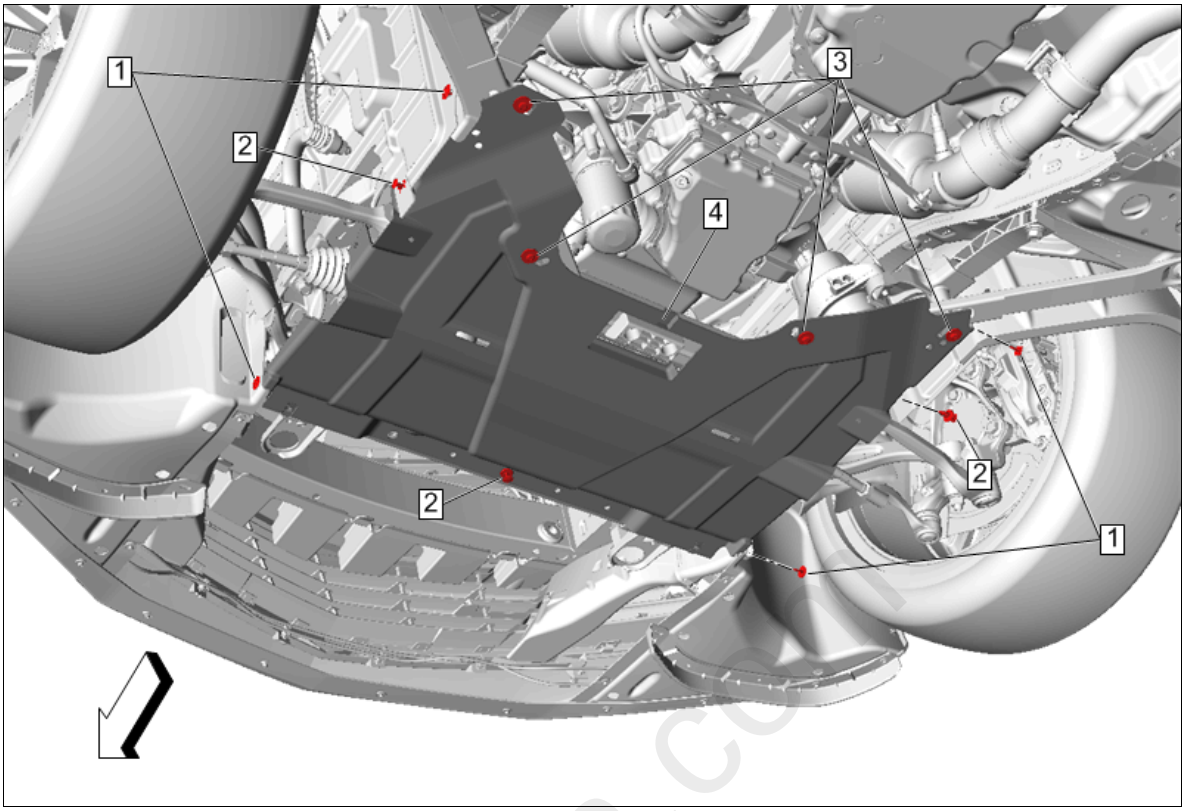


Courtesy of GENERAL MOTORS COMPANY

24. Install Front Wheelhouse Splash Shield (4) - Front Wheelhouse Splash Shield Replacement

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Fig 18: Front Compartment Lower Noise Shield

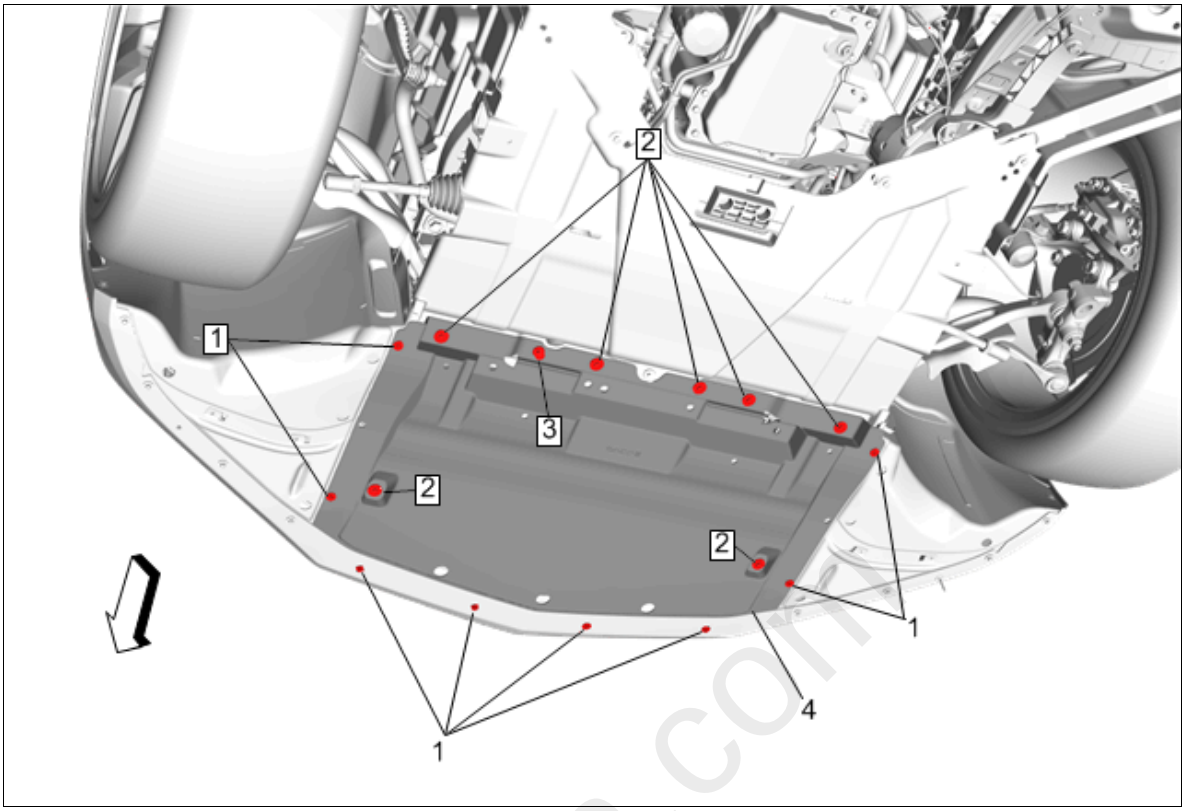


Courtesy of GENERAL MOTORS COMPANY

25. Install Front Compartment Lower Noise Shield (4) - Front Compartment Lower Noise Shield Replacement (Coupe - LGX, LTG)

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Fig 19: Front Compartment Air Deflector



Courtesy of GENERAL MOTORS COMPANY

26. Front Compartment Air Deflector (4) - Front Compartment Air Deflector Replacement (Convertible - LGX, LTG) Front Compartment Air Deflector Replacement (Coupe - LGX, LTG)
27. Install the front tires and wheels. Tire and Wheel Removal and Installation
28. Lower the vehicle.
29. Remove the engine support fixture.

REPAIR INSTRUCTIONS > DRIVETRAIN AND FRONT SUSPENSION CRADLE REMOVAL AND INSTALLATION (LGX)

Special Tools

EN-39580 Engine Support Stand

Equivalent regional tools:Special Tools

REPAIR INSTRUCTIONS > DRIVETRAIN AND FRONT SUSPENSION CRADLE REMOVAL AND INSTALLATION (LGX) > REMOVAL PROCEDURE

NOTE:

Suspension components attached to the frame use Torque-to-Yield fasteners and must be DISCARDED and replaced with NEW Torque Angle Yield (TAY) fasteners. The frame to body fasteners are not TAY fasteners.

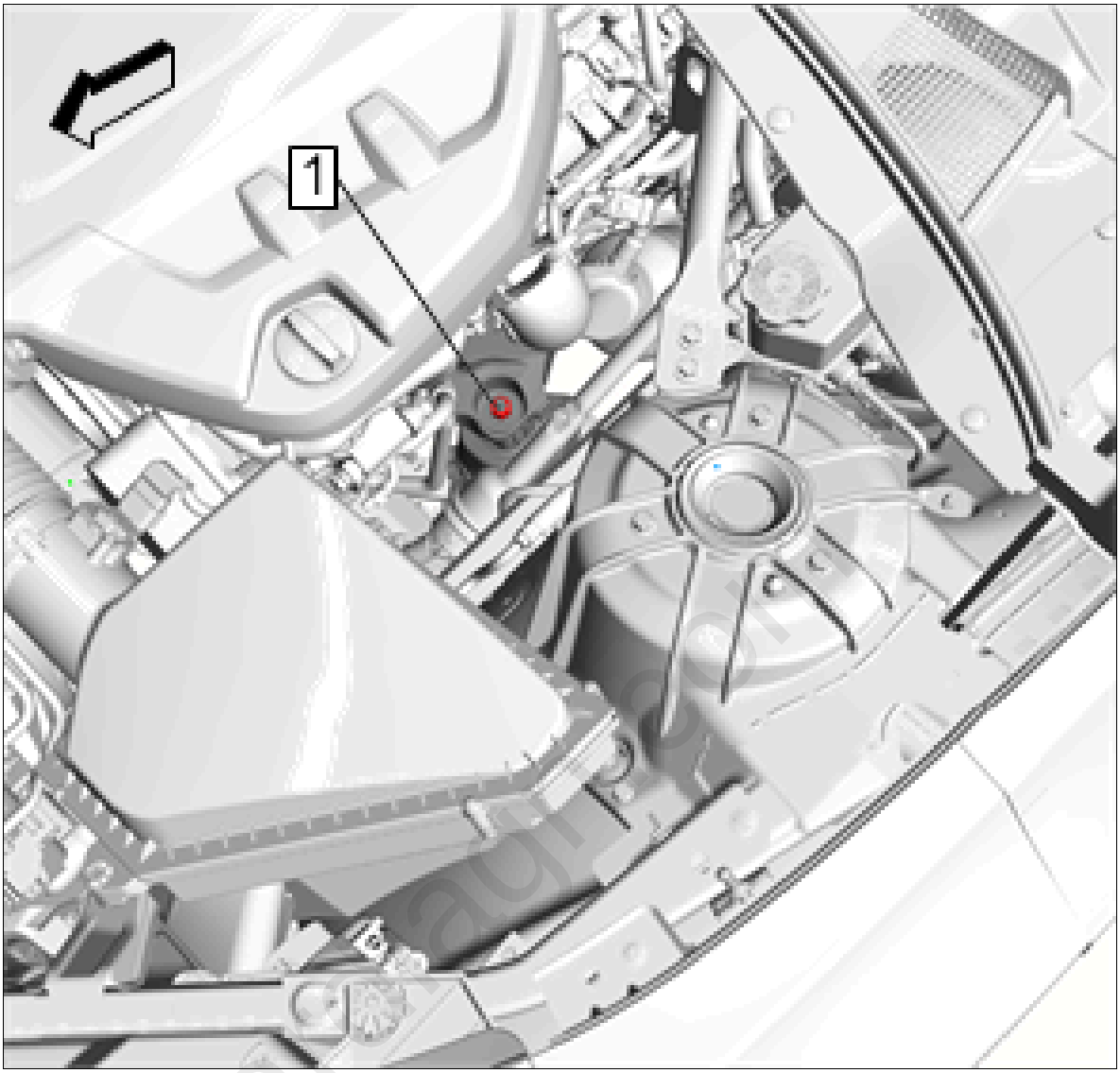
NOTE:

Vehicle alignment is not required if the cradle is being lowered or dropped to perform another procedure. This vehicle is equipped with a cradle to body aligning feature: cradle to body through holes or self-aligning pins that are part of the cradle or body. Only align if replacing the cradle with a NEW part and transferring components.

1. Install the engine support fixture. Engine Support Fixture
2. Using mechanics wire, support the radiator and AC condenser assembly to the vehicle body.

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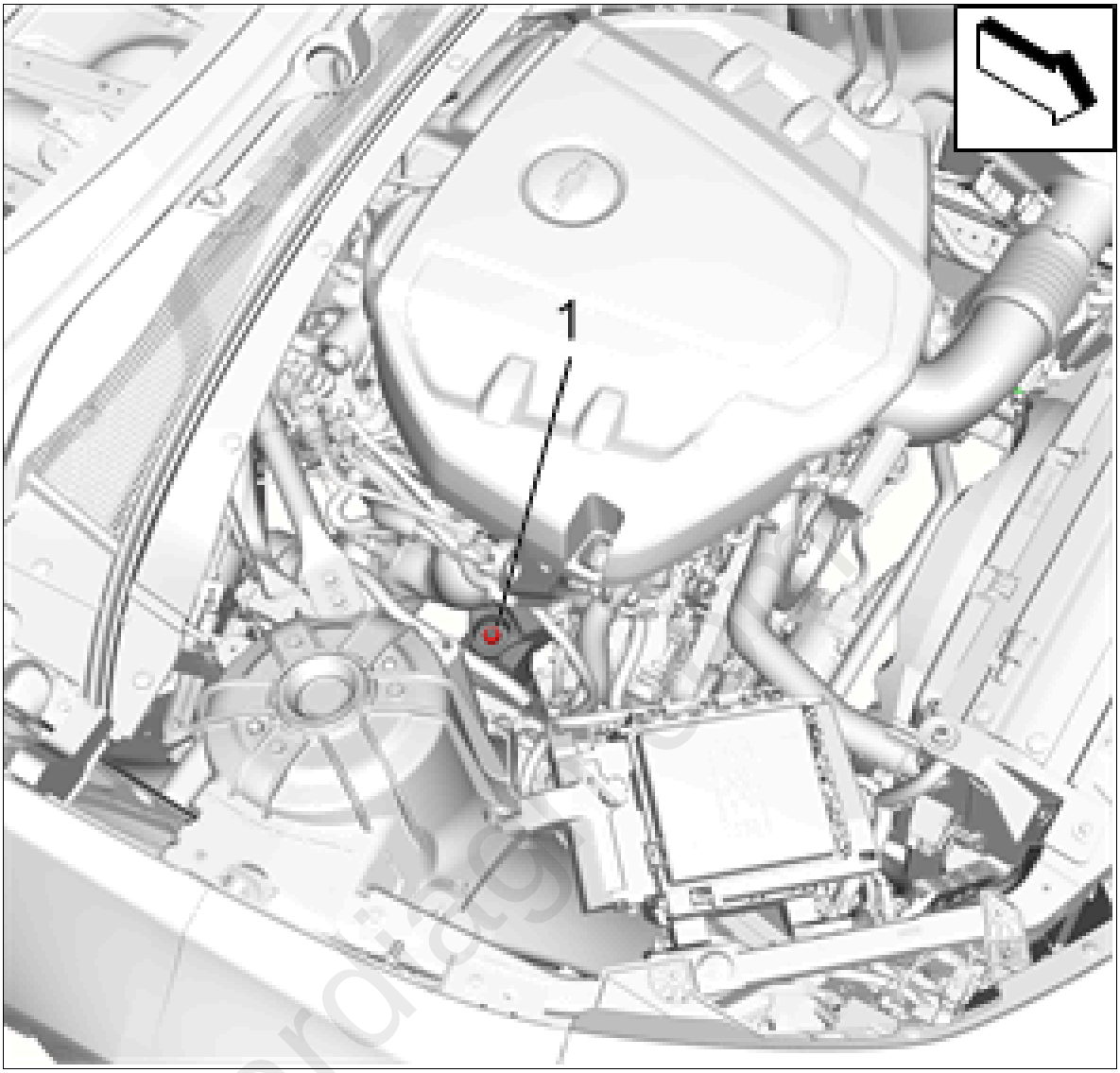
Fig 1: Left Side Engine Mount Nut



Courtesy of GENERAL MOTORS COMPANY

3. Remove Engine Mount Nut - Left Side (1)

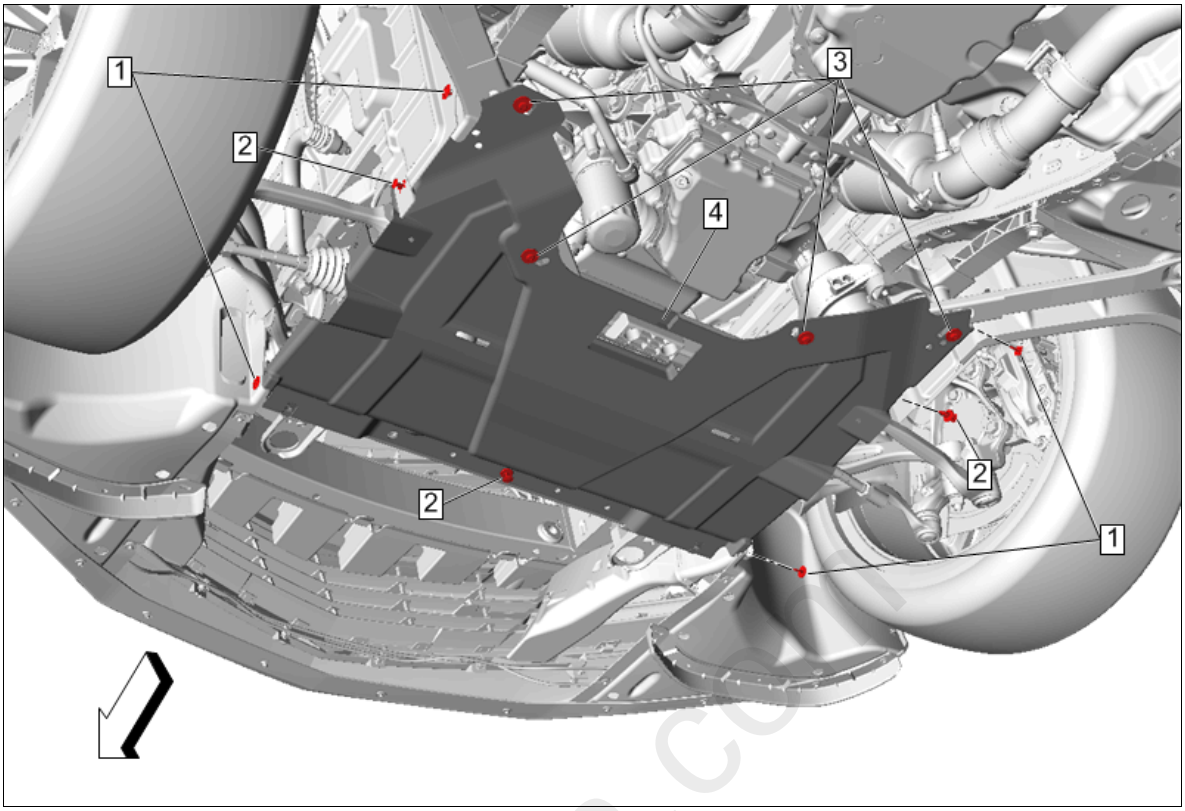
Fig 2: Right Side Engine Mount Nut



Courtesy of GENERAL MOTORS COMPANY

4. Remove Engine Mount Nut - Right Side (1)

Fig 3: Front Compartment Lower Noise Shield

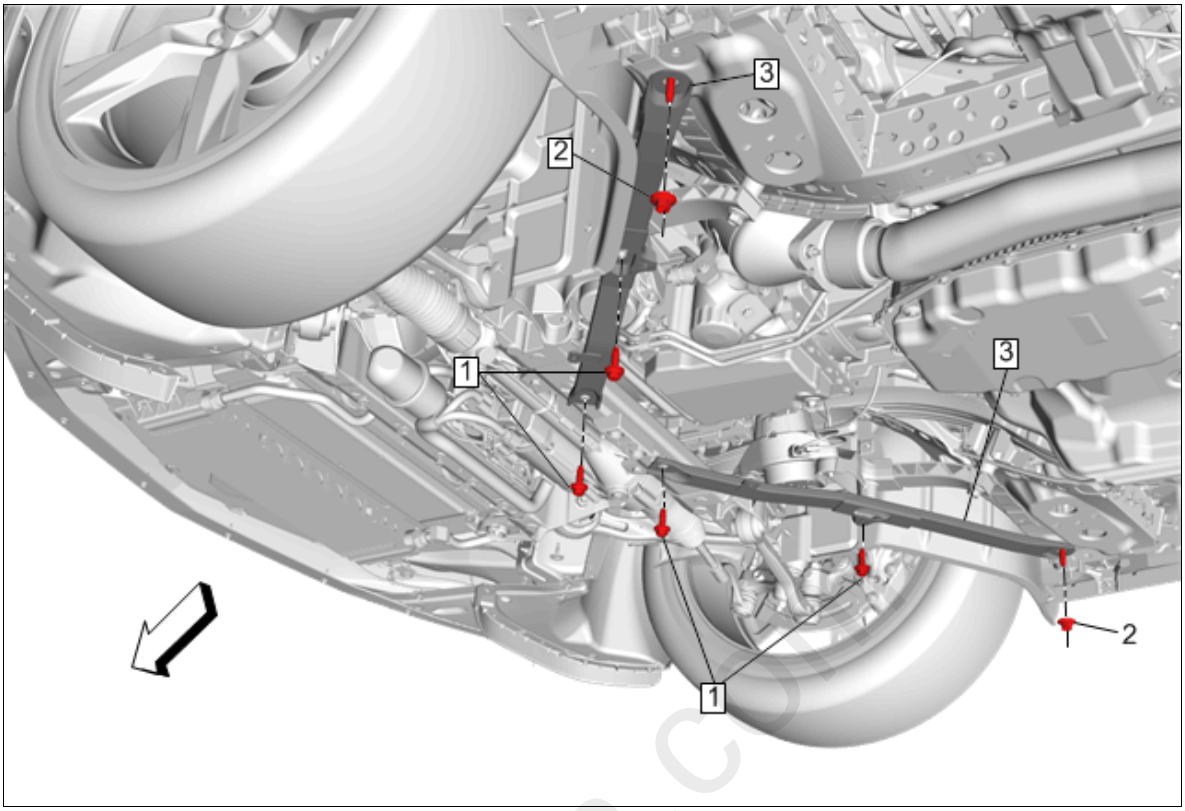


Courtesy of GENERAL MOTORS COMPANY

5. Remove Front Compartment Lower Noise Shield (4) - Front Compartment Lower Noise Shield Replacement (Coupe - LGX, LTG)

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Fig 4: Front Crossmember Brace

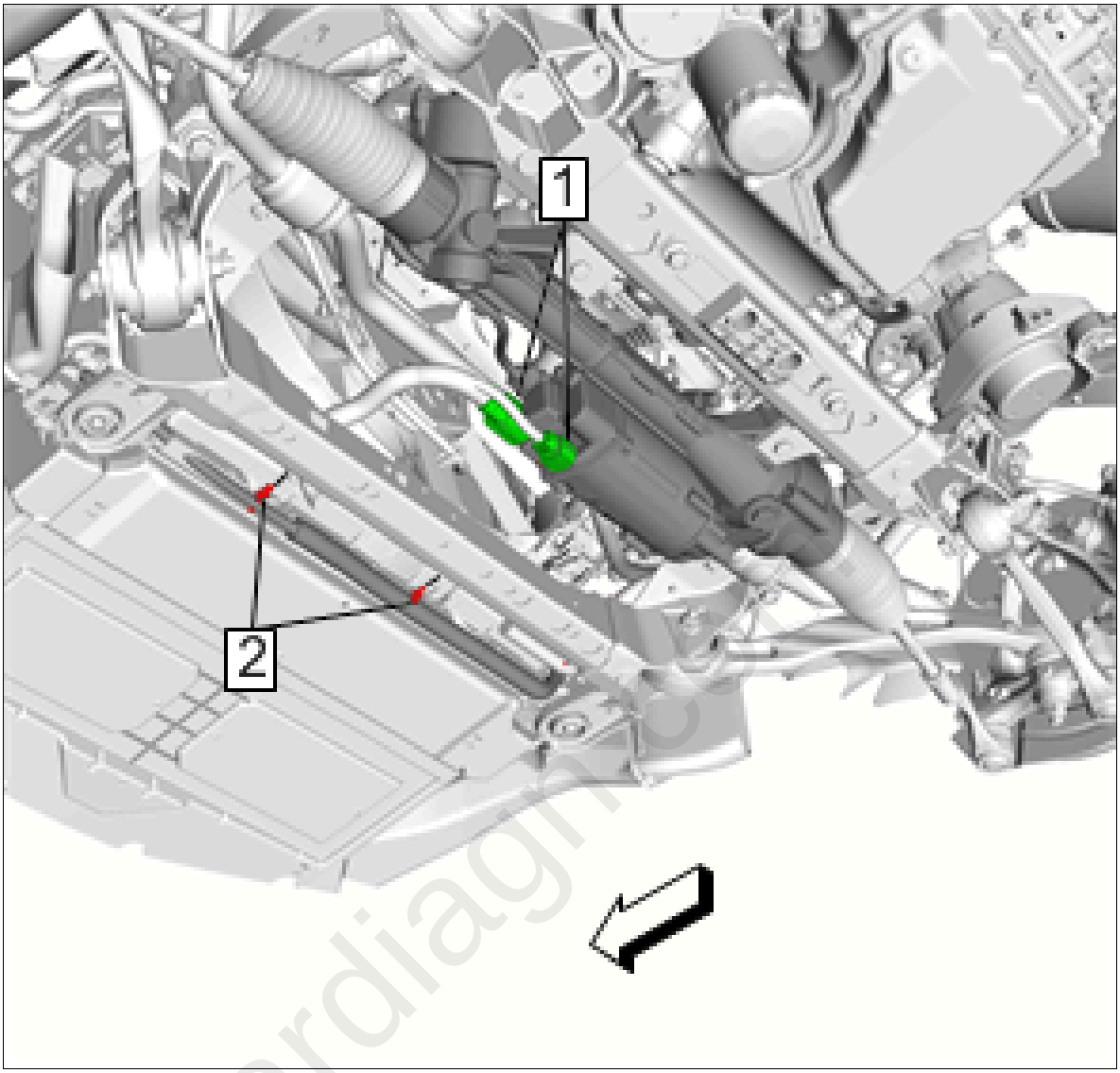


Courtesy of GENERAL MOTORS COMPANY

6. Remove Front Crossmember Brace (3) - Front Crossmember Brace Replacement (Coupe - LGX, LTG) Front Crossmember Brace Replacement (Convertible - LGX)

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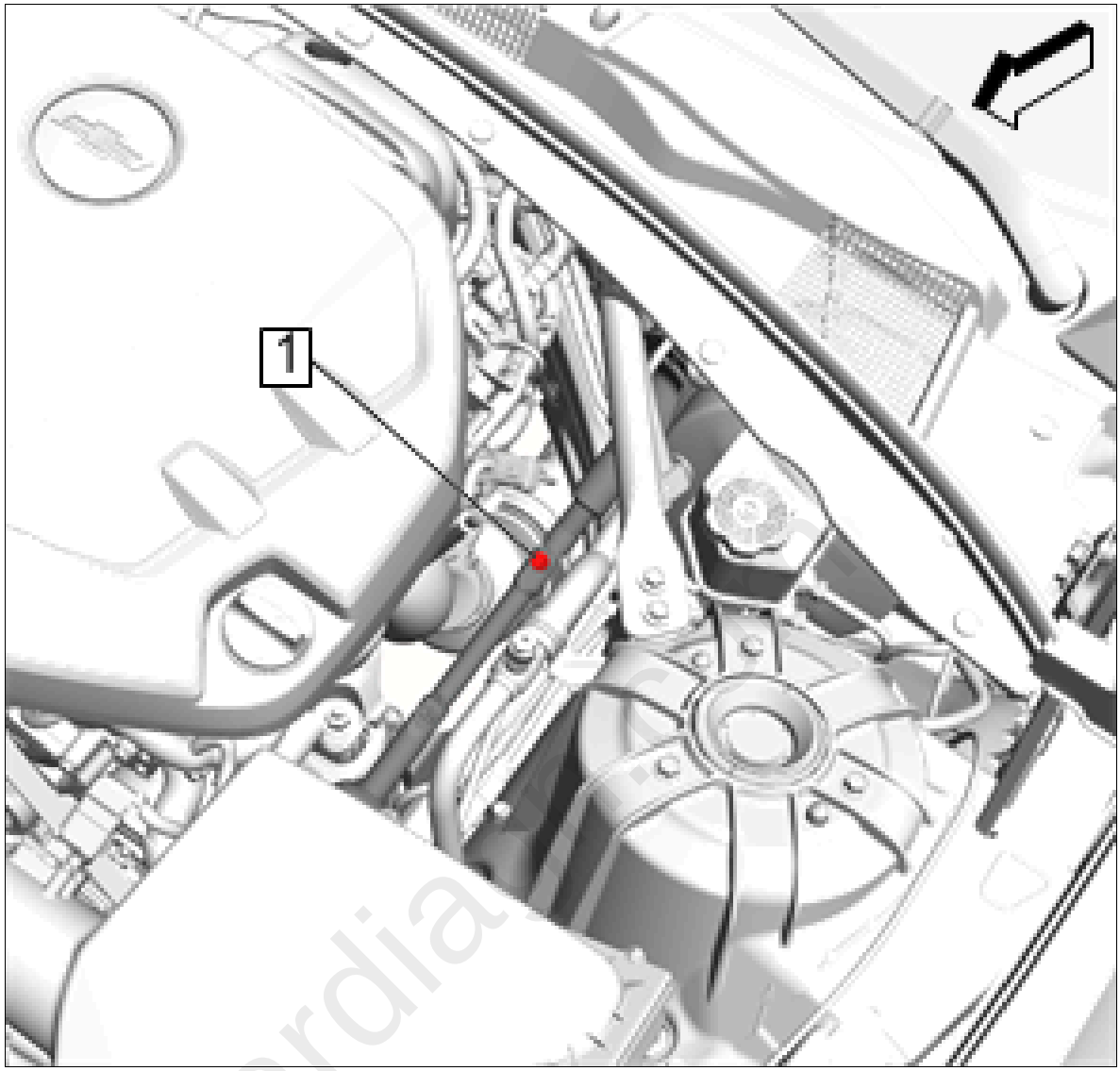
Fig 5: Steering Gear Electrical Connectors



Courtesy of GENERAL MOTORS COMPANY

7. Disconnect the steering gear electrical connectors (1)
8. Remove the wiring harness retainers from the frame (2)

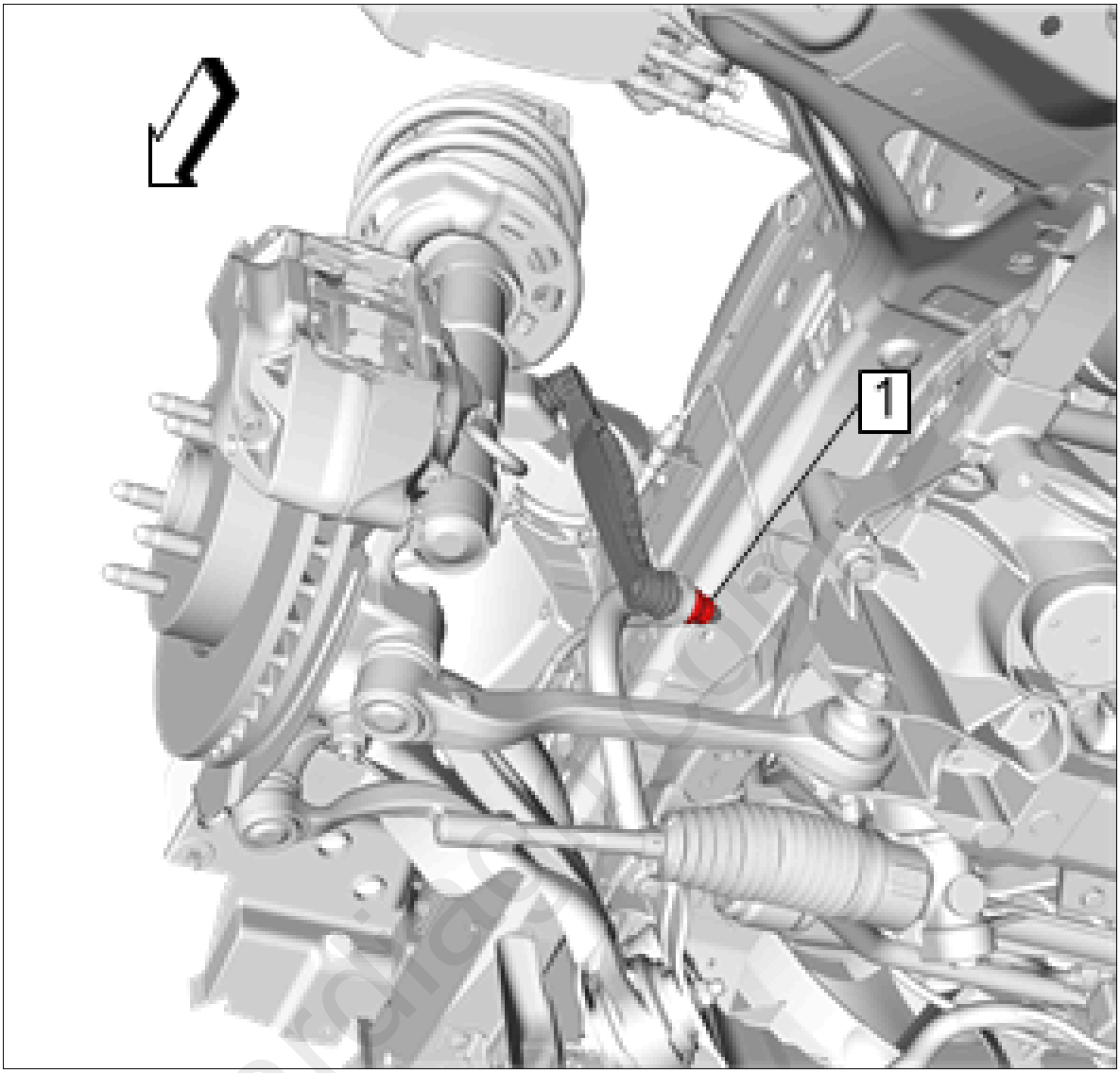
Fig 6: Intermediate Steering Shaft From Steering Column Shaft



Courtesy of GENERAL MOTORS COMPANY

9. Disconnect the intermediate steering shaft from the steering column shaft (1) - Mid Intermediate Steering Shaft Replacement

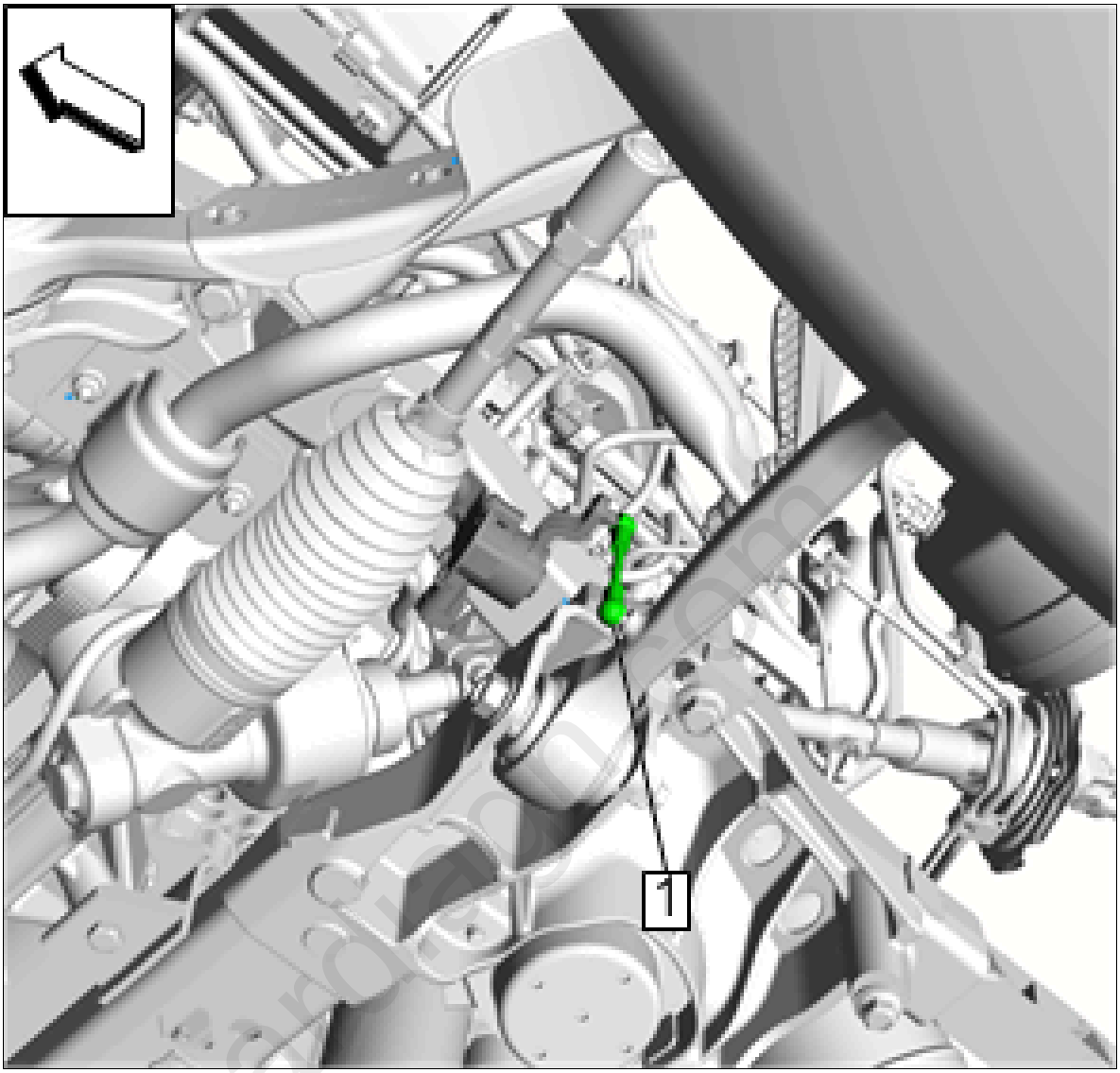
Fig 7: Right And Left Lower Stabilizer Shaft Links From Stabilizer Bar



Courtesy of GENERAL MOTORS COMPANY

10. Disconnect the right and left lower stabilizer shaft links from the stabilizer bar (1) - Stabilizer Shaft Link Replacement (LGX, LTG)

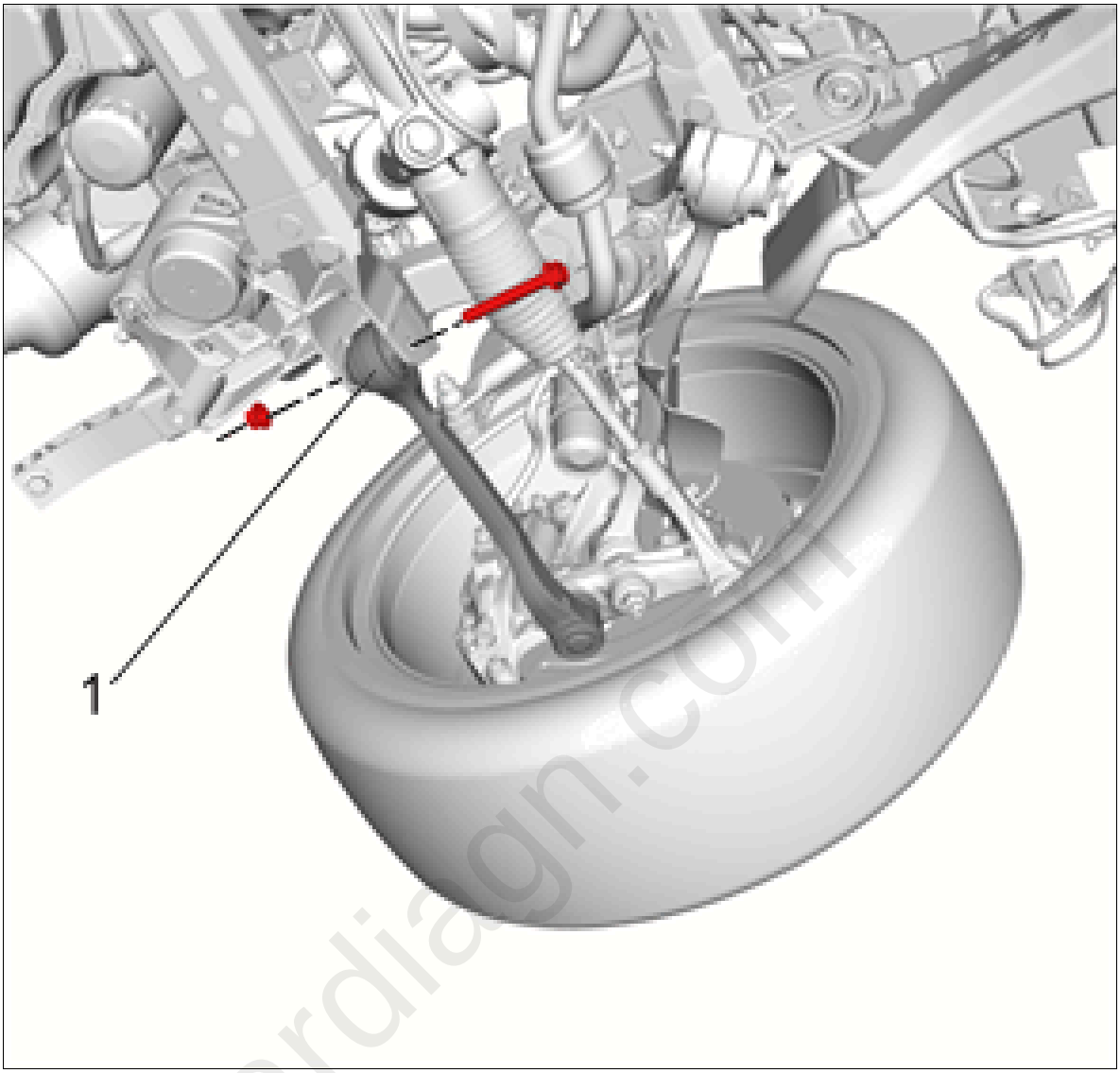
Fig 8: Front Suspension Automatic Forward Lighting Position Sensor Arms From Lower Control Rear Links



Courtesy of GENERAL MOTORS COMPANY

11. Disconnect the front suspension automatic forward lighting position sensor arms (1) from the lower control rear links.
12. Disconnect the electrical connector from the front suspension automatic forward lighting position sensor.

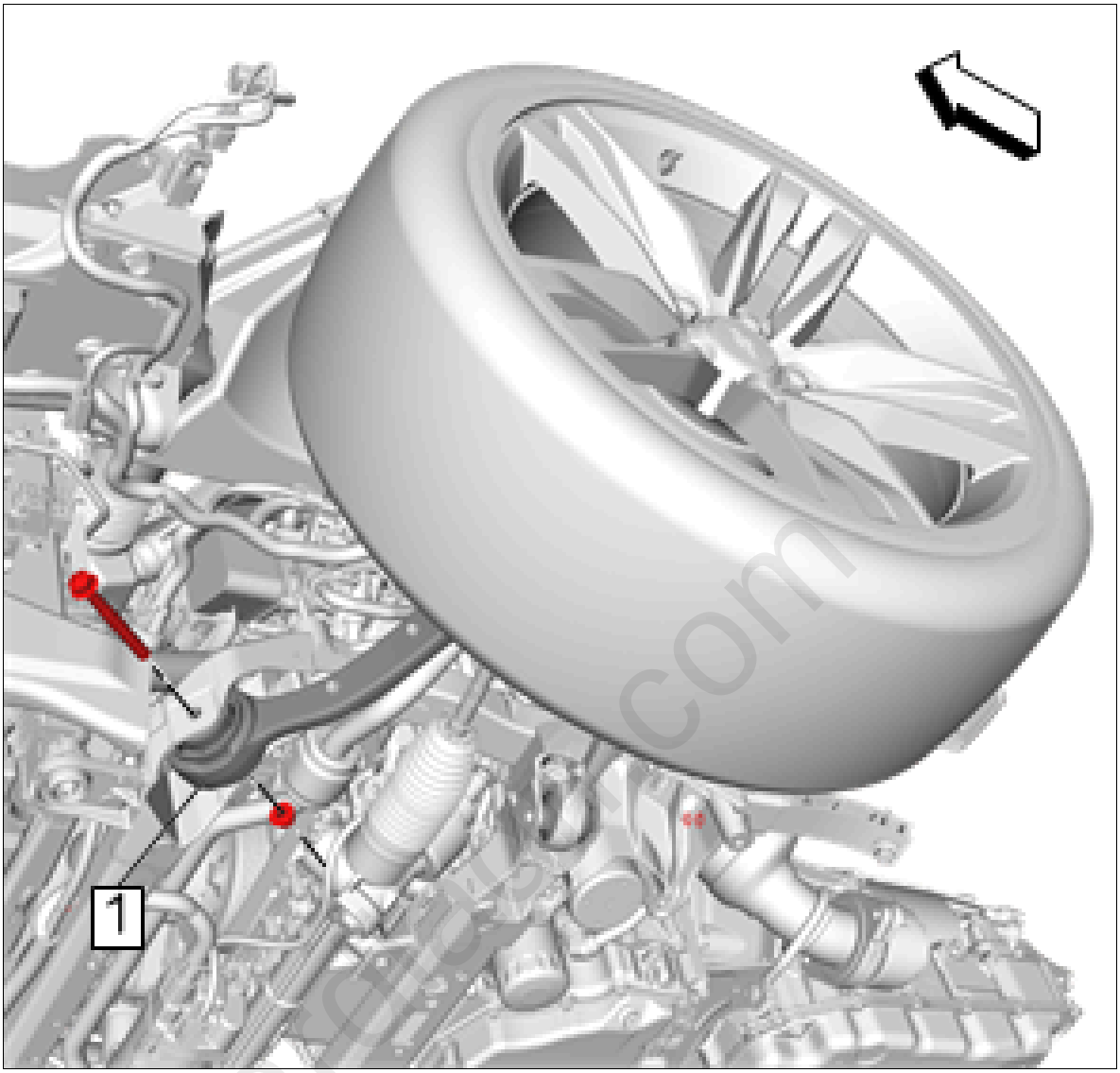
Fig 9: Front Lower Control Rear Links From Front Suspension Frame



Courtesy of GENERAL MOTORS COMPANY

13. Disconnect the front lower control rear links from the front suspension frame (1) - Front Lower Control Rear Link Replacement (LGX, LTG)

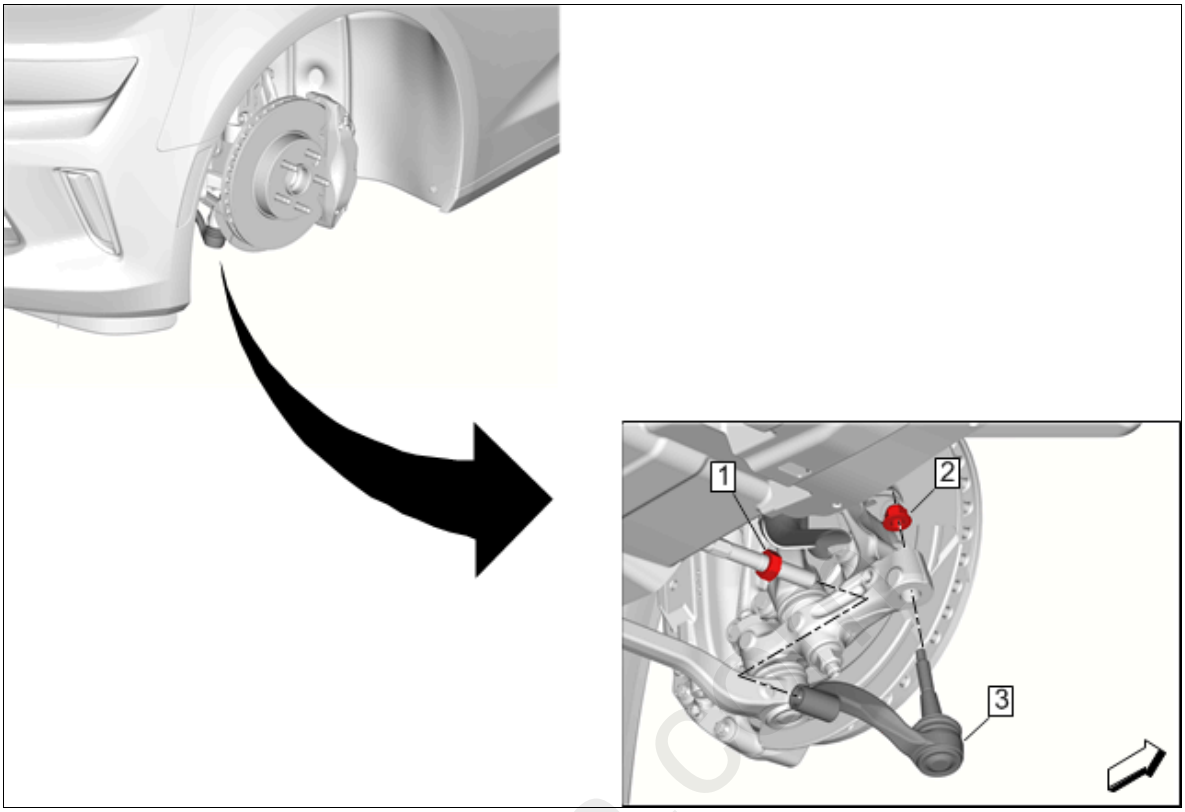
Fig 10: Front Lower Control Front Links From Front Suspension Frame



Courtesy of GENERAL MOTORS COMPANY

14. Disconnect the front lower control front links from the front suspension frame (1) - Front Lower Control Front Link Replacement (LGX or LTG, Without V18)Front Lower Control Front Link Replacement (LGX or LTG, With V18)

Fig 11: Steering Linkage Outer Tie Rod

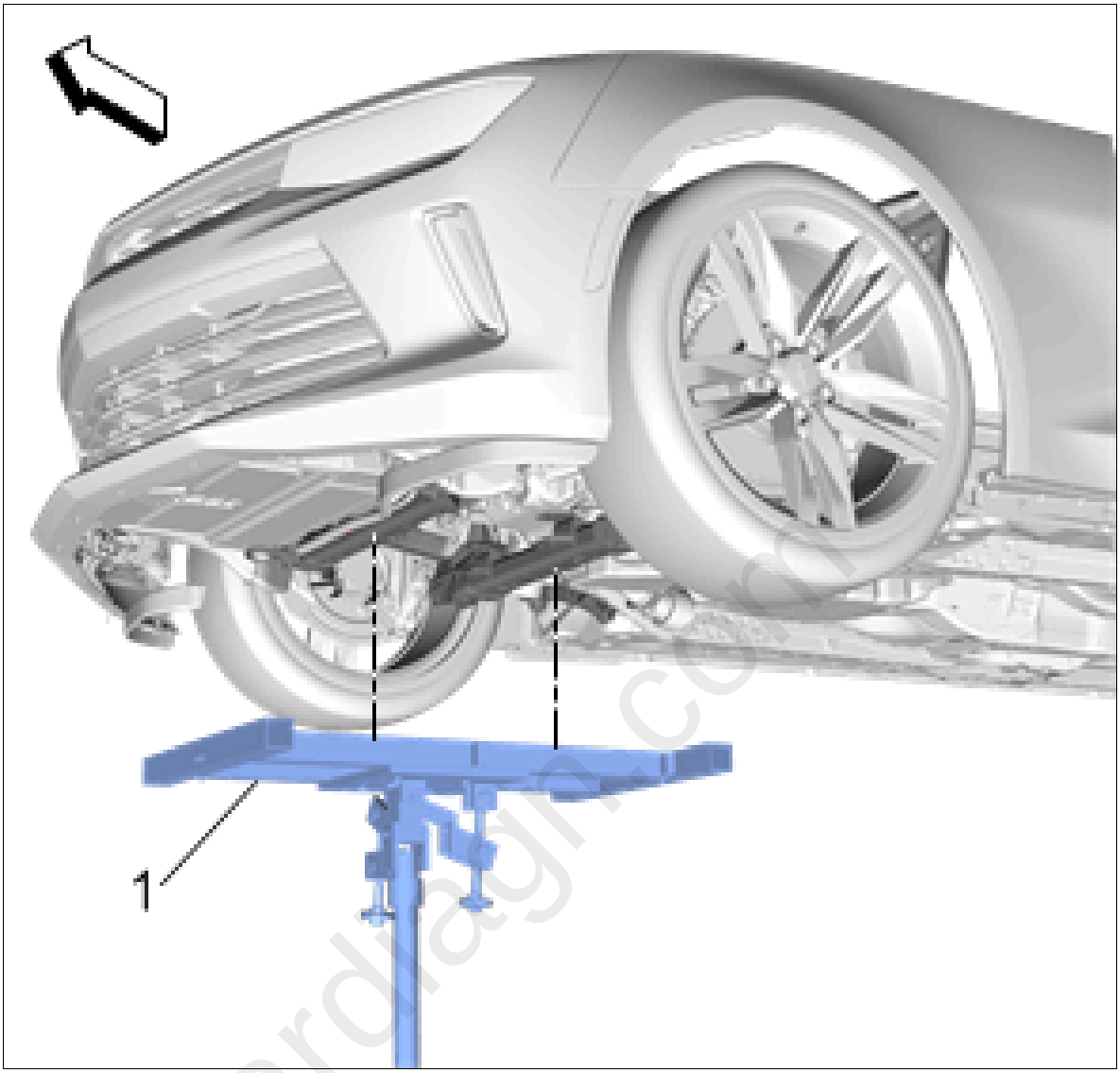


Courtesy of GENERAL MOTORS COMPANY

15. Remove Steering Linkage Outer Tie Rod (3) - Steering Linkage Outer Tie Rod Replacement

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Fig 12: Stand Under Drivetrain And Front Suspension Cradle



Courtesy of GENERAL MOTORS COMPANY

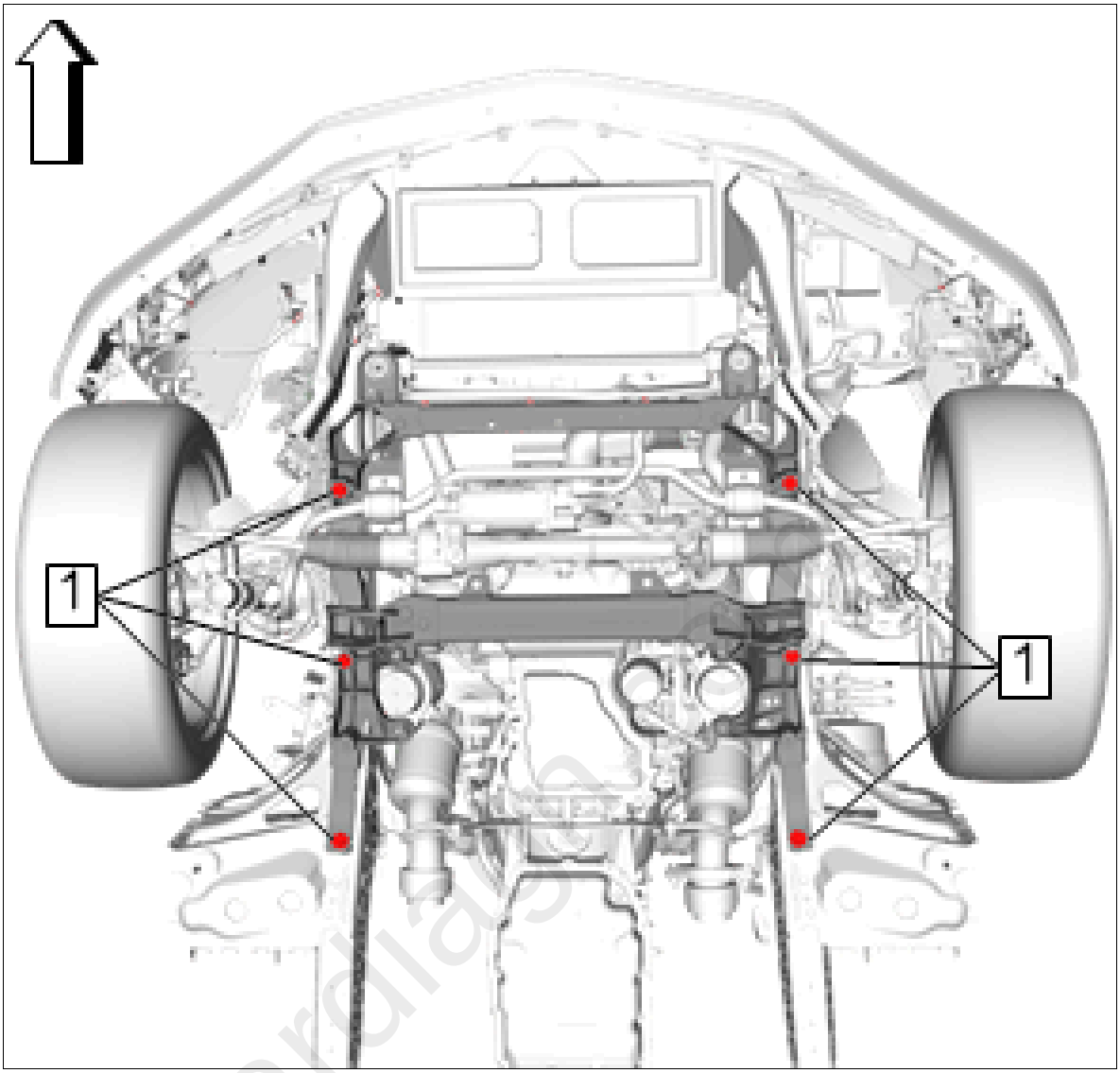
16. Install **J-39580** stand under the drivetrain and front suspension cradle.

    (1)

17. Lower the vehicle until the drivetrain and front suspension frame is resting lightly on the jackstands.

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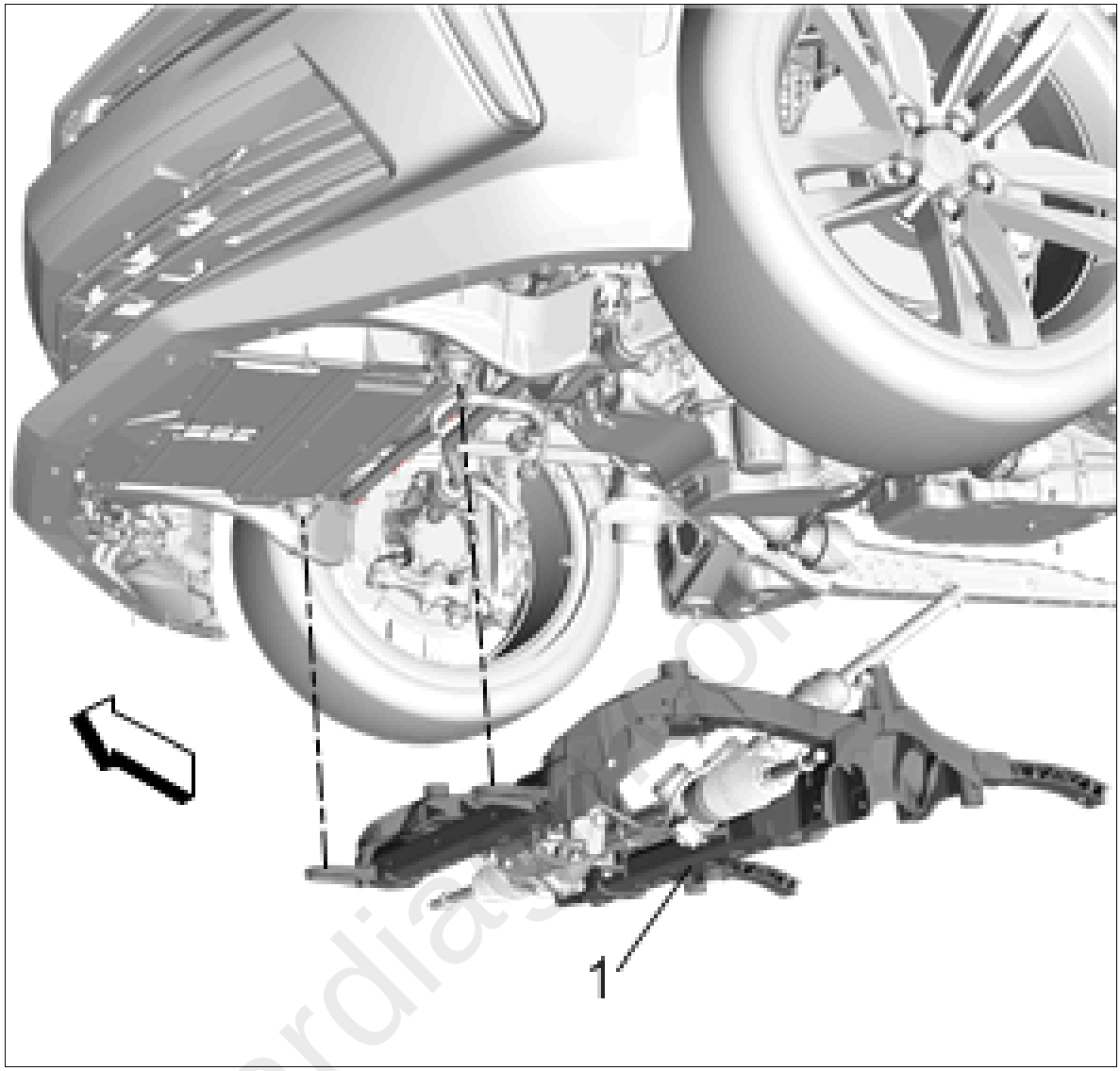
Fig 13: Drivetrain and Front Suspension Support Bolt



Courtesy of GENERAL MOTORS COMPANY

18. Remove Drivetrain and Front Suspension Support Bolt (1) (Qty: 6)
19. With the aid of an assistant, carefully raise the body from the frame.
20. Ensure when raising the body the following items are clear from the frame:
    1. Vacuum lines
    2. Steering knuckles
    3. Electrical wiring harnesses
    4. Oil coolers lines

Fig 14: Drivetrain And Front Suspension Frame

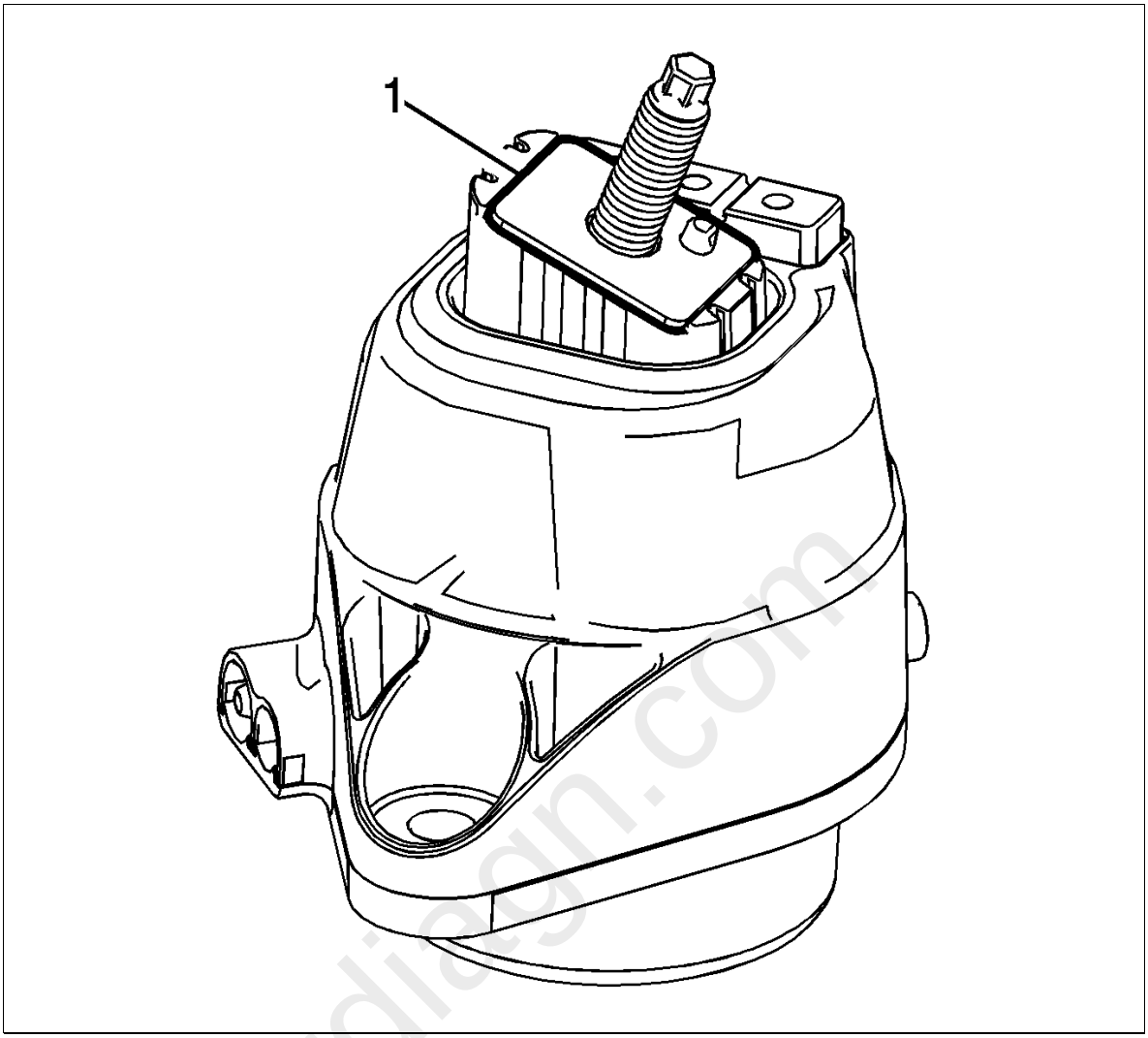


Courtesy of GENERAL MOTORS COMPANY

21. Remove the drivetrain and front suspension frame (1)

REPAIR INSTRUCTIONS > DRIVETRAIN AND FRONT SUSPENSION CRADLE REMOVAL AND INSTALLATION (LGX) > INSTALLATION PROCEDURE

Fig 1: Phenolic Spacer



Courtesy of GENERAL MOTORS COMPANY

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⚠ *CAUTION:*

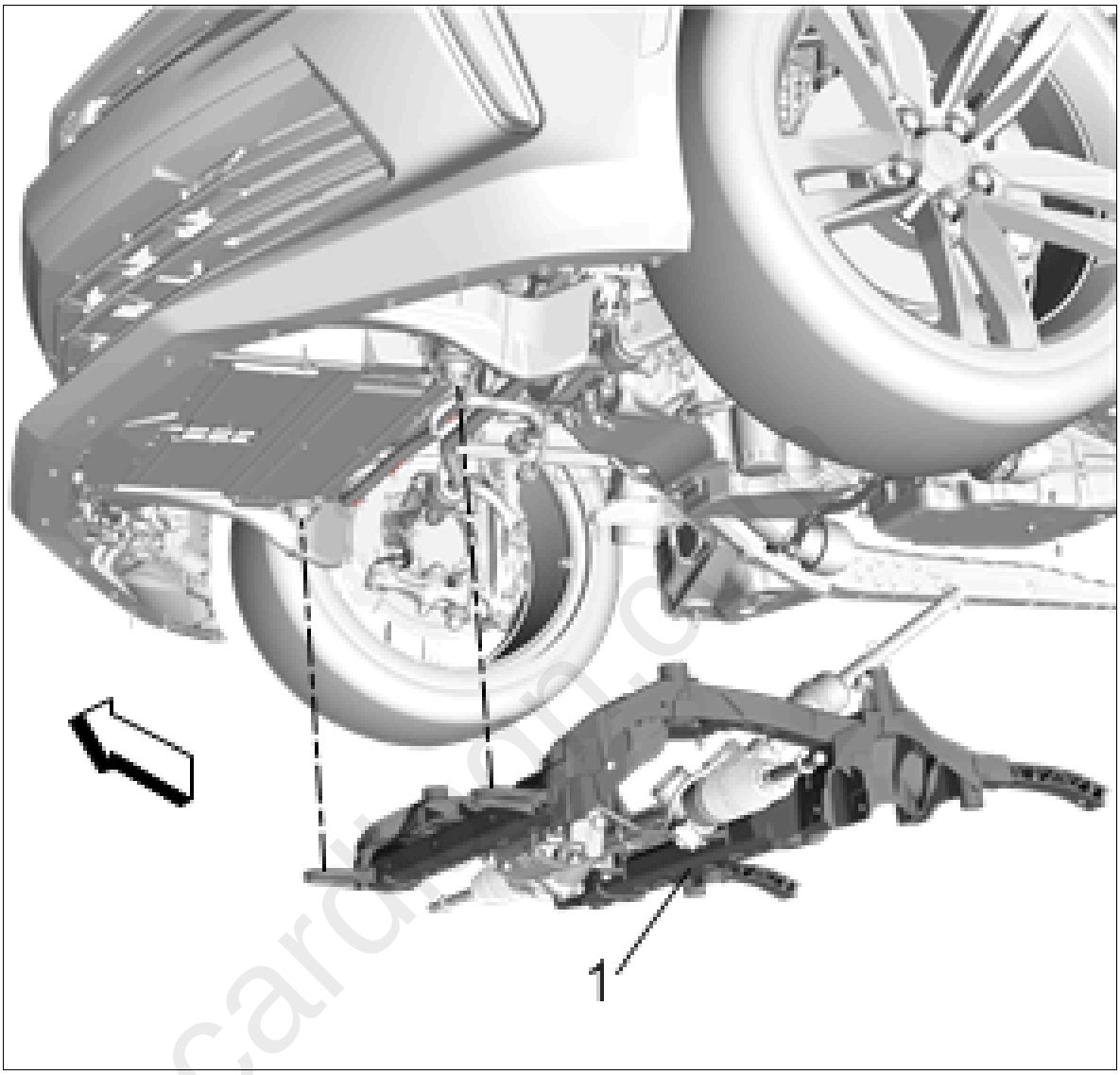
Phenolic spacer must be present to prevent galvanic/corrosive reaction and/or excessive temperature conduction between engine mount bracket and engine mount. Replace mount if phenolic spacer is missing or damaged. Failure to ensure phenolic spacer is intact and not damaged can lead to premature failure of engine mount and/or engine mount bracket.

NOTE:

Suspension components attached to the frame use Torque-to-Yield fasteners and must be DISCARDED and replaced with NEW Torque Angle Yield (TAY) fasteners. The frame to body fasteners are not TAY fasteners.

1. Inspect the engine mount to ensure the phenolic spacer (1) is in place and not damaged.
2. With the aid of an assistant, position and secure the frame assembly to the support fixture.

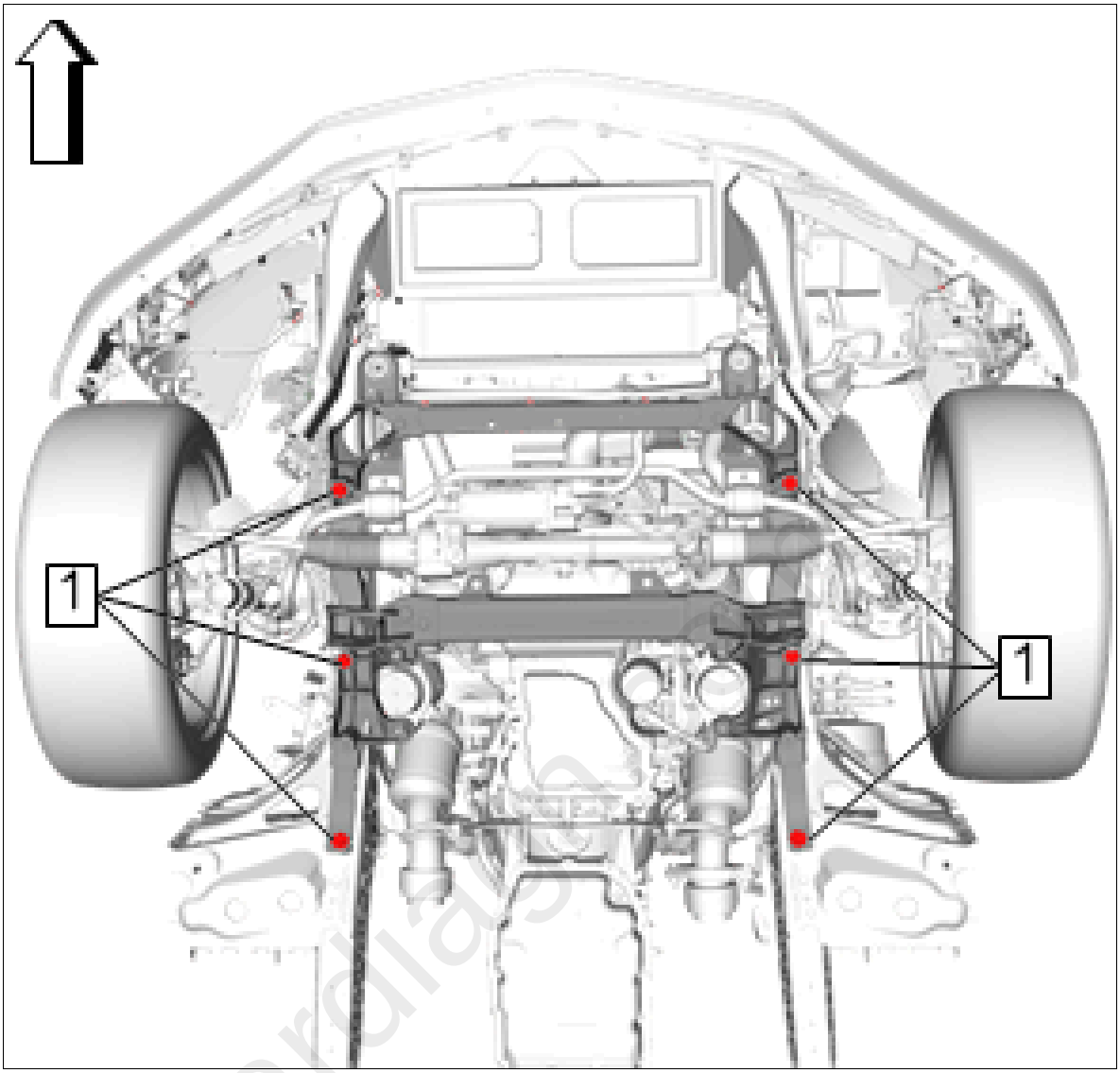
Fig 2: Drivetrain And Front Suspension Frame



Courtesy of GENERAL MOTORS COMPANY

3. With the aid of an assistant, carefully lower the body to the frame (1)
4. Ensure the following components are clear from the frame:
    1. Vacuum lines
    2. Steering knuckles
    3. Electrical wiring harnesses
    4. Oil cooler lines

Fig 3: Drivetrain and Front Suspension Support Bolt



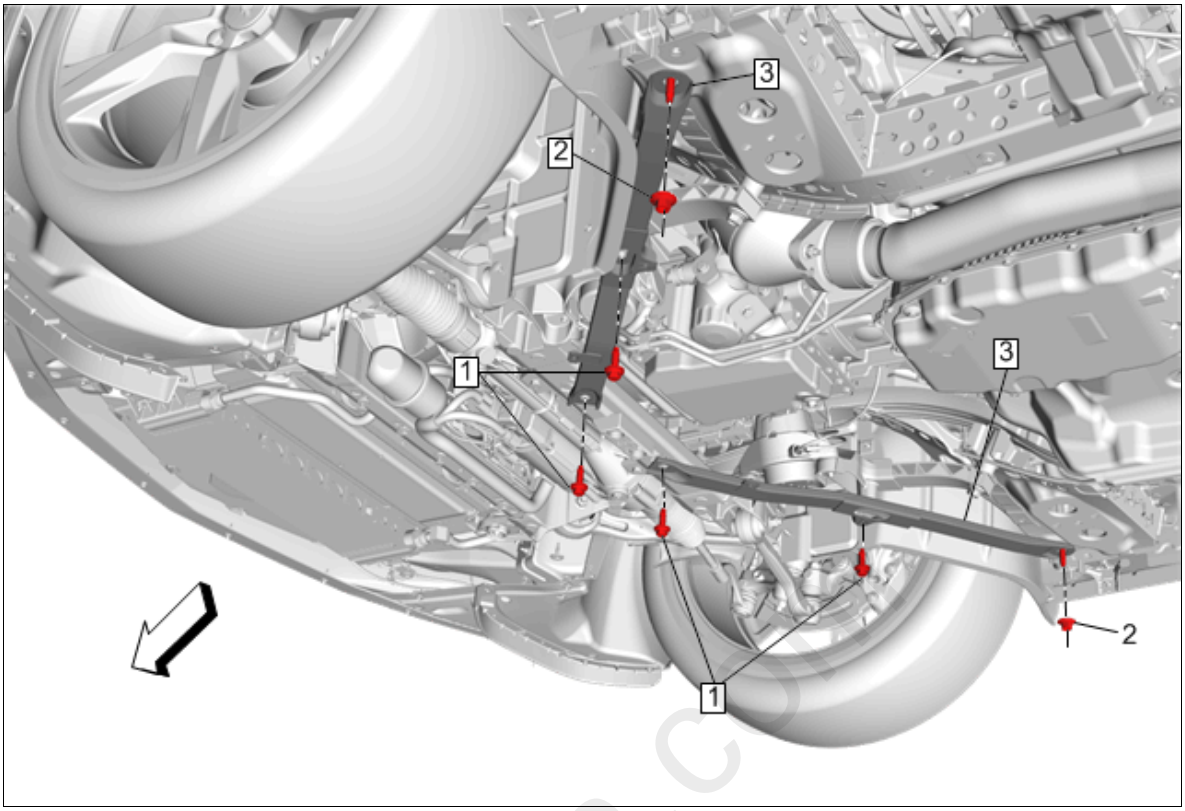
Courtesy of GENERAL MOTORS COMPANY

> ⚠ *CAUTION:*
>
> *Refer to Fastener Caution*

5. Install Drivetrain and Front Suspension Support Bolt(1) (Qty: 6) and tighten to 100 N.m (74 lb ft)

6. Remove the **J-39580** stand from under the vehicle.

Fig 4: Front Crossmember Brace

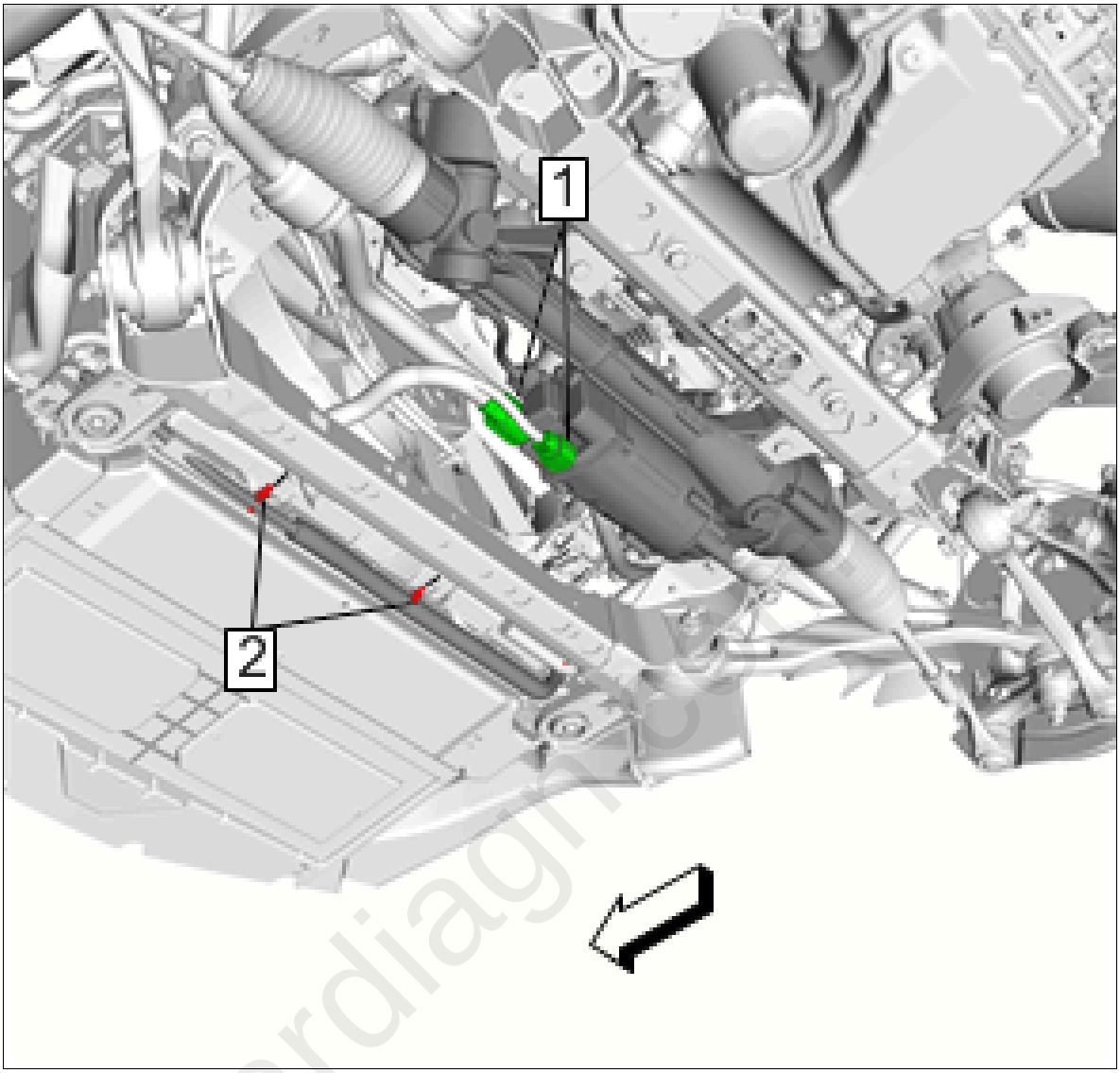


Courtesy of GENERAL MOTORS COMPANY

7. Install Front Crossmember Brace (3) - Front Crossmember Brace Replacement (Coupe - LGX, LTG) Front Crossmember Brace Replacement (Convertible - LGX)

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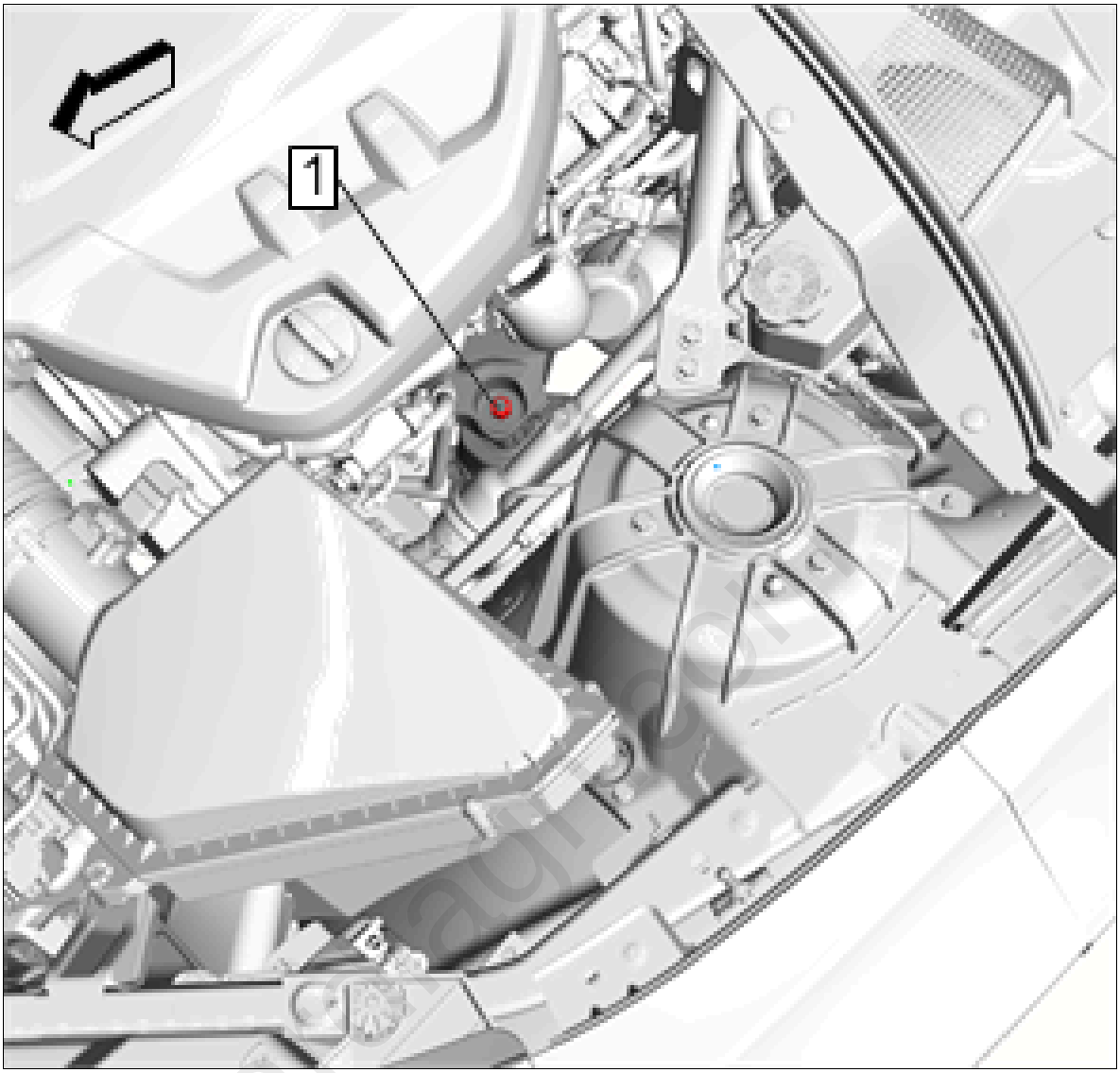
Fig 5: Steering Gear Electrical Connectors



Courtesy of GENERAL MOTORS COMPANY

8. Connect the steering gear electrical connectors (1)

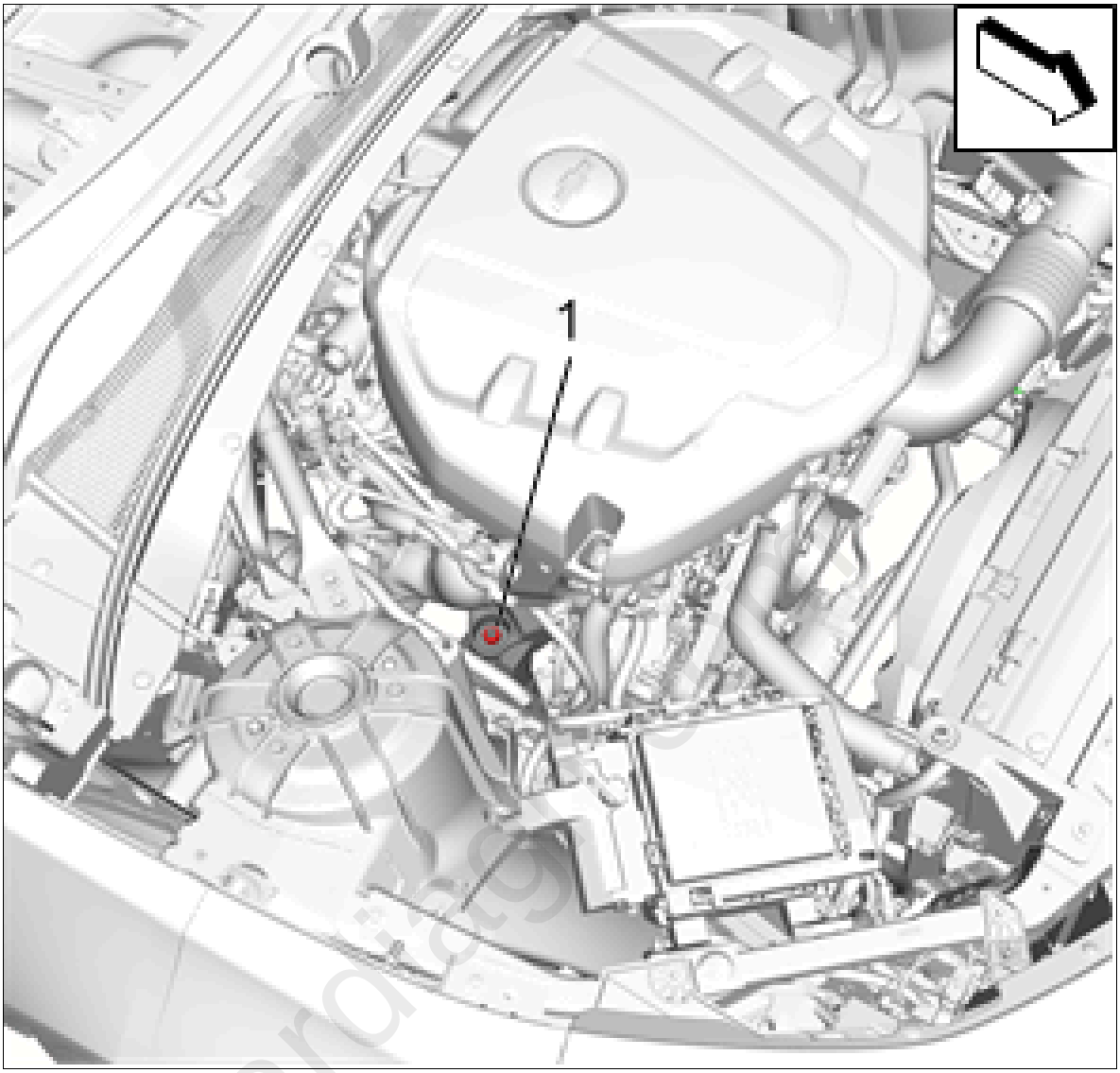
Fig 6: Left Side Engine Mount Nut



Courtesy of GENERAL MOTORS COMPANY

9. Install Engine Mount Nut - Left Side (1) and tighten to 70 N.m (52 lb ft)

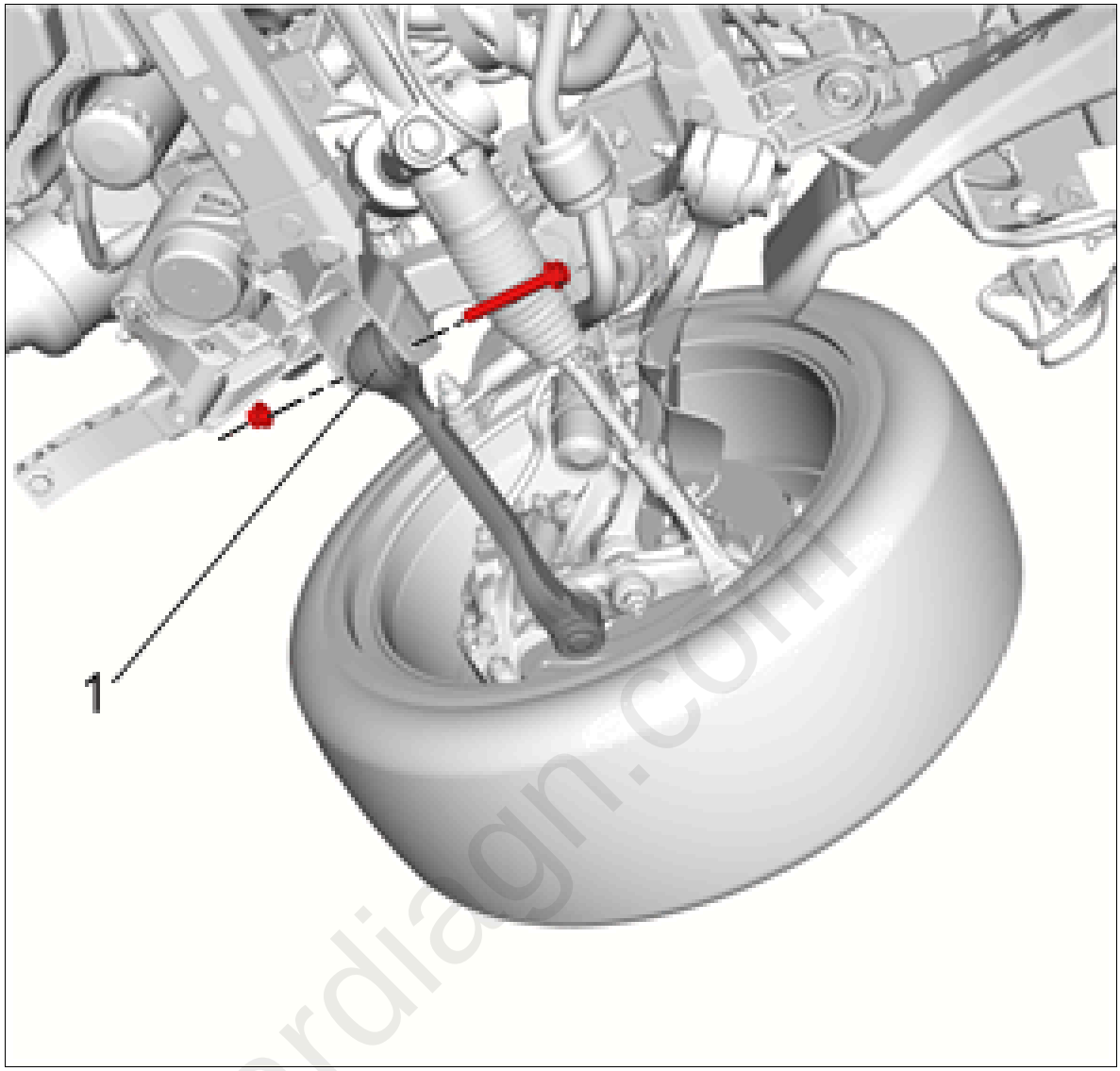
Fig 7: Right Side Engine Mount Nut



Courtesy of GENERAL MOTORS COMPANY

10. Install Engine Mount Nut - Right Side (1) and tighten to 70 N.m (52 lb ft)

Fig 8: Front Lower Control Rear Links From Front Suspension Frame

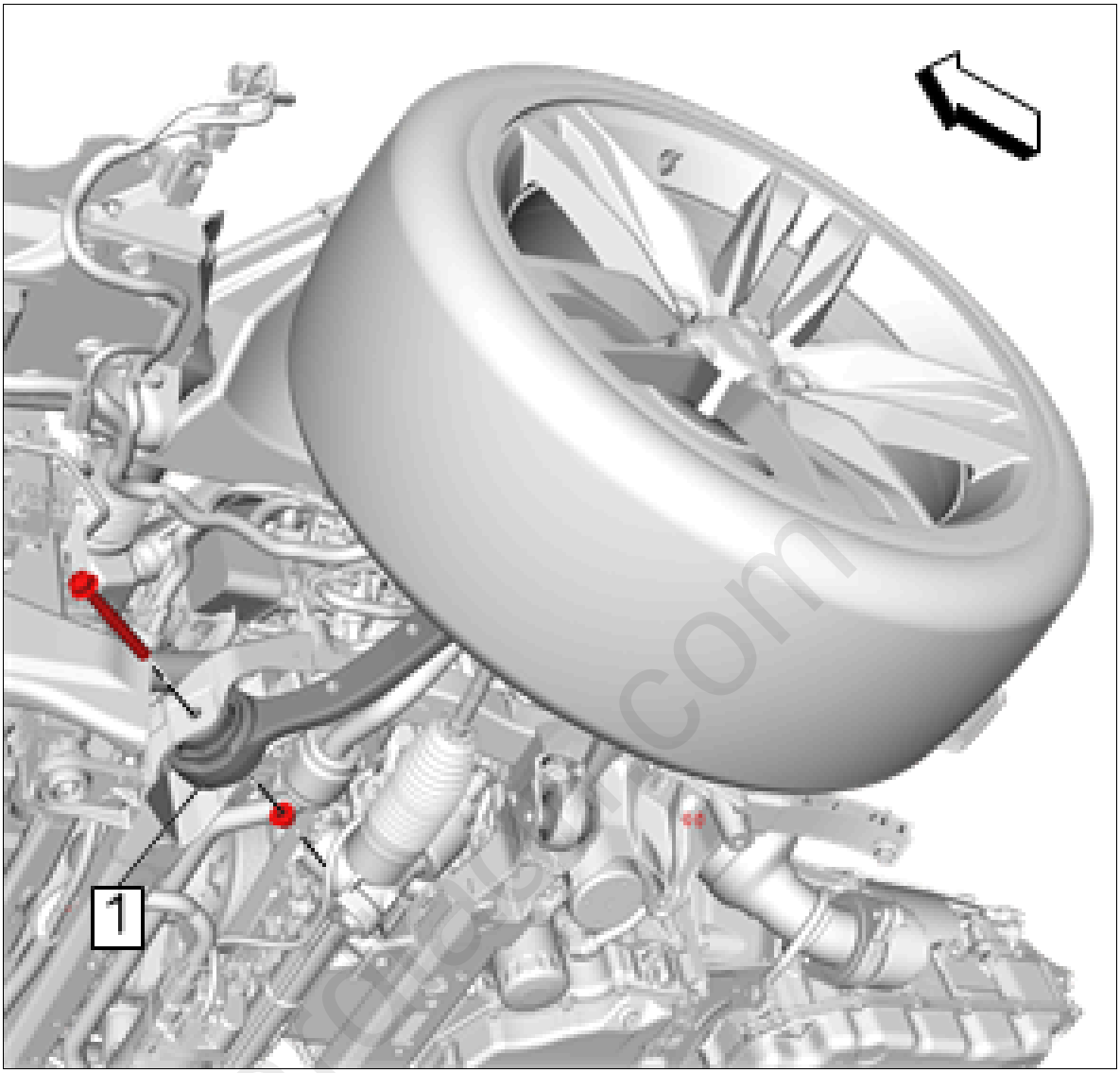


Courtesy of GENERAL MOTORS COMPANY

11. Install Front Lower Control Rear Link (1) - Front Lower Control Rear Link Replacement (LGX, LTG)

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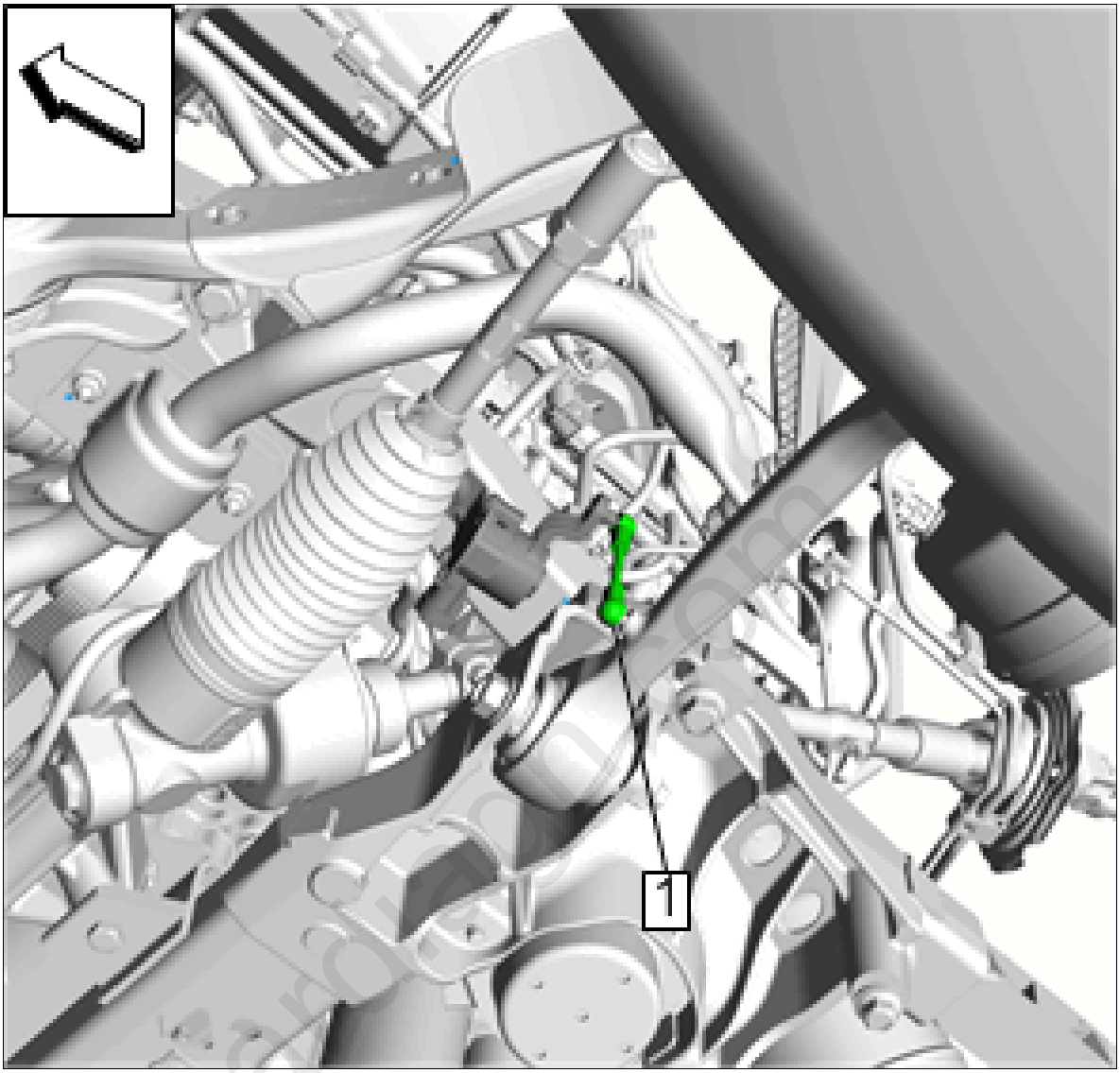
Fig 9: Front Lower Control Front Links From Front Suspension Frame



Courtesy of GENERAL MOTORS COMPANY

12. Install Front Lower Control Front Link (1) - Front Lower Control Front Link Replacement (LGX or LTG, Without V18)Front Lower Control Front Link Replacement (LGX or LTG, With V18)

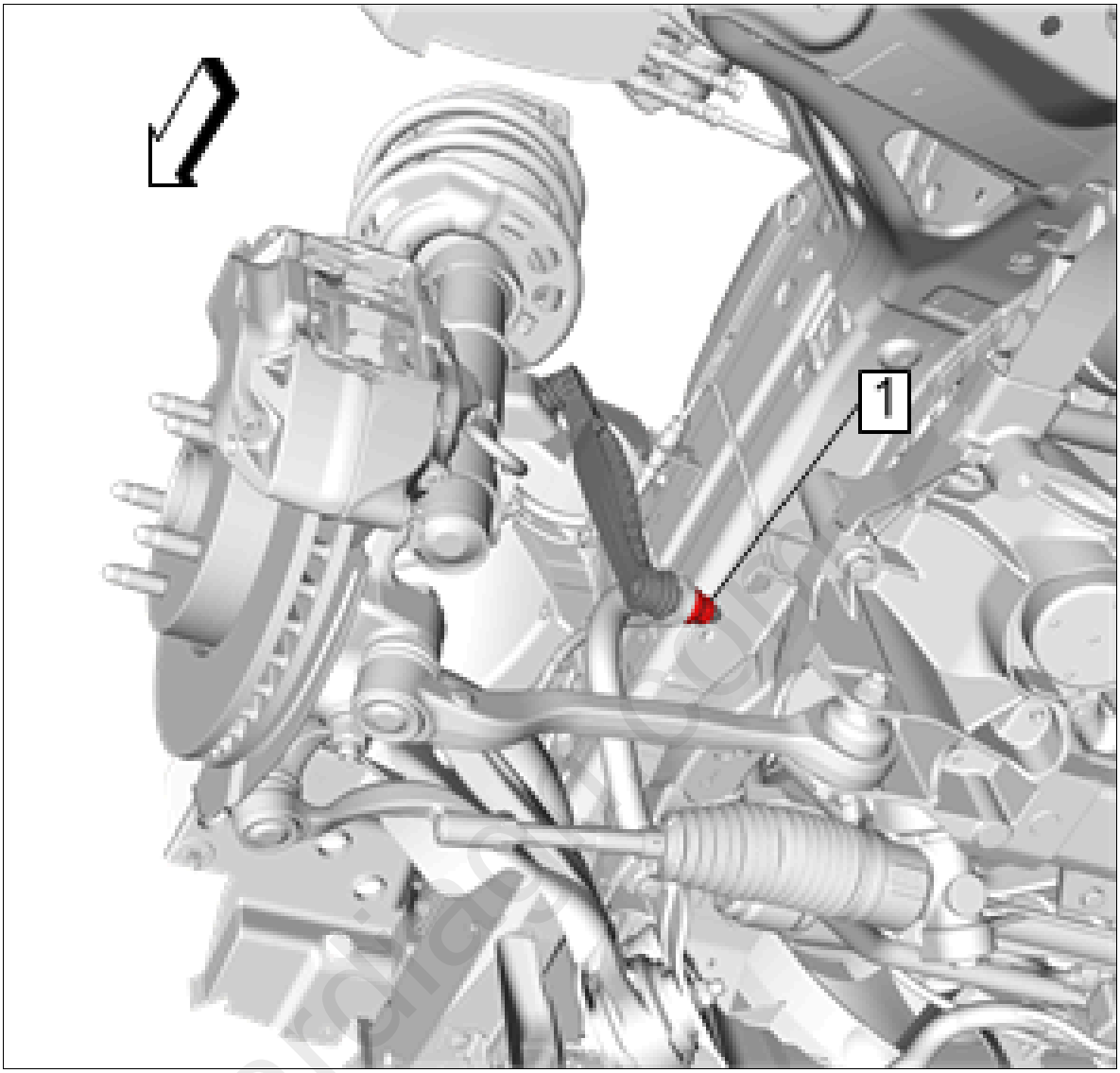
Fig 10: Front Suspension Automatic Forward Lighting Position Sensor Arms From Lower Control Rear Links



Courtesy of GENERAL MOTORS COMPANY

13. Connect the front suspension automatic forward lighting position sensor arm (1) to the lower control rear link.
14. Connect the electrical connector to the front suspension automatic forward lighting position sensor.

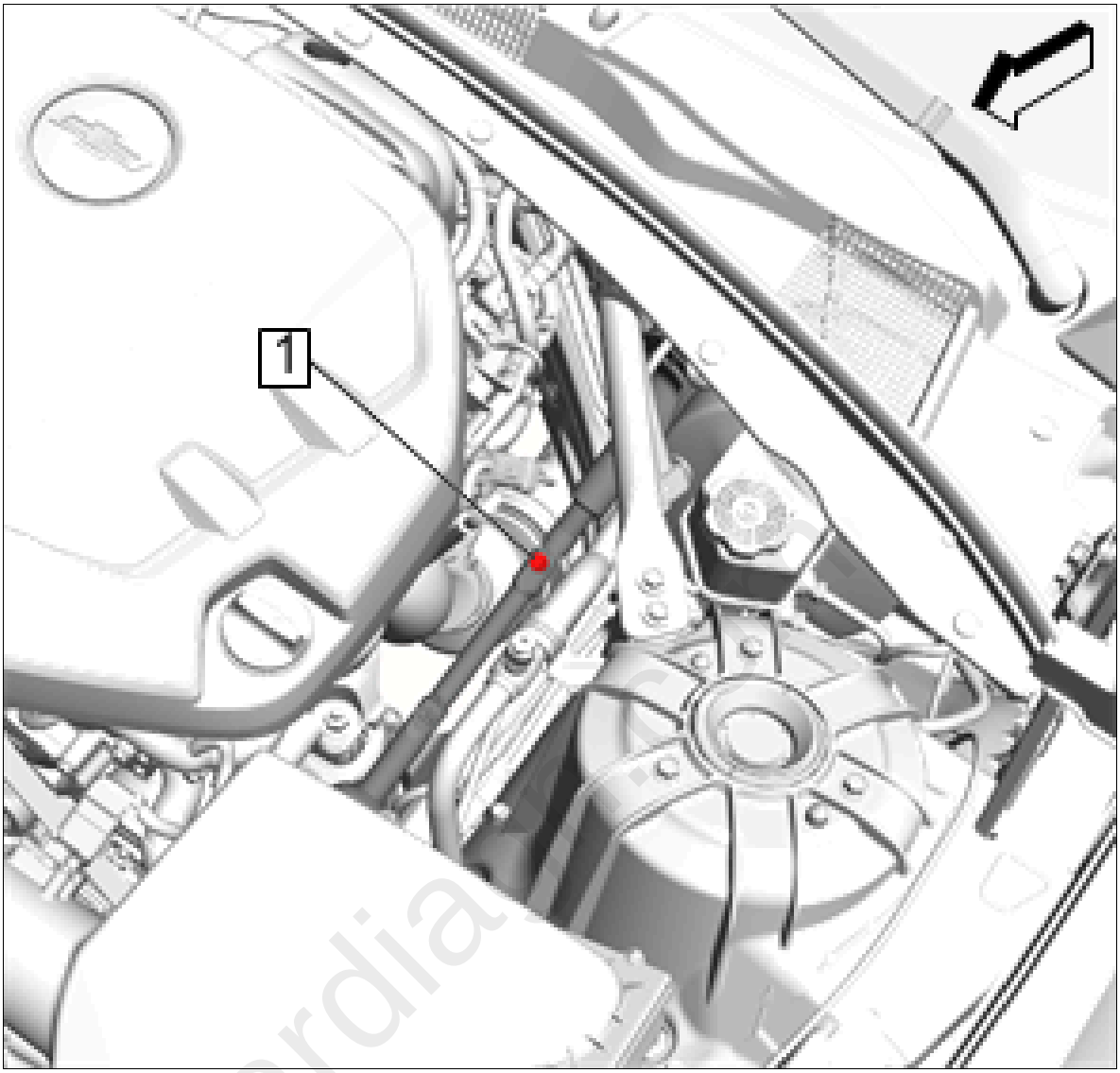
Fig 11: Right And Left Lower Stabilizer Shaft Links From Stabilizer Bar



Courtesy of GENERAL MOTORS COMPANY

15. Connect the right and left lower stabilizer shaft links to the stabilizer bar (1) - Stabilizer Shaft Link Replacement (LGX, LTG)

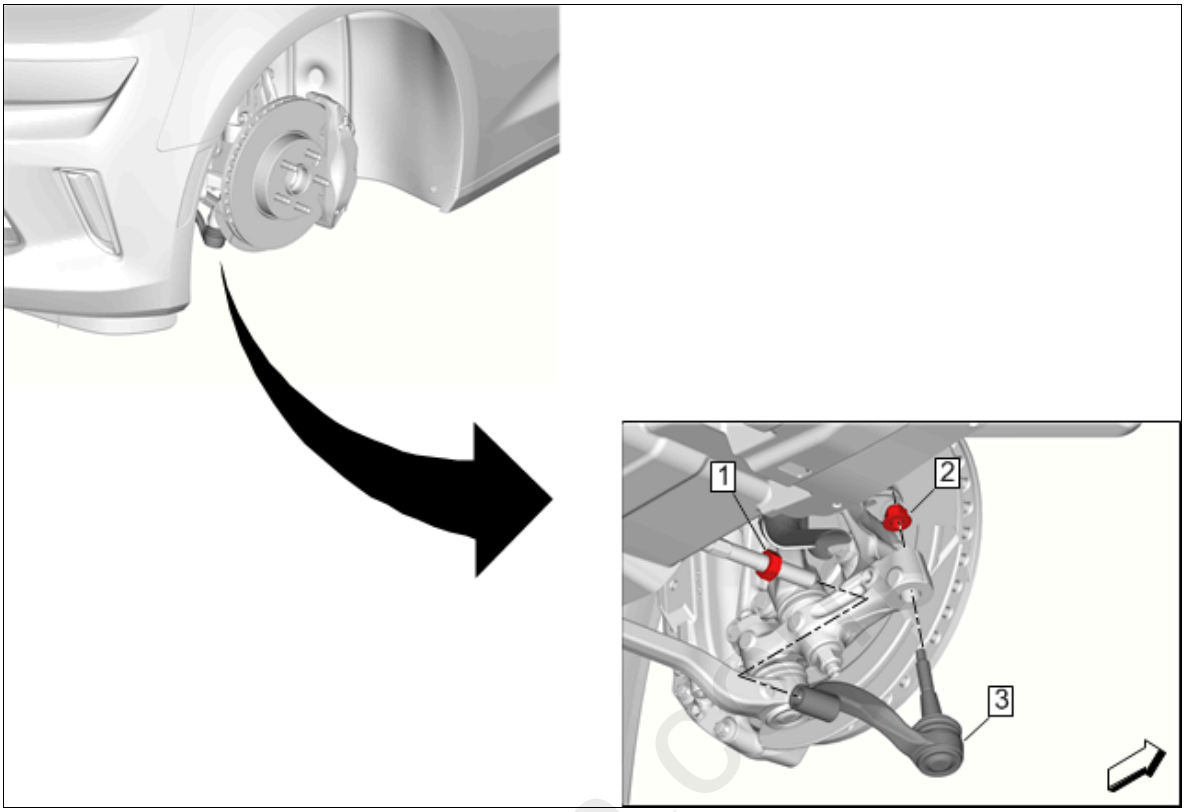
Fig 12: Intermediate Steering Shaft From Steering Column Shaft



Courtesy of GENERAL MOTORS COMPANY

16. Connect the intermediate steering shaft to the steering column (1) - Mid Intermediate Steering Shaft Replacement

Fig 13: Steering Linkage Outer Tie Rod

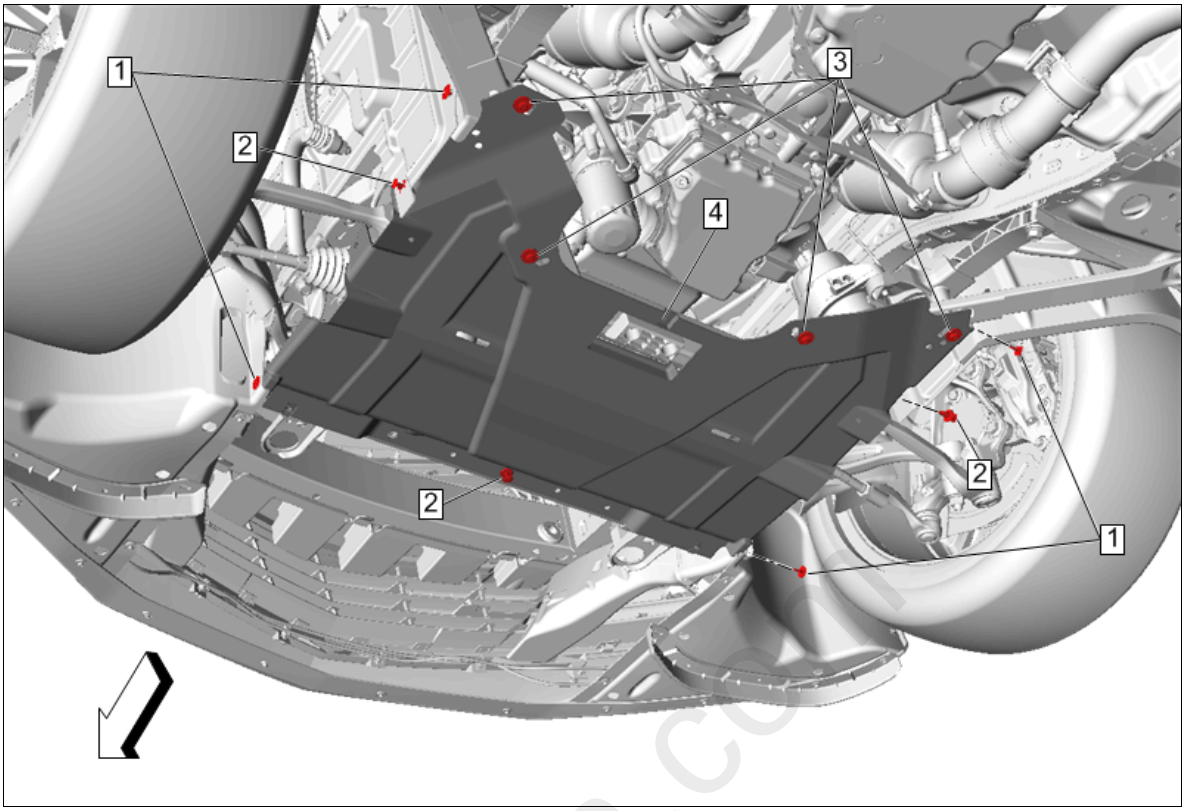


Courtesy of GENERAL MOTORS COMPANY

17. Install Steering Linkage Outer Tie Rod (3) - Steering Linkage Outer Tie Rod Replacement

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Fig 14: Front Compartment Lower Noise Shield



Courtesy of GENERAL MOTORS COMPANY

18. Install Front Compartment Lower Noise Shield (4) - Front Compartment Lower Noise Shield Replacement (Coupe - LGX, LTG)
19. Remove the engine support fixture.

REPAIR INSTRUCTIONS > REAR SUSPENSION CRADLE REPLACEMENT

Special Tools

EN-39580 Support Stand

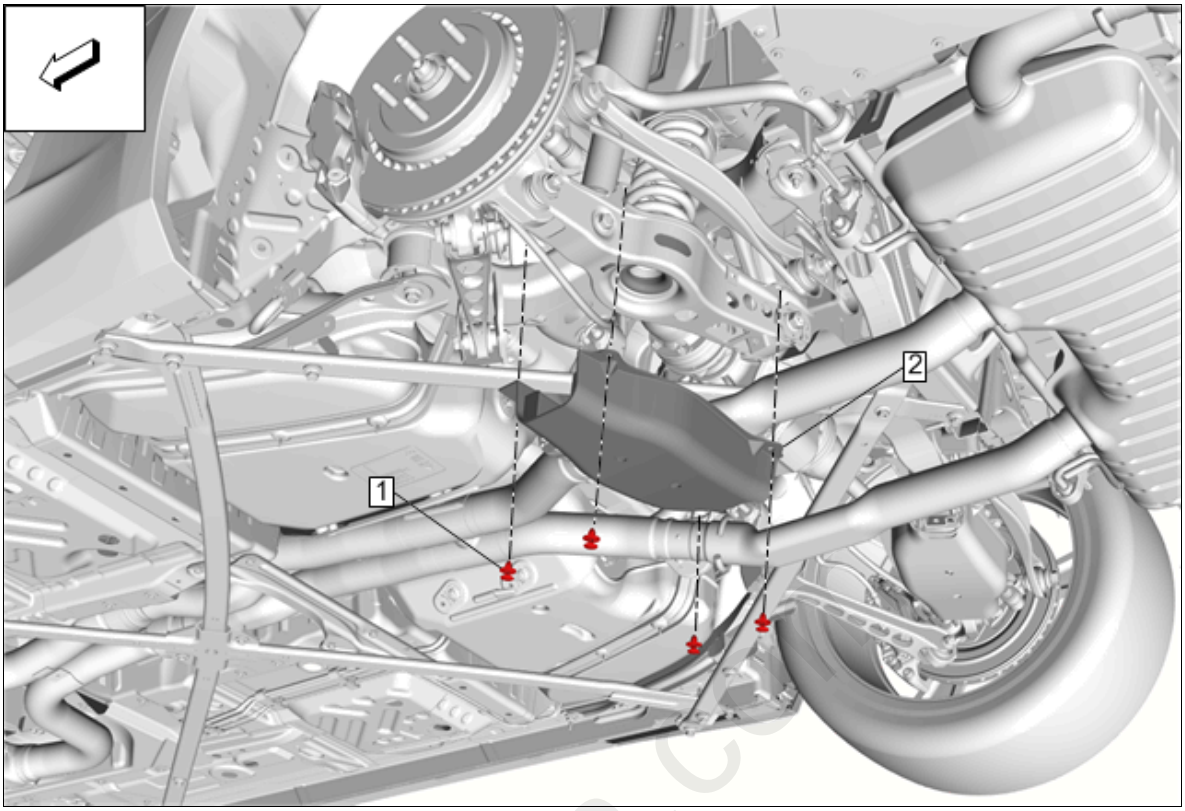
Equivalent regional tools:Special Tools

REPAIR INSTRUCTIONS > REAR SUSPENSION CRADLE REPLACEMENT > REMOVAL PROCEDURE

1. Raise and support the vehicle. Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP)
2. Remove the rear wheels. Tire and Wheel Removal and Installation

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Fig 1: Rear Suspension Lower Control Arm Cover

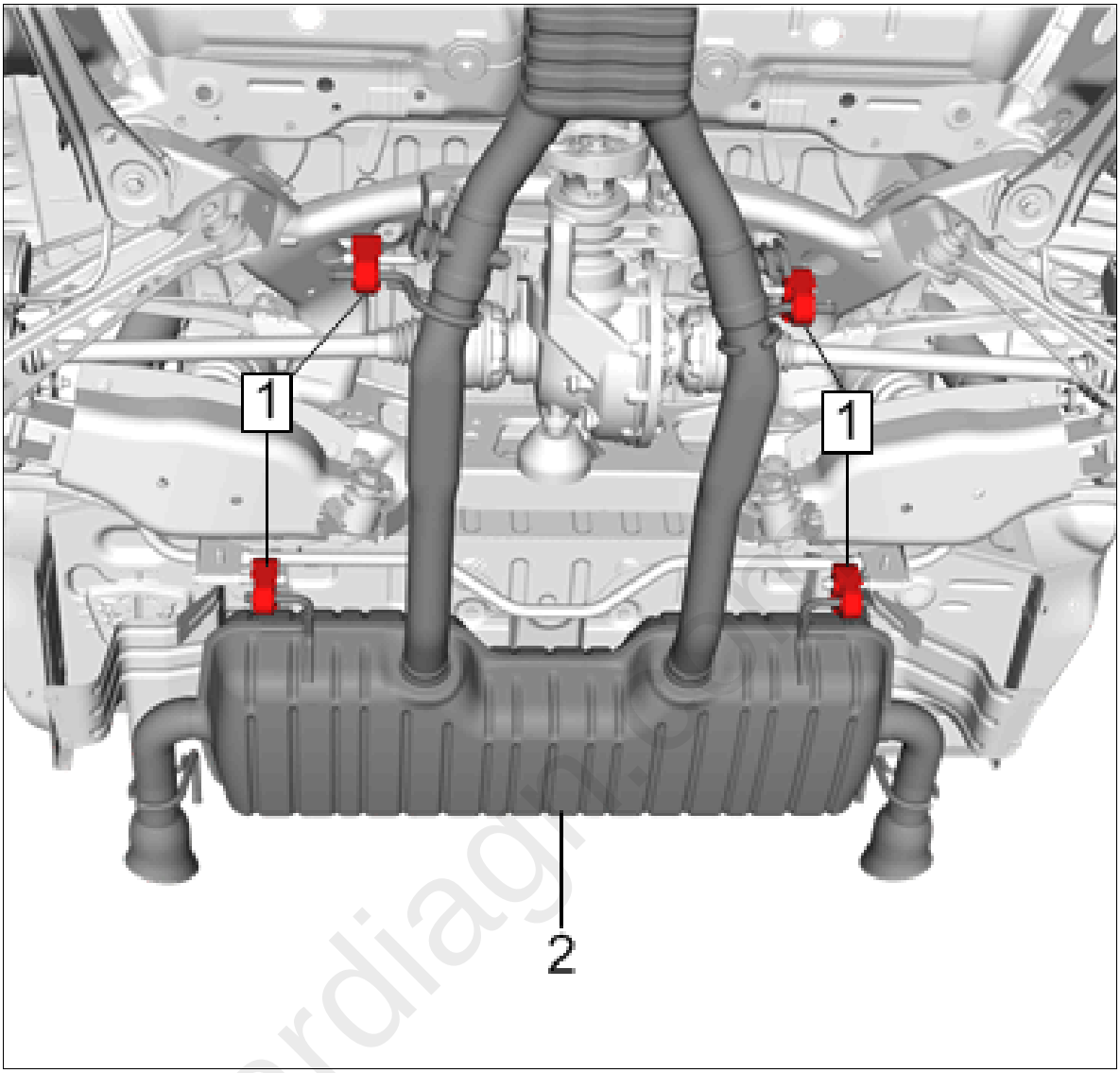


Courtesy of GENERAL MOTORS COMPANY

3. Remove Rear Suspension Lower Control Arm Cover (2) - Rear Suspension Lower Control Arm Cover Replacement

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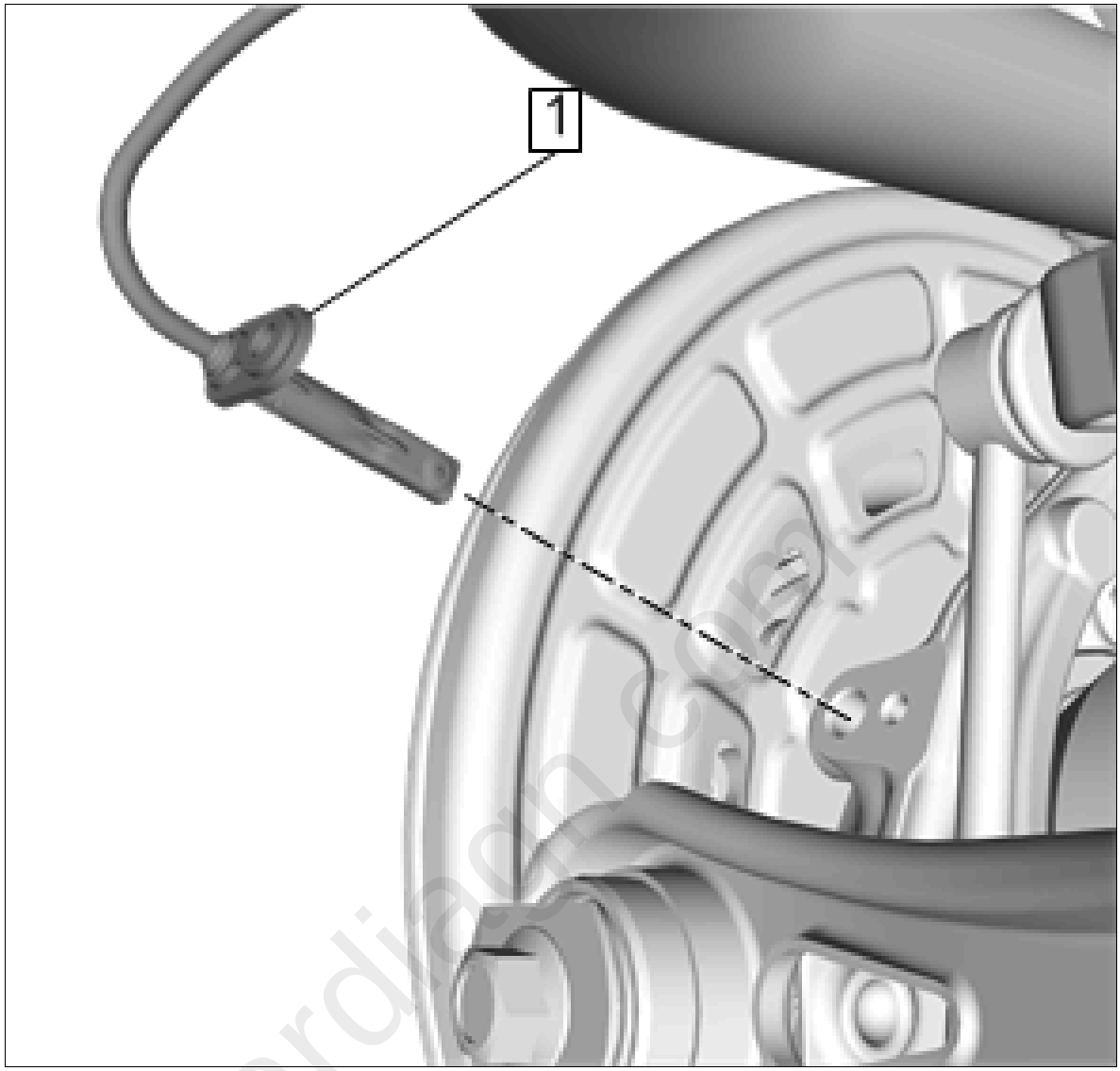
Fig 2: Exhaust Muffler Isolator



Courtesy of GENERAL MOTORS COMPANY

4. Remove Exhaust Muffler Assembly (2) - Exhaust Muffler Replacement (LGX, Coupe)Exhaust Muffler Replacement (LGX, Convertible)

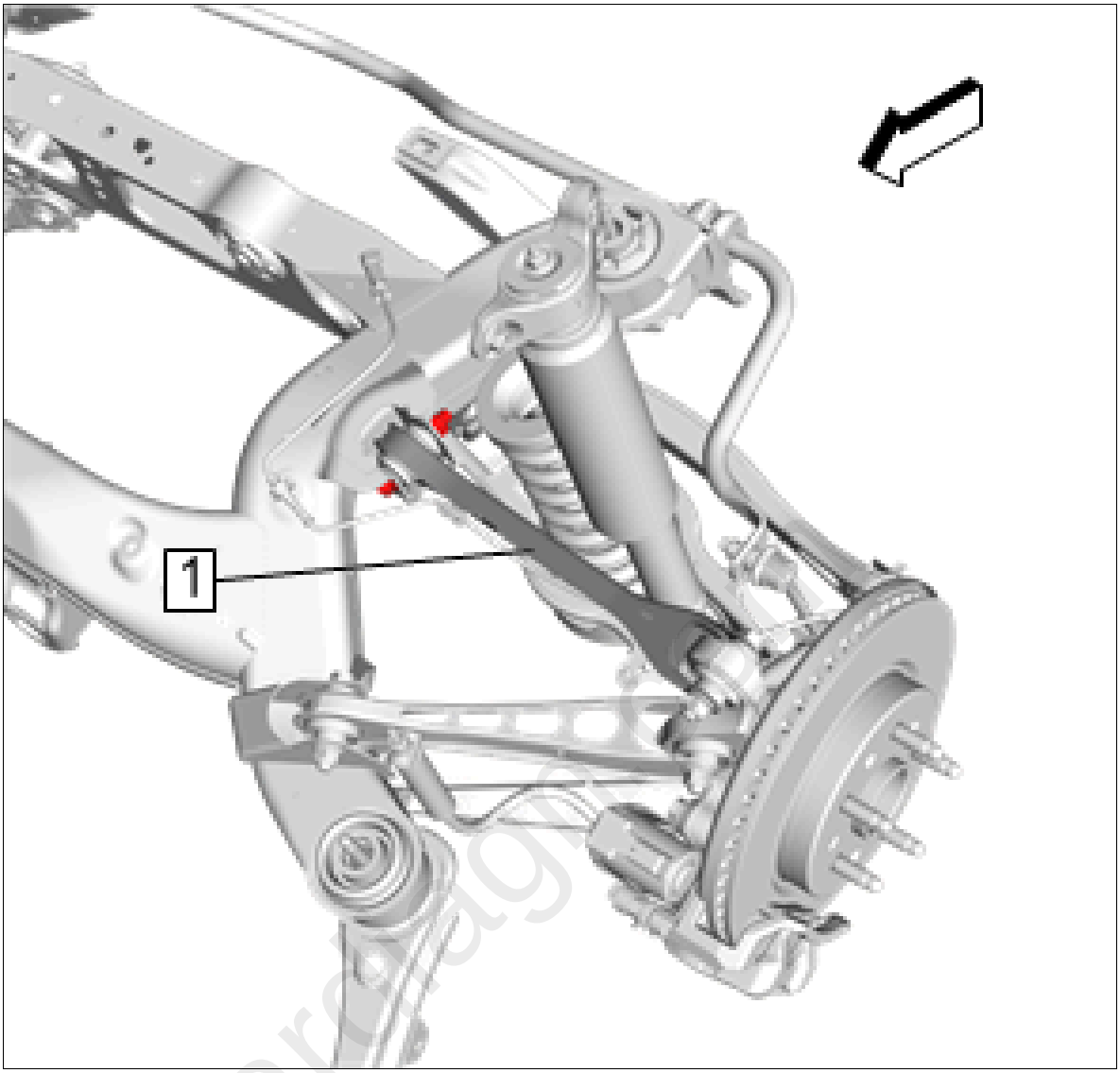
Fig 3: Rear Wheel Speed Sensor



Courtesy of GENERAL MOTORS COMPANY

5. Remove Rear Wheel Speed Sensor (1) - Rear Wheel Speed Sensor Replacement
6. Support the rear suspension lower control arm.

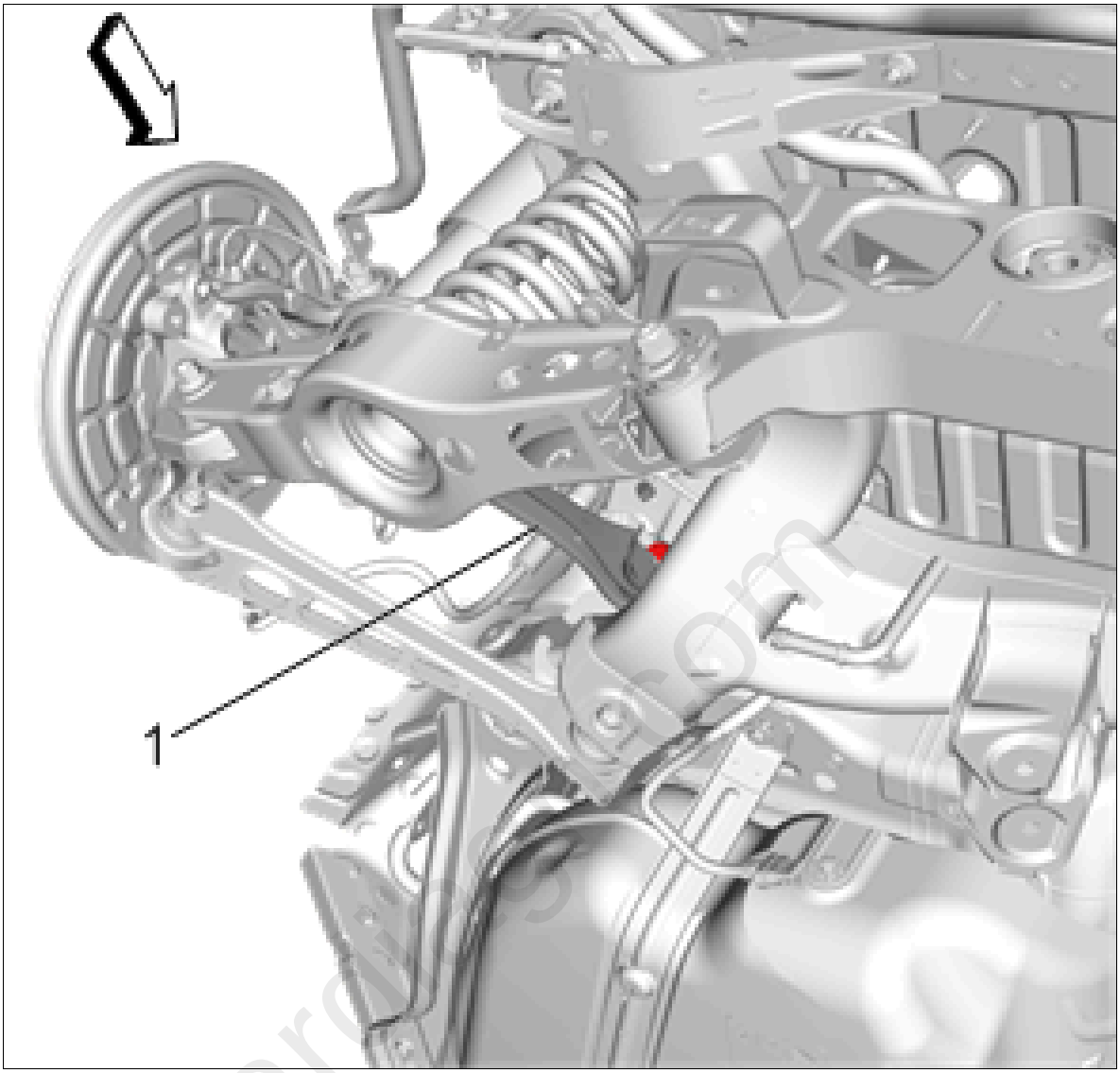
Fig 4: Rear Suspension Upper Lateral Link



Courtesy of GENERAL MOTORS COMPANY

7. Remove Rear Suspension Upper Lateral Link (1) at Rear Suspension Cradle - Rear Suspension Upper Lateral Link Replacement

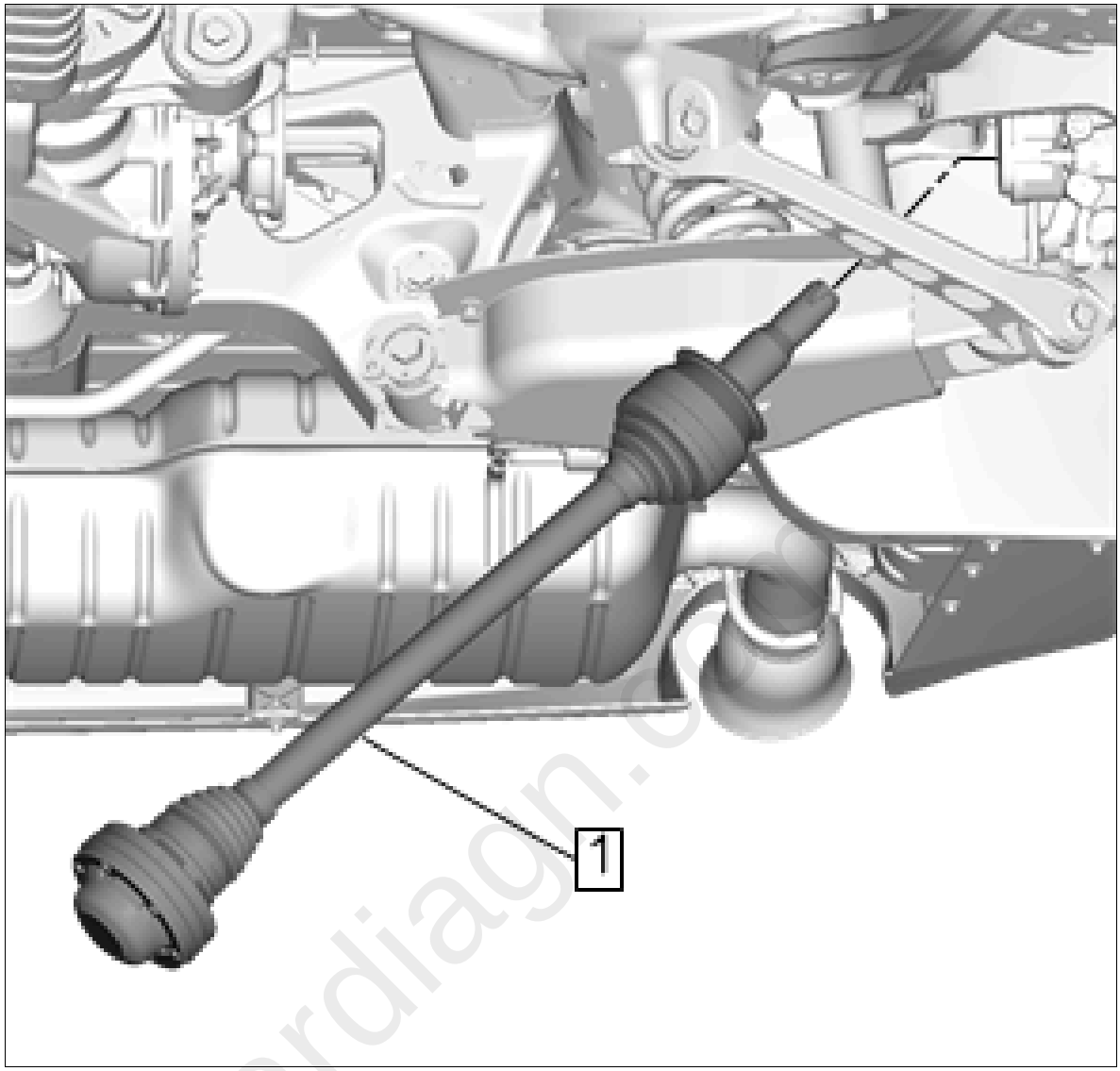
Fig 5: Rear Suspension Upper Trailing Link



Courtesy of GENERAL MOTORS COMPANY

8. Remove Rear Suspension Upper Trailing Link (1) at Rear Suspension Cradle - Rear Suspension Upper Trailing Link Replacement

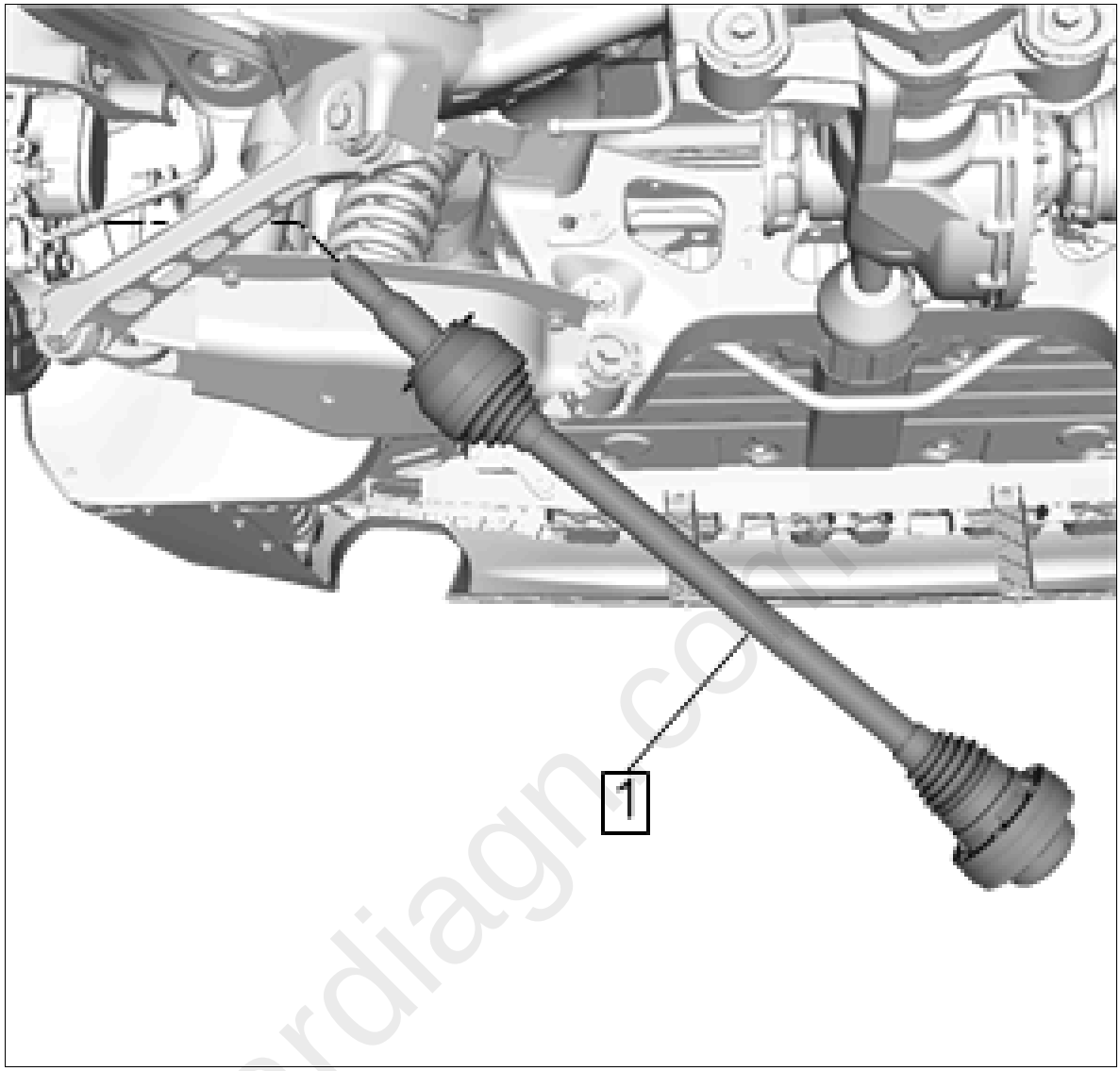
Fig 6: Wheel Drive Shaft



Courtesy of GENERAL MOTORS COMPANY

9. Remove Rear Wheel Drive Shaft - Left Side (1) - Rear Wheel Drive Shaft Replacement - Left Side

Fig 7: Wheel Drive Shaft

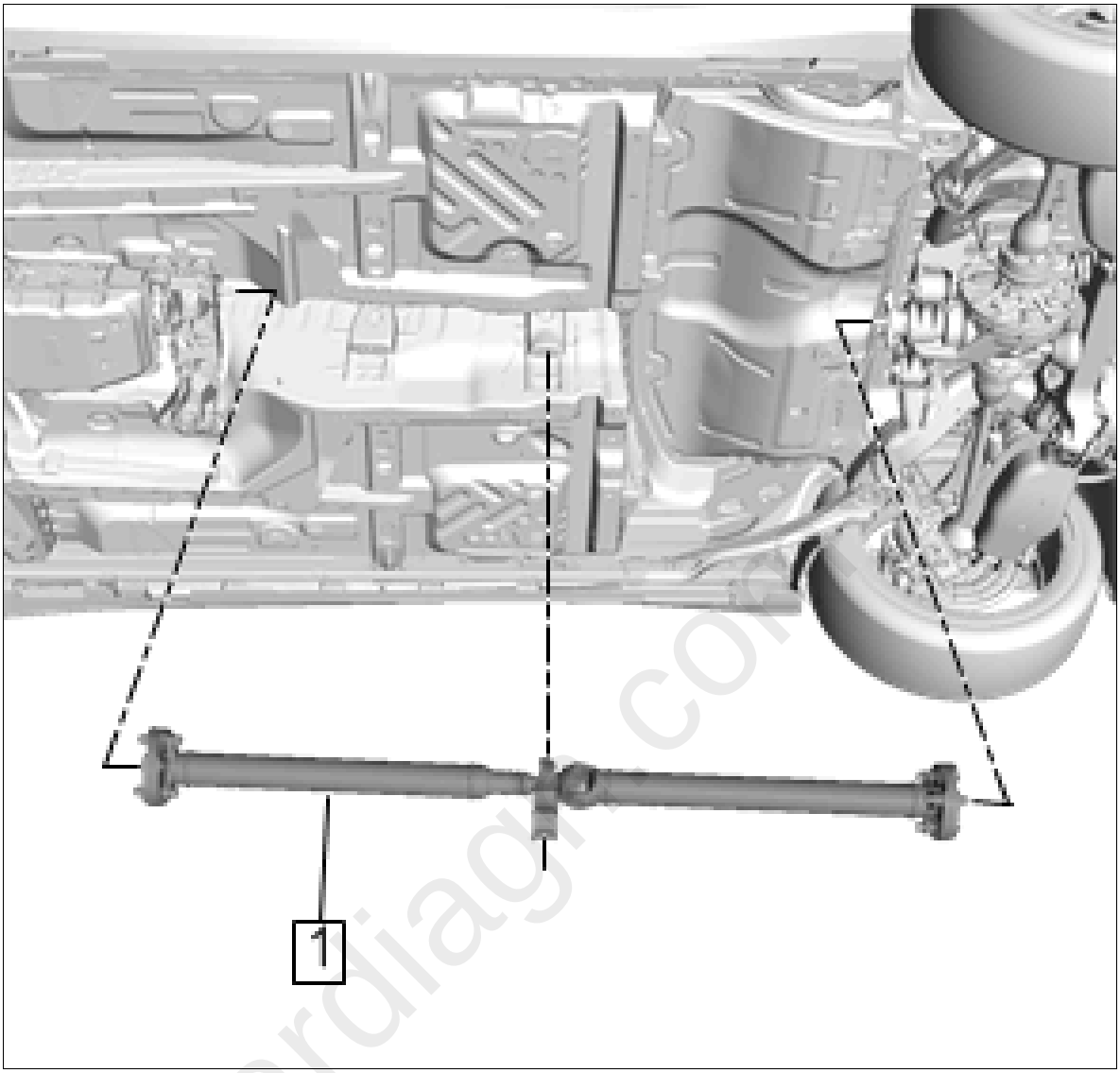


Courtesy of GENERAL MOTORS COMPANY

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10. Remove Rear Wheel Drive Shaft - Right Side (1) - Rear Wheel Drive Shaft Replacement - Right Side

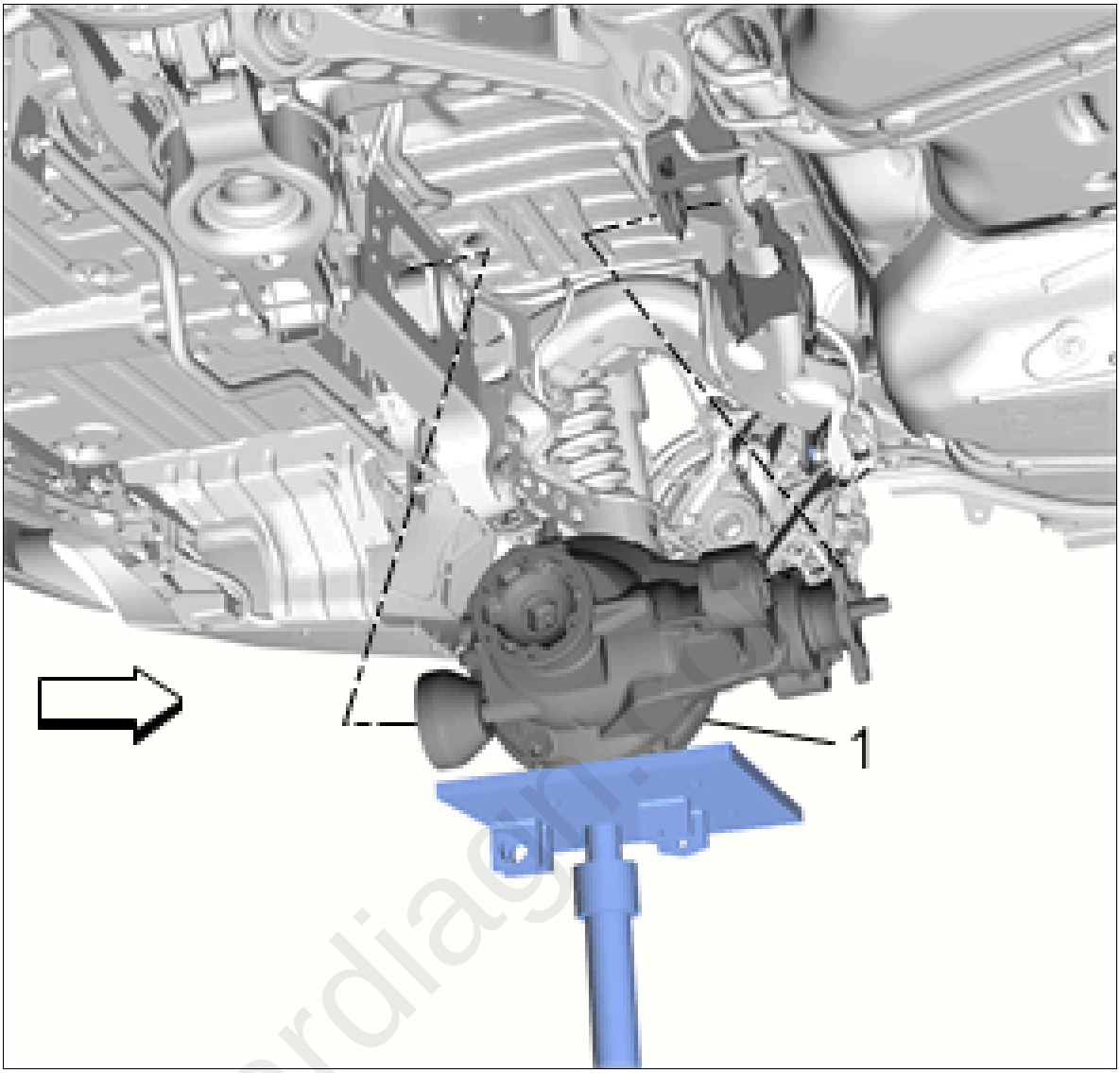
Fig 8: Propeller Shaft



Courtesy of GENERAL MOTORS COMPANY

11. Remove Propeller Shaft (1) - Two-Piece Propeller Shaft Replacement (Coupe MM6, M13)Two-Piece Propeller Shaft Replacement (Convertible MM6, M13)Two-Piece Propeller Shaft Replacement (Coupe M5T, M5U)Two-Piece Propeller Shaft Replacement (Convertible M5T, M5U)

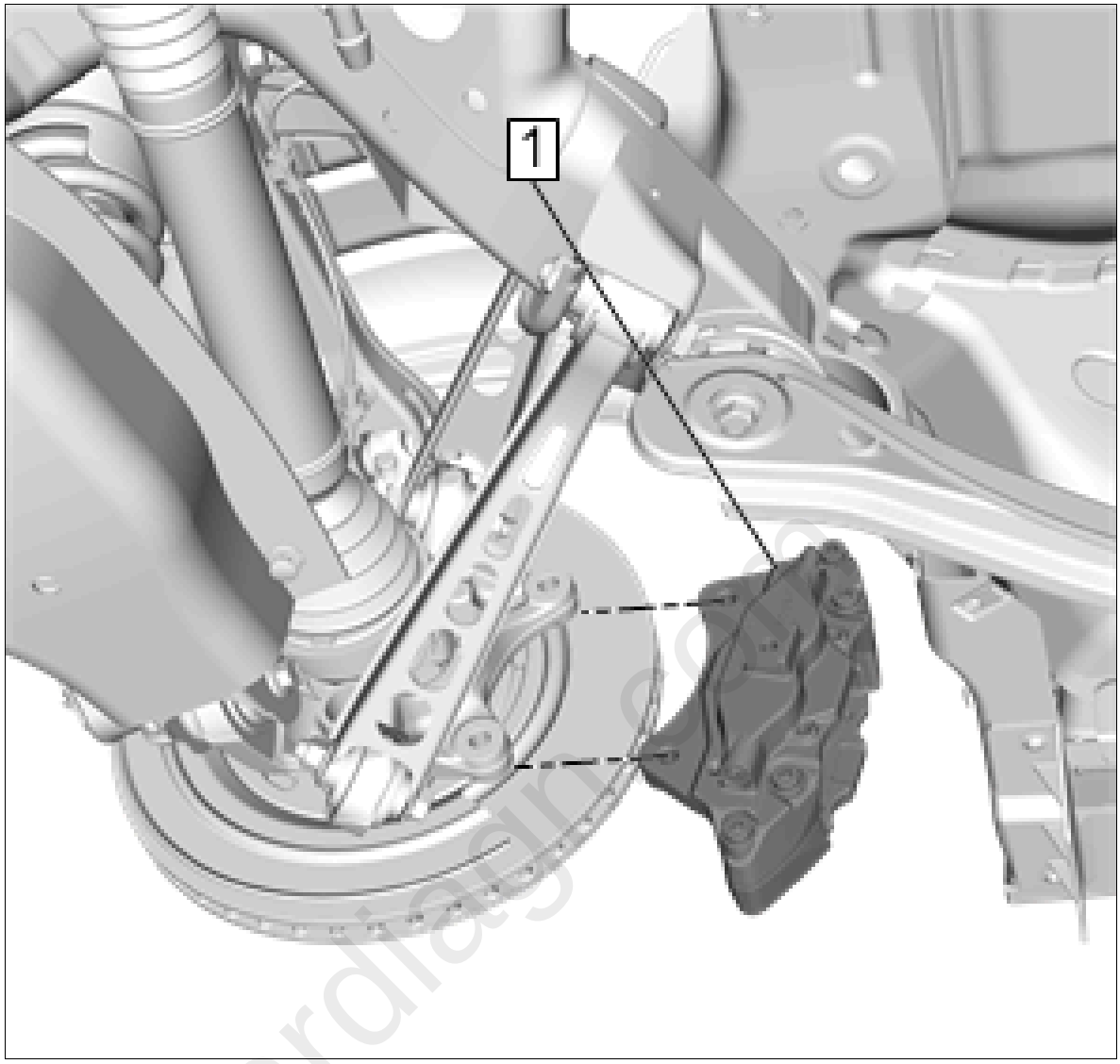
Fig 9: Differential Carrier Assembly



Courtesy of GENERAL MOTORS COMPANY

12. Remove Differential Carrier Assembly (1) - Differential Carrier Assembly Replacement (with KNR)Differential Carrier Assembly Replacement (without KNR)

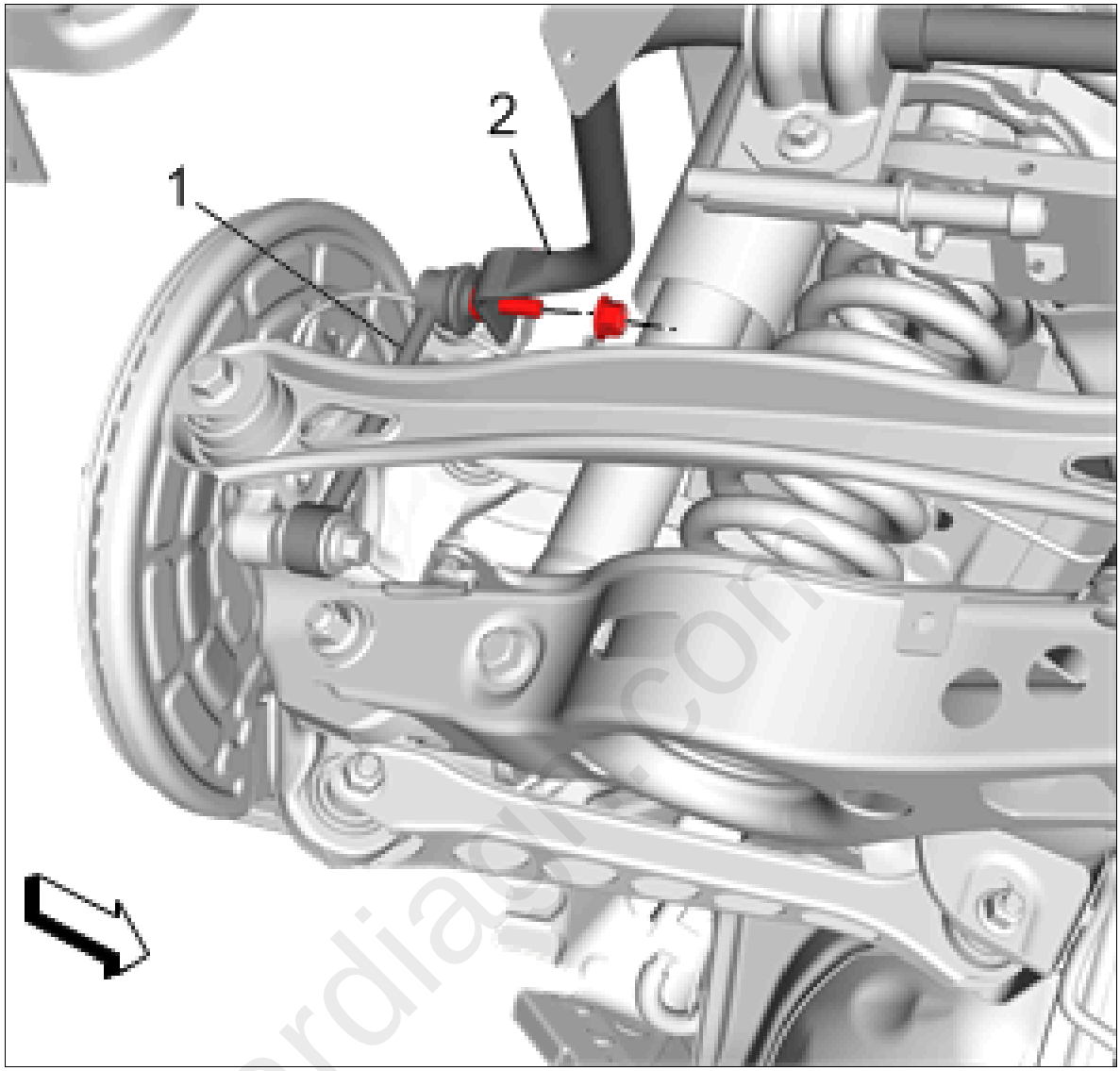
Fig 10: Brake Caliper Assembly



Courtesy of GENERAL MOTORS COMPANY

13. Remove Rear Brake Caliper (1) - Rear Brake Caliper Replacement (J6G)Rear Brake Caliper Replacement (JL9, J55)

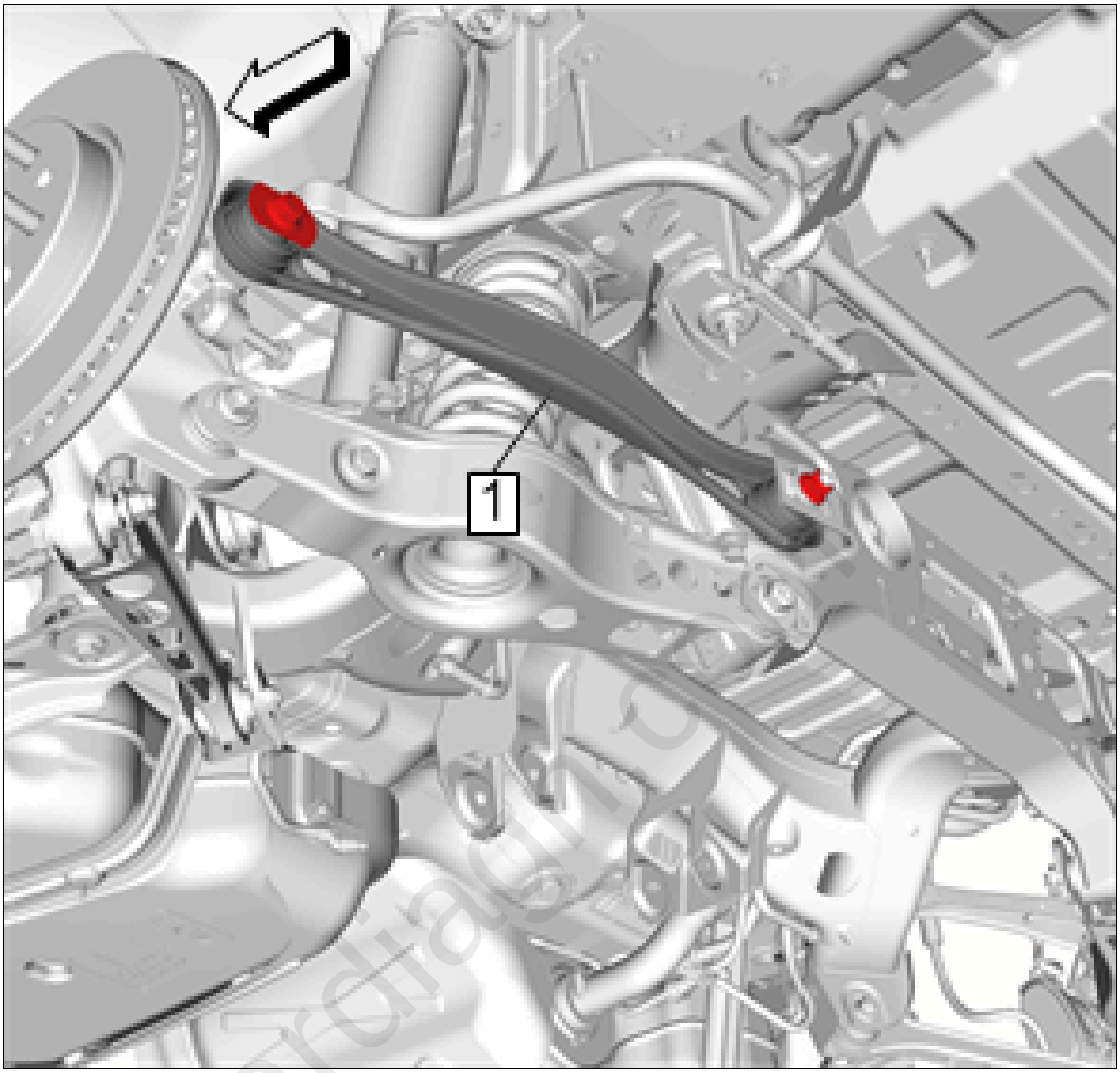
Fig 11: Stabilizer Shaft Link



Courtesy of GENERAL MOTORS COMPANY

14. Remove Stabilizer Shaft Link (1) at Knuckle - Stabilizer Shaft Link Replacement

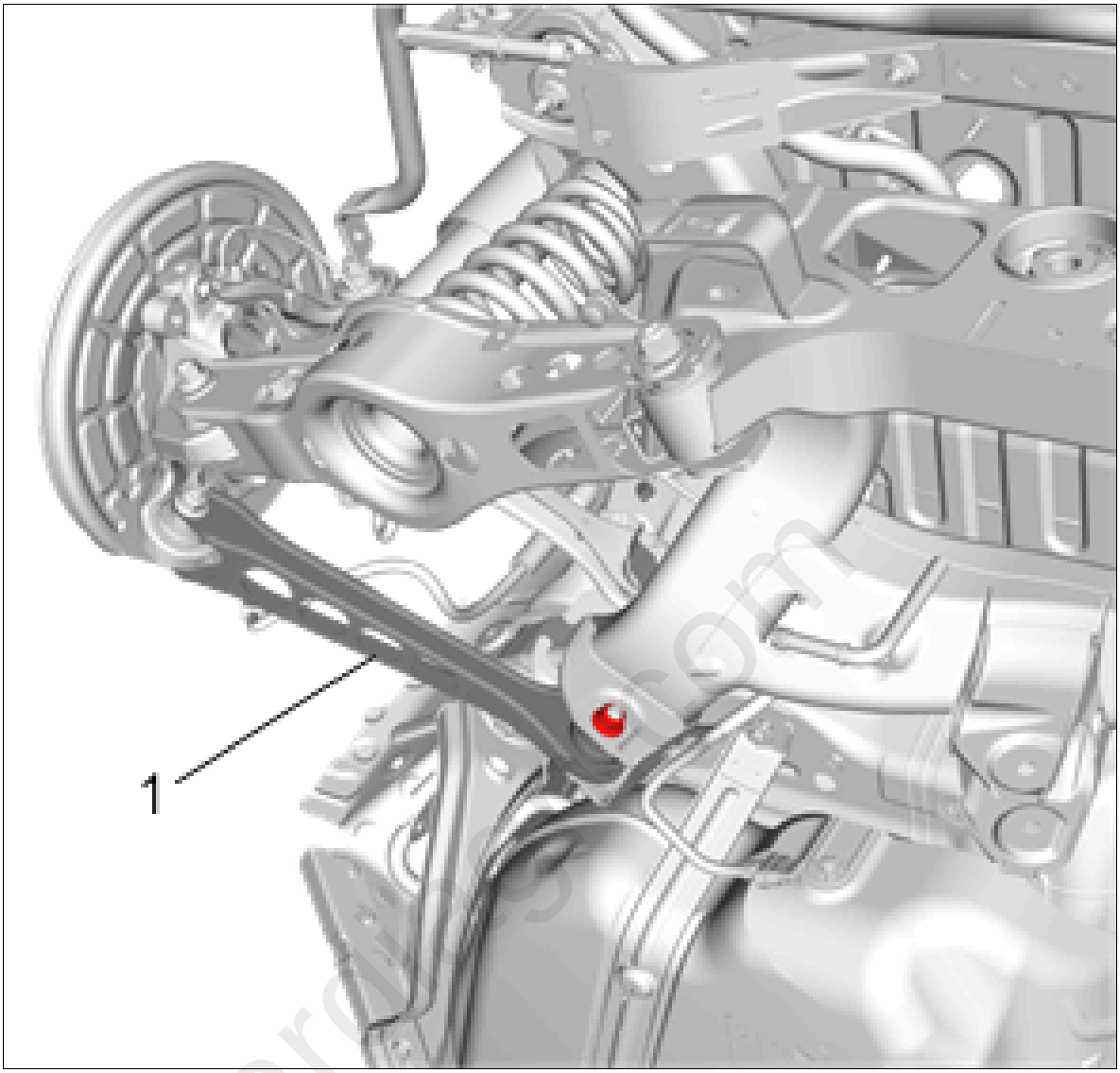
Fig 12: Rear Suspension Adjust Link



Courtesy of GENERAL MOTORS COMPANY

15. Remove Rear Suspension Adjust Link (1) at Rear Suspension Cradle - Adjust Link Replacement

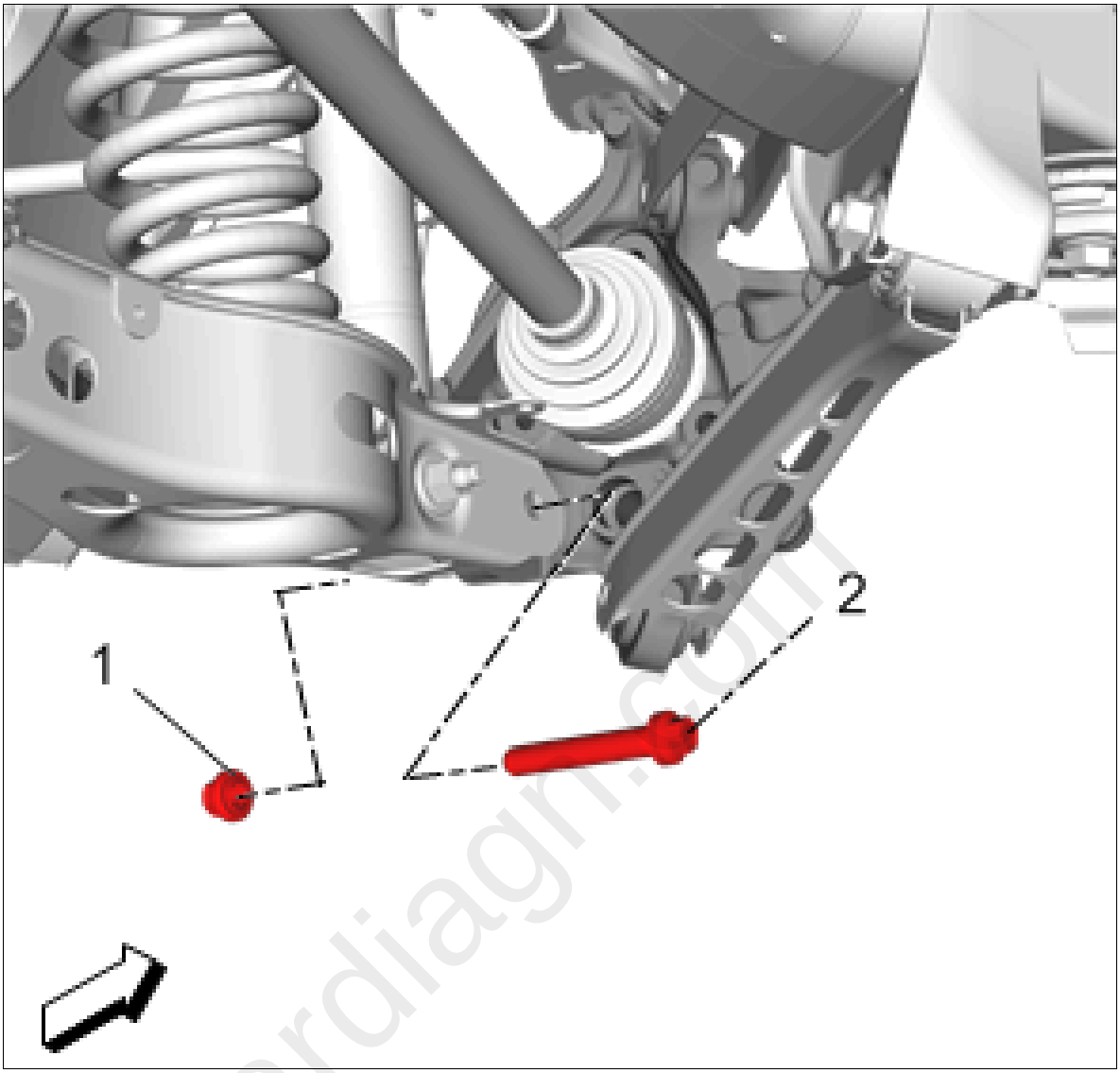
Fig 13: Rear Suspension Lower Trailing Link



Courtesy of GENERAL MOTORS COMPANY

16. Remove Rear Suspension Lower Trailing Link (1) - Rear Suspension Lower Trailing Link Replacement

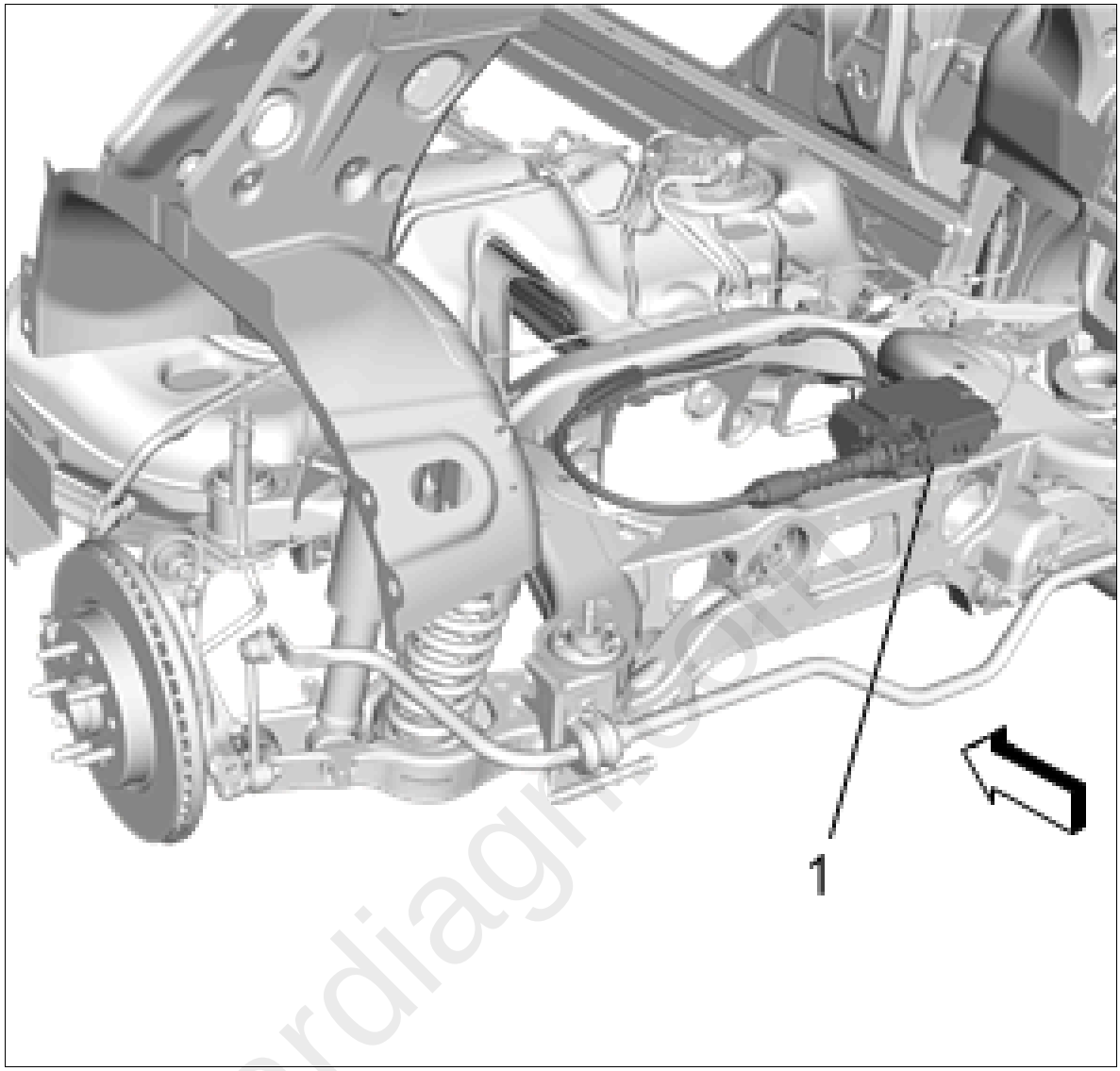
Fig 14: Rear Suspension Lower Control Arm Outer Nut And Bolt



Courtesy of GENERAL MOTORS COMPANY

17. Remove lower control arm outer nut and bolt (discard) - Lower Control Arm Replacement

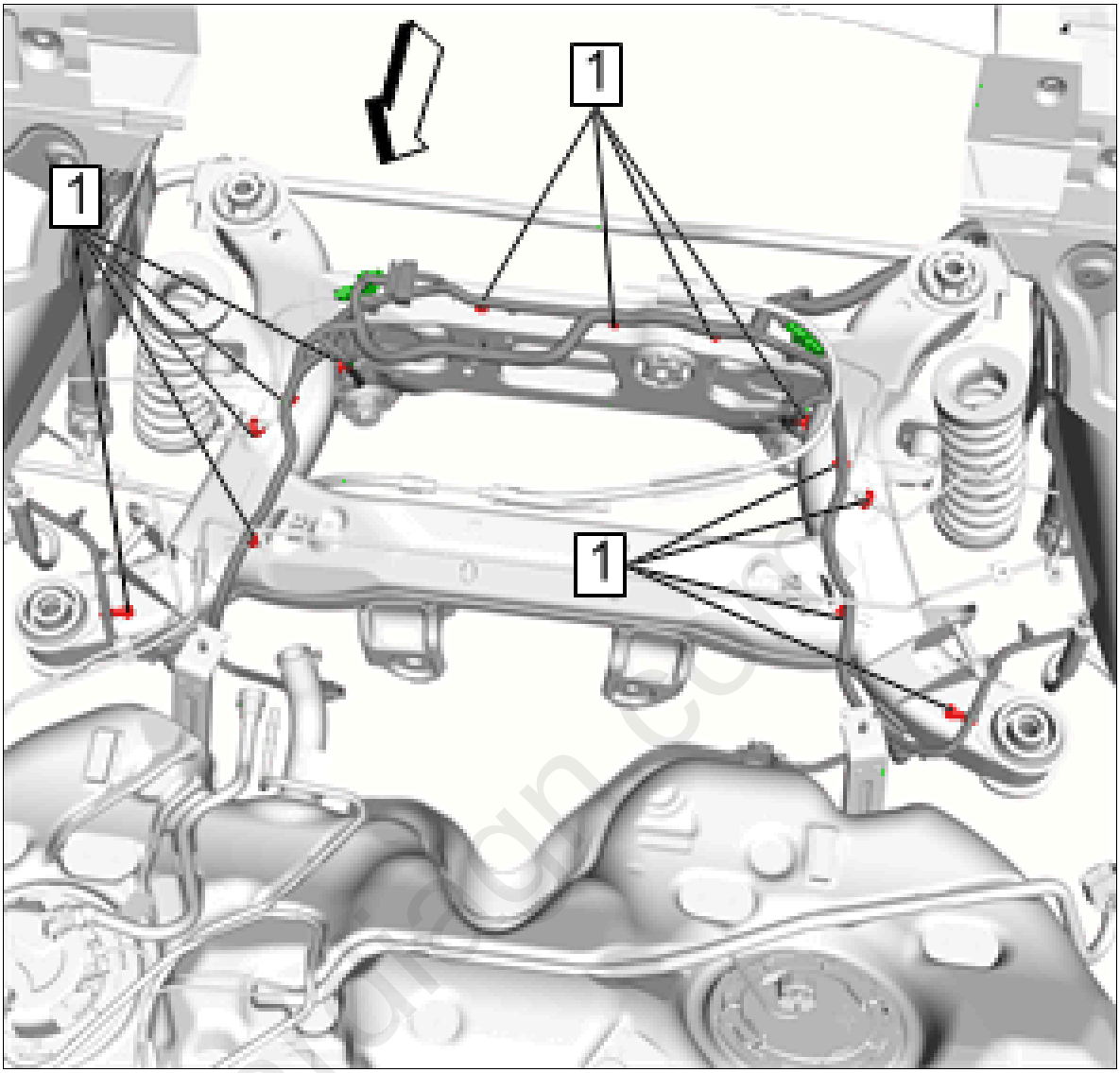
Fig 15: Electronic Parking Brake Control Module



Courtesy of GENERAL MOTORS COMPANY

18. { If equipped }Remove Electronic Parking Brake Control Module (1) - Electronic Parking Brake Control Module Replacement

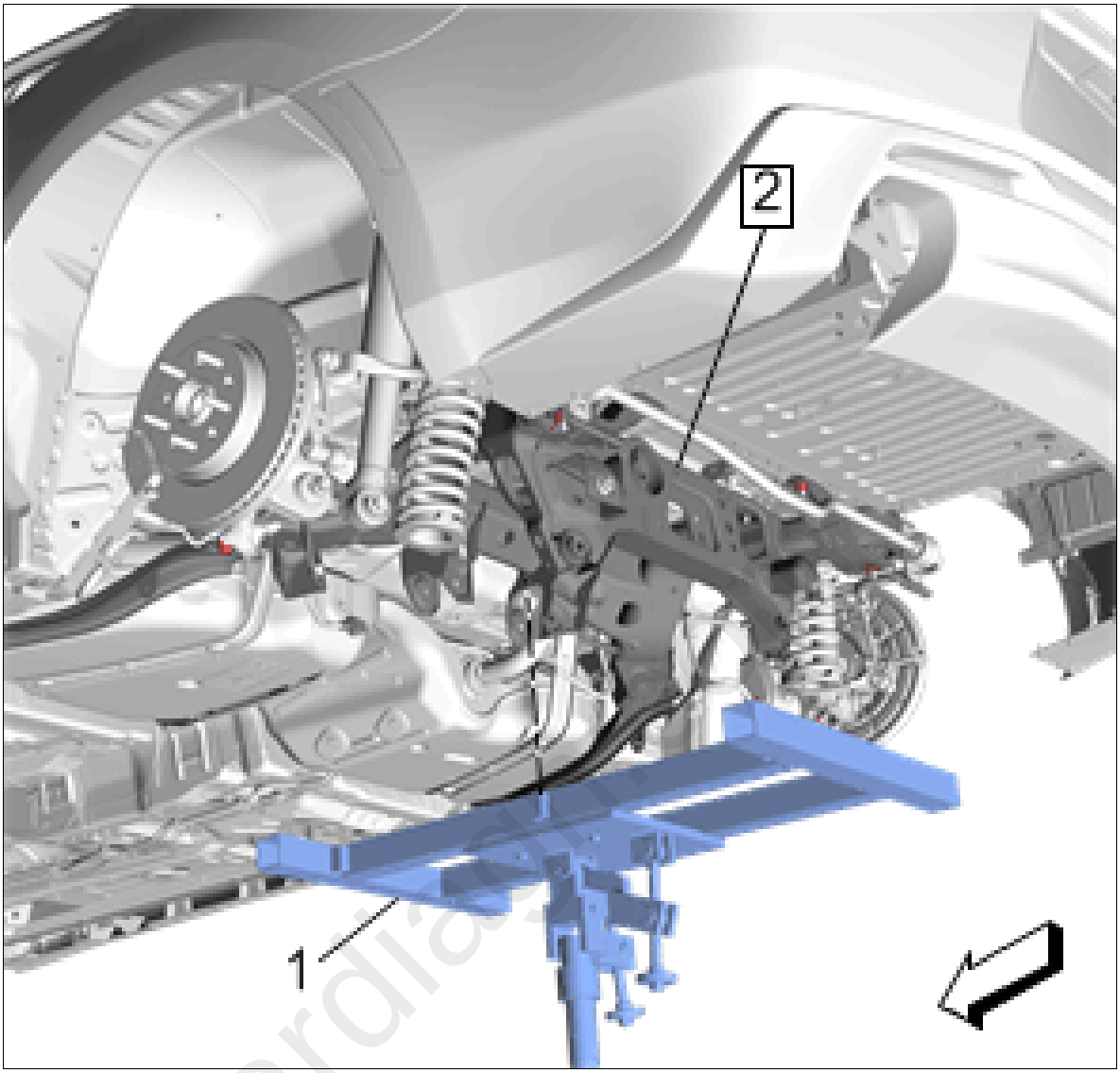
Fig 16: Wiring Harness Retainers From Rear Suspension Cradle



Courtesy of GENERAL MOTORS COMPANY

19. Remove the wiring harness retainers from the rear suspension cradle (1)

Fig 17: Hydraulic Jack Stand



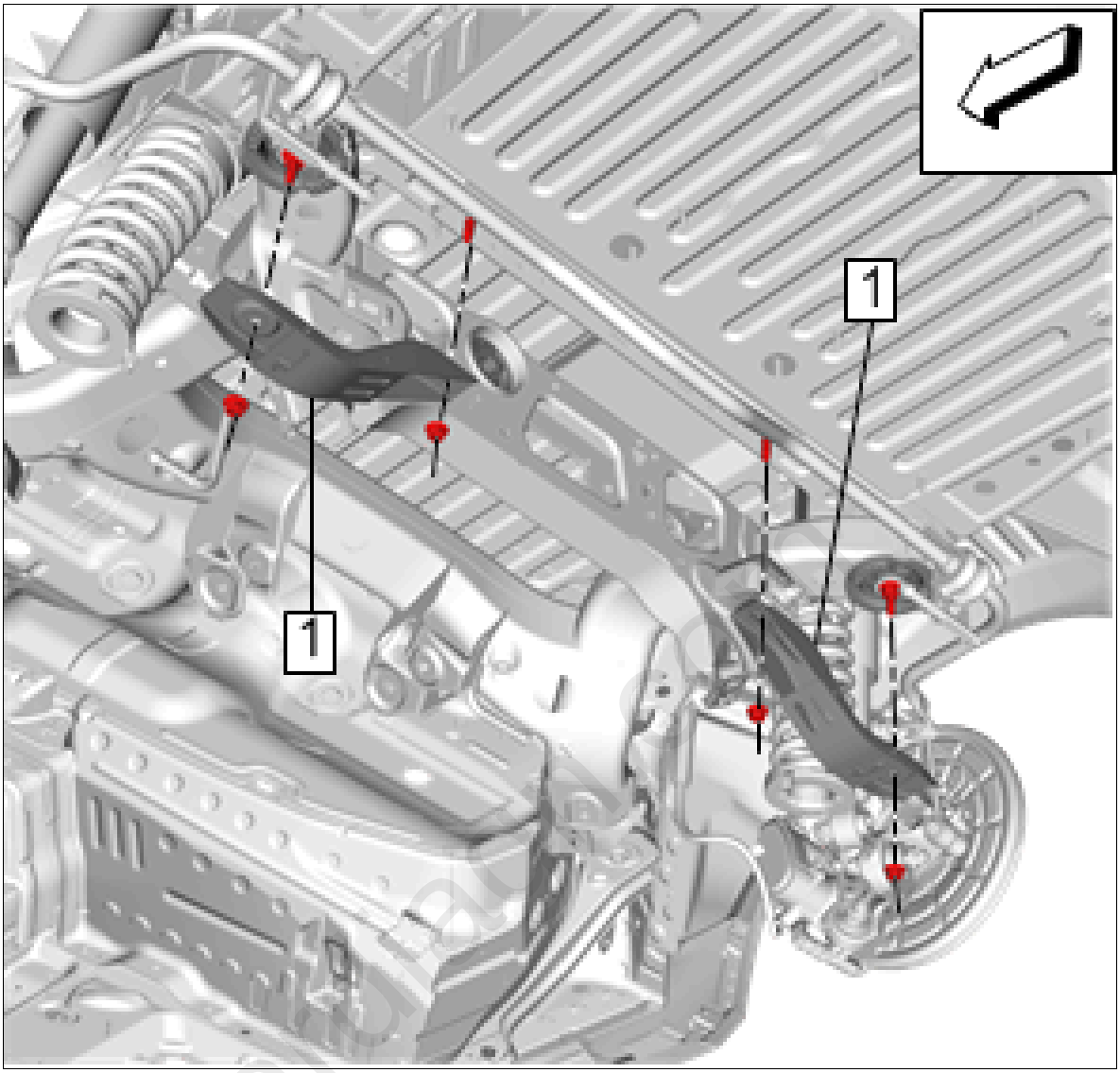
Courtesy of GENERAL MOTORS COMPANY

NOTE:

Ensure that the rear suspension cradle is securely attached to the hydraulic jack stand

20. Using the **EN-39580** Support Stand (1) support the rear suspension cradle (2)

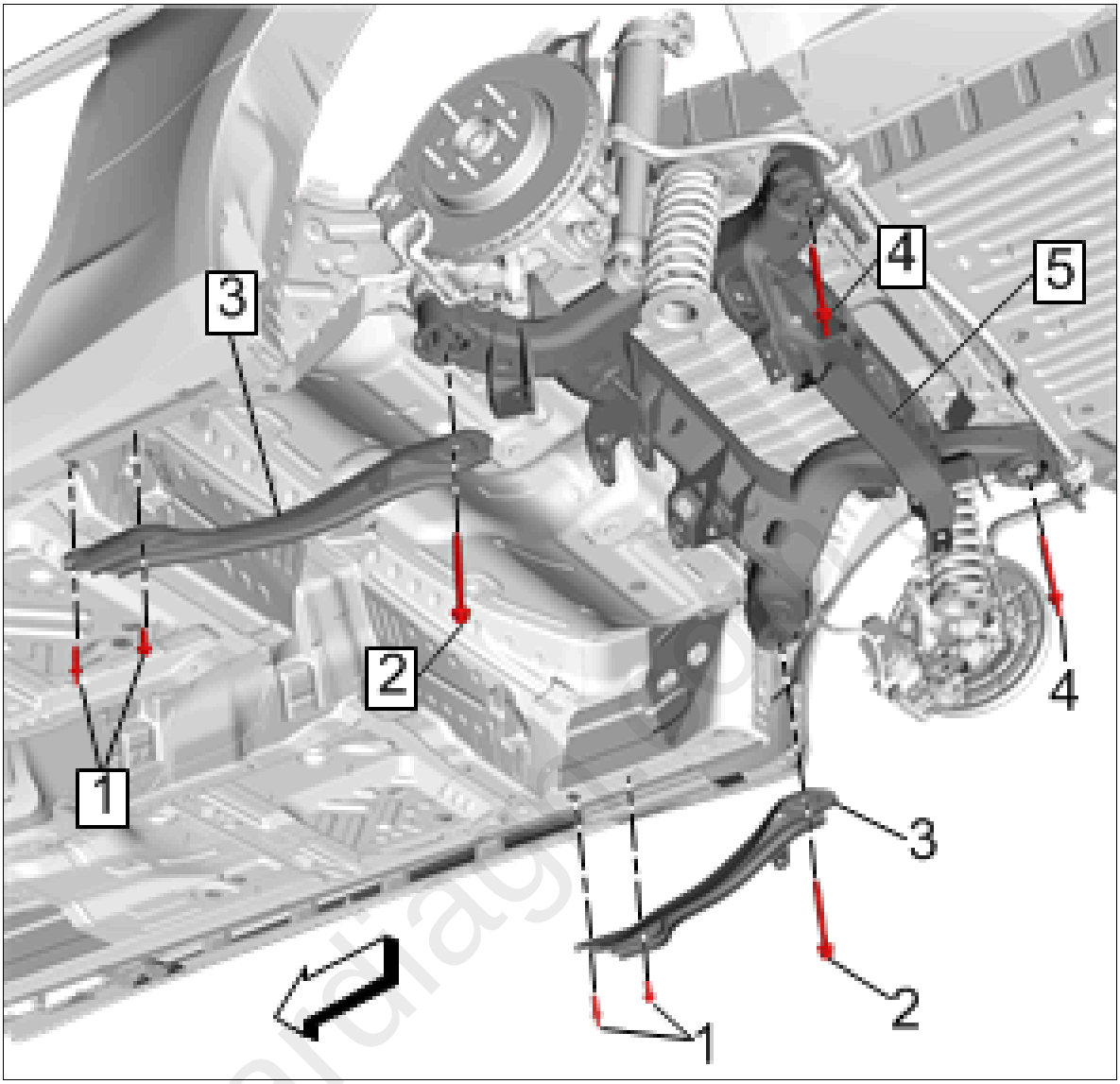
Fig 18: Rear Suspension - Rear Bracket



Courtesy of GENERAL MOTORS COMPANY

21. Remove Rear Suspension - Rear Bracket (1) - Rear Suspension Bracket Replacement (Rear (Coupe))Rear Suspension Bracket Replacement (Front)

Fig 19: Rear Suspension Cradle Bolt - Right Side



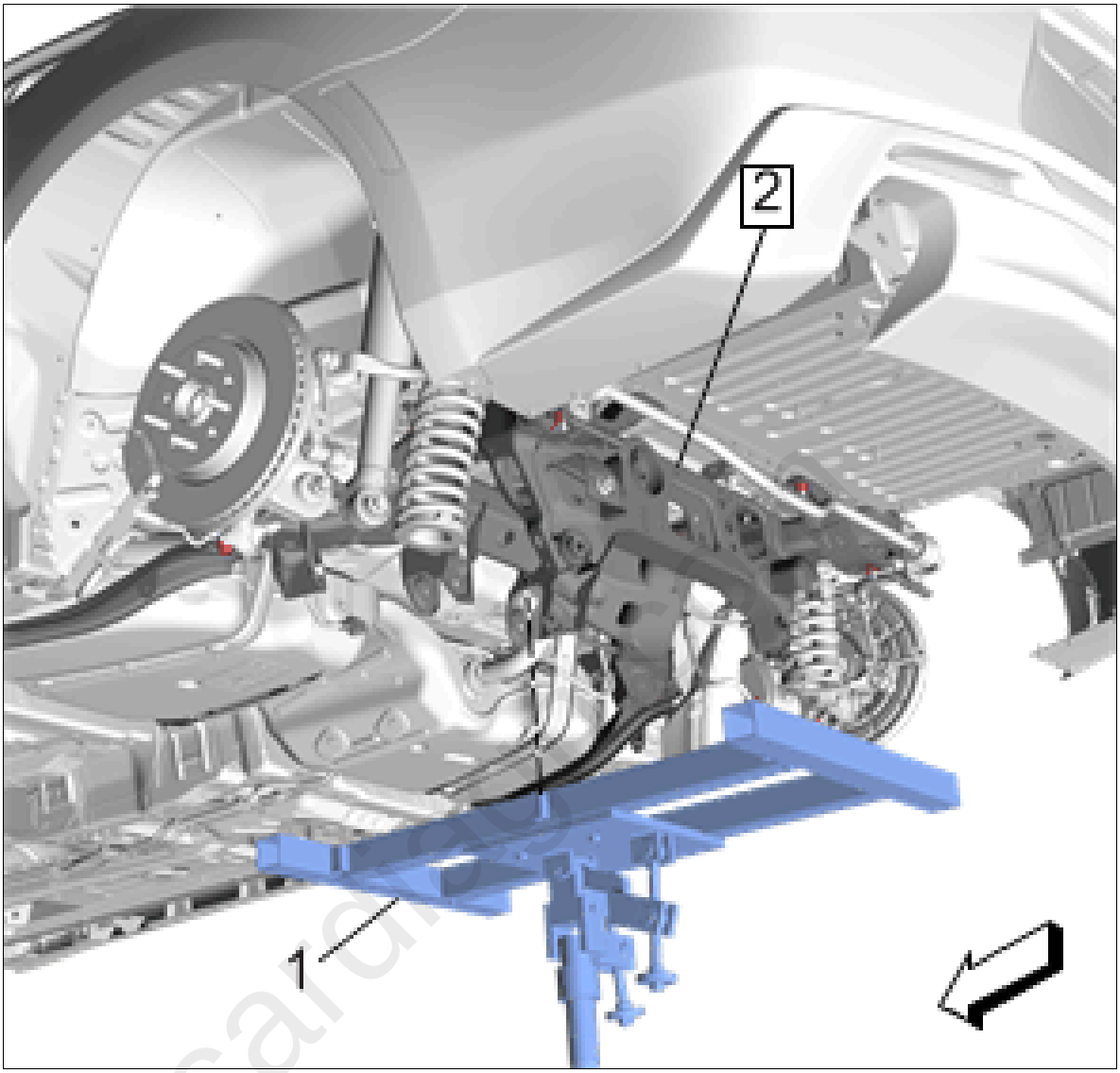
Courtesy of GENERAL MOTORS COMPANY

22. Remove Rear Suspension - Front Bracket Bolt (1) (Qty: 4) and DISCARD
23. Remove Rear Suspension - Front Bracket Bolt (2) (Qty: 2) and DISCARD
24. Remove Rear Suspension - Front Bracket (3) (Qty: 2)
25. Remove Rear Suspension Cradle Bolt (4) (Qty: 2) and DISCARD
26. Remove Rear Suspension Cradle (5)
27. Remove the stabilizer shaft. Stabilizer Shaft Replacement (FE3, FE4)Stabilizer Shaft Replacement

REPAIR INSTRUCTIONS > REAR SUSPENSION CRADLE REPLACEMENT > INSTALLATION PROCEDURE

1. Install the stabilizer shaft. Stabilizer Shaft Replacement (FE3, FE4)Stabilizer Shaft Replacement

Fig 1: Hydraulic Jack Stand

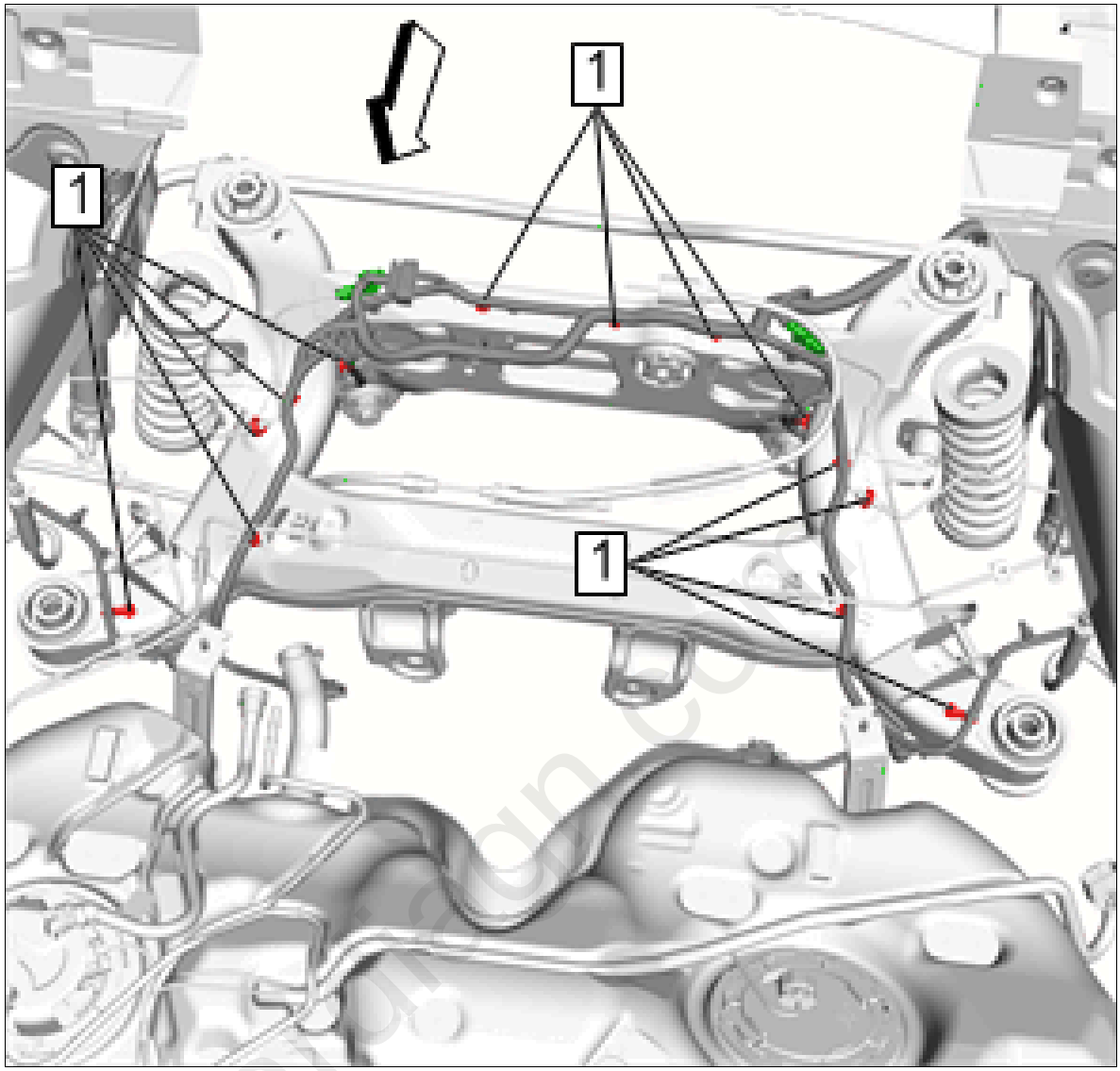


Courtesy of GENERAL MOTORS COMPANY

> *NOTE:*
>
> *Ensure that the rear suspension cradle is securely attached to the hydraulic jack stand*

2. Using the **EN-39580** Support Stand (1) Install the rear suspension cradle into position (2)

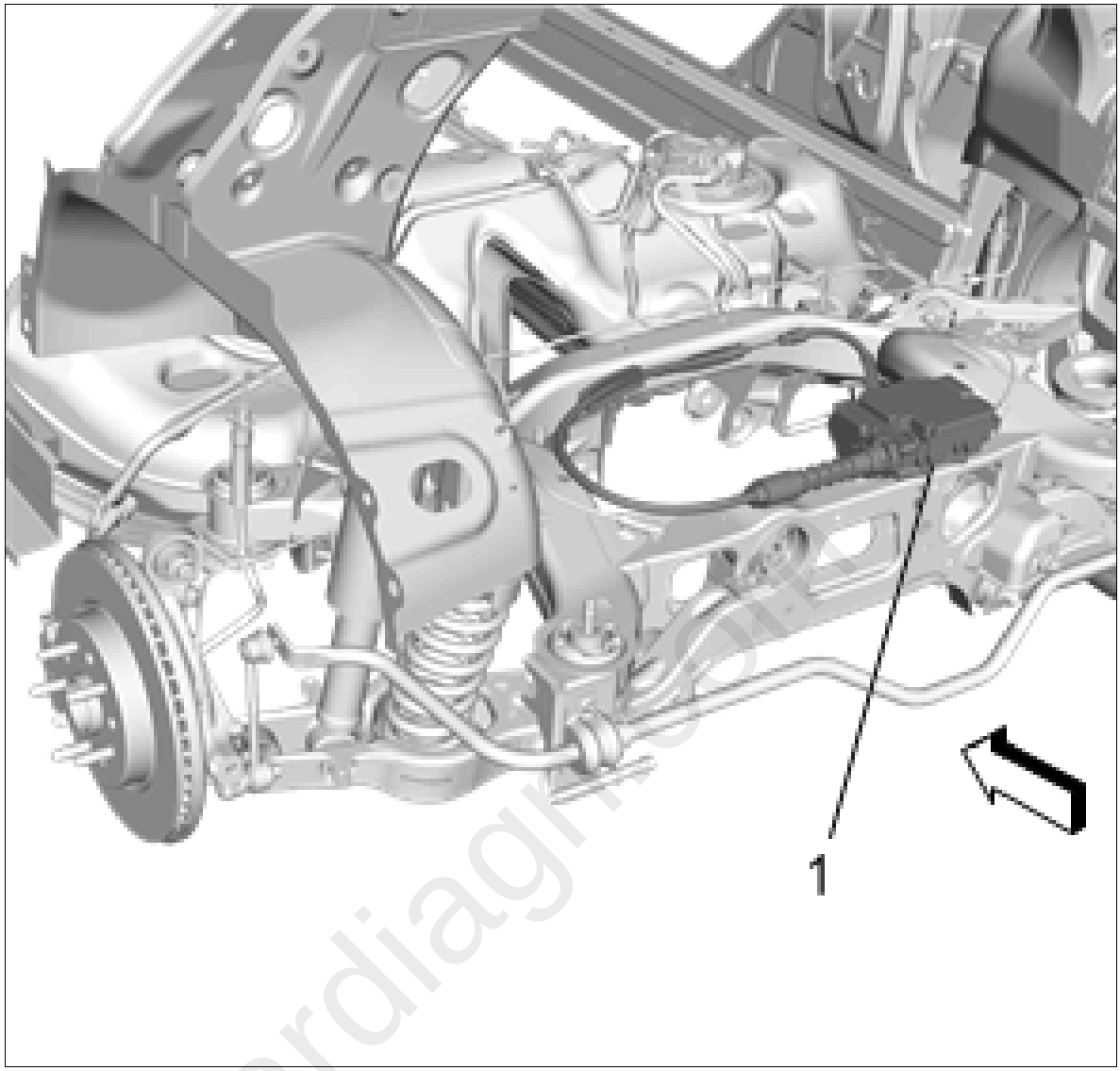
Fig 2: Wiring Harness Retainers To Rear Suspension Cradle



Courtesy of GENERAL MOTORS COMPANY

3. Install the wiring harness retainers to the rear suspension cradle (1)

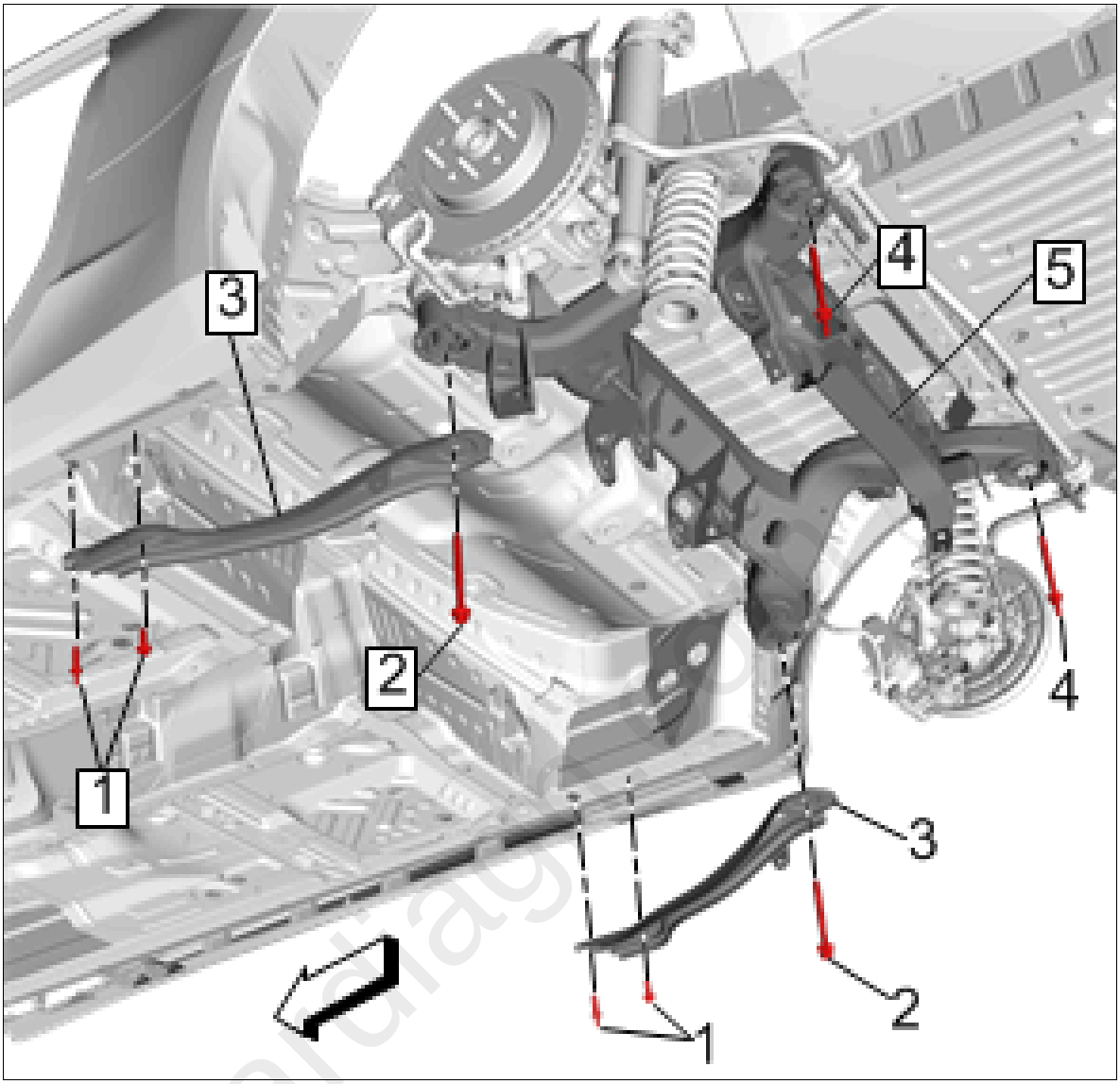
Fig 3: Electronic Parking Brake Control Module



Courtesy of GENERAL MOTORS COMPANY

4. { If equipped }Install Electronic Parking Brake Control Module (1) - Electronic Parking Brake Control Module Replacement

Fig 4: Rear Suspension Cradle Bolt - Right Side



Courtesy of GENERAL MOTORS COMPANY

5. Rear Suspension - Front Bracket (3) (Qty: 2)

> ⚠ *CAUTION:*
>
> *Refer to Fastener Caution*

6. Rear Suspension - Front Bracket Bolt (1) (Qty: 4) and tighten the NEW bolt.

   Tighten:

   1. First Pass: 100 N.m (74 lb ft)
   2. Final Pass: Plus 90-105 Degrees

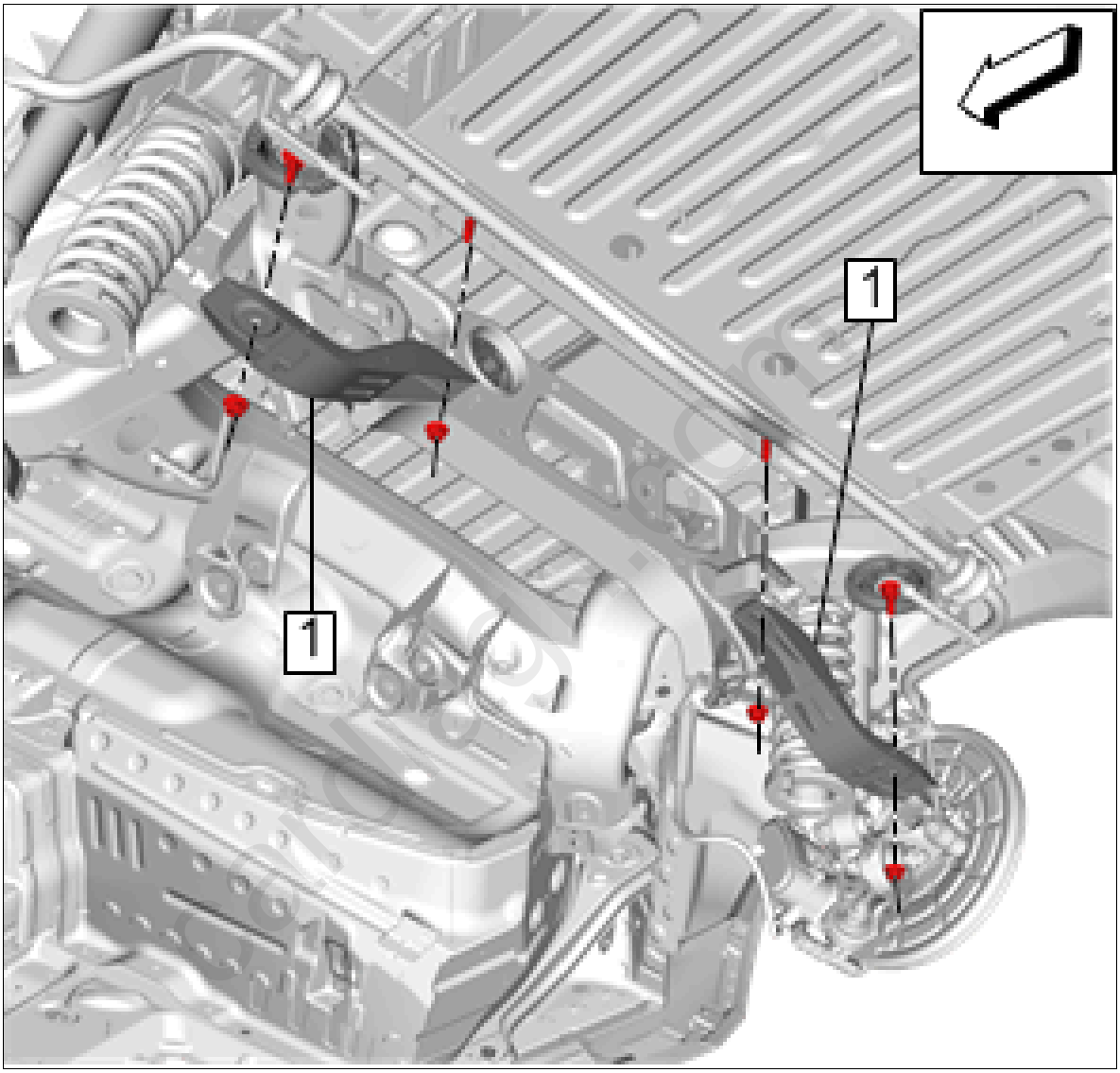
7. Rear Suspension - Front Bracket Bolt (1) (Qty: 4) and tighten the NEW bolt to 58 N.m (43 lb ft)

8. Rear Suspension Cradle Bolt (2) (Qty: 2) and tighten the NEW bolt.

   Tighten:

   1. First Pass: 100 N.m (74 lb ft)
   2. Final Pass: Plus 90-105 Degrees

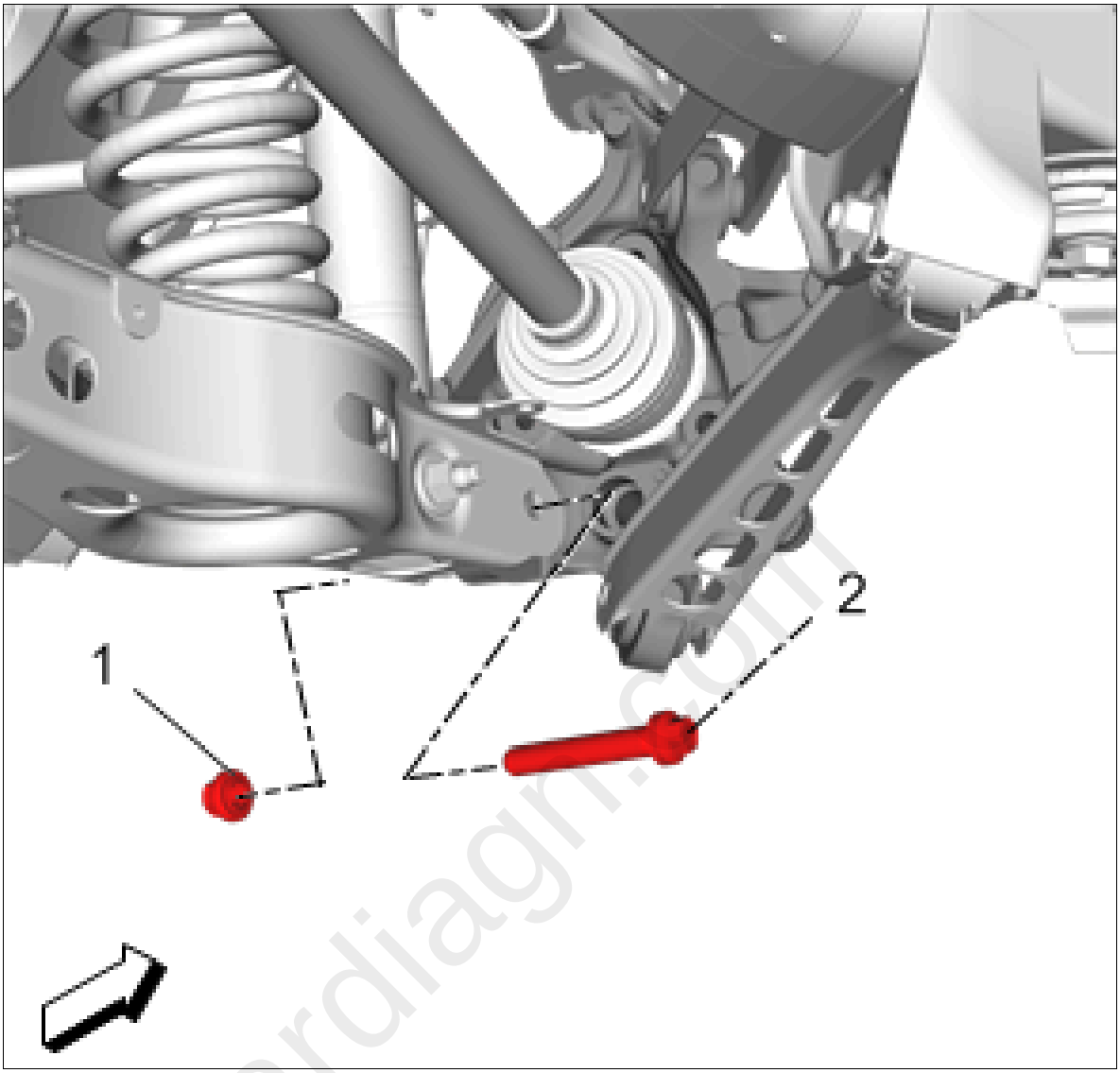
Fig 5: Rear Suspension - Rear Bracket



Courtesy of GENERAL MOTORS COMPANY

9. Install Rear Suspension - Rear Bracket (1) - Rear Suspension Bracket Replacement (Rear (Coupe))Rear Suspension Bracket Replacement (Front)

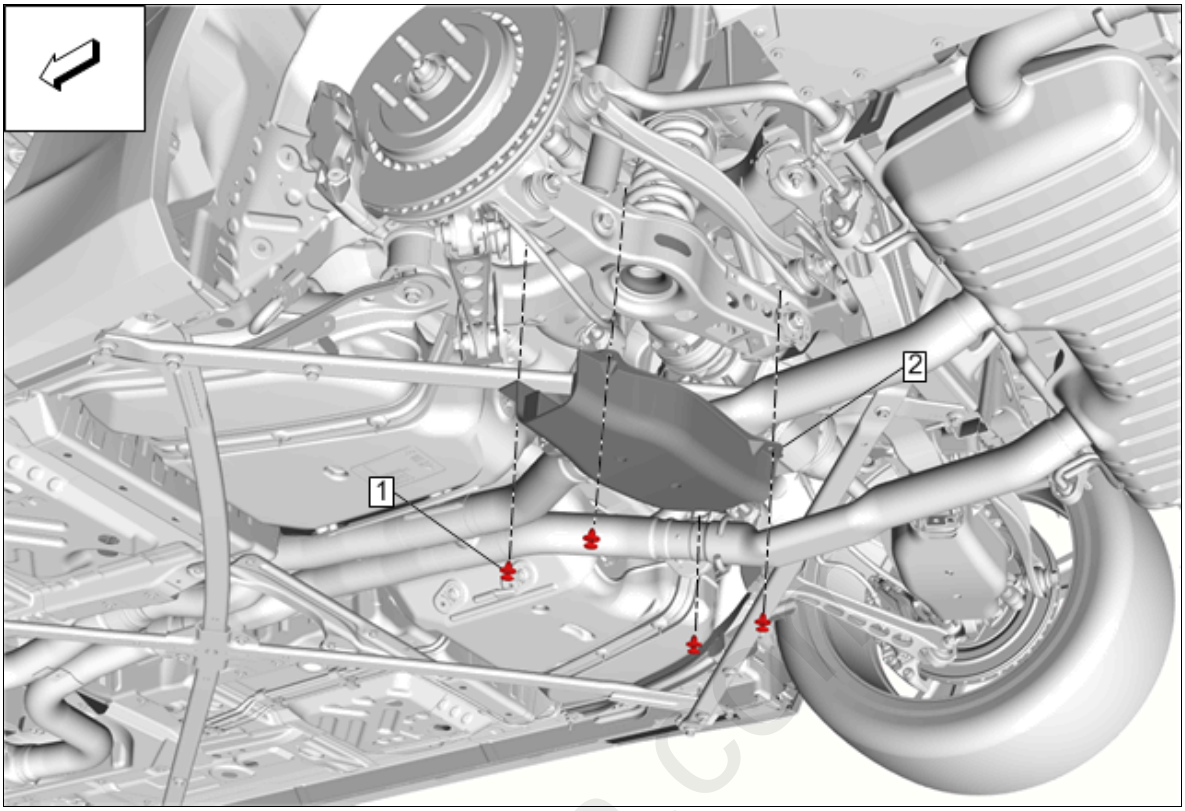
Fig 6: Rear Suspension Lower Control Arm Outer Nut And Bolt



Courtesy of GENERAL MOTORS COMPANY

10. Install lower control arm outer nut and NEW bolt - Lower Control Arm Replacement

Fig 7: Rear Suspension Lower Control Arm Cover

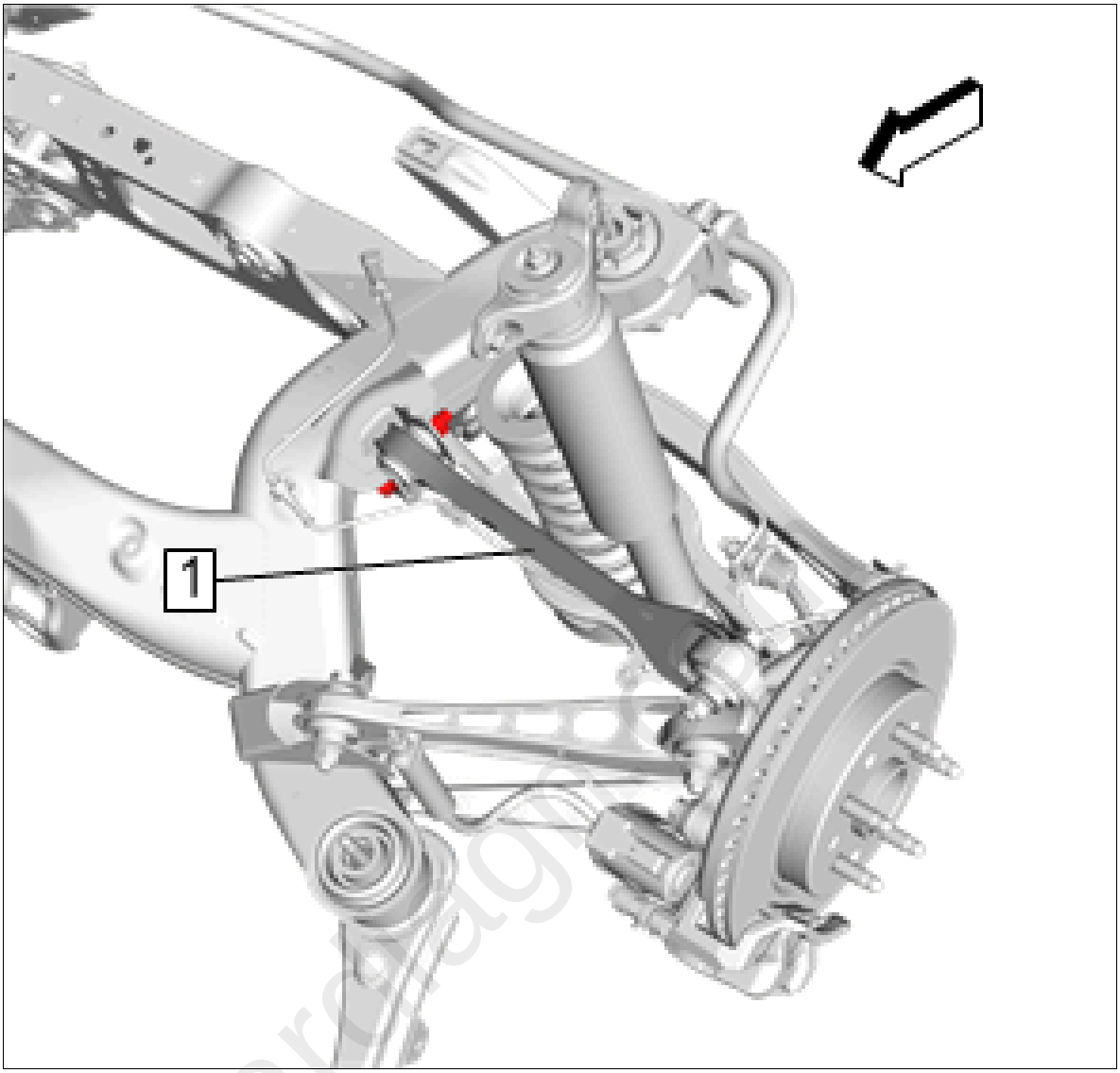


Courtesy of GENERAL MOTORS COMPANY

11. Install Rear Suspension Lower Control Arm Cover (2) - Rear Suspension Lower Control Arm Cover Replacement

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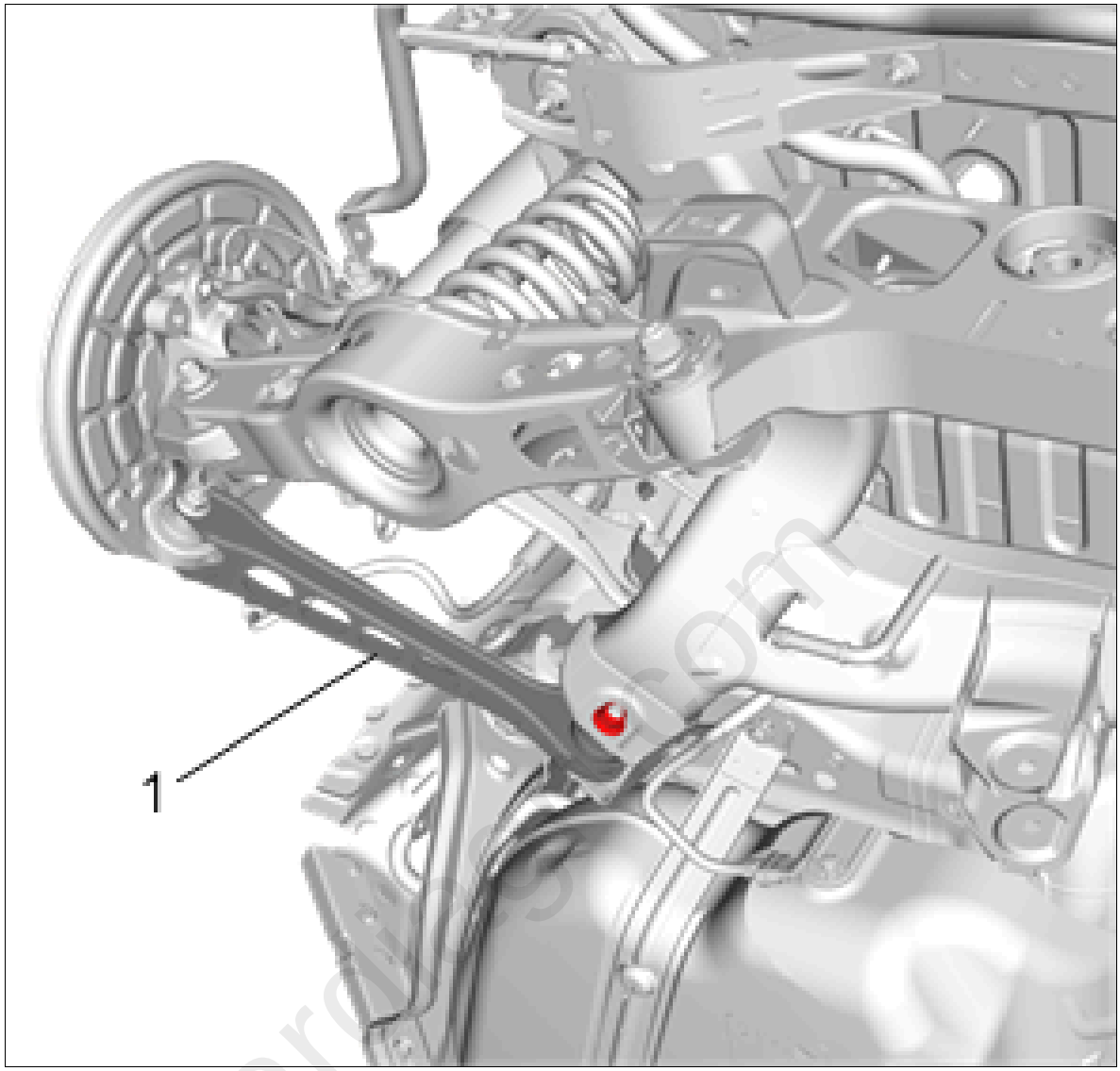
Fig 8: Rear Suspension Upper Lateral Link



Courtesy of GENERAL MOTORS COMPANY

12. Install Rear Suspension Upper Lateral Link (1) at Rear Suspension Cradle - Rear Suspension Upper Lateral Link Replacement

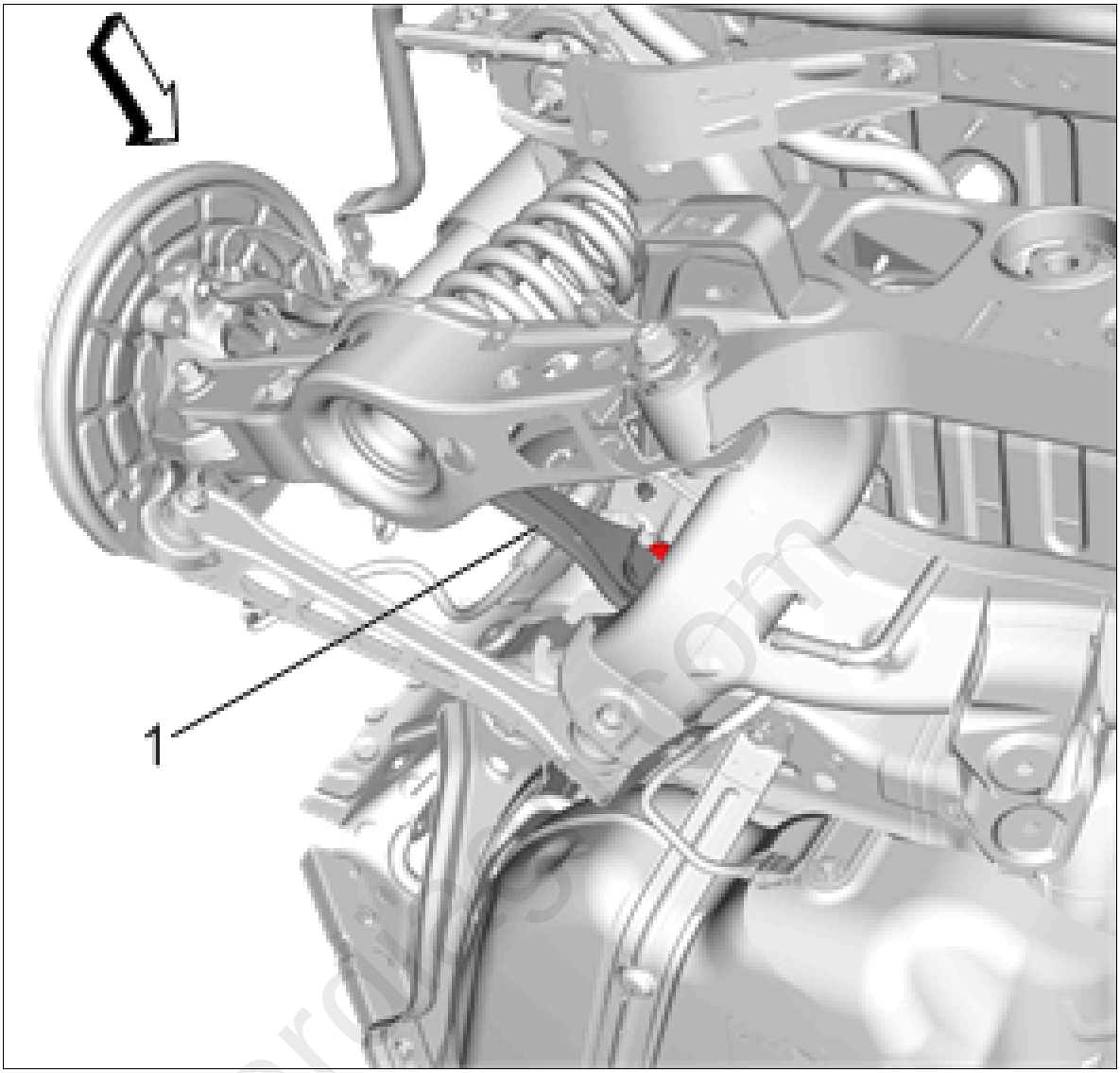
Fig 9: Rear Suspension Lower Trailing Link



Courtesy of GENERAL MOTORS COMPANY

13. Install Rear Suspension Lower Trailing Link<p01>@Rear Suspension Cradle »Install — Rear Suspension Lower Trailing Link Replacement

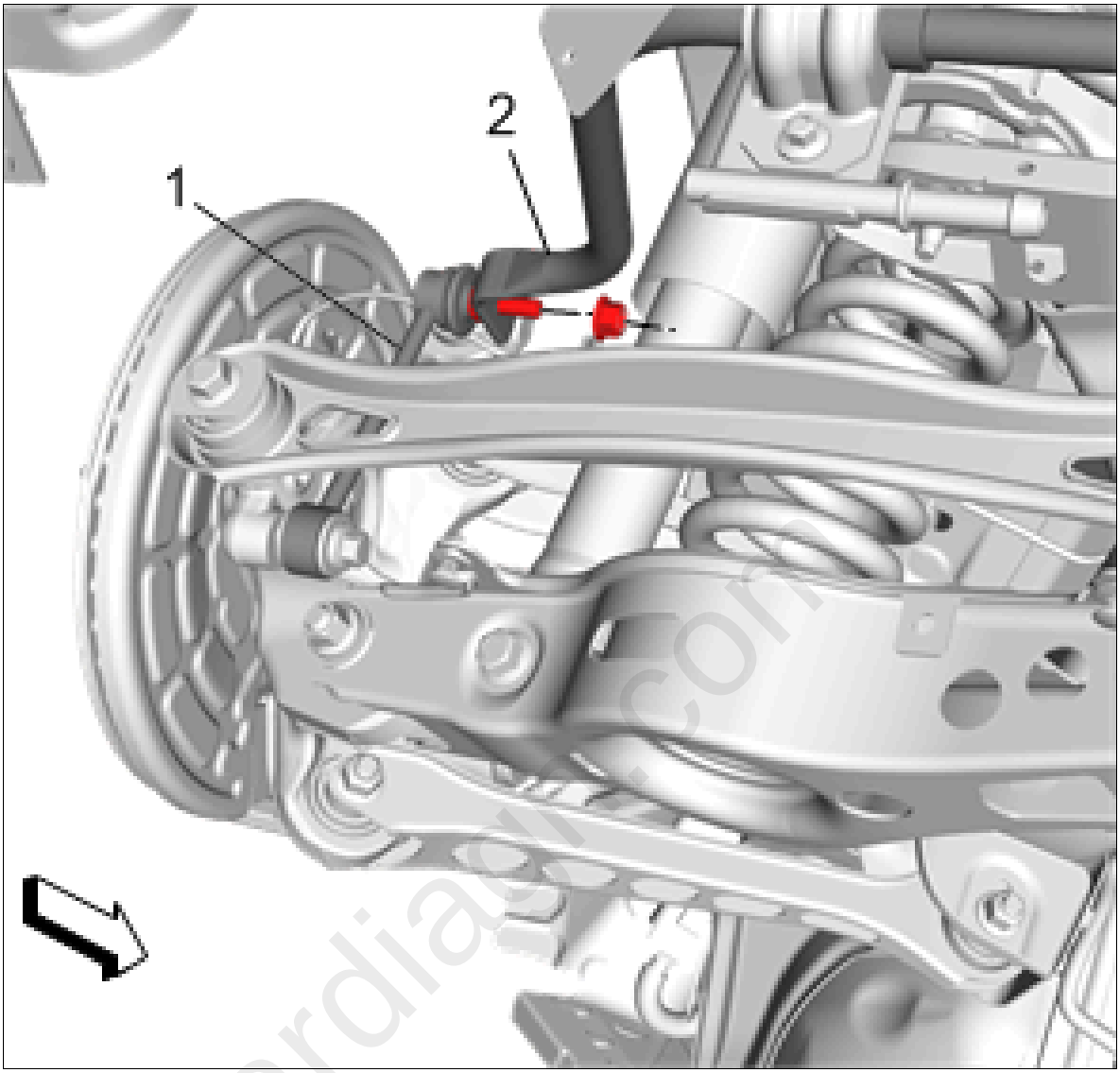
Fig 10: Rear Suspension Upper Trailing Link



Courtesy of GENERAL MOTORS COMPANY

14. Install Rear Suspension Upper Trailing Link (1) at Rear Suspension Cradle - Rear Suspension Upper Trailing Link Replacement

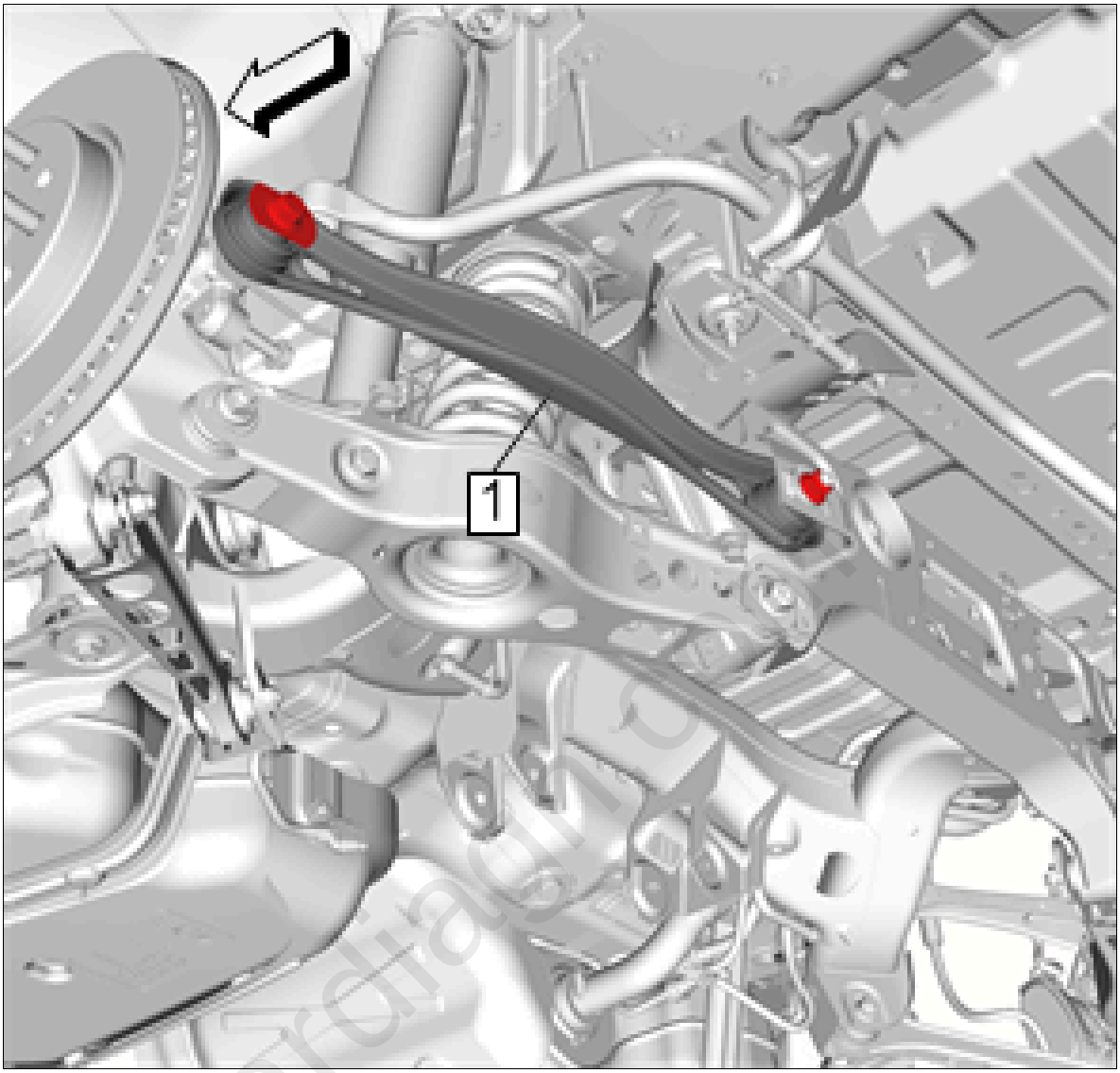
Fig 11: Stabilizer Shaft Link



Courtesy of GENERAL MOTORS COMPANY

15. Install Stabilizer Shaft Link (1) at Stabilizer Shaft (2) - Stabilizer Shaft Link Replacement

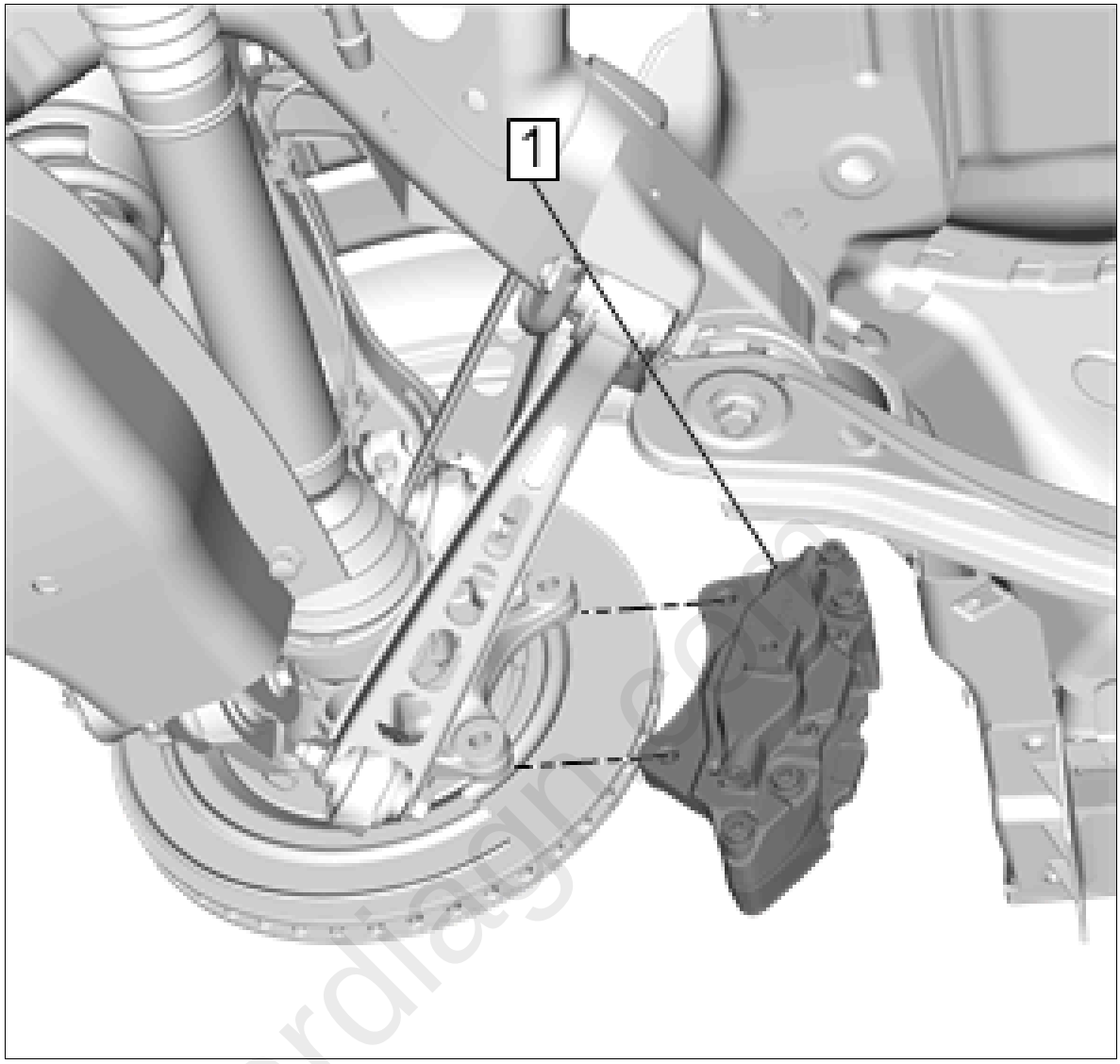
Fig 12: Rear Suspension Adjust Link



Courtesy of GENERAL MOTORS COMPANY

16. Install Rear Suspension Adjust Link (1) - Adjust Link Replacement

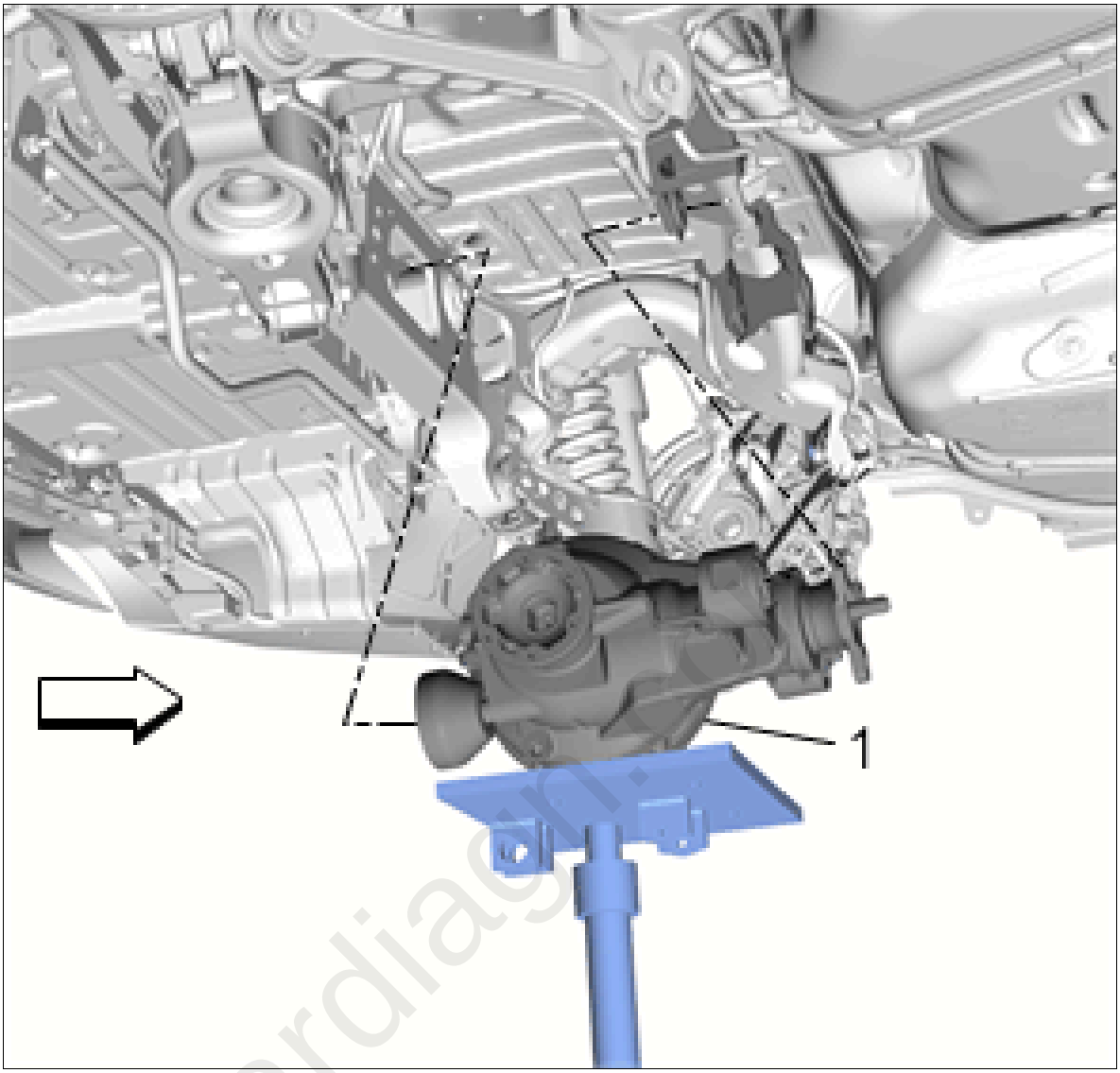
Fig 13: Brake Caliper Assembly



Courtesy of GENERAL MOTORS COMPANY

17. Install Rear Brake Caliper (1) - Rear Brake Caliper Replacement (J6G)Rear Brake Caliper Replacement (JL9, J55)

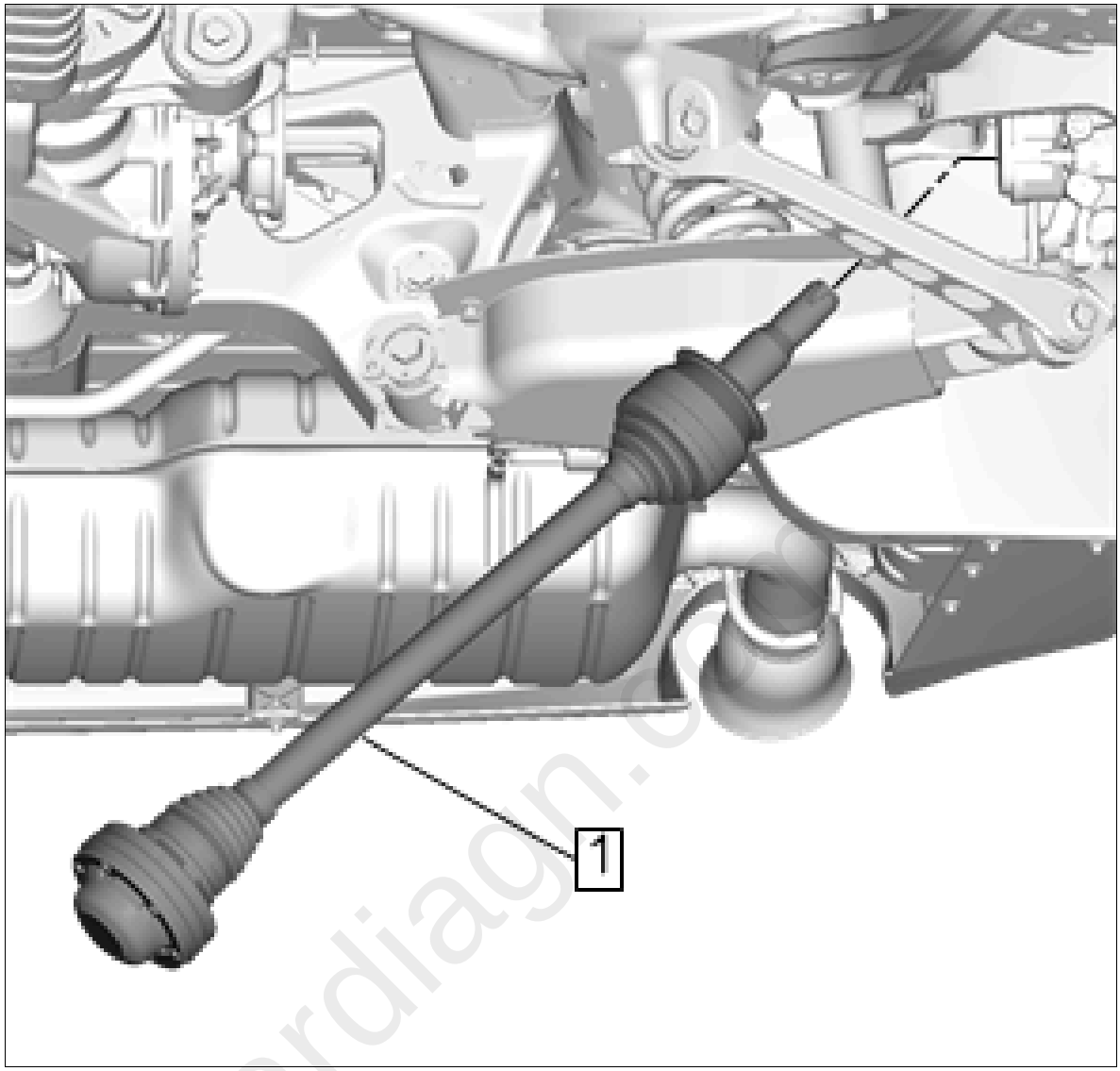
Fig 14: Differential Carrier Assembly



Courtesy of GENERAL MOTORS COMPANY

18. Install Differential Carrier Assembly (1) - Differential Carrier Assembly Replacement (with KNR)Differential Carrier Assembly Replacement (without KNR)

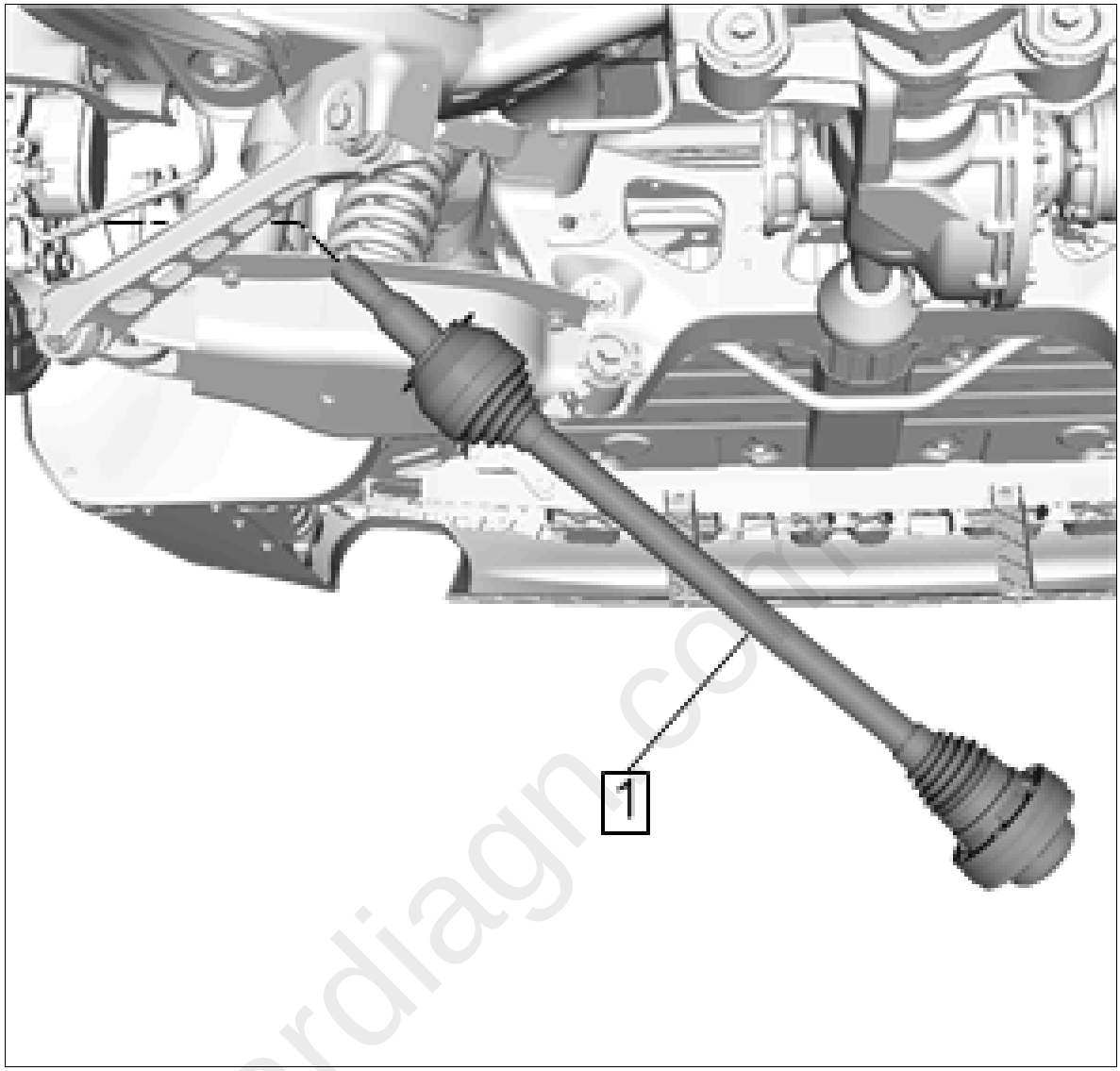
Fig 15: Wheel Drive Shaft



Courtesy of GENERAL MOTORS COMPANY

19. Install Rear Wheel Drive Shaft (1) - Left Side - Rear Wheel Drive Shaft Replacement - Left Side

Fig 16: Wheel Drive Shaft

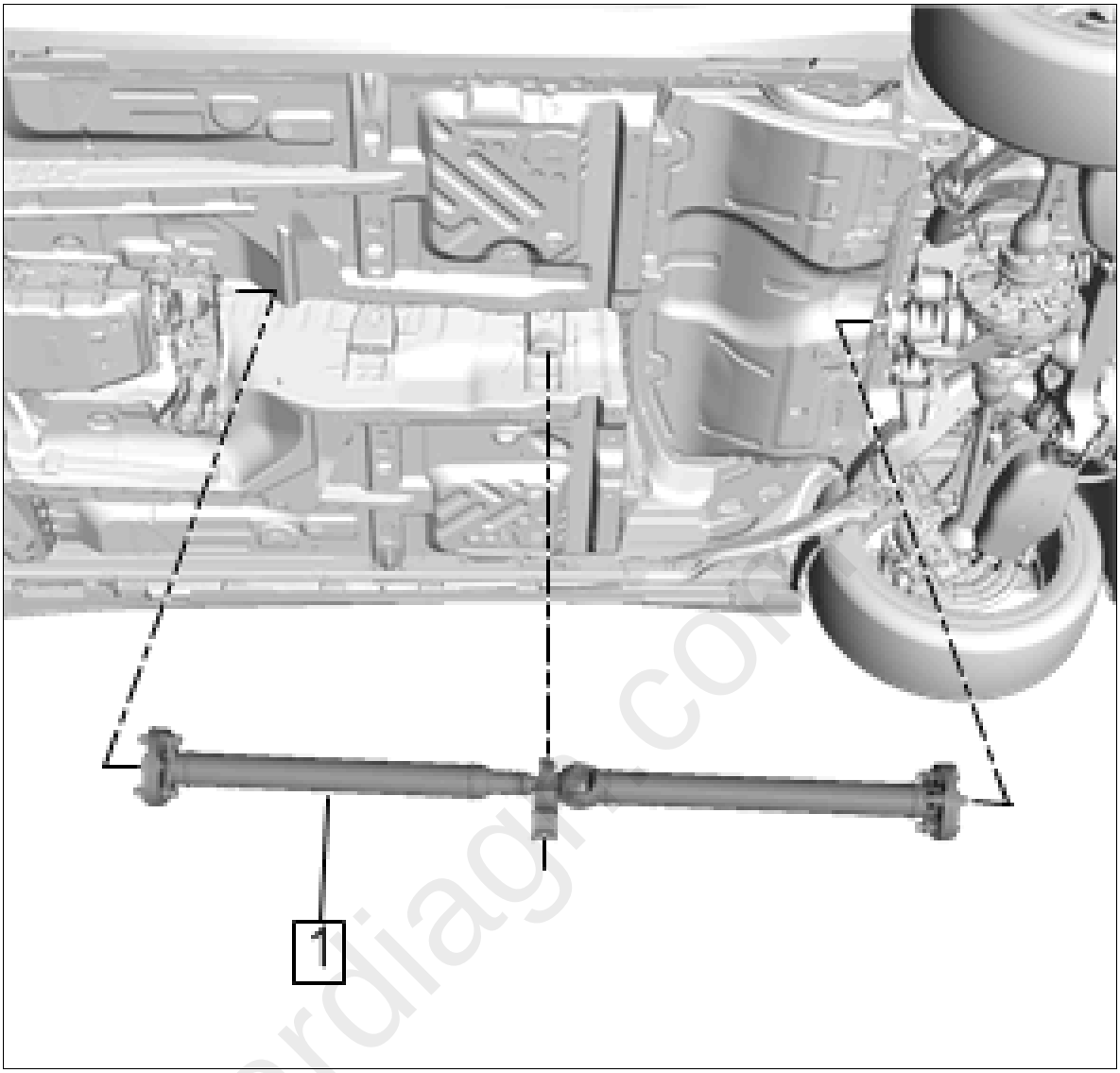


Courtesy of GENERAL MOTORS COMPANY

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20. Install Rear Wheel Drive Shaft (1) - Right Side - Rear Wheel Drive Shaft Replacement - Right Side

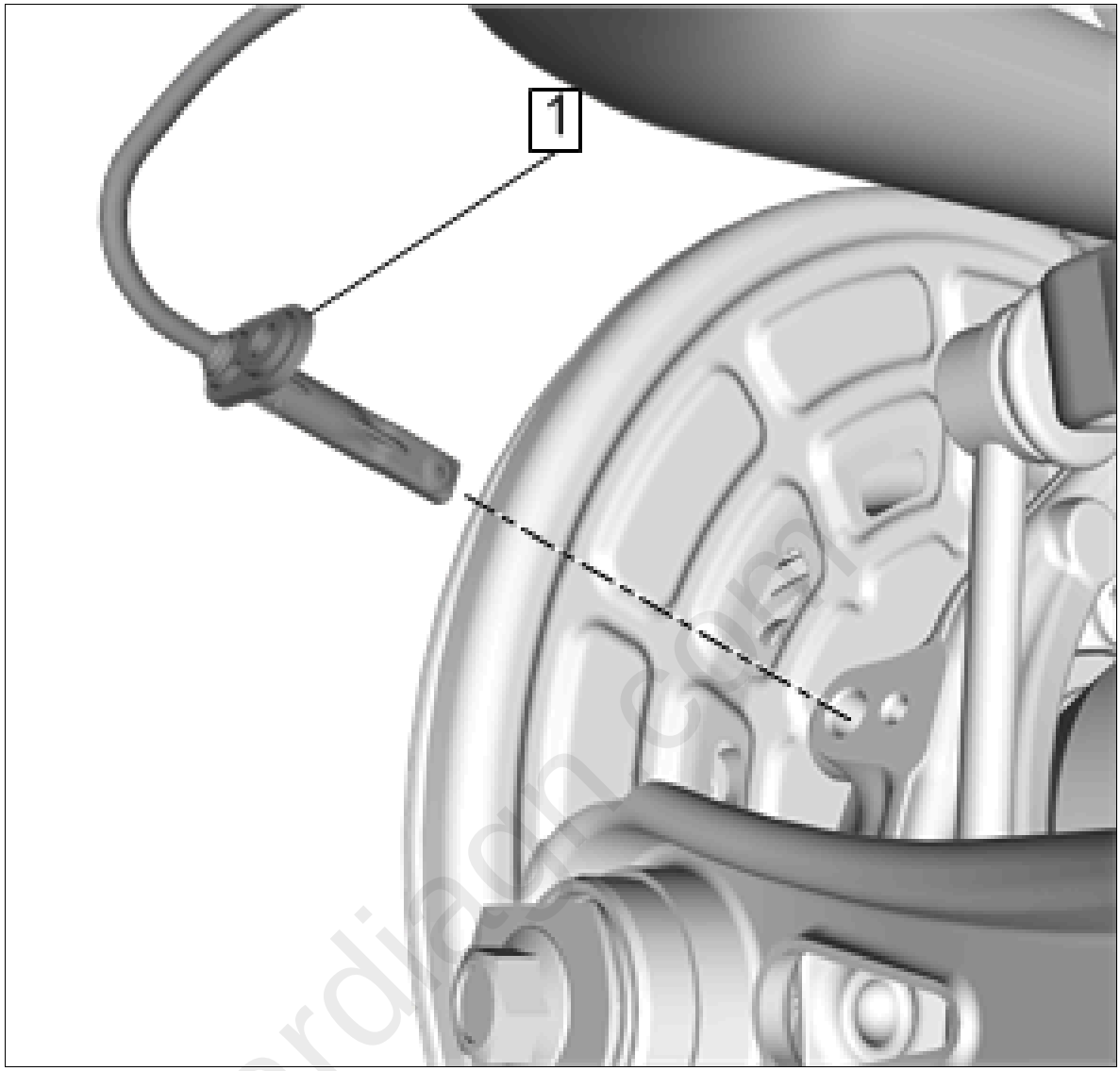
Fig 17: Propeller Shaft



Courtesy of GENERAL MOTORS COMPANY

21. Install Propeller Shaft (1) - Two-Piece Propeller Shaft Replacement (Coupe MM6, M13)Two-Piece Propeller Shaft Replacement (Convertible MM6, M13)Two-Piece Propeller Shaft Replacement (Coupe M5T, M5U)Two-Piece Propeller Shaft Replacement (Convertible M5T, M5U)

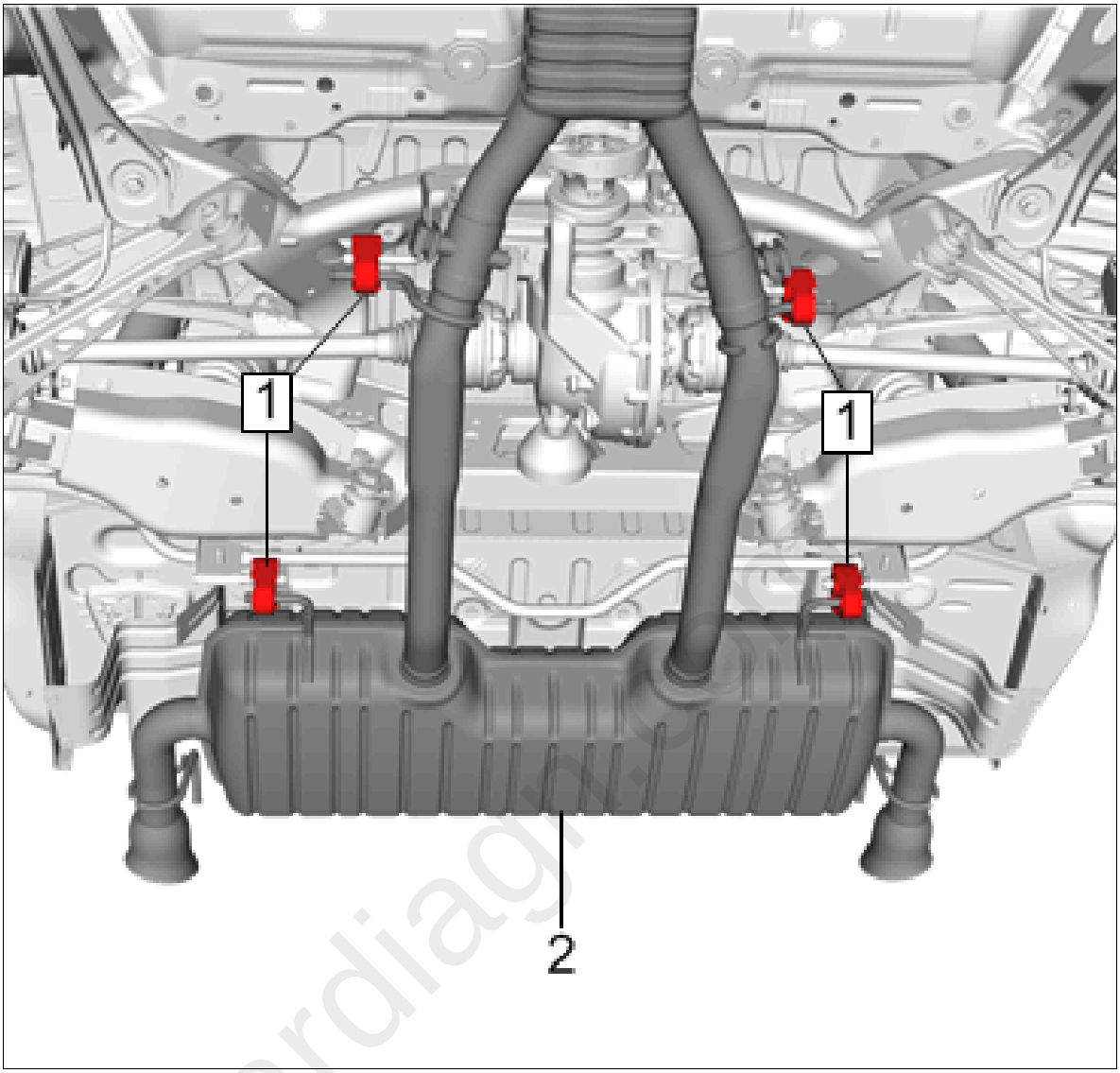
Fig 18: Rear Wheel Speed Sensor



Courtesy of GENERAL MOTORS COMPANY

22. Install Rear Wheel Speed Sensor (1) - Rear Wheel Speed Sensor Replacement

Fig 19: Exhaust Muffler Isolator



Courtesy of GENERAL MOTORS COMPANY

23. Install Exhaust Muffler Assembly (2) - Exhaust Muffler Replacement (LGX, Coupe)Exhaust Muffler Replacement (LGX, Convertible)
24. Check the rear wheel alignment. Wheel Alignment Specifications

REPAIR INSTRUCTIONS > REAR SUSPENSION SUPPORT MOUNT REPLACEMENT

Special Tools

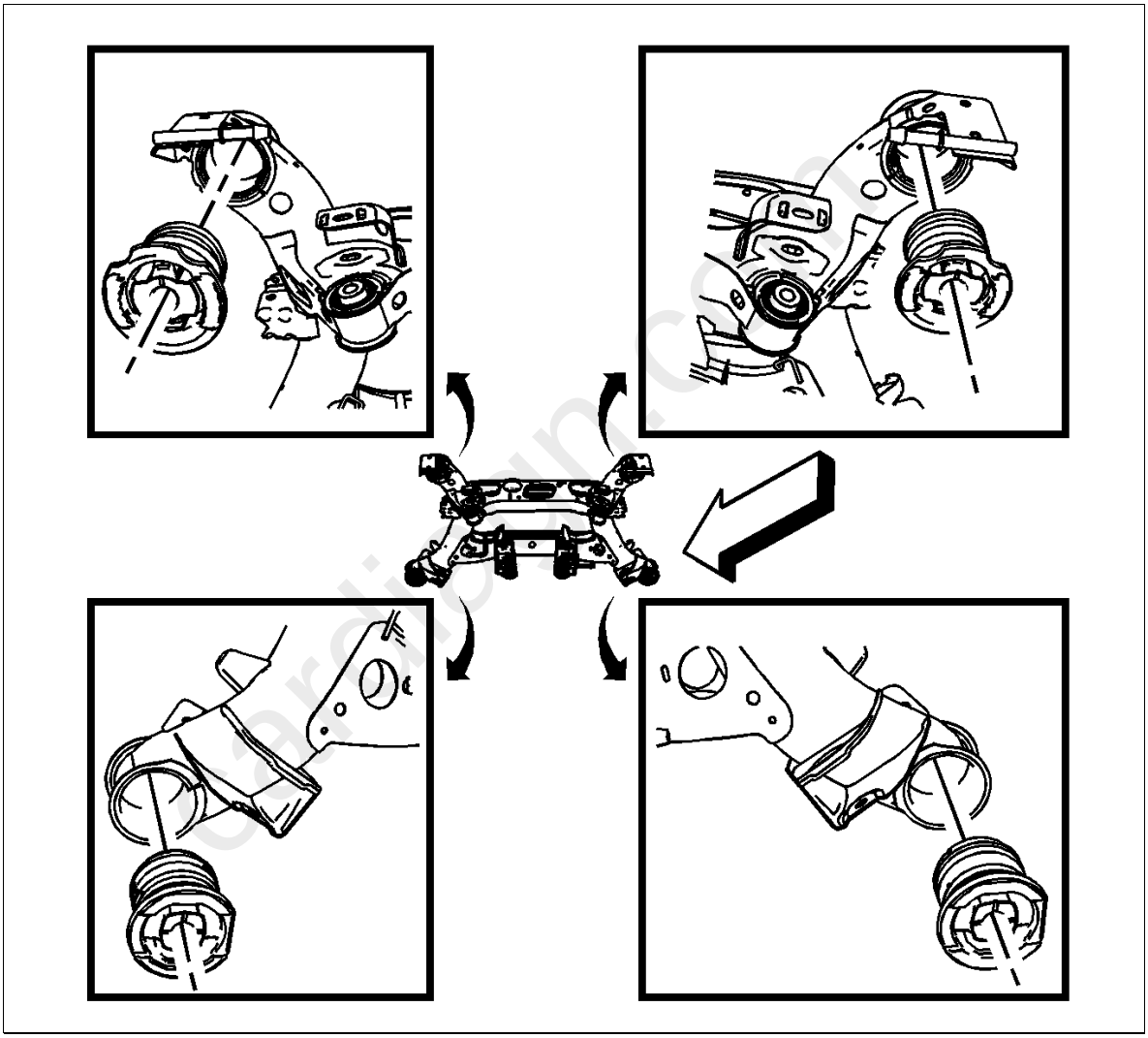
DT-50806 Bushing Remove and Install Kit

For the regional equivalent tools, refer to Special Tools

REPAIR INSTRUCTIONS > REAR SUSPENSION SUPPORT MOUNT REPLACEMENT > REMOVAL PROCEDURE

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP) .
2. Remove the tires and wheels. Refer to Tire and Wheel Removal and Installation .
3. Remove the rear suspension cradle. Refer to Rear Suspension Cradle Replacement .
4. With the aide of an assistant, position the rear suspension cradle on a suitable work bench.

Fig 1: Rear Suspension Support Mount



Courtesy of GENERAL MOTORS COMPANY

NOTE:

Note the position of the rear suspension rear mount cut-out side and the rear suspension front mount flat side before removal.

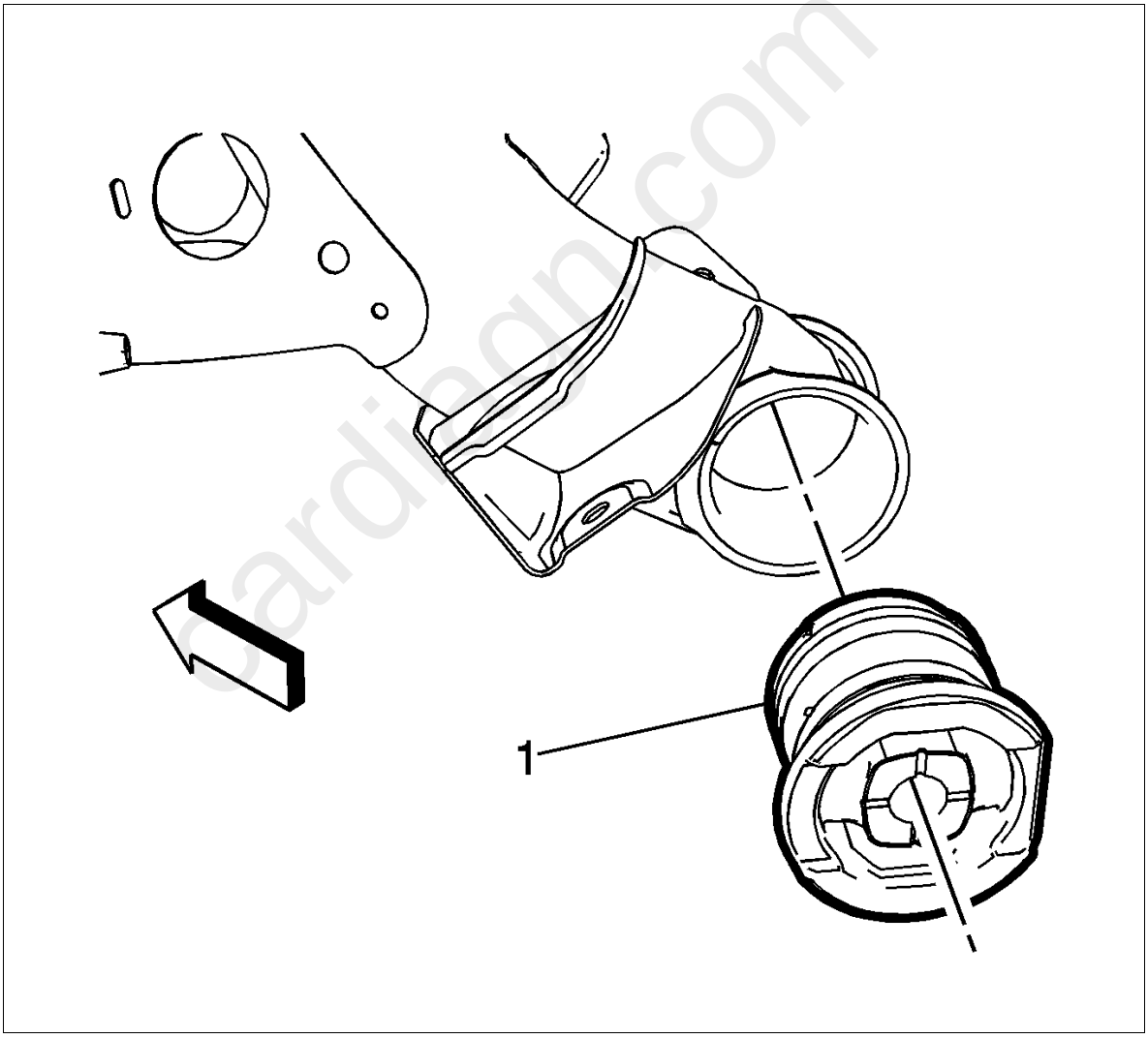
NOTE:

When cutting out the mount, some hydraulic fluid will flow out of the mount.

5. Using the appropriate tool, cut two slots on either side of the rear suspension support mount.
6. Collapse the support mount and remove it from the rear suspension cradle.

REPAIR INSTRUCTIONS > REAR SUSPENSION SUPPORT MOUNT REPLACEMENT > INSTALLATION PROCEDURE

Fig 1: Rear Suspension Support Mount



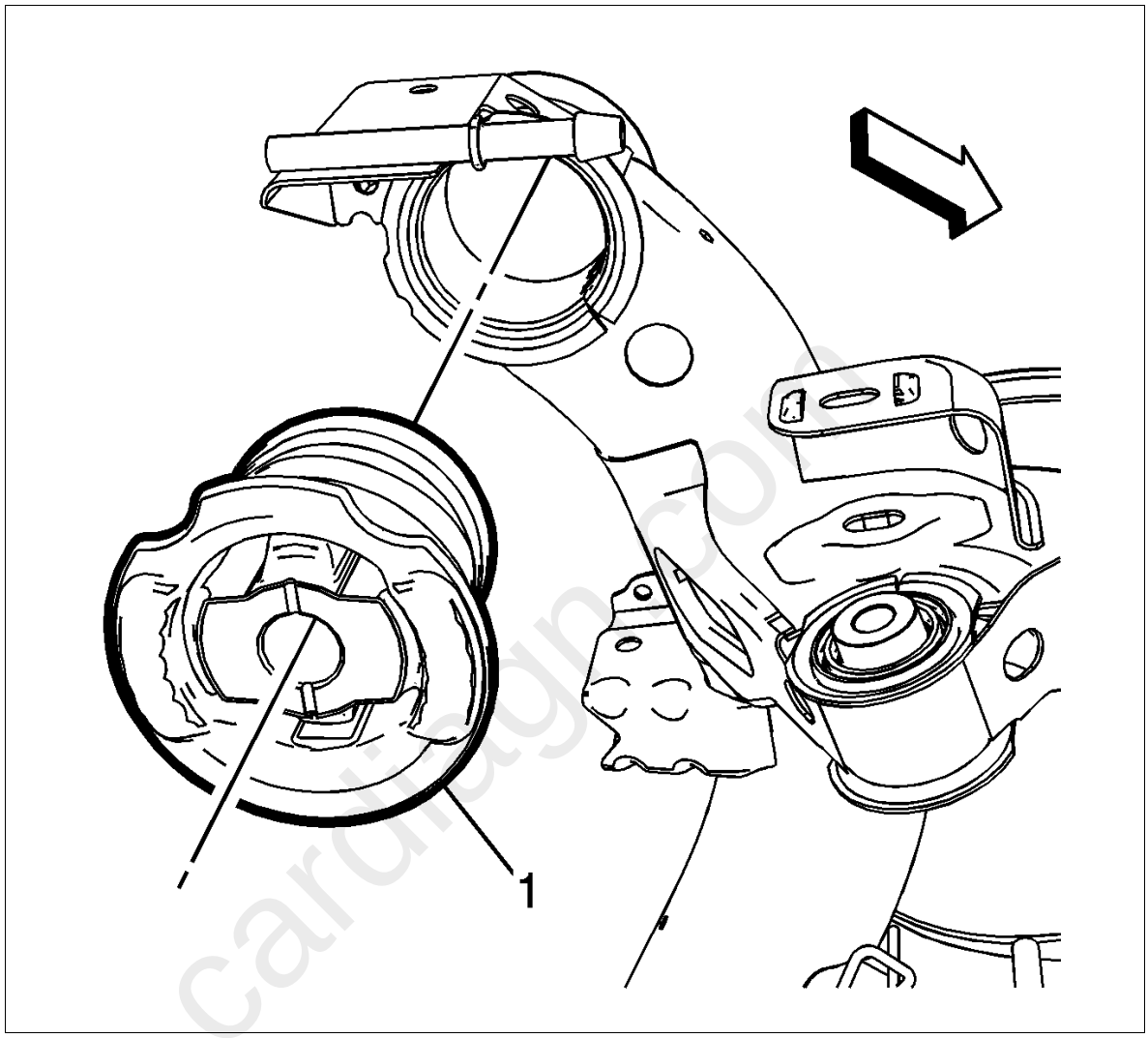
Courtesy of GENERAL MOTORS COMPANY

NOTE:

For the front support mounts, ensure the flat side is in the correct position facing the passenger side of the vehicle before installing it.

1. Position the rear suspension support mount (1) in the rear suspension support.

Fig 2: Rear Suspension Support Mount



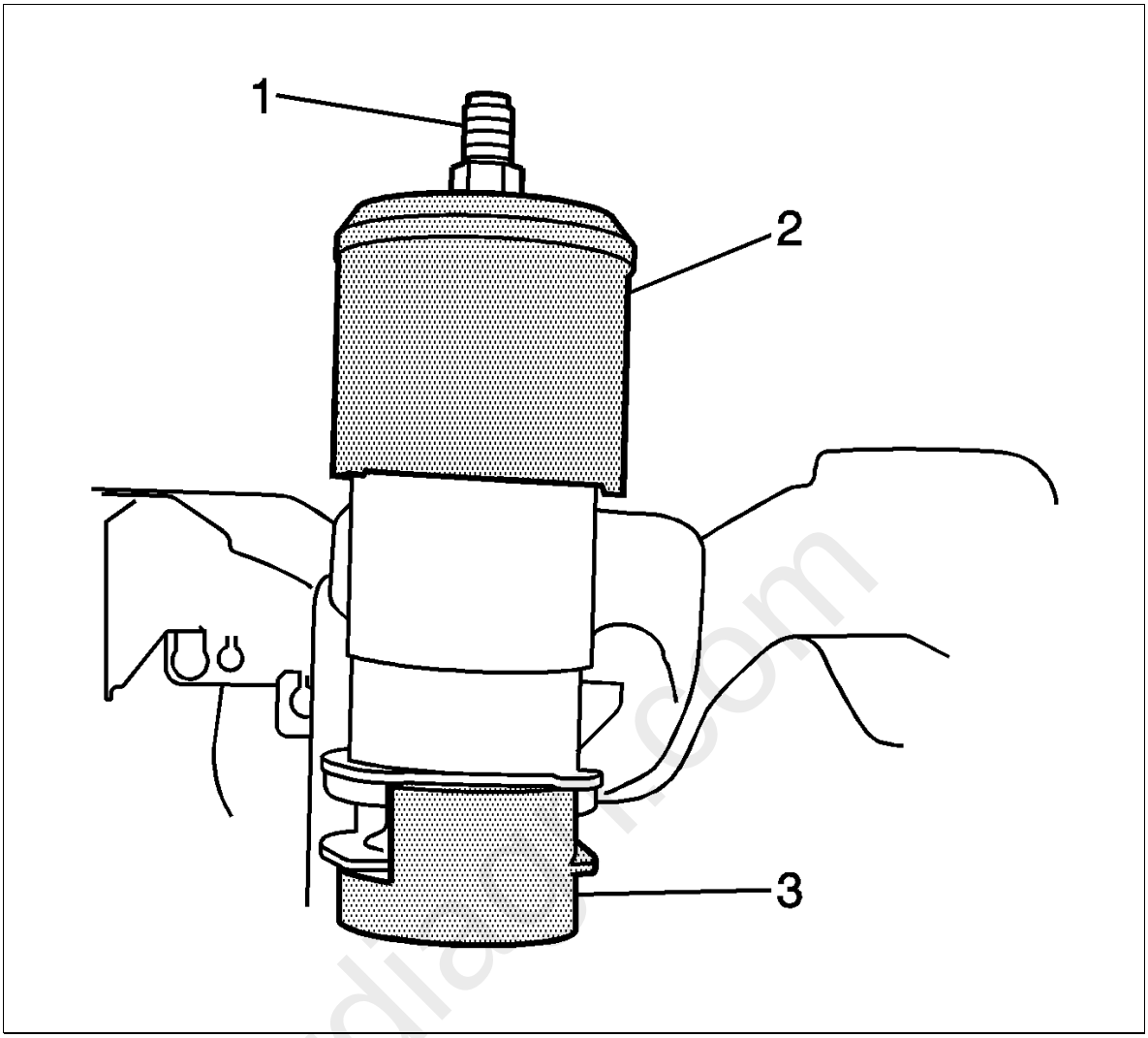
Courtesy of GENERAL MOTORS COMPANY

NOTE:

For the rear support mounts, ensure the cut-out side is in the correct position facing the rear of the vehicle before installing it.

2. Position the rear suspension support mount (1) in the rear suspension support.

Fig 3: Bushing & Removal/Installation Tools



Courtesy of GENERAL MOTORS COMPANY

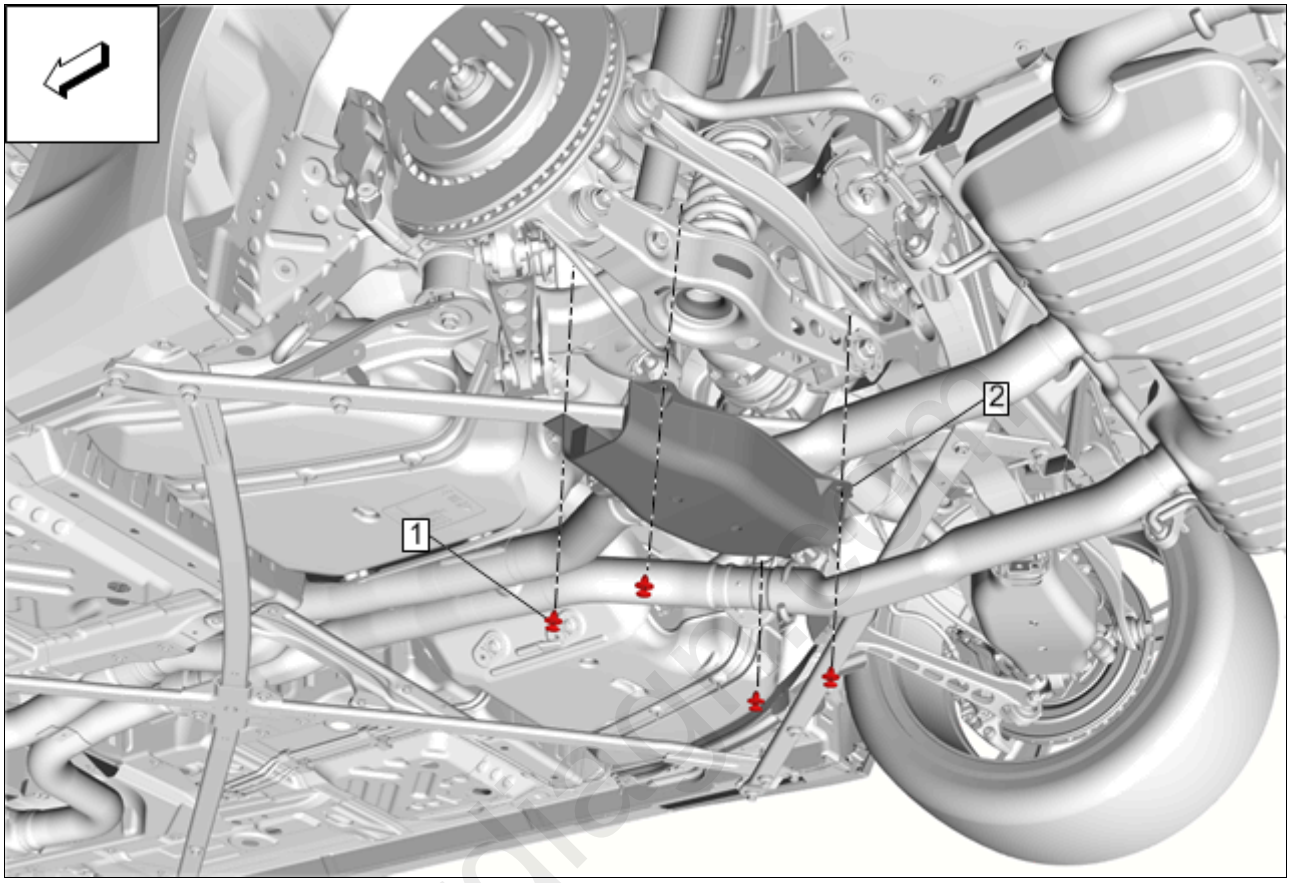
NOTE:

Apply a small amount of silicone grease on the support mount prior to installing.

3. Using the **DT-50806** kit (1), (2), and (3), install the rear suspension support bushings.
4. With the aid of an assistant, position the rear support onto the transmission jack and firmly secure the support to the jack with straps.
5. Install the rear suspension cradle. Refer to Rear Suspension Cradle Replacement .
6. Install the tires and wheels. Refer to Tire and Wheel Removal and Installation .
7. Remove the support and lower the vehicle.
8. Check the rear alignment. Refer to Wheel Alignment Measurement .

REPAIR INSTRUCTIONS > REAR SUSPENSION LOWER CONTROL ARM COVER REPLACEMENT

Fig 1: Rear Suspension Lower Control Arm Cover



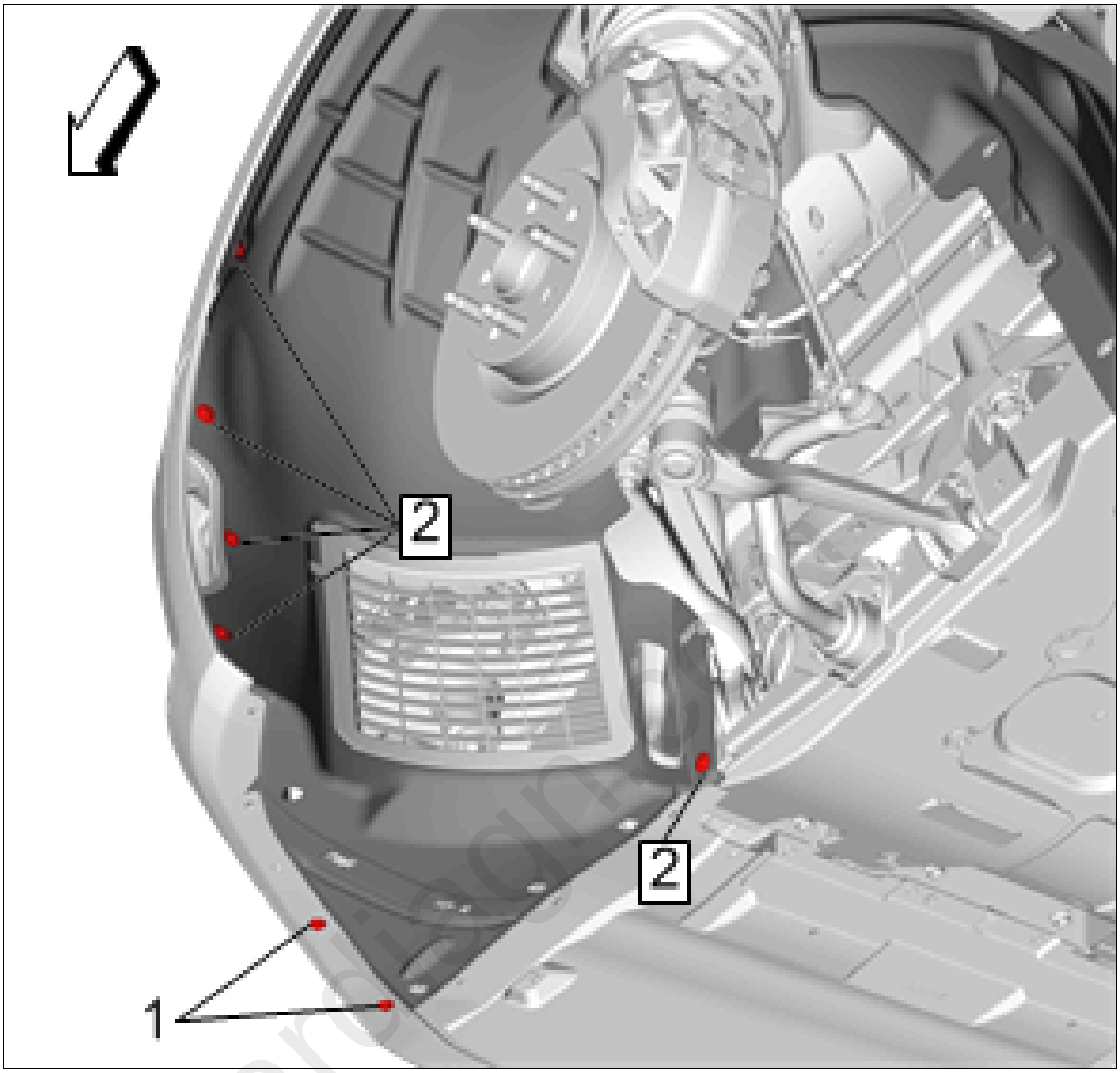
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Raise and support the vehicle. Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP)	
1	Retainer (Qty: 4)
2	Rear Suspension Lower Control Arm Cover

REPAIR INSTRUCTIONS > FRONT WHEELHOUSE LINER REPLACEMENT > REMOVAL PROCEDURE

1. Remove Front Tire Front Air Deflector Replacement
2. Remove Front Wheelhouse Splash Shield Replacement

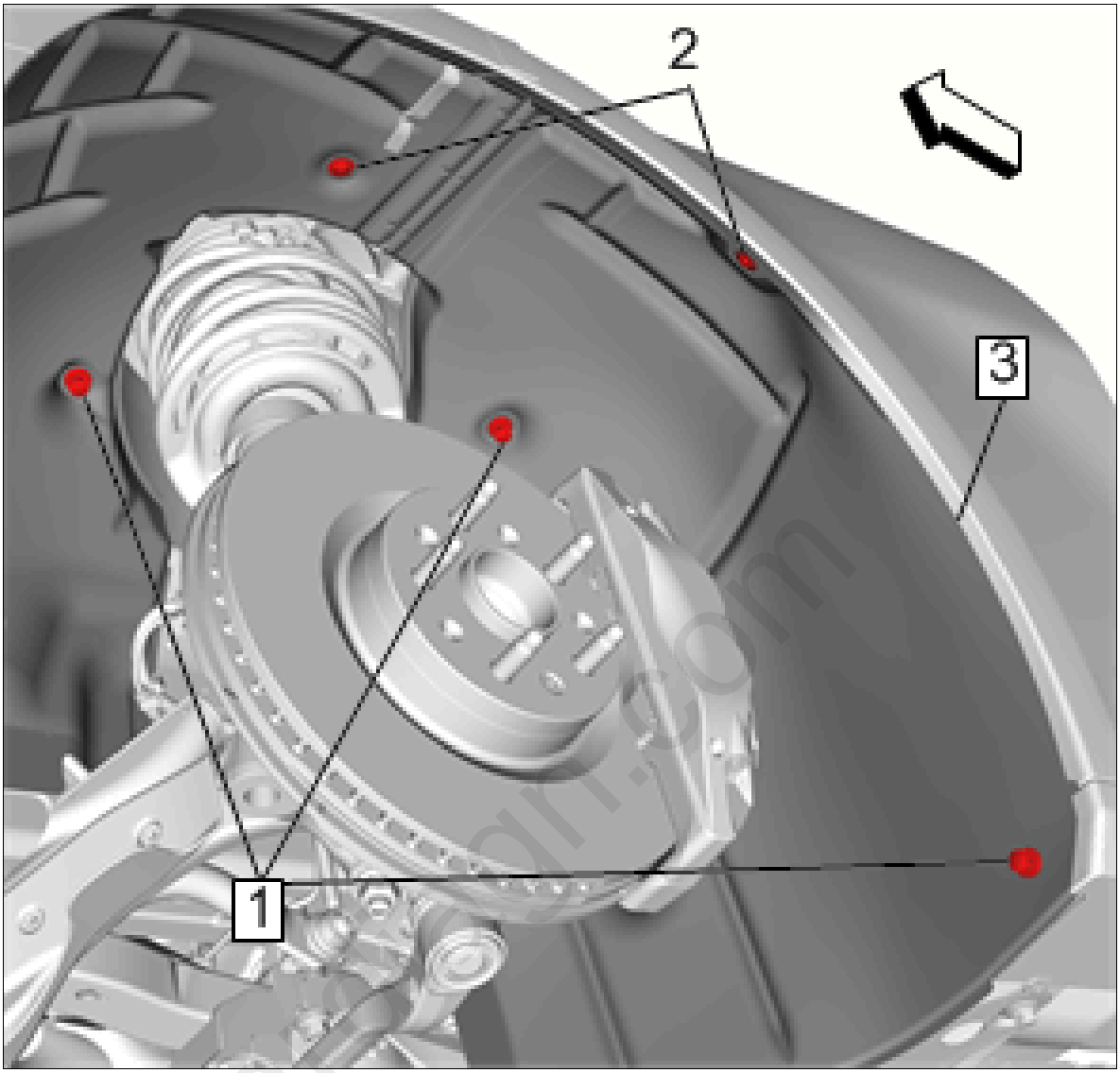
Fig 1: Front Bumper Fascia Bolt



Courtesy of GENERAL MOTORS COMPANY

3. Remove Front Bumper Fascia Bolt (1) (Qty: 2)
4. Remove Front Wheelhouse Liner Screw (2) (Qty: 5)

Fig 2: Front Wheelhouse Liner Retainer

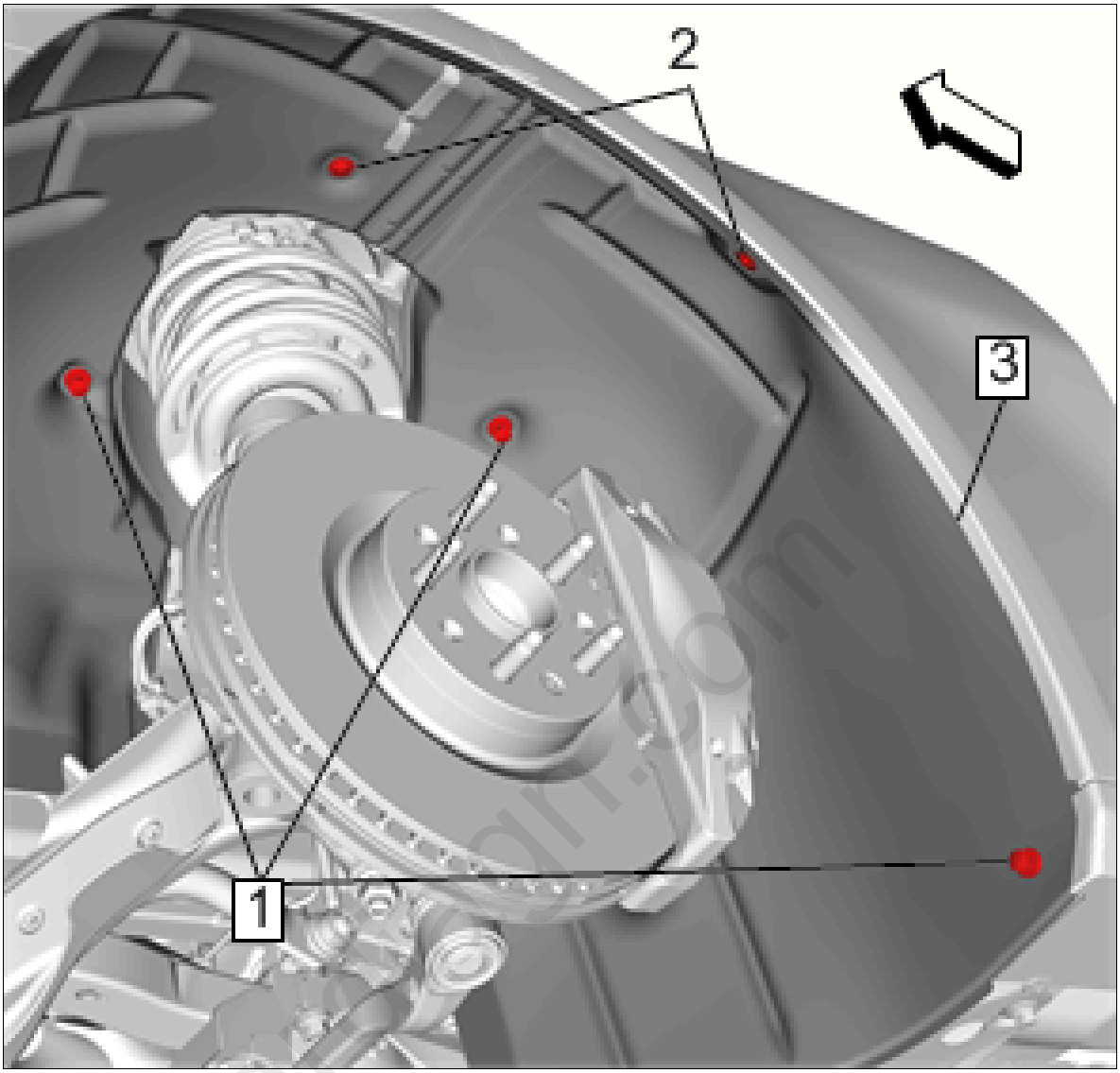


Courtesy of GENERAL MOTORS COMPANY

5. Remove Front Wheelhouse Liner Retainer (1) (Qty: 3)
6. Remove Front Wheelhouse Liner Screw (2) (Qty: 2)
7. Remove Front Wheelhouse Liner (3)

REPAIR INSTRUCTIONS > FRONT WHEELHOUSE LINER REPLACEMENT > INSTALLATION PROCEDURE

Fig 1: Front Wheelhouse Liner Retainer



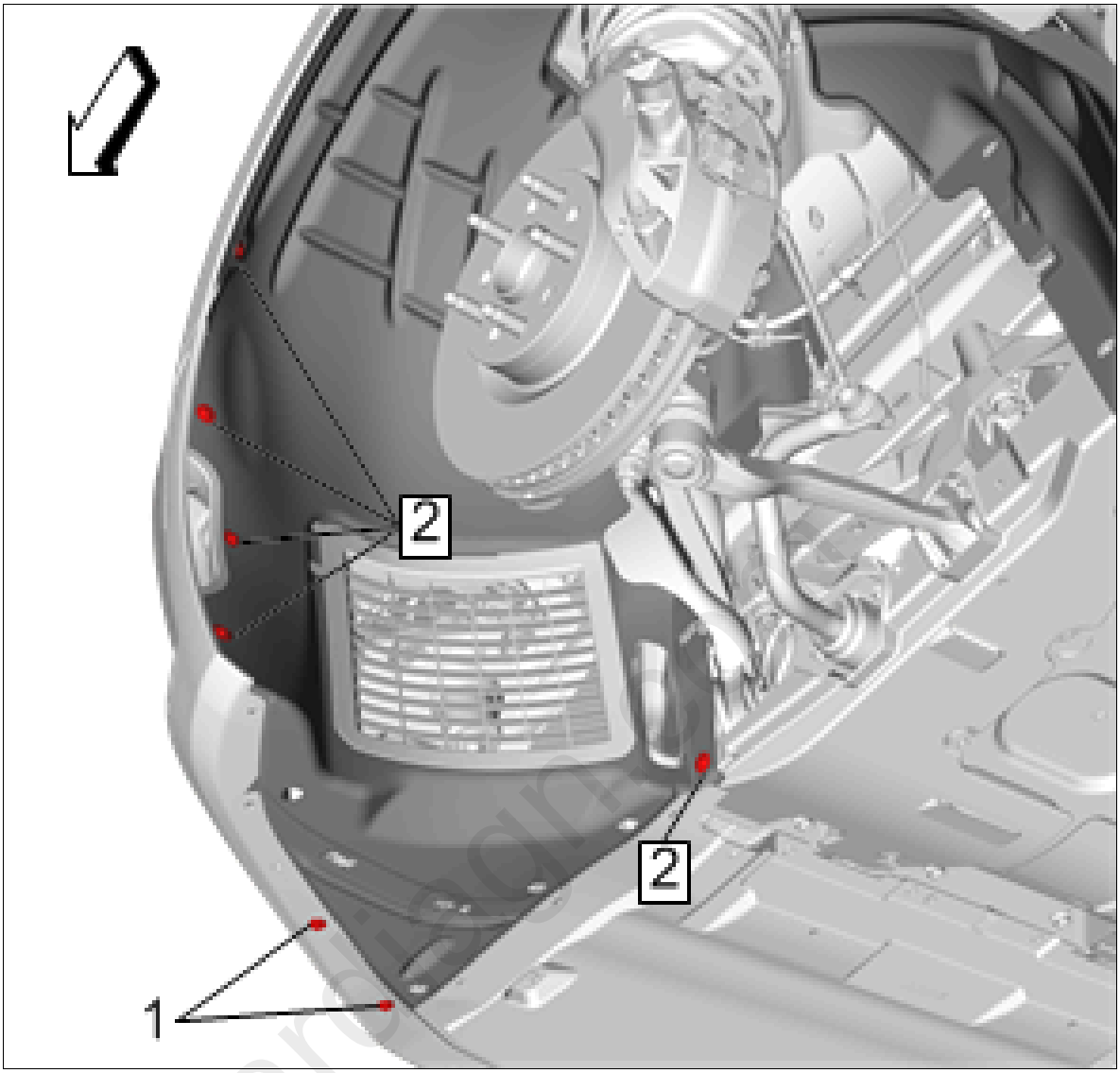
Courtesy of GENERAL MOTORS COMPANY

1. Install Front Wheelhouse Liner (3)
2. Install Front Wheelhouse Liner Retainer (1) (Qty: 3)

> ⚠ *CAUTION:*
>
> *Refer to Fastener Caution*

3. Install Front Wheelhouse Liner Screw (2) (Qty: 2) and tighten to 2.5 N.m (22 lb in)

Fig 2: Front Bumper Fascia Bolt



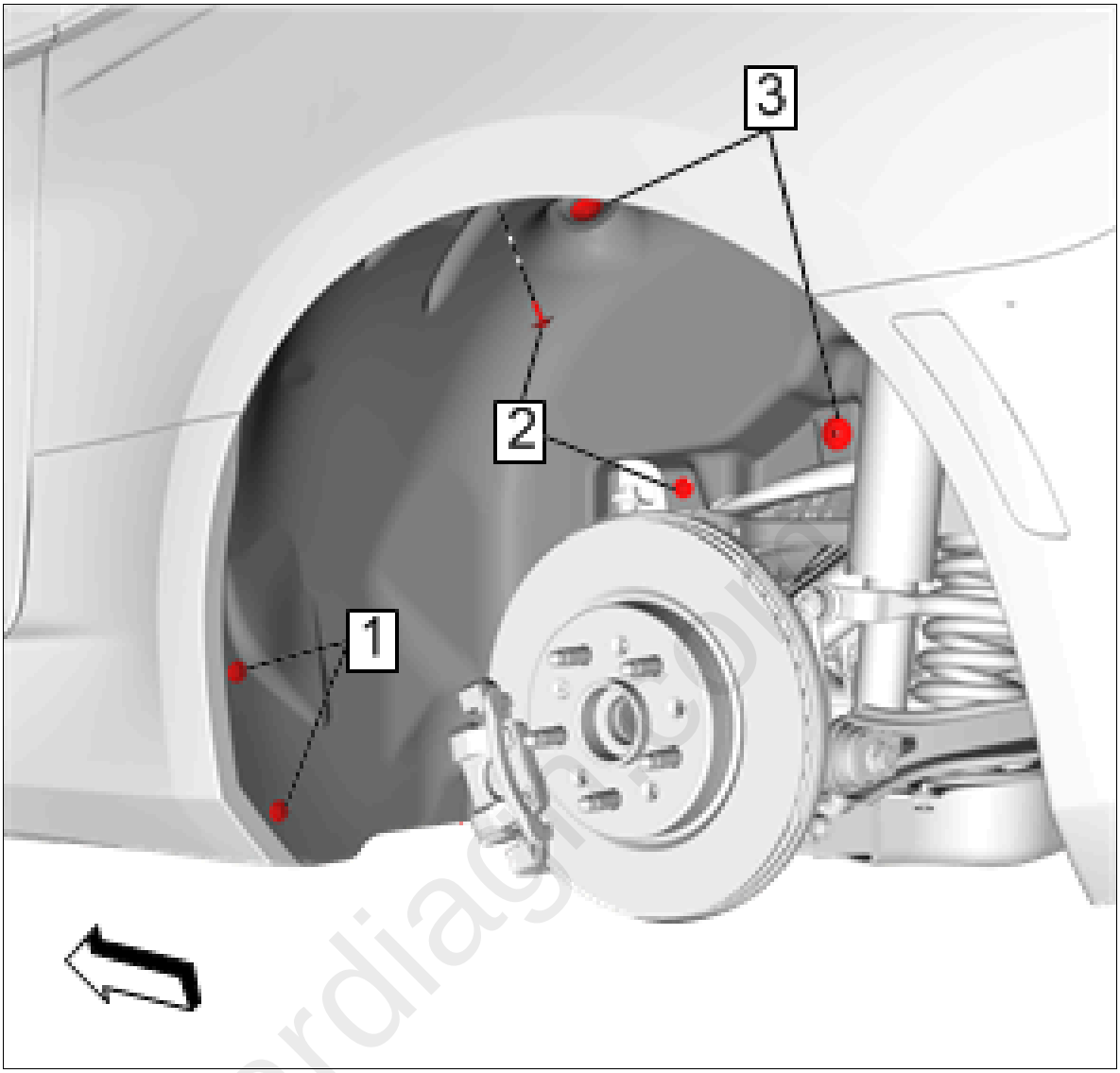
Courtesy of GENERAL MOTORS COMPANY

4. Install Front Wheelhouse Liner Screw (2) (Qty: 5) and tighten to 2.5 N.m (22 lb in)
5. Install Front Bumper Fascia Bolt (1) (Qty: 2) and tighten to 5 N.m (44 lb in)
6. Install Front Tire Front Air Deflector Replacement
7. Install Front Wheelhouse Splash Shield Replacement

REPAIR INSTRUCTIONS > REAR WHEELHOUSE LINER REPLACEMENT > REMOVAL PROCEDURE

1. Remove Tire and Wheel Removal and Installation

Fig 1: Rear Wheelhouse Liner Retainer

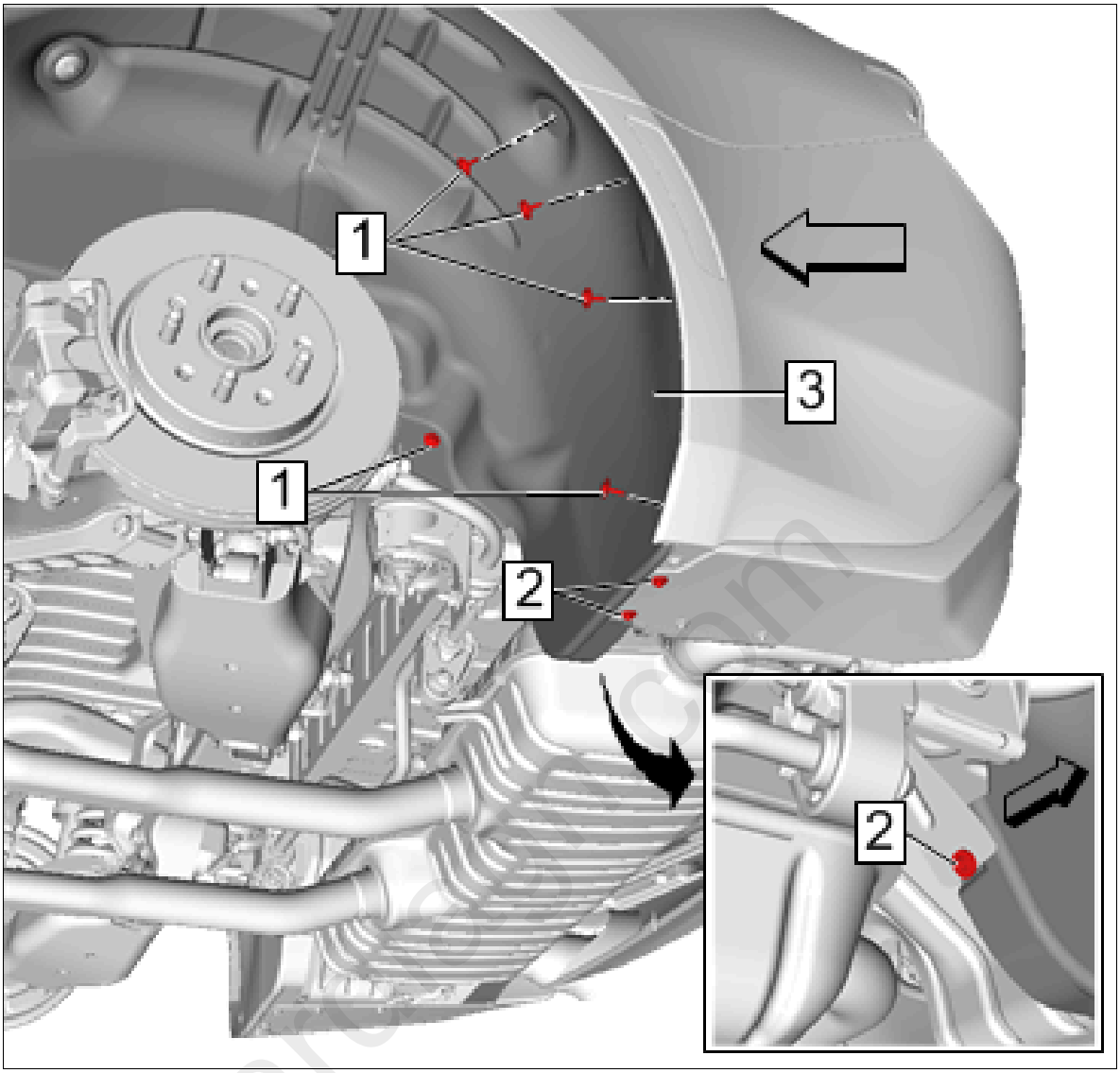


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2. Remove Rear Wheelhouse Liner Retainer (1) (Qty: 2)
3. Remove Rear Wheelhouse Liner Screw (2) (Qty: 3)
4. Remove Rear Wheelhouse Liner Retainer (3) (Qty: 2)

Fig 2: Rear Wheelhouse Liner Screw

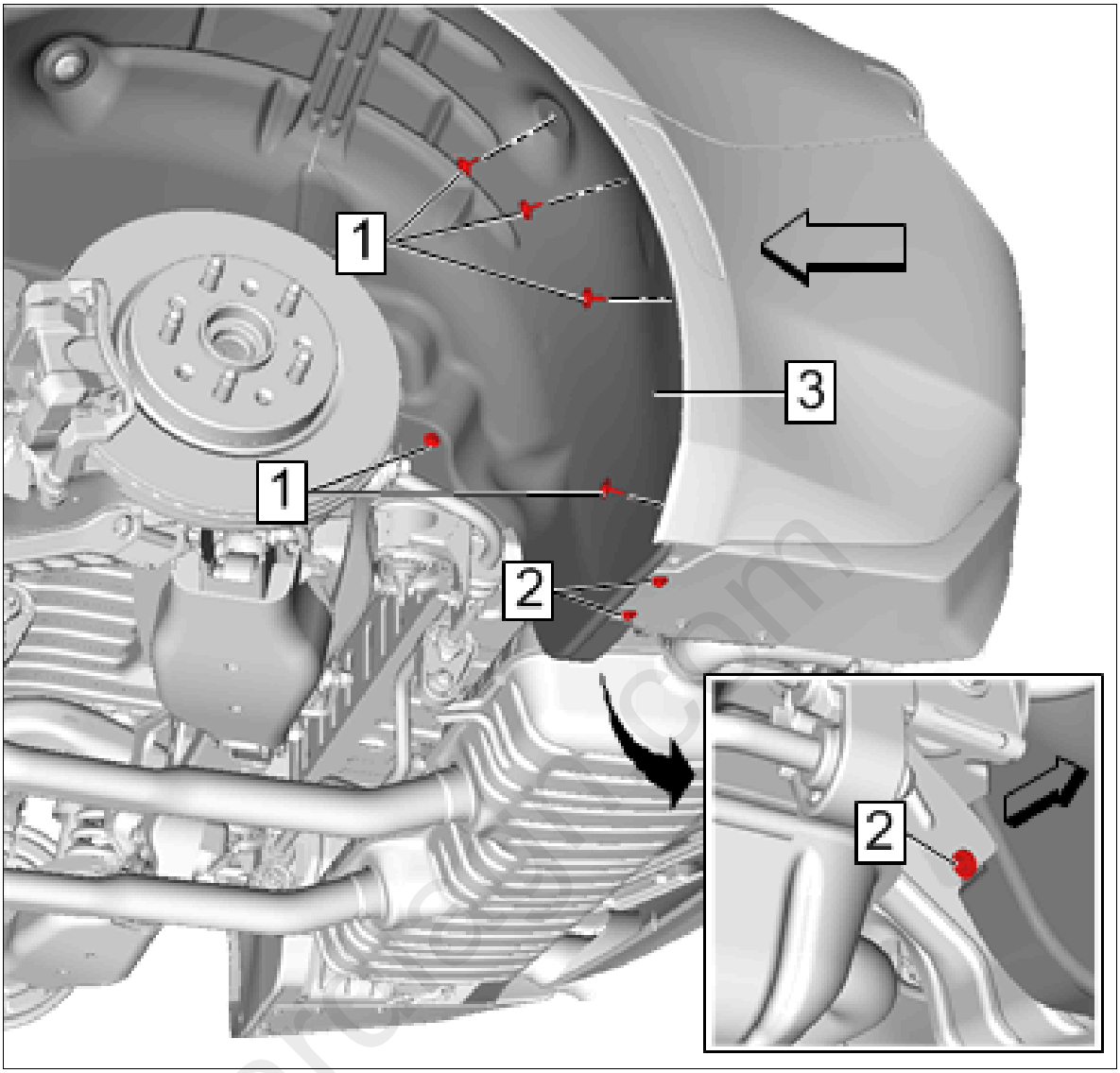


Courtesy of GENERAL MOTORS COMPANY

5. Remove Rear Wheelhouse Liner Screw (1) (Qty: 5)
6. Remove Rear Bumper Fascia Bolt (2) (Qty: 3)
7. Remove Rear Wheelhouse Liner (3)

REPAIR INSTRUCTIONS > REAR WHEELHOUSE LINER REPLACEMENT > INSTALLATION PROCEDURE

Fig 1: Rear Wheelhouse Liner



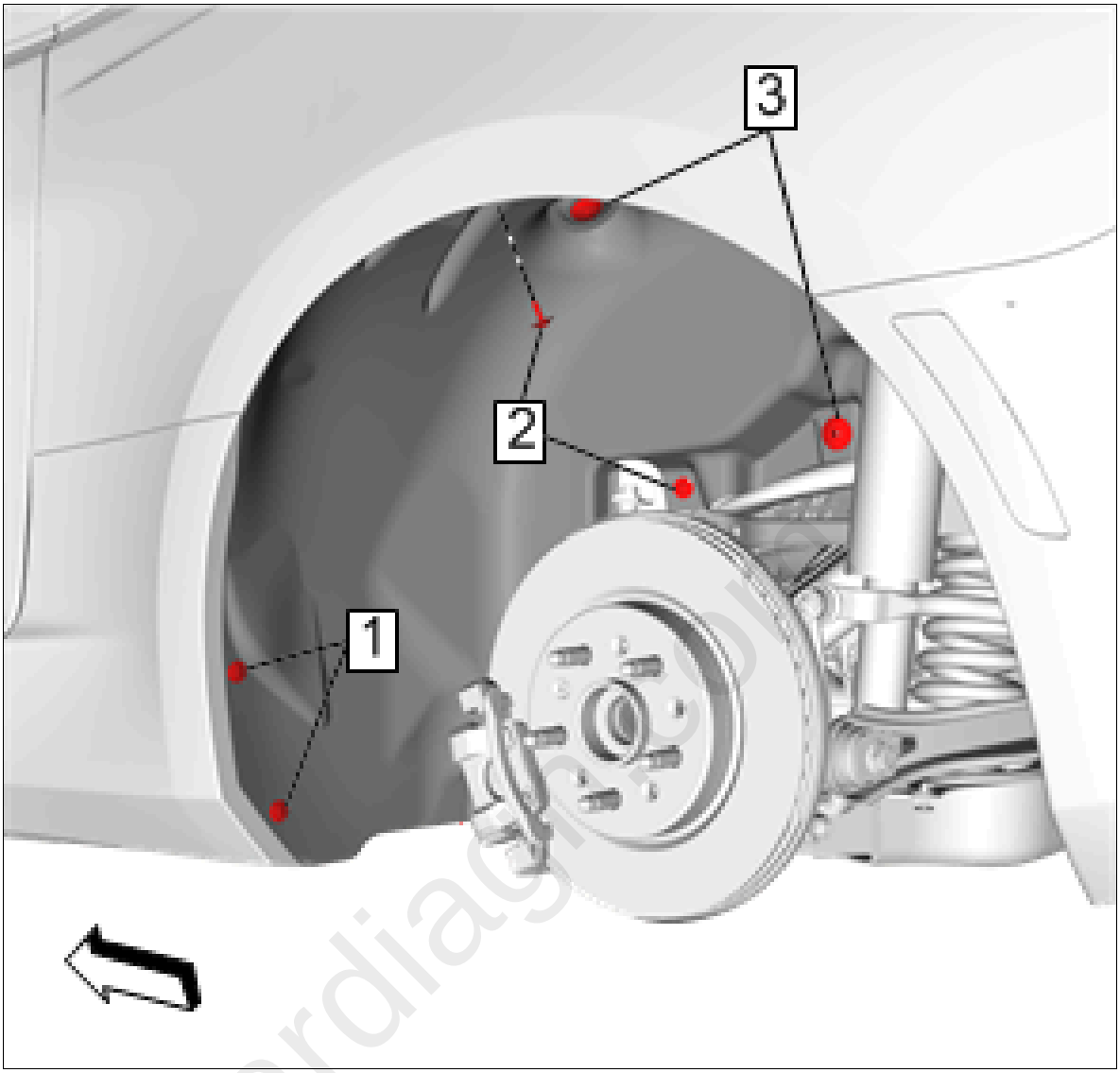
Courtesy of GENERAL MOTORS COMPANY

1. Install Rear Wheelhouse Liner (3)

> ⚠ *CAUTION:*
>
> *Refer to Fastener Caution*

2. Install Rear Bumper Fascia Bolt (2) (Qty: 3) and tighten to 5 N.m (44 lb in)
3. Install Rear Wheelhouse Liner Screw (1) (Qty: 5) and tighten to 2.5 N.m (22 lb in)

Fig 2: Rear Wheelhouse Liner Retainer

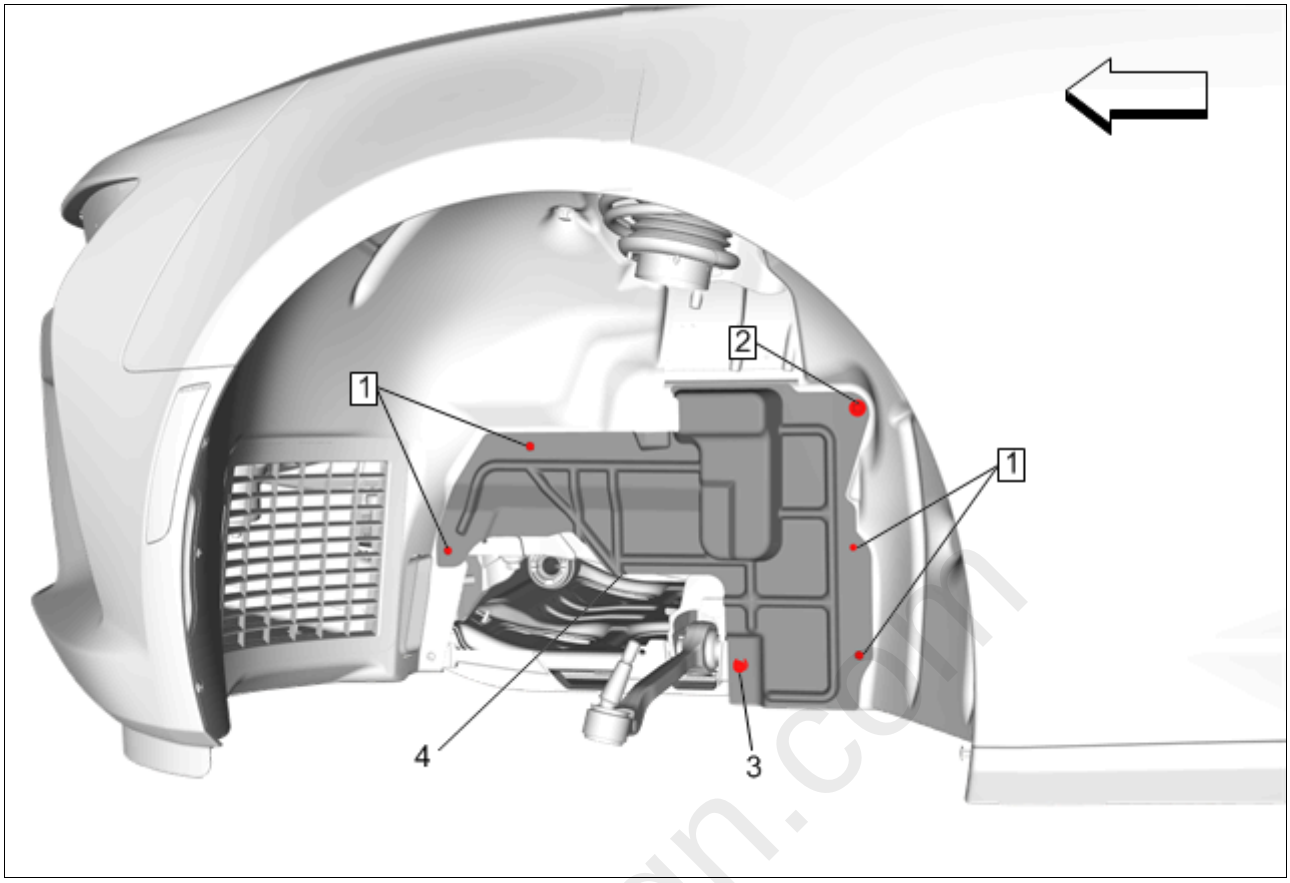


Courtesy of GENERAL MOTORS COMPANY

4. Install Rear Wheelhouse Liner Retainer (1) (Qty: 2)
5. Install Rear Wheelhouse Liner Screw (2) (Qty: 3) and tighten to 2.5 N.m (22 lb in)
6. Install Rear Wheelhouse Liner Retainer (1) (Qty: 5)
7. Install Tire and Wheel Removal and Installation

REPAIR INSTRUCTIONS > FRONT WHEELHOUSE SPLASH SHIELD REPLACEMENT

Fig 1: Front Wheelhouse Splash Shield



Courtesy of GENERAL MOTORS COMPANY

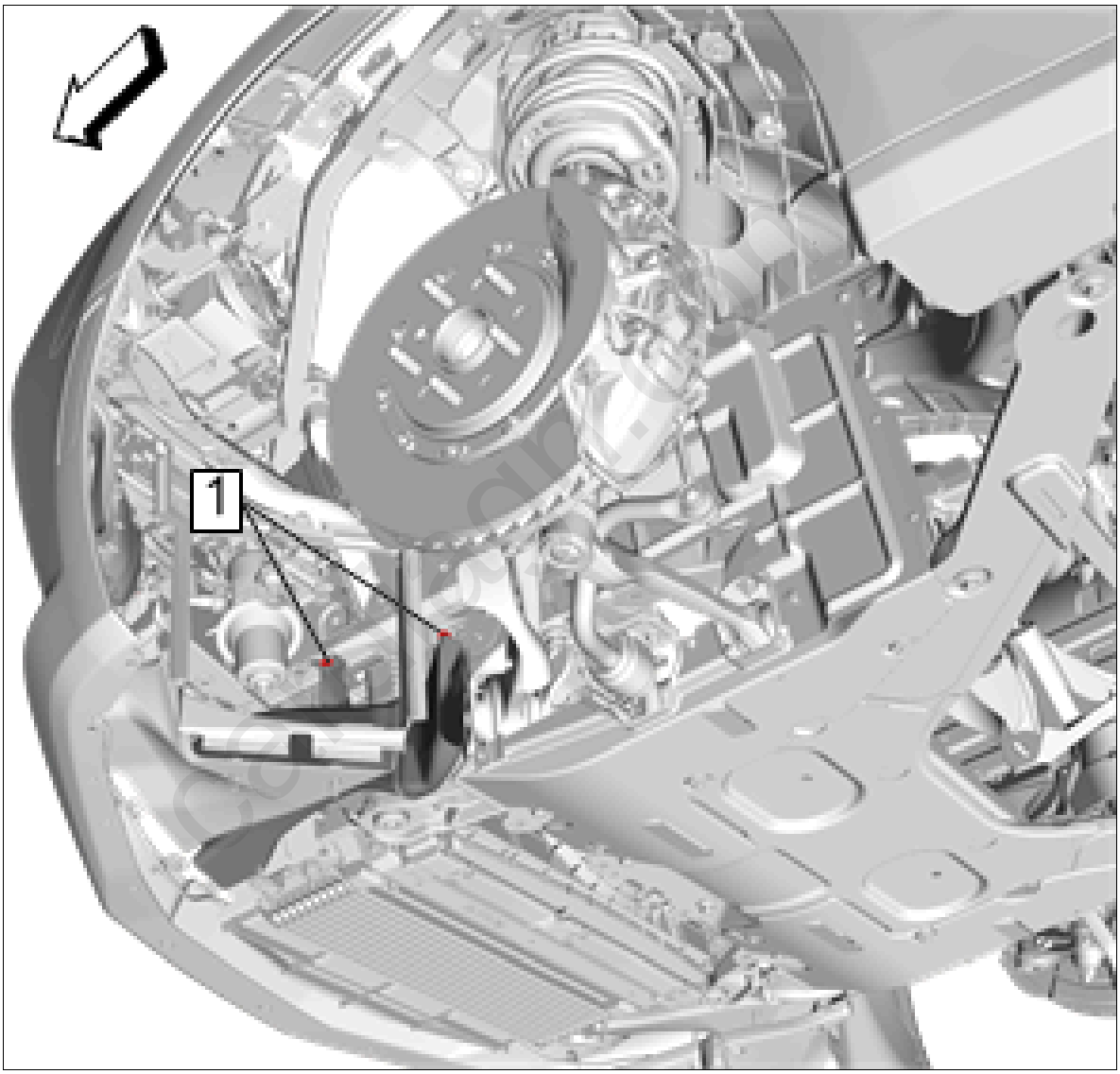
Callout	Component Name
Preliminary Procedure Tire and Wheel Removal and Installation	
1	Front Wheelhouse Splash Shield Fastener (Qty: 4) *CAUTION:* *Refer to Fastener Caution .* **Tighten** 2.5 N.m (22 lb in)
2	Front Wheelhouse Splash Shield Fastener **Tighten** 5 N.m (44 lb in)
3	Front Wheelhouse Splash Shield Retainer
4	Front Wheelhouse Splash Shield

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REPAIR INSTRUCTIONS > FRONT BRAKE ROTOR COOLING DUCT REPLACEMENT (J6G) > REMOVAL PROCEDURE

1. Remove Front Wheelhouse Liner - Front Wheelhouse Liner Replacement
2. Remove Radiator Air Side Baffle at Charge Air Cooler - Charge Air Cooler Replacement - Left Side (LGX with V18)Charge Air Cooler Replacement - Left Side (LT1 V18)Charge Air Cooler Replacement - Left Side (LTG with V18)

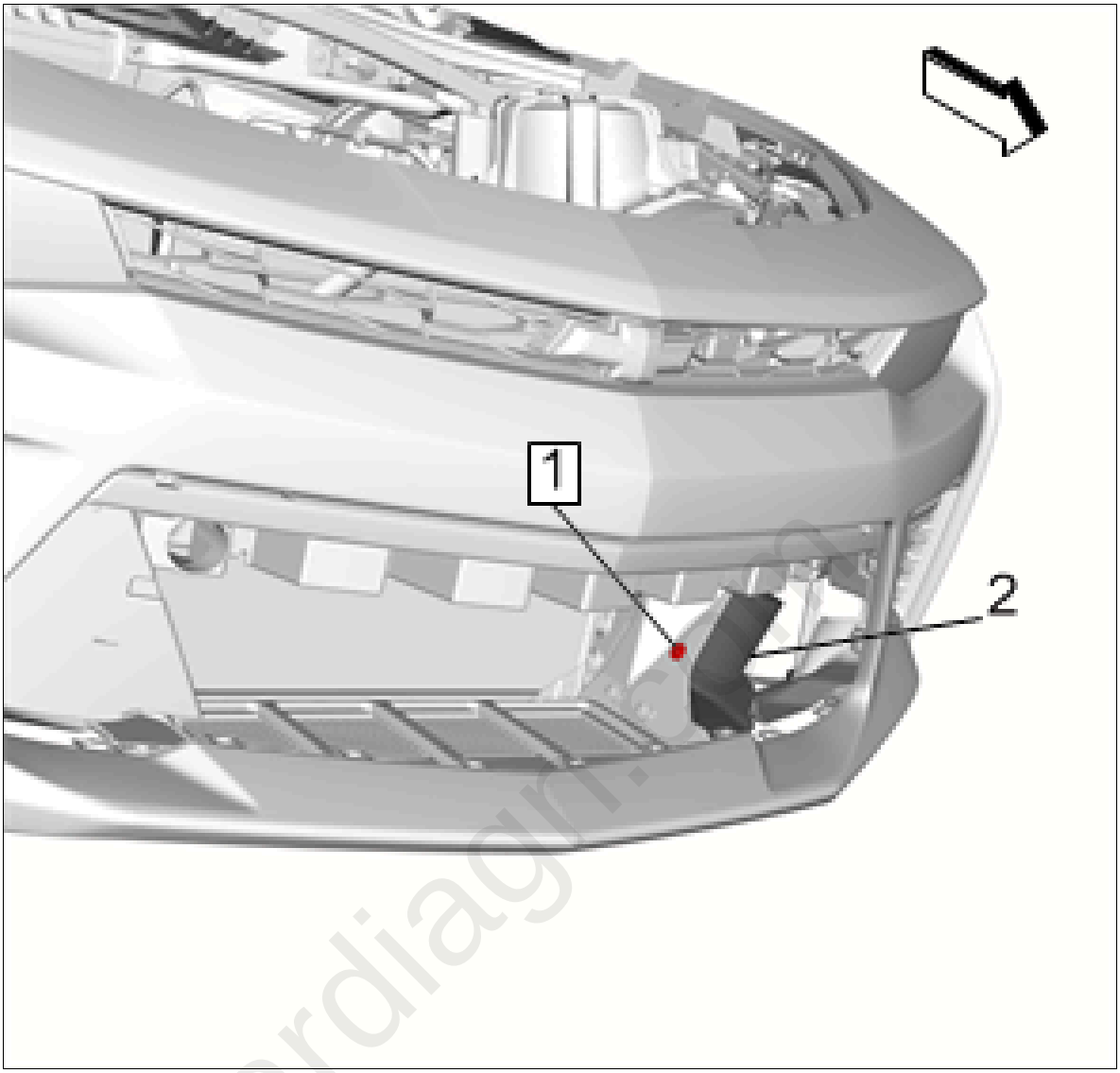
   Fig 1: Front Brake Rotor Cooling Duct Retainer



Courtesy of GENERAL MOTORS COMPANY

3. Remove Front Brake Rotor Cooling Duct Retainer (1) (Qty: 2)

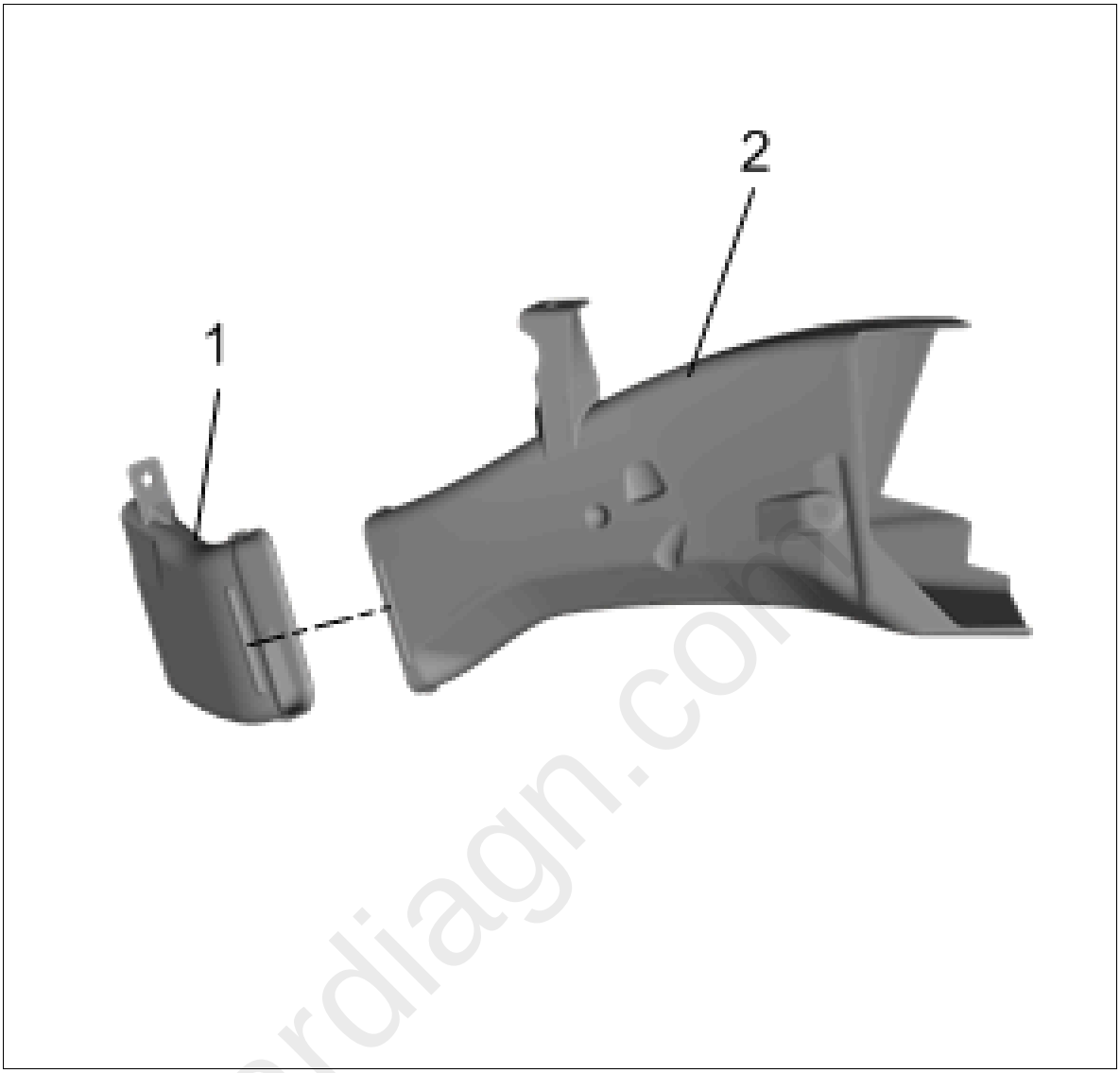
Fig 2: Front Brake Rotor Cooling Duct Retainer



Courtesy of GENERAL MOTORS COMPANY

4. Remove Front Brake Rotor Cooling Duct Retainer (1)
5. Remove Front Brake Rotor Cooling Duct (2)

Fig 3: Front Brake Rotor Cooling Duct



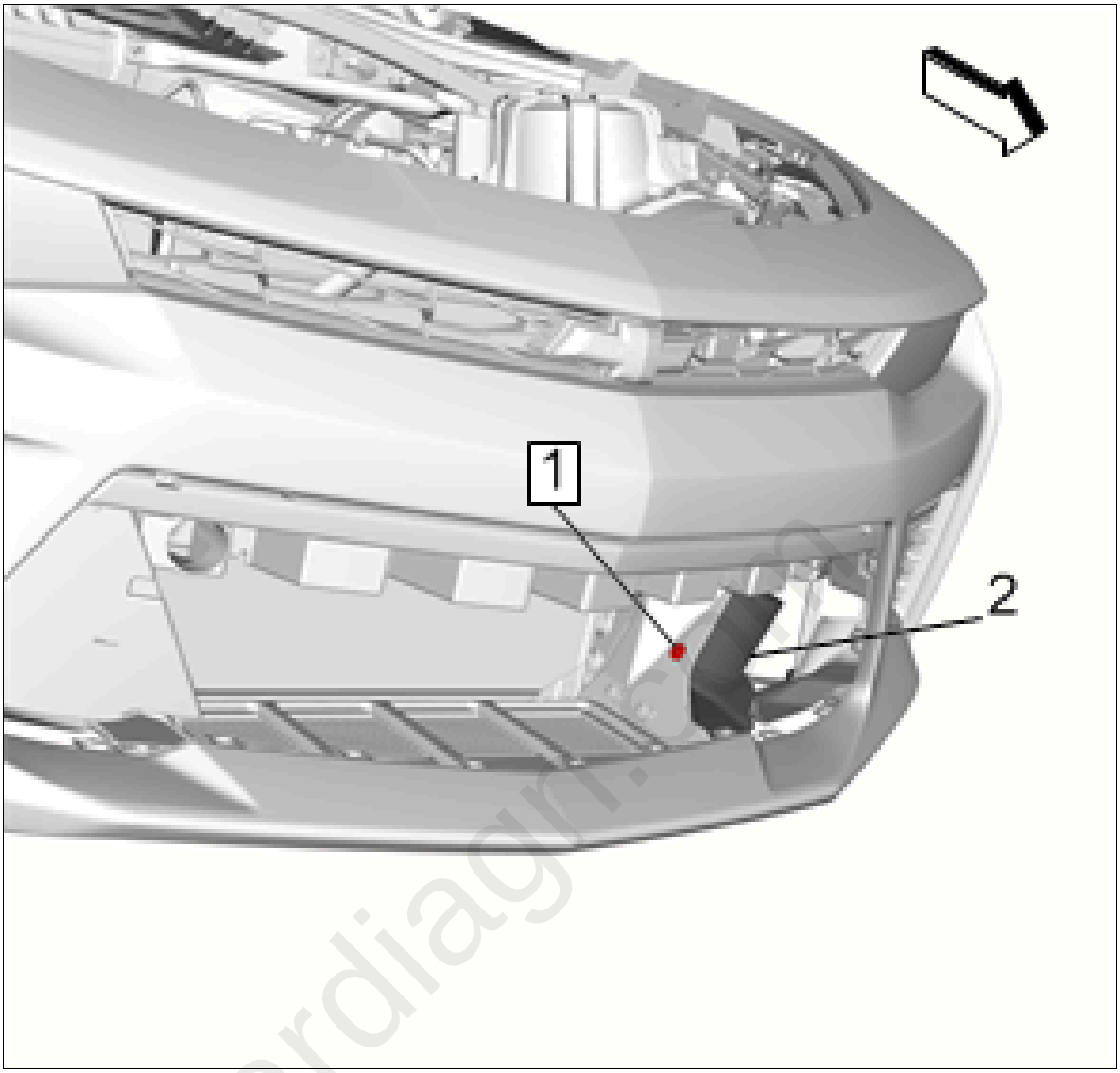
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6. Front Brake Rotor Cooling Duct - Rear (1)
7. Front Brake Rotor Cooling Duct - Front (2)

REPAIR INSTRUCTIONS > FRONT BRAKE ROTOR COOLING DUCT REPLACEMENT (J6G) > INSTALLATION PROCEDURE

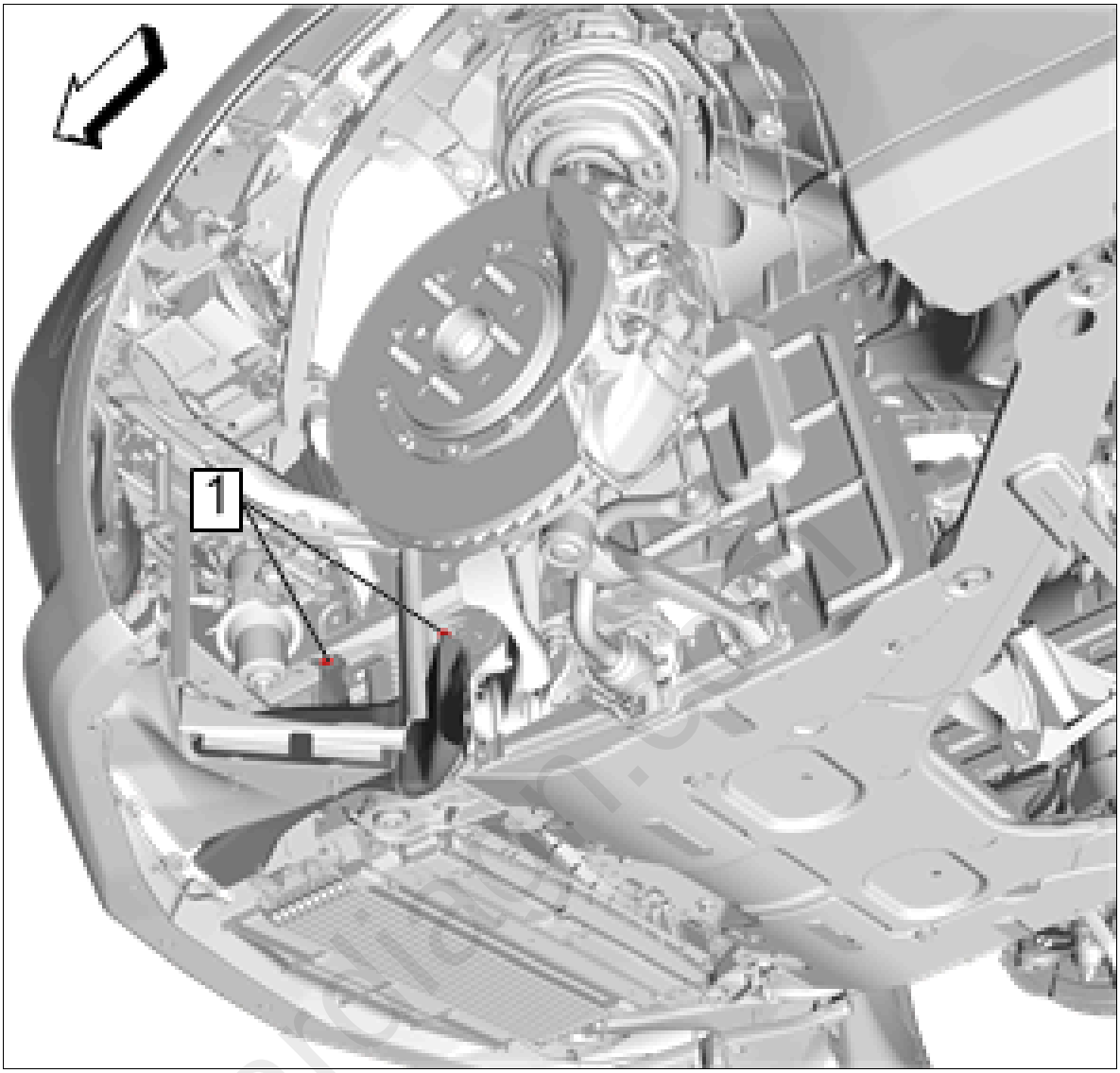
Fig 1: Front Brake Rotor Cooling Duct



Courtesy of GENERAL MOTORS COMPANY

1. Install Front Brake Rotor Cooling Duct (2)
2. Install Front Brake Rotor Cooling Duct Retainer (1)

Fig 2: Front Brake Rotor Cooling Duct Retainer

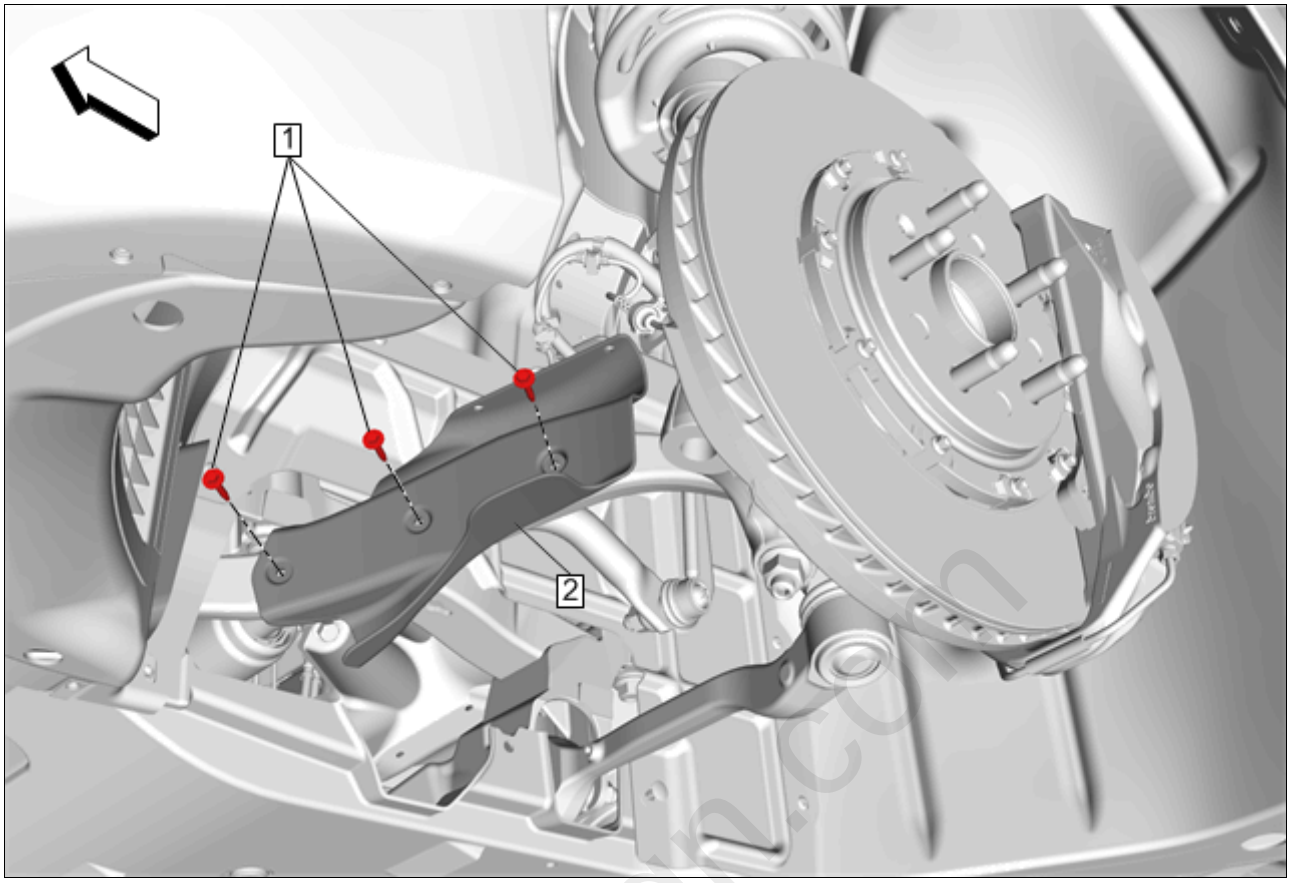


Courtesy of GENERAL MOTORS COMPANY

3. Install Front Brake Rotor Cooling Duct Retainer (1) (Qty: 2)
4. Install Radiator Air Side Baffle at Charge Air Cooler - Charge Air Cooler Replacement - Left Side (LGX with V18)Charge Air Cooler Replacement - Left Side (LT1 V18)Charge Air Cooler Replacement - Left Side (LTG with V18)
5. Install Front Wheelhouse Liner Replacement

REPAIR INSTRUCTIONS > FRONT BRAKE ROTOR COOLING DUCT DEFLECTOR REPLACEMENT

Fig 1: Front Brake Rotor Cooling Duct Deflector



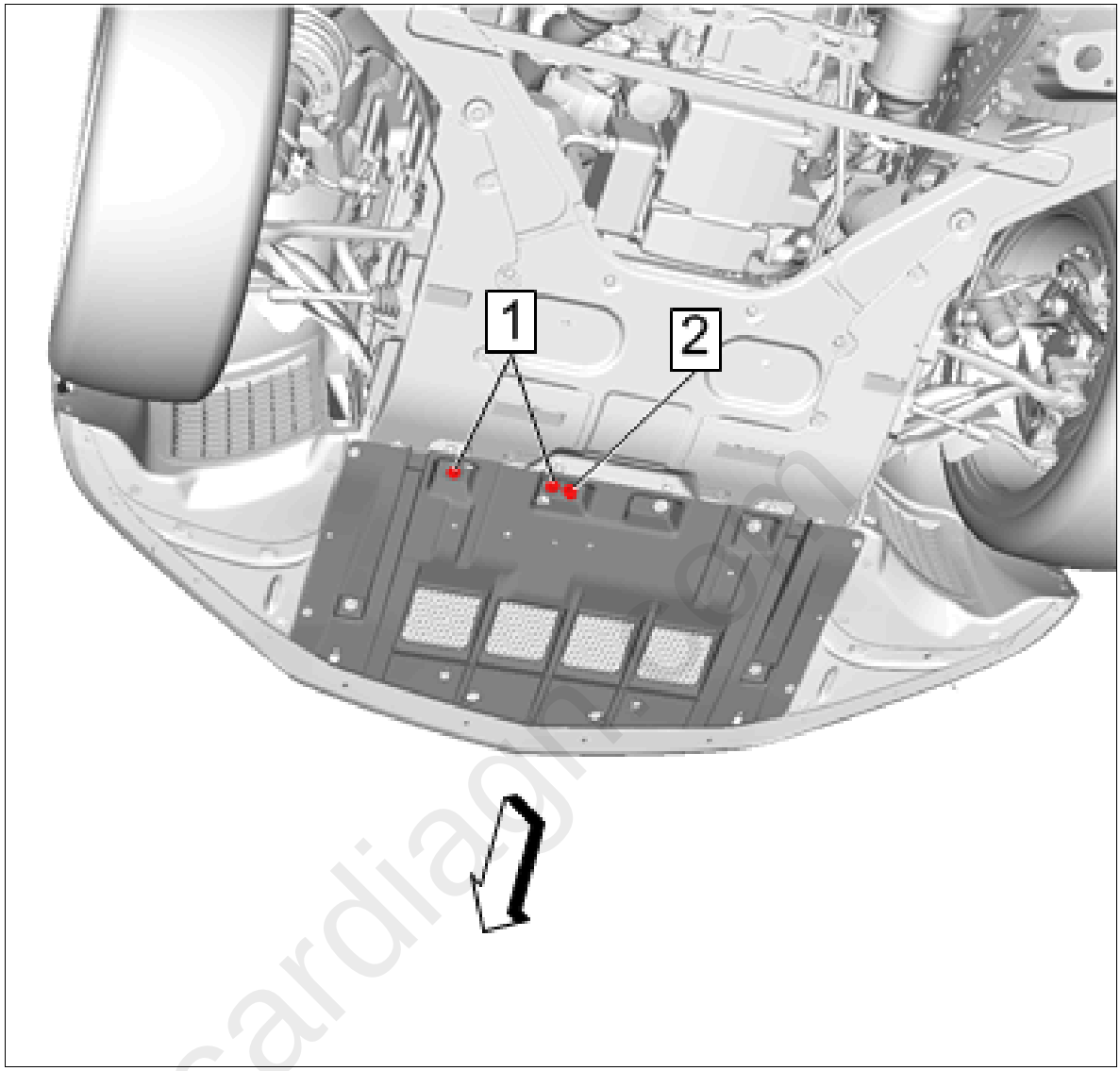
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Tire and Wheel Removal and Installation	
1	Front Brake Rotor Cooling Duct Deflector Bolt (Qty: 3) *CAUTION:* *Refer to Fastener Caution .* **Tighten** 3.3 N.m (29 lb in)
2	Front Brake Rotor Cooling Duct Deflector

REPAIR INSTRUCTIONS > FRONT COMPARTMENT SIDE NOISE SHIELD REPLACEMENT > REMOVAL PROCEDURE

1. Raise and support the vehicle. Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP)

   Fig 1: Front Compartment Air Deflector Retainers

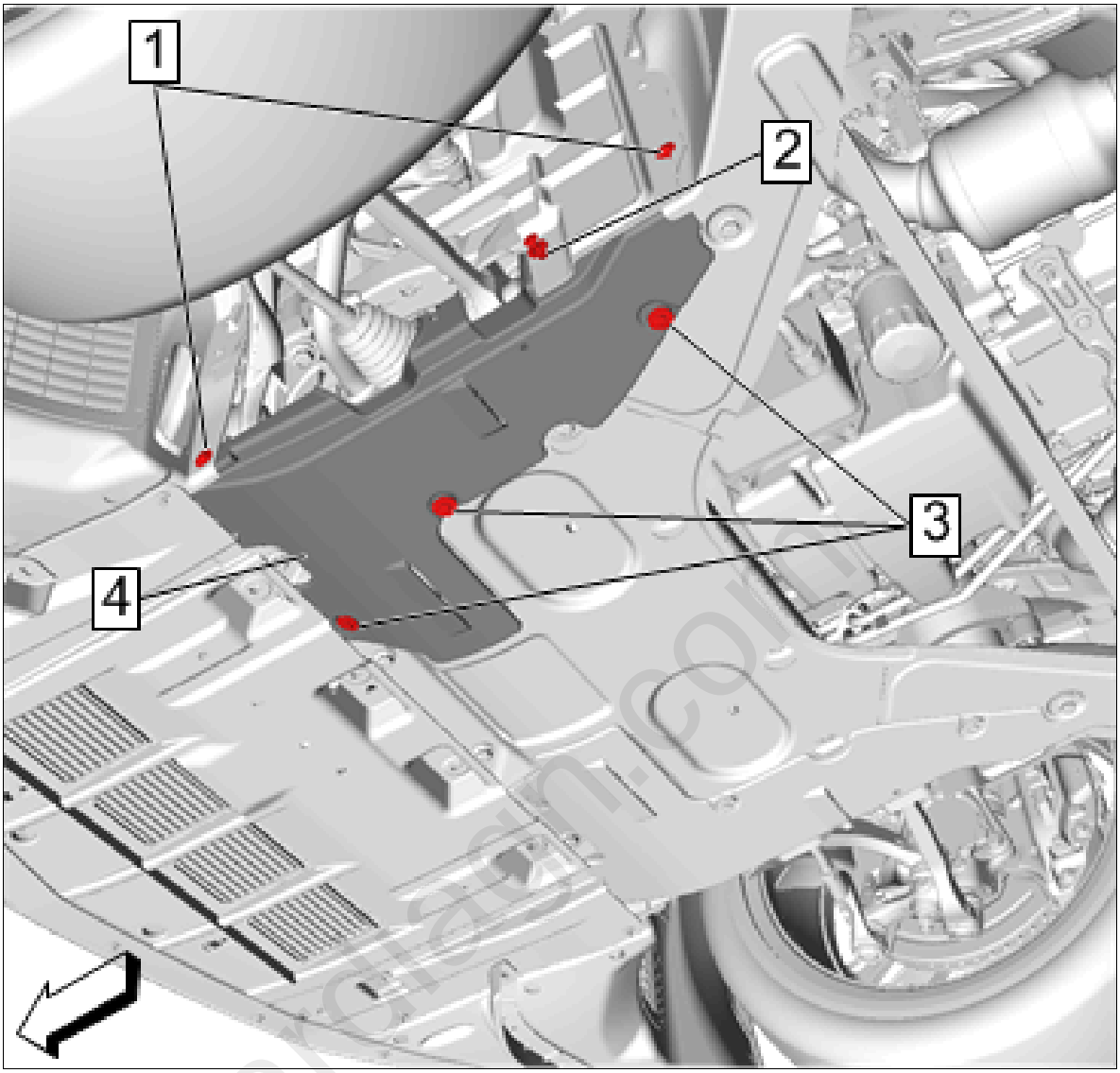


Courtesy of GENERAL MOTORS COMPANY

2. Remove Front Compartment Air Deflector Fastener (1) (Qty: 2)
3. Remove Front Compartment Air Deflector Retainer (2)

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Fig 2: Front Compartment Side Noise Shield

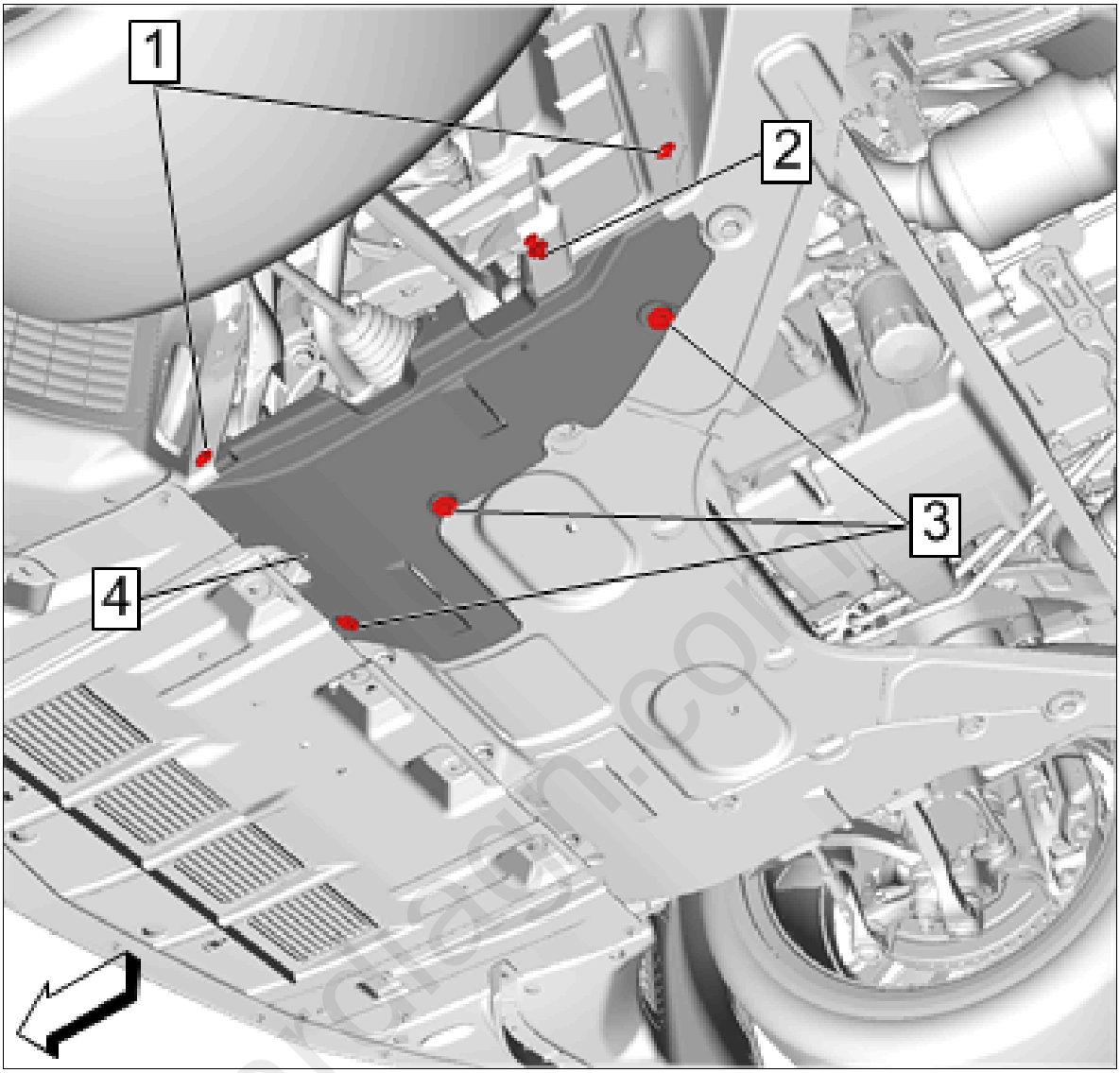


Courtesy of GENERAL MOTORS COMPANY

4. Remove Front Compartment Side Noise Shield Fastener (1) (Qty: 2)
5. Remove Front Compartment Side Noise Shield Retainer (2)
6. Remove Front Compartment Side Noise Shield Fastener (3) (Qty: 3)
7. Remove Front Compartment Side Noise Shield (4)

REPAIR INSTRUCTIONS > FRONT COMPARTMENT SIDE NOISE SHIELD REPLACEMENT > INSTALLATION PROCEDURE

Fig 1: Front Compartment Side Noise Shield



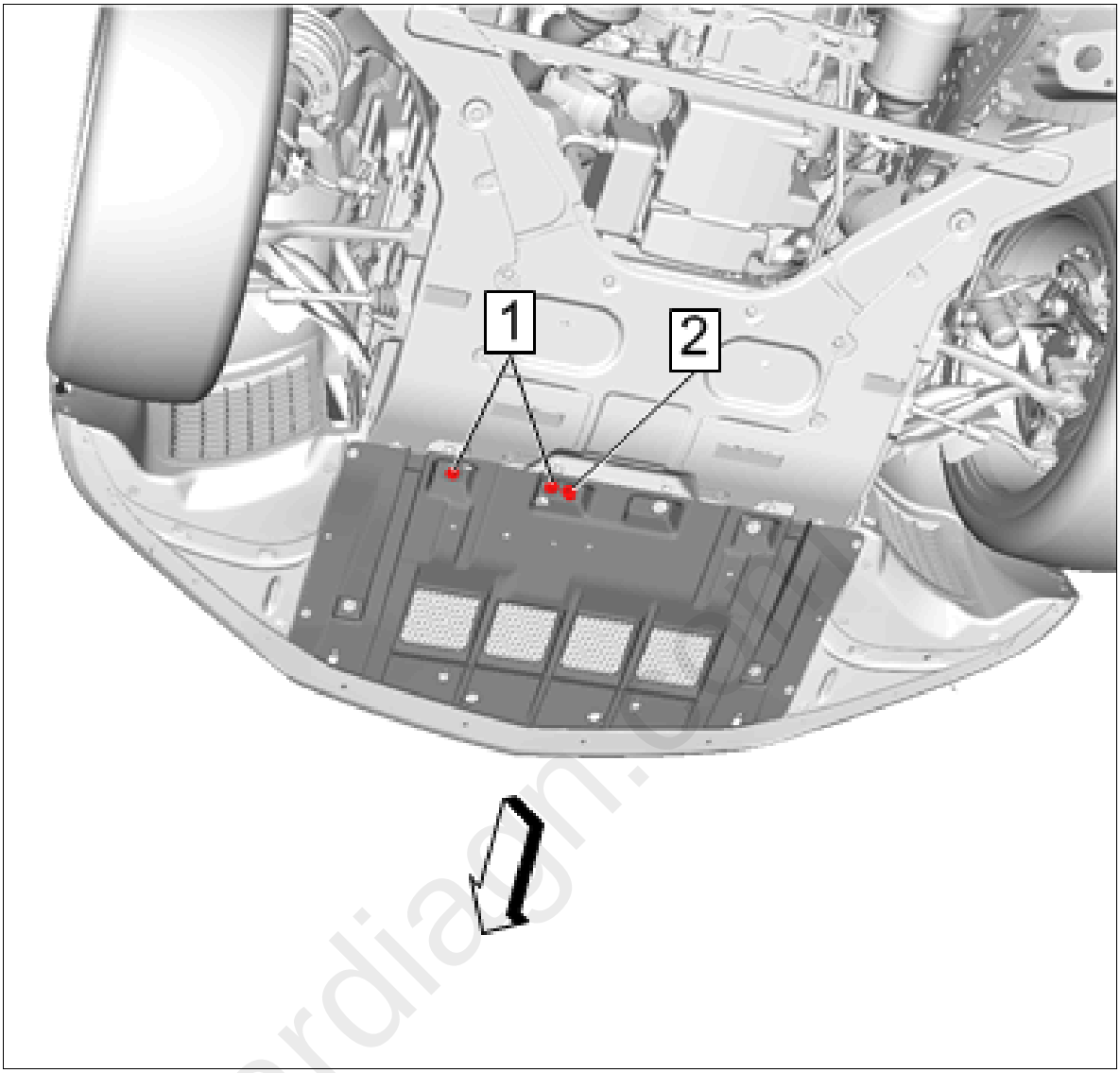
Courtesy of GENERAL MOTORS COMPANY

1. Install Front Compartment Side Noise Shield (4)
2. Install Front Compartment Side Noise Shield Retainer (2)

> ⚠ *CAUTION:*
>
> *Refer to Fastener Caution*

3. Install Front Compartment Side Noise Shield Screw (1) (Qty: 2) and tighten to 2.5 N.m (22 lb in)
4. Install Front Compartment Side Noise Shield Bolt (3) (Qty: 3) and tighten to 9 N.m (80 lb in)

Fig 2: Front Compartment Air Deflector Retainers



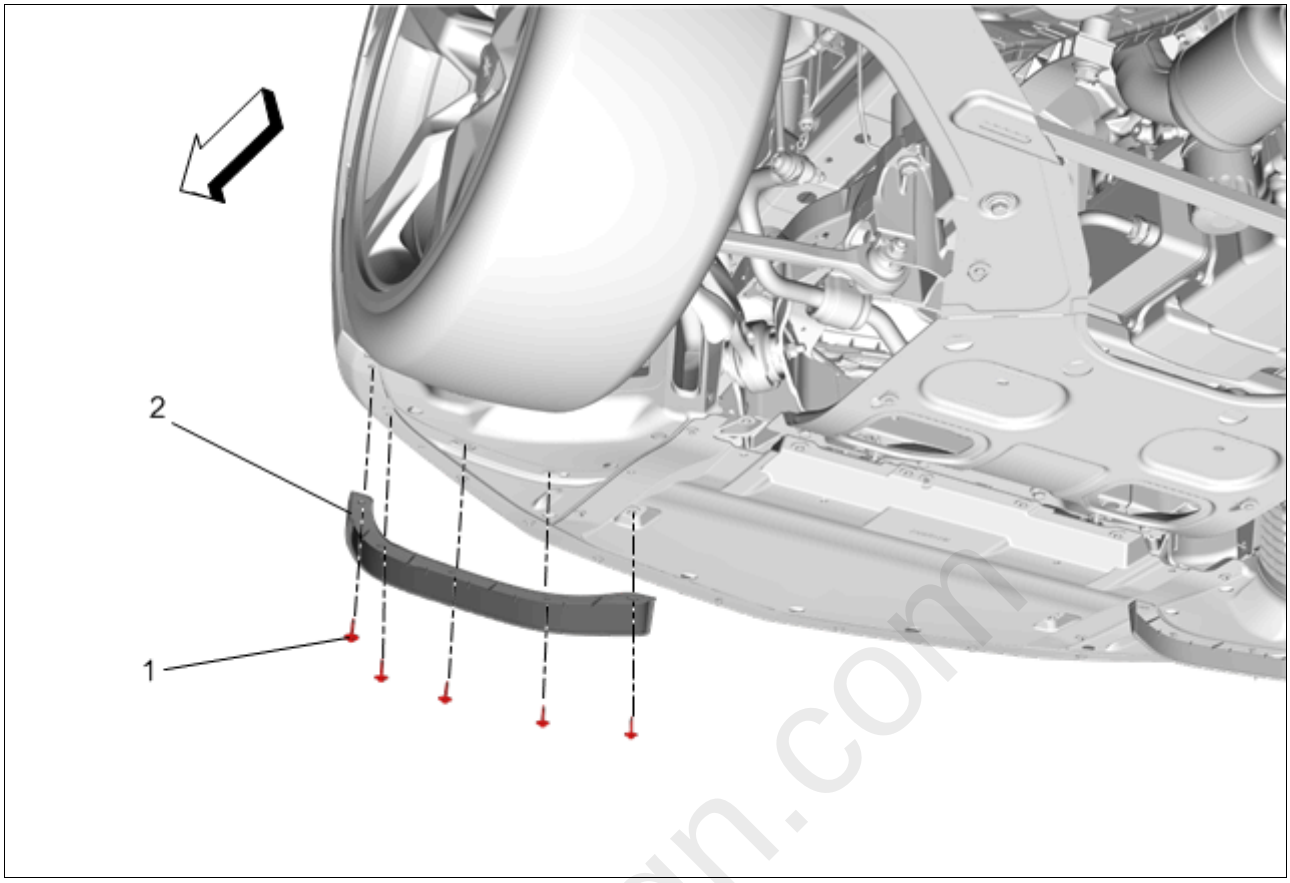
Courtesy of GENERAL MOTORS COMPANY

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5. Install Front Compartment Air Deflector Fastener (1) (Qty: 2) and tighten to 5 N.m (44 lb in)
6. Install Front Compartment Air Deflector Retainer (2)
7. Lower the vehicle.

REPAIR INSTRUCTIONS > FRONT TIRE FRONT AIR DEFLECTOR REPLACEMENT

Fig 1: Front Tire Front Air Deflector



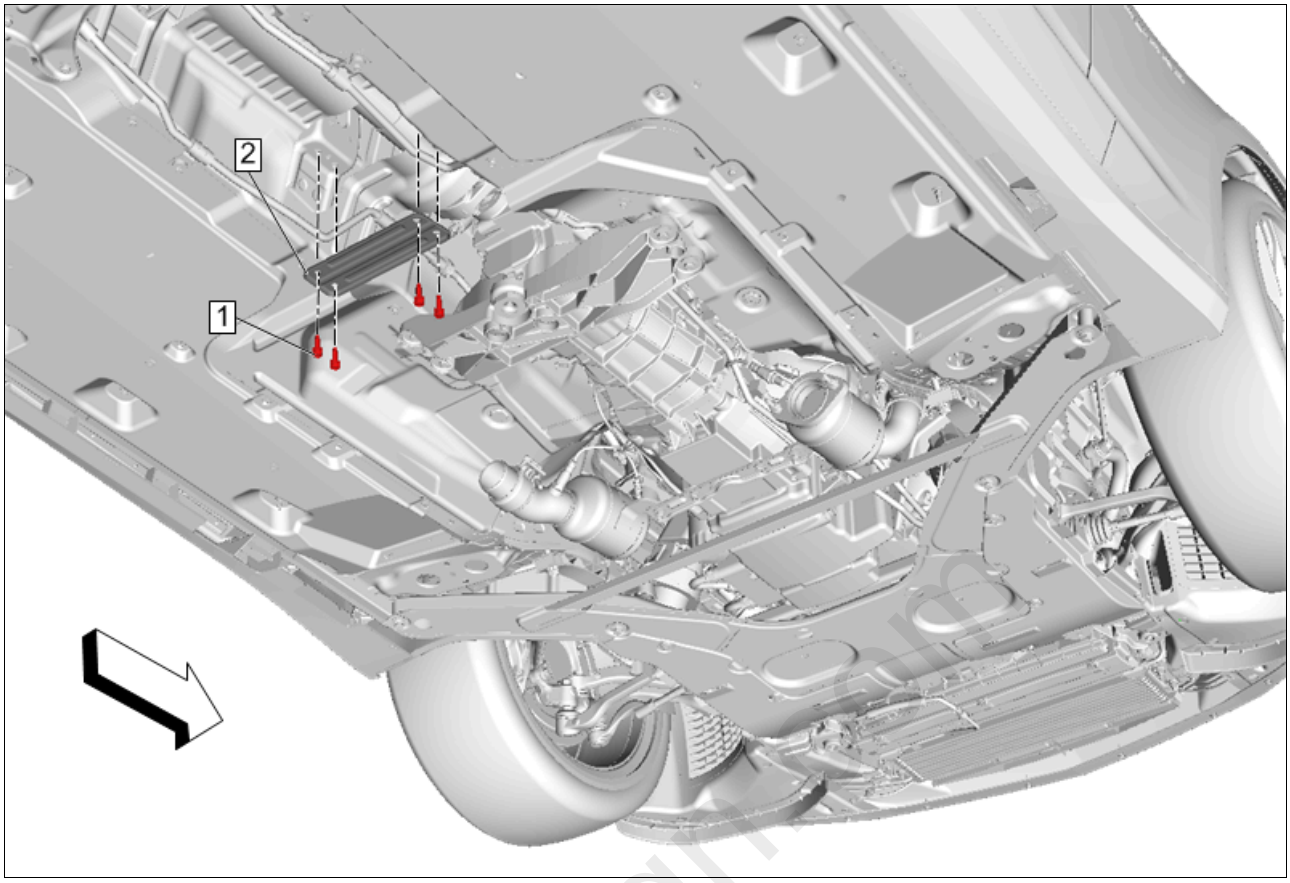
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Raise and support the vehicle. Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP)	
1	Fastener (Qty: 5) *CAUTION:* *Refer to Fastener Caution* **Tighten** 2.5 N.m (22 lb in)
2	Front Tire Front Air Deflector

REPAIR INSTRUCTIONS > FLOOR PANEL NUMBER 2 CROSS BAR REINFORCEMENT REPLACEMENT

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Fig 1: Floor Panel Number 2 Cross Bar Reinforcement

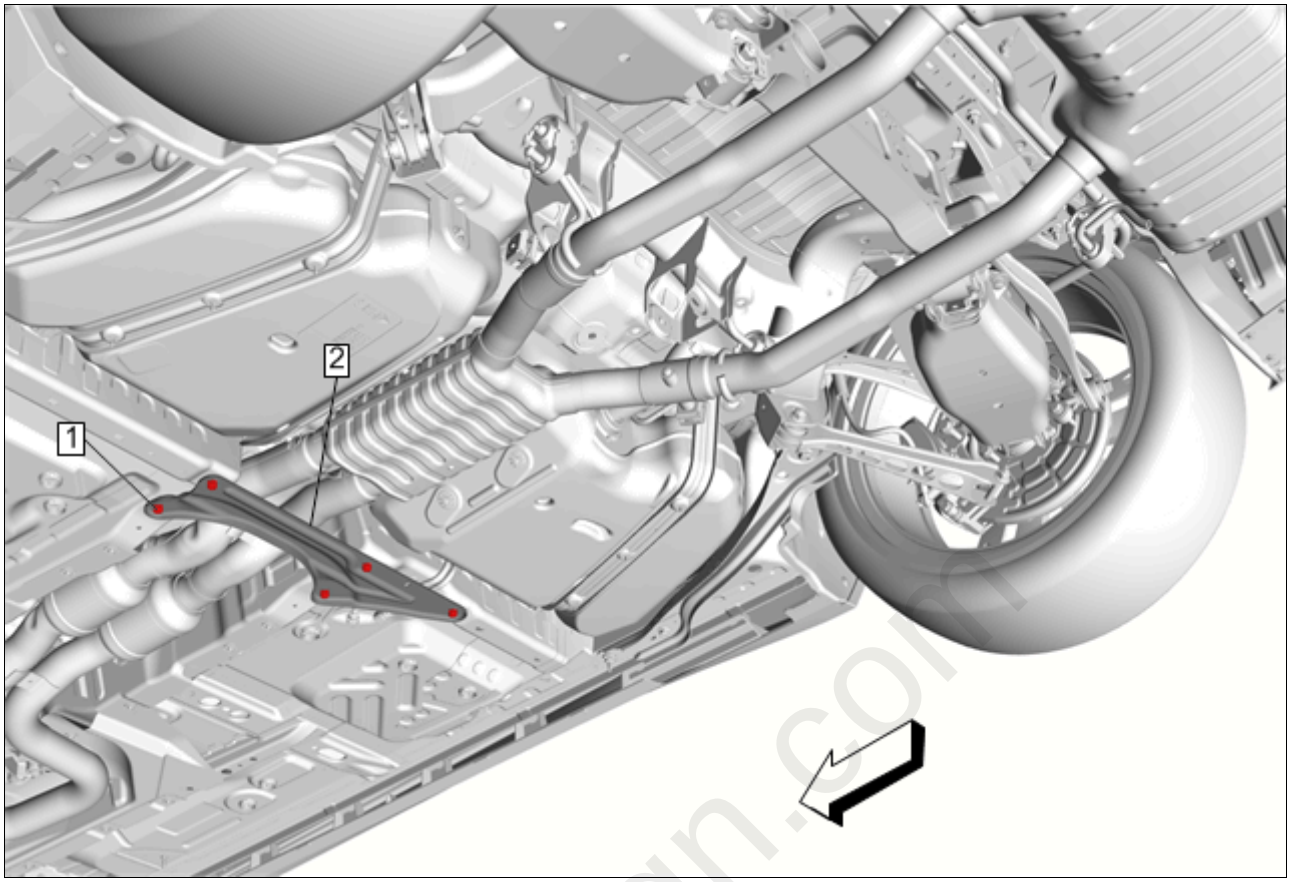


Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Exhaust Muffler Replacement (LGX, Coupe) Exhaust Muffler Replacement (LGX, Convertible) Exhaust Muffler Replacement (LT1, Coupe) Exhaust Muffler Replacement (LT1, Convertible) Exhaust Muffler Replacement (LTG, Coupe) Exhaust Muffler Replacement (LTG, Convertible)	
1	Floor Panel Number 2 Cross Bar Reinforcement Bolt (Qty: 4) *CAUTION:* *Refer to Fastener Caution* **Tighten** 22 N.m (16 lb ft)
2	Floor Panel Number 2 Cross Bar Reinforcement

REPAIR INSTRUCTIONS > FLOOR PANEL NUMBER 4 CROSS BAR REPLACEMENT

Fig 1: Floor Panel Number 4 Cross Bar

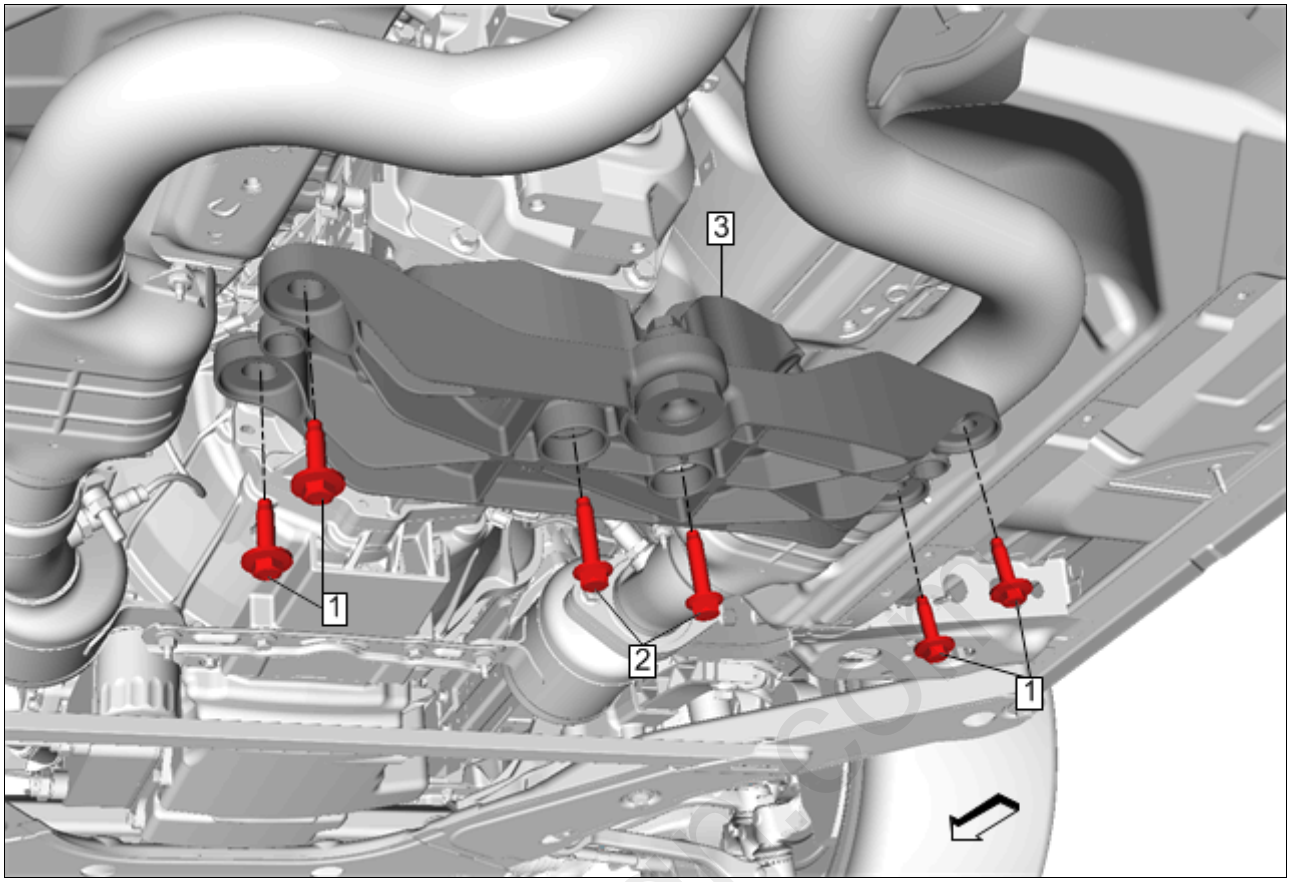


Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Raise and support the vehicle. Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP)	
1	Floor Panel Number 4 Cross Bar Reinforcement Bolt (Qty: 5) *CAUTION:* *Refer to Fastener Caution .* **Tighten** 22 N.m (16 lb ft)
2	Floor Panel Number 4 Cross Bar Reinforcement

REPAIR INSTRUCTIONS > TRANSMISSION SUPPORT REPLACEMENT (MM6 MANUAL TRANSMISSION)

Fig 1: Mount Bolts



Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name

NOTE:

The transmission support and the transmission mount are replaced as an assembly.

Preliminary Procedures

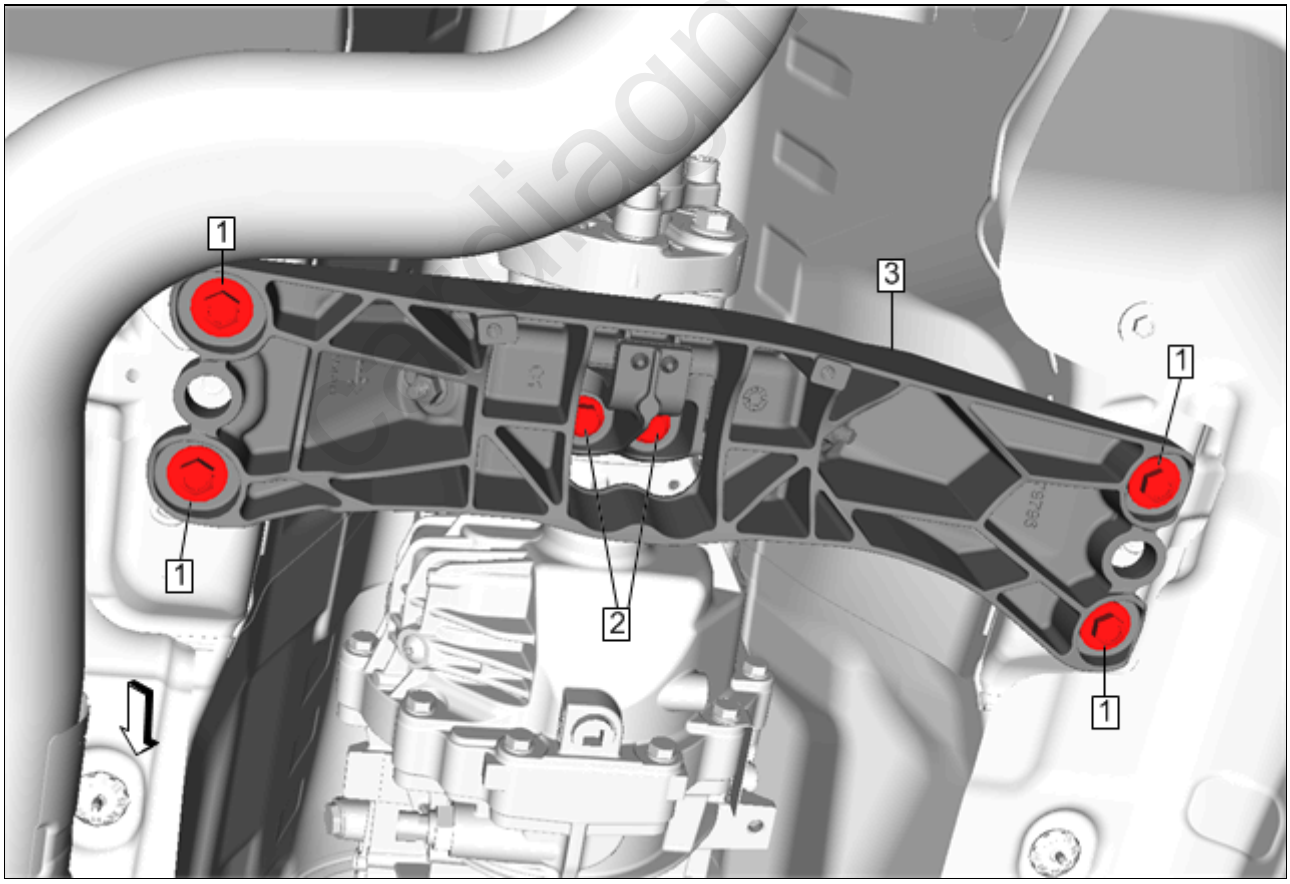
1. Raise and support the vehicle. Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP)
2. Support the transmission with a suitable jack.

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1	Transmission Support Crossmember Bolt (Qty: 4) *CAUTION:* *Refer to Fastener Caution* **Tighten** 58 N.m (43 lb ft)
2	Transmission Mount Bolt (Qty: 2) **Tighten** 58 N.m (43 lb ft)
3	Transmission Support Crossmember

REPAIR INSTRUCTIONS > TRANSMISSION SUPPORT REPLACEMENT (M13 MANUAL TRANSMISSION)

Fig 1: Transmission Rear Mount (M13 Transmission)



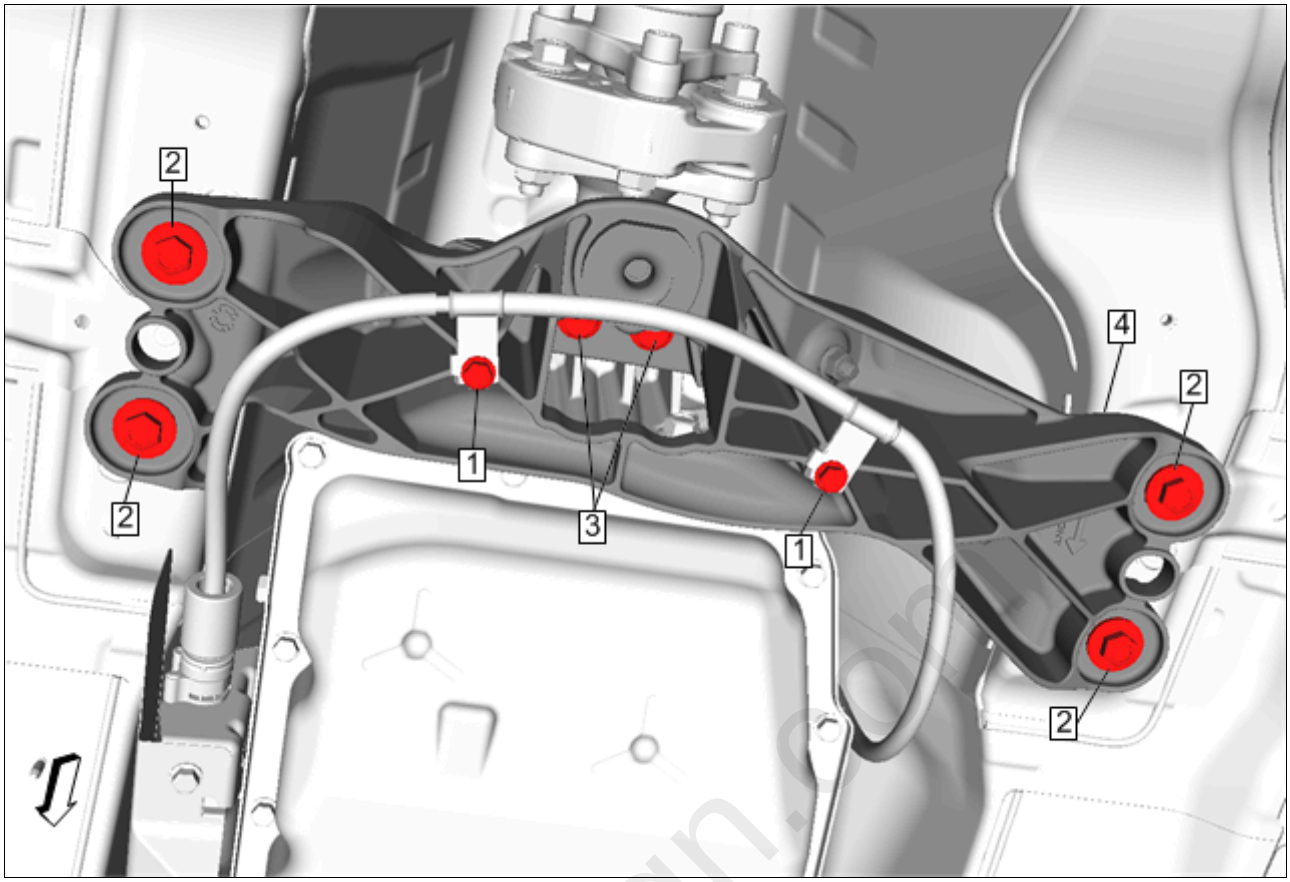
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
	NOTE: *The transmission support and the transmission mount are replaced as an assembly.* Preliminary Procedures 1. Raise and support the vehicle. Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP) 2. Support the transmission with a suitable jack.
1	Transmission Support Crossmember Bolt (Qty: 4) *CAUTION:* *Refer to Fastener Caution* **Tighten** 58 N.m (43 lb ft)
2	Transmission Mount Bolt (Qty: 2) **Tighten** 58 N.m (43 lb ft)
3	Transmission Support Crossmember

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REPAIR INSTRUCTIONS > TRANSMISSION SUPPORT REPLACEMENT (AUTOMATIC TRANSMISSION)

Fig 1: Transmission Mount



Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name

NOTE:

The transmission support and the transmission mount are replaced as an assembly.

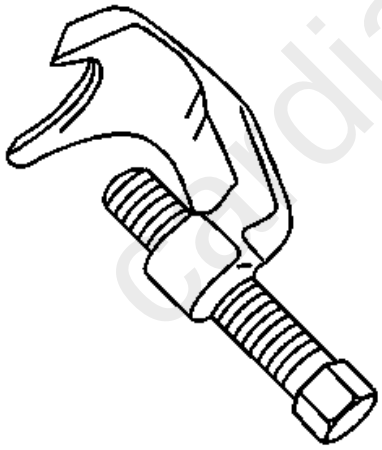
Preliminary Procedures

1. Raise and support the vehicle. Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP)
2. Support the transmission with a suitable jack.

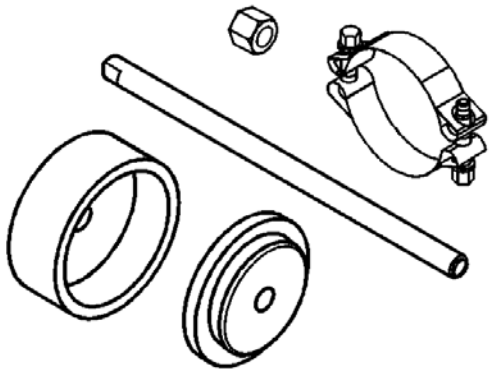
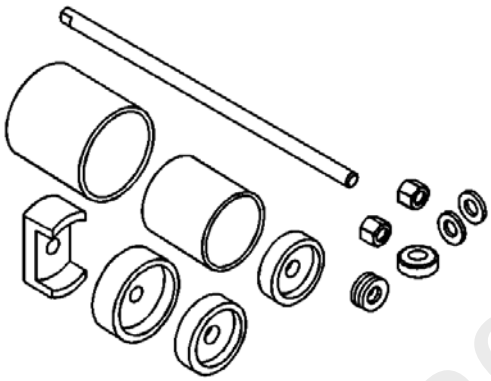
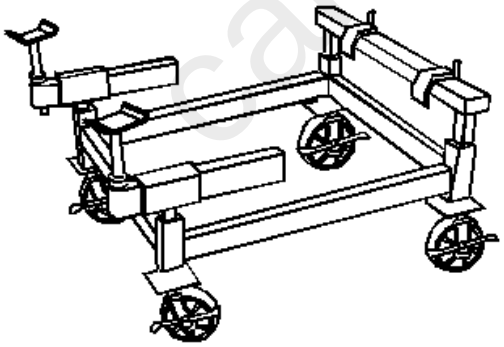
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1	Shift Control Cable Bolt (Qty: 2) *CAUTION:* *Refer to Fastener Caution* **Tighten** 9 N.m (80 lb in)
2	Transmission Support Crossmember Bolt (Qty: 4) **Tighten** 58 N.m (43 lb ft)
3	Transmission Mount Bolt (Qty: 2) **Tighten** 58 N.m (43 lb ft)
4	Transmission Support Crossmember

SPECIAL TOOLS AND EQUIPMENT > SPECIAL TOOLS

Illustration	Tool Number/ Description
	CH-43631 CH-49455 J-43631 Ball Joint Remover

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	CH-45725 J-45725-2 Cradle Bushing Replacer
	DT-50806 Bushing Replacer
	J 39580 Engine Support Stand

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