

- 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 Descriptor

DTC B0560 08

Engine RPM Input Circuit Signal Invalid

Circuit/System Description

The Audio Amplifier receives a discrete pulse-width modulated engine speed signal from the Engine Control Module. The Audio Amplifier uses the engine RPM signal for operating active noise cancellation.

Conditions for Running the DTC

- Engine running, Radio ON
- Battery voltage between 9-16 volts.

Conditions for Setting the DTC

- The Audio Amplifier receives a serial data message that the engine is running.
- The discrete engine speed signal to the Audio Amplifier indicates the engine speed is less than 300 RPM or greater than 9000 RPM.

Action Taken When the DTC Sets

The active noise cancellation system is disabled.

Conditions for Clearing the DTC

- A current DTC clears when a valid engine speed signal between 300-9000 RPM is received.
- A history DTC clears when the ignition cycle counter reaches the reset threshold without a repeat of the malfunction.

Reference Information

Schematic Reference

Active Noise Cancellation Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Description and Operation

Active Noise Cancellation 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 Testing

NOTE: Diagnose any Engine Control Module DTCs before performing this diagnostic.

1. Ignition OFF, disconnect the X3 harness connector at the T3 Audio Amplifier.

2. Engine running at 600 RPM,
3. Test for 575-625 Hz AC between the signal circuit terminal 2 and ground.
 - **If not between 575-625 Hz AC**
 1. Ignition OFF, disconnect the X2 harness connector at the K20 Engine Control Module. Ignition ON.
 2. Test for less than 1 V between the signal 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 infinite resistance between the signal circuit and ground.
 - If less than infinite resistance, repair the short to ground on the circuit.
 - If infinite resistance
 5. Test for less than 2 Ω in the signal circuit end to end.
 - If 2 Ω or greater, repair the open/high resistance in the circuit.
 - If less than 2 Ω , replace the K20 Engine Control Module.
 - **If between 575-625 Hz AC**
4. Test or replace the T3 Audio Amplifier.

Repair Instructions

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

[Control Module References](#) for Audio Amplifier or Engine Control Module replacement, programming, and setup.

DTC B1277, B127C, OR B127D: MICROPHONE INPUT

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](#) provide an overview of each diagnostic category.

DTC Descriptors

DTC B1277

Microphone 1 Input Signal Circuit

DTC B127C

Microphone 2 Input Signal Circuit

DTC B127D

Microphone 3 Input Signal Circuit

For symptom byte information refer to [Symptom Byte List](#)

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Microphone High Signal Circuit (LF)	B1277 02	B1277 04	B1277 1A	-
Microphone Low Signal Circuit (LF)	B1277 02	B1277 04	B1277 1A	-
Microphone High Signal Circuit (RF)	B127C 02	B127C 04	B127C 1A	-

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Microphone Low Signal Circuit (RF)	B127C 02	B127C 04	B127C 1A	-
Microphone High Signal Circuit (RR)	B127D 02	B127D 04	B127D 1A	-
Microphone Low Signal Circuit (RR)	B127D 02	B127D 04	B127D 1A	-

Circuit/System Description

The active noise cancellation system uses three microphones in the vehicle headliner: one above each front seating position, and one above the rear seat. The Audio Amplifier provides a bias voltage to each microphone (+) and (-) signal circuits for operation of the microphone. The microphones monitor the vehicle cabin for undesirable engine sounds. The Audio Amplifier uses the microphone inputs and an engine RPM signal to determine the frequency of the undesirable sound.

Conditions for Running the DTC

The Audio Amplifier performs a self diagnostic of the microphone circuits 16 seconds after initial power up, then periodically every 400 milliseconds thereafter.

Conditions for Setting the DTC

DTC B1277 01, B127C 01, B127D 01

- DTC B1325 is not current
- A short to voltage is detected on the specified (+) or (-) signal circuit for more than 1.5 seconds

DTC B1277 02, B127C 02, B127D 02

- DTC B1325 is not current
- A short to ground is detected on the specified (+) or (-) signal circuit for more than 1.5 seconds

DTC B1277 04, B127C 04, B127D 04

- DTC B1325 is not current
- An open is detected on the specified (+) or (-) signal circuit for more than 1.5 seconds

DTC B1277 1A, B127C 1A, B127D 1A

- DTC B1325 is not current
- An out of range voltage is detected on the specified (+) or (-) signal circuit for more than 1.5 seconds

Action Taken When the DTC Sets

The active noise cancellation system is disabled.

Conditions for Clearing the DTC

- A current DTC clears when the self diagnostic passes on the next ignition cycle.
- A history DTC clears when the ignition cycle counter reaches the reset threshold without a repeat of the malfunction.

Diagnostic Aids

- Installation of aftermarket replacement speakers, additional speakers/subwoofers, or aftermarket exhaust systems can cause undesirable behavior of the active noise cancellation system.
- The noise reduction microphones have foam blocks above them to seal the microphones and aid in the reduction of headliner vibration. Missing or out of place foam blocks can impact system performance.

Schematic Reference

Active Noise Cancellation Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Description and Operation

Active Noise Cancellation 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 Testing

1. Ignition OFF, disconnect the harness connector at the appropriate B77 Radio Volume Compensator Interior Noise Microphone. Ignition ON radio ON.
2. Test for 7.8-8.8 V between the signal circuit terminal 2 and ground.
 - **If less than 7.8 V**
 1. Ignition OFF, disconnect the X3 harness connector at the T3 Audio Amplifier.
 2. Test for infinite resistance between the signal circuit and ground.
 - If less than infinite resistance, repair the short to ground in the circuit.
 - If infinite resistance
 3. Test for less than 2 Ω in the signal circuit end to end.
 - If 2 Ω or greater, repair the open/high resistance in the circuit.
 - If less than 2 Ω , replace the T3 Audio Amplifier.
 - **If greater than 8.8 V**
 1. Ignition OFF, disconnect the X3 harness connector at the T3 Audio Amplifier. Ignition ON.
 2. Test for less than 1 V between the signal circuit and ground.
 - If 1 V or greater, repair the short to voltage on the circuit.
 - If less than 1 V, replace the T3 Audio Amplifier.
 - **If between 7.8-8.8 V**
3. Test for less than 1 V between the signal circuit terminal 1 and ground.
 - **If greater than 1 V**
 1. Ignition OFF, X3 harness connector at the T3 Audio Amplifier. Ignition ON.
 2. Test for less than 1 V between the signal circuit and ground.
 - If 1 V or greater, repair the short to voltage in the circuit.
 - If less than 1 V, replace the T3 Audio Amplifier.
 - **If less than 1 V**
4. Ignition OFF, disconnect the X3 harness connector at the T3 Audio Amplifier.
5. Test for infinite resistance between the B77 Radio Volume Compensator Interior Noise Microphone signal circuit terminal 1 and ground.
 - **If less than infinite resistance**

Repair the short to ground in the circuit

- **If infinite resistance**

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

- **If 2 Ω or greater**

Repair the open/high resistance in the circuit

- **If less than 2 Ω**

7. Replace the B77 Radio Volume Compensator Interior Noise Microphone.

8. Ignition ON

9. Verify the DTC does NOT set.

- **If the DTC sets**

Replace the T3 Audio Amplifier

- **If the DTC does not set**

10. All OK.

Repair Instructions

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

- [Radio Volume Compensator Interior Noise Microphone Replacement](#)
- [Control Module References](#) for Audio Amplifier replacement, programming, and setup.

DESCRIPTION AND OPERATION

ACTIVE NOISE CANCELLATION DESCRIPTION AND OPERATION

The entertainment system on this vehicle may have several different configurations. To determine the specific configuration of the vehicle, please see the Service Parts ID Label, and refer to [RPO Code List](#).

Active Noise Cancellation Block Diagram

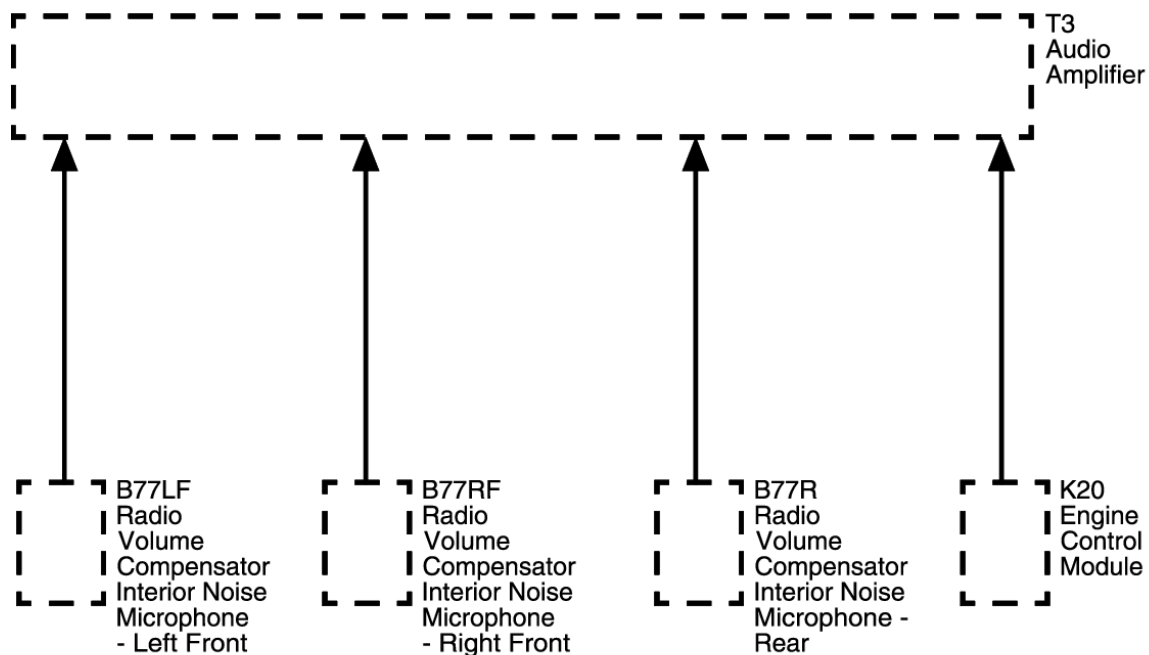


Fig. 2: Active Noise Cancellation Block Diagram

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name

Callout	Component Name
HW	Hard-Wired
HW	Hard-Wired
HW	Hard-Wired
HW	Hard-Wired
T3	T3 Audio Amplifier
B77LF	B77LF Radio Volume Compensator Interior Noise Microphone - Left Front
B77RF	B77RF Radio Volume Compensator Interior Noise Microphone - Right Front
B77R	B77R Radio Volume Compensator Interior Noise Microphone - Rear
K20	K20 Engine Control Module

The main components of the Active Noise Cancellation system are:

- 3 microphones in the vehicle headliner.
- A discrete engine speed (RPM) signal from the engine control module to the amplifier
- Active Noise Cancellation electronics and software integrated into the audio amplifier
- The vehicle speaker system, connected to the amplifier, to output the desired cancellation frequencies

The Active Noise Cancellation system is operational under the following conditions:

- The amplifier has passed all self diagnostic checks
- All doors are closed
- Battery voltage is between 9.5 V and 16 V
- The vehicle cabin temperature is less than 140°F (60°C)
- Engine speed is between 550 and 3000 RPM

The Active Noise Cancellation system is a method used to reduce the perception of certain undesirable sounds generated by the engine into the vehicle cabin. The system uses microphone and engine speed signals, software integrated into the amplifier, and the vehicle speakers to determine and generate the correct frequencies needed to achieve the desired reduction.

Three microphones are located in the headliner to monitor noise/sounds in the vehicle cabin, and are directly connected to the amplifier. The amplifier also receives a discrete engine speed (RPM) signal from the engine control module. The amplifier processes these inputs to determine the frequency of the undesirable sound. The amplifier then calculates the appropriate cancellation frequency and outputs a cancellation signal (audio tone) to the vehicle speakers to reduce the perception of undesirable sounds by the vehicle occupants so the vehicle cabin appears quieter and without vibration.

2014 ACCESSORIES & EQUIPMENT**Bolted Exterior Body Panels and Closures - ATS****SPECIFICATIONS****FASTENER TIGHTENING SPECIFICATIONS****Fastener Tightening Specifications**

Application	Specification	
	Metric	English
Front Compartment Front Panel Bolt	11	97 lb in
Front Compartment Front Panel Lower Bolt	11	97 lb in
Front End Sheet Metal Diagonal Brace Bolt	22	16 lb ft
Front End Sheet Metal Diagonal Brace Nut	22	16 lb ft
Front Fender Bolts	9	80 lb in
Front Fender Front Brace Bolt	9	80 lb in
Front Fender Nut	9	80 lb in
Front Side Door Check Link to Body Bolt	22	16 lb ft
Front Side Door Check Link to Door Nut (Sedan)	10	89 lb in
Front Side Door Check Link to Door Nut (Coupe)	11.5	91 lb in
Front Side Door Hinge to Body Bolt	32	24 lb ft
Front Side Door Hinge to Door Bolt	25	18 lb ft
Hood Hinge Nuts/Bolts	22	16 lb ft
Hood Primary and Secondary Latch Bolts	22	16 lb ft
Plenum Front Panel Bolt	9	80 lb in
Plenum Front Panel Nut	9	80 lb in
Rear Compartment Lid Hinge Bolt	9	80 lb in
Rear Side Door Check Link to Body Bolt	22	16 lb ft
Rear Side Door Check Link to Door Nut	10	89 lb in
Rear Side Door Hinge to Body Bolt	32	24 lb ft
Rear Side Door Hinge to Door Bolt	25	18 lb ft

SCHEMATIC WIRING DIAGRAMS**HOOD LATCH WIRING SCHEMATICS****Hood Ajar Switch**

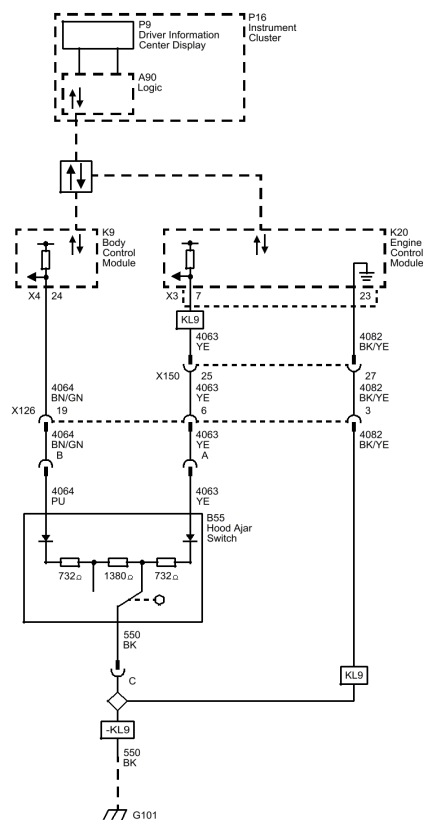


Fig. 1: Hood Ajar Switch Wiring Schematic
Courtesy of GENERAL MOTORS COMPANY

DIAGNOSTIC INFORMATION AND PROCEDURES

DIAGNOSTIC CODE INDEX

DIAGNOSTIC CODE INDEX

DTC	Description
<u>DTC B3006</u>	DTC B3006 Hood Ajar Circuit
<u>DTC P257D-P257F</u>	DTC P257D Engine Hood Switch Performance DTC P257E Engine Hood Switch Circuit Low Voltage DTC P257F Engine Hood Switch Circuit High Voltage

DTC B3006: HOOD AJAR CIRCUIT

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 B3006

Hood Ajar Circuit

For symptom byte information, refer to [Symptom Byte List](#)

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Signal - Terminal B	B3006 02	B3006 01, B3006 04	B3006 01	-
Signal - Terminal A*	P257E	P257F	P257F	-
Low Reference*	-	B3006 01, B3006 04, P257F*	-	-
Ground**	-	B3006	-	-
*with KL9 **without KL9				

Circuit/System Description

The body control module applies B+ to the hood ajar signal circuit and monitors the voltage to determine the position of the hood. The hood ajar switch contains a resistor ladder. This resistor ladder will vary the voltage seen by the body control module by pulling down the applied voltage based on the position of the switch. The engine control module also monitors the hood ajar switch on vehicles equipped with KL9.

Conditions for Running the DTC

The body control module continuously monitors for this DTC

Conditions for Setting the DTC

B3006 01

The body control module detects that the hood ajar switch signal circuit is shorted to battery.

B3006 02

The body control module detects that the hood ajar switch signal circuit is shorted to ground.

B3006 04

The body control module detects that the hood ajar switch signal circuit is open.

Action Taken When the DTC Sets

- The hood ajar switch input will be ignored as a content theft deterrent trigger.
- Remote vehicle start will be disabled.

Conditions for Clearing the DTC

- A current DTC will clear when the conditions for setting the DTC are no longer present.
- A history DTC will clear after 40 malfunction free ignition cycles.

Reference Information

Schematic Reference

Immobilizer Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Description and Operation

[Keyless Entry System Description and Operation \(With ATH\)](#) , [Keyless Entry System Description and Operation \(Without ATH\)](#)

- [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 the scan tool body control module Hood Position parameter is Open with the hood open and Closed with the hood closed
 - **If the parameter does not change**

Refer to Circuit/System Testing (below).
 - **If the parameter changes**
3. All OK.

Circuit/System Testing

Without KL9

1. Ignition OFF and all vehicle systems OFF, disconnect the harness connector at the B55 Hood Ajar Switch. It may take up to 2 min for all vehicle systems to power down.
2. Test for less than 10 Ω between the ground circuit terminal C 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. Test for greater than 10.5 V between the signal circuit terminal B and ground.
 - **If 11.5 V or less**
 1. Ignition OFF, disconnect the harness connector at the K9 Body Control Module.
 2. Test for infinite resistance between the signal circuit and ground.
 - If less than infinite resistance, repair the short to ground on the circuit.
 - If Infinite resistance.
 3. Test for less than 2 Ω in the signal circuit end to end.
 - If 2 Ω or greater, repair the open/high resistance in the circuit.
 - If less than 2 Ω , replace the K9 Body Control Module.
 - **If greater than 11.5 V**
5. Ignition OFF, disconnect the X4 and X7 harness connector at the K9 Body Control Module, ignition ON.
6. Test for less than 1 V between the signal circuit terminal B and ground.
 - **If 1 V or greater**

Repair the short to voltage on the circuit.
 - **If less than 1 V**
7. Test or replace the B55 Hood Ajar Switch.

With KL9

1. Ignition OFF and all vehicle systems OFF, disconnect the harness connector at the B55 Hood Ajar Switch. It may take up to 2 min for all vehicle systems to power down.
2. Test for less than 10 Ω between the low reference circuit terminal C and ground.
 - **If 10 Ω or greater**
 1. Ignition OFF, disconnect the harness connector at the K20 Engine Control Module.
 2. Test for less than 2 Ω in the low reference circuit end to end.
 - If 2 Ω or greater, repair the open/high resistance in the circuit.
 - If less than 2 Ω , replace the K20 Engine Control Module.
 - **If less than 10 Ω**
3. Ignition ON.
4. Test for greater than 11.5 V between the signal circuit terminal B and ground.
 - **If 11.5 V or less**
 1. Ignition OFF, disconnect the harness connector at the K9 Body Control Module.
 2. Test for infinite resistance between the signal circuit and ground.
 - If less than infinite resistance, repair the short to ground on the circuit.
 - If Infinite resistance.
 3. Test for less than 2 Ω in the signal circuit end to end.
 - If 2 Ω or greater, repair the open/high resistance in the circuit.
 - If less than 2 Ω , replace the K9 Body Control Module.
 - **If greater than 11.5 V**
5. Ignition OFF, disconnect the X4 and X7 harness connector at the K9 Body Control Module, ignition ON.
6. Test for less than 1 V between the signal circuit terminal B and ground.
 - **If 1 V or greater**

Repair the short to voltage on the circuit.
 - **If less than 1 V**
7. Test or replace the B55 Hood Ajar Switch.

Component Testing

1. Ignition OFF, disconnect the harness connector at the B55 Hood Ajar Switch.
2. Test for 2738-3350 Ω between the signal terminal A and the signal terminal B with the hood latch in the CLOSED position.
 - **If not between 2738-3350 Ω**

Replace the B55 Hood Ajar Switch.
 - **If between 2738-3350 Ω**
3. Test for 658-806 Ω between the signal terminal A and the ground terminal C with the hood latch in the CLOSED position.
 - **If not between 658-806 Ω**

Replace the B55 Hood Ajar Switch.
 - **If between 658-806 Ω**
4. Test for 2080-2545 Ω between the signal terminal B and the ground terminal C with the hood latch in the CLOSED position.
 - **If not between 2080-2545 Ω**

Replace the B55 Hood Ajar Switch.

- **If between 2080-2545 Ω**

5. Test for 2738-3350 Ω between the signal terminal A and the signal terminal B with the hood latch in the OPEN position.

- **If not between 2738-3350 Ω**

Replace the B55 Hood Ajar Switch.

- **If between 2738-3350 Ω**

6. Test for 2080-2545 Ω between the signal terminal A and the ground terminal C with the hood latch in the OPEN position.

- **If not between 2080-2545 Ω**

Replace the B55 Hood Ajar Switch.

- **If between 2080-2545 Ω**

7. Test for 658-806 Ω between the signal terminal B and the ground terminal C with the hood latch in the OPEN position.

- **If not between 658-806 Ω**

Replace the B55 Hood Ajar Switch.

- **If between 658-806 Ω**

8. All OK.

Repair Instructions

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

- [Hood Primary and Secondary Latch Replacement](#)
- [Control Module References](#) for body control module or engine control module replacement, programming, and setup.

DTC P257D-P257F: ENGINE HOOD SWITCH

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 P257D

Engine Hood Switch Performance

DTC P257E

Engine Hood Switch Circuit Low Voltage

DTC P257F

Engine Hood Switch Circuit High Voltage

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Signal - Terminal B	B3006 02	B3006 04	B3006 01	-
Signal - Terminal A	P257E	P257F	P257F	-
Low Reference	-	B3006 04, P257F	-	-

Circuit/System Description

The engine control module applies 5 V to the hood ajar signal circuit and monitors the voltage to determine the position of the hood. The hood ajar switch contains a multiplexed resistor. This resistor will vary the voltage seen by the engine control module by pulling down the applied voltage based on the position of the switch.

Conditions for Running the DTC

Ignition ON.

Conditions for Setting the DTC

P257D

The engine control module detects a plausibility error between the observed hood ajar position and the reported hood ajar position.

P257E

The engine control module detects a short to ground in the hood ajar signal input to the engine control module.

P257F

The engine control module detects a short to voltage or an open/high resistance in the hood ajar signal input to the engine control module.

Action Taken When the DTC Sets

Engine start/stop function will be disabled.

Conditions for Clearing the DTC

DTCs P257D, P257E, and P257F are Type B DTCs.

Reference Information

Schematic Reference

Immobilizer Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Description and Operation

Hood Ajar Indicator 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 the scan tool Hood Position parameter is Open when the hood is open and Closed when the hood is closed.

- **If the parameter does not change**

Refer to Circuit/System Testing (below).

- **If the parameter changes**

3. All OK.

Circuit/System Testing

1. Ignition OFF and all vehicle systems OFF, disconnect the harness connector at the B55 Hood Ajar Switch. It may take up to 2 min for all vehicle systems to power down.

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

- **If 10 Ω or greater**

1. Ignition OFF, disconnect the harness connector at the K20 Engine Control Module.

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

- If 2 Ω or greater, repair the open/high resistance in the circuit.
- If less than 2 Ω , replace the K20 Engine Control Module.

- **If less than 10 Ω**

3. Ignition ON.

4. Verify DTC P257F is set as current

- **If DTC P257F is not set as current**

1. Ignition OFF, disconnect the harness connector at the K20 Engine Control Module.

2. Test for infinite resistance between the signal circuit and ground.

- If less than infinite resistance, repair the short to ground on the circuit.
- If infinite resistance, replace the K20 Engine Control Module.

- **If DTC P257F is set as current**

5. Install a 5 A fused jumper wire between the signal circuit terminal A and ground, ignition ON

6. Verify DTC P257E is set as current.

- **If DTC P257E is not set as current**

1. Ignition OFF, disconnect the harness connector at the K20 Engine Control Module.

2. Test for less than 1 V between the signal circuit and ground.

- If 1 V or greater, repair the short to voltage on the circuit.
- If less than 1 V

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

- If 2 Ω or greater, repair the open/high resistance in the circuit.
- If less than 2 Ω , replace the K20 Engine Control Module.

- **If DTC P257E is set as current**

7. Test or replace the B55 Hood Ajar Switch.

Component Testing

1. Ignition OFF, disconnect the harness connector at the B55 Hood Ajar Switch.

2. Test for 2738-3350 Ω between the signal terminal A and the signal terminal B with the hood latch in the CLOSED position.

- **If not between 2738-3350 Ω**

Replace the B55 Hood Ajar Switch.

- **If between 2738-3350 Ω**

3. Test for 658-806 Ω between the signal terminal A and the ground terminal C with the hood latch in the CLOSED position.

- **If not between 658-806 Ω**

Replace the B55 Hood Ajar Switch.

- **If between 658-806 Ω**

4. Test for 2080-2545 Ω between the signal terminal B and the ground terminal C with the hood latch in the CLOSED position.

- **If not between 2080-2545 Ω**

Replace the B55 Hood Ajar Switch.

- **If between 2080-2545 Ω**

5. Test for 2738-3350 Ω between the signal terminal A and the signal terminal B with the hood latch in the OPEN position.

- **If not between 2738-3350 Ω**

Replace the B55 Hood Ajar Switch.

- **If between 2738-3350 Ω**

6. Test for 2080-2545 Ω between the signal terminal A and the ground terminal C with the hood latch in the OPEN position.

- **If not between 2080-2545 Ω**

Replace the B55 Hood Ajar Switch.

- **If between 2080-2545 Ω**

7. Test for 658-806 Ω between the signal terminal B and the ground terminal C with the hood latch in the OPEN position.

- **If not between 658-806 Ω**

Replace the B55 Hood Ajar Switch.

- **If between 658-806 Ω**

8. All OK.

Repair Instructions

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

- [Hood Primary and Secondary Latch Replacement](#)
- [Control Module References](#) for engine control module replacement, programming, and setup

SYMPTOMS - BOLTED EXTERIOR BODY PANELS AND CLOSURES

IMPORTANT: 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 links.
2. Review the system operation in order to familiarize yourself with the system functions. Refer to [Hood Ajar Indicator Description and Operation](#).

Visual/Physical Inspection

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

Symptom List

Refer to [Hood Ajar Indicator/Message Malfunction](#) in order to diagnose the symptom.

HOOD AJAR INDICATOR/MESSAGE 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 B3006

Hood Ajar Circuit

For symptom byte information, refer to [Symptom Byte List](#)

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Signal - Terminal B	B3006 02	B3006 01, B3006 04	B3006 01	-
Signal - Terminal A*	P257E	P257F	P257F	-
Low Reference*	-	B3006 01, B3006 04, P257F*	-	-
Ground**	-	B3006	-	-
*with KL9 **without KL9				

Circuit/System Description

The body control module applies B+ to the hood ajar signal circuit and monitors the voltage to determine the position of the hood. The hood ajar switch contains a resistor ladder. This resistor ladder will vary the voltage seen by the body control module by pulling down the applied voltage based on the position of the switch. The engine control module also monitors the hood ajar switch on vehicles equipped with KL9.

Conditions for Running the DTC

The body control module continuously monitors for this DTC

Conditions for Setting the DTC

B3006 01

The body control module detects that the hood ajar switch signal circuit is shorted to battery.

B3006 02

The body control module detects that the hood ajar switch signal circuit is shorted to ground.

B3006 04

The body control module detects that the hood ajar switch signal circuit is open.

Action Taken When the DTC Sets

- The hood ajar switch input will be ignored as a content theft deterrent trigger.
- Remote vehicle start will be disabled.

Conditions for Clearing the DTC

- A current DTC will clear when the conditions for setting the DTC are no longer present.
- A history DTC will clear after 40 malfunction free ignition cycles.

Reference Information

Schematic Reference

Immobilizer Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Description and Operation

Keyless Entry System Description and Operation (With ATH) , Keyless Entry System Description and Operation (Without ATH)

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 the scan tool body control module Hood Position parameter is Open with the hood open and Closed with the hood closed
 - **If the parameter does not change**
Refer to Circuit/System Testing (below).
 - **If the parameter changes**
3. All OK.

Circuit/System Testing

Without KL9

1. Ignition OFF and all vehicle systems OFF, disconnect the harness connector at the B55 Hood Ajar Switch. It may take up to 2 min for all vehicle systems to power down.
2. Test for less than 10 Ω between the ground circuit terminal C 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. Test for greater than 10.5 V between the signal circuit terminal B and ground.

- **If 11.5 V or less**

1. Ignition OFF, disconnect the harness connector at the K9 Body Control Module.

2. Test for infinite resistance between the signal circuit and ground.

- If less than infinite resistance, repair the short to ground on the circuit.
- If Infinite resistance.

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

- If 2 Ω or greater, repair the open/high resistance in the circuit.
- If less than 2 Ω , replace the K9 Body Control Module.

- **If greater than 11.5 V**

5. Ignition OFF, disconnect the X4 and X7 harness connector at the K9 Body Control Module, ignition ON.

6. Test for less than 1 V between the signal circuit terminal B and ground.

- **If 1 V or greater**

Repair the short to voltage on the circuit.

- **If less than 1 V**

7. Test or replace the B55 Hood Ajar Switch.

With KL9

1. Ignition OFF and all vehicle systems OFF, disconnect the harness connector at the B55 Hood Ajar Switch. It may take up to 2 min for all vehicle systems to power down.

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

- **If 10 Ω or greater**

1. Ignition OFF, disconnect the harness connector at the K20 Engine Control Module.

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

- If 2 Ω or greater, repair the open/high resistance in the circuit.
- If less than 2 Ω , replace the K20 Engine Control Module.

- **If less than 10 Ω**

3. Ignition ON.

4. Test for greater than 11.5 V between the signal circuit terminal B and ground.

- **If 11.5 V or less**

1. Ignition OFF, disconnect the harness connector at the K9 Body Control Module.

2. Test for infinite resistance between the signal circuit and ground.

- If less than infinite resistance, repair the short to ground on the circuit.
- If Infinite resistance.

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

- If 2 Ω or greater, repair the open/high resistance in the circuit.
- If less than 2 Ω , replace the K9 Body Control Module.

- **If greater than 11.5 V**

5. Ignition OFF, disconnect the X4 and X7 harness connector at the K9 Body Control Module, ignition ON.

6. Test for less than 1 V between the signal circuit terminal B and ground.

- **If 1 V or greater**

Repair the short to voltage on the circuit.

- **If less than 1 V**

7. Test or replace the B55 Hood Ajar Switch.

1. Ignition OFF, disconnect the harness connector at the B55 Hood Ajar Switch.
2. Test for 2738-3350 Ω between the signal terminal A and the signal terminal B with the hood latch in the CLOSED position.
 - **If not between 2738-3350 Ω**

Replace the B55 Hood Ajar Switch.
 - **If between 2738-3350 Ω**
3. Test for 658-806 Ω between the signal terminal A and the ground terminal C with the hood latch in the CLOSED position.
 - **If not between 658-806 Ω**

Replace the B55 Hood Ajar Switch.
 - **If between 658-806 Ω**
4. Test for 2080-2545 Ω between the signal terminal B and the ground terminal C with the hood latch in the CLOSED position.
 - **If not between 2080-2545 Ω**

Replace the B55 Hood Ajar Switch.
 - **If between 2080-2545 Ω**
5. Test for 2738-3350 Ω between the signal terminal A and the signal terminal B with the hood latch in the OPEN position.
 - **If not between 2738-3350 Ω**

Replace the B55 Hood Ajar Switch.
 - **If between 2738-3350 Ω**
6. Test for 2080-2545 Ω between the signal terminal A and the ground terminal C with the hood latch in the OPEN position.
 - **If not between 2080-2545 Ω**

Replace the B55 Hood Ajar Switch.
 - **If between 2080-2545 Ω**
7. Test for 658-806 Ω between the signal terminal B and the ground terminal C with the hood latch in the OPEN position.
 - **If not between 658-806 Ω**

Replace the B55 Hood Ajar Switch.
 - **If between 658-806 Ω**
8. All OK.

Repair Instructions

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

- [Hood Primary and Secondary Latch Replacement](#)
- [Control Module References](#) for body control module or engine control module replacement, programming, and setup.

REPAIR INSTRUCTIONS

FRONT END SHEET METAL DIAGONAL BRACE REPLACEMENT - LEFT SIDE

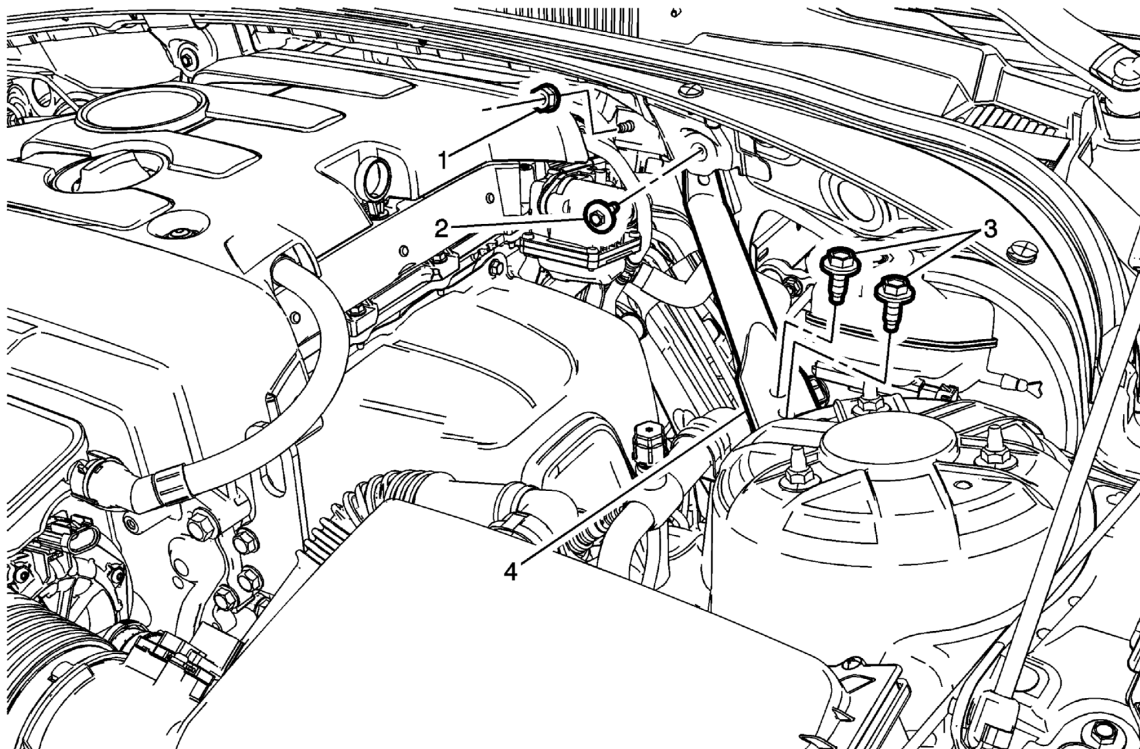


Fig. 2: Front End Sheet Metal Diagonal Brace & Mounting Components - Left Side

Courtesy of GENERAL MOTORS COMPANY

Front End Sheet Metal Diagonal Brace Replacement - Left Side

Callout	Component Name
Preliminary Procedure <ol style="list-style-type: none"> 1. Remove the plenum front panel. Refer to Plenum Front Panel Replacement. 2. If equipped with LFX, remove the intake manifold insulator. Refer to Intake Manifold Insulator Replacement. 3. If equipped with LFX, reposition the wire harness in front of the brace. 	
1	Front End Sheet Metal Diagonal Brace Nut CAUTION: Refer to Fastener Caution . Tighten 22 (16 lb ft)
2	Front End Sheet Metal Diagonal Brace Bolt Tighten 22 (16 lb ft)
3	Front End Sheet Metal Diagonal Brace Bolt (Qty: 2) Tighten 22 (16 lb ft)
4	Front End Sheet Metal Diagonal Brace

FRONT END SHEET METAL DIAGONAL BRACE REPLACEMENT - RIGHT SIDE

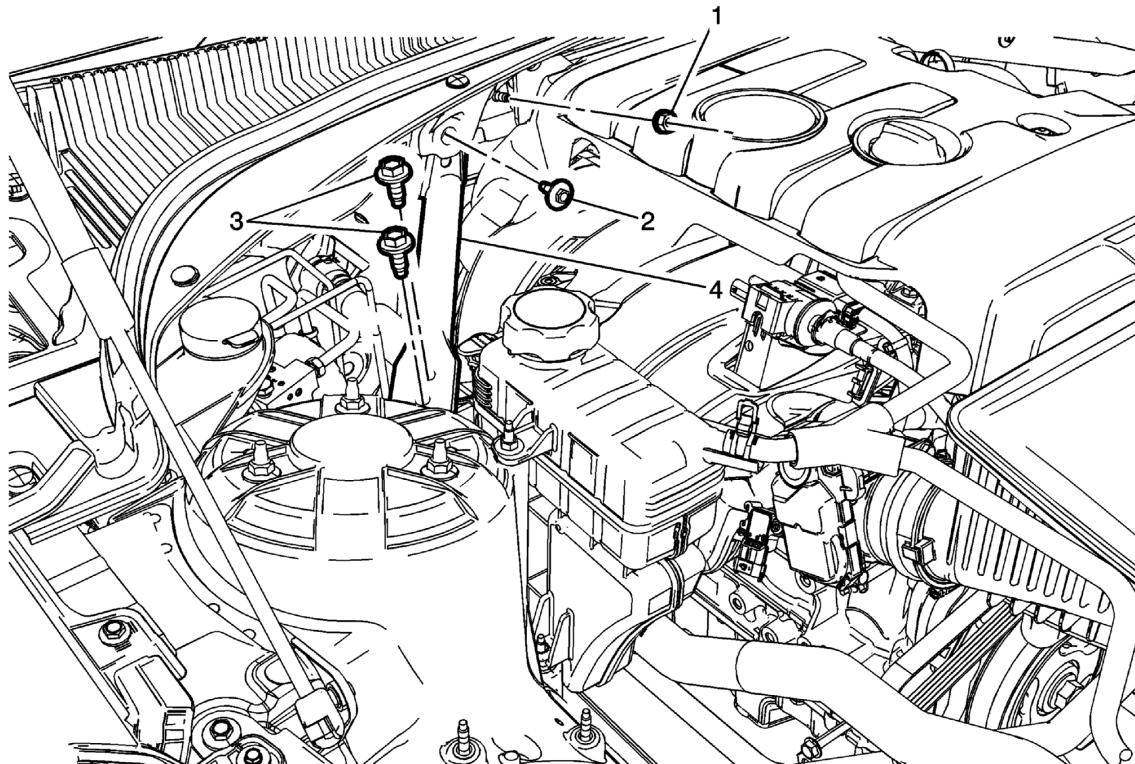


Fig. 3: Front End Sheet Metal Diagonal Brace - Right Side

Courtesy of GENERAL MOTORS COMPANY

Front End Sheet Metal Diagonal Brace Replacement - Right Side

Callout	Component Name
Preliminary Procedure <ol style="list-style-type: none"> 1. Remove the plenum front panel. Refer to Plenum Front Panel Replacement. 2. If equipped with LFX, remove the intake manifold insulator. Refer to Intake Manifold Insulator Replacement. 	
1	Front End Sheet Metal Diagonal Brace Nut CAUTION: Refer to Fastener Caution . Tighten 22 (16 lb ft)
2	Front End Sheet Metal Diagonal Brace Bolt Tighten 22 (16 lb ft)
3	Front End Sheet Metal Diagonal Brace Bolt (Qty: 2) Tighten 22 (16 lb ft)
4	Front End Sheet Metal Diagonal Brace

FRONT FENDER FRONT BRACE REPLACEMENT

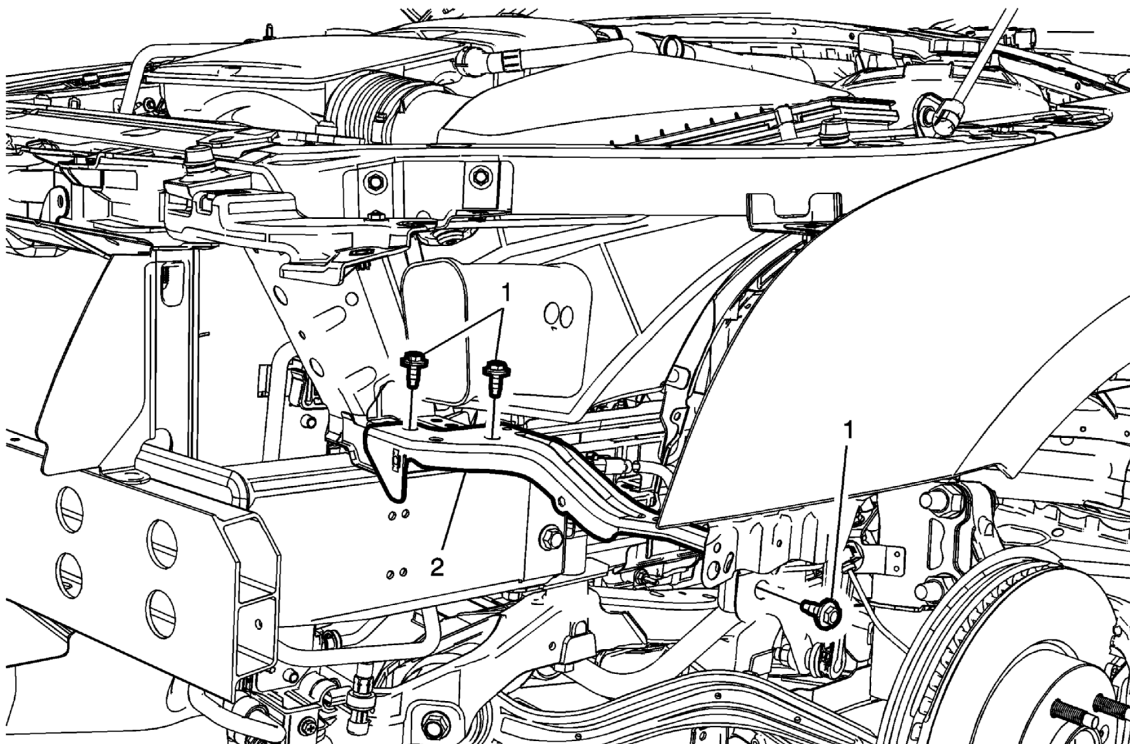


Fig. 4: Front Fender Front Brace & Bolts
 Courtesy of GENERAL MOTORS COMPANY

Front Fender Front Brace Replacement

Callout	Component Name
Preliminary Procedures <ol style="list-style-type: none"> 1. Remove the front bumper fascia. Refer to Front Bumper Fascia Replacement . 2. Remove the headlamp. Refer to Headlamp Replacement . 3. If replacing the left side fender brace, remove the air intake splash shield. Refer to Intake Air Splash Shield Replacement , for the 2.0L (LTG) or 2.5L (LCV) engine or Intake Air Splash Shield Replacement for the 2.8L, 3.0L, 3.2L, or 3.6L engine. 	
1	Front Fender Front Brace Bolt (Qty: 3) CAUTION: Refer to Fastener Caution . Tighten 9 (80 lb in)
2	Front Fender Front Brace Procedure <ol style="list-style-type: none"> 1. Disconnect the electrical harness from the front fender front brace. 2. Transfer parts as needed.

HOOD PRIMARY LATCH RELEASE CABLE REPLACEMENT

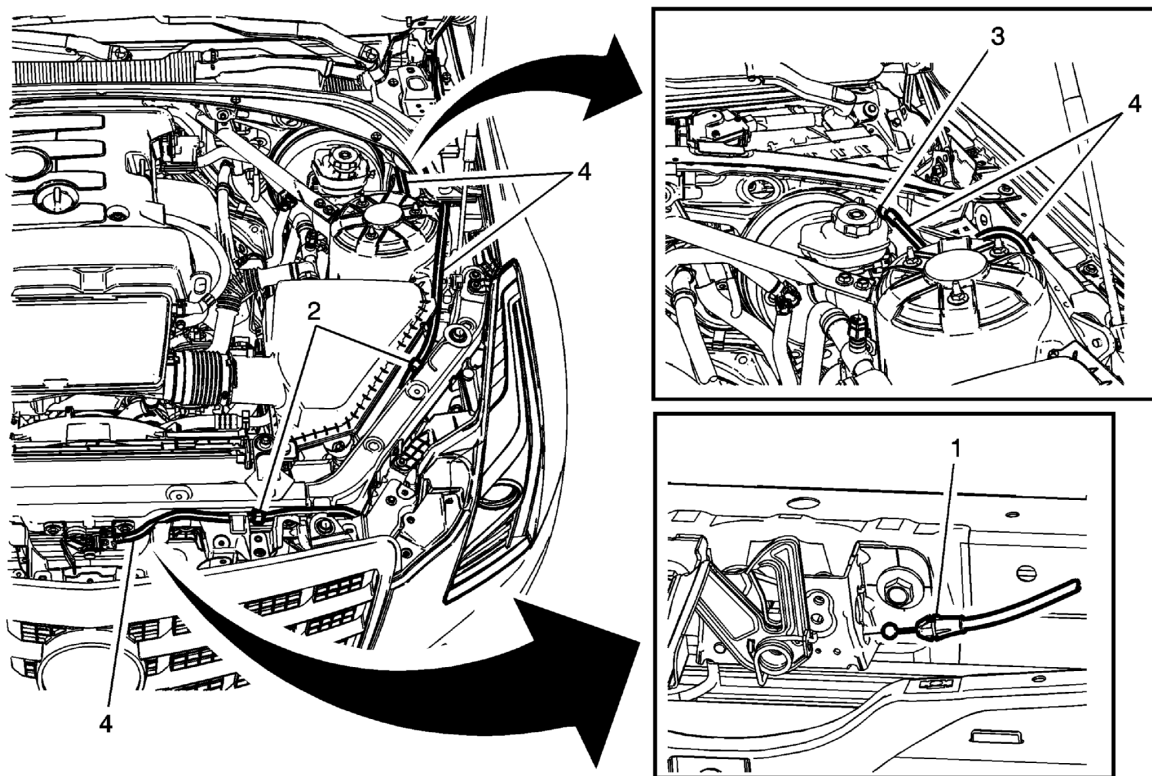


Fig. 5: Hood Primary Latch Release Cable
Courtesy of GENERAL MOTORS COMPANY

Hood Primary Latch Release Cable Replacement

Callout	Component Name
Preliminary Procedure <ol style="list-style-type: none"> 1. Remove the plenum upper panel hole plug. 2. Remove the left insulator panel. Refer to Instrument Panel Lower Trim Panel Insulator Replacement (Left Side) , Instrument Panel Lower Trim Panel Insulator Replacement (Right Side) . 3. Remove the front compartment front sight shield. Refer to Front Compartment Front Sight Shield Replacement. 	
1	Hood Primary Latch Cable Procedure Disconnect the hood primary latch release cable from the primary hood latch.
2	Hood Primary Latch Release Cable Retainer Procedure Disconnect the hood primary latch release cable from the hood primary latch release cable retainer.
3	Hood Primary Latch Release Cable Grommet
4	Hood Primary Latch Release Cable Procedure Note and follow the original routing of the release cable.

FRONT SIDE DOOR ADJUSTMENT

Removal Procedure

Up/Down or In/Out Adjustment

1. Open the door.

CAUTION: Refer to [Paint Damage Caution](#) .

NOTE: The door side upper and lower hinge bolts must remain tight

enough to retain door adjusted position.

2. Apply masking tape to the fender and the door edges.

Loosen the door side hinge bolts.

Do not remove the bolts from the door.

3. Adjust the door up or down by repositioning the door as needed.
4. Adjust the door in or out by repositioning the door as needed.

Installation Procedure

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

1. Install the door side hinge bolts.

Tighten

Tighten the bolts to 25 N.m (18 lb ft).

2. Inspect the door for proper operation and alignment.
3. Remove the masking tape.

Removal Procedure

Fore/Aft Adjustment

CAUTION: Refer to [Paint Damage Caution](#) .

NOTE: The door side upper and lower hinge bolts must remain tight enough to retain door adjusted position.

1. Apply masking tape to the fender and door edges.
2. Remove the front fender insulator. Refer to [Front Fender Insulator Replacement](#).
3. Loosen the bodyside hinge bolts, but do not remove the bolts from the door.
4. Adjust the door fore and aft by repositioning the door as needed.

Installation Procedure

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

1. Install the bodyside hinges bolts.

Tighten

Tighten the bolts to 32 N.m (24 lb ft).

2. Inspect the door for proper operation and alignment.
3. Remove the masking tape.

FRONT SIDE DOOR REPLACEMENT

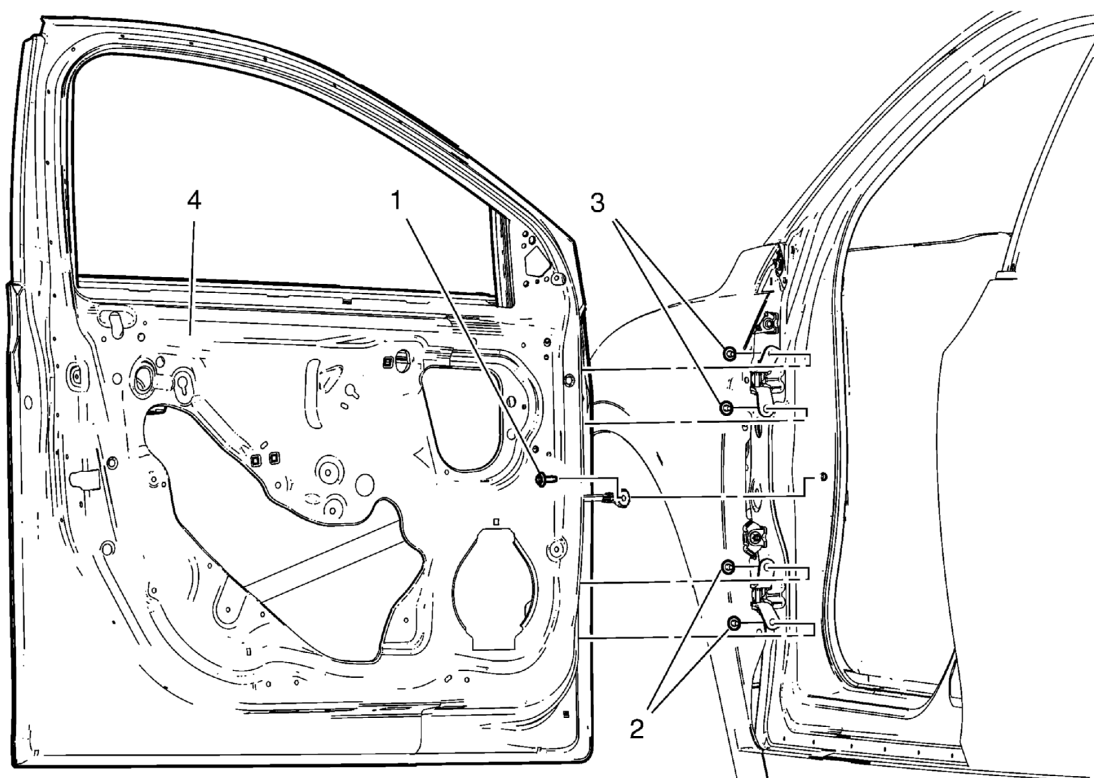


Fig. 6: Front Side Door Mounting Hardware
 Courtesy of GENERAL MOTORS COMPANY

Front Side Door Replacement

Callout	Component Name
1	<p>Front Side Door Check Link to Body Bolt</p> <p>CAUTION: Refer to Fastener Caution .</p> <p>Procedure</p> <ol style="list-style-type: none"> 1. Apply masking tape to the door edge and fender. 2. Remove the water deflector. 3. Reposition the door harness boot at the pillar and disconnect the door electrical connector. <p>Tighten 22 N.m (16 lb ft)</p>
2	<p>Front Side Door Lower Hinge to Door Bolt (Qty: 2)</p> <p>Procedure</p> <ol style="list-style-type: none"> 1. Support the door before removing the hinge bolts. 2. With an assistant, remove the door. <p>Tighten 25 N.m (18 lb ft)</p>
3	<p>Front Side Door Upper Hinge to Door Bolt (Qty: 2)</p> <p>Tighten 25 N.m (18 lb ft)</p>

Callout	Component Name
4	<p>Front Side Door</p> <p>Procedure</p> <ol style="list-style-type: none"> 1. If replacing the door, transfer components as necessary. 2. Adjust the front side door as needed. Refer to Front Side Door Adjustment.

REAR SIDE DOOR ADJUSTMENT

Removal Procedure

Up/Down or In/Out Adjustment

1. Open the door.

CAUTION: Refer to [Paint Damage Caution](#) .

NOTE: The door side upper and lower hinge bolts must remain tight enough to retain door adjusted position.

2. Apply masking tape to the quarter panel edge and the door edges.

Loosen the door side hinge bolts.

Do not remove the bolts from the door.

3. Adjust the door up or down by repositioning the door as needed.
4. Adjust the door in or out by repositioning the door as needed.

Installation Procedure

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

1. Install the door side hinge bolts.

Tighten

Tighten the bolts to 25 N.m (18 lb ft).

2. Inspect the door for proper operation and alignment.
3. Remove the masking tape.

Removal Procedure

Fore/Aft Adjustment

CAUTION: Refer to [Paint Damage Caution](#) .

NOTE: The door side upper and lower hinge bolts must remain tight enough to retain door adjusted position.

1. Apply masking tape to the quarter panel edge and door edges.

Loosen the bodyside hinge bolts.

Do not remove the bolts from the door.

2. Adjust the door fore and aft by repositioning the door as needed.

Installation Procedure

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

1. Install the bodyside hinges bolts.

Tighten

Tighten the bolts to 32 N.m (24 lb ft).

2. Inspect the door for proper operation and alignment.
3. Remove the masking tape.

REAR SIDE DOOR REPLACEMENT

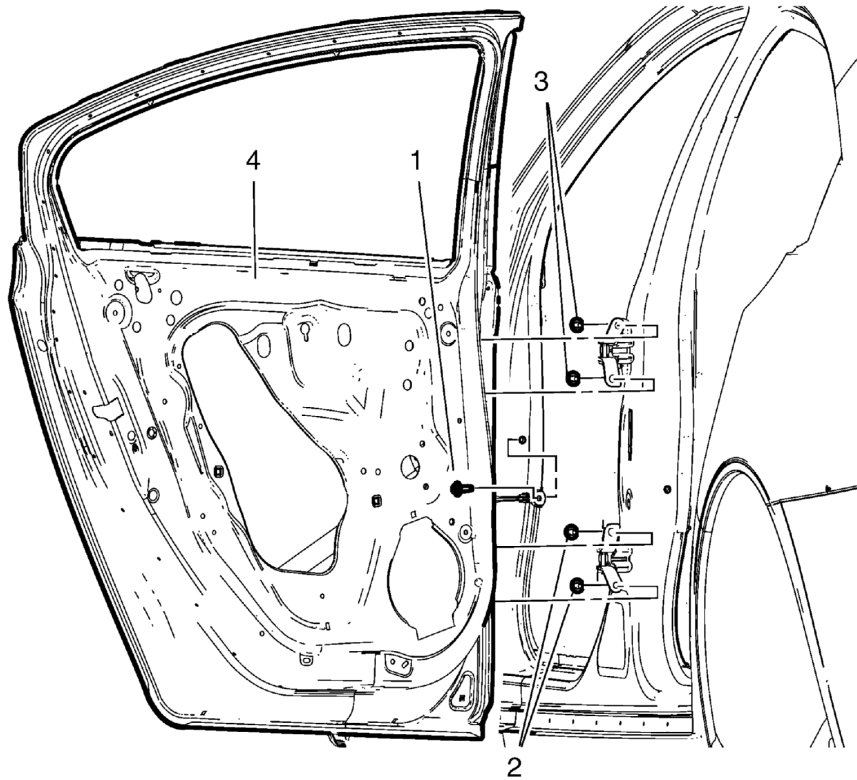


Fig. 7: Rear Side Door Mounting Hardware
Courtesy of GENERAL MOTORS COMPANY

Rear Side Door Replacement

Callout	Component Name
1	<p>Rear Side Door Check Link to Body Bolt</p> <p>CAUTION: Refer to Fastener Caution .</p> <p>Procedure</p> <ol style="list-style-type: none">1. Apply masking tape to the edges of the door.2. Remove the water deflector.3. Reposition the electrical harness boot, remove the connector body from the pillar and disconnect the door electrical connector. <p>Tighten 22 N.m (16 lb ft)</p>

Callout	Component Name
2	Rear Side Door Lower Hinge to Door Bolt (Qty: 2) Procedure <ol style="list-style-type: none"> 1. Support the door before removing the hinge bolts. 2. With an assistant, remove the door. Tighten 25 N.m (18 lb ft)
3	Rear Side Door Upper Hinge to Door Bolt (Qty: 2) Tighten 25 N.m (18 lb ft)
4	Rear Side Door Procedure <ol style="list-style-type: none"> 1. If replacing the door, transfer parts as necessary. 2. Adjust the rear side door as needed. Refer to Rear Side Door Adjustment.

FRONT FENDER REPLACEMENT

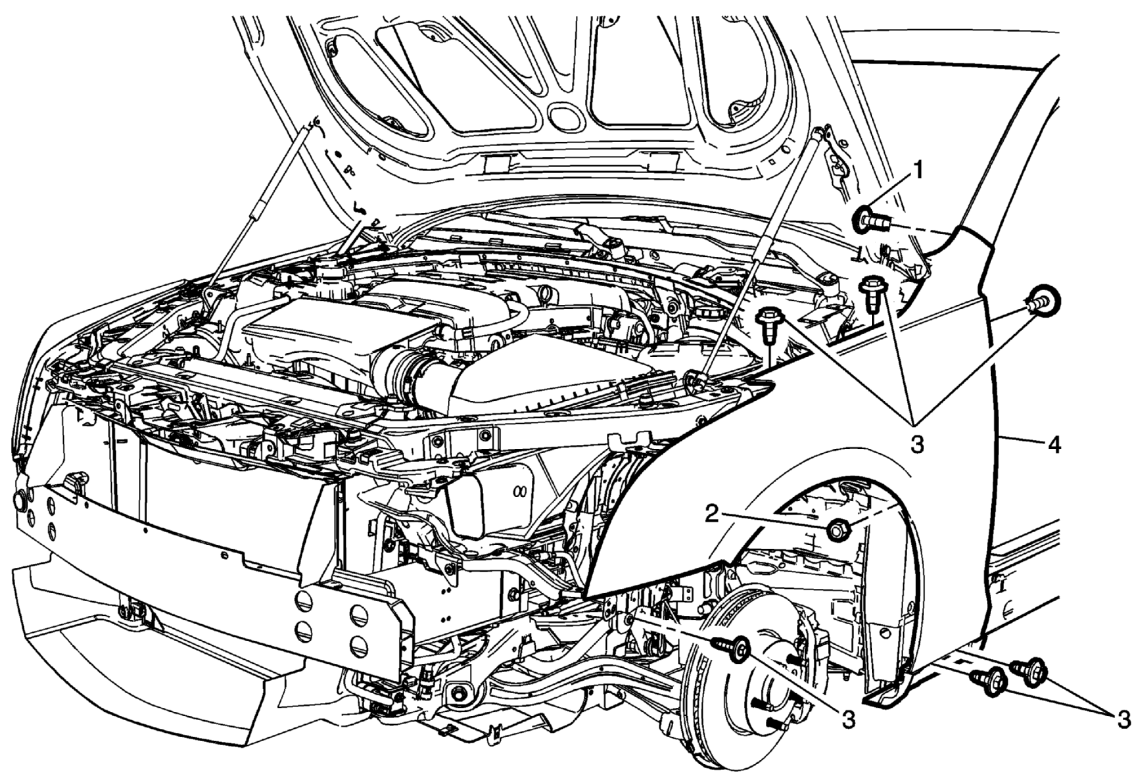


Fig. 8: Front Fender & Mounting Components
Courtesy of GENERAL MOTORS COMPANY

Front Fender Replacement

Callout	Component Name

Callout	Component Name
Preliminary Procedures <ol style="list-style-type: none"> 1. Remove the front bumper fascia. Refer to Front Bumper Fascia Replacement . 2. Remove the air inlet grille panel. Refer to Air Inlet Grille Panel Replacement . 3. Remove the headlamp. Refer to Headlamp Replacement . 4. Remove the rocker panel molding. Refer to Rocker Panel Molding Replacement . 5. Remove the front wheelhouse liner. Refer to Front Wheelhouse Liner Replacement . 6. Remove the air inlet grille panel extension. Refer to Air Inlet Grille Panel Extension Replacement . 7. If removing the passenger side fender, remove the windshield washer solvent container. Refer to Windshield Washer Solvent Container Replacement (with CE1) , Windshield Washer Solvent Container Replacement (with CE4) . 8. Remove the front fender insulator. Refer to Front Fender Insulator Replacement. 	
1	Front Fender Bolt CAUTION: Refer to Fastener Caution . Tighten 9 (80 lb in)
2	Front Fender Nut Tighten 9 (80 lb in)
3	Front Fender Bolt (Qty: 6) Tighten 9 (80 lb in)
4	Front Fender Procedure Transfer parts as needed.

FRONT SIDE DOOR UPPER HINGE AND LOWER HINGE REPLACEMENT

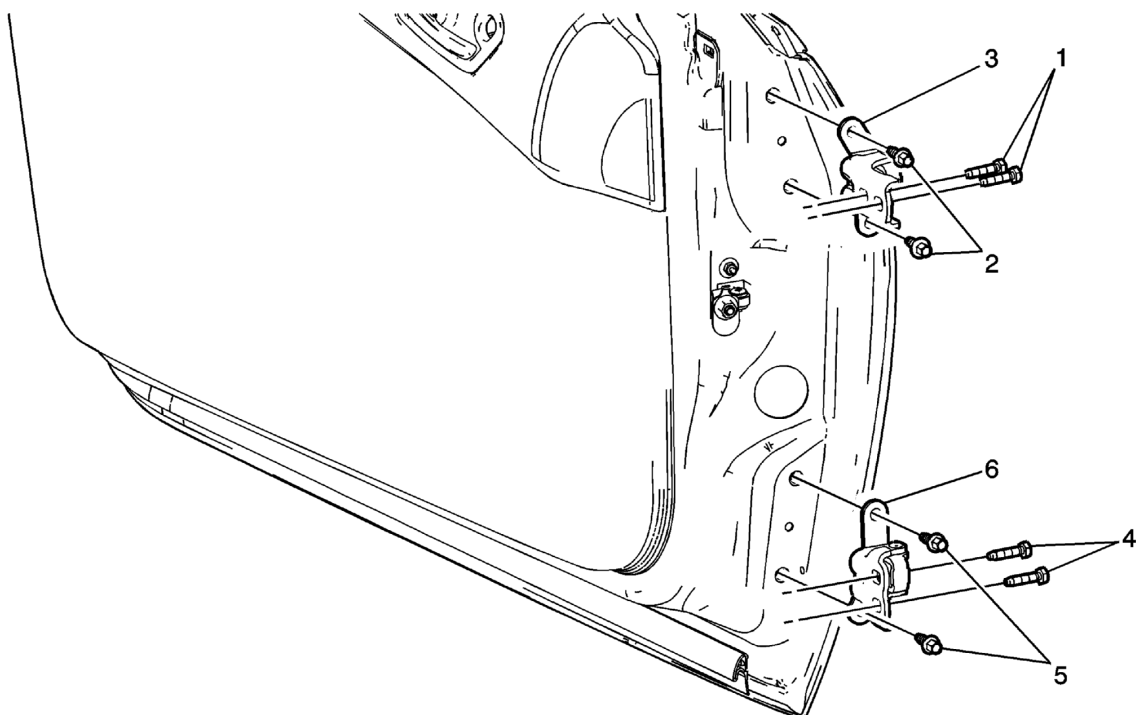


Fig. 9: View Of Front Side Door Hinge
Courtesy of GENERAL MOTORS COMPANY

Front Side Door Upper Hinge and Lower Hinge Replacement

Callout	Component Name
Preliminary Procedure Remove the front fender. Refer to Front Fender Replacement .	
1	Front Side Door Upper Hinge to Body Bolt (Qty: 2) CAUTION: Refer to Fastener Caution . Procedure 1. Mark the location of the hinge before removing the bolts with a grease pencil. 2. Support the door before removing the hinge bolts. 3. Disconnect the door electrical connector. Tighten 32 N.m (24 lb ft)
2	Front Side Door Upper Hinge to Door Bolt (Qty: 2) Tighten 25 N.m (18 lb ft)
3	Front Side Door Upper Hinge
4	Front Side Door Lower Hinge to Body Bolt (Qty: 2) Tighten 32 N.m (24 lb ft)
5	Front Side Door Lower Hinge to Door Bolt (Qty: 2) Tighten 25 N.m (18 lb ft)
6	Front Side Door Lower Hinge Procedure Check the door for proper alignment, adjust as necessary. Refer to Front Side Door Adjustment .

HOOD HINGE REPLACEMENT

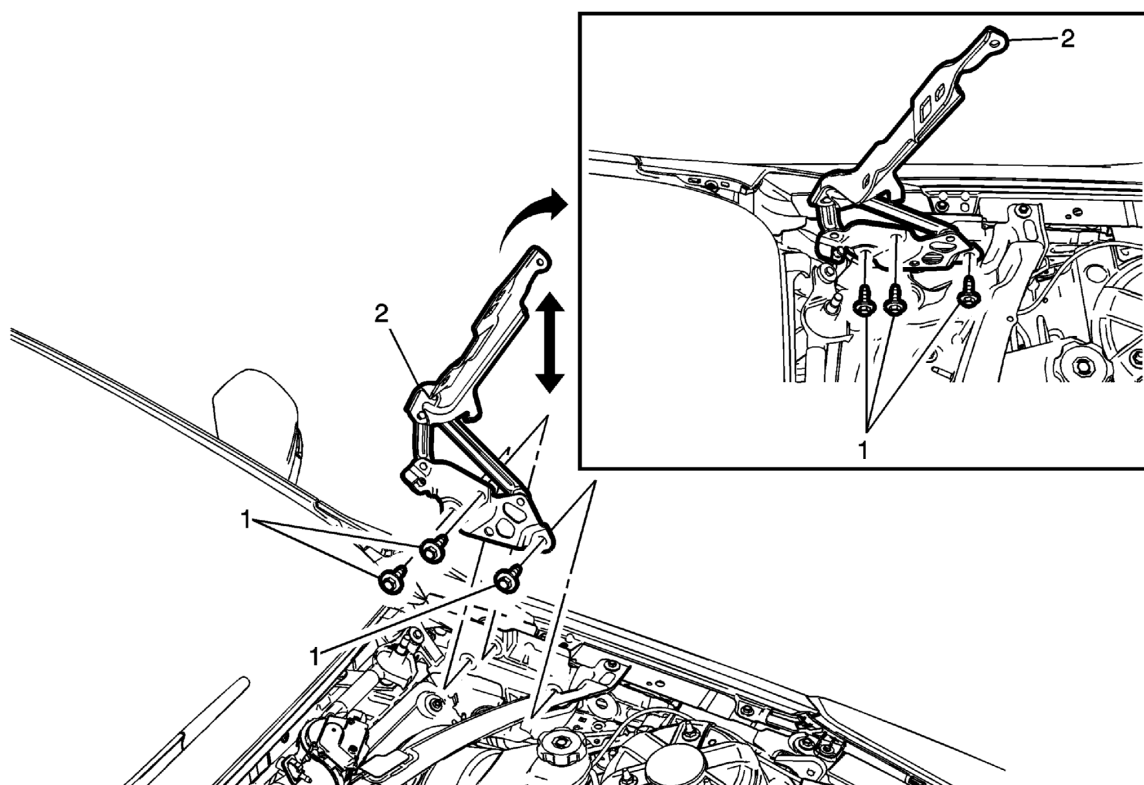


Fig. 10: Hood Hinge

Courtesy of GENERAL MOTORS COMPANY

Hood Hinge Replacement

Callout	Component Name
Preliminary Procedures <ol style="list-style-type: none"> 1. Remove the hood. Refer to Hood Replacement. 2. Remove the air inlet grille panel. Refer to Air Inlet Grille Panel Replacement. 3. Disconnect the hood strut rod from the hood hinge. Refer to Hood Strut Replacement. 4. Remove the active hood hinge actuator, if equipped. Refer to Active Hood Hinge Actuator Replacement. 	
1	Hood Hinge Bolt (Qty: 3) CAUTION: Refer to Fastener Caution . Tighten 22 (16 lb ft)
2	Hood Hinge Procedure Adjust the hood and hinge if needed. Refer to Hood Adjustment .

REAR COMPARTMENT LID HINGE COVER REPLACEMENT

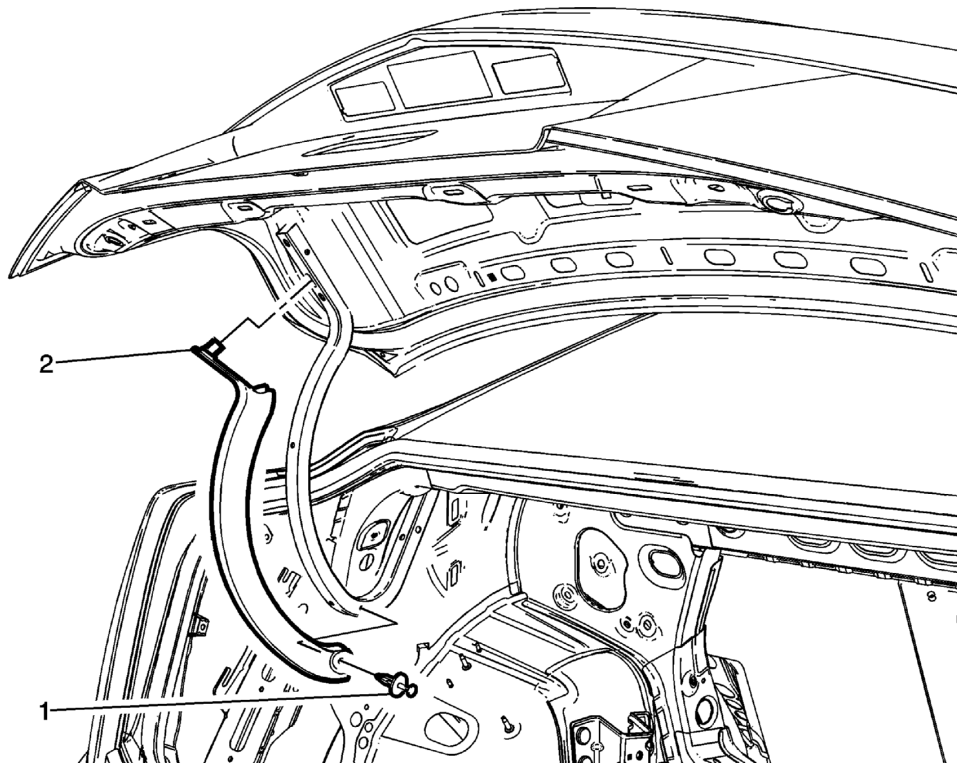


Fig. 11: Rear Compartment Lid Hinge Cover
 Courtesy of GENERAL MOTORS COMPANY

Rear Compartment Lid Hinge Cover Replacement

Callout	Component Name
1	Rear Compartment Lid Hinge Cover Push-In Retainer
2	Rear Compartment Lid Hinge Cover
Procedure Pull the upper end of the rear compartment lid hinge cover to release the upper retainer.	

REAR COMPARTMENT LID HINGE REPLACEMENT

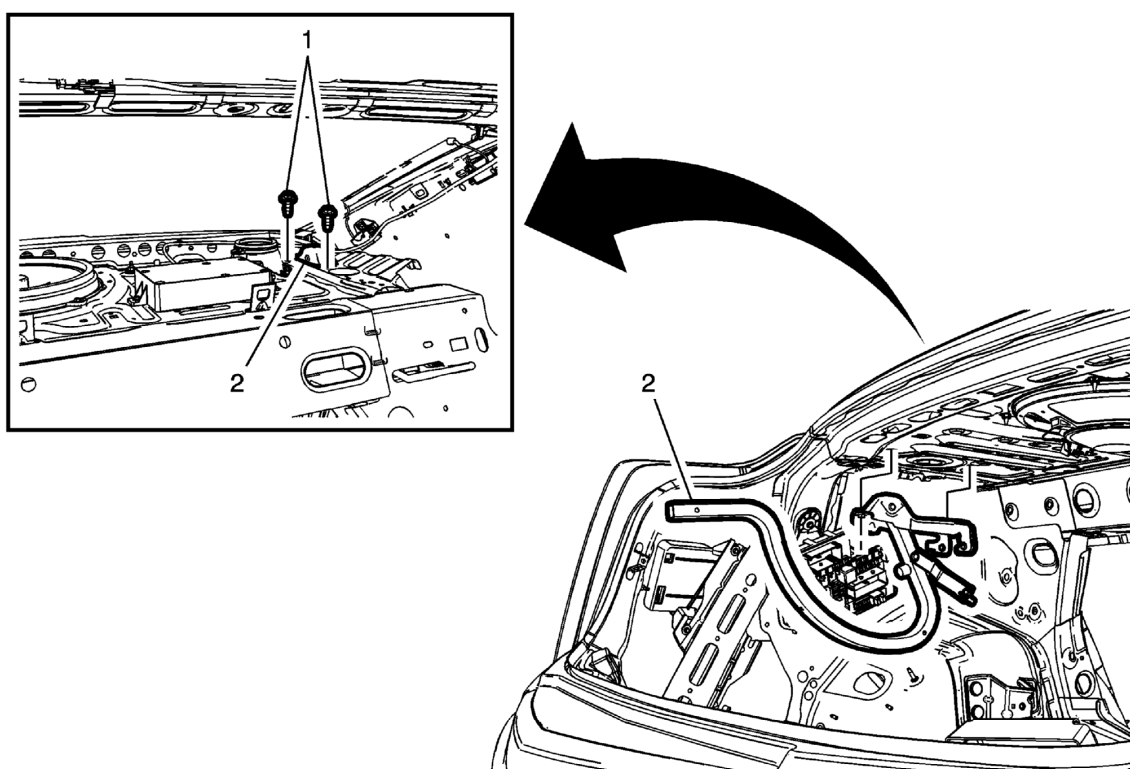


Fig. 12: Rear Compartment Lid Hinge & Bolts
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedures	
1. Remove the rear compartment lid. Refer to Rear Compartment Lid Replacement . 2. Remove the rear window trim panel. Refer to Rear Window Panel Trim Replacement . 3. Remove the rear compartment lid hinge torque rod. Refer to Rear Compartment Lid Hinge Torque Rod Replacement .	
1	Rear Compartment Lid Hinge Bolt (Qty: 2) CAUTION: Refer to Fastener Caution Tighten 9 (80 lb in)
2	Rear Compartment Lid Hinge

Callout	Component Name

Callout	Component Name
1	Rear Side Door Upper Hinge to Body Bolts (Qty: 2) CAUTION: Refer to Fastener Caution . Procedure 1. Do not remove the door from the vehicle to do this procedure. Keep the rear door in the closed position to replace the hinge 2. Mark the location of the hinge before removing the bolts with a grease pencil. Tighten 32 N.m (24 lb ft)
2	Rear Side Door Upper Hinge to Door Bolts (Qty: 2) Tighten 25 N.m (18 lb ft)
3	Rear Side Door Upper Hinge Assembly Procedure Check the door for proper alignment, adjust as necessary.
4	Rear Side Door Lower Hinge to Body Bolts (Qty: 2) Tighten 32 N.m (24 lb ft)
5	Rear Side Door Lower Hinge to Door Bolts (Qty: 2) Tighten 25 N.m (18 lb ft)
6	Rear Side Door Lower Hinge Assembly Procedure Check the door for proper alignment, adjust as necessary. Refer to Rear Side Door Adjustment .

HOOD ADJUSTMENT

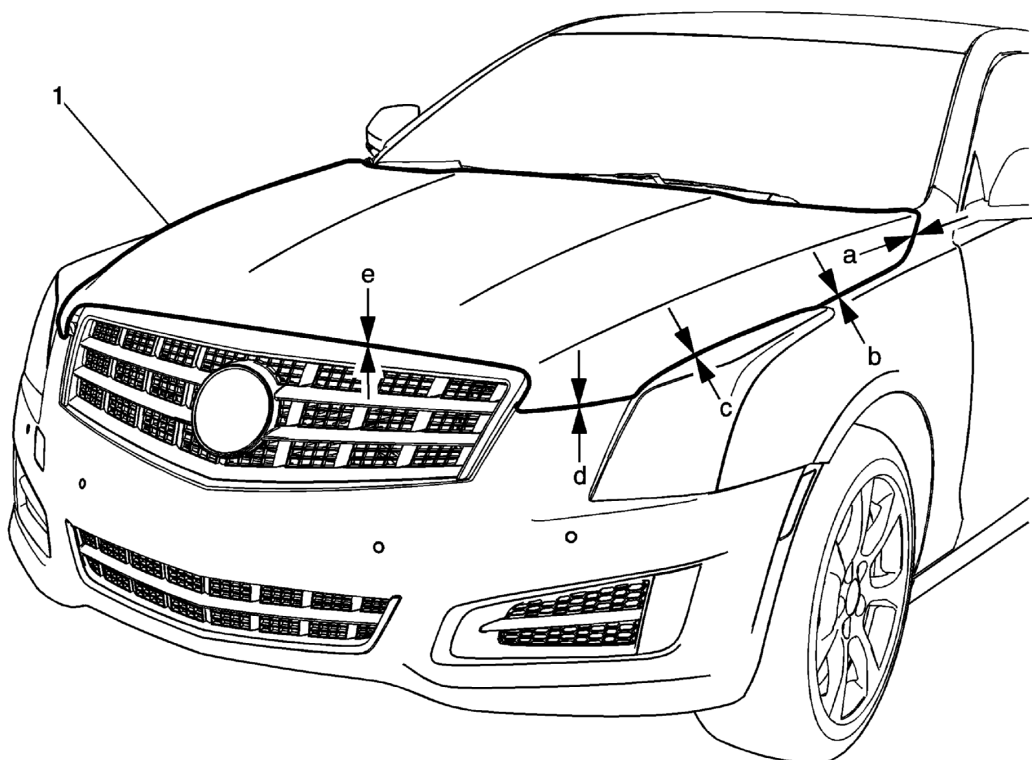


Fig. 14: Hood

Courtesy of GENERAL MOTORS COMPANY

Hood Adjustment

Callout	Component Name
1	<p>Hood</p> <p>CAUTION: Refer to Fastener Caution .</p> <p>Procedure</p> <ol style="list-style-type: none">1. Loosen the 4 hood hinge bolts.2. Adjust the hood in order to obtain an even gap on both sides between the hood and the fenders, the headlamps and the front bumper fascia and so that the hood is flush with both fenders on the front edge, the front bumper fascia, and the headlamps. <p>Adjustment:</p> <ul style="list-style-type: none">• Hood to front fender (a) 4.0 mm $\tilde{\Delta}$, $\hat{\Delta} \pm 1.0$ mm (0.12 in $\tilde{\Delta}$, $\hat{\Delta} \pm 0.04$ in)• Hood to front fender (b) 4.0 mm $\tilde{\Delta}$, $\hat{\Delta} \pm 1.0$ mm (0.12 in $\tilde{\Delta}$, $\hat{\Delta} \pm 0.04$ in)• Hood to headlamp (c) 4.0 mm $\tilde{\Delta}$, $\hat{\Delta} \pm 1.0$ mm (0.12 in $\tilde{\Delta}$, $\hat{\Delta} \pm 0.04$ in)• Hood to front bumper fascia (d) 6.5 mm $\tilde{\Delta}$, $\hat{\Delta} \pm 1.0$ mm (0.12 in $\tilde{\Delta}$, $\hat{\Delta} \pm 0.04$ in)• Hood to grille (e) 6.5 mm $\tilde{\Delta}$, $\hat{\Delta} \pm 1.0$ mm (0.12 in $\tilde{\Delta}$, $\hat{\Delta} \pm 0.04$ in) <p>Tighten 22 (16 lb ft)</p>

HOOD REPLACEMENT

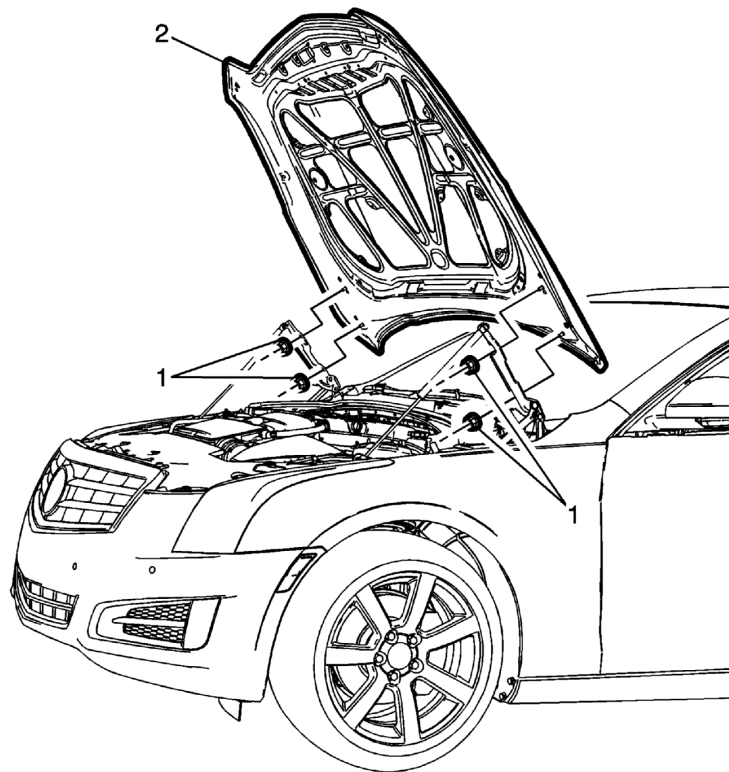


Fig. 15: Hood & Mounting Nuts

Courtesy of GENERAL MOTORS COMPANY

Hood Replacement

Callout	Component Name

Callout	Component Name
1	<p>Hood Hinge Nut (Qty: 4)</p> <p>CAUTION: Refer to Fastener Caution .</p> <p>Procedure Mark the hood or hinge position in order to aid in hood installation. Tighten 22 (16 lb ft)</p>
2	<p>Hood</p> <p>Procedure</p> <ol style="list-style-type: none"> 1. Remove the hood from the vehicle with the aid of an assistant. 2. Transfer parts as needed. 3. Adjust the hood if needed. Refer to Hood Adjustment.

FRONT FENDER INSULATOR REPLACEMENT

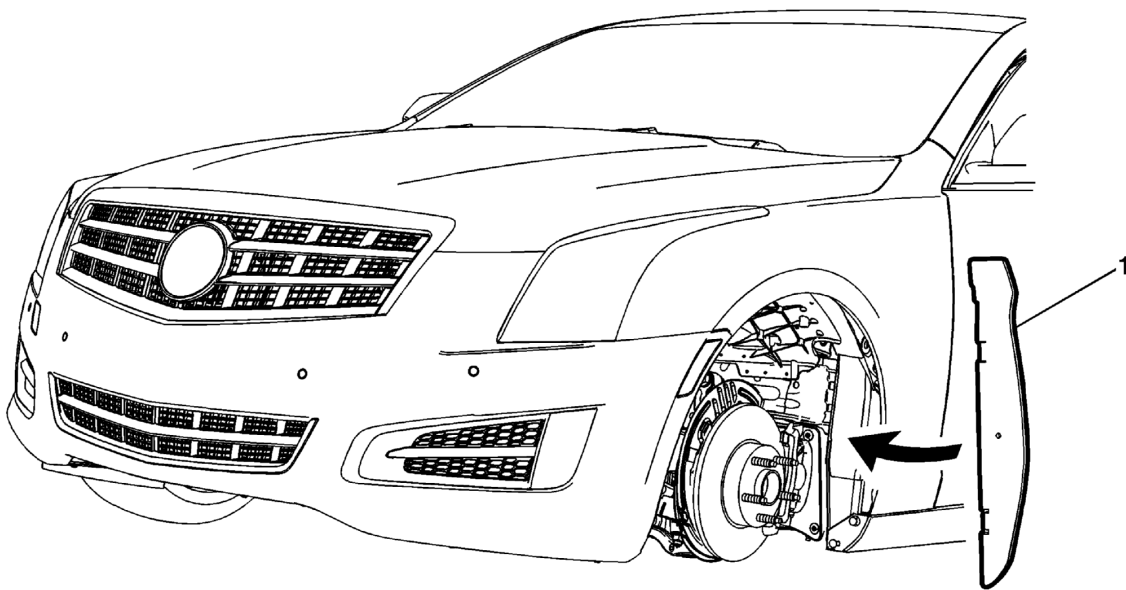


Fig. 16: Front Fender Insulator

Courtesy of GENERAL MOTORS COMPANY

Front Fender Insulator Replacement

Callout	Component Name
<p>Preliminary Procedure Remove the front wheelhouse liner. Refer to Front Wheelhouse Liner Replacement .</p>	
1	<p>Front Fender Insulator</p> <p>Procedure</p> <ol style="list-style-type: none"> 1. Grasp the front fender insulator and pull from the rear of the fender. 2. Firmly press the fender insulator into the rear of the fender until fully seated.

HOOD INSULATOR REPLACEMENT

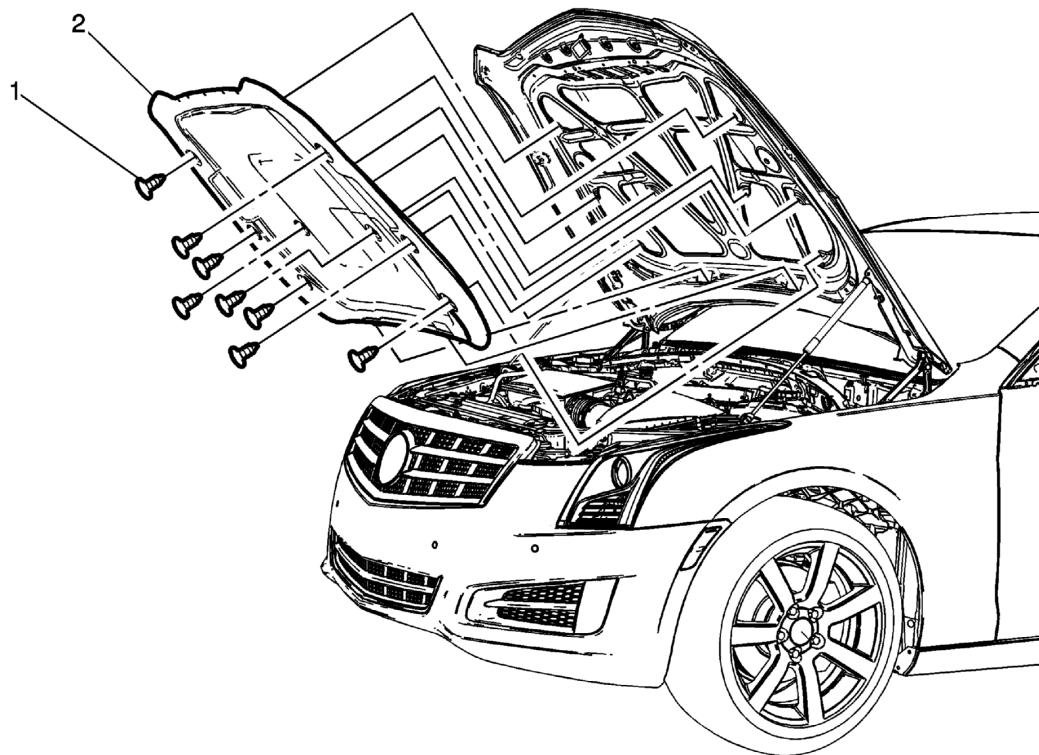


Fig. 17: Hood Insulator & Retainer

Courtesy of GENERAL MOTORS COMPANY

Hood Insulator Replacement

Callout	Component Name
Preliminary Procedure	
Remove the hood front weatherstrip. Refer to Hood Front Weatherstrip Replacement .	
1	Hood Insulator Plastic Retainer (Qty: 8)
2	Hood Insulator
Procedure	
Ensure the 2 integral tabs are secured to the hood.	

HOOD PRIMARY AND SECONDARY LATCH REPLACEMENT

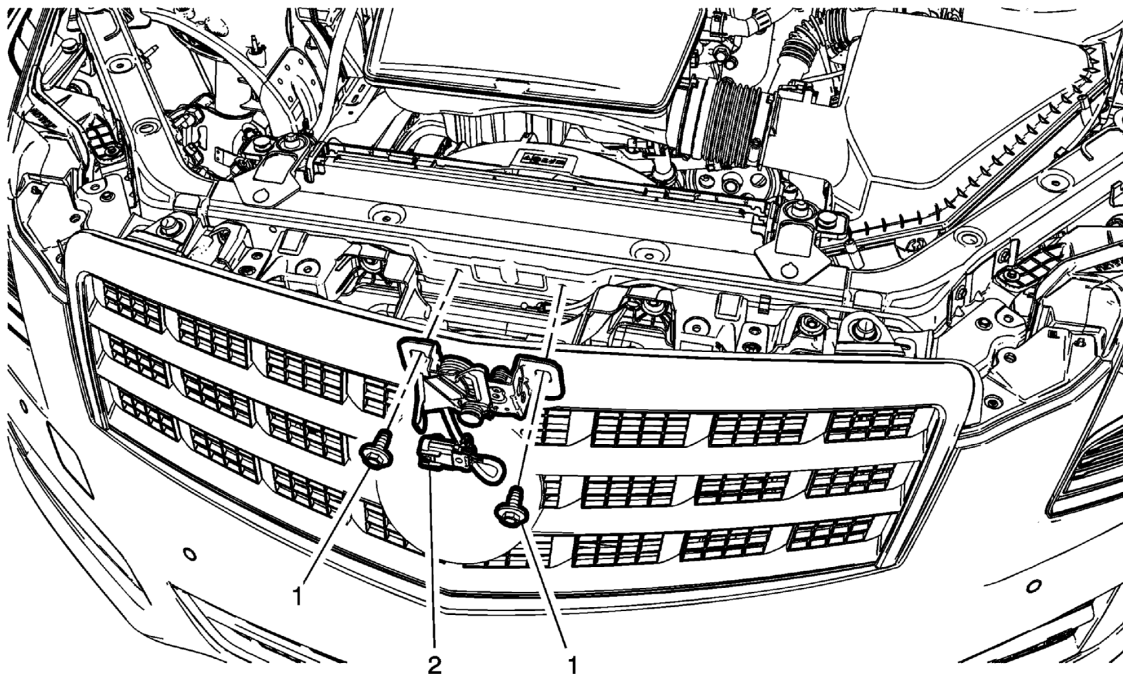


Fig. 18: Hood Primary & Secondary Latch
 Courtesy of GENERAL MOTORS COMPANY

Hood Primary and Secondary Latch Replacement

Callout	Component Name
Preliminary Procedure Remove the front compartment front sight shield. Refer to Front Compartment Front Sight Shield Replacement .	
1	Hood Primary and Secondary Latch Bolt (Qty: 2) CAUTION: Refer to Fastener Caution . Tighten 22 (16 lb ft)
2	Hood Primary and Secondary Latch Procedure <ol style="list-style-type: none"> 1. Disconnect the release cable from the hood primary latch. 2. Disconnect the electrical connector. 3. Adjust the hood as necessary. Refer to Hood Adjustment.

REAR COMPARTMENT LID ADJUSTMENT

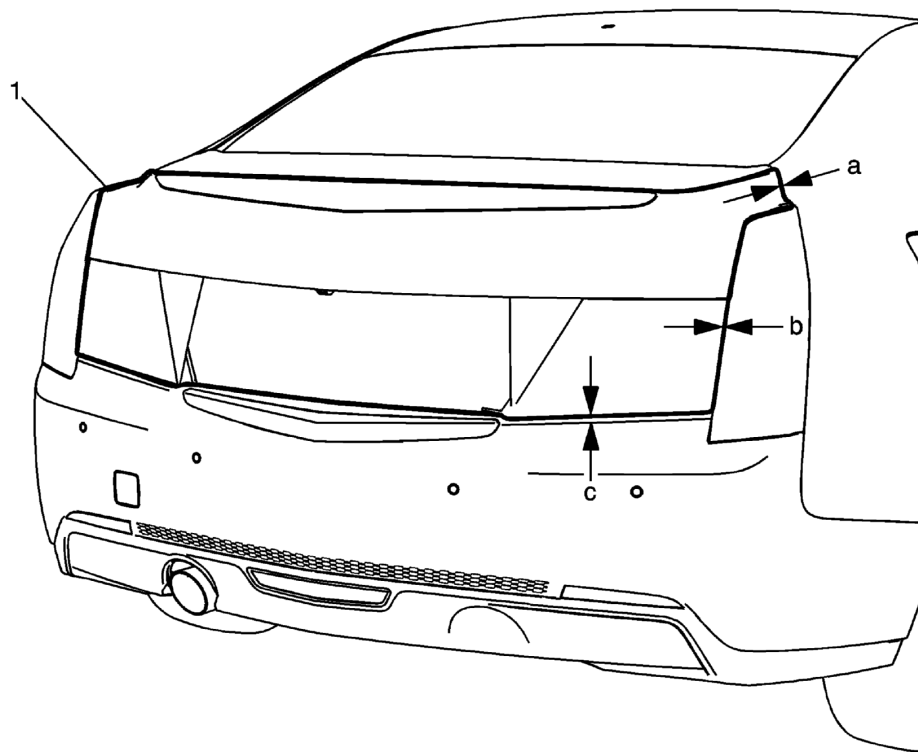


Fig. 19: Rear Compartment Lid

Courtesy of GENERAL MOTORS COMPANY

Rear Compartment Lid Adjustment

Callout	Component Name
Preliminary Procedures	
<ol style="list-style-type: none"> 1. Remove the rear compartment inner panel trim. Refer to Rear Compartment Lid Inner Panel Trim Replacement. 2. Remove the rear end trim finish panel. Refer to Rear End Trim Finish Panel Replacement. 	

Callout	Component Name
1	<p>Rear Compartment Lid</p> <p>CAUTION: Refer to Fastener Caution</p> <p>Procedure</p> <ol style="list-style-type: none"> 1. Loosen the rear compartment lid hinge bolts (Qty: 4) to perform adjustments (a) and (b). Loosen the rear compartment latch striker bolts to perform adjustment (c). 2. Adjust the rear compartment lid in order to obtain an even gap between the rear compartment lid and the quarter outer panel, the rear tail lamp, and the rear bumper fascia and so that the rear compartment lid is flush with the quarter outer panel, the rear tail lamp, and the rear bumper fascia. <p>Adjustment</p> <ul style="list-style-type: none"> • Rear compartment lid to quarter outer panel (a) 3.0 mm $\tilde{\Delta}$, $\hat{\Delta} \pm 0.75$ mm (0.12 in $\tilde{\Delta}$, $\hat{\Delta} \pm 0.03$ in) • Tail lamp to rear compartment lid (b) 3.0 mm $\tilde{\Delta}$, $\hat{\Delta} \pm 1.0$ mm (0.12 in $\tilde{\Delta}$, $\hat{\Delta} \pm 0.04$ in) • Rear compartment lid to rear bumper fascia (c) 5.5 mm $\tilde{\Delta}$, $\hat{\Delta} \pm 1.5$ mm (0.22 in $\tilde{\Delta}$, $\hat{\Delta} \pm 0.06$ in) <p>Tighten 9 (80 lb in)</p>

REAR COMPARTMENT LID REPLACEMENT

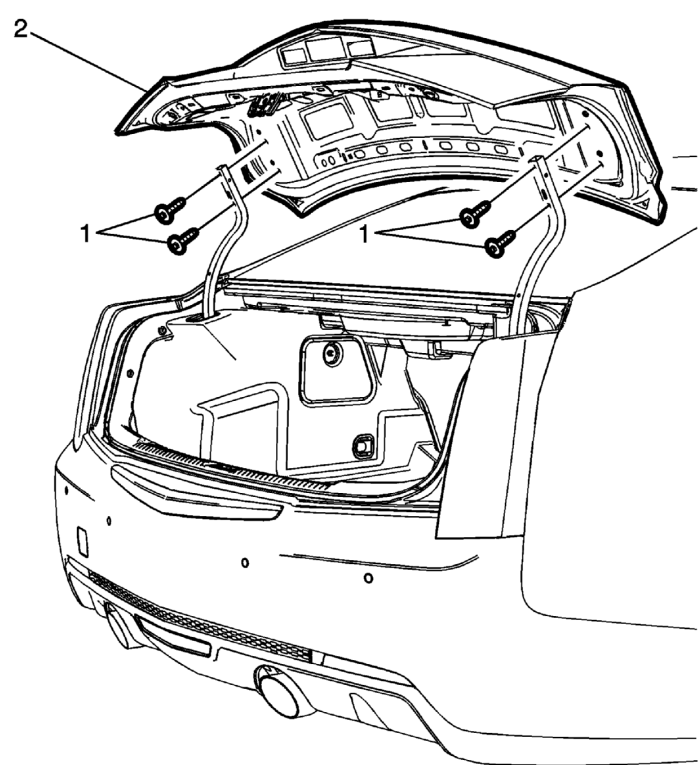


Fig. 20: Rear Compartment Lid & Bolts
Courtesy of GENERAL MOTORS COMPANY

Rear Compartment Lid Replacement

Callout	Component Name

Callout	Component Name
Preliminary Procedures 1. Remove the rear compartment lid inner panel trim. Refer to Rear Compartment Lid Inner Panel Trim Replacement .	
1	Rear Compartment Lid Bolt (Qty: 4) CAUTION: Refer to Fastener Caution . Tighten 9 (80 lb in)
2	Rear Compartment Lid Procedure 1. Disconnect the electrical connector. 2. Remove the rear compartment with the aid of an assistant. 3. Transfer parts as needed. 4. Adjust the rear compartment lid if needed. Refer to Rear Compartment Lid Adjustment .

FRONT SIDE DOOR CHECK LINK REPLACEMENT

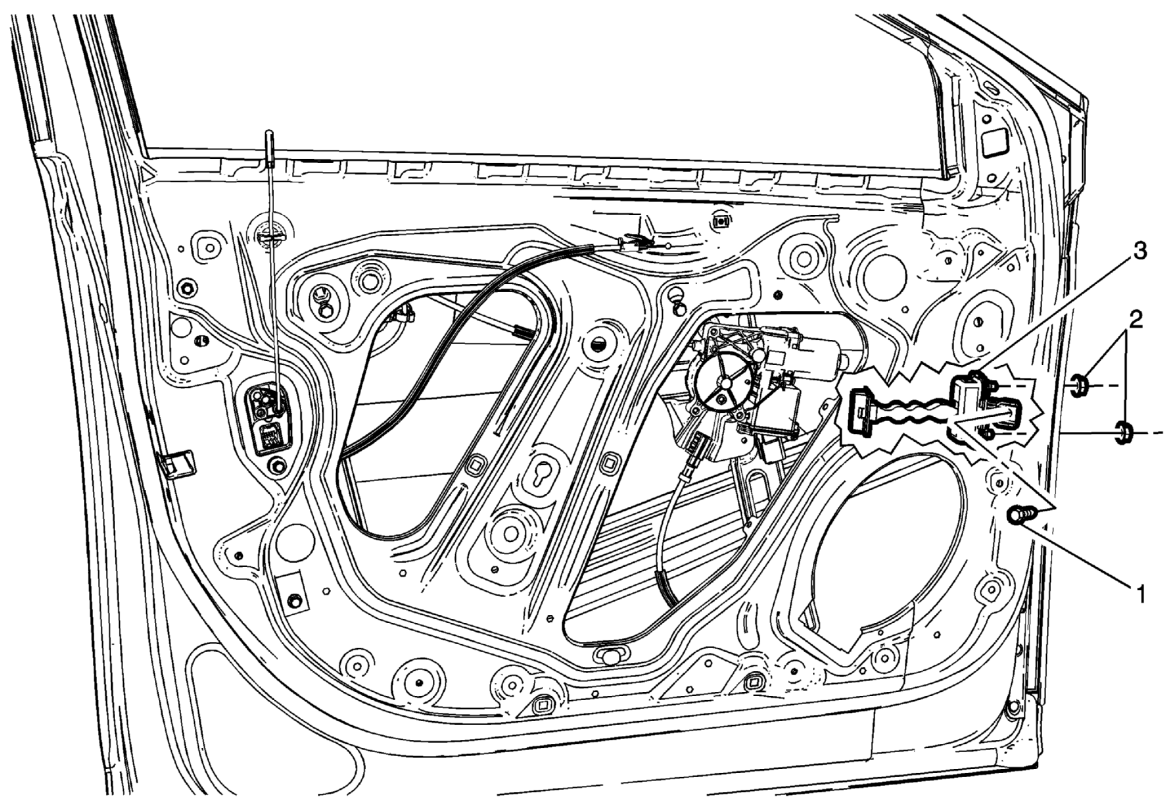


Fig. 21: Front Side Door Check Link & Mounting Components
 Courtesy of GENERAL MOTORS COMPANY

Front Side Door Check Link Replacement

Callout	Component Name
Preliminary Procedures Remove the front side door speaker. Refer to Radio Front Side Door Speaker Replacement .	

Callout	Component Name
1	Front Side Door Check Link to Body Bolt CAUTION: Refer to Fastener Caution . NOTE: Place the door in the full open position. Tighten 22 N.m (16 lb ft)
2	Front Side Door Check Link to Door Nuts (Qty: 2) Tighten 10 N.m (89 lb in)
3	Front Side Door Check Link

REAR SIDE DOOR CHECK LINK REPLACEMENT

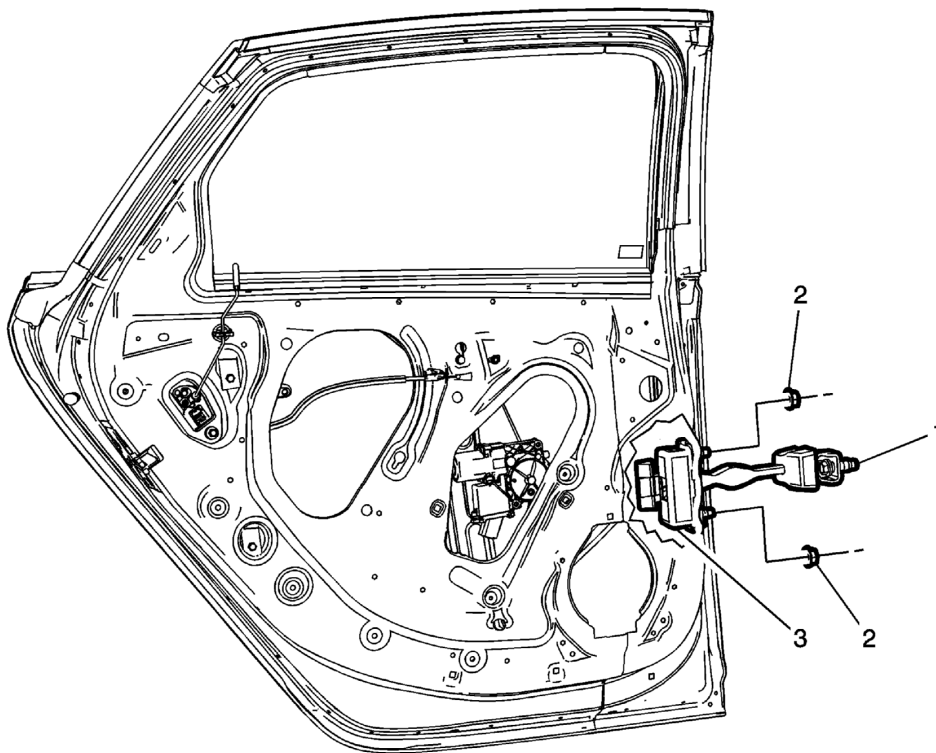


Fig. 22: Rear Side Door Check Link & Mounting Components
Courtesy of GENERAL MOTORS COMPANY

Rear Side Door Check Link Replacement

Callout	Component Name
Preliminary Procedures	
1.	Remove the rear side door trim. Refer to Rear Side Door Trim Replacement .
2.	Remove the rear side door speaker. Refer to Radio Rear Side Door Speaker Replacement
	.

Callout	Component Name
1	Rear Side Door Check Link to Body Bolt CAUTION: Refer to Fastener Caution . NOTE: Place the door in the full open position. Tighten 22 (16 lb ft)
2	Rear Side Door Check Link to Door Nut (Qty: 2) Tighten 10 (89 lb in)
3	Rear Side Door Check Link

FUEL TANK FILLER DOOR REPLACEMENT

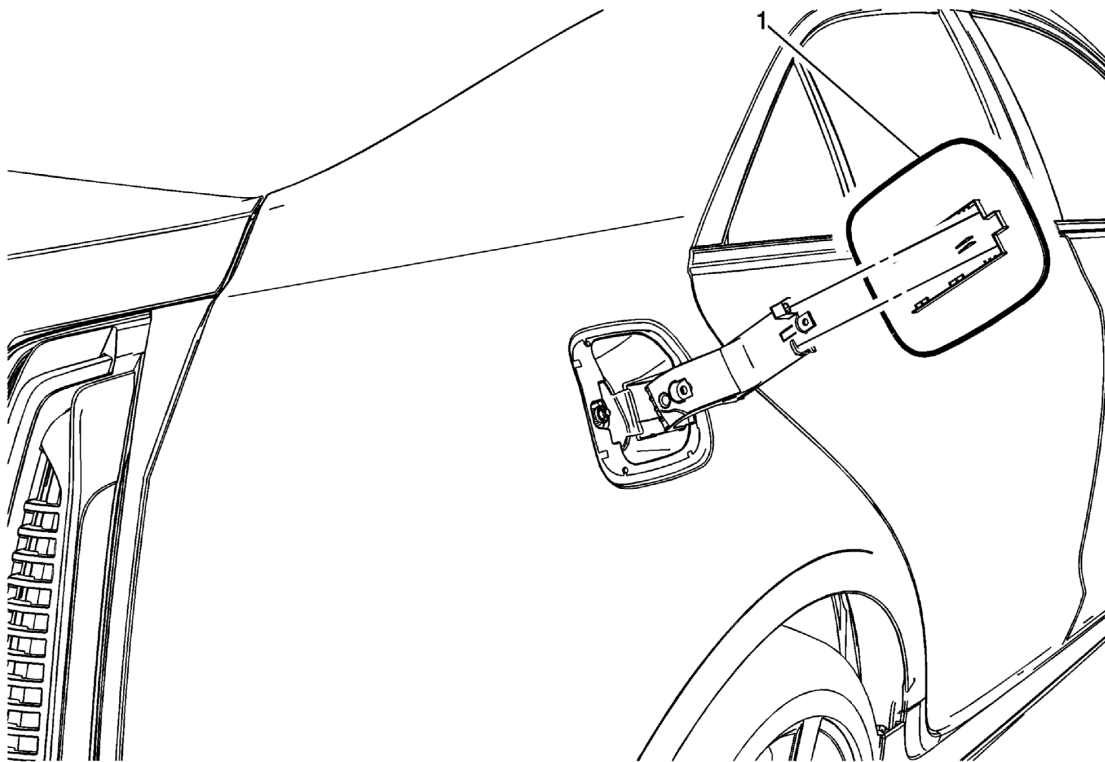


Fig. 23: Fuel Tank Filler Door

Courtesy of GENERAL MOTORS COMPANY

Fuel Tank Filler Door Replacement

Callout	Component Name
1	Fuel Tank Filler Door Procedure Position the fuel tank filler door to the full open position. Using light outward sliding pressure on the filler door, release the retainer on the fuel tank filler door from the hinge.

FUEL TANK FILLER PIPE HOUSING REPLACEMENT

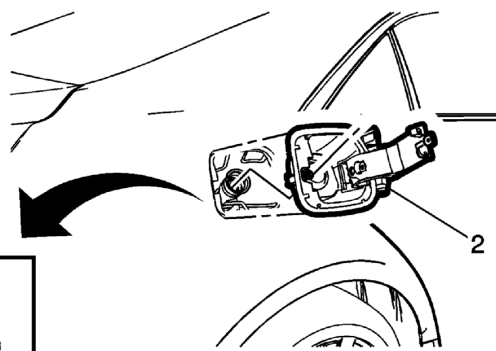
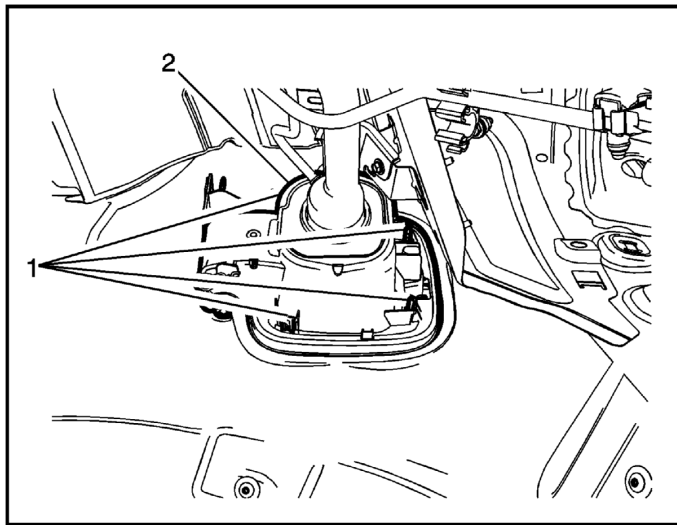


Fig. 24: Fuel Tank Filler Pipe Housing
 Courtesy of GENERAL MOTORS COMPANY

Fuel Tank Filler Pipe Housing Replacement

Callout	Component Name
Preliminary Procedures <ol style="list-style-type: none"> 1. Remove the fuel tank filler door. Refer to Fuel Tank Filler Door Replacement. 2. Loosen the lower filler pipe bolt and remove the upper filler pipe bolt. Refer to Fuel Tank Filler Pipe Replacement. 	
1	Fuel Tank Filler Pipe Housing Retainer (Qty: 4) Procedure <ol style="list-style-type: none"> 1. Using a flat-bladed tool, release the fuel tank filler pipe housing retainers through the wheelhouse opening. 2. Disconnect the electrical connector if equipped with a locking actuator. 3. Transfer the actuator if equipped.
2	Fuel Tank Filler Pipe Housing Procedure <ol style="list-style-type: none"> 1. Position the fuel tank filler pipe housing to the panel and the fuel filler pipe. 2. Press the fuel tank filler pipe housing to the panel until fully seated. 3. Ensure the fuel tank filler pipe housing seal is fully seated to the filler pipe. 4. Connect electrical connector to the locking actuator if equipped.

HOOD STRUT REPLACEMENT



Fig. 25: Hood Strut

Courtesy of GENERAL MOTORS COMPANY

Hood Strut Replacement

Callout	Component Name
1	<p>Hood Strut</p> <p>WARNING: When a hood hold open device is being removed or installed, provide alternate support to avoid the possibility of damage to the vehicle or personal injury.</p> <p>CAUTION: Apply pressure only at the end of the liftgate/hood assist rod that you are removing or attaching. Do NOT apply pressure to the middle of the rod because damage or bending will result.</p> <p>Procedure Remove the metal clip at the ends of the hood strut, then pull away from the stud.</p>

REAR COMPARTMENT LID HINGE TORQUE ROD REPLACEMENT

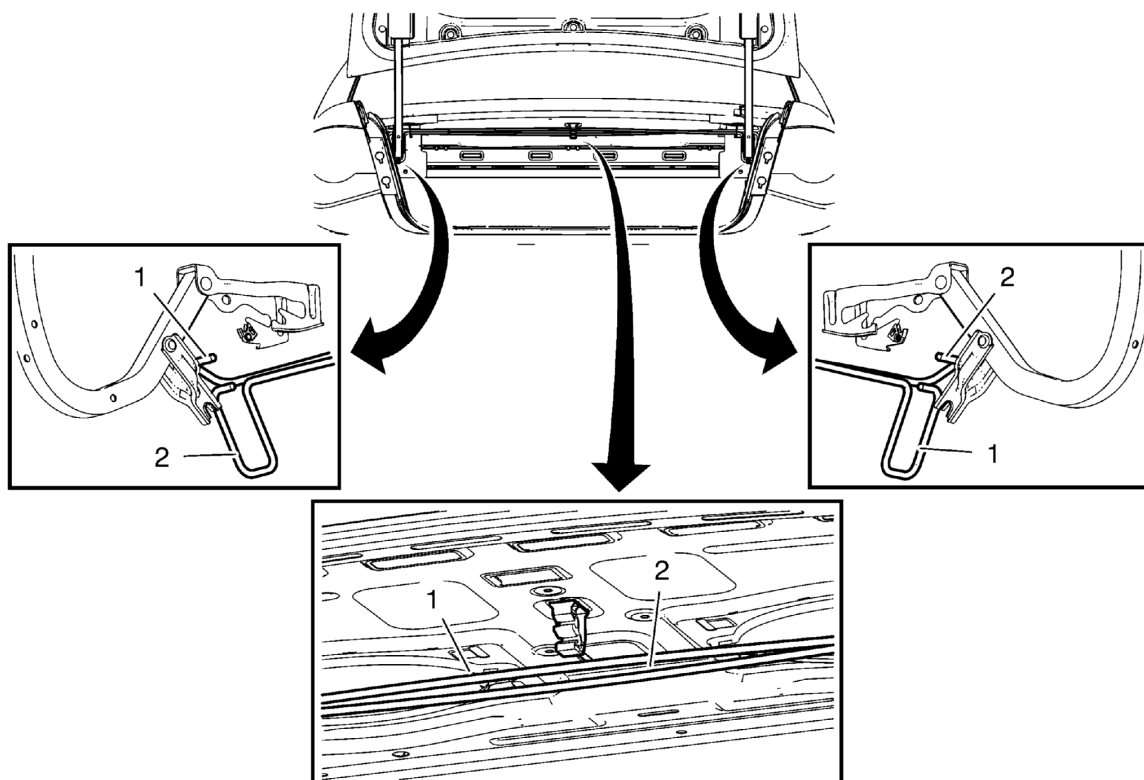


Fig. 26: Rear Compartment Lid Hinge Torque Rods & Components

Courtesy of GENERAL MOTORS COMPANY

Rear Compartment Lid Hinge Torque Rod Replacement

Callout	Component Name
WARNING: When a rear compartment lid hold open device is being removed or installed, provide alternate support to avoid the possibility of damage to the vehicle or personal injury.	
Preliminary Procedure <ol style="list-style-type: none"> 1. Remove the left and right rear compartment side trim panels. Refer to Rear Compartment Side Trim Replacement - Left Side (With AM9), Rear Compartment Side Trim Replacement - Left Side (Except AM9), and Rear Compartment Side Trim Replacement - Right Side (With AM9), Rear Compartment Side Trim Replacement - Right Side (Except AM9). 2. Remove the rear compartment rear window lower trim. Refer to Rear Compartment Rear Window Lower Trim Replacement. 	
1	Rear Compartment Lid Hinge Torque Rod - Right Side Procedure <ol style="list-style-type: none"> 1. Using a suitable pair of pliers, rotate the torque rod upward to release it from the swing bracket and slowly rotate the torque rod downward until the tension is released. 2. Unclip torque rod from hinge retainers. 3. Remove the torque rod from the vehicle.

Callout	Component Name
	Rear Compartment Lid Hinge Torque Rod - Left Side
2	Procedure <ol style="list-style-type: none"> 1. Using a suitable pair of pliers, rotate the torque rod upward to release it from the swing bracket and slowly rotate the torque rod downward until the tension is released. 2. Unclip torque rod from hinge retainers. 3. Remove the torque rod from the vehicle.

HOOD FRONT WEATHERSTRIP REPLACEMENT

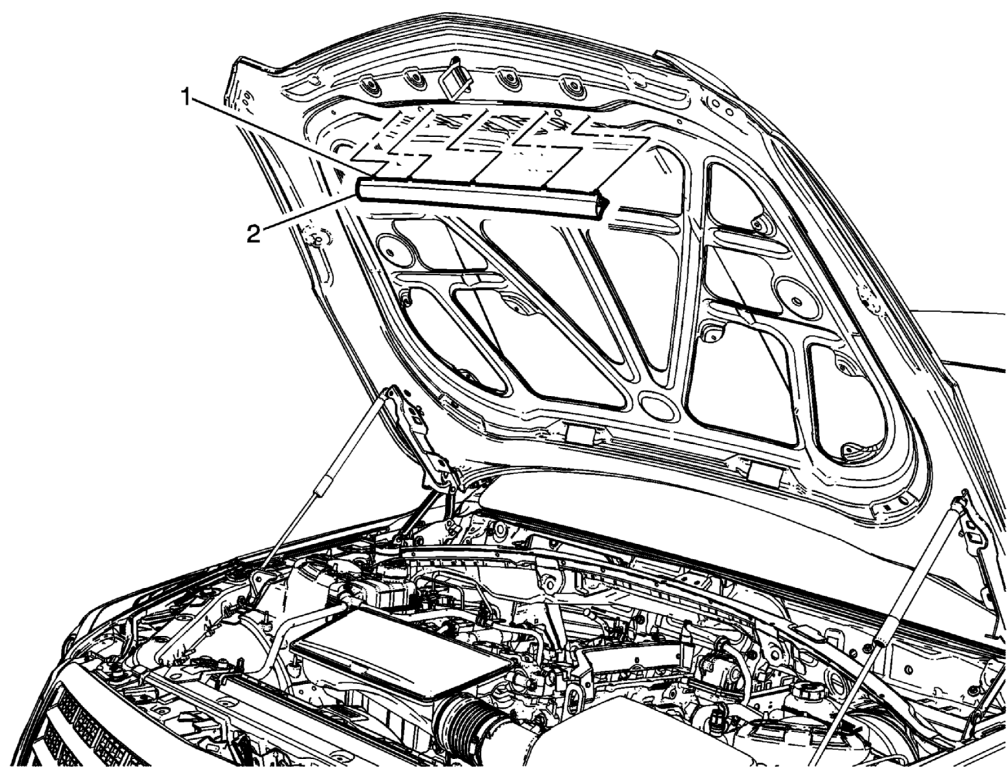


Fig. 27: Hood Front Weatherstrip
 Courtesy of GENERAL MOTORS COMPANY

Hood Front Weatherstrip Replacement

Callout	Component Name
1	Hood Front Weatherstrip Retainer Procedure The hood front weatherstrip is held in place with 5 plastic push-in retainers. Using a suitable tool, carefully pull the push-in retainers to release the hood front weatherstrip from the hood insulator.
2	Hood Front Weatherstrip

HOOD REAR WEATHERSTRIP REPLACEMENT

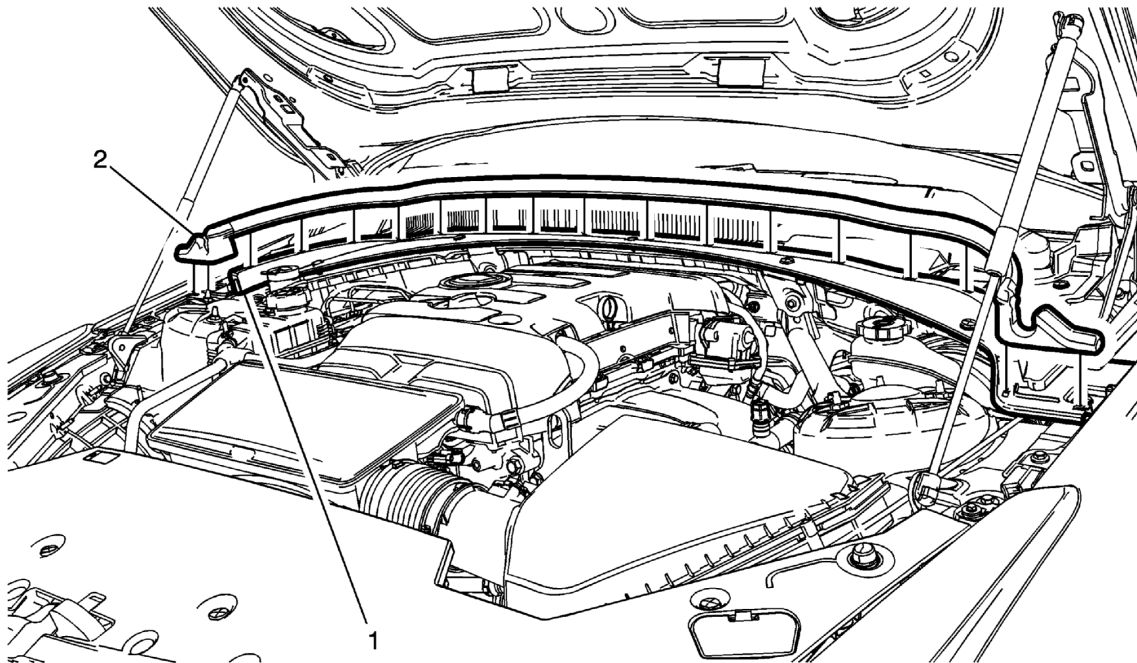


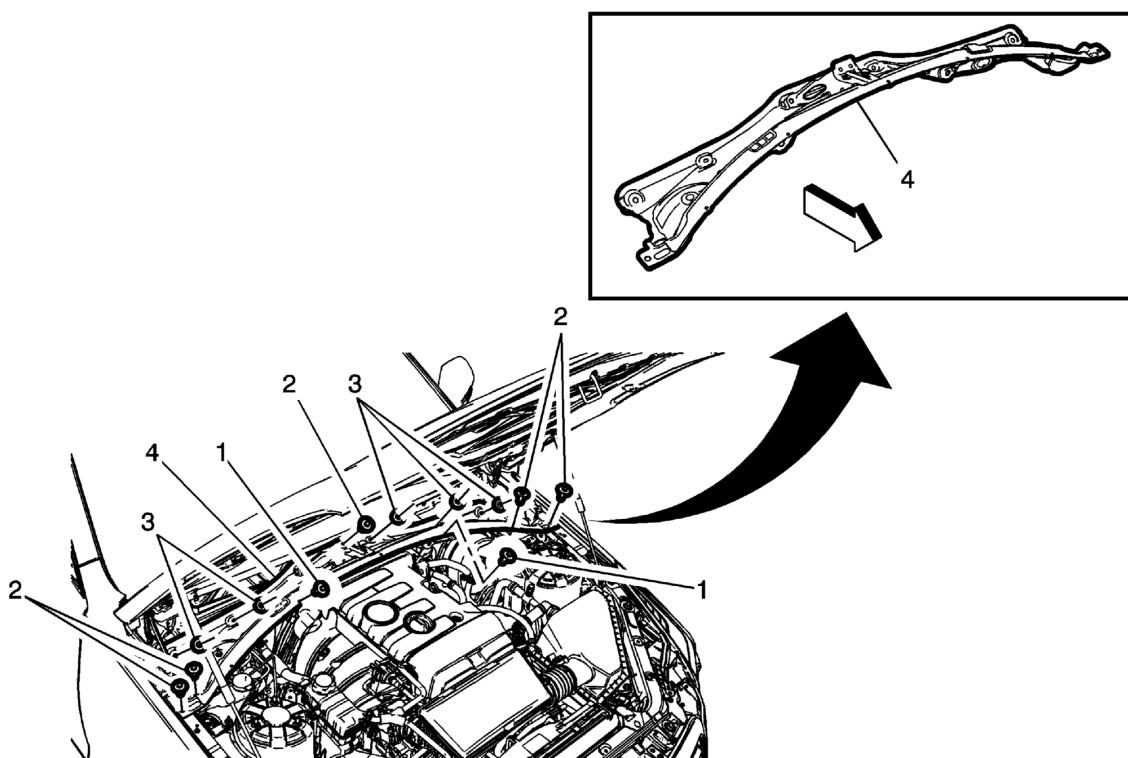
Fig. 28: Hood Rear Weatherstrip

Courtesy of GENERAL MOTORS COMPANY

Hood Rear Weatherstrip Replacement

Callout	Component Name
	Hood Rear Weatherstrip Retainer (Qty: 20)
1	Procedure The hood rear weatherstrip is held in place with plastic retainers that are part of the air inlet grille. Carefully pull the weatherstrip to the right/left to release from the retainers on the air inlet grille.
2	Hood Rear Weatherstrip

PLENUM FRONT PANEL REPLACEMENT



Plenum Front Panel Replacement

Callout	Component Name
Preliminary Procedures <ol style="list-style-type: none"> 1. Remove the windshield wiper transmission. Refer to Windshield Wiper Transmission Replacement . 2. Remove the air inlet grille panel air deflector. Refer to Air Inlet Grille Panel Air Deflector Replacement . 3. Remove the left plenum side panel. Refer to Plenum Side Panel Replacement - Left Side. 4. Remove the right plenum side panel. Refer to Plenum Side Panel Replacement - Right Side. 	
1	Diagonal brace to plenum bolt (Qty 2) CAUTION: Refer to Fastener Caution . Tighten 22 (16 lb ft)
2	Plenum Front Panel Bolt (Qty: 5) Tighten 9 (80 lb in)
3	Plenum Front Panel Nut (Qty: 3) Tighten 9 (80 lb in)
4	Plenum Front Panel Procedure <ol style="list-style-type: none"> 1. Remove the electrical harness grommet from the panel. 2. Ensure all seals are in place before installation.

PLENUM SIDE PANEL REPLACEMENT - RIGHT SIDE

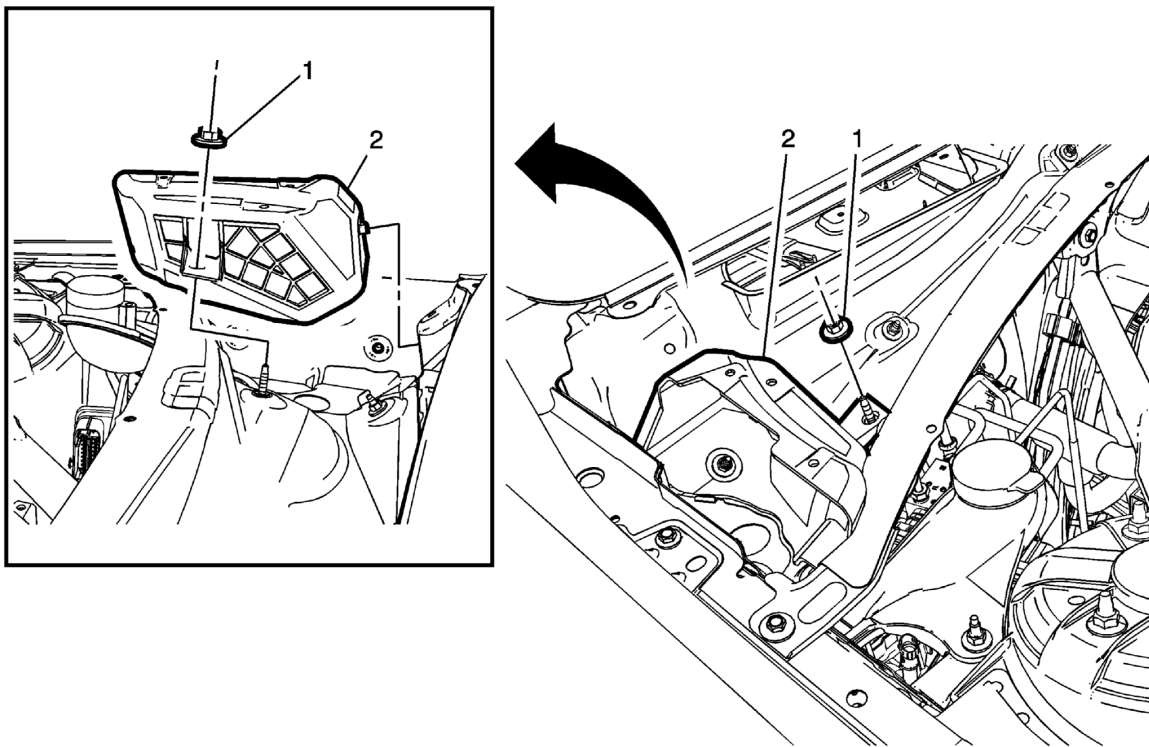


Fig. 30: Plenum Side Panel - Right Side
 Courtesy of GENERAL MOTORS COMPANY

Plenum Side Panel Replacement - Right Side

Callout	Component Name
Preliminary Procedure Remove the air inlet grille panel. Refer to Air Inlet Grille Panel Replacement .	
1	Plenum Side Panel Nut CAUTION: Refer to Fastener Caution . Tighten 9 (80 lb in)
2	Plenum Side Panel Procedure Position the plenum side panel to the locator pin for assembly.

PLENUM SIDE PANEL REPLACEMENT - LEFT SIDE

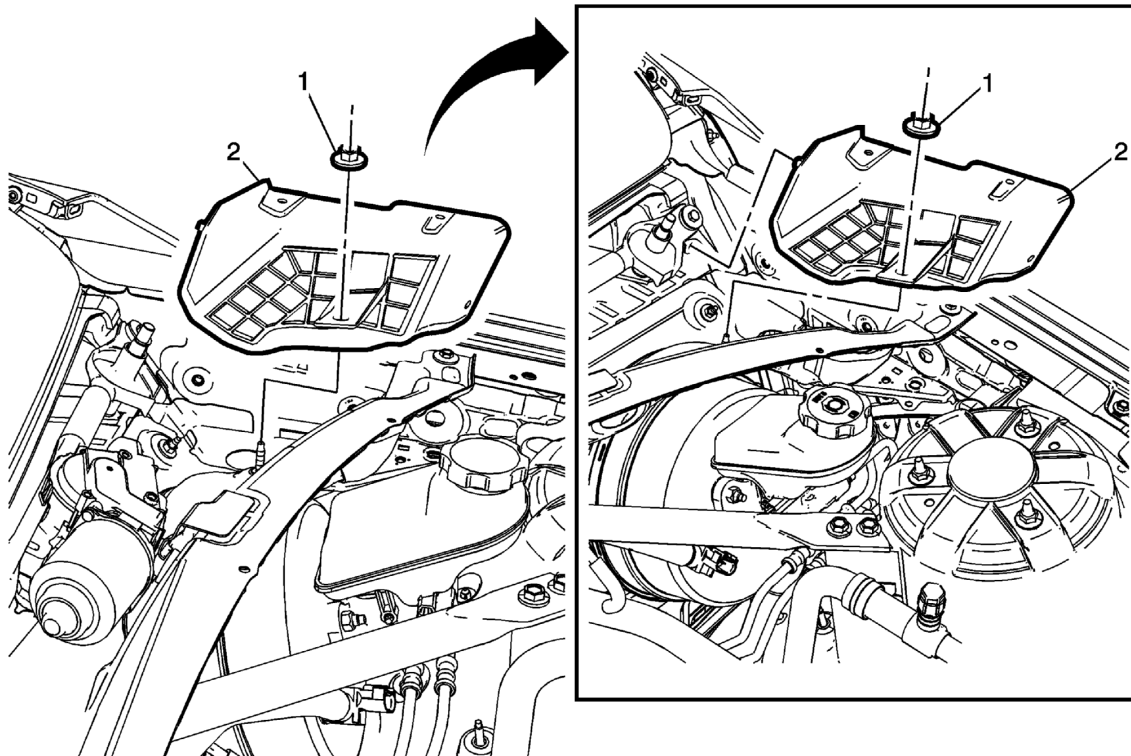


Fig. 31: Plenum Side Panel - Left Side
 Courtesy of GENERAL MOTORS COMPANY

Plenum Side Panel Replacement - Left Side

Callout	Component Name
Preliminary Procedure Remove the air inlet grille panel. Refer to Air Inlet Grille Panel Replacement .	
1	Plenum Side Panel Nut CAUTION: Refer to Fastener Caution . Tighten 9 (80 lb in)
2	Plenum Side Panel Procedure Position the plenum side panel to the locator pin for assembly.

FRONT COMPARTMENT FRONT SIGHT SHIELD REPLACEMENT

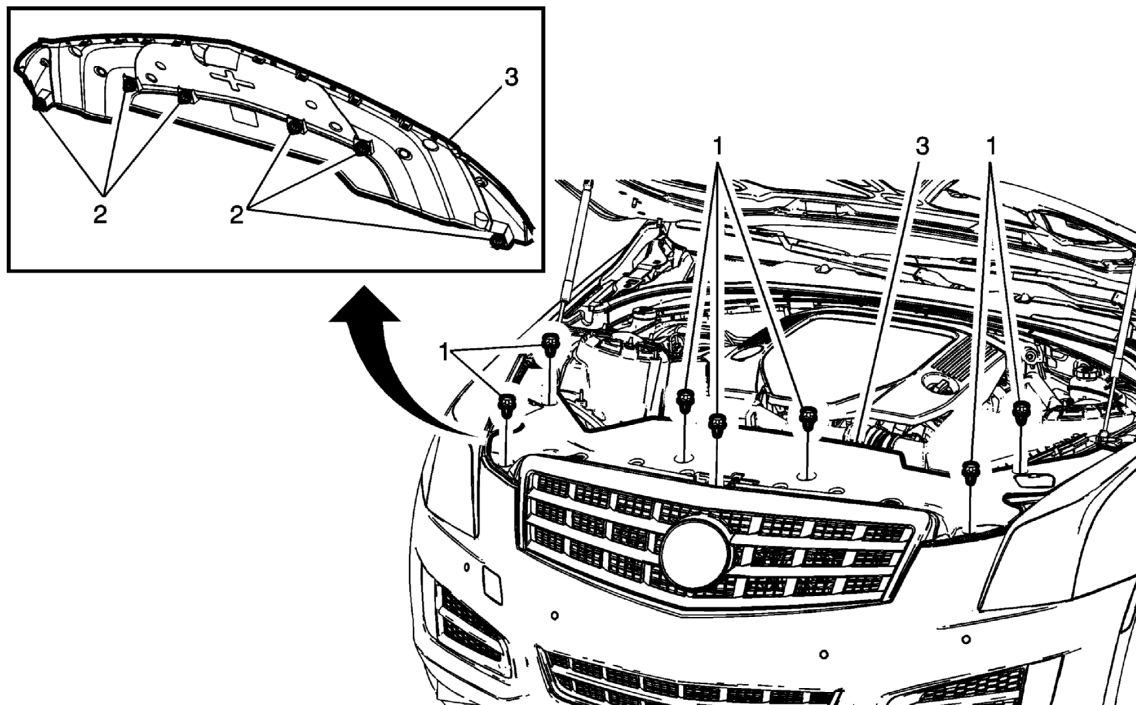


Fig. 32: Front Compartment Front Sight Shield & Retainers

Courtesy of GENERAL MOTORS COMPANY

Front Compartment Front Sight Shield Replacement

Callout	Component Name
1	Front Compartment Front Sight Shield Push-In Retainer (Qty: 7)
2	Front Compartment Front Sight Shield Retainer (Qty: 4)
	Procedure
	Using a suitable tool, disengage the 4 hidden retainers from the upper tie bar.
3	Front Compartment Front Sight Shield

FRONT COMPARTMENT FRONT PANEL REPLACEMENT

