

2017 ACCESSORIES & EQUIPMENT

Bumpers and Fascias - Impala

SPECIFICATIONS

FASTENER SPECIFICATIONS

Reusable Threaded Fastener Tightening Specifications

NOTE: <i>All fasteners listed in this table can be reused after removal.</i>	
Application	Specification
	Metric (English)
Front Bumper Fascia Air Deflector Bolt - Center	3 N.m (27 lb in)
Front Bumper Fascia Air Deflector Bolt - Left	3 N.m (27 lb in)
Front Bumper Fascia Air Deflector Bolt - Right	3 N.m (27 lb in)
Front Bumper Fascia Bracket Bolt	2.5 N.m (22 lb in)
Front Bumper Fascia Center Support Bolt	9 N.m (80 lb in)
Front Bumper Fascia Lower Bolt	2.5 N.m (22 lb in)
Front Bumper Fascia Outer Bracket Bolt	9 N.m (80 lb in)
Front Bumper Fascia Shutter-Air Deflector Bolt	2.5 N.m (22 lb in)
Front Bumper Fascia Upper Bolt	2.5 N.m (22 lb in)
Front Bumper Fascia Upper Screw	2.5 N.m (22 lb in)
Front Bumper Impact Bar Bolt	22 N.m (16 lb ft)
Front Bumper Lower Impact Bar Fastener	3 N.m (27 lb in)
Headlamp Mounting Bolt	2.5 N.m (22 lb in)
Rear Bumper Fascia Bolt	9 N.m (80 lb in)
Rear Bumper Fascia Outer Bracket Bolt	9 N.m (80 lb in)
Rear Bumper Impact Bar Nut	40 N.m (30 lb ft)

SCHEMATIC WIRING DIAGRAMS

ACTIVE GRILLE AIR SHUTTER WIRING SCHEMATICS

Active Grille Air Shutter (VRI)

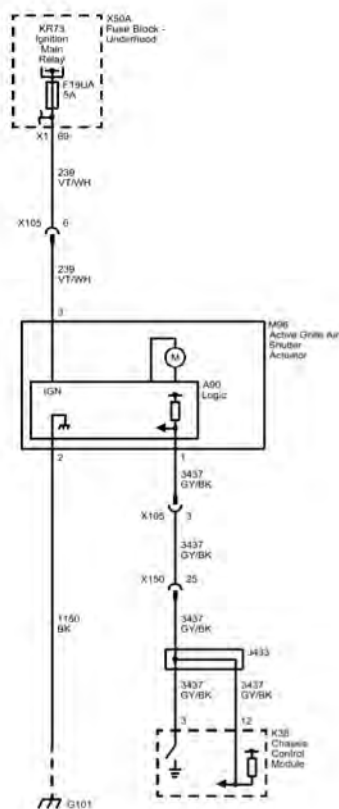


Fig. 1: Active Grille Air Shutter (VRI)

Courtesy of GENERAL MOTORS COMPANY

DIAGNOSTIC INFORMATION AND PROCEDURES

DTC P059F OR P151E: ACTIVE GRILLE AIR SHUTTER 1 PERFORMANCE

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 P059F

Active Grille Air Shutter 1 Performance

DTC P151E

Active Grille Air Shutter Actuator 1 Signal Message Counter Incorrect

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Ignition	P059F, P151E	P059F, P151E	- -	- -
Control - Terminal 3	P059F, P151E	P059F, P151E	P059F, P151E	P059F, P151E
Control - Terminal 12	P059F, P151E	P059F, P151E	P059F, P151E	P059F, P151E
Ground	-	P059F, P151E	-	- -

Circuit/System Description

The active grille air shutter actuator closes louvers in the front grille 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 chassis 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 chassis control module commands the active grille air shutter actuator to open the louvers.

Conditions for Running the DTC

- The engine is running.
- The ignition voltage is greater than 10 V.
- The DTC runs continuously when the above conditions are met.

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 louvers. 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 louvers 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 P151E will set if there is no communication on the bi-directional control circuit.

Action Taken When the DTC Sets

DTC P059F and P151E are Type B DTCs.

Conditions for Clearing the DTC

DTC P059F and P151E are Type B DTCs.

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 U0109 is not set.
 - **If DTC U0109 is set**

Refer to [Diagnostic Trouble Code \(DTC\) List - Vehicle](#) for further diagnosis.

- **If DTC U0109 is not set**

3. Verify the active grille air shutter actuator opens and closes the louvers in the front grille when performing the Active Grille Air Shutter System test with a scan tool.

- **If the louvers in the front grille do not open and close and the test result is fail**

Refer to Circuit/System Testing.

- **If the louvers in the front grille 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 grille 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 vehicles systems OFF, disconnect the harness connector at the M60A Active Grille Air Shutter 1 Motor Module. It may take up to 2 minutes for all vehicle systems to power down.

2. Test for less than 10 Ω between the ground circuit terminal 2 and ground.

- **If 10 Ω or greater**

1. Ignition OFF.

2. Test for less than 2 Ω in the ground circuit end to end.

- If 2 Ω or greater, repair the open/high resistance in the circuit.
- If less than 2 Ω , repair the open/high resistance in the ground connection.

- **If less than 10 Ω**

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 Ω in the ignition circuit end to end.

- If 2 Ω or greater, repair the open/high resistance in the circuit.
- If less than 2 Ω , verify the fuse is not open and there is voltage at the fuse. Refer to **Power Mode Mismatch**.

- **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 M60A Active Grille Air Shutter 1 Motor Module.

- **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 turns On and Off when performing the Active Grille Air Shutter System test with a scan tool.

- **If the test lamp is always Off**

1. Ignition OFF, disconnect the harness connector at the K38 Chassis 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 Ω in the control circuit end to end.
 - If 2 Ω or greater, repair the open/high resistance in the circuit.
 - If less than 2 Ω , replace the K38 Chassis Control Module.
- **If the test lamp is always On**
 1. Ignition OFF, disconnect the harness connector at the K38 Chassis 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 K38 Chassis Control Module.
- **If the test lamp turns On and Off**
 7. Ignition OFF, connector the harness connector at the M60A Active Grille Air Shutter 1 Motor Module. Disconnect the harness connector at the K38 Chassis 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 M60A Active Grille Air Shutter 1 Motor Module.
 2. Test for less than 2 Ω in the control circuit end to end.
 - If 2 Ω or greater, repair the open/high resistance in the circuit.
 - If less than 2 Ω , replace the M60A Active Grille Air Shutter 1 Motor Module.
 - **If greater than 11 V**
 9. Test or replace the M60A Active Grille Air Shutter 1 Motor Module.
 10. Verify DTC P151E is not set.
 - **If the DTC is set**

Replace the K38 Chassis Control Module.
 - **If the DTC is not set**
 11. All OK

Repair Instructions

Perform the [Diagnostic Repair Verification](#) after completing the repair.

[Control Module References](#) for chassis control module replacement, programming and setup.

SYMPTOMS - ACTIVE GRILLE AIR SHUTTER

NOTE: The following steps must be completed before using the symptom tables:

1. Perform the [Diagnostic System Check - Vehicle](#) before using the Symptom Tables in order to verify that all of the following are true:
 - There are no DTCs set.
 - The control modules can communicate via the serial data link.
2. Review the system operation in order to familiarize yourself with the system functions. Refer to [Active Grille Air Shutter Description and Operation](#).

Visual/Physical Inspection

- Inspect for aftermarket devices which may affect the operation of the system. Refer to [Checking Aftermarket Accessories](#).
- Inspect the easily accessible or visible system components for obvious damage or conditions which may cause the symptom.

Intermittent

Faulty electrical connections or wiring may be the cause of intermittent conditions. Refer to [Testing for Intermittent Conditions and Poor Connections](#).

Active Grille Air Shutter 1 Malfunction**ACTIVE GRILLE AIR SHUTTER 1 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 P059F**

Active Grille Air Shutter 1 Performance

DTC P151E

Active Grille Air Shutter Actuator 1 Signal Message Counter Incorrect

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Ignition	P059F, P151E	P059F, P151E	- -	- -
Control - Terminal 3	P059F, P151E	P059F, P151E	P059F, P151E	P059F, P151E
Control - Terminal 12	P059F, P151E	P059F, P151E	P059F, P151E	P059F, P151E
Ground	-	P059F, P151E	-	- -

Circuit/System Description

The active grille air shutter actuator closes louvers in the front grille 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 chassis 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 chassis control module commands the active grille air shutter actuator to open the louvers.

Conditions for Running the DTC

- The engine is running.
- The ignition voltage is greater than 10 V.
- The DTC runs continuously when the above conditions are met.

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 louvers. 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 louvers 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 P151E will set if there is no communication on the bi-directional control circuit.

Action Taken When the DTC Sets

DTC P059F and P151E are Type B DTCs.

Conditions for Clearing the DTC

DTC P059F and P151E are Type B DTCs.

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- [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 U0109 is not set.
 - **If DTC U0109 is set**

Refer to [Diagnostic Trouble Code \(DTC\) List - Vehicle](#) for further diagnosis.
 - **If DTC U0109 is not set**
3. Verify the active grille air shutter actuator opens and closes the louvers in the front grille when performing the Active Grille Air Shutter System test with a scan tool.
 - **If the louvers in the front grille do not open and close and the test result is fail**

Refer to Circuit/System Testing.
 - **If the louvers in the front grille 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 grille 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 vehicles systems OFF, disconnect the harness connector at the M60A Active Grille Air Shutter 1 Motor Module. It may take up to 2 minutes for all vehicle systems to power down.
2. Test for less than 10 Ω between the ground circuit terminal 2 and ground.
 - **If 10 Ω or greater**
 1. Ignition OFF.
 2. Test for less than 2 Ω in the ground circuit end to end.

- If 2 Ω or greater, repair the open/high resistance in the circuit.
 - If less than 2 Ω , repair the open/high resistance in the ground connection.
 - **If less than 10 Ω**
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 Ω in the ignition circuit end to end.
 - If 2 Ω or greater, repair the open/high resistance in the circuit.
 - If less than 2 Ω , verify the fuse is not open and there is voltage at the fuse. Refer to [Power Mode Mismatch](#).
 - **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 M60A Active Grille Air Shutter 1 Motor Module.
 - **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 turns On and Off when performing the Active Grille Air Shutter System test with a scan tool.
 - **If the test lamp is always Off**
 1. Ignition OFF, disconnect the harness connector at the K38 Chassis 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 Ω in the control circuit end to end.
 - If 2 Ω or greater, repair the open/high resistance in the circuit.
 - If less than 2 Ω , replace the K38 Chassis Control Module.
 - **If the test lamp is always On**
 1. Ignition OFF, disconnect the harness connector at the K38 Chassis 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 K38 Chassis Control Module.
 - **If the test lamp turns On and Off**
 7. Ignition OFF, connector the harness connector at the M60A Active Grille Air Shutter 1 Motor Module. Disconnect the harness connector at the K38 Chassis 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 M60A Active Grille Air Shutter 1 Motor Module.
 2. Test for less than 2 Ω in the control circuit end to end.
 - If 2 Ω or greater, repair the open/high resistance in the circuit.
 - If less than 2 Ω , replace the M60A Active Grille Air Shutter 1 Motor Module.
 - **If greater than 11 V**
 9. Test or replace the M60A Active Grille Air Shutter 1 Motor Module.
 10. Verify DTC P151E is not set.
 - **If the DTC is set**

Replace the K38 Chassis Control Module.

- If the DTC is not set

11. All OK

Repair Instructions

Perform the [Diagnostic Repair Verification](#) after completing the repair.

[Control Module References](#) for chassis control module replacement, programming and setup.

REPAIR INSTRUCTIONS

FRONT BUMPER FASCIA ENERGY ABSORBER REPLACEMENT

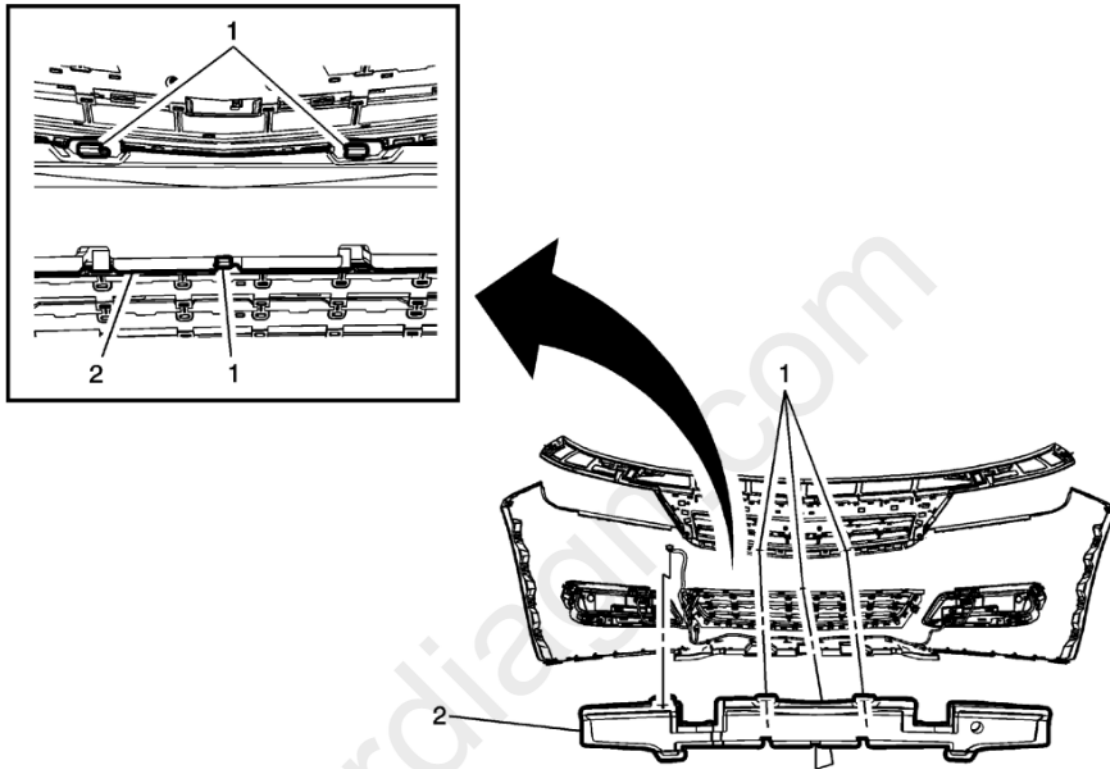


Fig. 2: Front Bumper Fascia Energy Absorber

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Remove the front bumper fascia. Refer to Front Bumper Fascia Replacement .	
1	Front Bumper Energy Upper Absorber Retainers. NOTE: The two upper retainers are part of the front bumper reinforcement, and the lower retainer is part of the lower grille.
2	Front Bumper Energy Upper Absorber Procedure Reposition the electrical harness from the absorber.

FRONT BUMPER IMPACT BAR REPLACEMENT

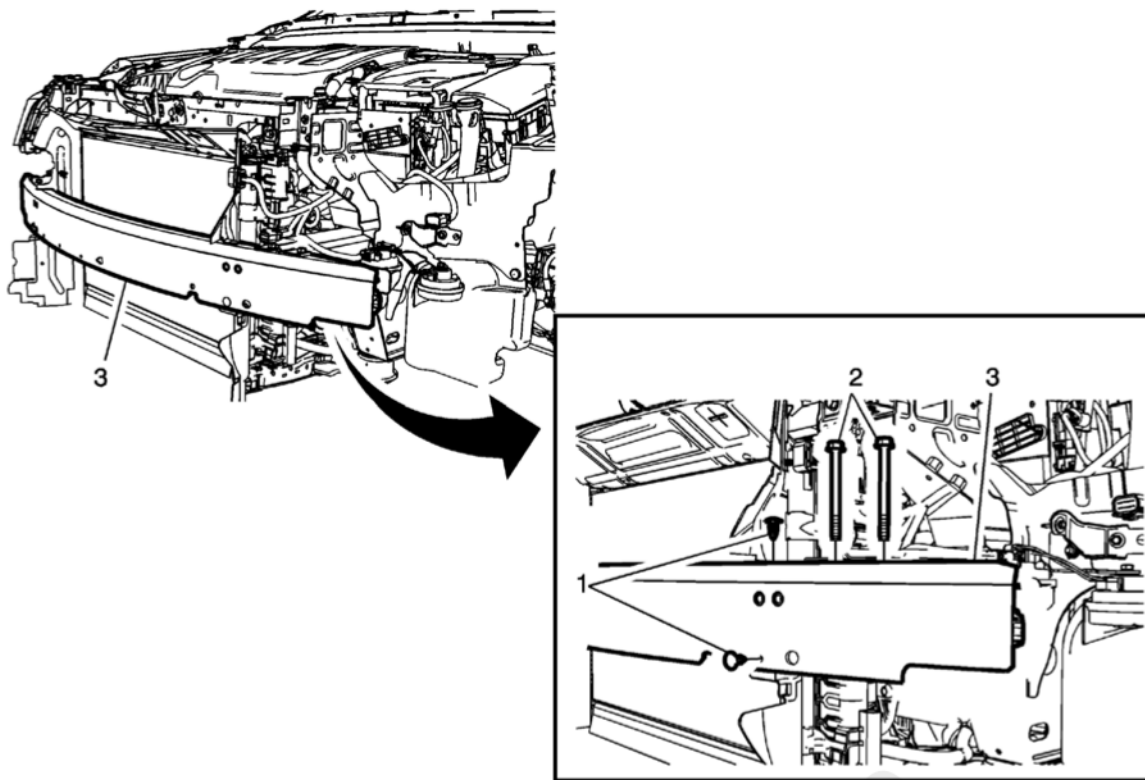


Fig. 3: Front Bumper Impact Bar & Mounting Components

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedures 1. Remove the front bumper fascia. Refer to Front Bumper Fascia Replacement. 2. Remove both headlamps. Refer to Headlamp Replacement. 3. Remove the left hand and right hand side front bumper fascia reinforcement. Refer to Front Bumper Fascia Reinforcement Replacement - Left Side, Front Bumper Fascia Reinforcement Replacement - Right Side 4. Remove the air cleaner inlet duct, if equipped. Refer to Air Cleaner Inlet Duct Replacement	
1	Push-In Retainer (Qty: 4) Procedure Remove the required push-in retainers from the radiator air side baffle and air deflector.
2	Front Bumper Impact Bar Bolt (Qty: 4) CAUTION: Refer to Fastener Caution . Procedure Counterhold the front bumper impact bar nuts. Tighten 22 N.m (16 lb ft)
3	Front Bumper Impact Bar

FRONT BUMPER FASCIA REPLACEMENT

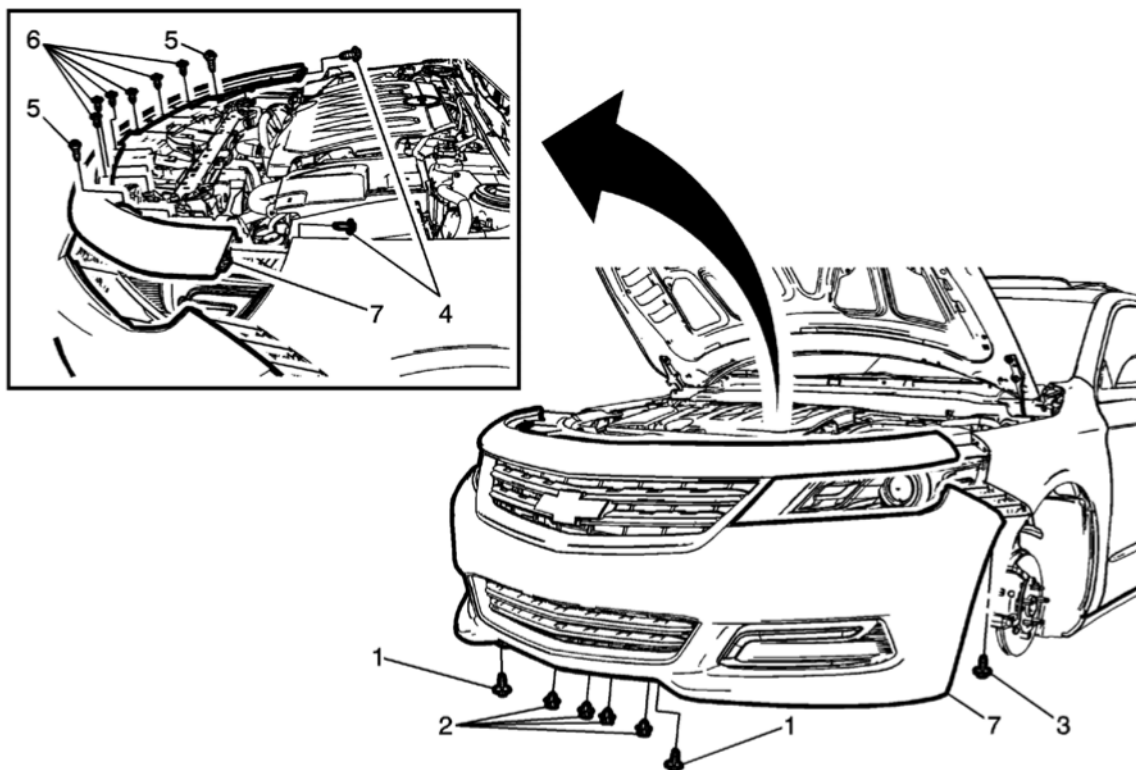


Fig. 4: Front Bumper Fascia & Mounting Components
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedures 1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle 2. Remove the front compartment front sight shield. Refer to Front Compartment Front Sight Shield Replacement .	
1	Front Bumper Fascia Lower Bolt (Qty 2) CAUTION: Refer to Fastener Caution .
2	Front Bumper Fascia Lower Push-In Retainer (Qty: 4)
3	Front Bumper Fascia Bolt (Qty: 2)
4	Front Bumper Fascia to Fender Outer Bolts (Qty: 2) NOTE: These bolts are accessed through the wheelhouse opening
5	Front Bumper Fascia Upper Bolts (Qty: 2)
6	Front Bumper Fascia Upper Screws (Qty 6)

Callout	Component Name
7	Front Bumper Fascia Procedure 1. Turn wheel inboard. 2. Remove the four screw from the wheelhouse panel to front fascia. 3. Reposition the wheelhouse liner down and away from the fascia bracket. 4. Remove the front fascia to fender bolt (3). 5. 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. 6. Disconnect any electrical connectors. 7. Transfer components as necessary.

FRONT BUMPER FASCIA CENTER SUPPORT REPLACEMENT

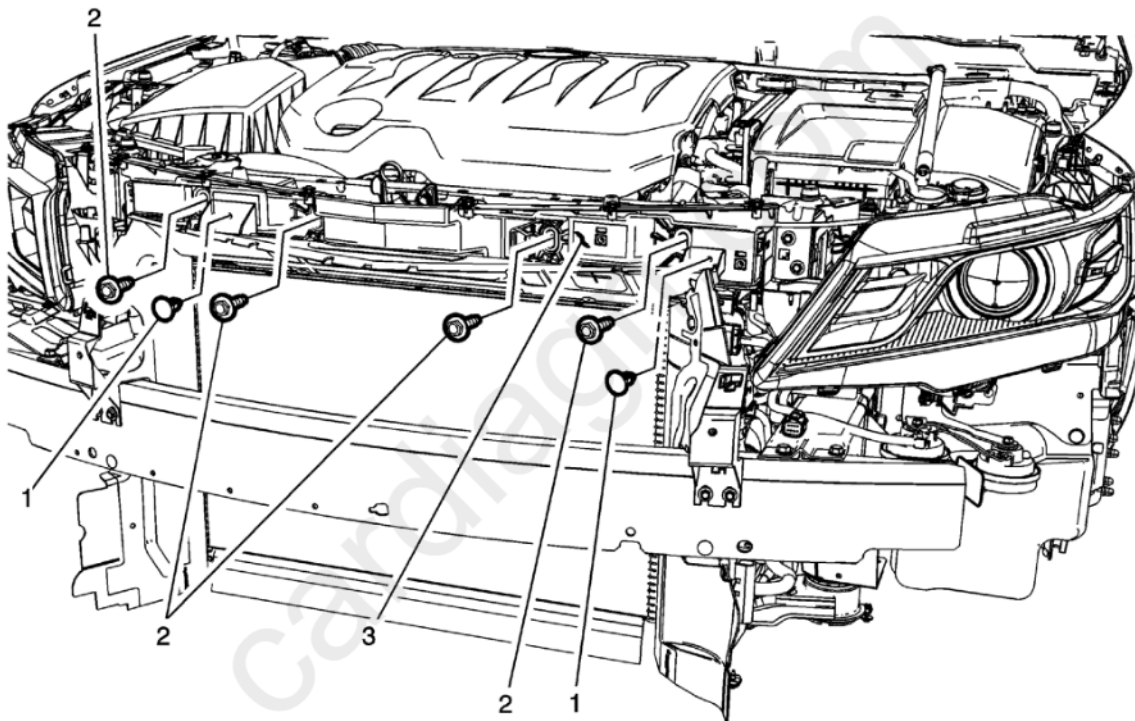


Fig. 5: Front Bumper Fascia Center Support & Mounting Components
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Remove the front bumper fascia. Refer to Front Bumper Fascia Replacement.	
1	Air Baffle Push-In Retainer (Qty: 2)
2	Front Bumper Fascia Center Support Bolt (Qty: 4) CAUTION: Refer to Fastener Caution . Tighten 9 N.m (80 lb in)
3	Front Bumper Fascia Center Support - Upper

FRONT BUMPER LOWER SHUTTER REPLACEMENT

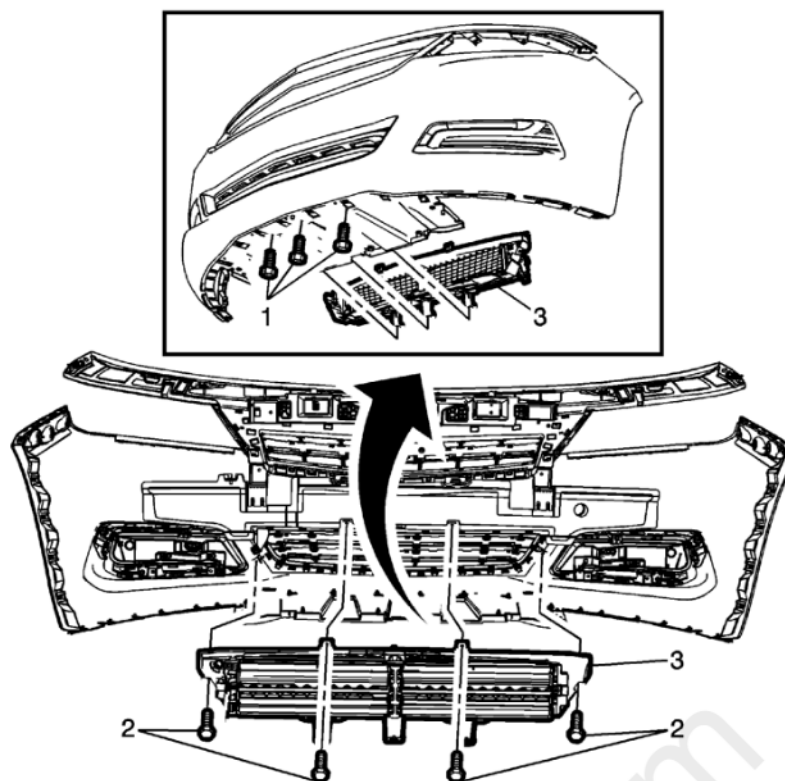


Fig. 6: Front Bumper Lower Shutter & Mounting Components

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedures	
Remove the front bumper fascia. Refer to Front Bumper Fascia Replacement .	
1	Front Bumper Lower Shutter Lower Bolts (Qty: 3) CAUTION: Refer to Fastener Caution .
2	Front Bumper Shutter Bolts (Qty: 4)
3	Front Bumper Lower Shutter

FRONT BUMPER FASCIA BRACKET REPLACEMENT

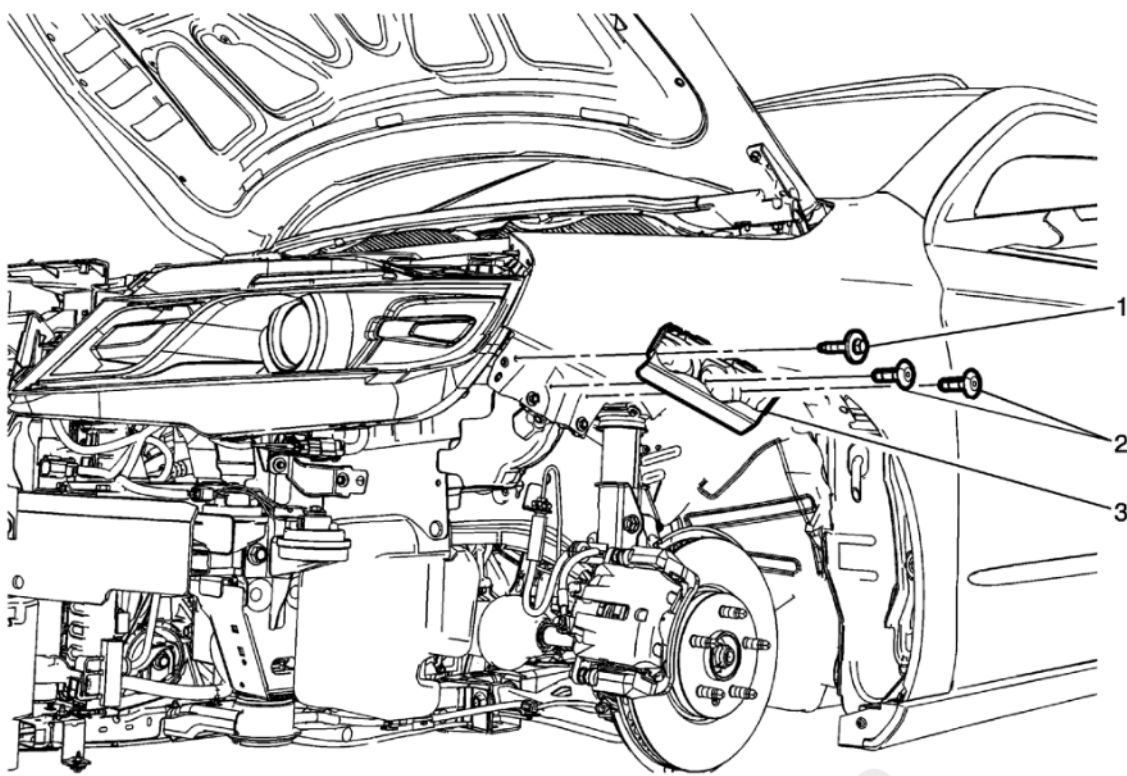


Fig. 7: Front Bumper Fascia Bracket & Mounting Components

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
WARNING: Refer to Eye Protection Warning .	
Preliminary Procedure Remove the front bumper fascia. Refer to Front Bumper Fascia Replacement .	
1	Headlamp Mounting Bolt CAUTION: Refer to Fastener Caution . Tighten 2.5 N.m (22 lb in)
2	Front Bumper Fascia Bracket Rivet (Qty: 2)
3	Front Bumper Fascia Bracket

FRONT BUMPER FASCIA OUTER SUPPORT BRACKET REPLACEMENT (LKW)

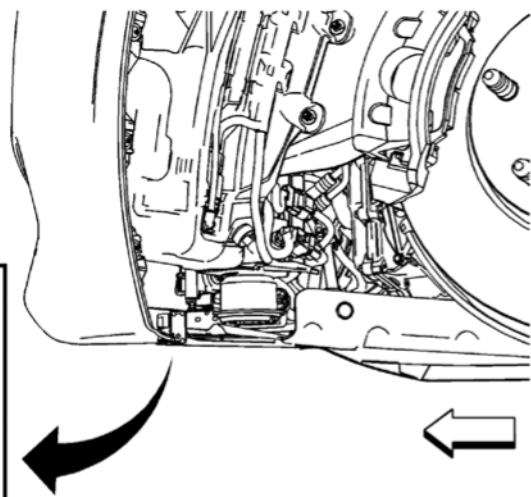
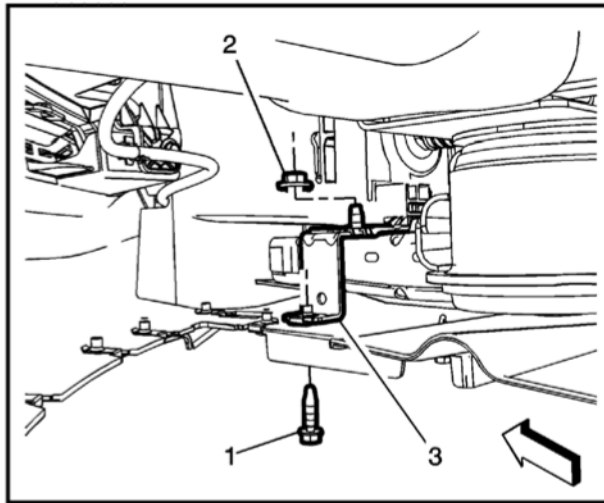


Fig. 8: Front Bumper Lower Impact Bar Bracket
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure It is only necessary to reposition the right or left front wheelhouse liner. Only do those steps in the front wheelhouse liner replacement that will remove the wheelhouse liner enough to gain access to the bracket. Refer to Front Wheelhouse Liner Replacement .	
1	Front Bumper Fascia Outer Support Bracket Bolt CAUTION: Refer to Fastener Caution .
2	Front Bumper Fascia Outer Support Bracket Nut
3	Front Bumper Fascia Outer Support Bracket

FRONT BUMPER FASCIA OUTER SUPPORT BRACKET REPLACEMENT (LFX)

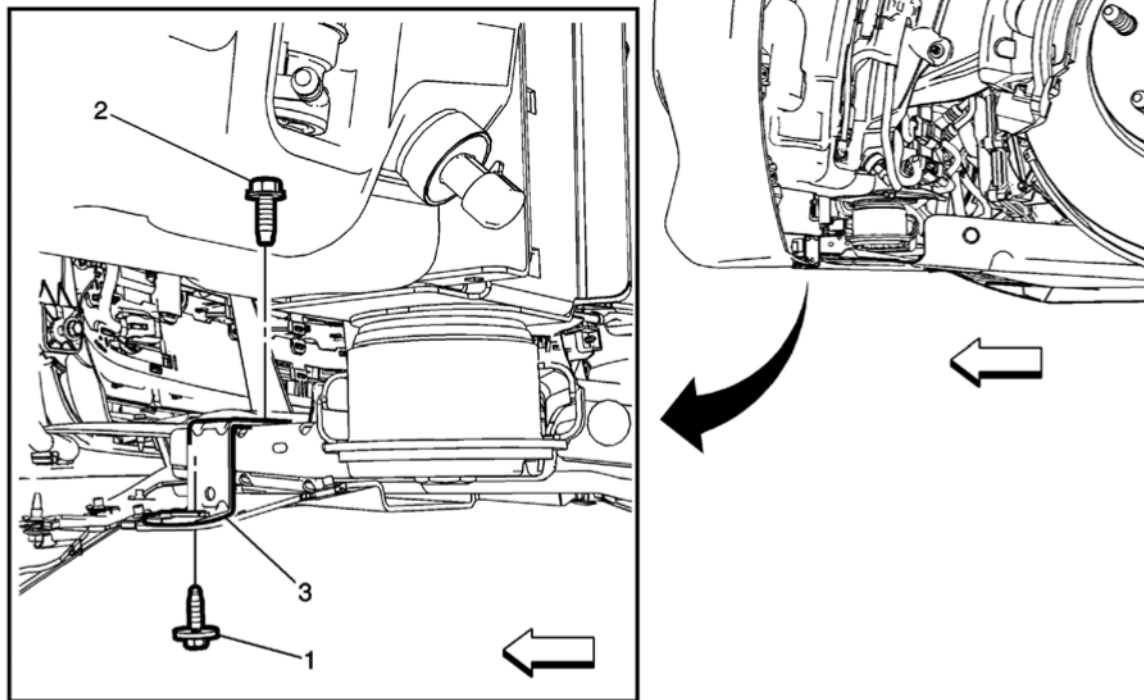


Fig. 9: Front Bumper Fascia Outer Support Bracket
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Reposition either the right front or left front wheelhouse liner enough to gain access to the bracket. Refer to Front Wheelhouse Liner Replacement .	
1	Front Bumper Fascia Bracket Bolt CAUTION: Refer to Fastener Caution .
2	Front Bumper Fascia Outer Support Bracket Bolt
3	Front Bumper Fascia Outer Support Bracket

FRONT BUMPER FASCIA REINFORCEMENT REPLACEMENT - LEFT SIDE

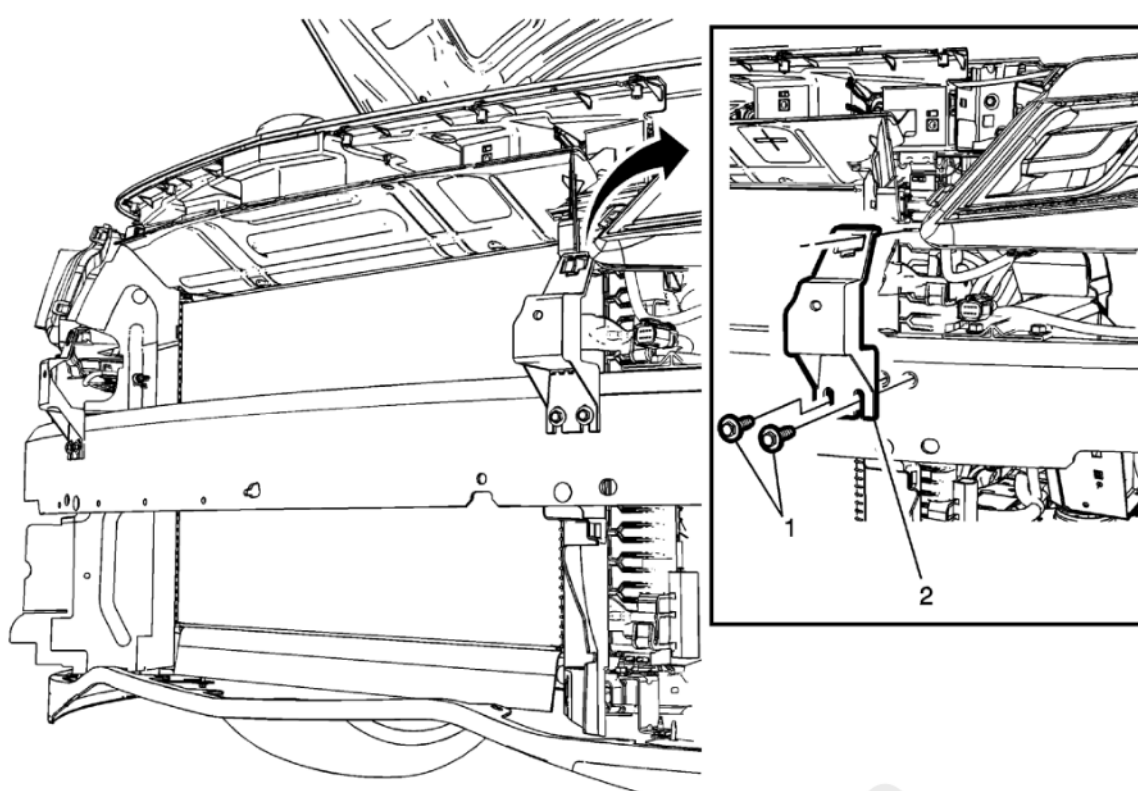


Fig. 10: Front Bumper Fascia Reinforcement - Left Side

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Remove the front bumper fascia. Refer to Front Bumper Fascia Replacement	
1	Front Bumper Fascia Reinforcement Bolt (Qty: 2) CAUTION: Refer to Fastener Caution .
2	Front Bumper Fascia Reinforcement Left Side NOTE: When removing the reinforcement be careful not to damage the tab from the headlamp. This is only serviced with the headlamp.

FRONT BUMPER FASCIA REINFORCEMENT REPLACEMENT - RIGHT SIDE

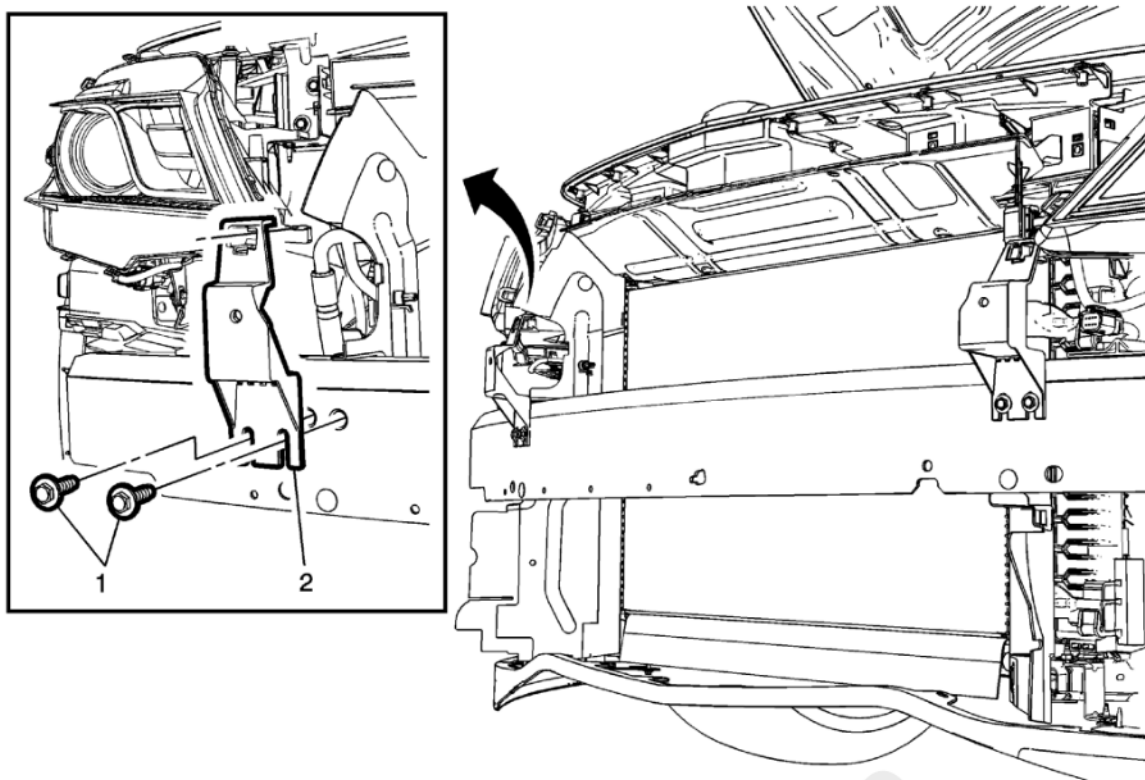


Fig. 11: Front Bumper Fascia Reinforcement - Right Side
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedures 1. Remove the front bumper fascia. Refer to Front Bumper Fascia Replacement. 2. Remove the air inlet duct screw and duct from the bumper reinforcement, if equipped (LKW).	
1	Front Bumper Fascia Reinforcement Bolt (Qty: 2) CAUTION: Refer to Fastener Caution .
2	Front Bumper Fascia Reinforcement Right Side NOTE: When removing the reinforcement be careful not to damage the tab from the headlamp. This is only serviced with the headlamp.

FRONT BUMPER FASCIA AIR DEFLECTOR REPLACEMENT - CENTER

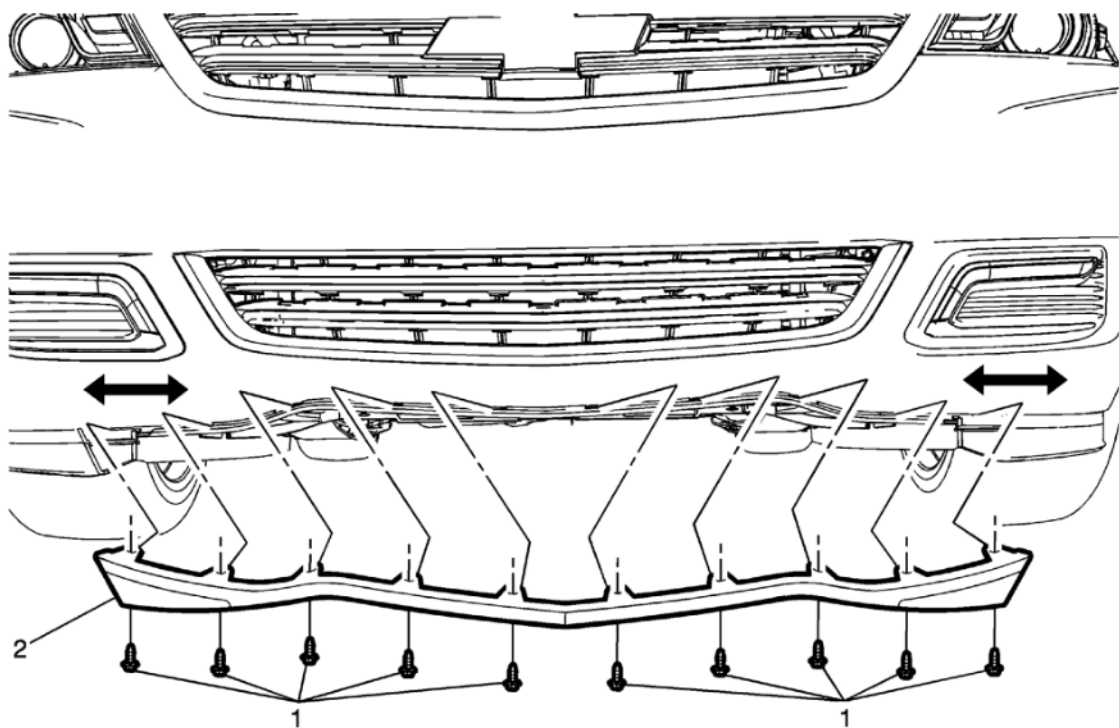


Fig. 12: Front Bumper Fascia Air Deflector - Center

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle	
1	Front Bumper Fascia Air Deflector Bolt (Qty: 10) CAUTION: Refer to Fastener Caution . Tighten 3 N.m (27 lb in)
2	Front Bumper Fascia Air Deflector Procedure Remove the front bumper fascia air deflector pulling forward to release the retainer tabs from the fascia.

FRONT BUMPER FASCIA AIR DEFLECTOR REPLACEMENT - LEFT SIDE

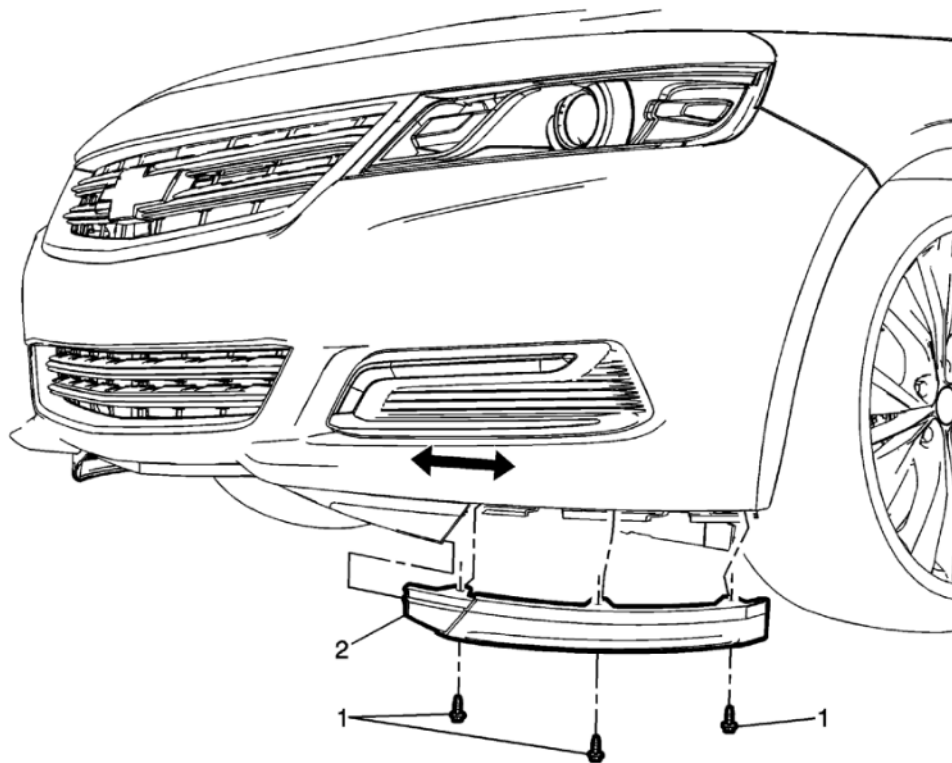


Fig. 13: Front Bumper Fascia Air Deflector - Left Side

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle	
1	Front Bumper Fascia Air Deflector Bolt (Qty: 3) CAUTION: Refer to Fastener Caution . Tighten 3 N.m (27 lb in)
2	Front Bumper Fascia Air Deflector Procedure Remove the front bumper fascia air deflector pulling forward to release the retainer tabs from the fascia.

FRONT BUMPER FASCIA AIR DEFLECTOR REPLACEMENT - RIGHT SIDE

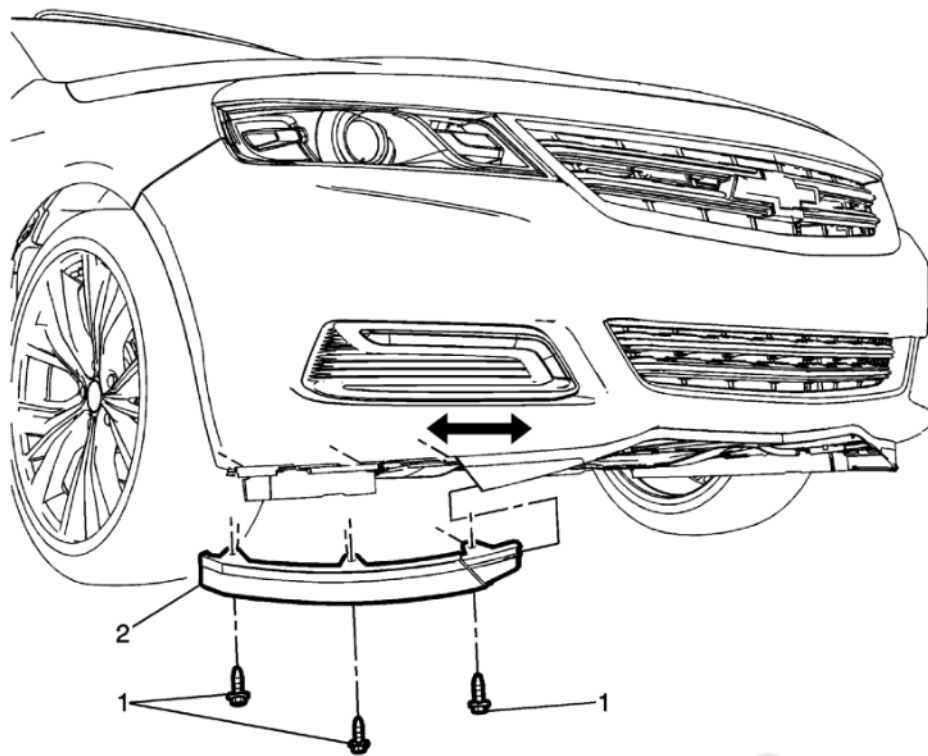


Fig. 14: Front Bumper Fascia Air Deflector - Right Side

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle	
1	Front Bumper Fascia Air Deflector Bolt (Qty: 3) CAUTION: Refer to Fastener Caution . Tighten 3 N.m (27 lb in)
2	Front Bumper Fascia Air Deflector Procedure Remove the front bumper fascia air deflector pulling forward to release the retainer tabs from the fascia.

REAR BUMPER VALANCE OUTER PANEL REPLACEMENT

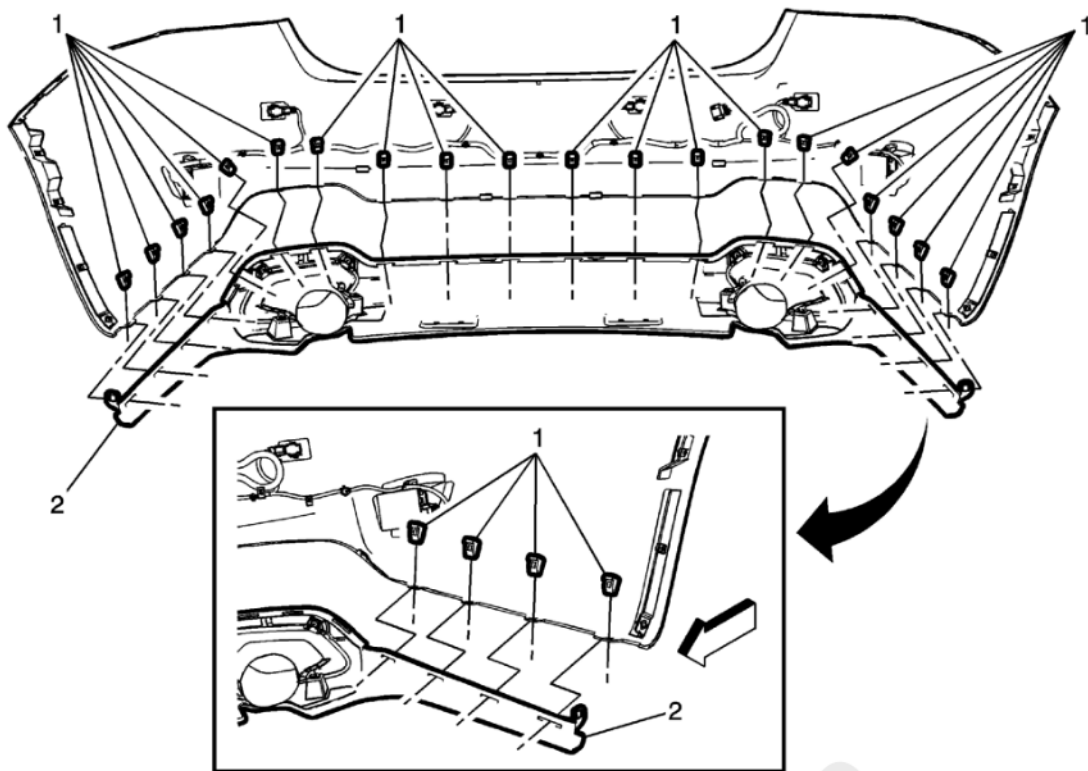


Fig. 15: Rear Bumper Valance Outer Panel & Retainer Clips

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure	
1. Remove the rear bumper energy absorber. Refer to Rear Bumper Energy Absorber Replacement	
1	Rear Bumper Valance Outer Panel Retainer Clip (Qty: 20) Procedure Compress the rear bumper fascia valance outer panel retainer clips and push them up through the rear fascia slot and the rear bumper valance outer panel slot.
2	Rear Bumper Valance Outer Panel Procedure Carefully pull the rear bumper fascia valance outer panel away from the rear bumper fascia tabs.

REAR BUMPER FASCIA REPLACEMENT

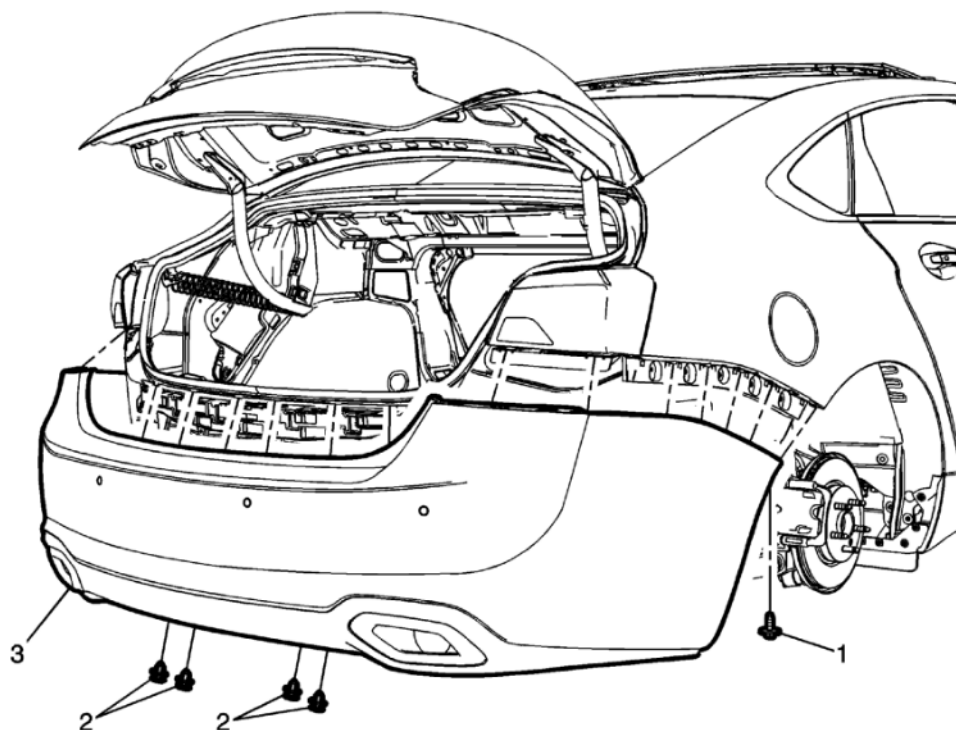


Fig. 16: Rear Bumper Fascia & Mounting Components
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Remove the left and right rear wheelhouse liner fasteners that attach the liners to the rear fascia. Refer to Rear Wheelhouse Liner Replacement .	
1	Rear Bumper Fascia Bolt (Qty: 2) CAUTION: Refer to Fastener Caution . Tighten 9 N.m (80 lb in)
2	Rear Bumper Fascia Push-In Retainer (Qty: 4)
3	Rear Bumper Fascia Procedure 1. Carefully push a small nylon wedge between the fascia and the rear fascia brackets. 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 brackets. 2. Disconnect the electrical connectors. 3. Transfer parts as needed.

REAR BUMPER FASCIA BRACKET REPLACEMENT - SIDE

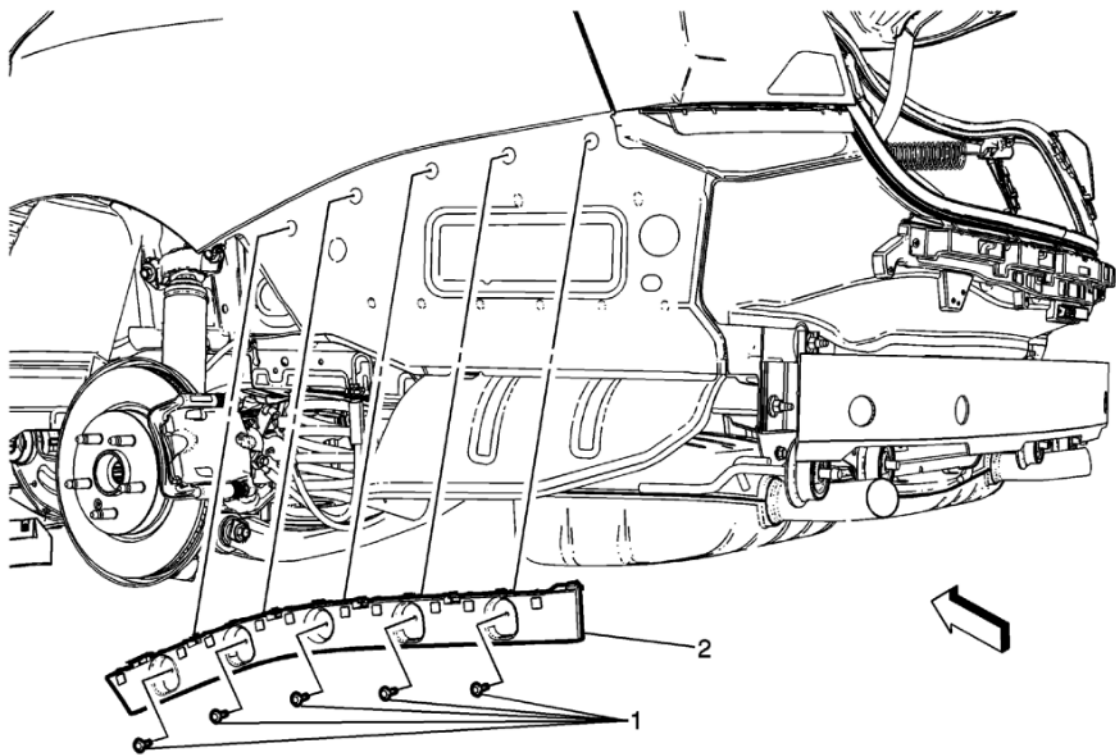


Fig. 17: Rear Bumper Fascia Bracket - Side
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
WARNING: Refer to Eye Protection Warning .	
Preliminary Procedure Remove the rear bumper fascia. Refer to Rear Bumper Fascia Replacement .	
1	Rear Bumper Fascia Bracket Rivet (Qty: 5)
2	Rear Bumper Fascia Bracket

REAR BUMPER FASCIA BRACKET REPLACEMENT - OUTER

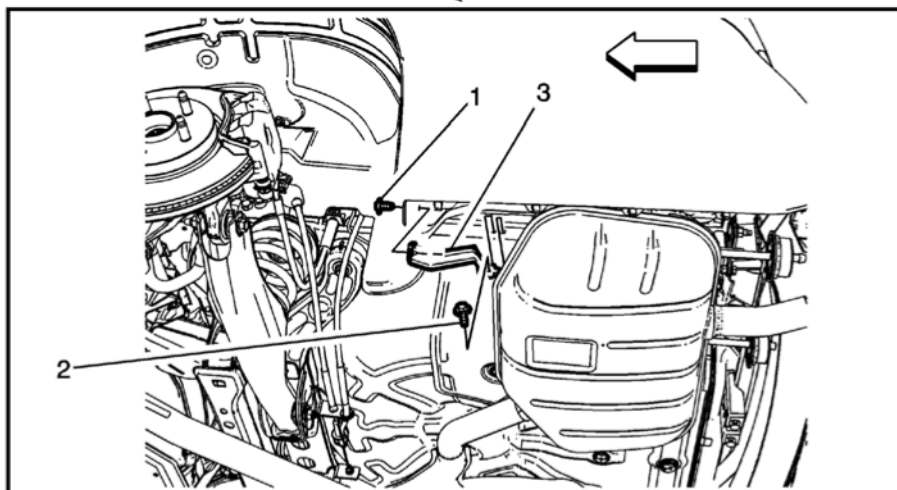
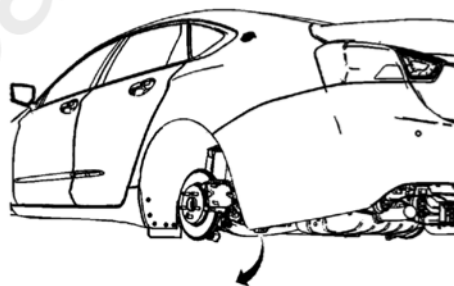


Fig. 18: Rear Bumper Fascia Bracket - Outer
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedures Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle	
1	Rear Bumper Fascia Outer Bracket Screw CAUTION: Refer to Fastener Caution .
2	Rear Bumper Fascia Outer Bracket Bolt Tighten 9 N.m (7 lb ft)
3	Rear Bumper Fascia Outer Bracket

REAR BUMPER FASCIA CENTER BRACKET REPLACEMENT

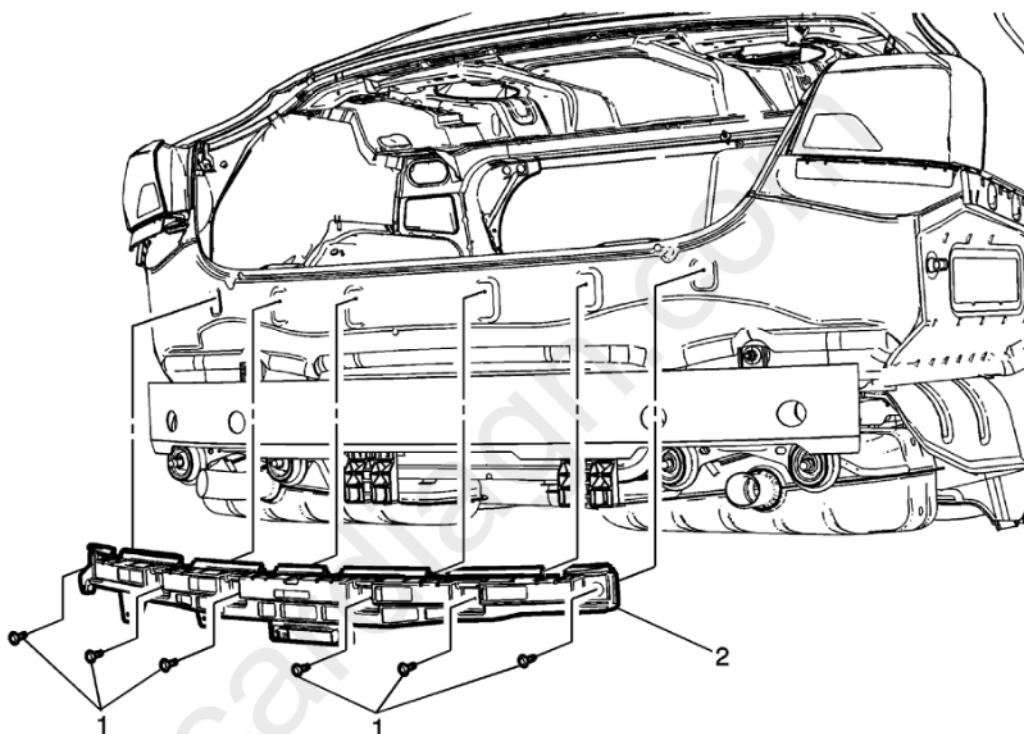


Fig. 19: Rear Bumper Fascia Bracket - Center
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
WARNING: Refer to Eye Protection Warning .	
Preliminary Procedure Remove the rear bumper fascia. Refer to Rear Bumper Fascia Replacement .	
1	Rear Bumper Fascia Center Bracket Rivet (Qty: 6)
2	Rear Bumper Fascia Center Bracket Procedure 1. Unclip and reposition wire harness as necessary. 2. Transfer parts as needed.

REAR BUMPER FASCIA LOWER BRACKET REPLACEMENT

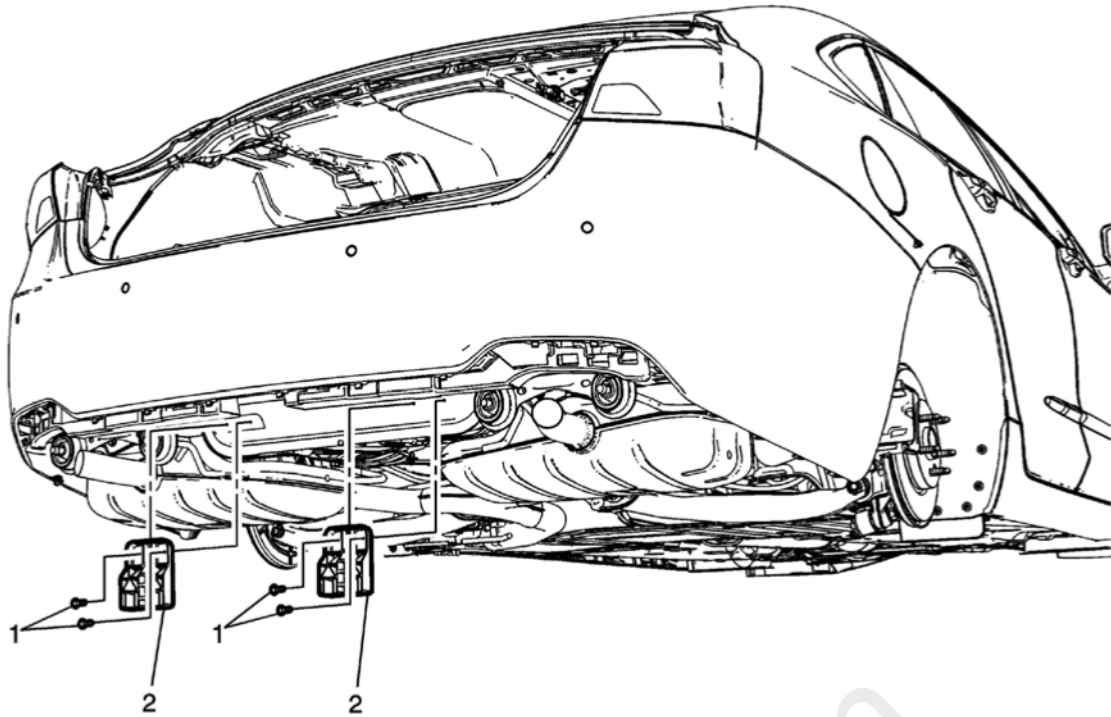


Fig. 20: Rear Bumper Fascia Lower Bracket
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
WARNING: Refer to Eye Protection Warning .	
Preliminary Procedures Remove the rear bumper fascia. Refer to Rear Bumper Fascia Replacement .	
1	Rear Bumper Fascia Lower Bracket Rivet (Qty 4)
2	Rear Bumper Fascia Lower Bracket (Qty 2)

REAR BUMPER ENERGY ABSORBER REPLACEMENT

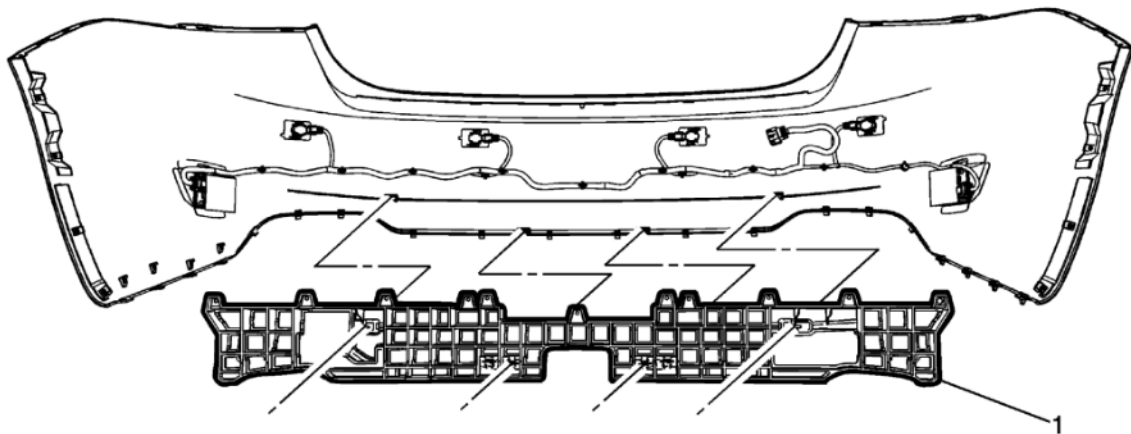


Fig. 21: Rear Bumper Energy Absorber
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure	
Remove the rear bumper fascia. Refer to Rear Bumper Fascia Replacement .	
1	Rear Bumper Energy Absorber Procedure 1. Disconnect the electrical connector/harness. 2. Disengage the four rear bumper fascia retainer tabs.

REAR BUMPER IMPACT BAR REPLACEMENT

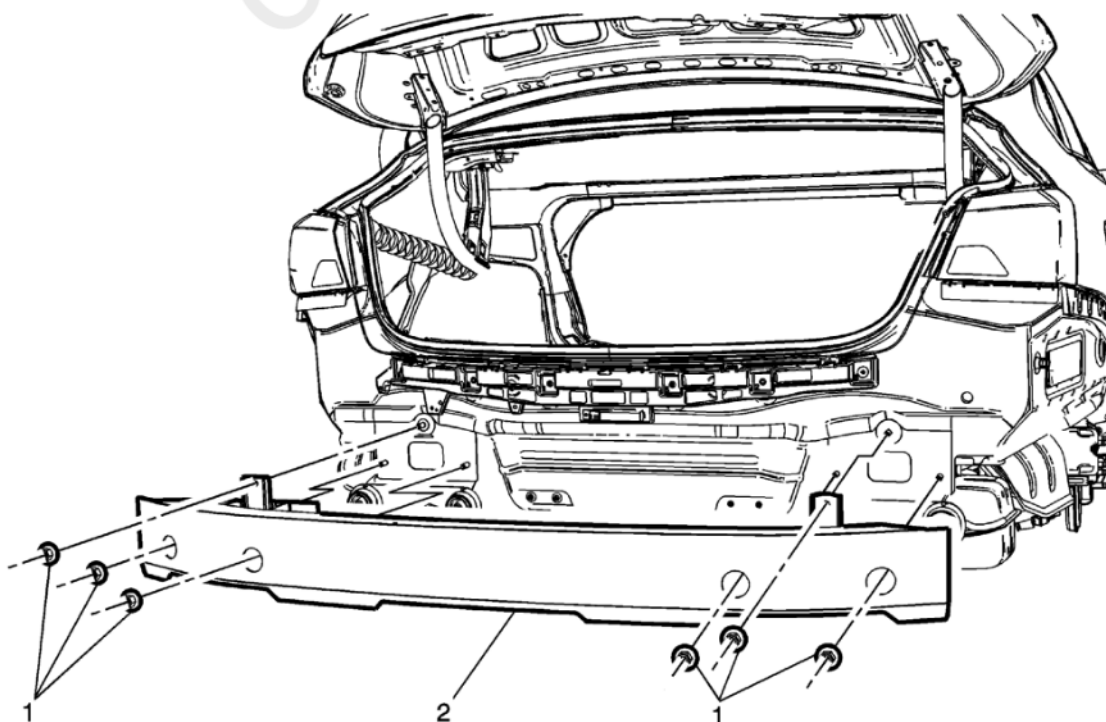


Fig. 22: Rear Bumper Impact Bar & Nuts
Courtesy of GENERAL MOTORS COMPANY

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

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 chassis 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 chassis 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 chassis 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 km/h (25 mph) before the shutter begins to move. If low ambient temperature is detected, the shutter will remain in the closed position.
