

2013 ACCESSORIES & EQUIPMENT

Bumpers and Fascias - Cruze

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Drivetrain and Front Suspension Frame Bolt Front	160 N.m	118 lb ft
Front Bumper Energy Absorber Bracket Bolt	22 Y	16 lb ft
Front Bumper Fascia Air Deflector Bolt	2.5 N.m	22 lb in
Front Bumper Fascia Bolt	9 N.m	80 lb in
Front Bumper Impact Bar Bolt	110 N.m	81 lb ft
Front Wheelhouse Liner Bolt	2.5 N.m	22 lb in
Rear Bumper Energy Absorber Nut	40 N.m	30 lb ft
Rear Wheelhouse Liner Bolt	2.5 N.m	22 lb in

SCHEMATIC WIRING DIAGRAMS

ACTIVE GRILLE AIR SHUTTER WIRING SCHEMATICS

Active Grille Air Shutter (Y8X) Wiring Schematics

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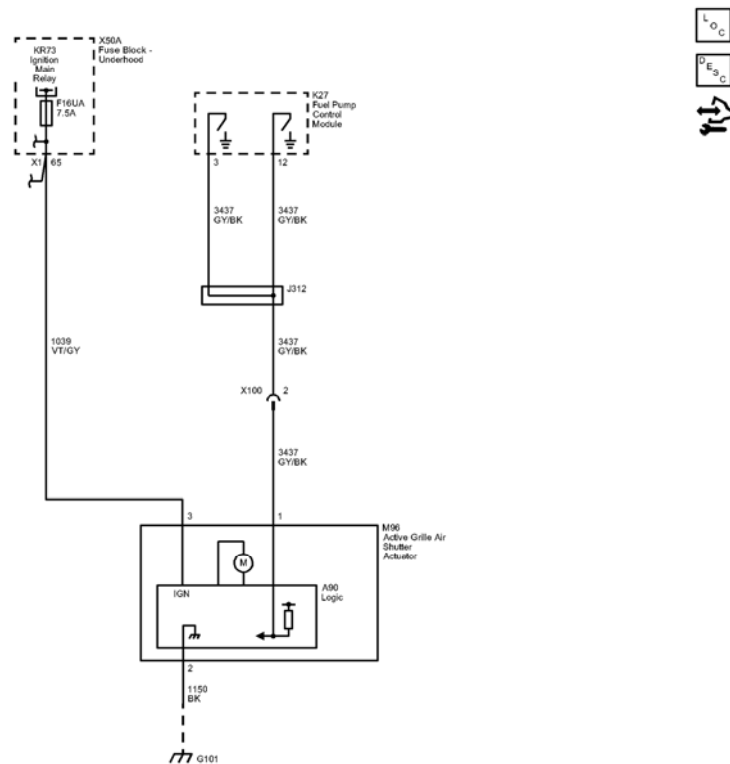


Fig. 1: Active Grille Air Shutter (Y8X) Wiring Schematics
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
1039	Run/Crank Ignition 1 Voltage
1039 VT/GY	1039 VT/GY
CAV_3	3
CAV_65	65
CONN_X1	X1
3437	Shutter Valve Solenoid Control
3437_GY/BK	3437 GY/BK
CAV_3	3
3437_GY/BK	3437 GY/BK
CAV_1	1
CAV_12	12
1150	Ground
1150_BK	1150 BK
CAV_2	2
3437_GY/BK	3437 GY/BK
3437_GY/BK	3437 GY/BK
CAV_2	2

2013 Chevrolet Cruze

2013 ACCESSORIES & EQUIPMENT Bumpers and Fascias - Cruze

G101	G101
F16UA	F16UA 7.5A
X100	X100
J312	J312
KR73	
X50A	
A90	Logic
M96	(Y8K)
K27	

DIAGNOSTIC INFORMATION AND PROCEDURES

DIAGNOSTIC CODE INDEX

DIAGNOSTIC CODE INDEX

DTC	Description
<u>DTC P059F or U0284</u>	DTC U0284 Lost Communication with Active Grille Air Shutter 1 Motor Module DTC P059F Active Grille Air Shutter Performance

DTC P059F OR U0284

Diagnostic Instructions

- Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.
- Review **Strategy Based Diagnosis** for an overview of the diagnostic approach.
- **Diagnostic Procedure Instructions** provides an overview of each diagnostic category.

DTC Descriptors

DTC U0284

Lost Communication with Active Grille Air Shutter 1 Motor Module

DTC P059F

Active Grille Air Shutter Performance

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Ignition	U0284, P059F	U0284, P059F	--	--
Control - Terminal 3	U0284, P059F	U0284, P059F	U0284, P059F	U0284, P059F

2013 Chevrolet Cruze

2013 ACCESSORIES & EQUIPMENT Bumpers and Fascias - Cruze

Control - Terminal 12	U0284, P059F	U0284, P059F	U0284, P059F	U0284, P059F
Ground	-	U0284, P059F	-	--

Circuit/System Description

The active grille air shutter actuator closes louvers at the front bumper to enhance vehicle aerodynamics in driving situations where cooling and A/C loads are relatively low and high levels of front end airflow are not required. If high levels of airflow are required the active grille air shutter actuator opens the louvers. The control signal from the fuel pump control module, ignition and ground circuits enable the active grille air shutter actuator to operate. If the conditions for opening the louvers are reached the fuel pump control module commands the active grille air shutter actuator to open the louvers.

Conditions for Running the DTC

- The ambient temperature is above 2.5°C (36.5°F).
- The engine is running.
- The ignition voltage is greater than 10 V.
- The DTC runs continuously when the above conditions are met.
- If the ambient temperature is below 10°C (50°F) when the vehicle is first started, this DTC will be disabled.

Conditions for Setting the DTC

- The DTC P059F will be set during a key cycle when the commanded louver position can not be achieved after 3 attempts are made to move the louver. The DTC will be stored as current for this key cycle but the malfunction indicator lamp (MIL) will not be illuminated.
- On the next key cycle the louver will be commanded to move again. If the commanded louver position can not be achieved after 3 more attempts, the MIL will be illuminated and DTC P059F will be set as current.
- The DTC U0284 will set if there is no communication on the bi-directional control circuit.

Action Taken When the DTC Sets

DTC P059F is a type B DTC.

Conditions for Clearing the DTC

DTC P059F is a type B DTC.

Reference Information

Schematic Reference

Active Grille Air Shutter Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Description and Operation

Active Grille Air Shutter Description and Operation

Electrical Information Reference

- **Circuit Testing**
- **Connector Repairs**
- **Testing for Intermittent Conditions and Poor Connections**
- **Wiring Repairs**

Scan Tool Reference

Control Module References for scan tool information

Circuit/System Verification

1. Ignition ON.
2. Verify DTC P069E, or U0109 is not set
 - **If any of the DTCs are set**

Refer to **Diagnostic Trouble Code (DTC) List - Vehicle** for further diagnosis.

 - **If none of the DTCs are set**
3. Verify the active grille air shutter actuator opens and closes the louvers at the front bumper when performing the Active Grille Air Shutter Actuator test with a scan tool.
 - **If the louvers at the front bumper do not open and close and the test result is fail**

Refer to Circuit/System Testing below.

- **If the louvers at the front bumper open and close and the test result is pass**
4. Verify none of the following conditions are present:
 - Snow or ice packed in the front fascia which prevents the louvers from moving.
 - Debris or foreign objects which prevent the louvers from moving.
 - **If any of the conditions are present**

Clear any snow, ice or foreign objects from the front grille.

- **If none of the conditions are present**
5. All OK

Circuit/System Testing

2013 Chevrolet Cruze

2013 ACCESSORIES & EQUIPMENT Bumpers and Fascias - Cruze

1. Ignition OFF, and all vehicle systems OFF, disconnect the harness connector at the M96 active grille air shutter actuator. It may take up to 2 minutes for all vehicle systems to power down.
2. Test for less than 10 ohms between the ground circuit terminal 2 and ground.
 - **If 10 ohms or greater**
 1. Ignition OFF.
 2. Test for less than 2 ohms in the ground circuit end to end.
 - If 2 ohms or greater, repair the open/high resistance in the circuit.
 - If less than 2 ohms, repair the open/high resistance in the ground connection.
 - **If less than 10 ohms**
3. Ignition ON.
4. Verify a test lamp illuminates between the ignition circuit terminal 3 and ground.
 - **If the test lamp does not illuminate and the circuit fuse is good**
 1. Ignition OFF.
 2. Test for less than 2 ohms in the ignition circuit end to end.
 - If 2 ohms or greater, repair the open/high resistance in the circuit.
 - If less than 2 ohms, verify the fuse is not open and there is voltage at the fuse.
 - **If the test lamp does not illuminate and the circuit fuse is open**
 1. Ignition OFF.
 2. Test for infinite resistance between the ignition circuit and ground.
 - If less than infinite resistance, repair the short to ground on the circuit.
 - If infinite resistance, replace the M96 active grille air shutter actuator.
 - **If the test lamp illuminates**
5. Connect a test lamp between the control circuit terminal 1 and the ignition circuit terminal 3.
6. Verify the test lamp blinks ON and OFF.
 - **If the test lamp is always OFF**
 1. Ignition OFF, disconnect the harness connector at the K27 fuel pump control module, ignition ON.
 2. Test for less than 1 V between the control circuit and ground.
 - If 1 V or greater, repair the short to voltage on the circuit.
 - If less than 1 V
 3. Ignition OFF.
 4. Test for less than 2 ohms between the K27 fuel pump control module control circuit terminal 3 and the M96 active grille air shutter actuator terminal 1.
 - If 2 ohms or greater, repair the open/high resistance in the circuit.
 - If less than 2 ohms, replace the K27 fuel pump control module.
 - **If the test lamp is always ON**
 1. Ignition OFF, disconnect the harness connector at the K27 fuel pump control module.
 2. Test for infinite resistance between the control circuit and ground.
 - If less than infinite resistance, repair the short to ground on the circuit.

2013 Chevrolet Cruze

2013 ACCESSORIES & EQUIPMENT Bumpers and Fascias - Cruze

- If infinite resistance, replace the K27 fuel pump control module.
- **If the test lamp turns ON and OFF**
- 7. Ignition OFF, connector the harness connector at the M96 active grille air shutter actuator. Disconnect the harness connector at the K27 fuel pump control module, Ignition ON.
- 8. Test for greater than 11 V between the control circuit terminal 12 and ground.
 - **If 11 V or less**
 1. Ignition OFF, disconnect the harness connector at the M96 active grille air shutter actuator.
 2. Test for less than 2 ohms between the K27 fuel pump control module control circuit terminal 12 and the M96 active grille air shutter actuator terminal 1.
 - If 2 ohms or greater, repair the open/high resistance in the circuit.
 - If less than 2 ohms, replace the M96 active grille air shutter actuator.
 - **If greater than 11 V**
- 9. Test or replace the M96 active grille air shutter actuator.
- 10. Verify DTC U0284 is not set.
 - **If the DTC is set**

Replace the K27 fuel pump control module.
 - **If the DTC is not set**
- 11. All OK

Repair Instructions

Perform the **Diagnostic Repair Verification** after completing the repair.

- **Front Bumper Fascia Air Deflector Actuator Replacement**
- **Control Module References** for fuel pump control module replacement, programming and setup

ACTIVE GRILLE AIR SHUTTER MALFUNCTION

Diagnostic Instructions

- Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.
- Review **Strategy Based Diagnosis** for an overview of the diagnostic approach.
- **Diagnostic Procedure Instructions** provides an overview of each diagnostic category.

DTC Descriptors

DTC U0284

Lost Communication with Active Grille Air Shutter 1 Motor Module

DTC P059F

2013 Chevrolet Cruze

2013 ACCESSORIES & EQUIPMENT Bumpers and Fascias - Cruze

Active Grille Air Shutter Performance

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Ignition	U0284, P059F	U0284, P059F	--	--
Control - Terminal 3	U0284, P059F	U0284, P059F	U0284, P059F	U0284, P059F
Control - Terminal 12	U0284, P059F	U0284, P059F	U0284, P059F	U0284, P059F
Ground	-	U0284, P059F	-	--

Circuit/System Description

The active grille air shutter actuator closes louvers at the front bumper to enhance vehicle aerodynamics in driving situations where cooling and A/C loads are relatively low and high levels of front end airflow are not required. If high levels of airflow are required the active grille air shutter actuator opens the louvers. The control signal from the fuel pump control module, ignition and ground circuits enable the active grille air shutter actuator to operate. If the conditions for opening the louvers are reached the fuel pump control module commands the active grille air shutter actuator to open the louvers.

Conditions for Running the DTC

- The ambient temperature is above 2.5°C (36.5°F).
- The engine is running.
- The ignition voltage is greater than 10 V.
- The DTC runs continuously when the above conditions are met.
- If the ambient temperature is below 10°C (50°F) when the vehicle is first started, this DTC will be disabled.

Conditions for Setting the DTC

- The DTC P059F will be set during a key cycle when the commanded louver position can not be achieved after 3 attempts are made to move the louver. The DTC will be stored as current for this key cycle but the malfunction indicator lamp (MIL) will not be illuminated.
- On the next key cycle the louver will be commanded to move again. If the commanded louver position can not be achieved after 3 more attempts, the MIL will be illuminated and DTC P059F will be set as current.
- The DTC U0284 will set if there is no communication on the bi-directional control circuit.

Action Taken When the DTC Sets

DTC P059F is a type B DTC.

Conditions for Clearing the DTC

DTC P059F is a type B DTC.

Reference Information

Schematic Reference

Active Grille Air Shutter Schematics

Connector End View Reference

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- **Connector Repairs**
- **Testing for Intermittent Conditions and Poor Connections**
- **Wiring Repairs**

Scan Tool Reference

Control Module References for scan tool information

Circuit/System Verification

1. Ignition ON.
2. Verify DTC P069E, or U0109 is not set
 - **If any of the DTCs are set**

Refer to **Diagnostic Trouble Code (DTC) List - Vehicle** for further diagnosis.

- **If none of the DTCs are set**
3. Verify the active grille air shutter actuator opens and closes the louvers at the front bumper when performing the Active Grille Air Shutter Actuator test with a scan tool.
 - **If the louvers at the front bumper do not open and close and the test result is fail**

Refer to Circuit/System Testing below.

- **If the louvers at the front bumper open and close and the test result is pass**
4. Verify none of the following conditions are present:
 - Snow or ice packed in the front fascia which prevents the louvers from moving.
 - Debris or foreign objects which prevent the louvers from moving.
 - **If any of the conditions are present**

Clear any snow, ice or foreign objects from the front grille.

- **If none of the conditions are present**

5. All OK

Circuit/System Testing

1. Ignition OFF, and all vehicle systems OFF, disconnect the harness connector at the M96 active grille air shutter actuator. It may take up to 2 minutes for all vehicle systems to power down.
2. Test for less than 10 ohms between the ground circuit terminal 2 and ground.
 - **If 10 ohms or greater**
 1. Ignition OFF.
 2. Test for less than 2 ohms in the ground circuit end to end.
 - If 2 ohms or greater, repair the open/high resistance in the circuit.
 - If less than 2 ohms, repair the open/high resistance in the ground connection.
 - **If less than 10 ohms**
3. Ignition ON.
4. Verify a test lamp illuminates between the ignition circuit terminal 3 and ground.
 - **If the test lamp does not illuminate and the circuit fuse is good**
 1. Ignition OFF.
 2. Test for less than 2 ohms in the ignition circuit end to end.
 - If 2 ohms or greater, repair the open/high resistance in the circuit.
 - If less than 2 ohms, verify the fuse is not open and there is voltage at the fuse.
 - **If the test lamp does not illuminate and the circuit fuse is open**
 1. Ignition OFF.
 2. Test for infinite resistance between the ignition circuit and ground.
 - If less than infinite resistance, repair the short to ground on the circuit.
 - If infinite resistance, replace the M96 active grille air shutter actuator.
 - **If the test lamp illuminates**
5. Connect a test lamp between the control circuit terminal 1 and the ignition circuit terminal 3.
6. Verify the test lamp blinks ON and OFF.
 - **If the test lamp is always OFF**
 1. Ignition OFF, disconnect the harness connector at the K27 fuel pump control module, ignition ON.
 2. Test for less than 1 V between the control circuit and ground.
 - If 1 V or greater, repair the short to voltage on the circuit.
 - If less than 1 V
 3. Ignition OFF.
 4. Test for less than 2 ohms between the K27 fuel pump control module control circuit terminal 3 and the M96 active grille air shutter actuator terminal 1.

2013 Chevrolet Cruze

2013 ACCESSORIES & EQUIPMENT Bumpers and Fascias - Cruze

- If 2 ohms or greater, repair the open/high resistance in the circuit.
- If less than 2 ohms, replace the K27 fuel pump control module.
- **If the test lamp is always ON**
 1. Ignition OFF, disconnect the harness connector at the K27 fuel pump control module.
 2. Test for infinite resistance between the control circuit and ground.
 - If less than infinite resistance, repair the short to ground on the circuit.
 - If infinite resistance, replace the K27 fuel pump control module.
- **If the test lamp turns ON and OFF**
 7. Ignition OFF, connector the harness connector at the M96 active grille air shutter actuator. Disconnect the harness connector at the K27 fuel pump control module, Ignition ON.
 8. Test for greater than 11 V between the control circuit terminal 12 and ground.
 - **If 11 V or less**
 1. Ignition OFF, disconnect the harness connector at the M96 active grille air shutter actuator.
 2. Test for less than 2 ohms between the K27 fuel pump control module control circuit terminal 12 and the M96 active grille air shutter actuator terminal 1.
 - If 2 ohms or greater, repair the open/high resistance in the circuit.
 - If less than 2 ohms, replace the M96 active grille air shutter actuator.
 - **If greater than 11 V**
 9. Test or replace the M96 active grille air shutter actuator.
- 10. Verify DTC U0284 is not set.
 - **If the DTC is set**

Replace the K27 fuel pump control module.
 - **If the DTC is not set**
- 11. All OK

Repair Instructions

Perform the **Diagnostic Repair Verification** after completing the repair.

- **Front Bumper Fascia Air Deflector Actuator Replacement**
- **Control Module References** for fuel pump control module replacement, programming and setup

REPAIR INSTRUCTIONS

FRONT BUMPER ENERGY ABSORBER REPLACEMENT

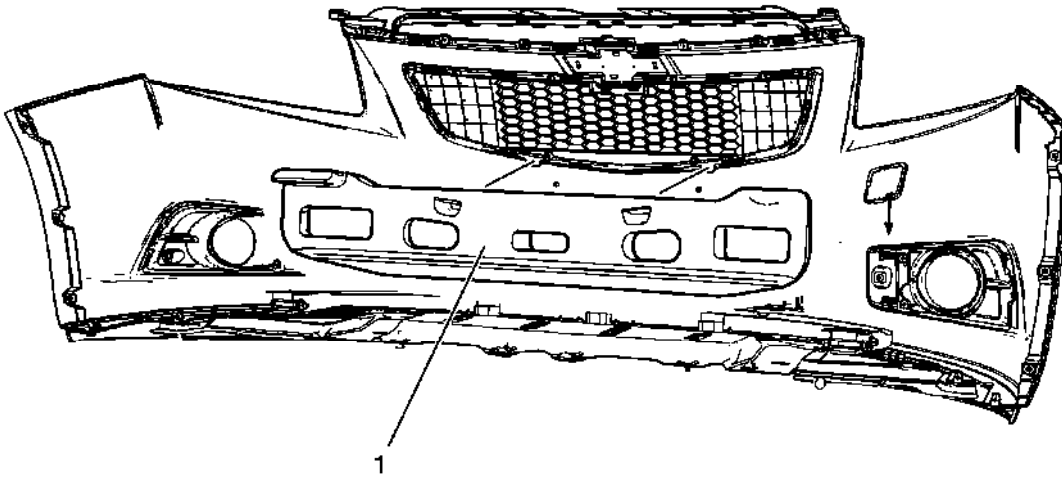


Fig. 2: Front Bumper Energy Absorber
Courtesy of GENERAL MOTORS COMPANY

Front Bumper Energy Absorber Replacement

Callout	Component Name
Preliminary Procedure Remove the front bumper fascia. Refer to Front Bumper Fascia Replacement .	
1	Front Bumper Energy Absorber Procedure Unclip from front bumper fascia.

FRONT BUMPER IMPACT BAR REPLACEMENT

Removal Procedure

WARNING: Refer to **Approved Equipment for Collision Repair Warning** .

WARNING: Refer to **Glass and Sheet Metal Handling Warning** .

1. Disable the SIR System. Refer to **SIR Disabling and Enabling** .
2. Disconnect the negative battery cable. Refer to **Battery Negative Cable Disconnection and Connection** .

3. Remove all related panels and components.

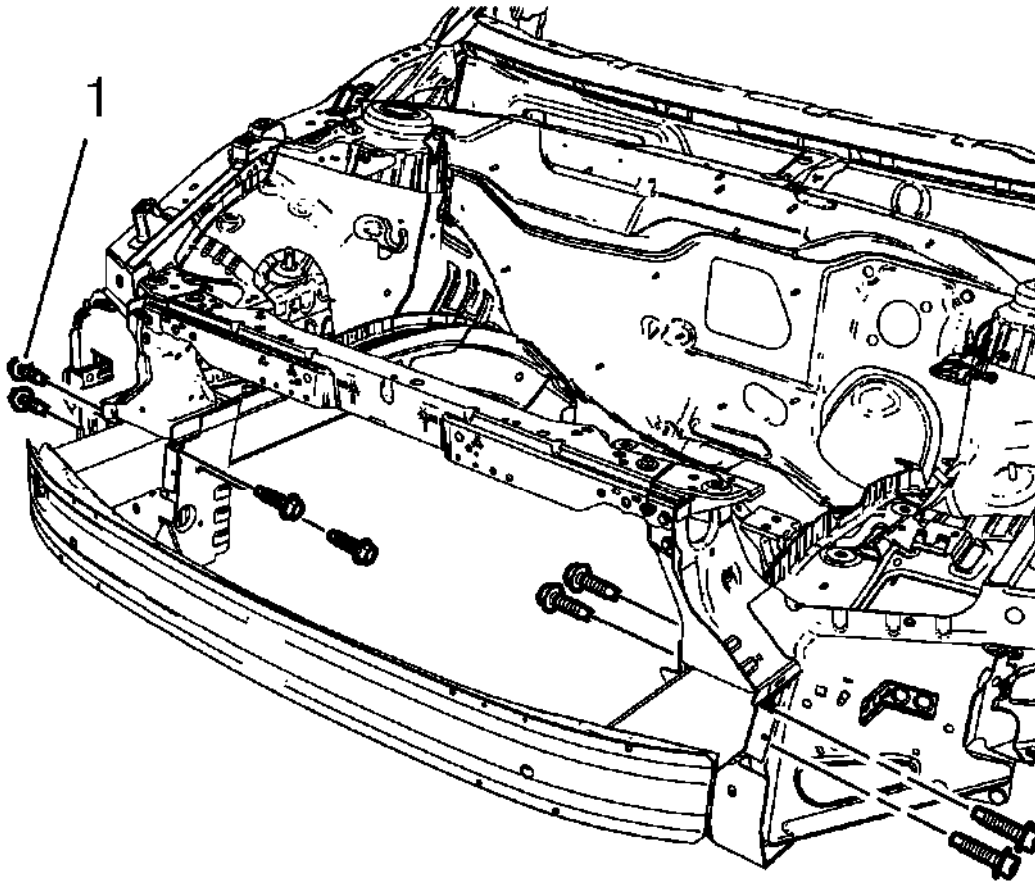


Fig. 3: Front Bumper Impact Bar And Front Bumper Impact Bar Bolts
Courtesy of GENERAL MOTORS COMPANY

4. Remove the 8 front bumper impact bar bolts (1).

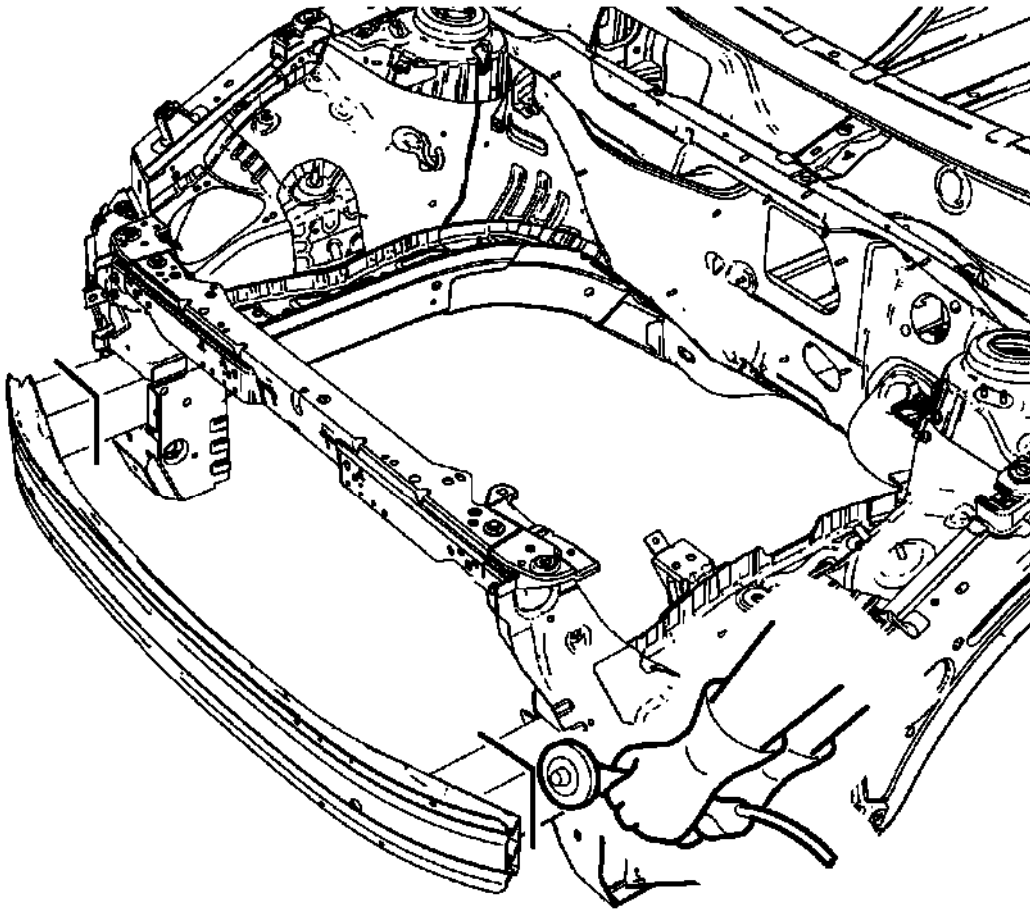


Fig. 4: Front Bumper Impact Bar Cut Points
Courtesy of GENERAL MOTORS COMPANY

5. Cut the front bumper impact bar left and right.
6. Locate and mark all factory welds.

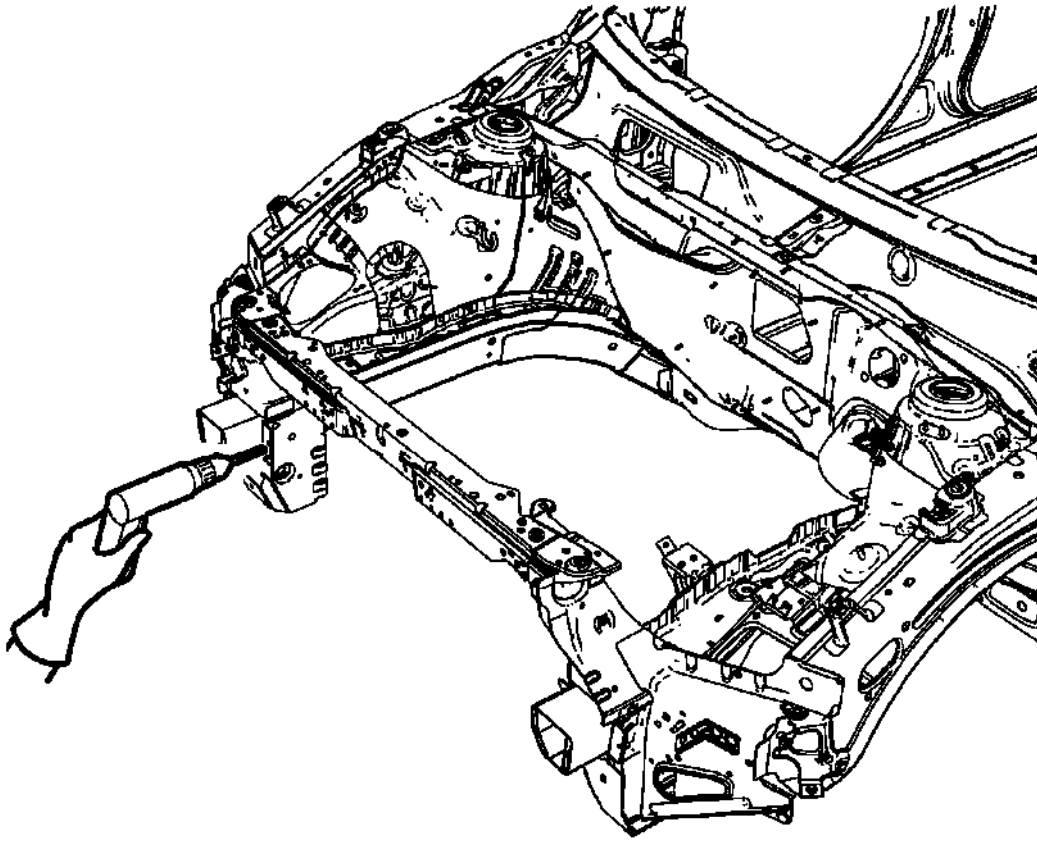


Fig. 5: Drilling Factory Welds

Courtesy of GENERAL MOTORS COMPANY

7. Drill all factory welds.

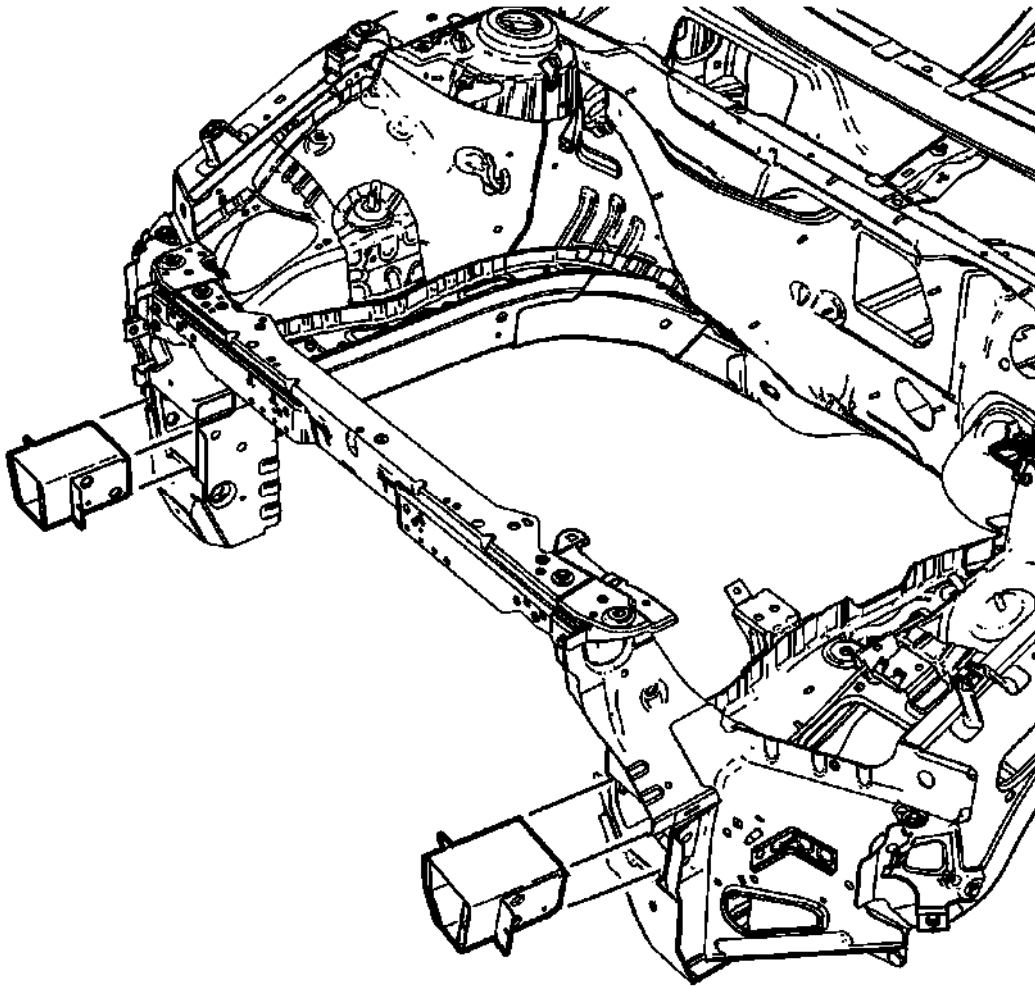


Fig. 6: Remaining Parts Of Front Bumper Impact Bar
Courtesy of GENERAL MOTORS COMPANY

8. Remove the remaining parts of the front bumper impact bar.

Installation Procedure

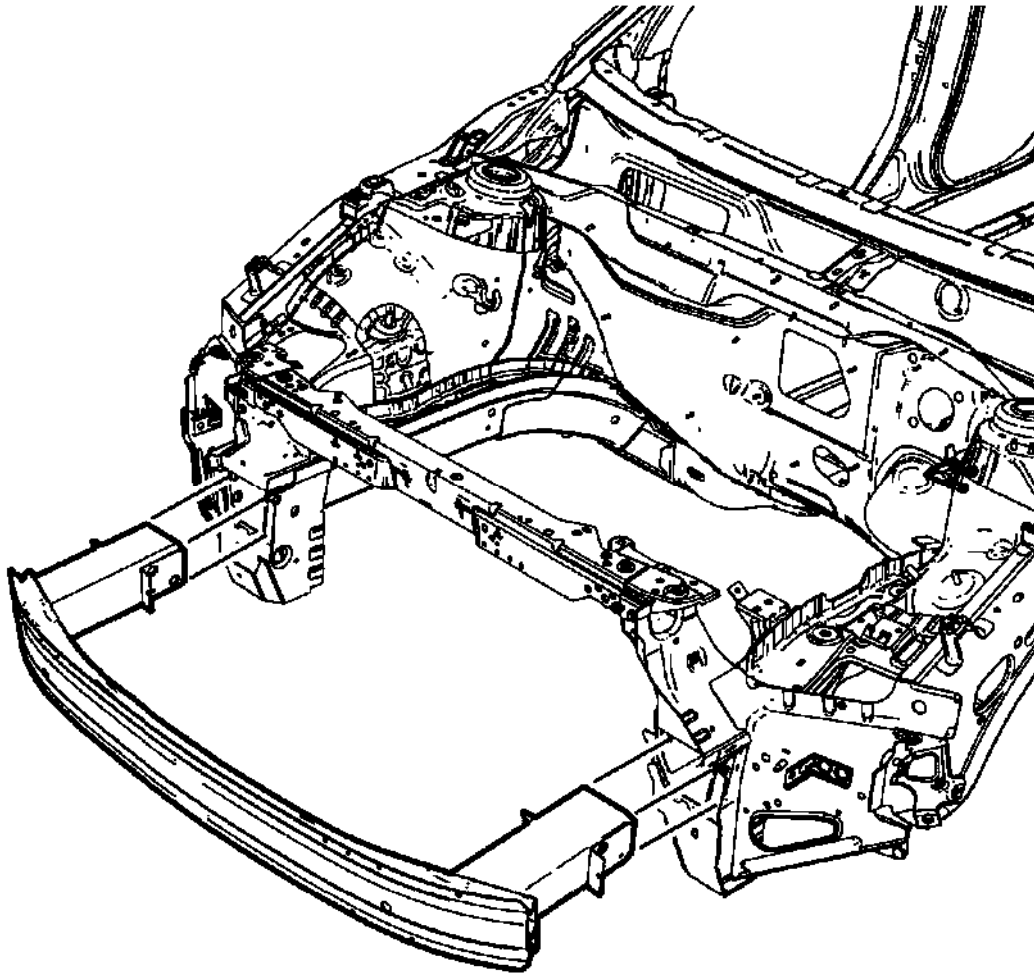


Fig. 7: Front Bumper Impact Bar

Courtesy of GENERAL MOTORS COMPANY

1. Position the front bumper impact bar on the vehicle.

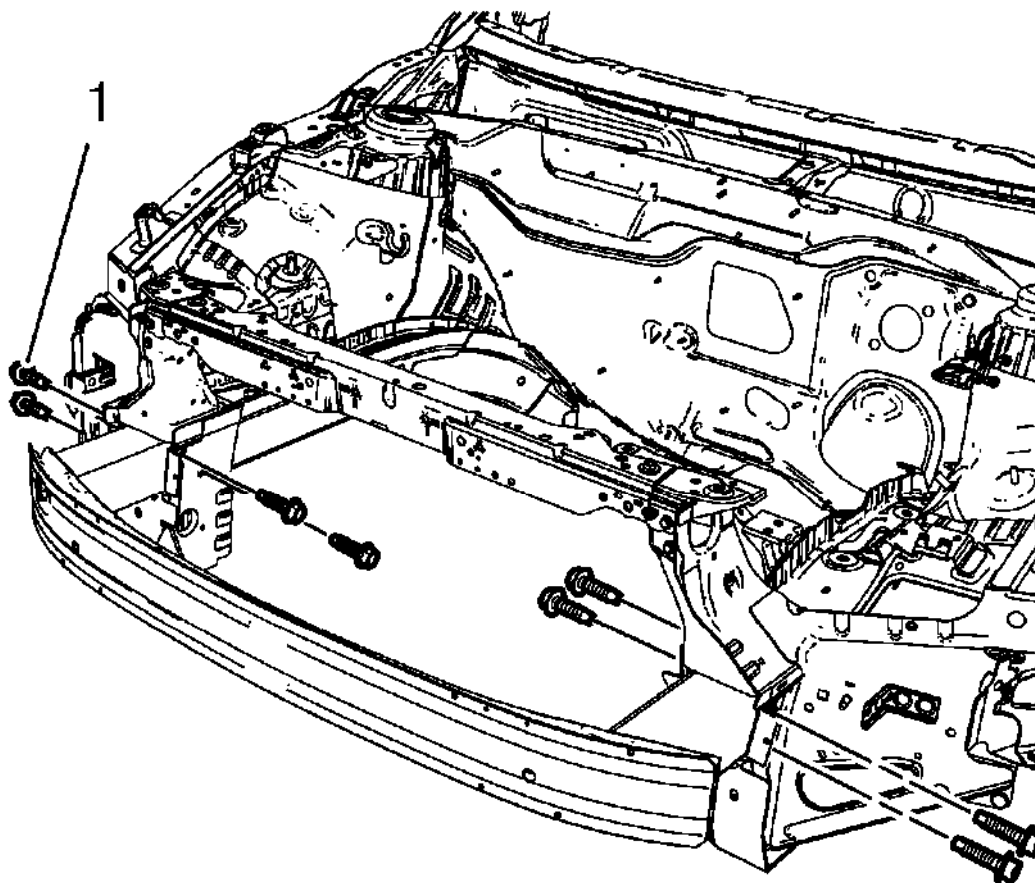


Fig. 8: Front Bumper Impact Bar And Front Bumper Impact Bar Bolts
Courtesy of GENERAL MOTORS COMPANY

CAUTION: Refer to Fastener Caution .

NOTE: Use only the original front bumper impact bar bolts. Replace bolts if damaged.

2. Install the 8 front bumper impact bar bolts (1) and tighten to 110 N.m (81 lb ft).
3. Paint the repaired area. Refer to Basecoat/Clearcoat Paint Systems .
4. Install all related panels and components.
5. Connect the negative battery cable. Refer to Battery Negative Cable Disconnection and Connection .
6. Enable the SIR system. Refer to SIR Disabling and Enabling .

FRONT BUMPER FASCIA REPLACEMENT

Removal Procedure

1. Remove the front bumper fascia opening lower cover. Refer to **Front Bumper Fascia Opening Lower Cover Replacement**.

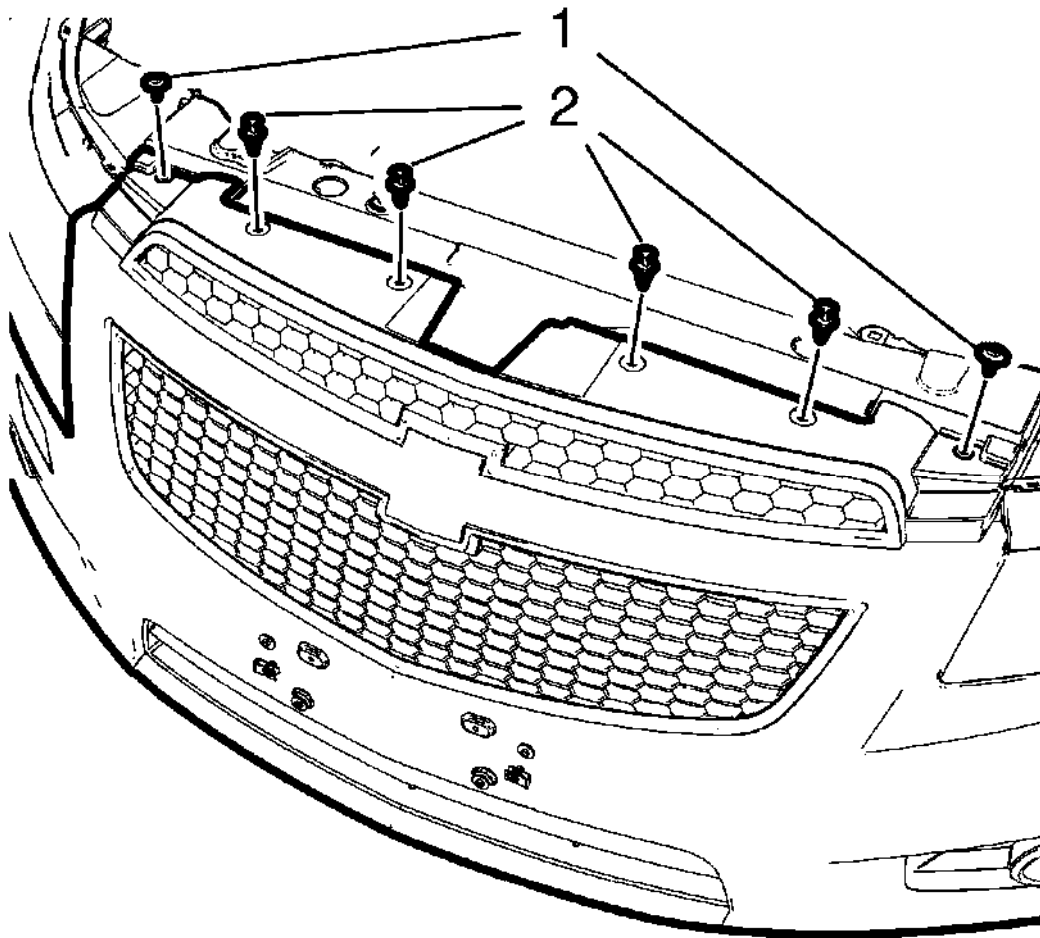


Fig. 9: Front Bumper Fascia Upper And Bolts
Courtesy of GENERAL MOTORS COMPANY

2. Remove the front bumper fascia upper bolts (1).
3. Remove the front bumper fascia upper retainers (2).

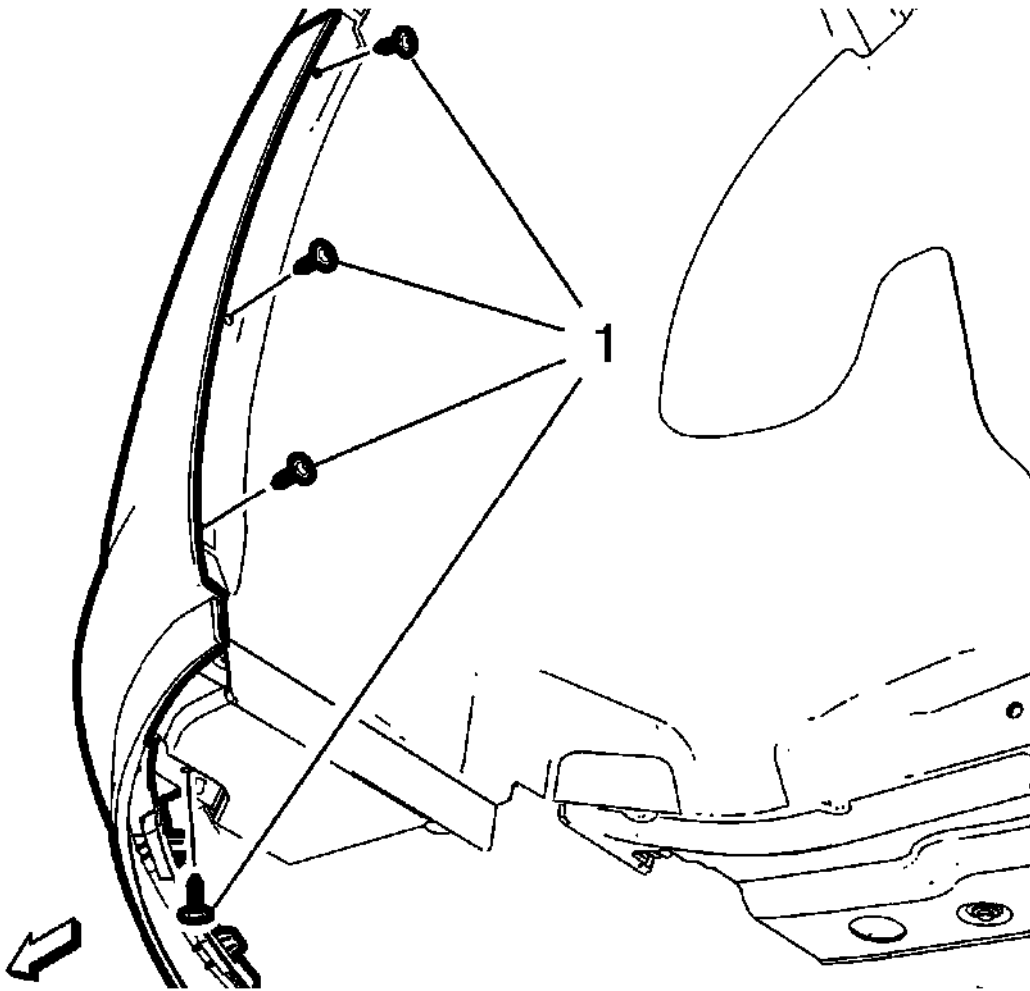


Fig. 10: Front Wheelhouse Liner

Courtesy of GENERAL MOTORS COMPANY

4. Remove the front wheelhouse liner bolts (1) on both sides.

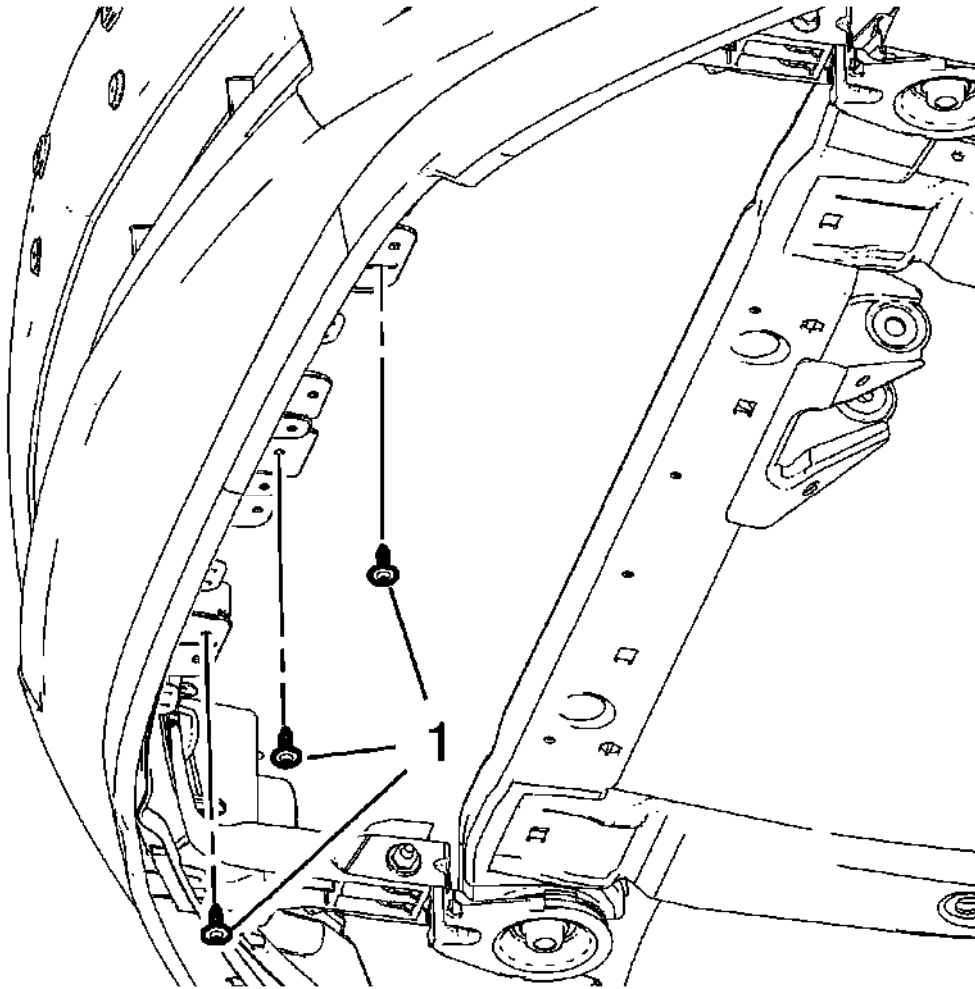


Fig. 11: Lower Stiffener Bolts

Courtesy of GENERAL MOTORS COMPANY

5. If equipped, remove the lower stiffener bolts (1).

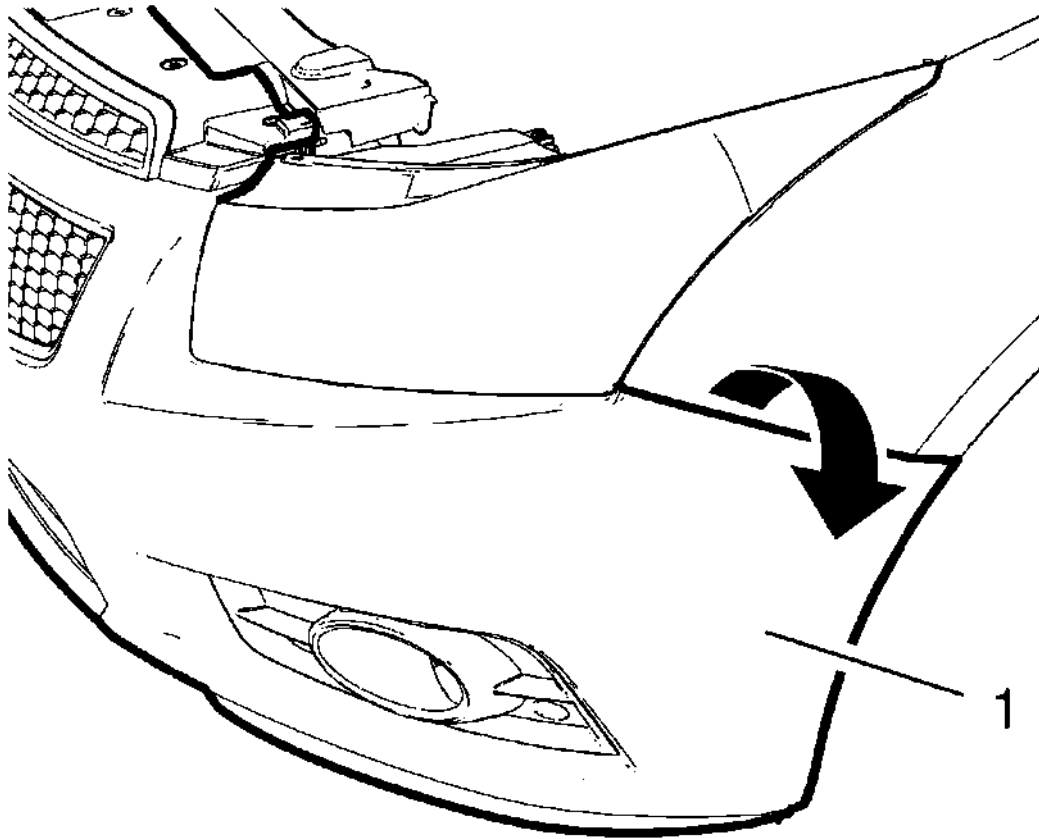


Fig. 12: Pulling Front Bumper Fascia Carefully Outward

Courtesy of GENERAL MOTORS COMPANY

NOTE: Use a plastic trim tool if necessary. Use care when removing the fascia. Fascia might rip apart if forced.

6. Pull the front bumper fascia (1) carefully outward in order to release the retaining tabs from front bumper fascia guides.
7. Disconnect any electrical connectors.

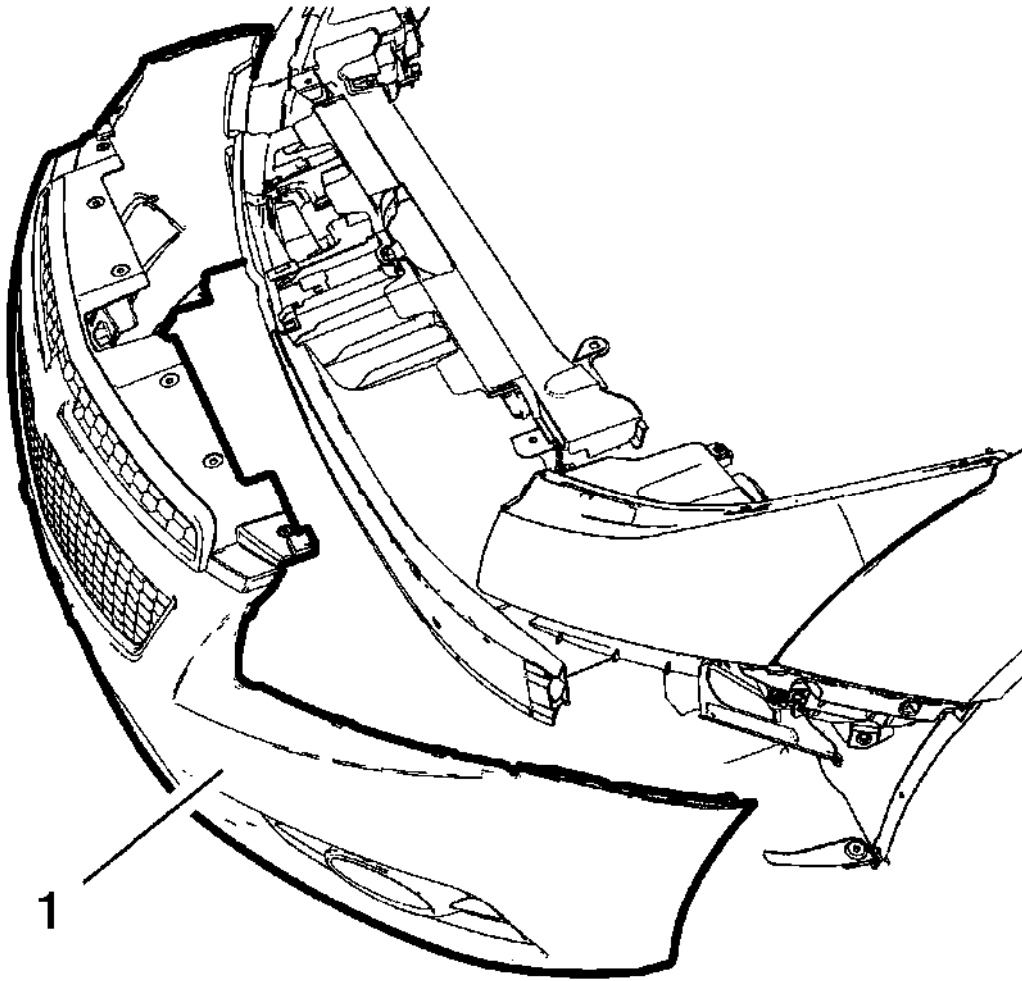


Fig. 13: Front Bumper Fascia

Courtesy of GENERAL MOTORS COMPANY

8. With the aid of an assistant remove the front bumper fascia (1).
9. Transfer or replace parts as needed.

Installation Procedure

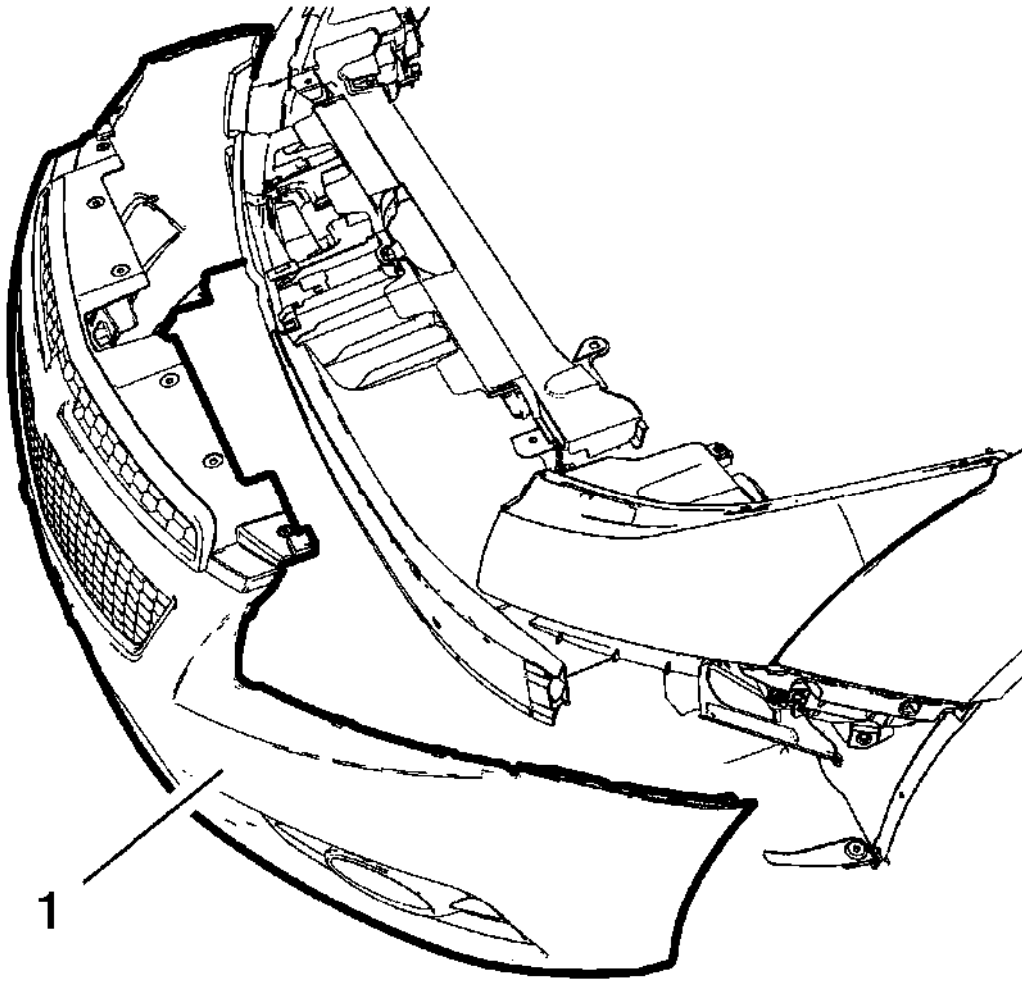


Fig. 14: Front Bumper Fascia

Courtesy of GENERAL MOTORS COMPANY

1. With the aid of an assistant install the front bumper fascia (1).
2. Carefully push in the retaining tabs of front bumper fascia into the front bumper fascia guides.
3. Connect any electrical connectors.

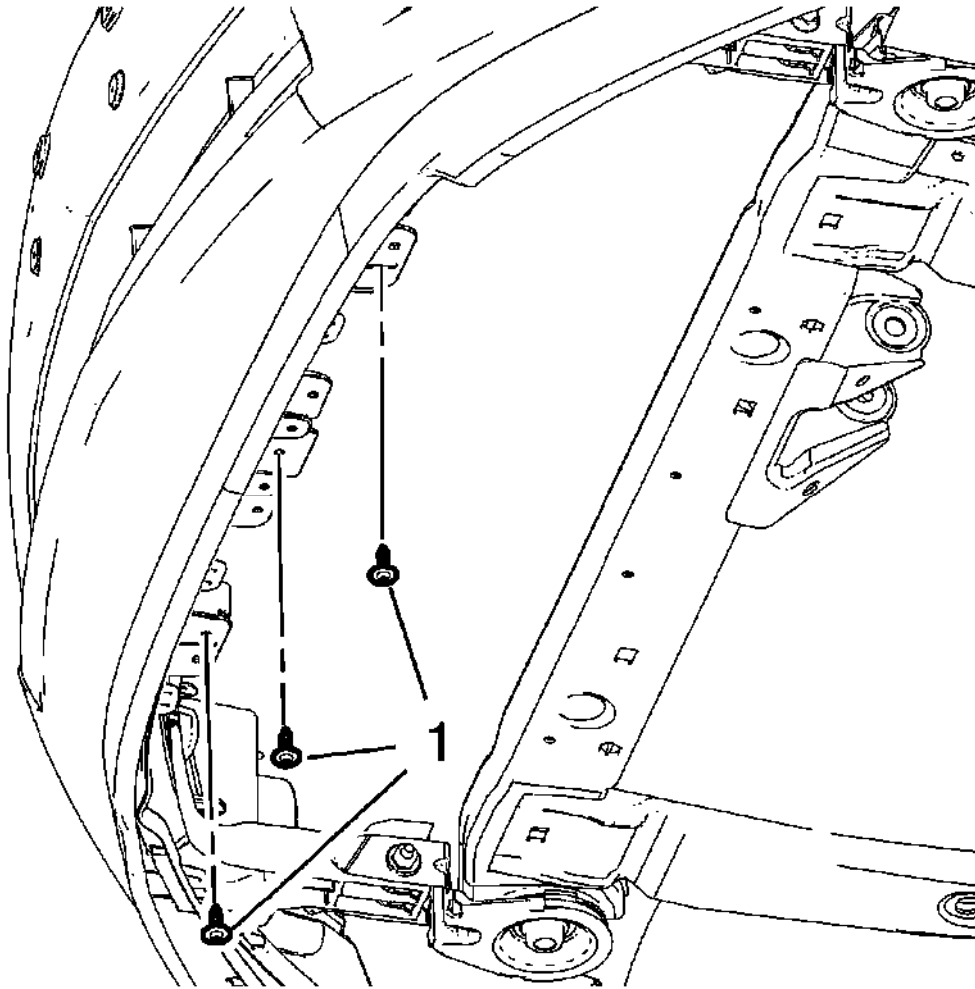


Fig. 15: Lower Stiffener Bolts

Courtesy of GENERAL MOTORS COMPANY

CAUTION: Refer to Fastener Caution .

4. If equipped, install the lower stiffener bolts (1) and tighten to 2.5 (22 lb in).

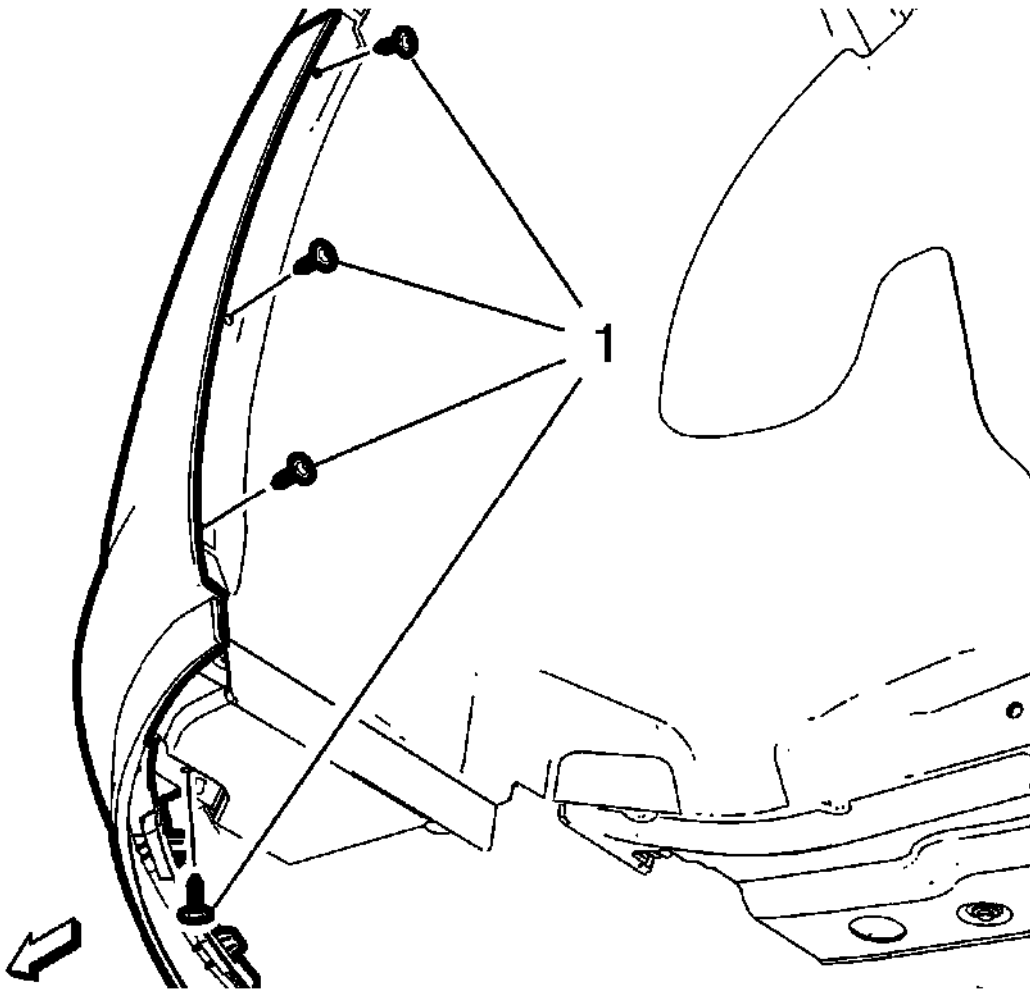


Fig. 16: Front Wheelhouse Liner

Courtesy of GENERAL MOTORS COMPANY

5. Install the front wheelhouse liner bolts (1) and tighten to 2.5 (22 lb in).

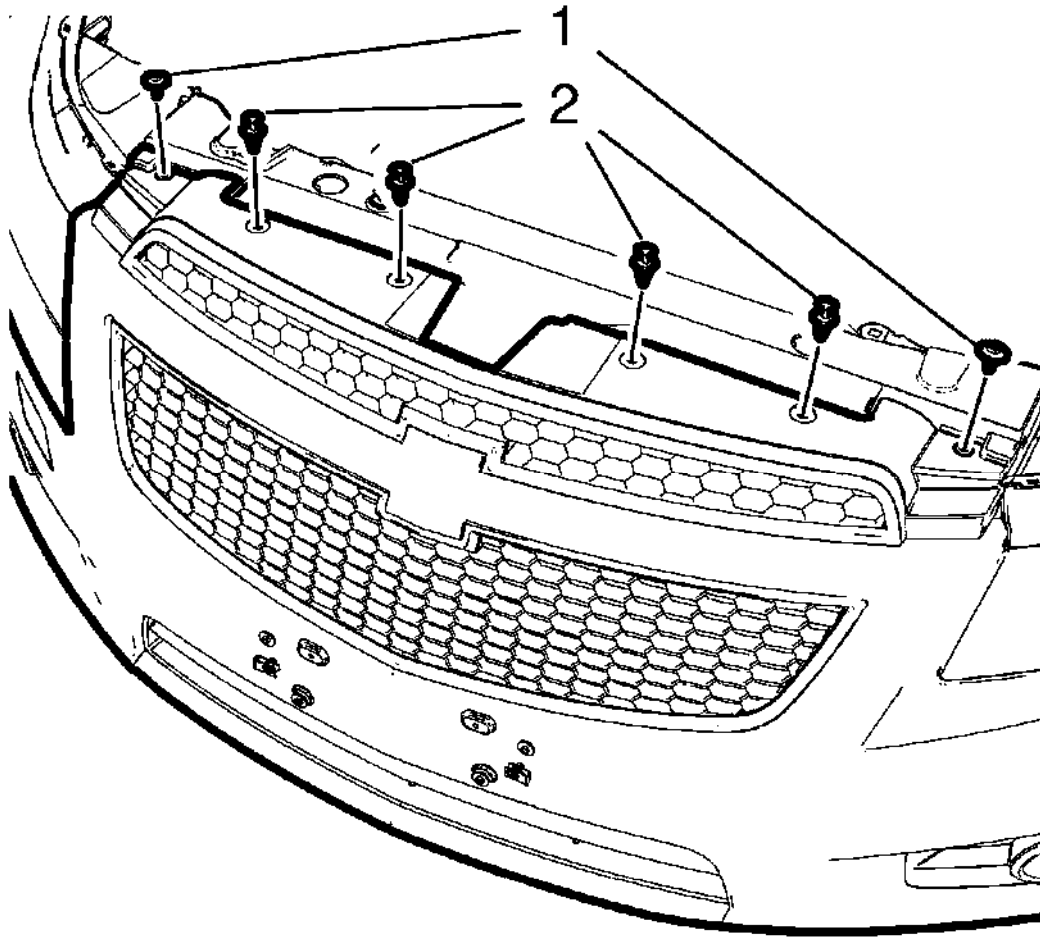
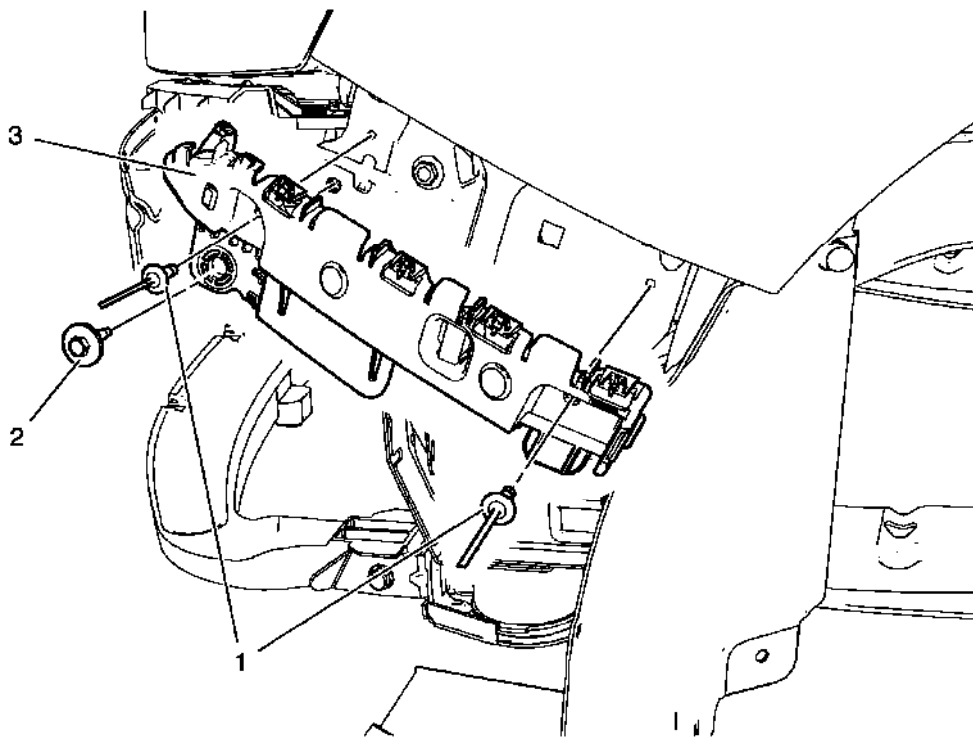


Fig. 17: Front Bumper Fascia Upper And Bolts
Courtesy of GENERAL MOTORS COMPANY

6. Install the front bumper fascia upper retainers (2).
7. Install the front bumper fascia upper bolts (1) and tighten to 9 (80 lb in).
8. Install the front bumper fascia opening lower cover. Refer to **Front Bumper Fascia Opening Lower Cover Replacement**.

FRONT BUMPER FASCIA GUIDE REPLACEMENT

**Fig. 18: Front Bumper Fascia Guide**

Courtesy of GENERAL MOTORS COMPANY

Front Bumper Fascia Guide Replacement

Callout	Component Name
Preliminary Procedure Remove the front bumper fascia. Refer to Front Bumper Fascia Replacement .	
1	Front Bumper Fascia Guide Rivet (Qty: 2)
2	Headlamp Bolt CAUTION: Refer to <u>Fastener Caution</u> . Tighten 2.5 N.m (23 lb in)
3	Front Bumper Fascia Guide

FRONT BUMPER LOWER FASCIA BRACKET REPLACEMENT

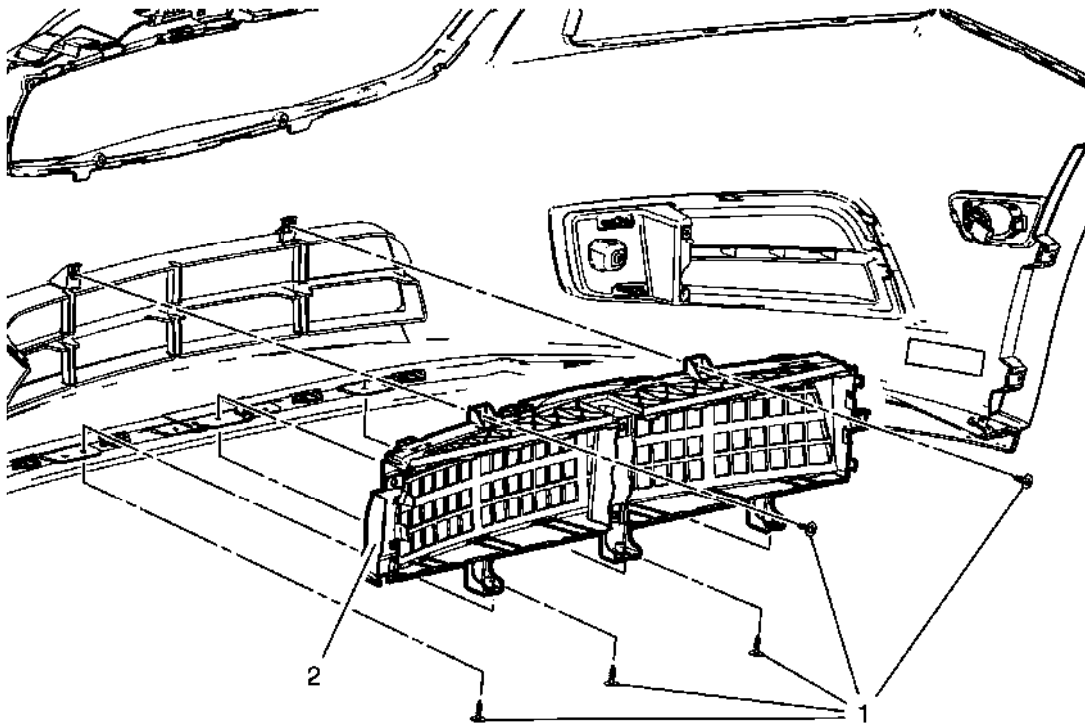


Fig. 19: Front Bumper Lower Fascia Bracket
Courtesy of GENERAL MOTORS COMPANY

Front Bumper Lower Fascia Bracket Replacement

Callout	Component Name
Preliminary Procedures Remove the aero shutter front bumper fascia air deflector. Refer to <u>Aero Shutter Front Bumper Fascia Air Deflector Replacement</u> .	
1	Front Bumper Lower Fascia Bracket Bolt (Qty: 5)
2	Front Bumper Lower Fascia Bracket Procedure Remove the front bumper lower fascia grille. Refer to <u>Front Bumper Lower Fascia Grille Replacement</u> .

FRONT BUMPER FASCIA OPENING LOWER COVER REPLACEMENT

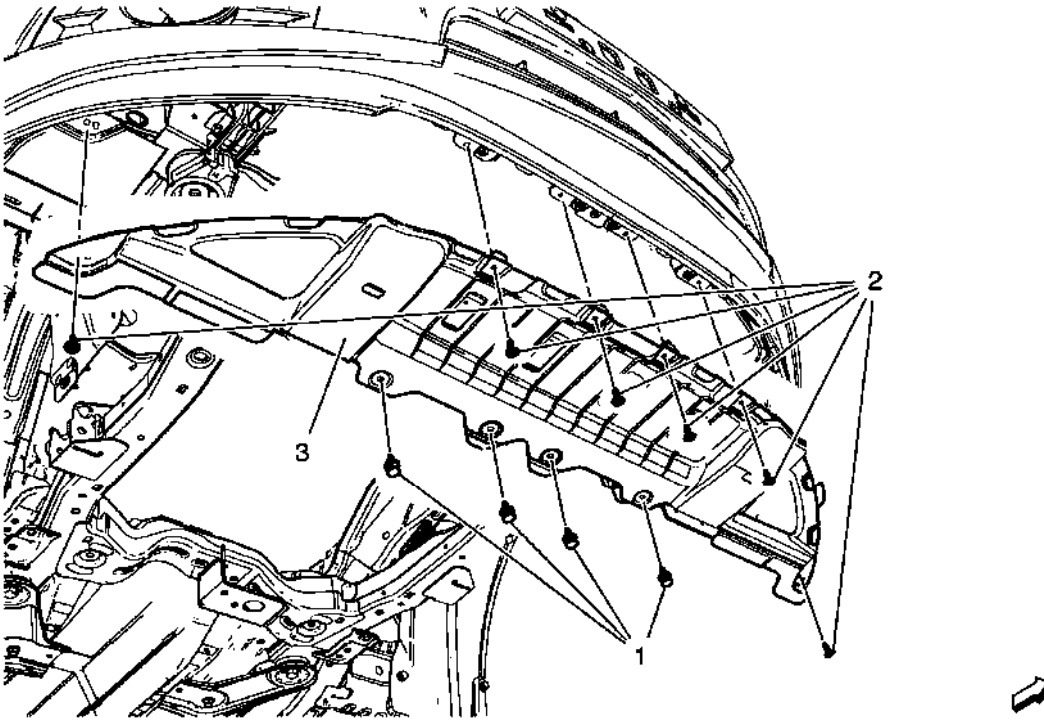


Fig. 20: Front Bumper Fascia Opening Lower Cover
Courtesy of GENERAL MOTORS COMPANY

Front Bumper Fascia Opening Lower Cover Replacement

Callout	Component Name
Preliminary Procedures Raise and support the vehicle. Refer to <u>Lifting and Jacking the Vehicle</u> .	
1	Front Bumper Fascia Opening Lower Cover Retainer (Qty: 4)
2	Front Bumper Fascia Opening Lower Cover Bolt (Qty: 6)
	CAUTION: Refer to <u>Fastener Caution</u> . Tighten 2.5 N.m (23 lb in)
3	Front Bumper Fascia Opening Lower Cover

FRONT BUMPER FASCIA OUTER BRACKET REPLACEMENT

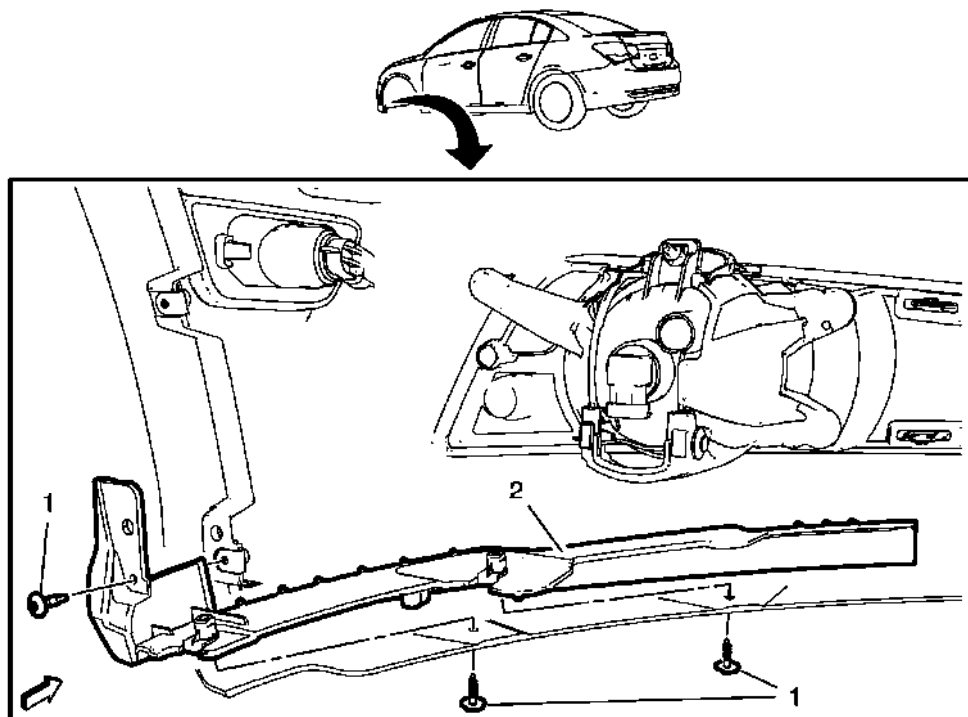


Fig. 21: Front Bumper Fascia Outer Bracket
Courtesy of GENERAL MOTORS COMPANY

Front Bumper Fascia Outer Bracket Replacement

Callout	Component Name
Preliminary Procedures	
Remove the front wheelhouse liner. Refer to Front Wheelhouse Liner Replacement .	
1	Front Bumper Fascia Outer Bracket Bolt (Qty: 3)
2	Front Bumper Fascia Outer Bracket

FRONT BUMPER FASCIA AIR DEFLECTOR REPLACEMENT

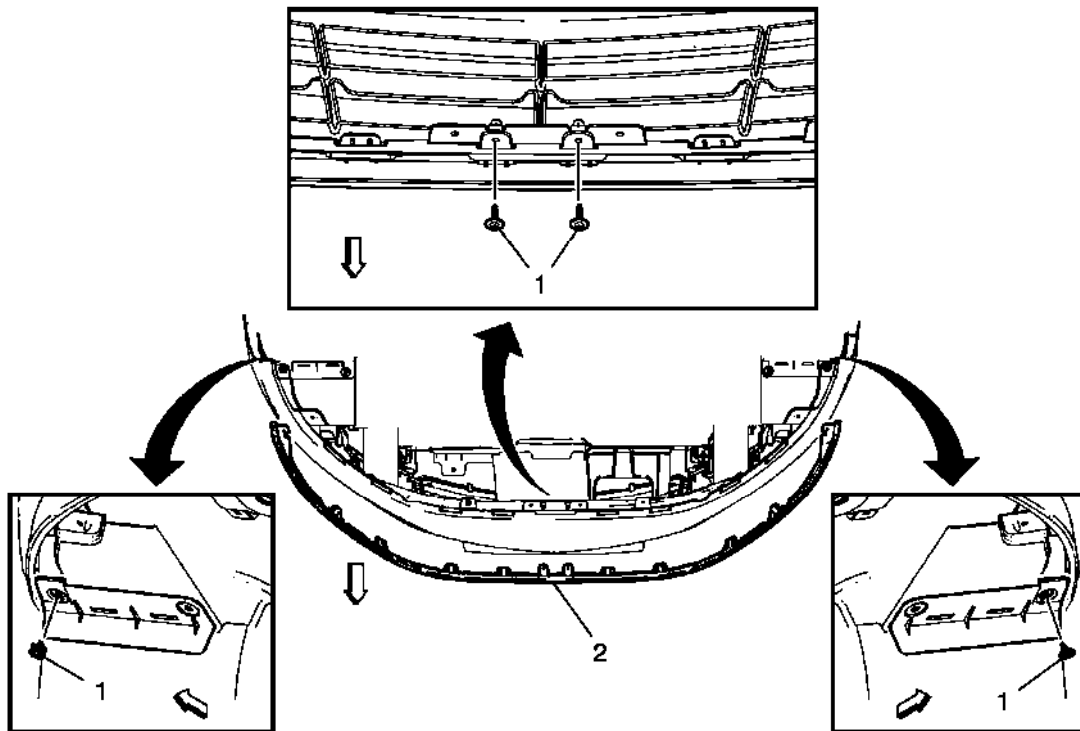


Fig. 22: Front Bumper Fascia Air Deflector
Courtesy of GENERAL MOTORS COMPANY

Front Bumper Fascia Air Deflector Replacement

Callout	Component Name
Preliminary Procedure Remove the front bumper fascia opening lower cover. Refer to <u>Front Bumper Fascia Opening Lower Cover Replacement</u> .	
1	Front Bumper Fascia Air Deflector Bolt (Qty: 4) CAUTION: Refer to <u>Fastener Caution</u> . Tighten 2.5 N.m (23 lb in)
2	Front Bumper Fascia Air Deflector Procedure Unclip from front bumper fascia.

FRONT BUMPER FASCIA AIR DEFLECTOR ACTUATOR REPLACEMENT

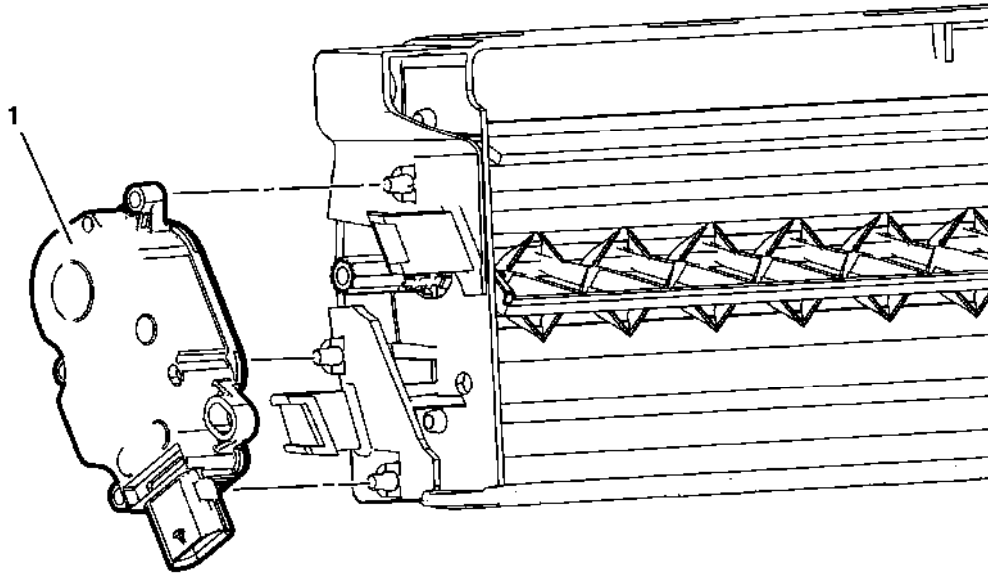


Fig. 23: Front Bumper Fascia Air Deflector Actuator
Courtesy of GENERAL MOTORS COMPANY

Front Bumper Fascia Air Deflector Actuator Replacement

Callout	Component Name
Preliminary Procedures Remove the aero shutter front bumper fascia air deflector. Refer to <u>Aero Shutter Front Bumper Fascia Air Deflector Replacement</u> .	
1	Front Bumper Fascia Air Deflector Actuator Procedure Unclip from aero shutter front bumper fascia air deflector. NOTE: The aero shutter actuator have splines and can be installed in multiple positions.

AERO SHUTTER FRONT BUMPER FASCIA AIR DEFLECTOR REPLACEMENT

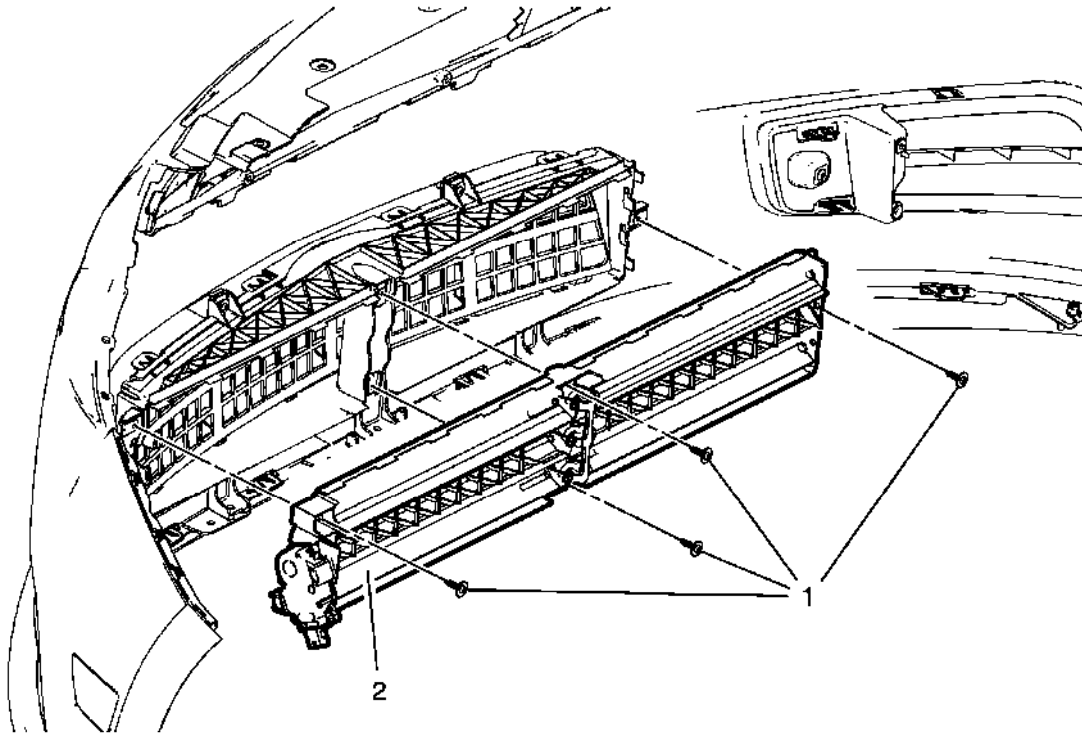


Fig. 24: Aero Shutter Front Bumper Fascia Air Deflector
Courtesy of GENERAL MOTORS COMPANY

Aero Shutter Front Bumper Fascia Air Deflector Replacement

Callout	Component Name
Preliminary Procedures	
Remove the front bumper fascia. Refer to Front Bumper Fascia Replacement .	
1	Aero Shutter Front Bumper Fascia Air Deflector Bolt (Qty: 4)
2	Aero Shutter Front Bumper Fascia Air Deflector
Procedure	
Release the 3 integral clips retaining aero shutter to fascia.	

REAR BUMPER FASCIA REPLACEMENT

Removal Procedure

1. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle**.
2. Remove the tail lamps. Refer to **Tail Lamp Replacement**.

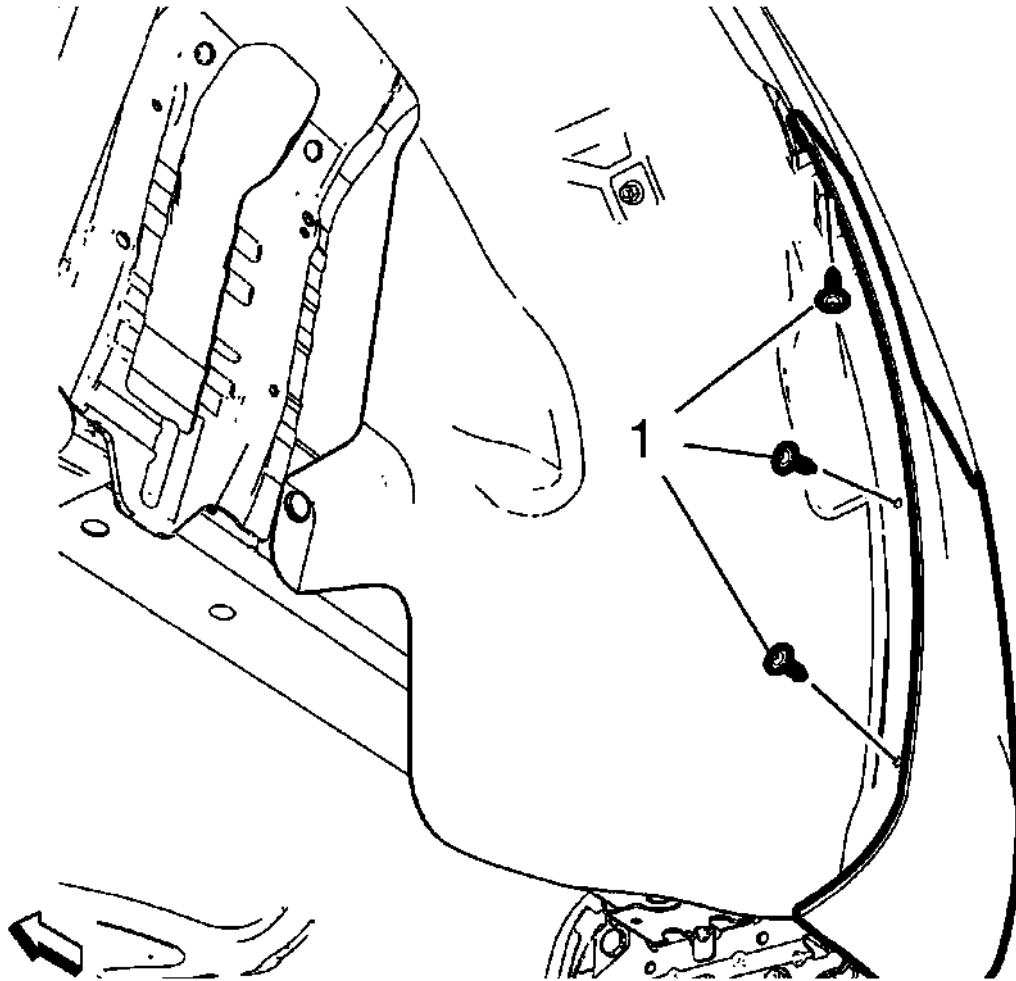


Fig. 25: Rear Wheelhouse Liner And Bolts
Courtesy of GENERAL MOTORS COMPANY

3. Remove the rear wheelhouse liner bolts (1) on both sides.

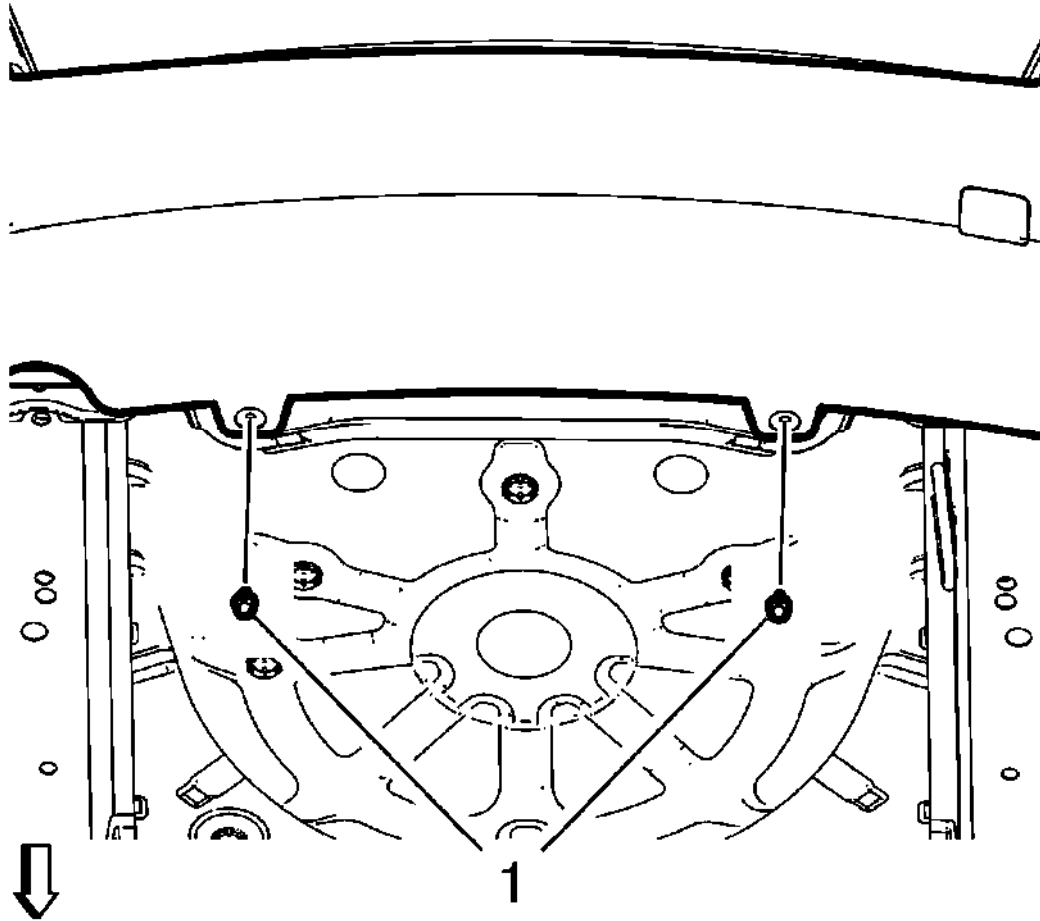


Fig. 26: Rear Bumper Fascia Lower Retainers
Courtesy of GENERAL MOTORS COMPANY

4. Remove the rear bumper fascia lower retainers (1).

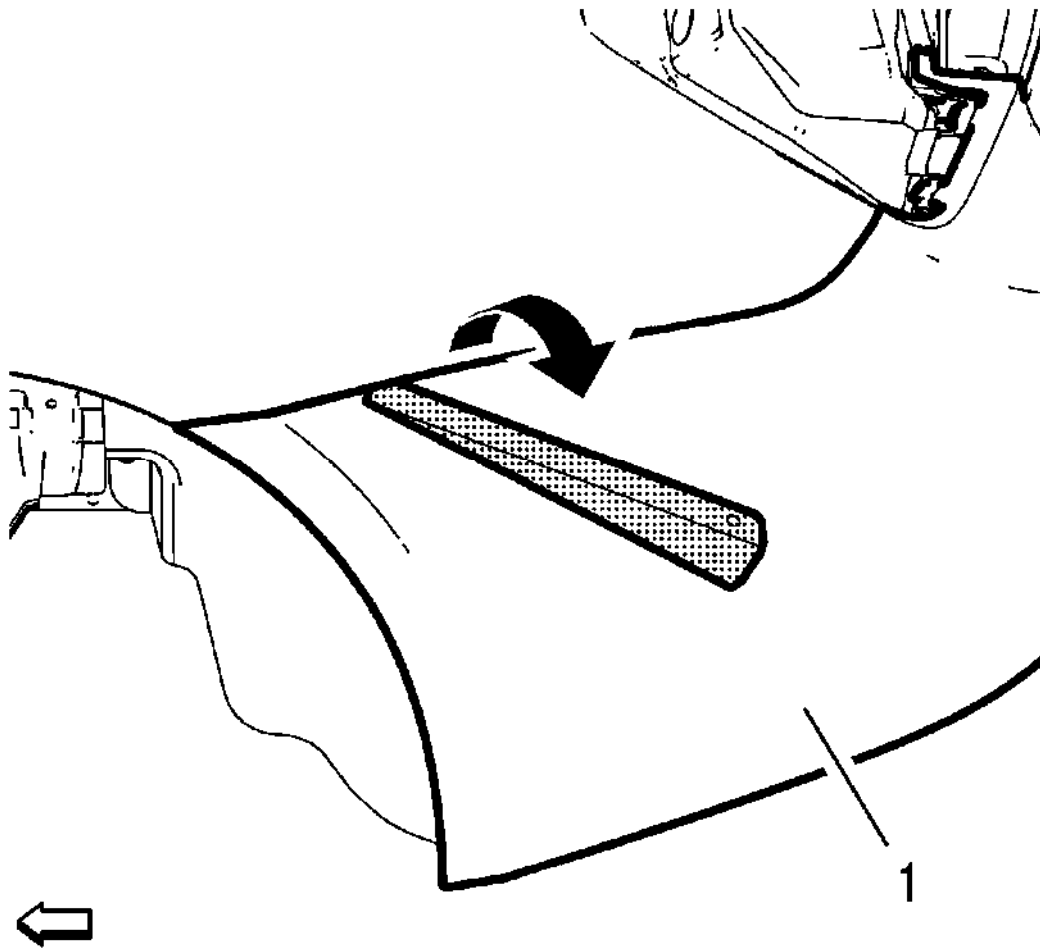


Fig. 27: Carefully Pulling Rear Bumper Fascia Outward

Courtesy of GENERAL MOTORS COMPANY

NOTE: Use care when removing the fascia. Fascia might rip apart if forced.

5. Pull the rear bumper fascia (1) carefully outward and use a plastic tool in order to release the retaining tabs from rear bumper fascia guides.

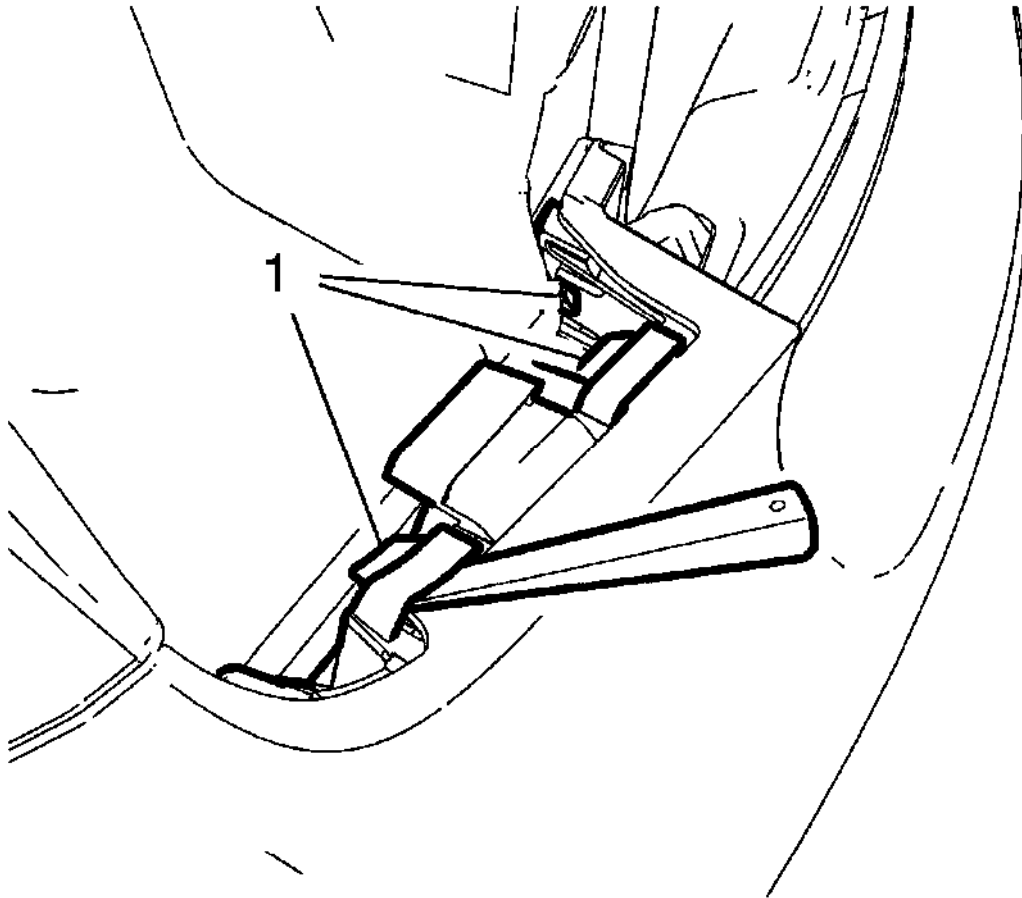


Fig. 28: Releasing Rear Bumper Retainer Tabs
Courtesy of GENERAL MOTORS COMPANY

6. Use a plastic trim tool to release the retaining tabs of rear bumper fascia (1).
7. Disconnect any electrical connectors.

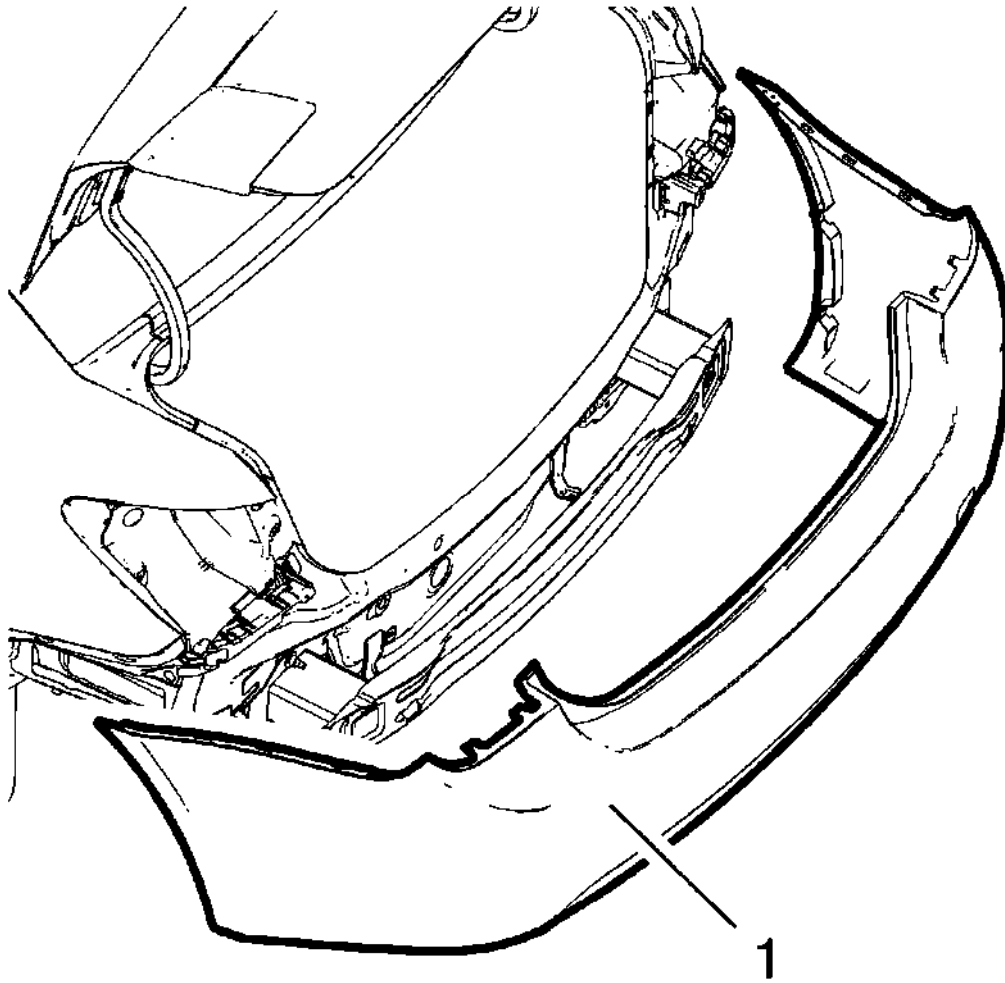


Fig. 29: Rear Bumper Fascia

Courtesy of GENERAL MOTORS COMPANY

8. With the aid of an assistant remove the rear bumper fascia (1).
9. Transfer or replace parts as needed.

Installation Procedure

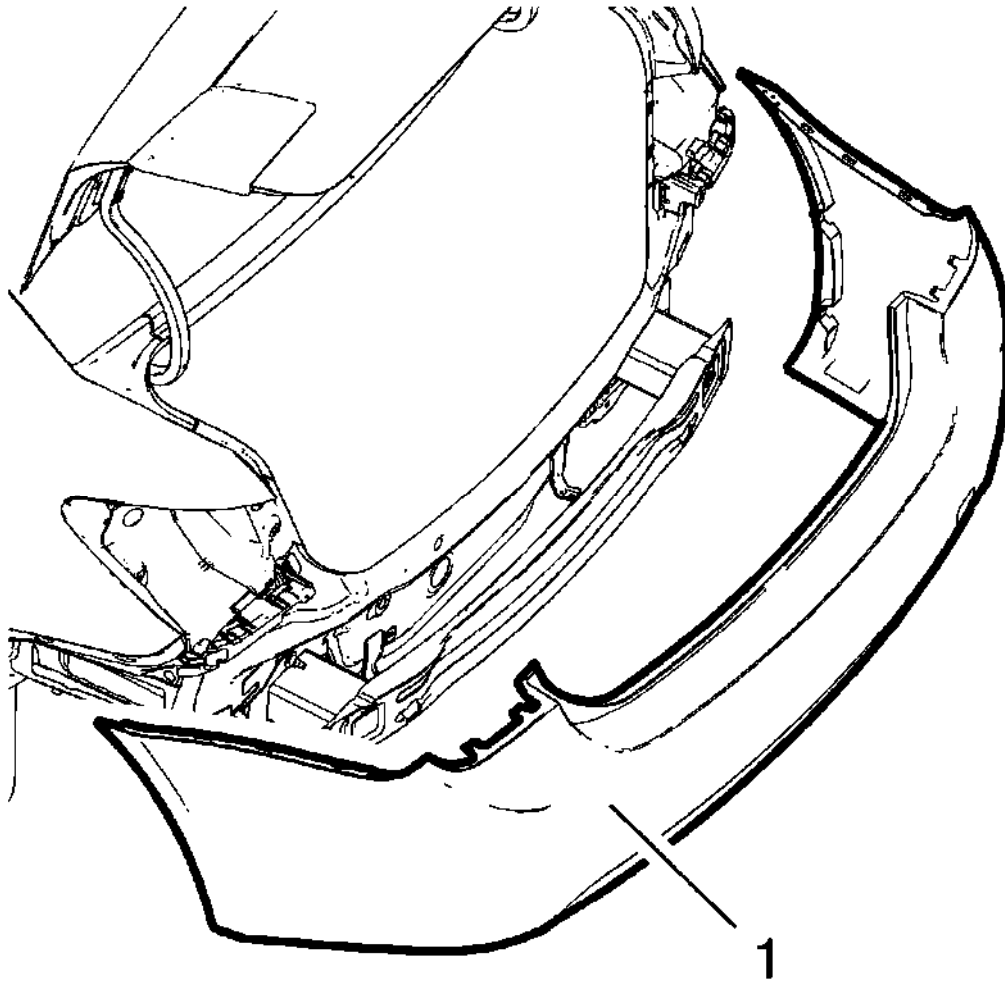


Fig. 30: Rear Bumper Fascia

Courtesy of GENERAL MOTORS COMPANY

1. With the aid of an assistant install the rear bumper fascia (1).
2. Carefully push in the retaining tabs of rear bumper fascia into the rear bumper fascia guides.
3. Connect any electrical connectors.

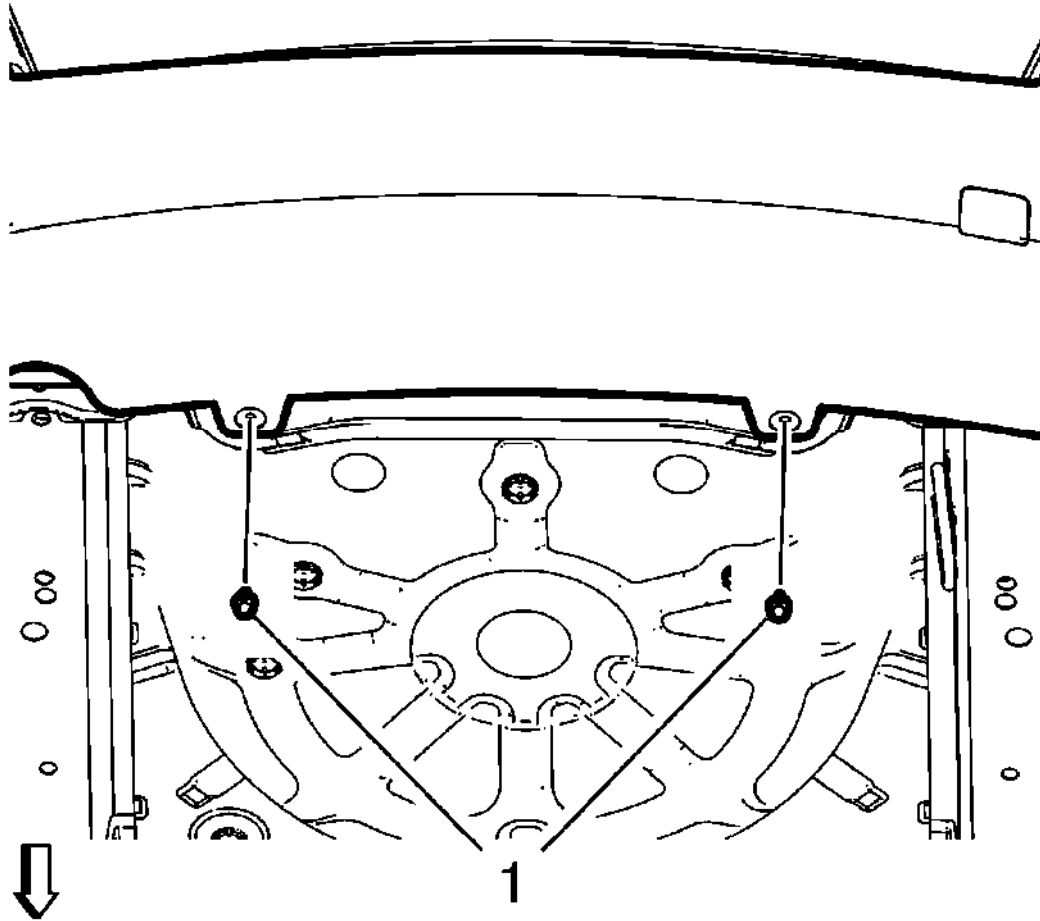


Fig. 31: Rear Bumper Fascia Lower Retainers
Courtesy of GENERAL MOTORS COMPANY

4. Install the rear bumper fascia lower retainers (1).

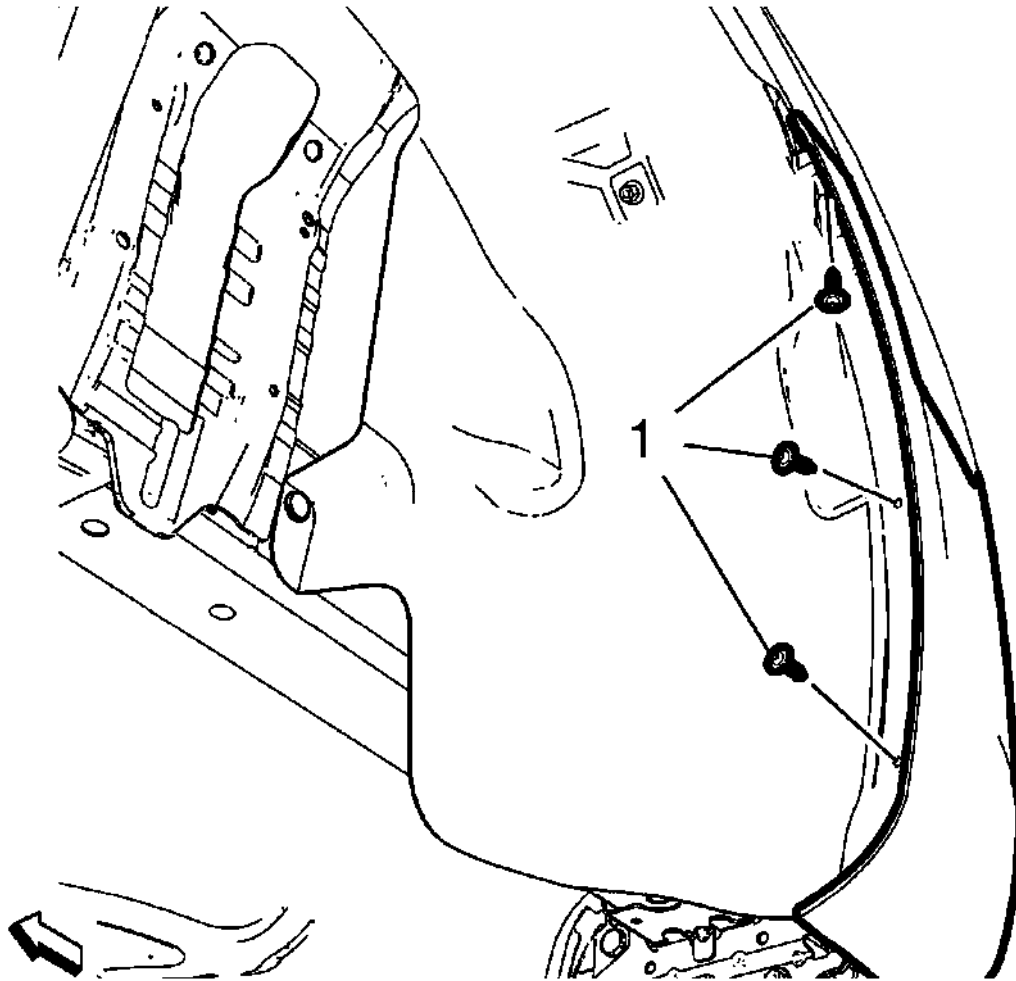
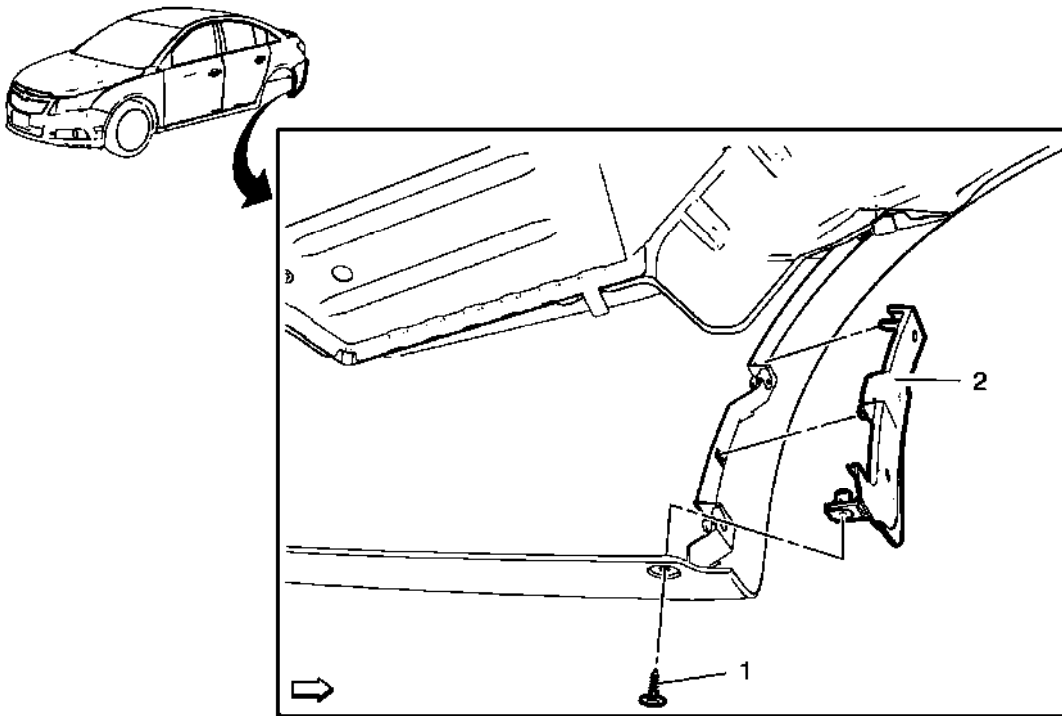


Fig. 32: Rear Wheelhouse Liner And Bolts
Courtesy of GENERAL MOTORS COMPANY

CAUTION: Refer to Fastener Caution .

5. Install the rear wheelhouse liner bolts (1) and tighten with 2.5 N.m (22 lb in).
6. Install the tail lamps. Refer to Tail Lamp Replacement .

REAR BUMPER FASCIA BRACKET REPLACEMENT - OUTER

**Fig. 33: Rear Bumper Fascia Bracket - Outer**

Courtesy of GENERAL MOTORS COMPANY

Rear Bumper Fascia Bracket Replacement - Outer

Callout	Component Name
Preliminary Procedures	
Remove the rear wheelhouse panel liner. Refer to <u>Rear Wheelhouse Liner Replacement</u> .	
1	Rear Bumper Fascia Outer Bracket Bolt
2	Rear Bumper Fascia Outer Bracket
Procedure	
Unclip the rear bumper fascia outer bracket from rear bumper fascia.	

REAR BUMPER FASCIA GUIDE REPLACEMENT

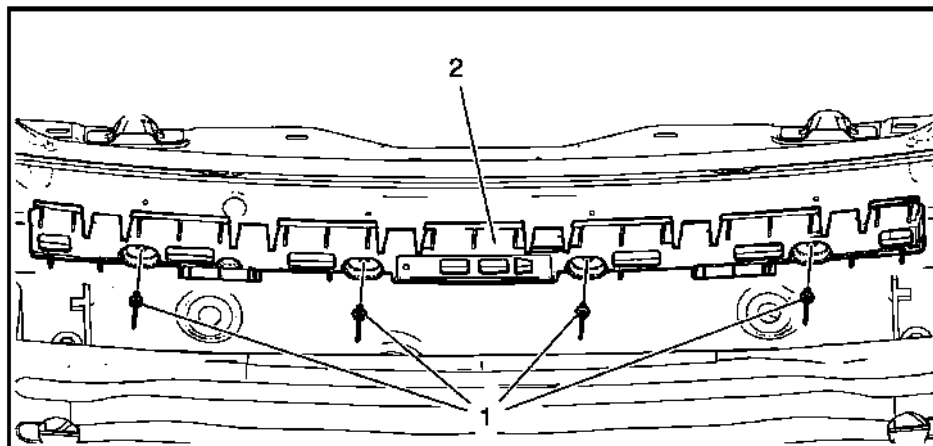
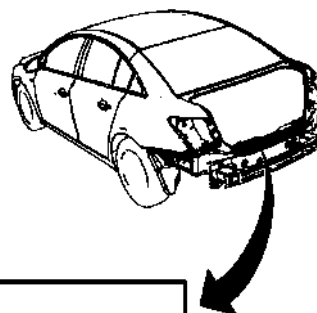


Fig. 34: Rear Bumper Fascia Guide

Courtesy of GENERAL MOTORS COMPANY

Rear Bumper Fascia Guide Replacement

Callout	Component Name
Preliminary Procedure	
Remove the rear bumper fascia. Refer to Rear Bumper Fascia Replacement .	
1	Rear Bumper Fascia Guide Rivet (Qty: 4)
2	Rear Bumper Fascia Guide

REAR BUMPER FASCIA INNER GUIDE REPLACEMENT

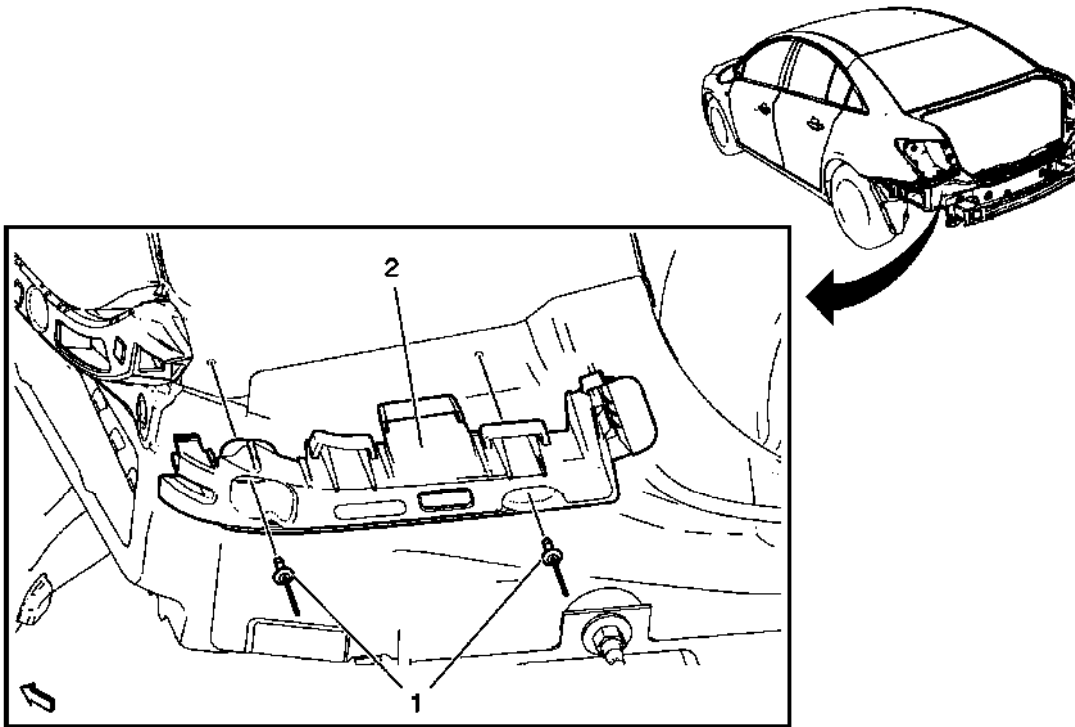


Fig. 35: Rear Bumper Fascia Inner Guide

Courtesy of GENERAL MOTORS COMPANY

Rear Bumper Fascia Inner Guide Replacement

Callout	Component Name
Preliminary Procedure	
Remove the rear bumper fascia. Refer to Rear Bumper Fascia Replacement .	
1	Rear Bumper Fascia Inner Guide Rivet (Qty: 2)
2	Rear Bumper Fascia Inner Guide.

REAR BUMPER FASCIA OUTER GUIDE REPLACEMENT

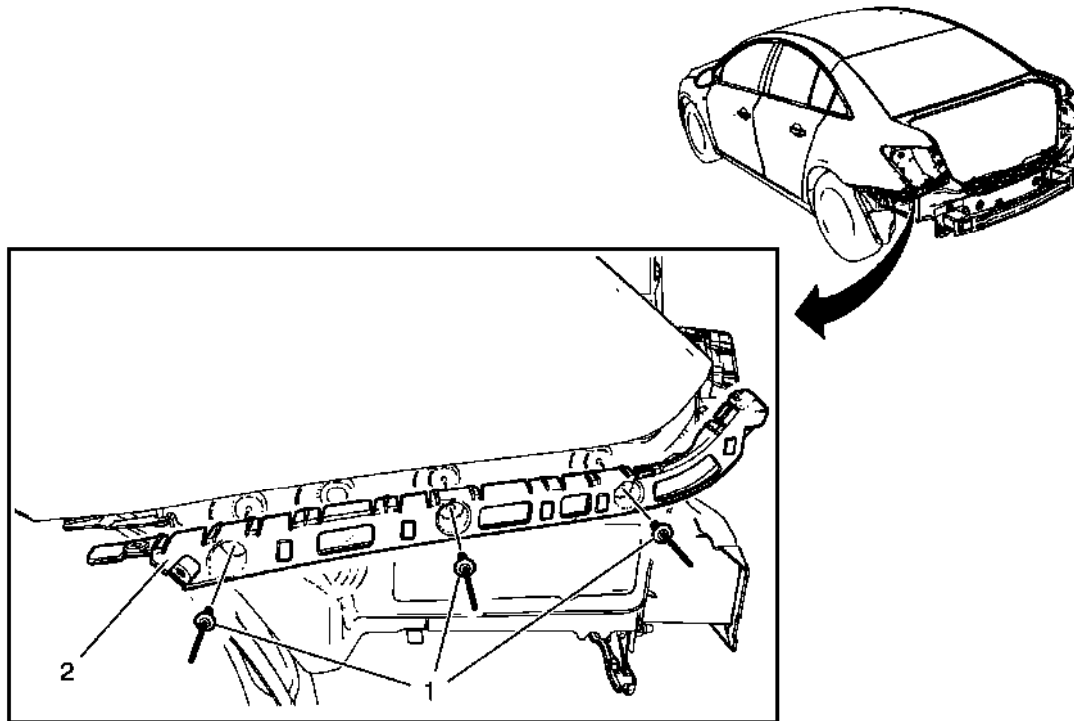
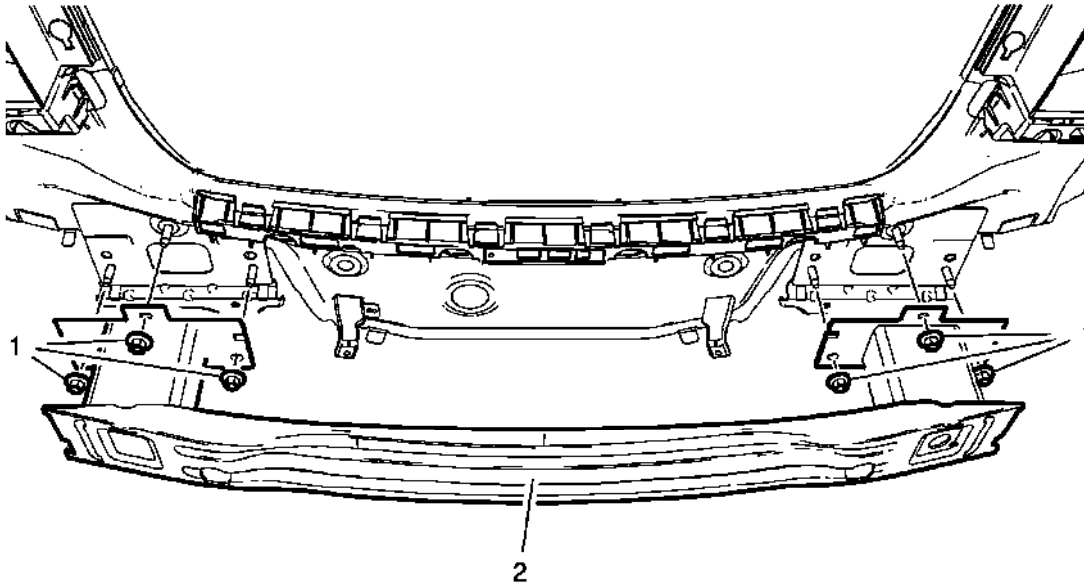


Fig. 36: Rear Bumper Fascia Outer Guide
Courtesy of GENERAL MOTORS COMPANY

Rear Bumper Fascia Outer Guide Replacement

Callout	Component Name
Preliminary Procedure Remove the rear bumper fascia. Refer to Rear Bumper Fascia Replacement .	
1	Rear Bumper Fascia Outer Guide Rivet (Qty: 3)
2	Rear Bumper Fascia Outer Guide

REAR BUMPER IMPACT BAR REPLACEMENT

**Fig. 37: Rear Bumper Impact Bar**

Courtesy of GENERAL MOTORS COMPANY

Rear Bumper Impact Bar Replacement

Callout	Component Name
Preliminary Procedure Remove the rear bumper fascia. Refer to <u>Rear Bumper Fascia Replacement</u> .	
1	Rear Bumper Energy Absorber Nut (Qty: 6) CAUTION: Refer to <u>Fastener Caution</u> . Tighten 40 N.m (30 lb ft)
2	Rear Bumper Impact Bar

DESCRIPTION AND OPERATION

ACTIVE GRILLE AIR SHUTTER DESCRIPTION AND OPERATION

The active grille air shutter actuator closes louvers at the front bumper to enhance vehicle aerodynamics in driving situations where cooling and A/C loads are relatively low and high levels of front end airflow are not required. If high levels of airflow are required the active grille air shutter actuator opens the louvers. The control signal from the fuel pump control module, ignition and ground circuits enable the active grille air shutter

2013 Chevrolet Cruze

2013 ACCESSORIES & EQUIPMENT Bumpers and Fascias - Cruze

actuator to operate. If the conditions for opening the louvers are reached the fuel pump control module commands the active grille air shutter actuator to open the louvers.

The single active grille air shutter system consists of an individual motor operated mechanism hinged behind the vehicle front grille for controlling the amount of air entering the engine compartment. It includes three wires, ground, power and pulse width modulated signal to the actuator. The fuel pump control module determines shutter state based on various vehicle conditions such as vehicle speed, coolant temperature, fan state, refrigerant system pressure, A/C compressor state and ambient temperature. The pulsed signal controlling the shutter mechanism will be able to control the shutter to close/open positions.

The actuator is powered by an ignition circuit that is active when the key is in the RUN position. The vehicle may have to be driven for up to 13 minutes at speeds greater than 41 kph (25 mph) before the shutter begins to move. If low ambient temperature is detected, the shutter will remain in the closed position.