

2013 ACCESSORIES & EQUIPMENT

Bumpers and Fascias - Malibu

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Frame to Body Bolt	160 N.m	118 lb ft
Front Bumper Fascia Air Deflector Screws	3 N.m	26 lb in
Front Bumper Fascia Bolt	3 N.m	26 lb in
Front Bumper Fascia Center Support Bolts	2 N.m	26 lb in
Front Bumper Fascia Lower Impact Bar Rear Bolt	22 N.m	16 lb ft
Front Bumper Fascia Top Screws	3 N.m	26 lb in
Front Bumper Fascia Upper Support Screw	3 N.m	26 lb in
Front Bumper Impact Bar Bolts	22 N.m	16 lb ft
Front Bumper Impact Bar Lower Screws	3 N.m	26 lb in
Front Bumper Lower Impact Bracket Bolt	22 N.m	16 lb ft
Headlamp Bolt	10 N.m	89 lb in
Rear Bumper Impact Bar Bolts	40 N.m	30 lb ft
Rear Bumper Lower Fascia Bolt	6 N.m	53 lb in
Rear Bumper Upper Fascia Bolt	6 N.m	53 lb in
Rear Fascia Screws	10 N.m	89 lb in

SCHEMATIC WIRING DIAGRAMS

ACTIVE GRILLE AIR SHUTTER WIRING SCHEMATICS

Active Grille Air Shutter Schematics (VRI with LUK) Wiring Schematics

Callout	Component Name
239	Run/Crank Ignition 1 Voltage
239_VT/WH	239 VT/WH
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
CAV_30	30
3437_GY/BK	3437 GY/BK
3437_GY/BK	3437 GY/BK
3437_GY/BK	3437 GY/BK
239_VT/WH	239 VT/WH
X125	X125
CAV_D	D
CAV_E	E
G101	G101
F16UA	F16UA 7.5A
X150	X150
J303	J303
X125	X125
X50A	
A90	Logic
M96	(VRI)
K27	(LUK)
KR73	Ignition Main Relay

DIAGNOSTIC INFORMATION AND PROCEDURES

DIAGNOSTIC CODE INDEX

DIAGNOSTIC CODE INDEX

DTC	Description
DTC P059F or U0284	DTC U0284 Lost Communication with Active Grille Air Shutter 1 Motor Module

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
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

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.
 - 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 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

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

COMPONENT CONNECTOR END VIEWS - INDEX

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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

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.
 - 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 Replacement**
- **Control Module References** for fuel pump control module replacement, programming and setup

REPAIR INSTRUCTIONS

FRONT BUMPER FASCIA ENERGY UPPER ABSORBER REPLACEMENT

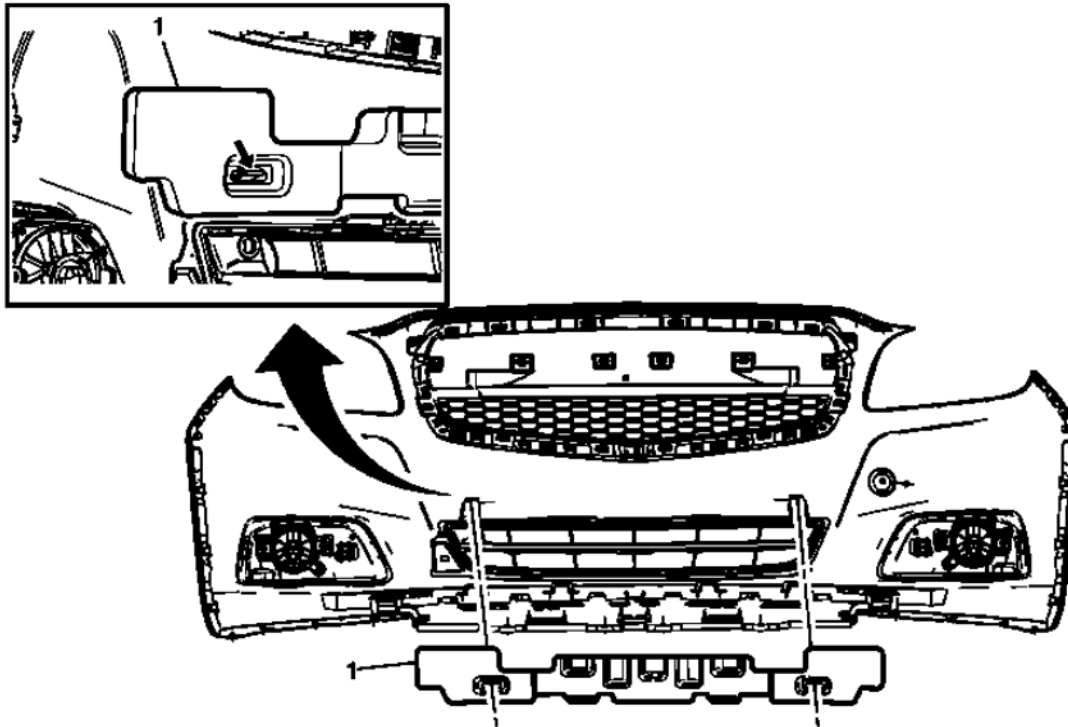


Fig. 3: Front Bumper Fascia Energy Upper Absorber
 Courtesy of GENERAL MOTORS COMPANY

Front Bumper Fascia Energy Upper Absorber Replacement

Callout	Component Name
Preliminary Procedure Remove the front bumper fascia. Refer to Front Bumper Fascia Replacement .	
1	Front Bumper Energy Upper Absorber Procedure Depress the retainer tabs.

FRONT BUMPER IMPACT BAR REPLACEMENT

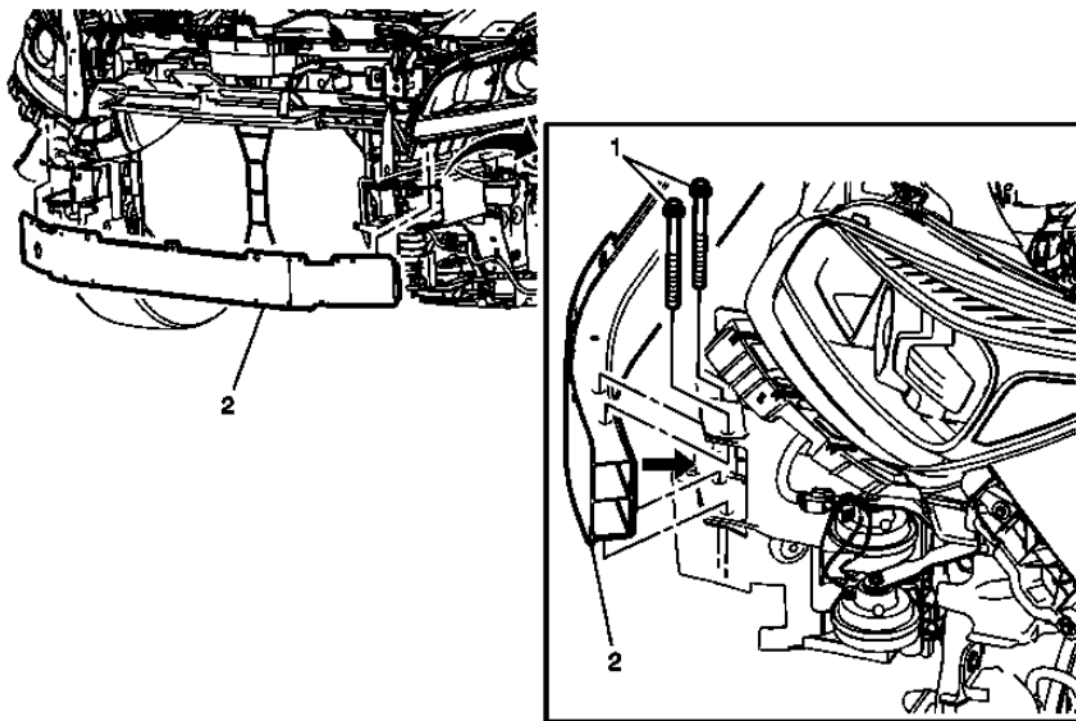


Fig. 4: Front Bumper Impact Bar
 Courtesy of GENERAL MOTORS COMPANY

Front Bumper Impact Bar Replacement

Callout	Component Name
Preliminary Procedures 1. Remove the front bumper fascia. Refer to Front Bumper Fascia Replacement. 2. Remove the right headlamp. Refer to Headlamp Replacement (Left Side) , Headlamp Replacement (Right Side) .	
1	Front Bumper Impact Bar Bolt (Qty: 4) CAUTION: Refer to Fastener Caution . Procedure 1. Counterhold the front bumper impact bar nuts. 2. Remove the required push-in retainers from the radiator air side baffle and air deflector. Refer to Radiator Air Side Baffle and Deflector Replacement (Left LUK) , Radiator Air Side Baffle and Deflector Replacement (Right LUK) , Radiator Air Side Baffle and Deflector Replacement (Left LCV) , Radiator Air Side Baffle and Deflector Replacement (Right LCV) , Radiator Air Side Baffle and Deflector Replacement (Left LTG) ,

	<u>Radiator Air Side Baffle and Deflector Replacement (Right LTG) .</u>
	Tighten 22 (16 lb ft)
2	Front Bumper Impact Bar

FRONT BUMPER LOWER IMPACT BAR REPLACEMENT

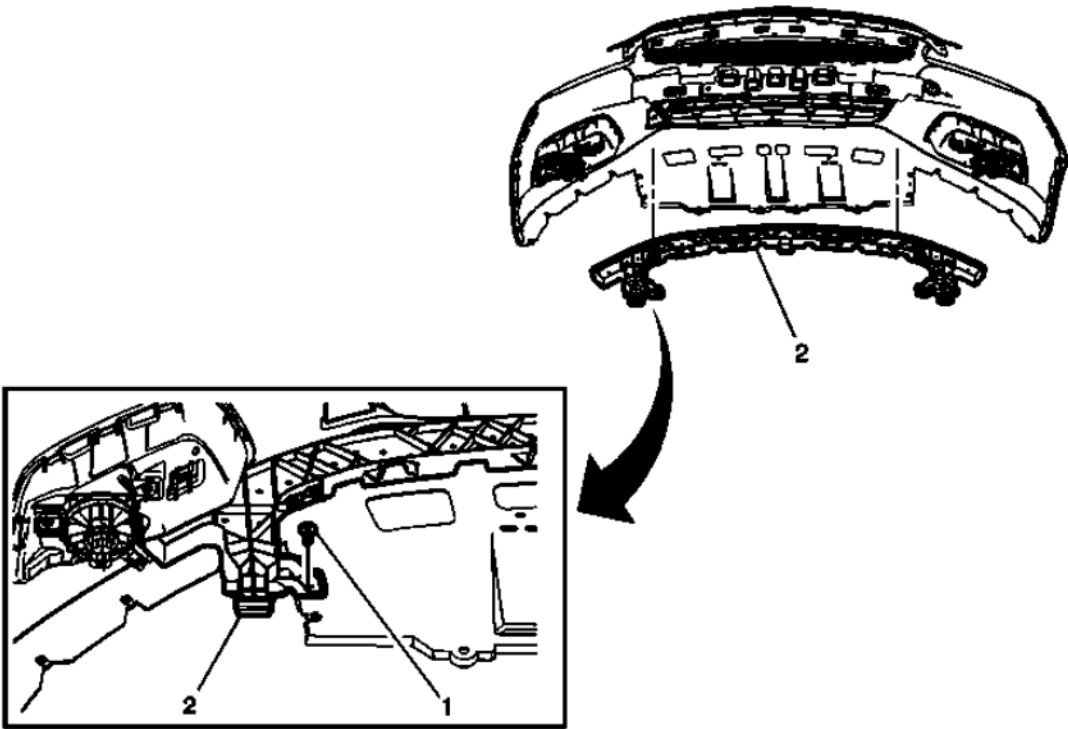


Fig. 5: Front Bumper Lower Impact Bar
 Courtesy of GENERAL MOTORS COMPANY

Front Bumper Lower Impact Bar Replacement

Callout	Component Name
Preliminary Procedure Remove the front bumper fascia air deflector. Refer to <u>Front Bumper Fascia Air Deflector Replacement</u> .	
1	Front Bumper Lower Impact Bar Fastener (Qty: 2) CAUTION: Refer to <u>Fastener Caution</u> . Tighten

	3 (36 lb in)
2	Front Bumper Lower Impact Bar Procedure Reposition the electrical connectors and hoses from the lower impact bar.

FRONT BUMPER LOWER IMPACT BAR BRACKET REPLACEMENT

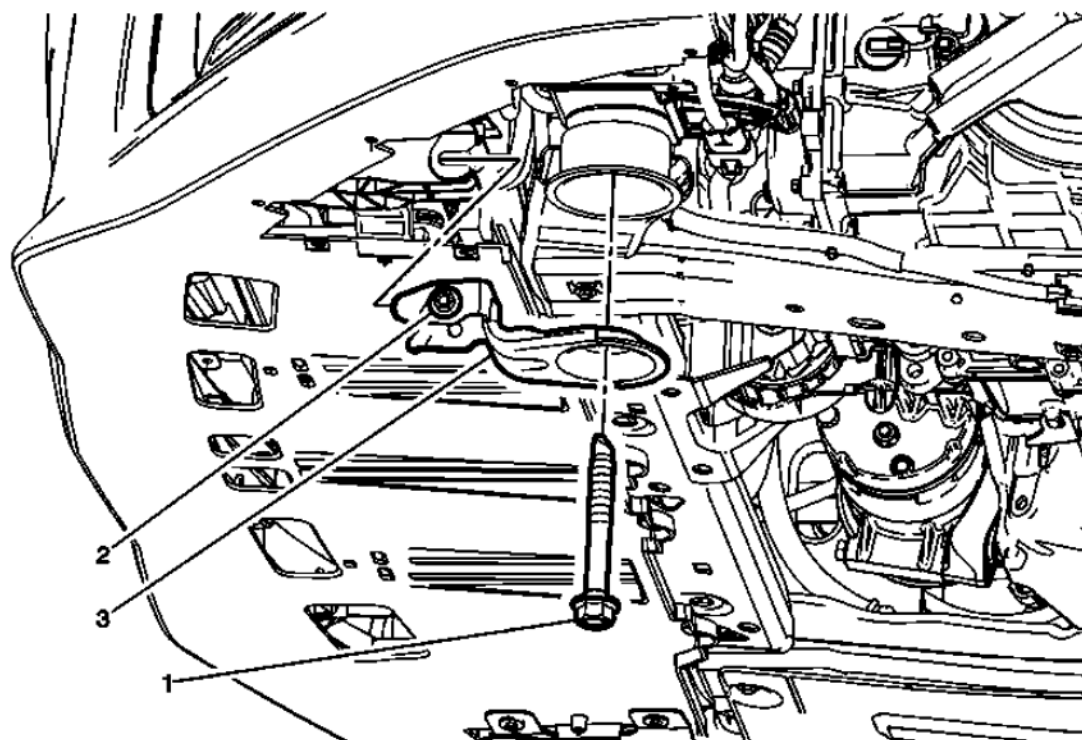


Fig. 6: Front Bumper Lower Impact Bar Bracket & Bolts
Courtesy of GENERAL MOTORS COMPANY

Front Bumper Lower Impact Bar Bracket Replacement

Callout	Component Name
Preliminary Procedures	
1. Remove the front compartment splash shield. Refer to <u>Front Compartment Splash Shield Replacement</u>. 2. Support the front suspension frame front crossmember.	
1	Front Bumper Lower Impact Bracket Bolt CAUTION: Refer to <u>Fastener Caution</u> .

	Tighten 160 N.m (118 lb ft)
2	Front Bumper Lower Impact Bracket Bolt Procedure Loosen the bolt only. Tighten 25 N.m (18 lb ft)
3	Front Bumper Lower Impact Bracket Procedure Rotate the lower impact bar bracket from the back, then down and back.

RADIATOR GRILLE LOWER MOLDING REPLACEMENT

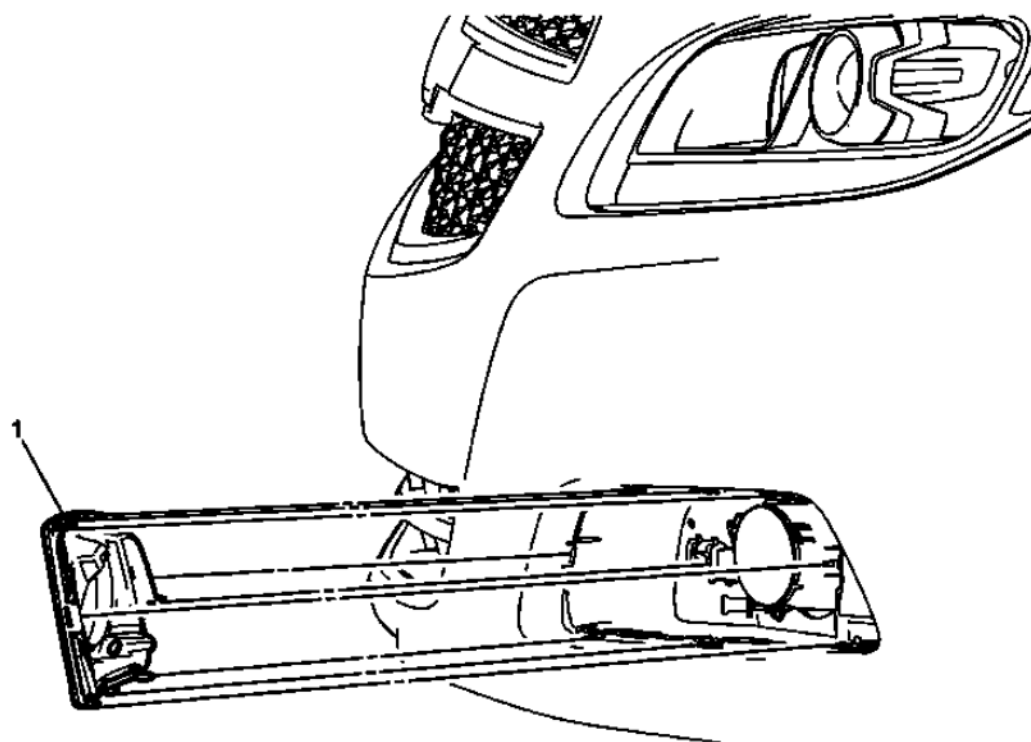


Fig. 7: Radiator Grille Lower Molding
Courtesy of GENERAL MOTORS COMPANY

Radiator Grille Lower Molding Replacement

Callout	Component Name
Preliminary Procedure Remove the front bumper fascia. Refer to Front Bumper Fascia Replacement .	
1	Radiator Grille Lower Molding Procedure Release the tabs securing the radiator grille lower molding to the front bumper fascia.

FRONT BUMPER FASCIA REPLACEMENT

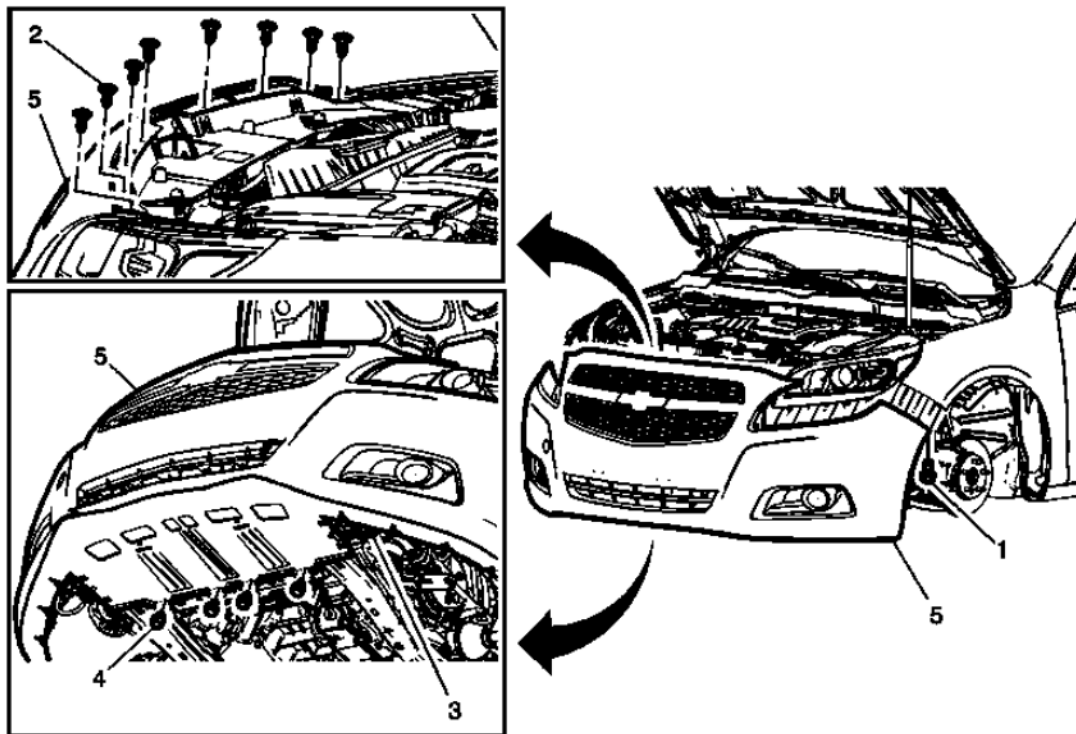


Fig. 8: Front Bumper Fascia
Courtesy of GENERAL MOTORS COMPANY

Front Bumper Fascia Replacement

Callout	Component Name
Preliminary Procedure Remove the front wheelhouse front liner. Refer to Front Wheelhouse Front Liner Replacement (Left Side) , Front Wheelhouse Front Liner Replacement (Right Side) .	
1	Front Bumper Fascia Bolt (Qty: 2) CAUTION: Refer to Fastener Caution . Tighten 3 (26 lb in)
2	Front Bumper Fascia Top Screw (Qty: 8) Tighten 3 (26 lb in)
3	Front Bumper Fascia Lower Impact Bar Rear Bolt (Qty: 2) Procedure Loosen the lower front fascia impact bar rear bolts. Do not remove. Tighten

	25 (18 lb ft)
4	Front Bumper Fascia Push-In Retainer (Qty: 4)
5	Front Bumper Fascia
	Procedure 1. If equipped, remove the 2 bolts that are part of the shutter. These bolts support the shutter and attach to the frame. 2. Carefully push a small nylon wedge between the fascia and the front fascia guide. Insert a small flat-bladed tool into the fascia slot and depress the snaps one at a time and pull on the fascia at the same time to gradually remove the fascia from the front fascia guide. 3. Disconnect any electrical connectors. 4. Disconnect any hoses. 5. Transfer components as necessary.

FRONT BUMPER FASCIA CENTER SUPPORT REPLACEMENT

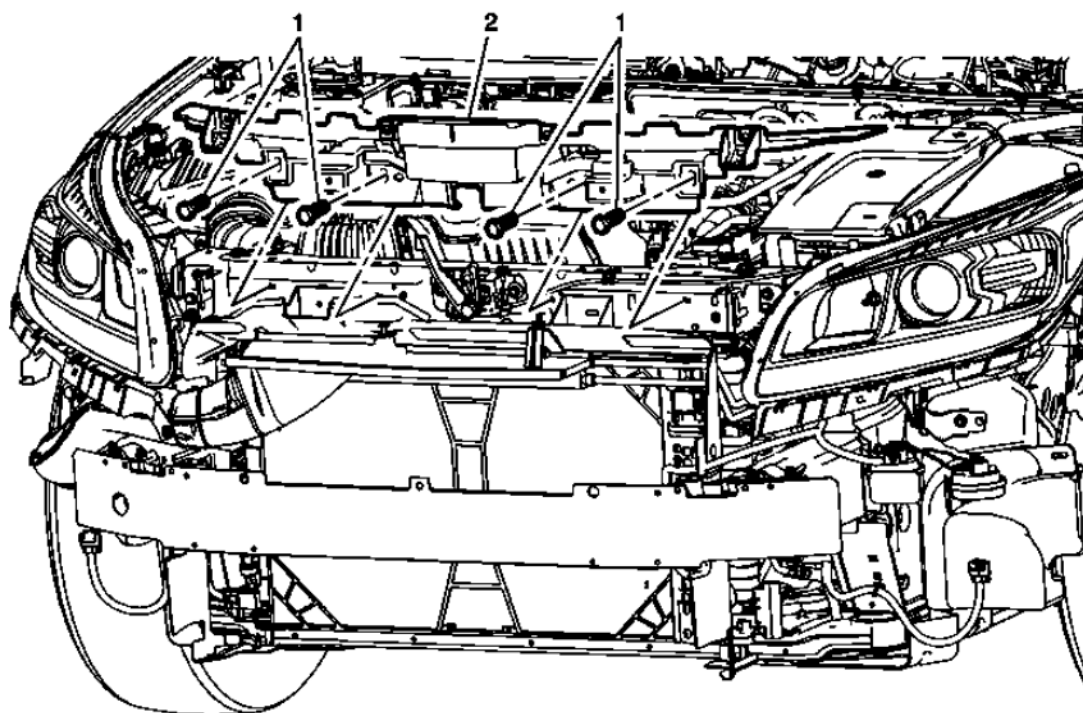


Fig. 9: Front Bumper Fascia Center Support
Courtesy of GENERAL MOTORS COMPANY

Front Bumper Fascia Center Support Replacement

Callout	Component Name
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Preliminary Procedures

1. Remove the front bumper fascia. Refer to **Front Bumper Fascia Replacement**.
2. Remove the radiator air upper baffle and deflector upper 2 retainers. Refer to **Radiator Air Upper Baffle and Deflector Replacement (LUK)** , **Radiator Air Upper Baffle and Deflector Replacement (LCV, LTG)** .

1	Front Bumper Fascia Center Support Bolt (Qty: 4) CAUTION: Refer to Fastener Caution . Tighten 3 N.m (26 lb in)
2	Front Bumper Fascia Center Support

FRONT BUMPER FASCIA OUTER SUPPORT REPLACEMENT

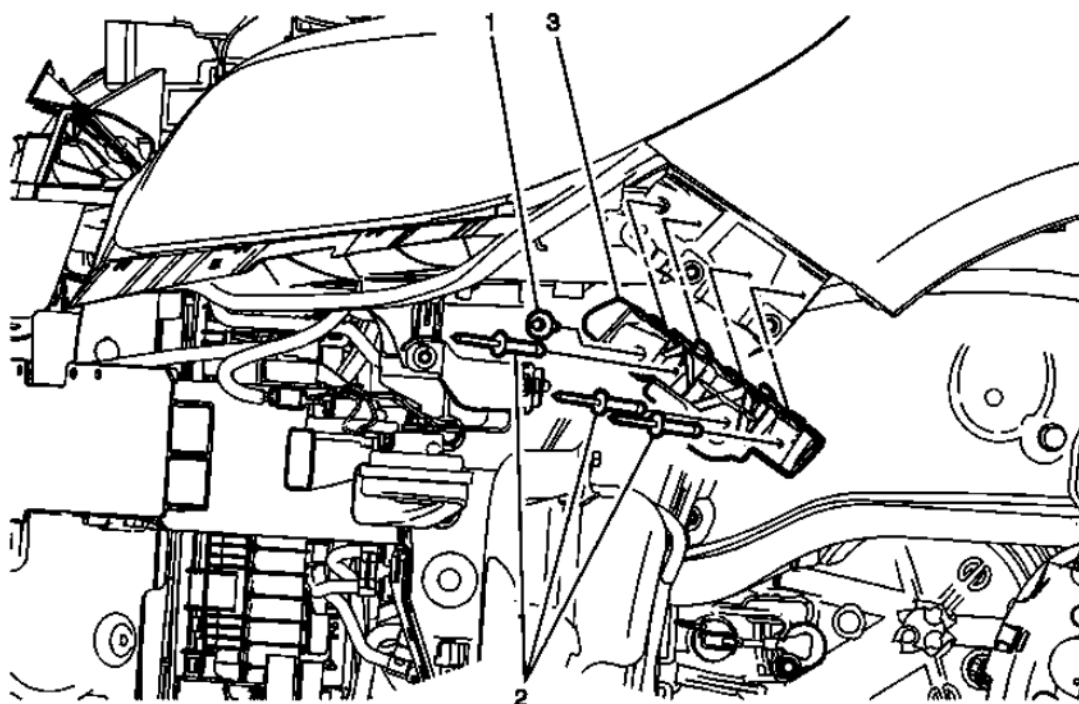


Fig. 10: Front Bumper Fascia Outer Support
 Courtesy of GENERAL MOTORS COMPANY

Front Bumper Fascia Outer Support Replacement

Callout	Component Name
WARNING:	

Refer to Eye Protection Warning .

Preliminary Procedure Remove the front bumper fascia. Refer to Front Bumper Fascia Replacement.

1	Headlamp Bolt CAUTION: Refer to <u>Fastener Caution</u> . Tighten 10 N.m (89 lb in)
2	Front Bumper Outer Support Rivet (Qty: 3) Special Tools BO-594-A Hand Rivet Tongs For equivalent regional tools, refer to <u>Special Tools</u> .
3	Front Bumper Outer Support

FRONT BUMPER FASCIA UPPER SUPPORT REPLACEMENT

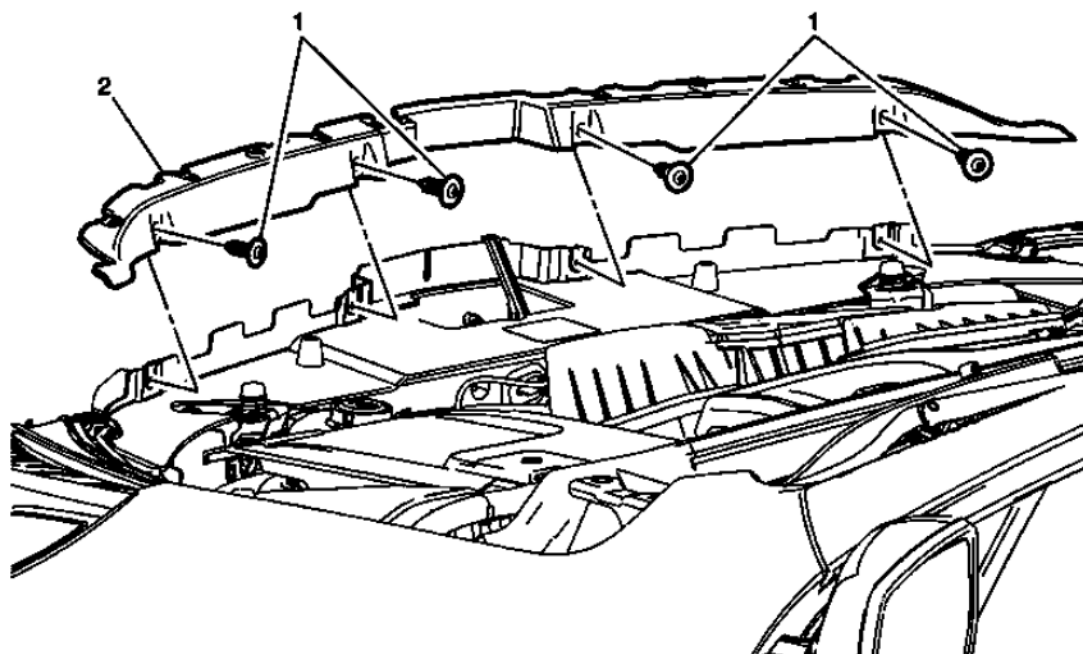


Fig. 11: Front Bumper Fascia Upper Support
Courtesy of GENERAL MOTORS COMPANY

Front Bumper Fascia Upper Support Replacement

Callout	Component Name

Preliminary Procedure

Remove the front bumper fascia. Refer to **Front Bumper Fascia Replacement**.

1	Front Bumper Fascia Upper Support Screw (Qty: 4) CAUTION: Refer to Fastener Caution . Tighten 3 N.m (26 lb in)
2	Front Bumper Fascia Upper Support

FRONT AIR DEFLECTOR REPLACEMENT

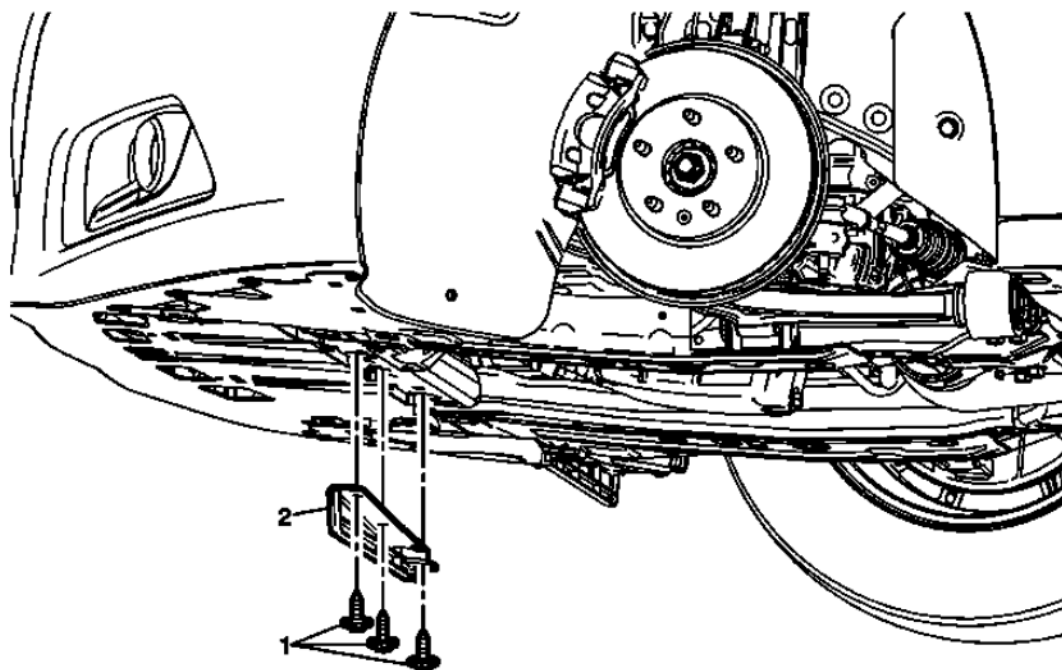


Fig. 12: Front Air Deflector

Courtesy of GENERAL MOTORS COMPANY

Front Air Deflector Replacement

Callout	Component Name
1	Front Air Deflector Bolt (Qty: 3) CAUTION: Refer to Fastener Caution .
2	Front Air Deflector

FRONT BUMPER FASCIA AIR DEFLECTOR REPLACEMENT

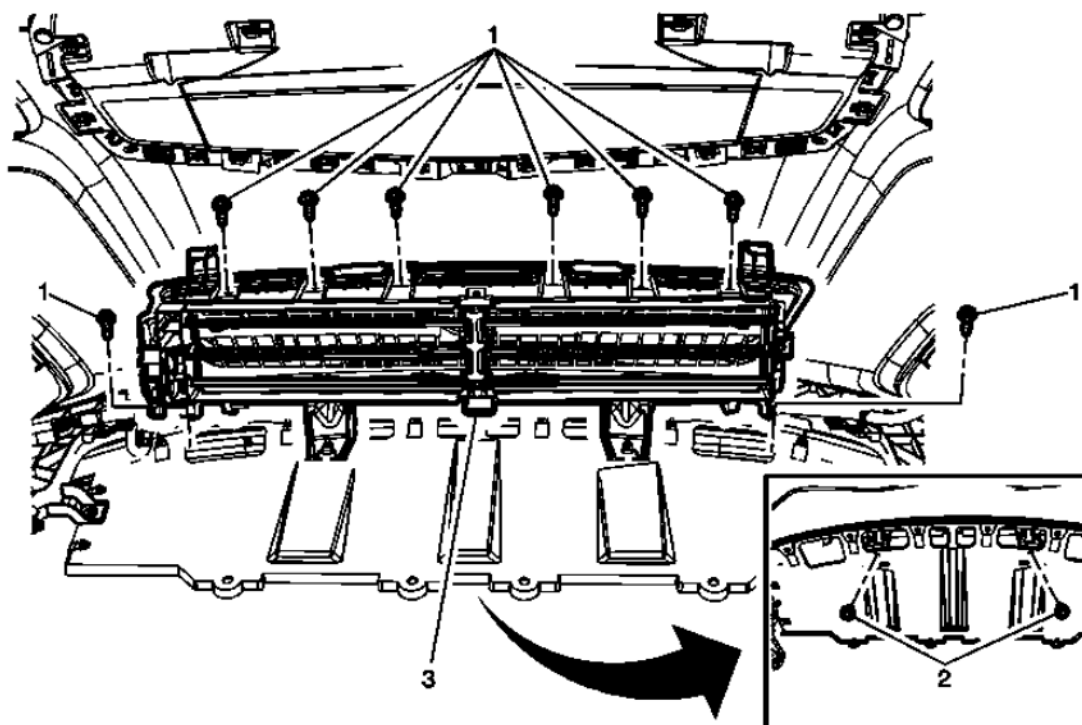


Fig. 13: Front Bumper Fascia Air Deflector
Courtesy of GENERAL MOTORS COMPANY

Front Bumper Fascia Air Deflector Replacement

Callout	Component Name
Preliminary Procedure Remove the front bumper fascia energy upper absorber. Refer to Front Bumper Fascia Energy Upper Absorber Replacement .	
1	Front Bumper Fascia Air Deflector Bolt (Qty: 8) CAUTION: Refer to Fastener Caution . Tighten 2 (18 lb in)
2	Front Bumper Fascia Air Deflector Nut (Qty: 2) Tighten 2 (18 lb in)
3	Front Bumper Fascia Air Deflector Procedure Disconnect the electrical connector from the actuator.

REAR BUMPER FASCIA REPLACEMENT

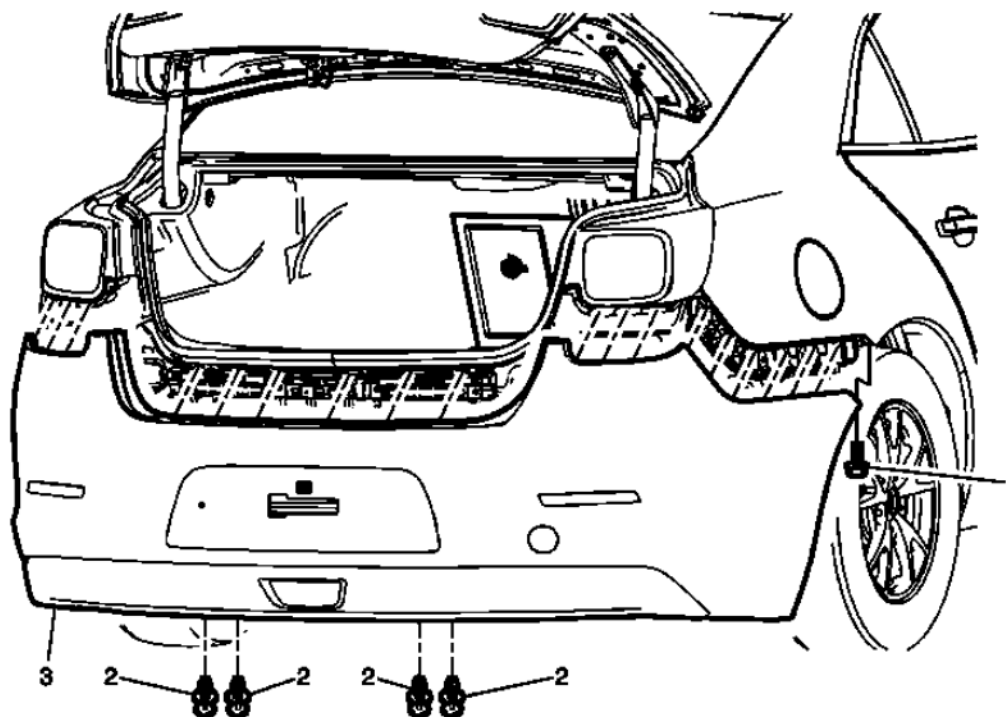


Fig. 14: Rear Bumper Fascia

Courtesy of GENERAL MOTORS COMPANY

Rear Bumper Fascia Replacement

Callout	Component Name
Preliminary Procedure Remove the screws from the rear wheelhouse liners to the rear fascia. Refer to <u>Rear Wheelhouse Liner Replacement</u> .	
1	Rear Bumper Fascia Screw (Qty: 2) CAUTION: Refer to <u>Fastener Caution</u> . Tighten 10 N.m (89 lb in)
2	Rear Bumper Fascia Lower Push-In Retainer (Qty: 4)
3	Rear Bumper Fascia Procedure 1. Carefully push a small nylon wedge between the fascia and the rear fascia guide. Insert a small flat-bladed tool into the fascia slot

and depress the snaps one at a time and pull on the fascia at the same time to gradually remove the fascia from the rear fascia guide.

2. Disconnect the electrical connectors.
3. Transfer parts as needed.

REAR BUMPER UPPER FASCIA REPLACEMENT

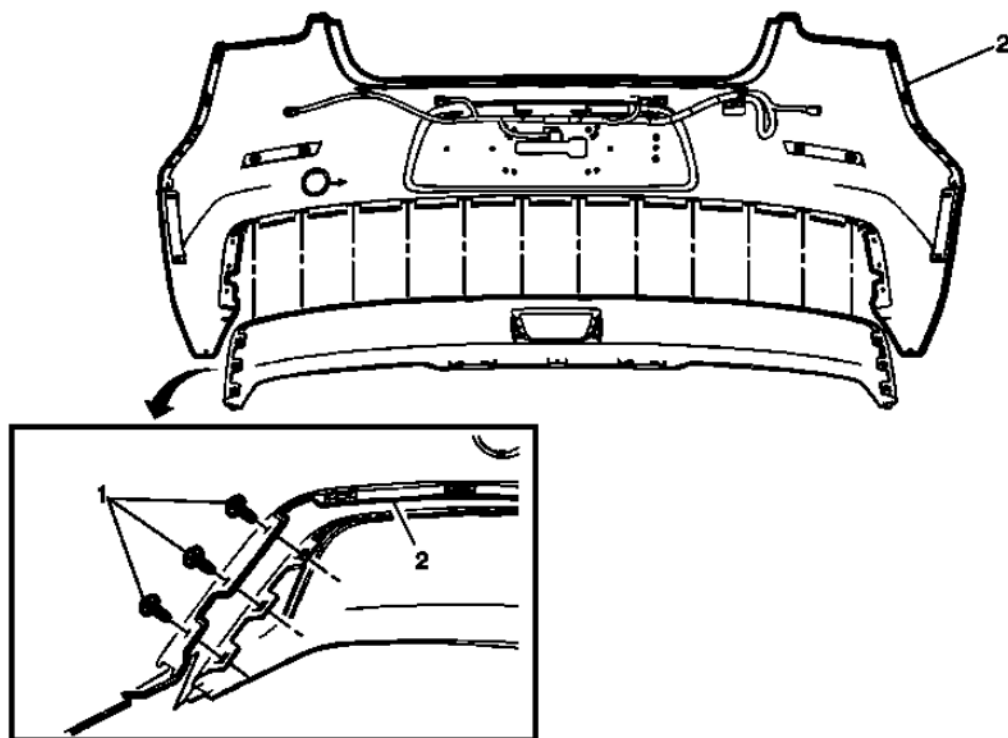


Fig. 15: Rear Bumper Upper Fascia
Courtesy of GENERAL MOTORS COMPANY

Rear Bumper Upper Fascia Replacement

Callout	Component Name
Preliminary Procedure Remove the rear bumper fascia. Refer to Rear Bumper Fascia Replacement .	
1	Rear Bumper Upper Fascia Bolt (Qty: 6) CAUTION: Refer to Fastener Caution . Tighten 6 N.m (53 lb in)
	Rear Bumper Upper Fascia

2	Procedure 1. Carefully push a small nylon wedge between the upper fascia and the lower fascia. Insert a small flat-bladed tool into the fascia slot and depress the snaps one at a time and pull on the fascia at the same time to gradually remove the upper fascia from the lower fascia. 2. Transfer part as necessary.
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REAR BUMPER LOWER FASCIA REPLACEMENT

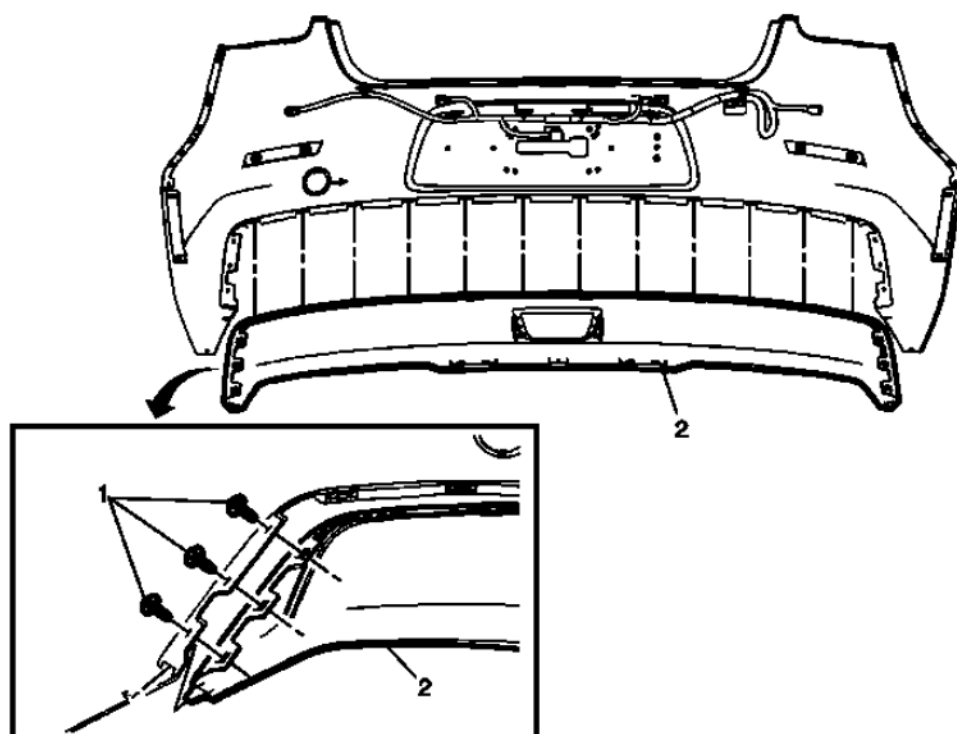


Fig. 16: Rear Bumper Lower Fascia
 Courtesy of GENERAL MOTORS COMPANY

Rear Bumper Lower Fascia Replacement

Callout	Component Name
Preliminary Procedure Remove the rear bumper fascia. Refer to Rear Bumper Fascia Replacement .	
1	Rear Bumper Lower Fascia Bolt (Qty: 6) CAUTION: Refer to Fastener Caution .

	Tighten 6 N.m (53 lb in)
2	Rear Bumper Lower Fascia Procedure 1. Carefully push a small nylon wedge between the lower fascia and the lower fascia. Insert a small flat-bladed tool into the fascia slot and depress the snaps one at a time and pull on the fascia at the same time to gradually remove the lower fascia from the upper fascia. 2. Transfer part as necessary.

REAR BUMPER FASCIA CENTER BRACKET REPLACEMENT

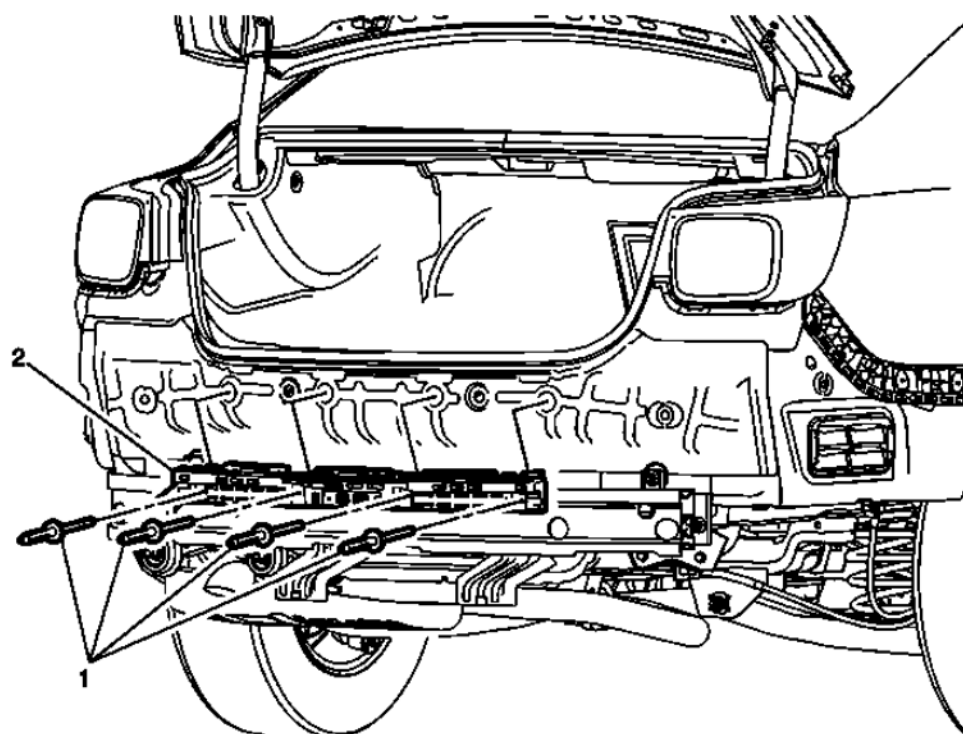


Fig. 17: Rear Bumper Fascia Center Bracket
 Courtesy of GENERAL MOTORS COMPANY

Rear Bumper Fascia Center Bracket Replacement

Callout	Component Name
WARNING: Refer to <u>Eye Protection Warning</u> .	
Preliminary Procedures	

1. Remove the rear bumper fascia. Refer to <u>Rear Bumper Fascia Replacement</u>. 2. Remove the ignition lock key transmitter antenna - rear bumper fascia. Refer to <u>Ignition Lock Key Transmitter Antenna Replacement - Rear Bumper Fascia</u>.	
1	Rear Bumper Fascia Center Bracket Rivet (Qty: 4) Special Tools BO-594-A Hand Rivet Tongs For equivalent regional tools, refer to <u>Special Tools</u> .
2	Rear Bumper Fascia Center Bracket Procedure Reposition the electrical connectors from the rear bumper fascia center bracket.

REAR REAR BUMPER FASCIA CENTER BRACKETBUMPER FASCIA OUTER SUPPORT REPLACEMENT

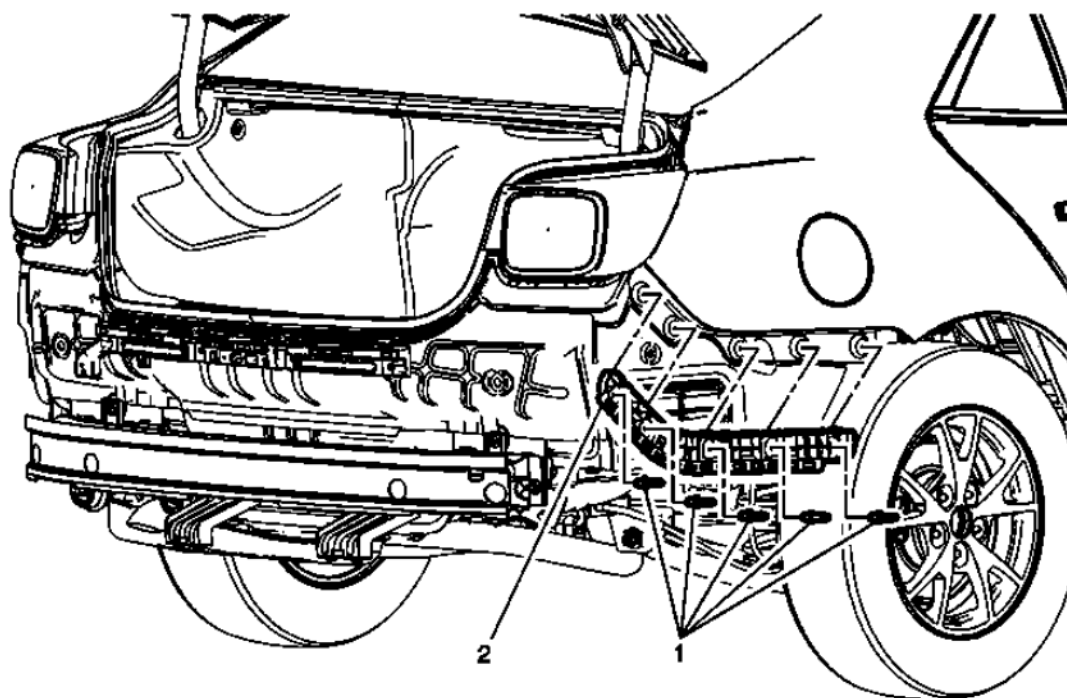


Fig. 18: Rear Bumper Fascia Center Bracket
Courtesy of GENERAL MOTORS COMPANY

Rear Bumper Fascia Outer Support Replacement

Callout	Component Name
WARNING: Refer to <u>Eye Protection Warning</u> .	
Preliminary Procedure Remove the rear bumper fascia. Refer to <u>Rear Bumper Fascia Replacement</u> .	

1	Rear Bumper Fascia Outer Support Rivet (Qty: 5) Special Tools BO-594-A Hand Rivet Tongs For equivalent regional tools, refer to Special Tools .
2	Rear Bumper Fascia Outer Support

REAR BUMPER FASCIA LOWER BRACKET REPLACEMENT

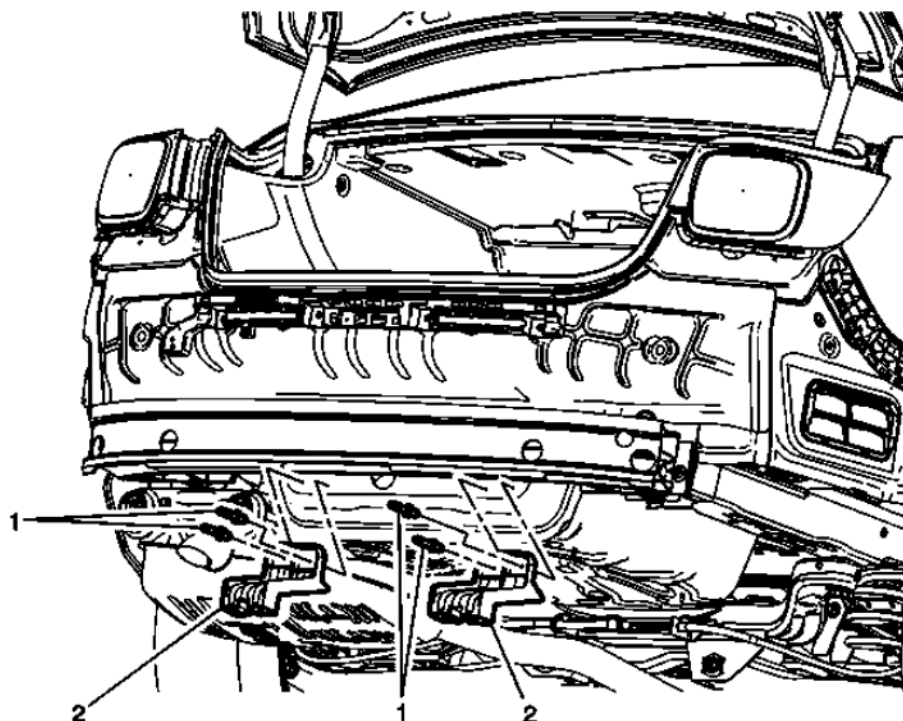


Fig. 19: Rear Bumper Fascia Lower Bracket
Courtesy of GENERAL MOTORS COMPANY

Rear Bumper Fascia Lower Bracket Replacement

Callout	Component Name
Preliminary Procedure Remove the rear bumper fascia. Refer to Rear Bumper Fascia Replacement .	
1	Rear Bumper Fascia Lower Bracket Rivet (Qty: 4) Special Tools BO-594-A Hand Rivet Tongs For equivalent regional tools, refer to Special Tools .
2	Rear Bumper Fascia Lower Bracket

REAR BUMPER IMPACT BAR REPLACEMENT

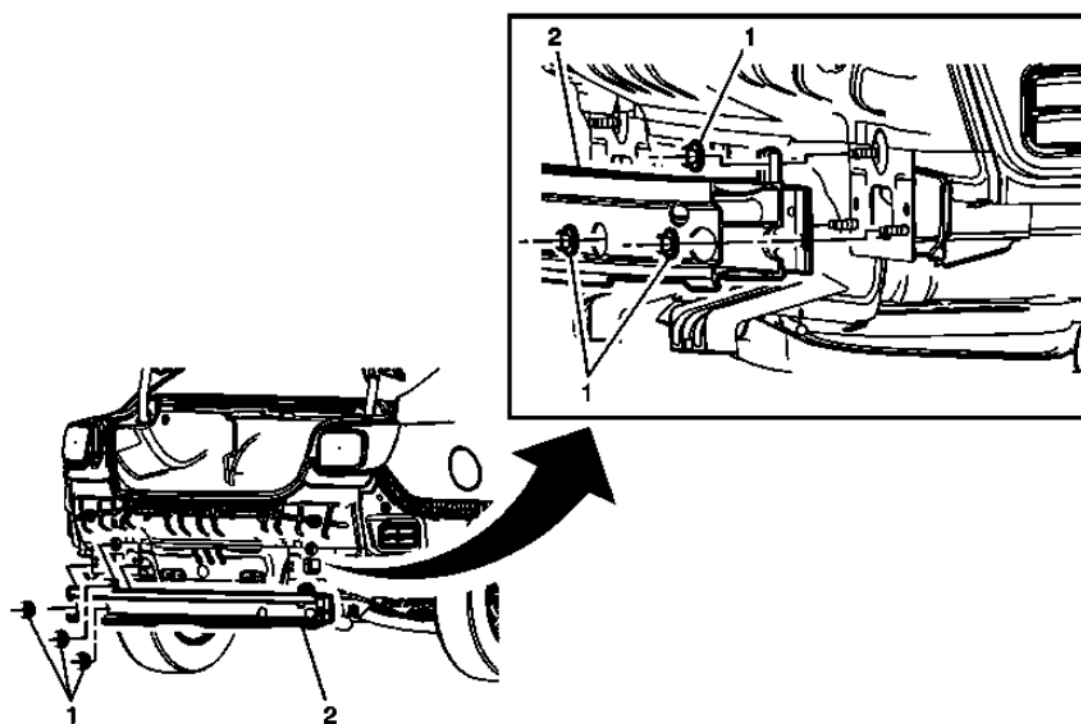


Fig. 20: Rear Bumper Impact Bar
Courtesy of GENERAL MOTORS COMPANY

Rear Bumper Impact Bar Replacement

Callout	Component Name
Preliminary Procedure Remove the rear bumper fascia. Refer to Rear Bumper Fascia Replacement .	
1	Rear Bumper Impact Bar Nut (Qty: 6) CAUTION: Refer to Fastener Caution . Tighten 40 N.m (30 lb ft)
2	Rear Bumper Impact Bar Procedure Transfer any parts as needed.

REAR BUMPER FASCIA REFLECTOR REPLACEMENT

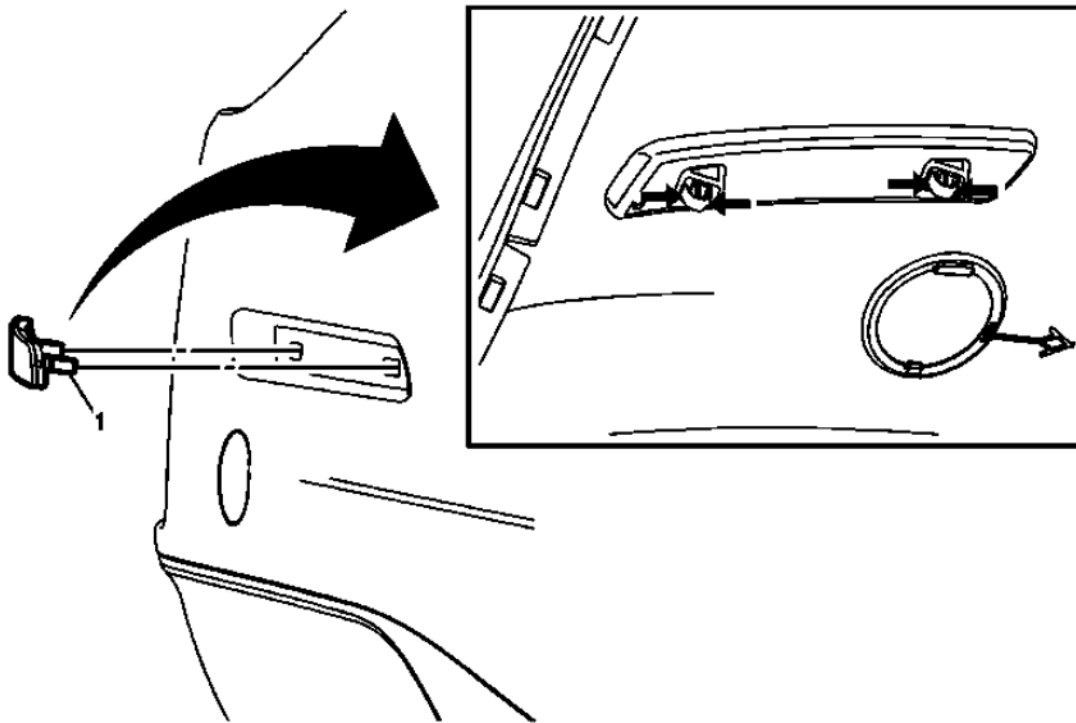


Fig. 21: Rear Bumper Fascia Reflector
Courtesy of GENERAL MOTORS COMPANY

Rear Bumper Fascia Reflector Replacement

Callout	Component Name
Preliminary Procedure	
Raise and support the vehicle. Refer to <u>Lifting and Jacking the Vehicle</u>	
1	Rear Bumper Fascia Reflector Retainer Procedure Compress the retainer tabs and press out from the rear bumper fascia. NOTE: Access the retaining tabs from underneath the vehicle.

DESCRIPTION AND OPERATION

ACTIVE GRILLE AIR SHUTTER DESCRIPTION AND OPERATION

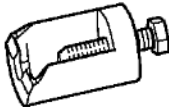
The active grille air shutter actuator closes louvers at the front bumper to enhance vehicle aerodynamics in driving situations where cooling and A/C loads are relatively low and high levels of front end airflow are not required. If high levels of airflow are required the active grille air shutter actuator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

SPECIAL TOOLS AND EQUIPMENT

SPECIAL TOOLS

Illustration	Tool Number/ Description
	BO-594-A Hand Rivet Tongs