

2018 ACCESSORIES & EQUIPMENT

Bumpers And Fascias - Traverse

SPECIFICATIONS

FASTENER SPECIFICATIONS

Reusable Threaded Fastener Tightening Specifications

NOTE:

All fasteners listed in this table can be reused after removal.

Application	Specification
	Metric (English)
Front Bumper Fascia Bolt	2.5 N.m (22 lb in)
Front Bumper Fascia Center Air Deflector Bolt	2.5 N.m (22 lb in)
Front Bumper Fascia Center Support Bolt	9 N.m (80 lb in)
Front Bumper Fascia Guide Bolt	2.5 N.m (22 lb in)
Front Bumper Fascia Outer Bracket Bolt	2.5 N.m (22 lb in)
Front Bumper Fascia Reinforcement Bolt	2.5 N.m (22 lb in)
Front Bumper Fascia Support Brace Bolt	9 N.m (80 lb in)
Front Bumper Impact Bar Bolt	32 N.m (24 lb ft)
Front Bumper Shutter Bolt	2.5 N.m (22 lb in)
Front Grille Bolt	2.5 N.m (22 lb in)
Headlamp Bolt	2.5 N.m (22 lb in)
Radiator Air Upper Baffle Bolt	2.5 N.m (22 lb in)
Rear Bumper Fascia Bolt	2.5 N.m (22 lb in)
Rear Bumper Fascia Energy Absorber Bolt	2.5 N.m (22 lb in)
Rear Bumper Fascia Lower Bolt	2.5 N.m (22 lb in)
Rear Bumper Fascia Molding Bolt	2.5 N.m (22 lb in)
Rear Bumper Impact Bar Nut	58 N.m (43 lb ft)
Rear Bumper Valance Panel Bolt	2.5 N.m (22 lb in)

SCHEMATIC WIRING DIAGRAMS

ACTIVE GRILLE AIR SHUTTER WIRING SCHEMATICS

Active Grille Air Shutter



- ## DIAGNOSTIC INFORMATION AND PROCEDURES

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 5 attempts are made to move the louver. The DTC will be stored as current for this key cycle but the malfunction indicator lamp (MIL) will not be illuminated. The malfunction indicator lamp will illuminate in the second key cycle after a failed movement attempt is made in each of two back to back key cycles.
- The DTC P151E will set if there is a serial data communication failure.

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 Wiring 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/Vehicle in Service Mode.
2. Verify no other DTCs are set, except P059F or P151E.
 - **If any other DTCs are set**
Refer to [Diagnostic Trouble Code \(DTC\) List - Vehicle](#) for further diagnosis.
 - **Go to next step: If no other DTCs are set**
3. Verify the active grille air shutter position parameter changes from 0% (fully closed) to 100% (fully open) when using the scan tool ECM Active Grille Air Shutter Position control function.
 - **If the louvers at the front bumper do not open and close**
Refer to Circuit/System Testing.
 - **Go to next step: If the louvers at the front bumper open and close**
4. Verify none of the following conditions are present:
 - Snow or ice packed in the front fascia which prevents the louvers from moving.
 - Debris or foreign objects which prevent the louvers from moving.
 - **If any of the conditions are present**

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

- **Go to next step: If none of the conditions are present**

5. All OK

Circuit/System Testing

1. Ignition/Vehicle Off and all vehicle systems Off, disconnect the harness connector (s) at the active grille air shutter actuator (s). 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 and ground.

- **If 10 Ω or greater**

1. Ignition/Vehicle 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.

- **Go to next step: If less than 10 Ω**

3. Ignition On/Vehicle in Service Mode.

4. Verify a test lamp illuminates between the ignition circuit and ground.

- **If the test lamp does not illuminate and the circuit fuse is good**

1. Ignition/Vehicle 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/Vehicle 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.

- **Go to next step: If the test lamp illuminates**

5. Ignition/Vehicle Off, disconnect the harness connector at the K20 Engine Control Module.

6. Disconnect all other components on the LIN Serial Data Bus circuit, if equipped.

1. Test for infinite resistance between the LIN Serial Data Bus circuit and ground.

- If less than infinite resistance, repair the short to ground on the circuit.
- Go to next step: If infinite resistance

2. Test for less than 2 Ω in the LIN Serial Data Bus circuit end to end.

- If 2 Ω or greater, repair the open/high resistance in the circuit.
- Go to next step: If less than 2 Ω

3. Test for less than 1 V between the LIN Serial Data Bus circuit and ground.

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

7. Test or replace the M60A Active Grille Air Shutter 1 Motor Module.

8. Verify DTCs P059F or P151E are not set while operating the vehicle under the conditions for setting the DTC.

- **If any of the DTCs are set**

Replace the K20 Engine Control Module.

- **Go to next step: If none of the DTCs are set**

9. All OK.

Repair Instructions

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

Control Module References for control module replacement, programming and setup.

DTC P05AE OR P151F

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 P05AE

Active Grille Air Shutter 2 Performance

DTC P151F

Active Grille Air Shutter Actuator 2 Signal Message Counter Incorrect

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Ignition	P05AE, P151F	P05AE, P151F	-	-
Local Interconnect Network Serial Data Bus	U1511	U1511	U1511	U1511
Ground	-	P05AE, P151F	-	-

Circuit/System Description

The active grille air shutter actuator closes louvers at the front bumper to enhance vehicle aerodynamics in driving situations where cooling and A/C loads are relatively low and high levels of front end airflow are not required. If high levels of airflow are required the active grille air shutter actuator opens the louvers. The Local Interconnect Network (LIN) Serial Data Bus signal from the engine 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 engine control module commands the active grille air shutter actuator to open the louvers.

Conditions for Running the DTC

- Ignition On/Vehicle in Service Mode.
- The battery voltage is greater than 10 V.
- The DTC runs continuously when the above conditions are met.

Conditions for Setting the DTC

- The DTC P05AE will be set during a key cycle when the commanded louver position can not be achieved after 5 attempts are made to move the louver. The DTC will be stored as current for this key cycle but the malfunction indicator lamp (MIL) will not be illuminated. The malfunction indicator lamp will illuminate in the second key cycle after a failed movement attempt is made in each of two back to back key cycles.
- The DTC P151F will set if there is a serial data communication failure.

Action Taken When the DTC Sets

DTC P05AE and P151F are type B DTCs.

Conditions for Clearing the DTC

DTC P05AE and P151F are type B DTCs.

Schematic Reference

Active Grille Air Shutter Wiring 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/Vehicle in Service Mode.
2. Verify DTC U1511 is not set.

- **If DTC U1511 is set**

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

- **Go to next step: If DTC U1511 is not set**

3. Verify the active grille air shutter position parameter changes from 0% (fully closed) to 100% (fully open) when using the scan tool ECM Active Grille Air Shutter Position control function.

- **If the louvers at the front bumper do not open and close**

Refer to Circuit/System Testing.

- **Go to next step: If the louvers at the front bumper open and close**

4. Verify none of the following conditions are present:

- Snow or ice packed in the front fascia which prevents the louvers from moving.
- Debris or foreign objects which prevent the louvers from moving.
- **If any of the conditions are present**

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

- **Go to next step: If none of the conditions are present**

5. All OK

Circuit/System Testing

1. Ignition/Vehicle Off and all vehicle systems Off, disconnect the harness connector (s) at the active grille air shutter actuator (s). 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 and ground.
 - **If 10 Ω or greater**
 1. Ignition/Vehicle 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.
 - **Go to next step: If less than 10 Ω**
3. Ignition On/Vehicle in Service Mode.
 4. Verify a test lamp illuminates between the ignition circuit and ground.
 - **If the test lamp does not illuminate and the circuit fuse is good**
 1. Ignition/Vehicle 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/Vehicle 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.
 - **Go to next step: If the test lamp illuminates**
 5. Ignition/Vehicle Off, disconnect the harness connector at the K20 Engine Control Module.
 1. Test for infinite resistance between the LIN Serial Data Bus circuit and ground.
 - If less than infinite resistance, repair the short to ground on the circuit.
 - Go to next step: If infinite resistance
 2. Test for less than 2 Ω in the LIN Serial Data Bus circuit end to end.
 - If 2 Ω or greater, repair the open/high resistance in the circuit.
 - Go to next step: If less than 2 Ω
 3. Test for less than 1 V between the LIN Serial Data Bus circuit and ground.
 - If 1 V or greater, repair the short to voltage on the circuit.
 - Go to next step: If less than 1 V
 6. Test or replace the M60B Active Grille Air Shutter 2 Motor Module.
 7. Verify DTCs P05AE, P151F or U1511 are not set while operating the vehicle under the conditions for setting the DTC.
 - **If the DTC is set**

Replace the K20 Engine Control Module.
 - **Go to next step: If the DTC is not set**
 8. All OK.

Repair Instructions

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

[Control Module References](#) for 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](#).

Symptom List

- [Active Grille Air Shutter 1 Malfunction](#)
- [Active Grille Air Shutter 2 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	-	-
Local Interconnect Network Serial Data Bus	U1510	U1510	U1510	U1510
Ground	-	P059F, P151E	-	-

Circuit/System Description

The active grille air shutter actuator closes louvers at the front bumper to enhance vehicle aerodynamics in driving situations where cooling and A/C loads are relatively low and high levels of front end airflow are not required. If high levels of airflow are required the active grille air shutter actuator opens the louvers. The Local Interconnect Network (LIN) Serial Data Bus signal from the engine 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 engine control module commands the active grille air shutter actuator to open the louvers.

Conditions for Running the DTC

- Ignition On/Vehicle in Service Mode.
- The battery 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 5 attempts are made to move the louver. The DTC will be stored as current for this

key cycle but the malfunction indicator lamp (MIL) will not be illuminated. The malfunction indicator lamp will illuminate in the second key cycle after a failed movement attempt is made in each of two back to back key cycles.

- The DTC P151E will set if there is a serial data communication failure.

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 Wiring 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/Vehicle in Service Mode.
2. Verify no other DTCs are set, except P059F or P151E.

- **If any other DTCs are set**

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

- **Go to next step: If no other DTCs are set**

3. Verify the active grille air shutter position parameter changes from 0% (fully closed) to 100% (fully open) when using the scan tool ECM Active Grille Air Shutter Position control function.

- **If the louvers at the front bumper do not open and close**

Refer to Circuit/System Testing.

- **Go to next step: If the louvers at the front bumper open and close**

4. Verify none of the following conditions are present:

- Snow or ice packed in the front fascia which prevents the louvers from moving.
- Debris or foreign objects which prevent the louvers from moving.
- **If any of the conditions are present**

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

- **Go to next step: If none of the conditions are present**

5. All OK

Circuit/System Testing

1. Ignition/Vehicle Off and all vehicle systems Off, disconnect the harness connector (s) at the active grille air shutter actuator (s). 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 and ground.
 - **If 10 Ω or greater**
 1. Ignition/Vehicle 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.
 - **Go to next step: If less than 10 Ω**
3. Ignition On/Vehicle in Service Mode.
4. Verify a test lamp illuminates between the ignition circuit and ground.
 - **If the test lamp does not illuminate and the circuit fuse is good**
 1. Ignition/Vehicle 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/Vehicle 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.
 - **Go to next step: If the test lamp illuminates**
5. Ignition/Vehicle Off, disconnect the harness connector at the K20 Engine Control Module.
6. Disconnect all other components on the LIN Serial Data Bus circuit, if equipped.
 1. Test for infinite resistance between the LIN Serial Data Bus circuit and ground.
 - If less than infinite resistance, repair the short to ground on the circuit.
 - Go to next step: If infinite resistance
 2. Test for less than 2 Ω in the LIN Serial Data Bus circuit end to end.
 - If 2 Ω or greater, repair the open/high resistance in the circuit.
 - Go to next step: If less than 2 Ω
 3. Test for less than 1 V between the LIN Serial Data Bus circuit and ground.
 - If 1 V or greater, repair the short to voltage on the circuit.
 - Go to next step: If less than 1 V
7. Test or replace the M60A Active Grille Air Shutter 1 Motor Module.
8. Verify DTCs P059F or P151E are not set while operating the vehicle under the conditions for setting the DTC.
 - **If any of the DTCs are set**

Replace the K20 Engine Control Module.
 - **Go to next step: If none of the DTCs are set**
9. All OK.

Repair Instructions

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

Control Module References for control module replacement, programming and setup.

ACTIVE GRILLE AIR SHUTTER 2 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 P05AE

Active Grille Air Shutter 2 Performance

DTC P151F

Active Grille Air Shutter Actuator 2 Signal Message Counter Incorrect

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Ignition	P05AE, P151F	P05AE, P151F	-	-
Local Interconnect Network Serial Data Bus	U1511	U1511	U1511	U1511
Ground	-	P05AE, P151F	-	-

Circuit/System Description

The active grille air shutter actuator closes louvers at the front bumper to enhance vehicle aerodynamics in driving situations where cooling and A/C loads are relatively low and high levels of front end airflow are not required. If high levels of airflow are required the active grille air shutter actuator opens the louvers. The Local Interconnect Network (LIN) Serial Data Bus signal from the engine 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 engine control module commands the active grille air shutter actuator to open the louvers.

Conditions for Running the DTC

- Ignition On/Vehicle in Service Mode.
- The battery voltage is greater than 10 V.
- The DTC runs continuously when the above conditions are met.

Conditions for Setting the DTC

- The DTC P05AE will be set during a key cycle when the commanded louver position can not be achieved after 5 attempts are made to move the louver. The DTC will be stored as current for this key cycle but the malfunction indicator lamp (MIL) will not be illuminated. The malfunction indicator lamp will illuminate in the second key cycle after a failed movement attempt is made in each of two back to back key cycles.
- The DTC P151F will set if there is a serial data communication failure.

Action Taken When the DTC Sets

DTC P05AE and P151F are type B DTCs.

Conditions for Clearing the DTC

DTC P05AE and P151F are type B DTCs.

Reference Information

Schematic Reference

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/Vehicle in Service Mode.
2. Verify DTC U1511 is not set.
 - **If DTC U1511 is set**

Refer to [Diagnostic Trouble Code \(DTC\) List - Vehicle](#) for further diagnosis.
 - **Go to next step: If DTC U1511 is not set**
3. Verify the active grille air shutter position parameter changes from 0% (fully closed) to 100% (fully open) when using the scan tool ECM Active Grille Air Shutter Position control function.
 - **If the louvers at the front bumper do not open and close**

Refer to Circuit/System Testing.
 - **Go to next step: If the louvers at the front bumper open and close**
4. Verify none of the following conditions are present:
 - Snow or ice packed in the front fascia which prevents the louvers from moving.
 - Debris or foreign objects which prevent the louvers from moving.
 - **If any of the conditions are present**

Clear any snow, ice or foreign objects from the front grille.
 - **Go to next step: If none of the conditions are present**
5. All OK

[Circuit/System Testing](#)

1. Ignition/Vehicle Off and all vehicle systems Off, disconnect the harness connector (s) at the active grille air shutter actuator (s). 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 and ground.
 - **If 10 Ω or greater**
 1. Ignition/Vehicle 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.
 - **Go to next step: If less than 10 Ω**
3. Ignition On/Vehicle in Service Mode.

4. Verify a test lamp illuminates between the ignition circuit and ground.
 - **If the test lamp does not illuminate and the circuit fuse is good**
 1. Ignition/Vehicle 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/Vehicle 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.
 - **Go to next step: If the test lamp illuminates**
5. Ignition/Vehicle Off, disconnect the harness connector at the K20 Engine Control Module.
 1. Test for infinite resistance between the LIN Serial Data Bus circuit and ground.
 - If less than infinite resistance, repair the short to ground on the circuit.
 - Go to next step: If infinite resistance
 2. Test for less than 2 Ω in the LIN Serial Data Bus circuit end to end.
 - If 2 Ω or greater, repair the open/high resistance in the circuit.
 - Go to next step: If less than 2 Ω
 3. Test for less than 1 V between the LIN Serial Data Bus circuit and ground.
 - If 1 V or greater, repair the short to voltage on the circuit.
 - Go to next step: If less than 1 V
6. Test or replace the M60B Active Grille Air Shutter 2 Motor Module.
7. Verify DTCs P05AE, P151F or U1511 are not set while operating the vehicle under the conditions for setting the DTC.
 - **If the DTC is set**

Replace the K20 Engine Control Module.
 - **Go to next step: If the DTC is not set**
8. All OK.

Repair Instructions

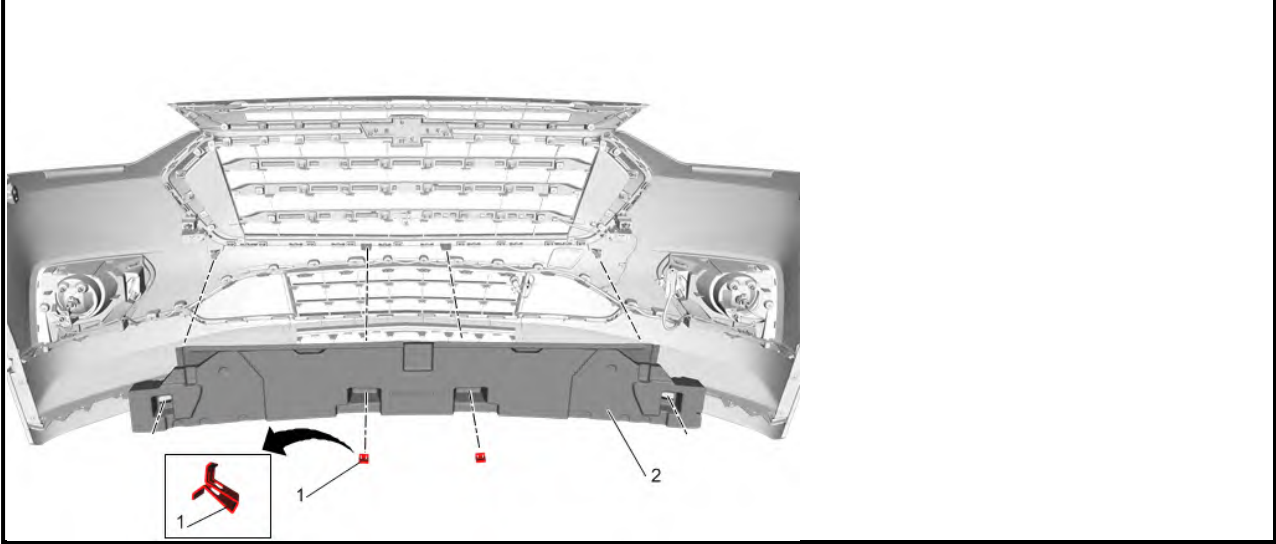
Perform the [Diagnostic Repair Verification](#) after completing the repair.

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

REPAIR INSTRUCTIONS

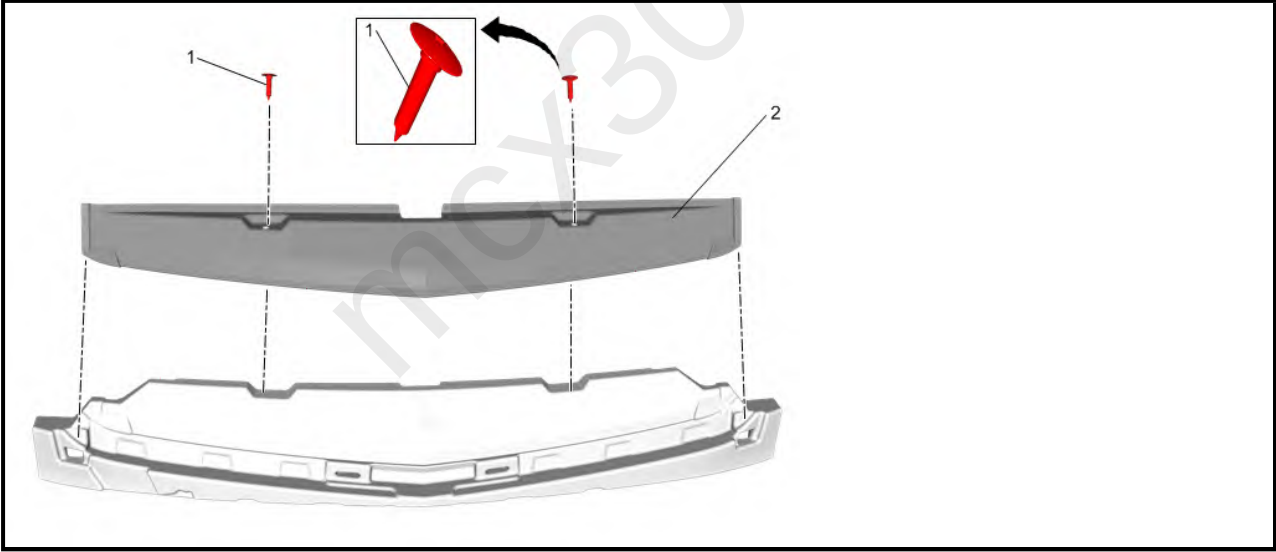
FRONT BUMPER FASCIA ENERGY ABSORBER REPLACEMENT





Callout	Component Name
Preliminary Procedures <u>Front Bumper Fascia Replacement</u> - Reposition the wiring harness.	
1	Front Bumper Fascia Energy Absorber Retainer [2x]
2	Front Bumper Fascia Energy Absorber Procedure Release the retainer tabs and remove the front bumper fascia energy absorber from the fascia.

ABSORBER FRONT BUMPER ENERGY COVER REPLACEMENT

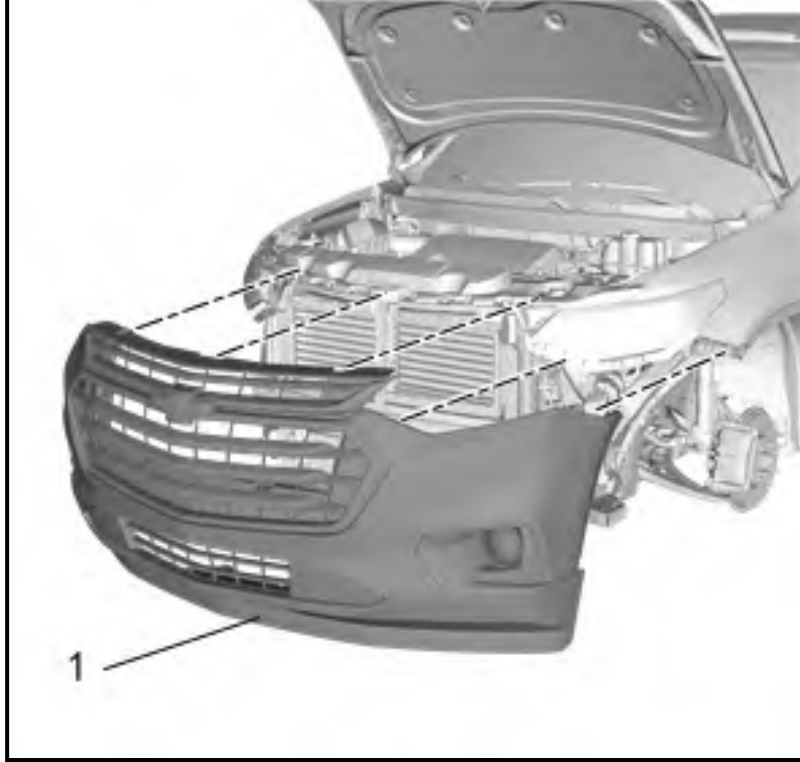


Callout	Component Name
Preliminary Procedure <u>Front Bumper Fascia Energy Absorber Replacement</u>	
1	Absorber Front Bumper Energy Cover Retainer [2x]
2	Absorber Front Bumper Energy Cover

FRONT BUMPER IMPACT BAR REPLACEMENT

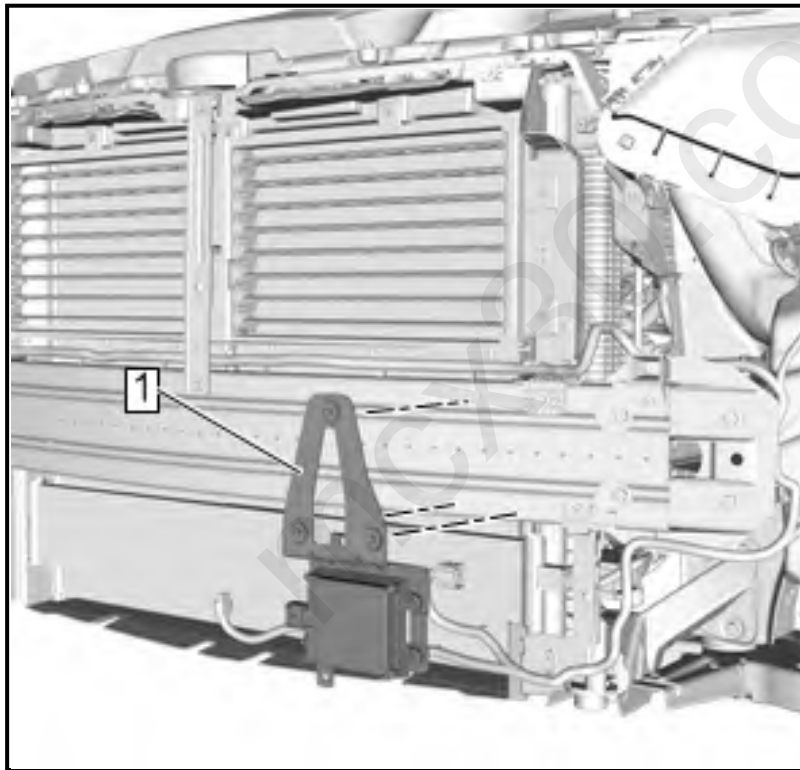
Removal Procedure

-



Front Bumper Fascia (1) - Remove - [Front Bumper Fascia Replacement](#)

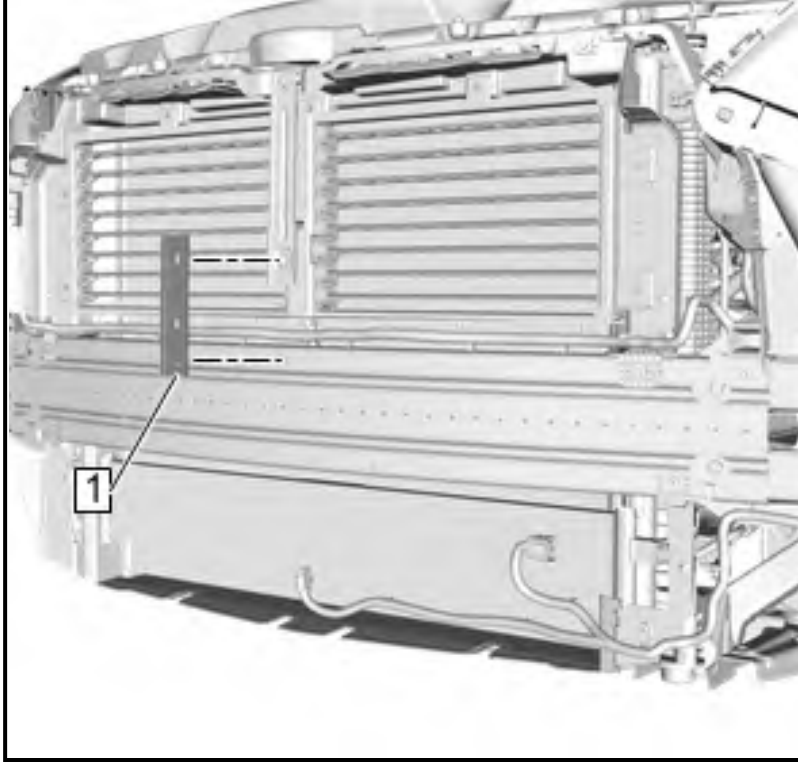
2.



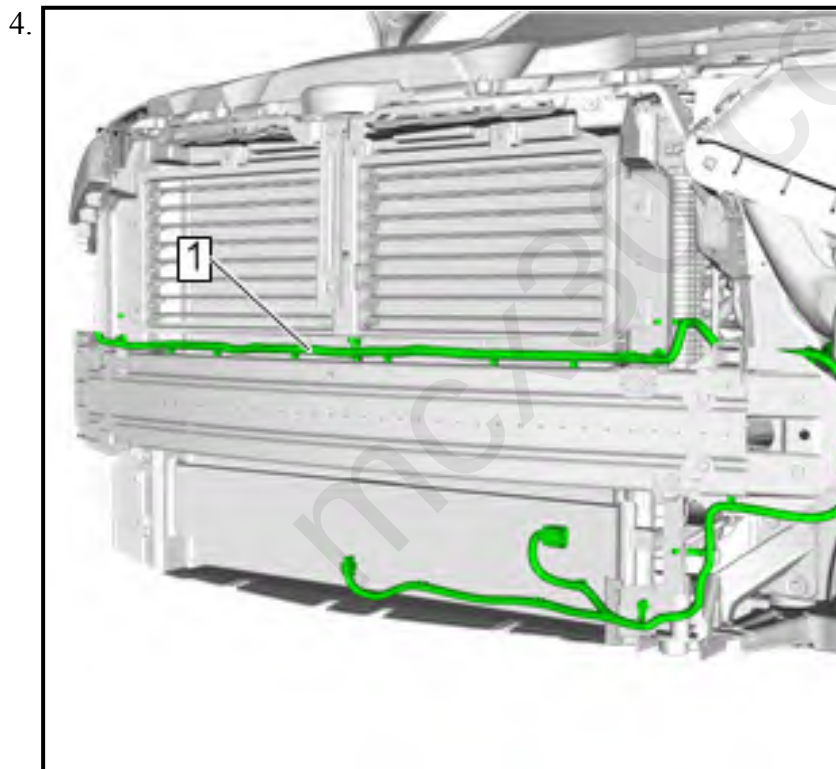
Forward Range Radar Bracket (1) - Remove - [Forward Range Radar Bracket Replacement](#)

3.



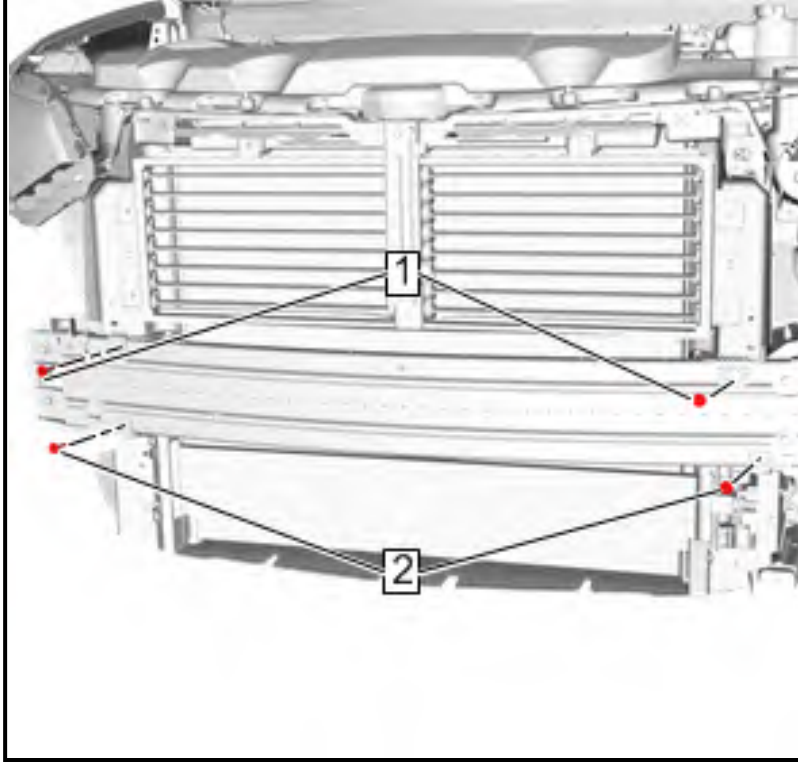


Front Bumper Fascia Support Brace- Lower (1) - Remove - [Front Bumper Fascia Support Brace Replacement - Lower](#)



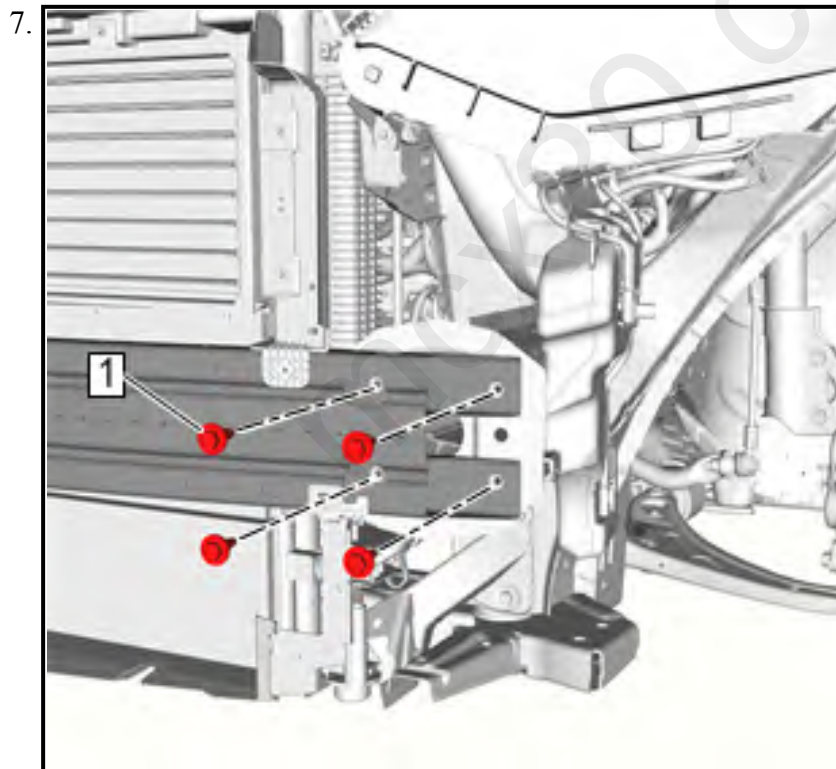
Reposition the wiring harness. (1)





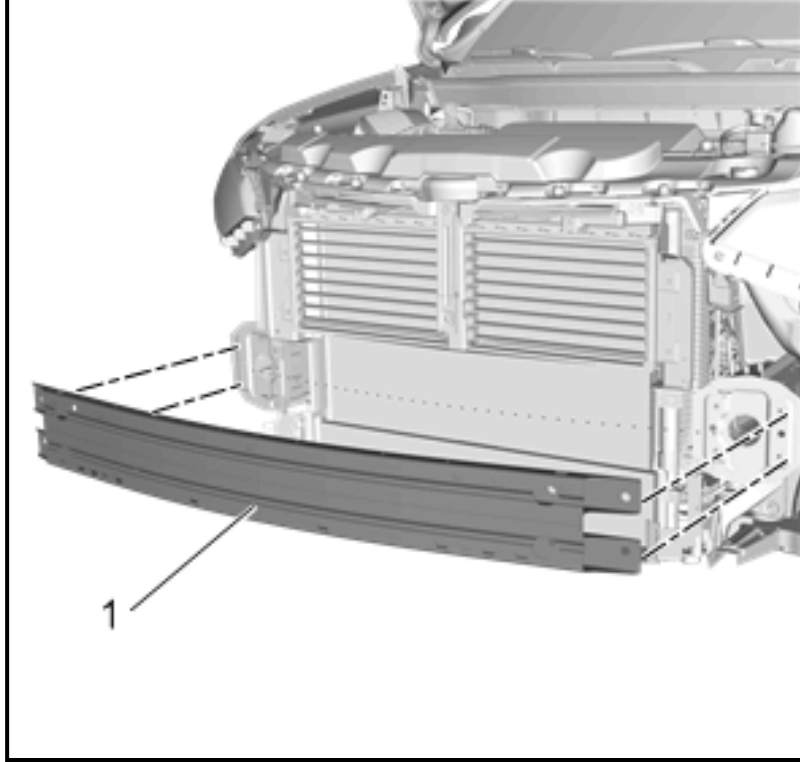
Radiator Air Upper Baffle Bolt (1) - Remove - [Radiator Air Upper Baffle Replacement](#)

6. Radiator Air Lower Baffle Bolt (2) - Remove - [Radiator Air Lower Baffle Replacement \(LFY with V08\)](#) [Radiator Air Lower Baffle Replacement \(LFY without V08\)](#) [Radiator Air Lower Baffle Replacement \(LTG\)](#)



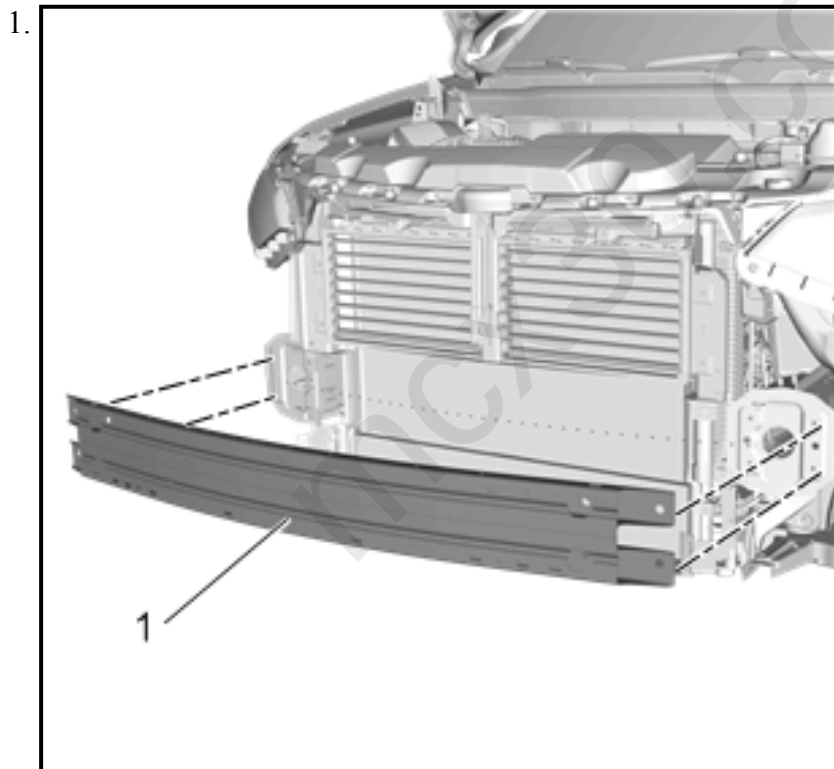
Front Bumper Impact Bar Bolt (1) - Remove [8x]





Front Bumper Impact Bar (1) - Remove

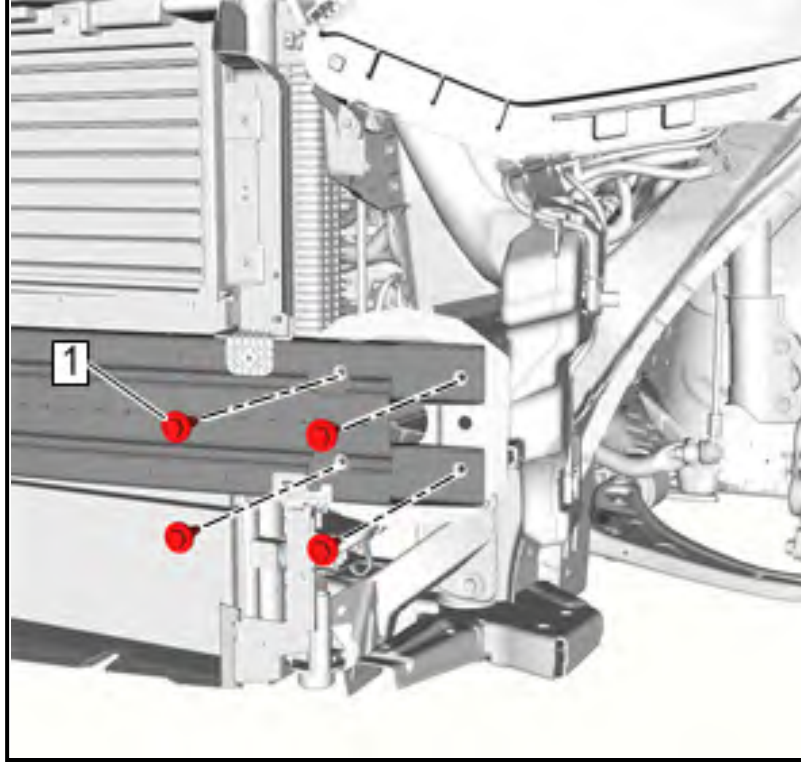
Installation Procedure



Transfer components as necessary.

2. Front Bumper Impact Bar (1) - Install

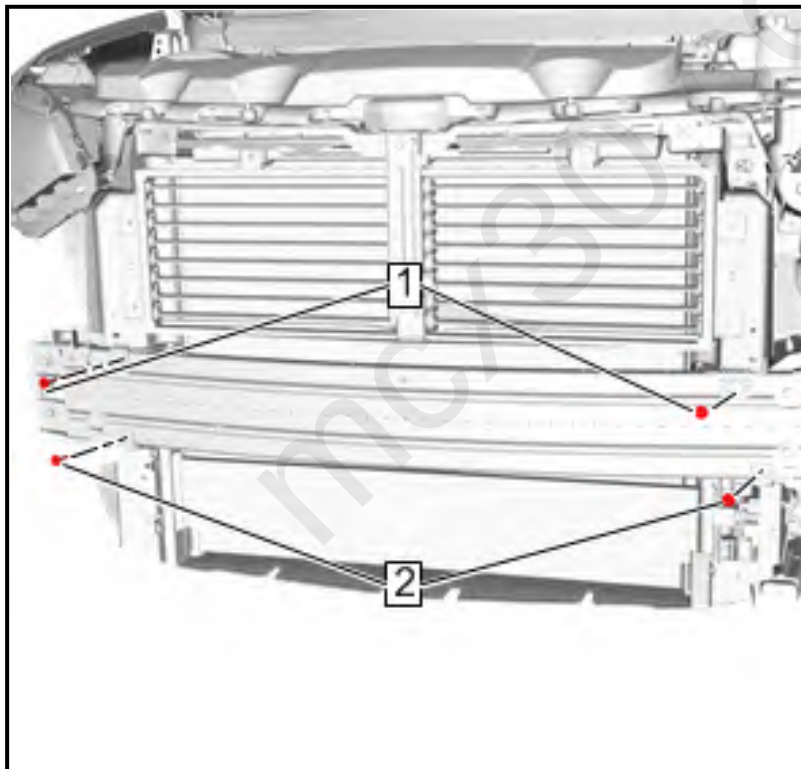




CAUTION: Refer to [Fastener Caution](#) .

Front Bumper Impact Bar Bolt (1) - Install and tighten [8x] 32 N.m (24 lb ft)

4.

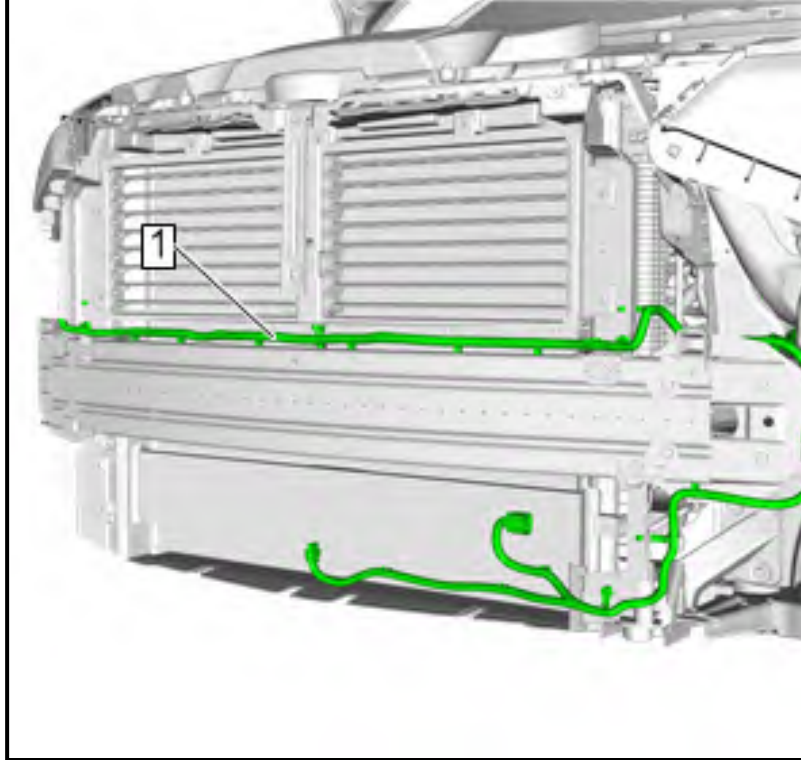


Radiator Air Upper Baffle Bolt (1) - Install - [Radiator Air Upper Baffle Replacement](#)

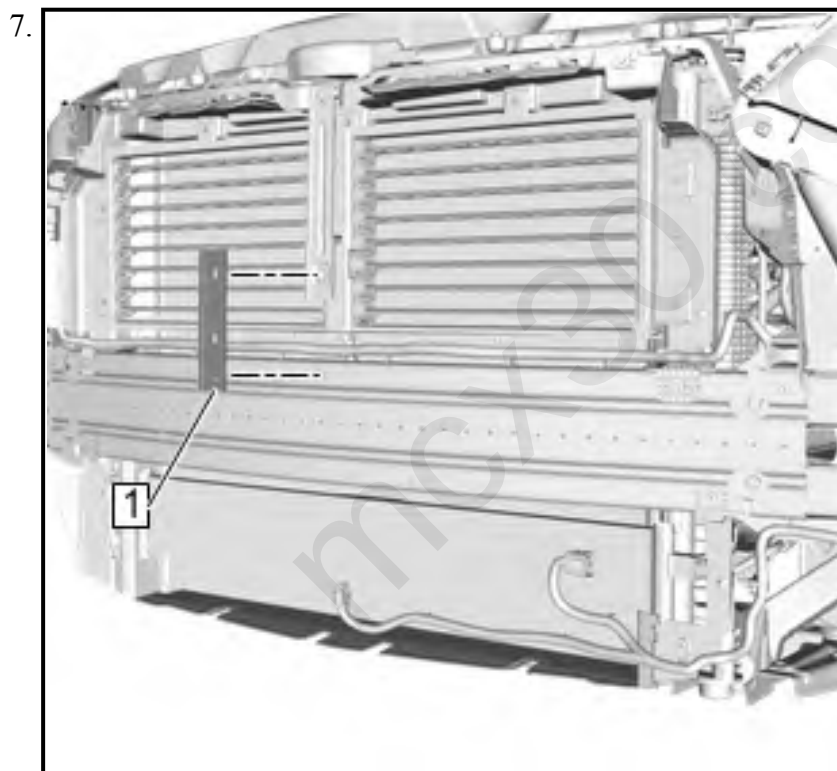
5. Radiator Air Lower Baffle Bolt (2) - Install - [Radiator Air Lower Baffle Replacement \(LFY with V08\)](#) [Radiator Air Lower Baffle Replacement \(LFY without V08\)](#) [Radiator Air Lower Baffle Replacement \(LTG\)](#)

6.



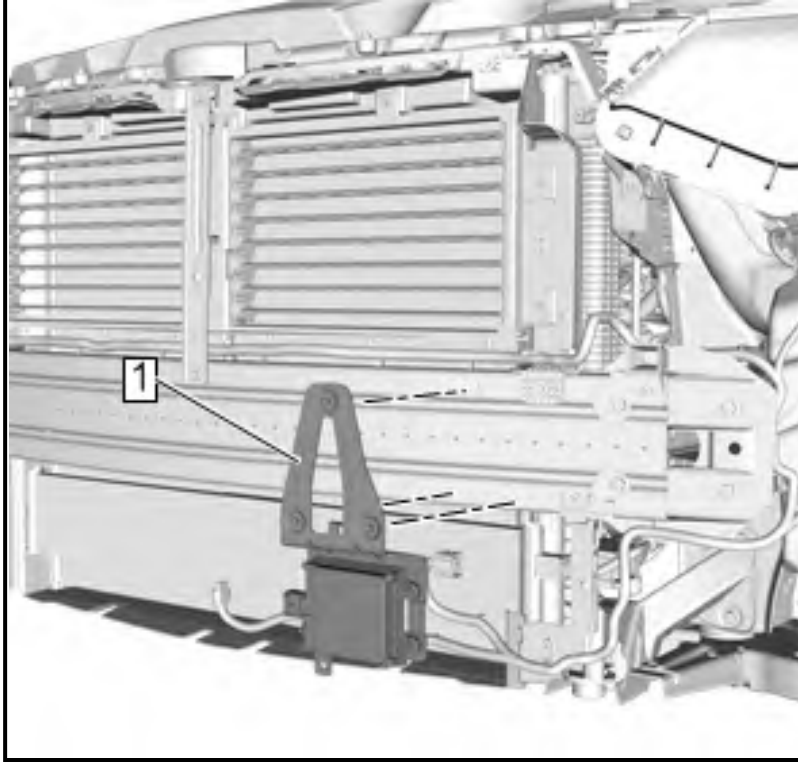


Install the wiring harness. (1)

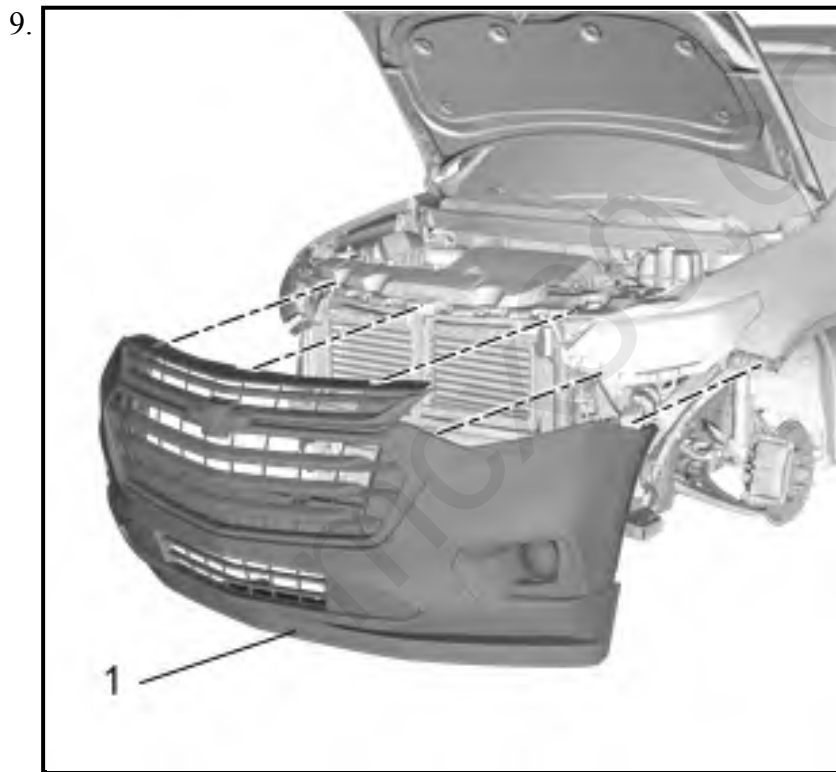


Front Bumper Fascia Support Brace- Lower (1) - Install - **Front Bumper Fascia Support Brace Replacement - Lower**





Forward Range Radar Bracket (1) - Install - [Forward Range Radar Bracket Replacement](#)

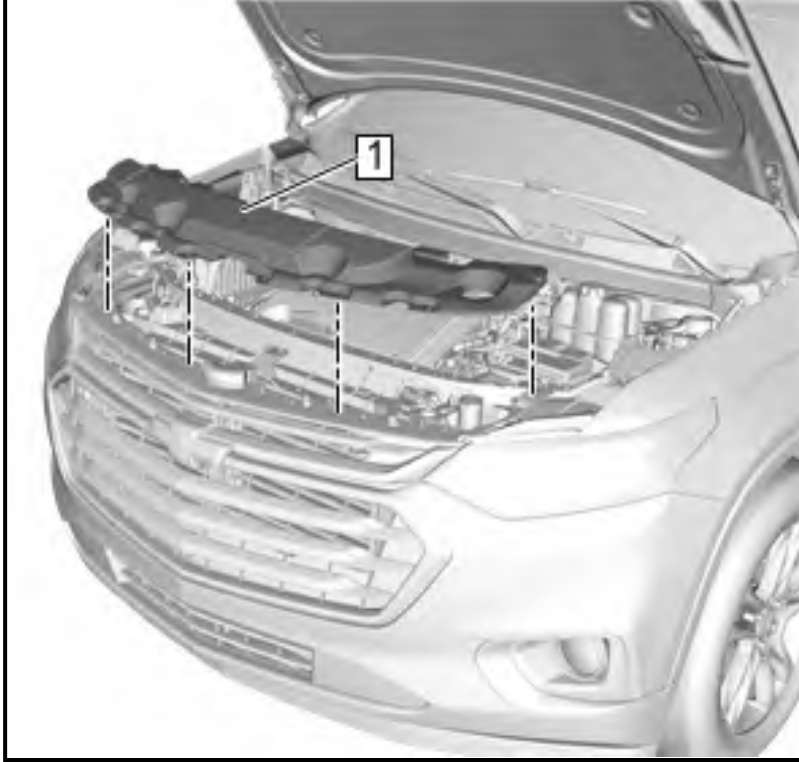


Front Bumper Fascia (1) - Install - [Front Bumper Fascia Replacement](#).

FRONT BUMPER FASCIA REPLACEMENT

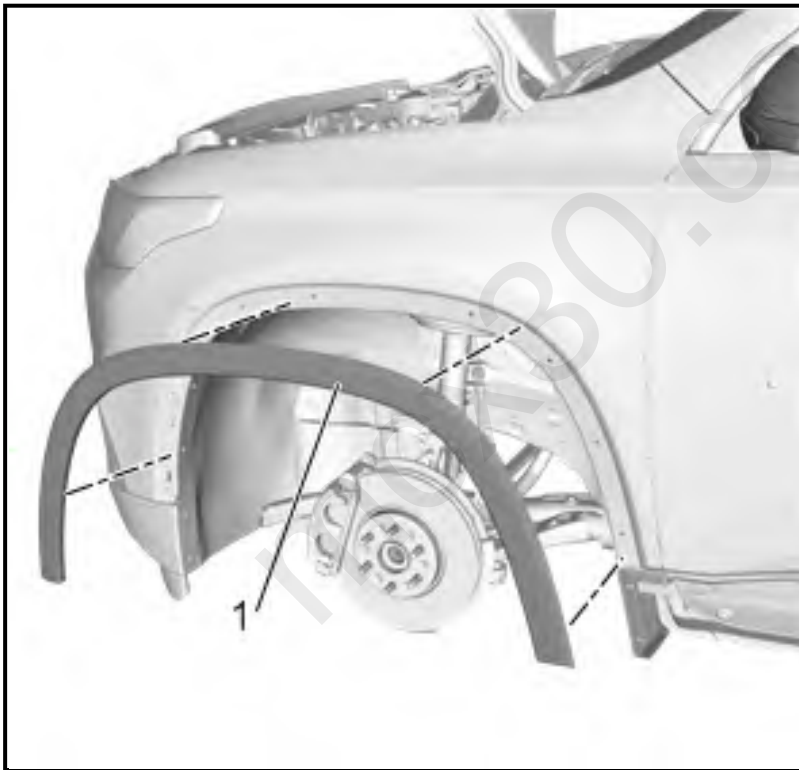
Removal Procedure





Intake Air Splash Shield (1) - Remove - [Intake Air Splash Shield Replacement](#)

2.



Front Wheel Opening Molding (1) - Remove - [Front Wheel Opening Molding Replacement](#)

3.

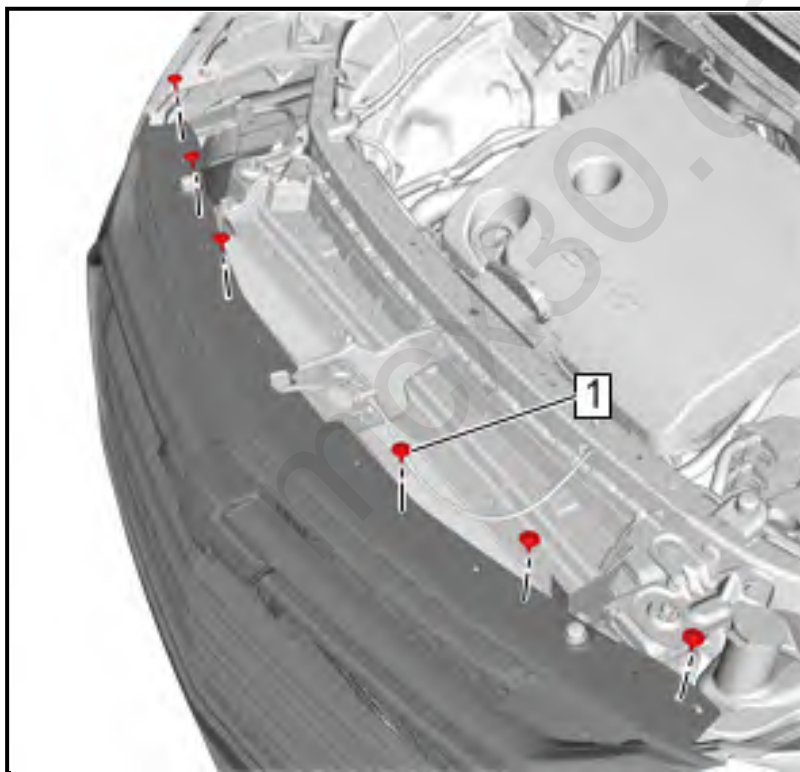




Front Wheelhouse Liner (1) - Remove - [Front Wheelhouse Liner Replacement](#)

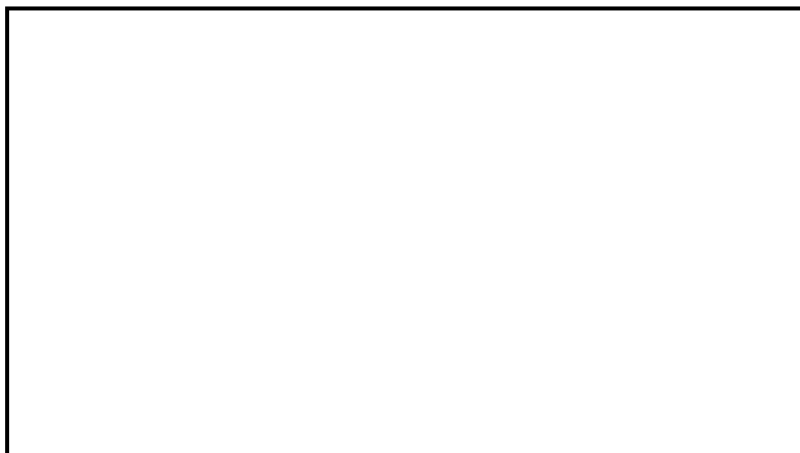
4. Disconnect the fog lamp connectors if required.

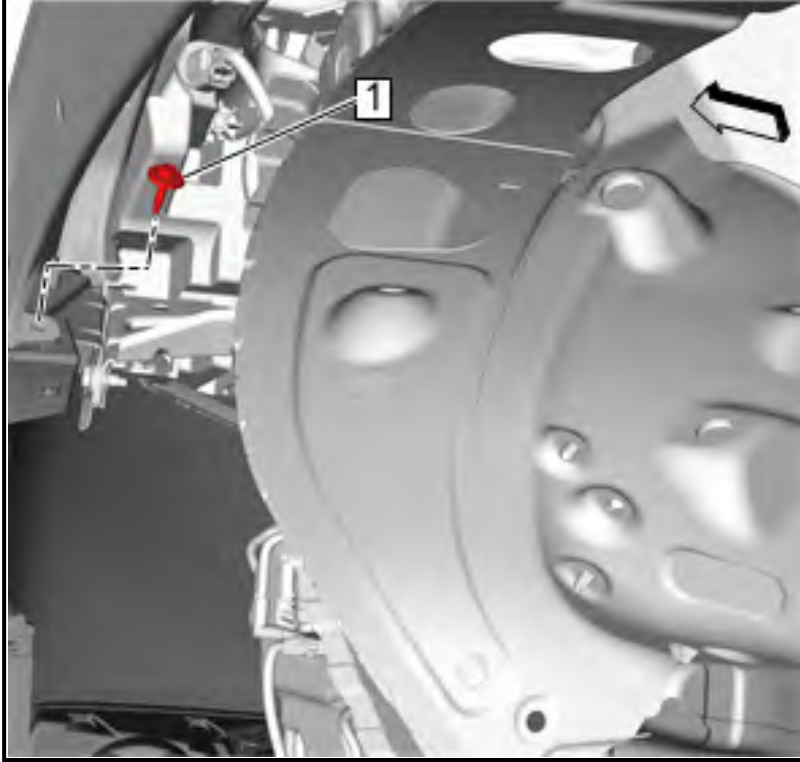
5.



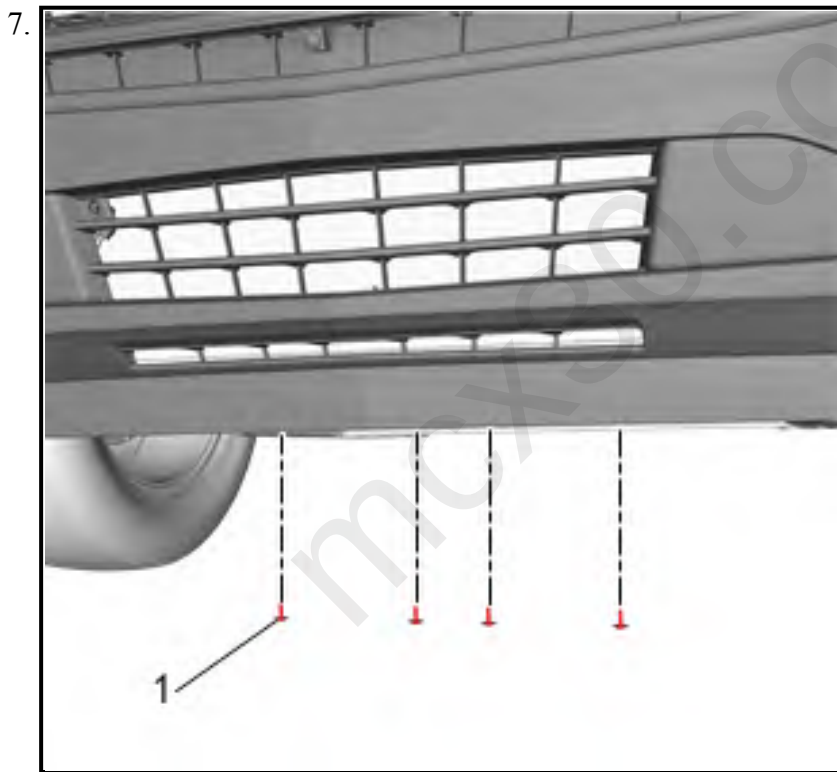
Front Grille Bolt (1) - Remove [6x]

6.



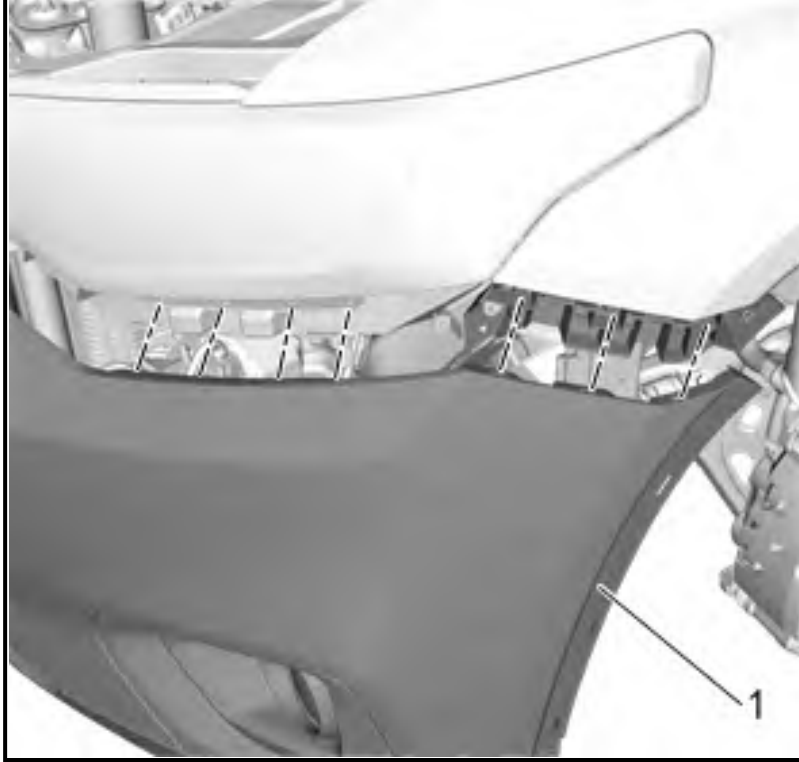


Front Bumper Fascia Bolt (1) - Remove

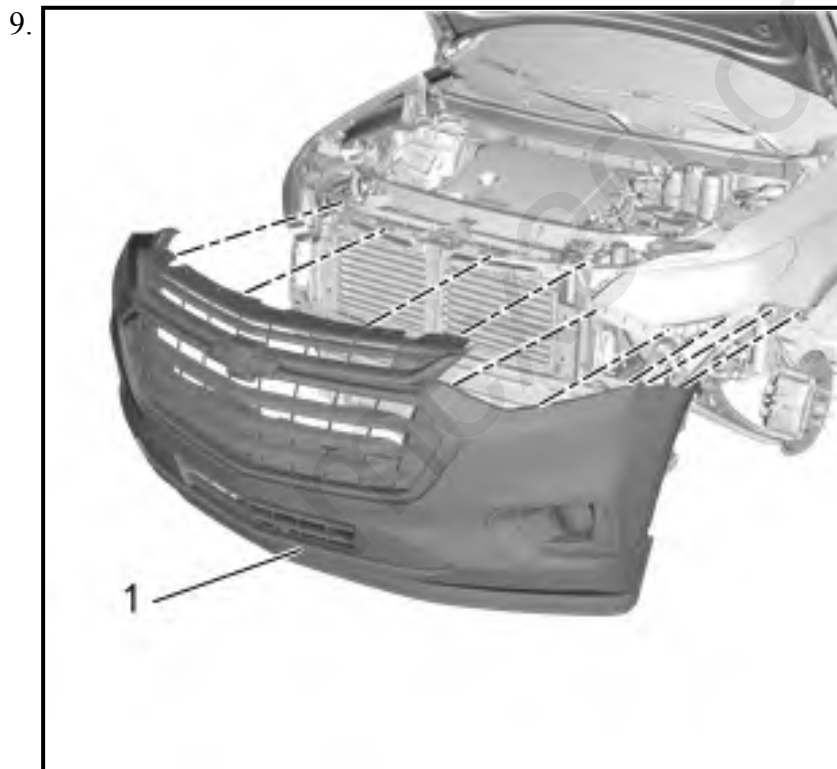


Front Bumper Fascia Bolt (1) - Remove [4x]





Carefully push a small nylon wedge between the fascia (1) and the 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.

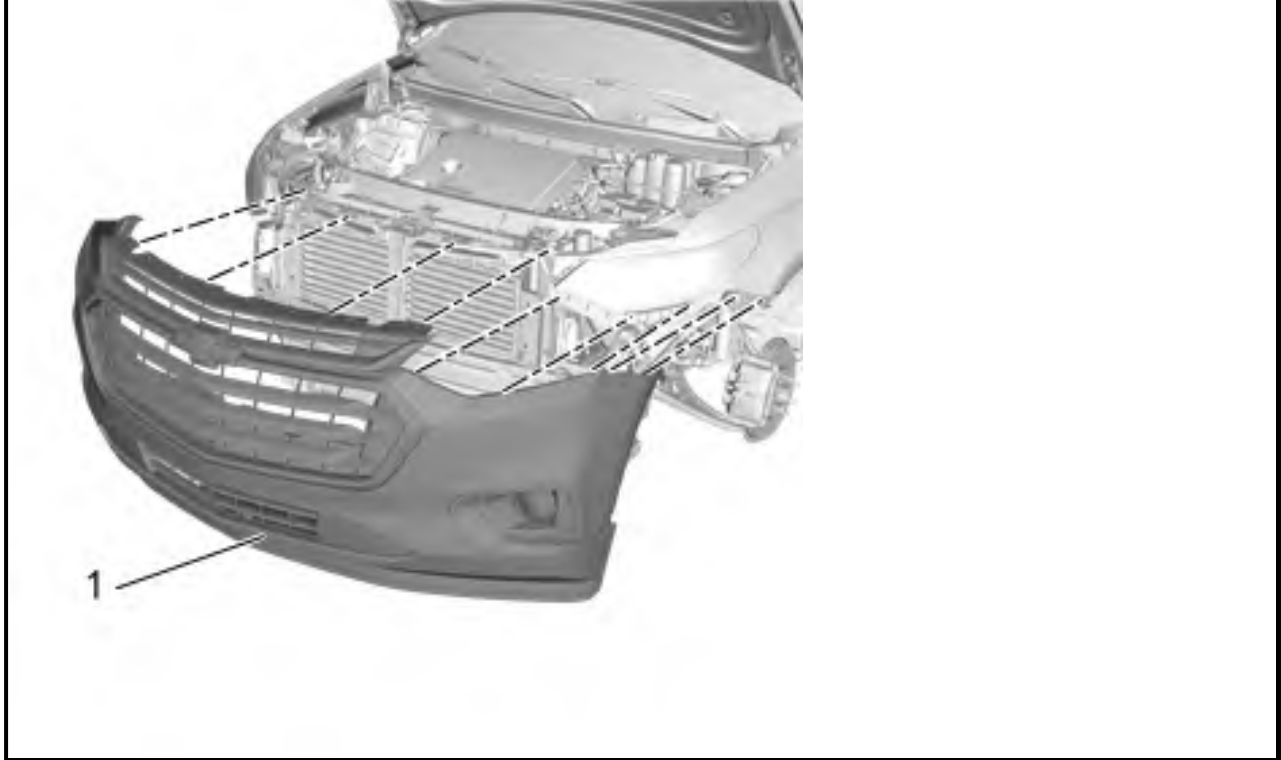


Front Bumper Fascia (1) - Remove

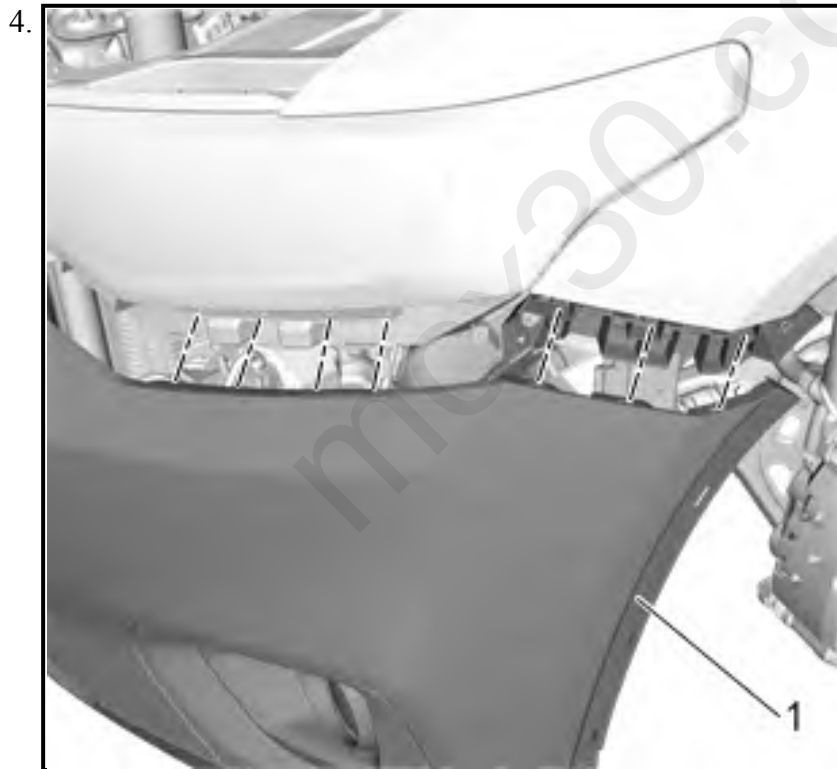
10. Disconnect all electrical connectors.

Installation Procedure



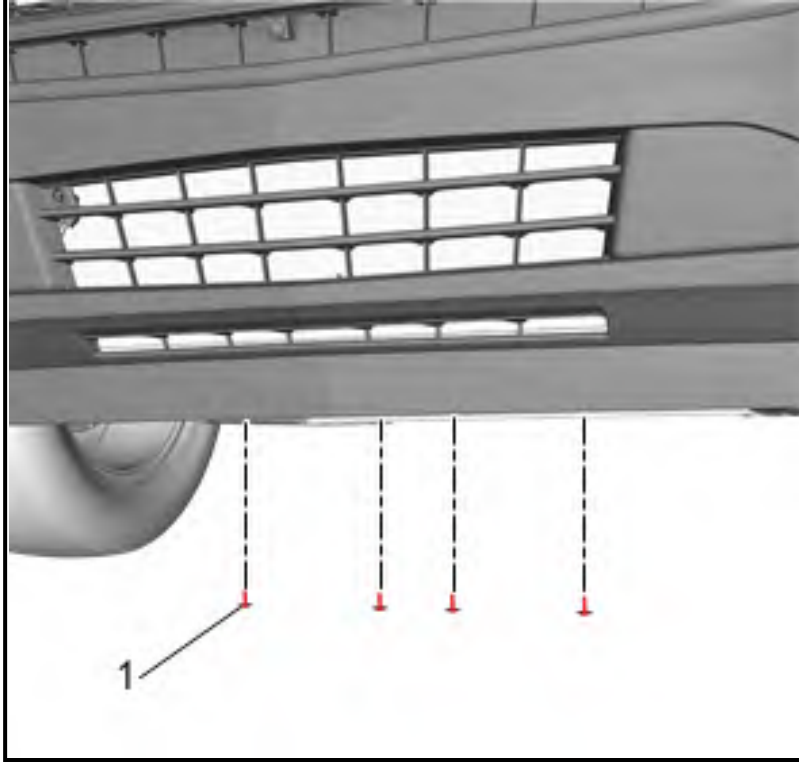


1. Transfer components as necessary.
2. Connect the electrical connectors.
3. Front Bumper Fascia (1) - Install



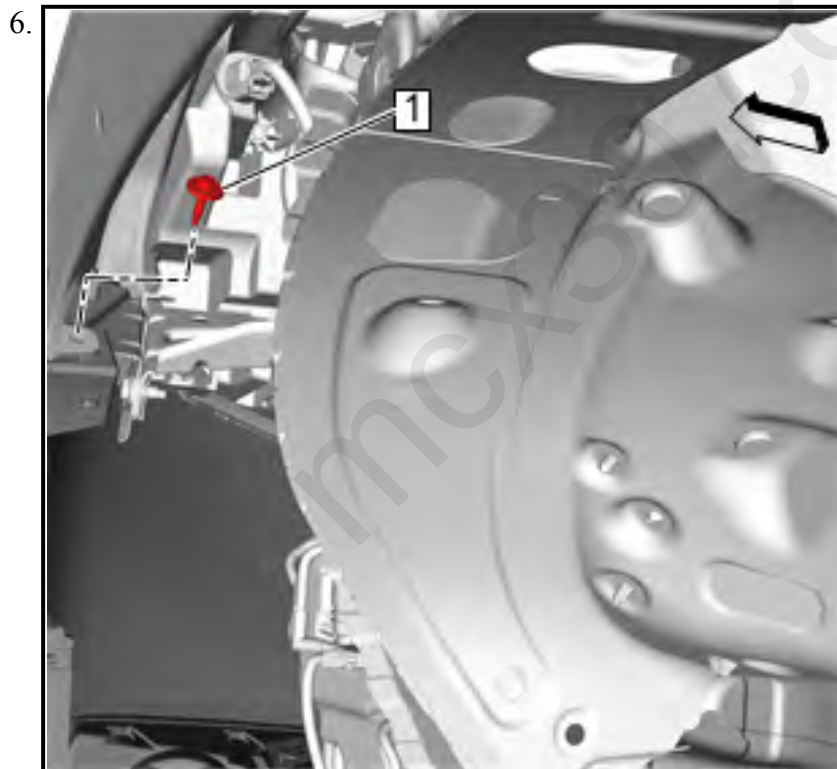
Secure the front bumper fascia (1) to the front bumper fascia guide.



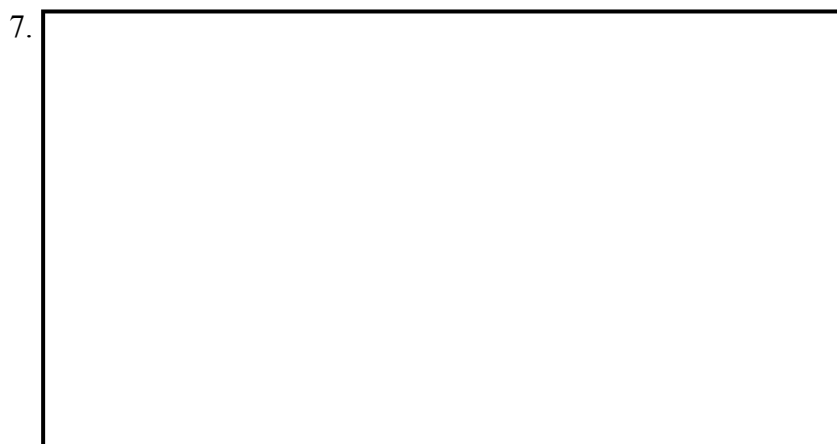


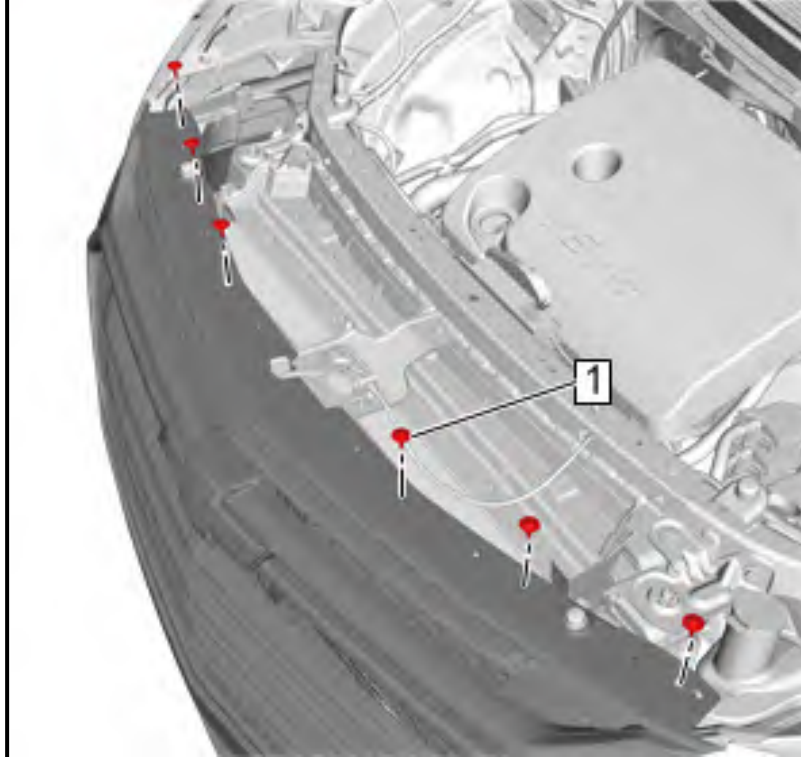
CAUTION: Refer to [Fastener Caution](#) .

Front Bumper Fascia Bolt (1) - Install and tighten [4x] 2.5 N.m (22 lb ft)



Front Bumper Fascia Bolt (1) - Install and tighten 2.5 N.m (22 lb ft)

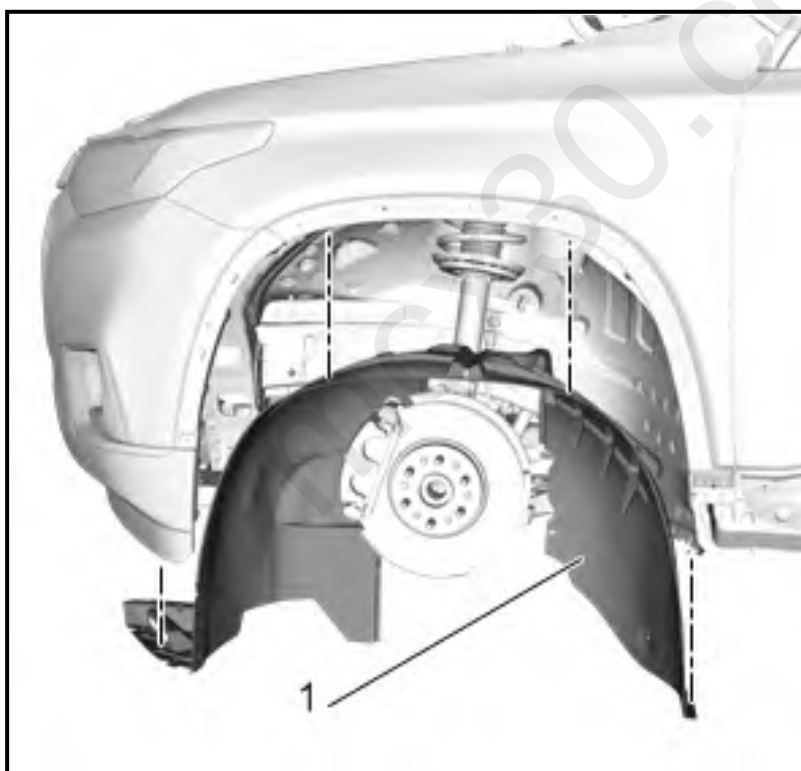




Front Grille Bolt (1) - Install and tighten [6x] 2.5 N.m (22 lb ft)

8. Connect the fog lamp connectors if required.
9. Confirm fog lamp operation.

10.



Front Wheelhouse Liner (1) - Install - [Front Wheelhouse Liner Replacement](#)

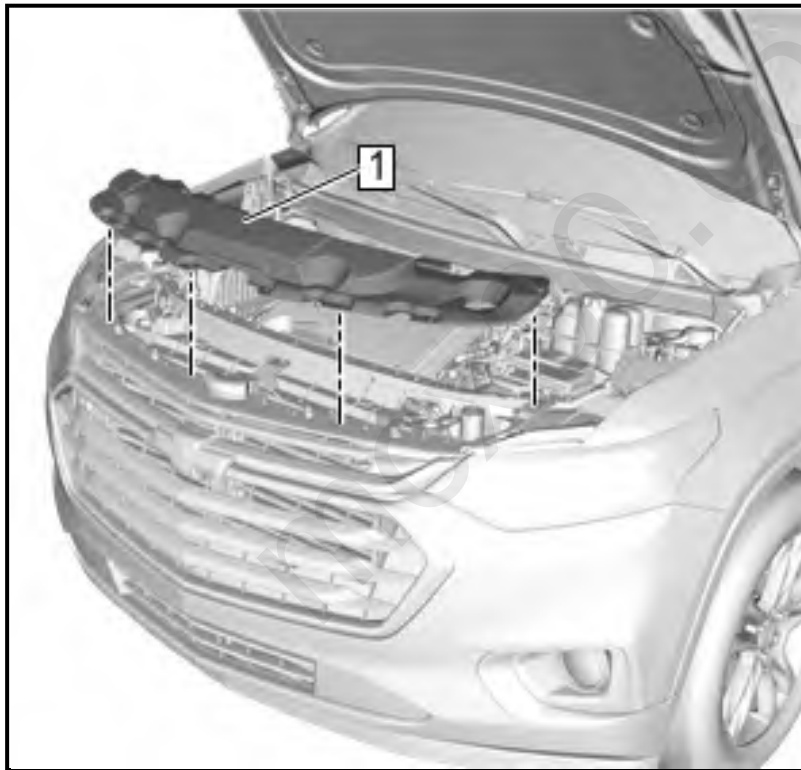
11.





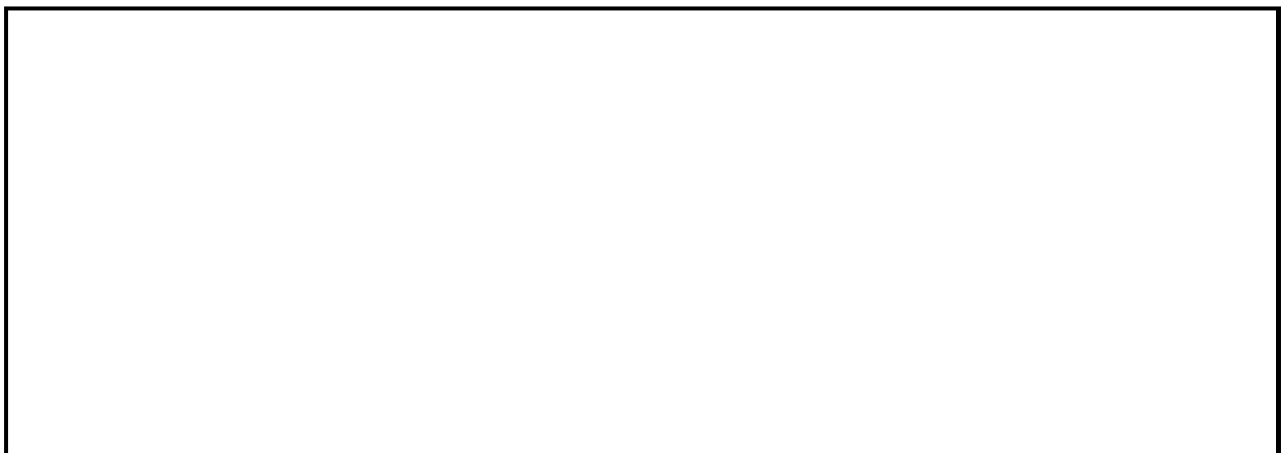
Front Wheel Opening Molding (1) - Install - [Front Wheel Opening Molding Replacement](#)

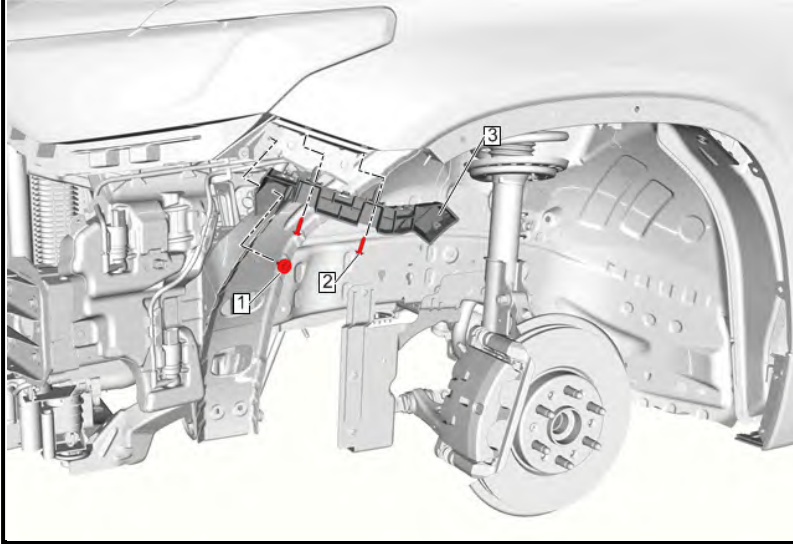
12.



Intake Air Splash Shield (1) - Install - [Intake Air Splash Shield Replacement](#)

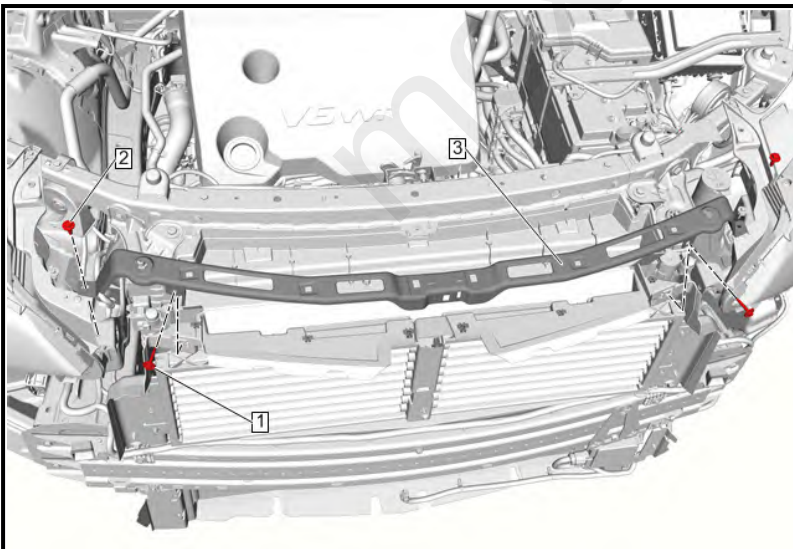
FRONT BUMPER FASCIA GUIDE REPLACEMENT





Callout	Component Name
Preliminary Procedure Front Bumper Fascia Replacement	
1	Headlamp Bolt CAUTION: Refer to Fastener Caution . Tighten 2.5 N.m (22 lb in)
2	Front Bumper Fascia Guide Bolt [2x] Tighten 2.5 N.m (22 lb in)
3	Front Bumper Fascia Guide

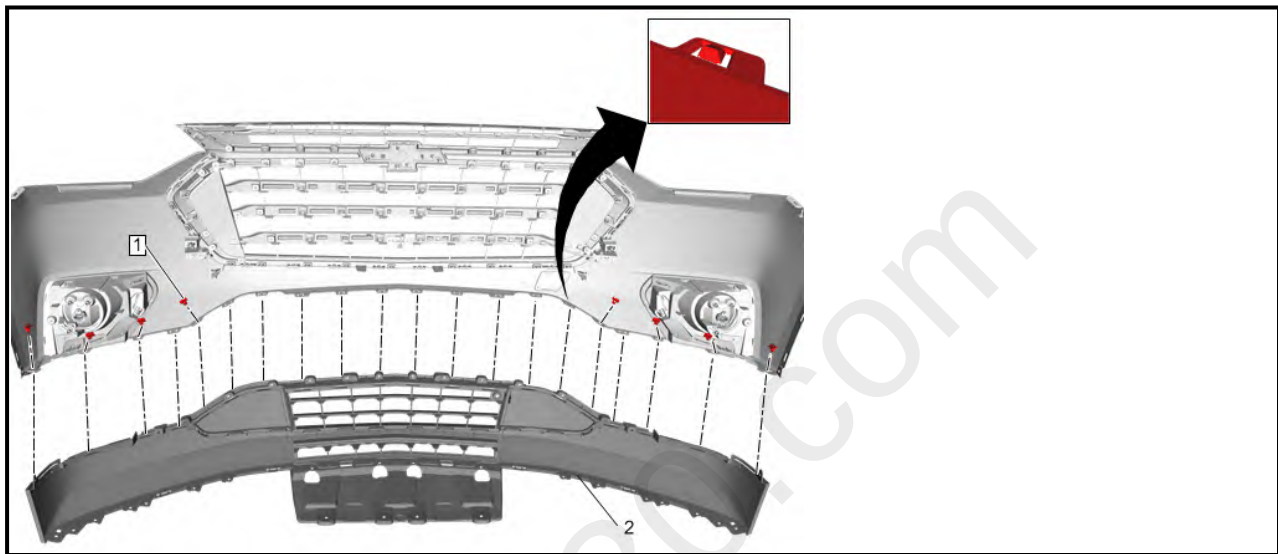
FRONT BUMPER FASCIA CENTER SUPPORT REPLACEMENT



Callout	Component Name
Preliminary Procedures 1. Front Bumper Fascia Support Brace Replacement (Center) 2. Front Bumper Fascia Support Brace Replacement - Upper	

Callout	Component Name
1	Radiator Air Upper Baffle Bolt [2x] CAUTION: Refer to Fastener Caution . Tighten 2.5 N.m (22 lb in)
2	Front Bumper Fascia Center Support Bolt [2x] Tighten 9 N.m (80 lb in)
3	Front Bumper Fascia Center Support

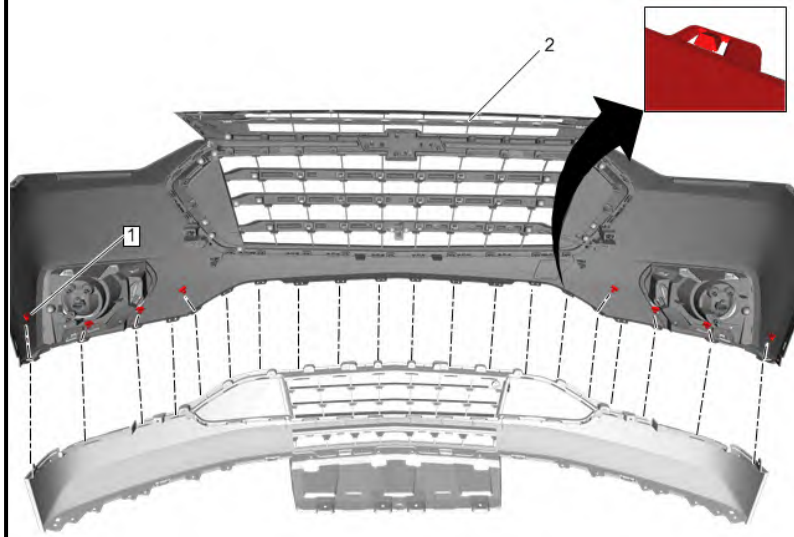
FRONT BUMPER LOWER FASCIA REPLACEMENT



Callout	Component Name
Preliminary Procedure Front Bumper Fascia Energy Absorber Replacement	
1	Front Bumper Fascia Clip [8x]
2	Front Bumper Lower Fascia Procedure 1. Place the front bumper fascia down on a clean protected surface. 2. Carefully push a small nylon wedge between the upper fascia and the lower fascia. Insert a small flat-bladed tool into the fascia slot and depress the tabs one at a time and pull on the fascia at the same time to gradually remove the lower fascia from the fascia. 3. Transfer components as necessary.

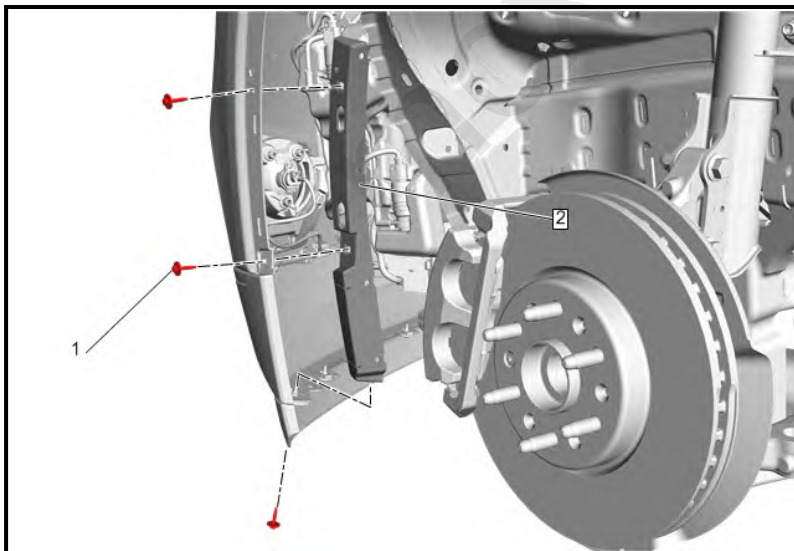
FRONT BUMPER UPPER FASCIA REPLACEMENT





Callout	Component Name
Preliminary Procedure <u>Front Bumper Fascia Energy Absorber Replacement</u>	
1	Front Bumper Fascia Clip [8x]
2	Front Bumper Upper Fascia Procedure 1. Place the front bumper fascia down on a clean protected surface. 2. Carefully push a small nylon wedge between the upper fascia and the lower fascia. Insert a small flat-bladed tool into the fascia slot and depress the tabs one at a time and pull on the fascia at the same time to gradually remove the upper fascia from the lower fascia. 3. Transfer components as necessary.

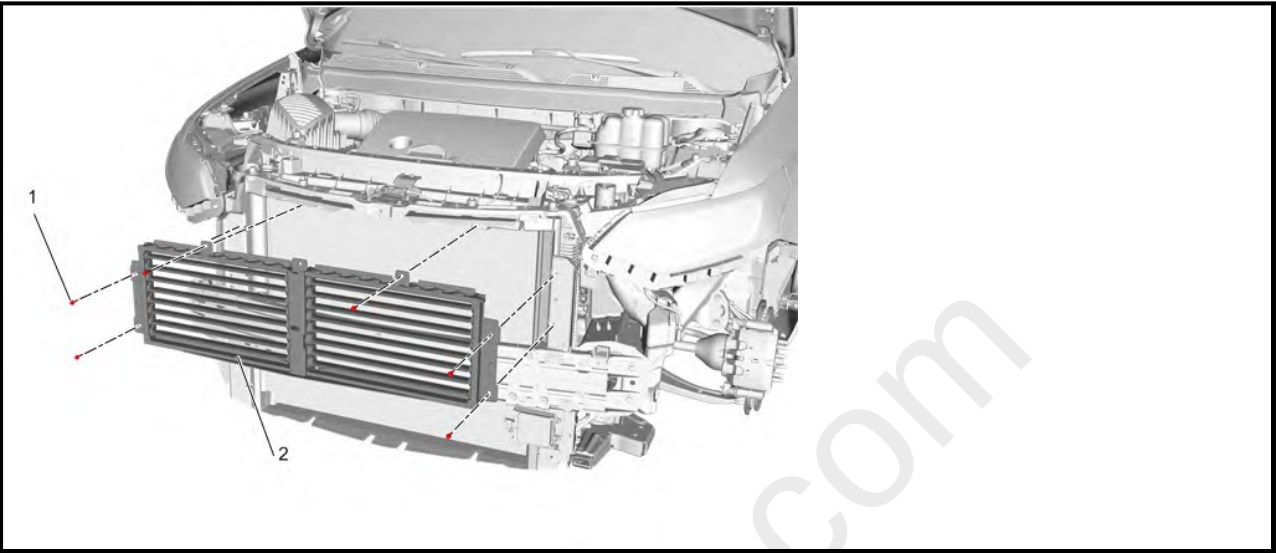
FRONT BUMPER FASCIA OUTER BRACKET REPLACEMENT



Callout	Component Name
Preliminary Procedures 1. <u>Front Wheel Opening Molding Replacement</u> 2. <u>Front Wheelhouse Liner Replacement</u>	

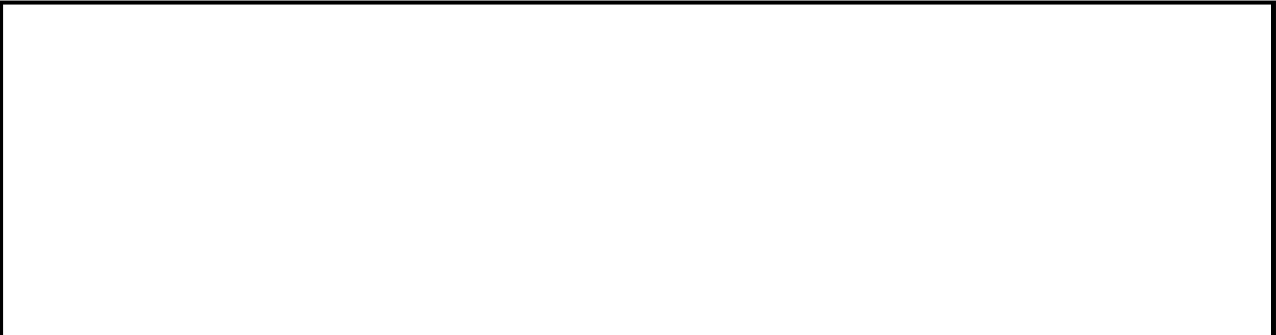
Callout	Component Name
1	Front Bumper Fascia Outer Bracket Bolt [2x] CAUTION: Refer to <u>Fastener Caution</u> . Tighten 2.5 N.m (22 lb in)
2	Front Bumper Fascia Outer Bracket

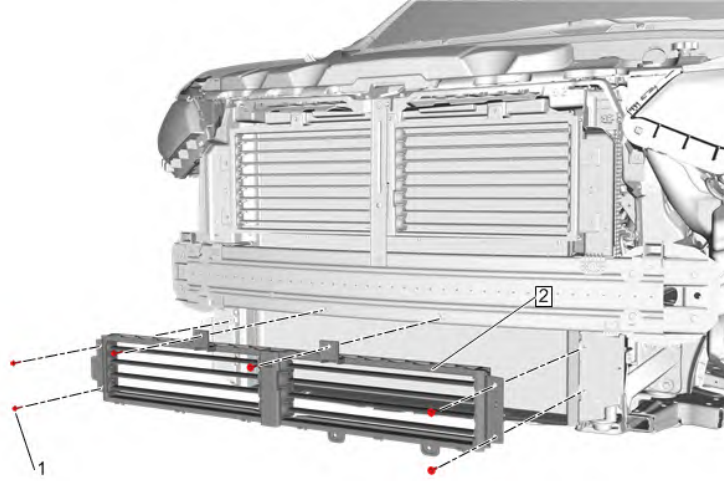
FRONT BUMPER SHUTTER REPLACEMENT (UPPER)



Callout	Component Name
Preliminary Procedure <u>Front Bumper Fascia Support Brace Replacement (Center).</u>	
1	Front Bumper Shutter Bolt [6x] CAUTION: Refer to <u>Fastener Caution</u> . Tighten 2.5 N.m (22 lb in)
2	Front Bumper Shutter Procedure 1. Disconnect the electrical connector. 2. Transfer components as necessary. 3.

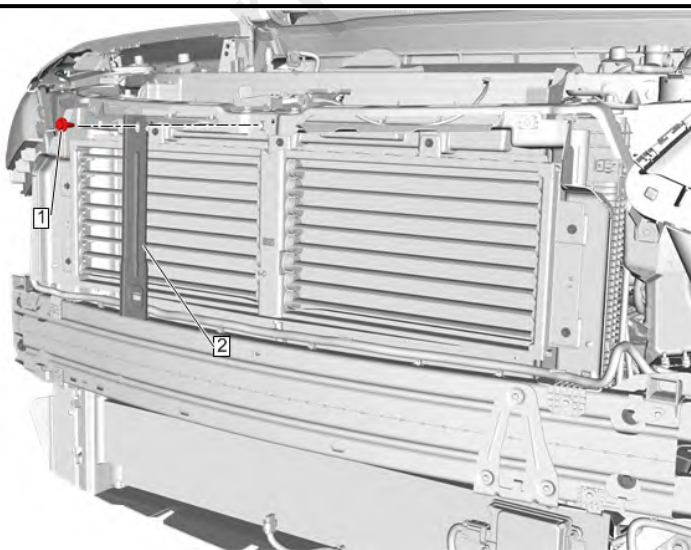
FRONT BUMPER SHUTTER REPLACEMENT (LOWER)





Callout	Component Name
Preliminary Procedure { If equipped } Forward Range Radar Bracket Replacement	
1	Front Bumper Shutter Bolt [6x] CAUTION: Refer to <u>Fastener Caution</u> . Tighten 2.5 N.m (22 lb in)
2	Front Bumper Shutter Procedure 1. Disconnect the electrical connector. 2. Transfer components as necessary. 3.

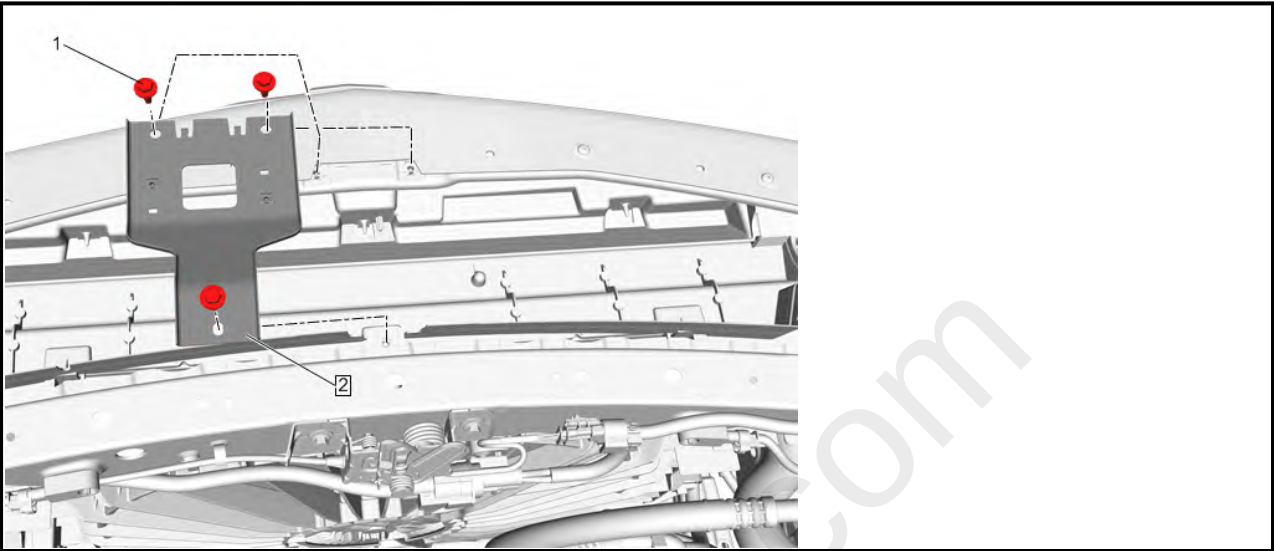
FRONT BUMPER FASCIA SUPPORT BRACE REPLACEMENT (CENTER)



Callout	Component Name
Preliminary Procedure Front Bumper Fascia Support Brace Replacement - Lower	
Empty row for procedure details	

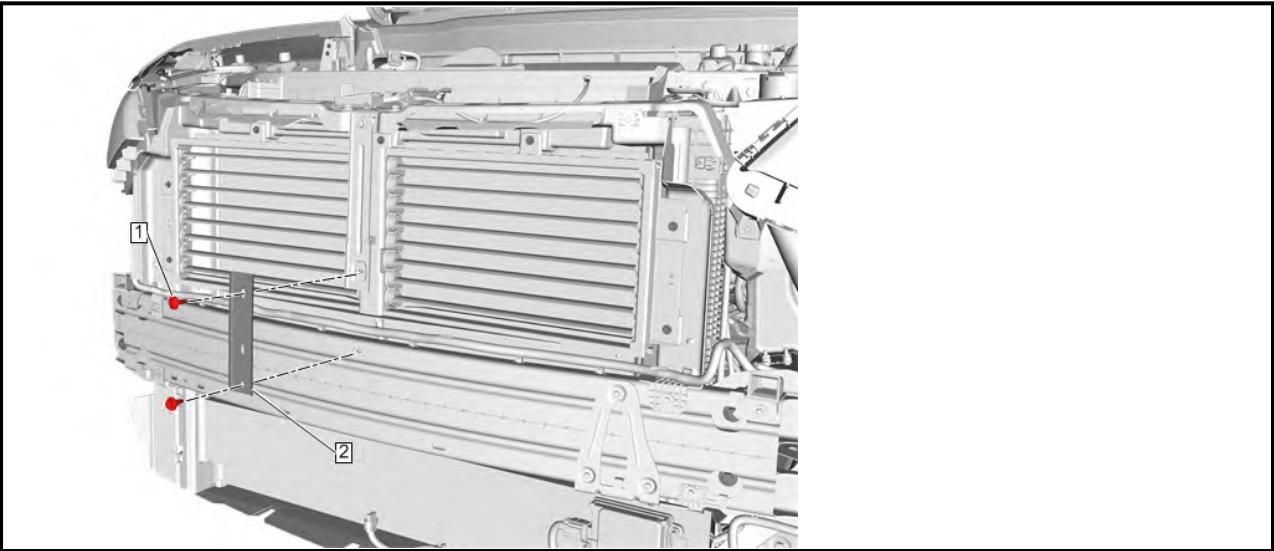
Callout	Component Name
1	Front Bumper Fascia Support Brace Bolt CAUTION: <u>Fastener Caution</u> Tighten 9 N.m (80 lb in)
2	Front Bumper Fascia Support Brace- Center

FRONT BUMPER FASCIA SUPPORT BRACE REPLACEMENT - UPPER



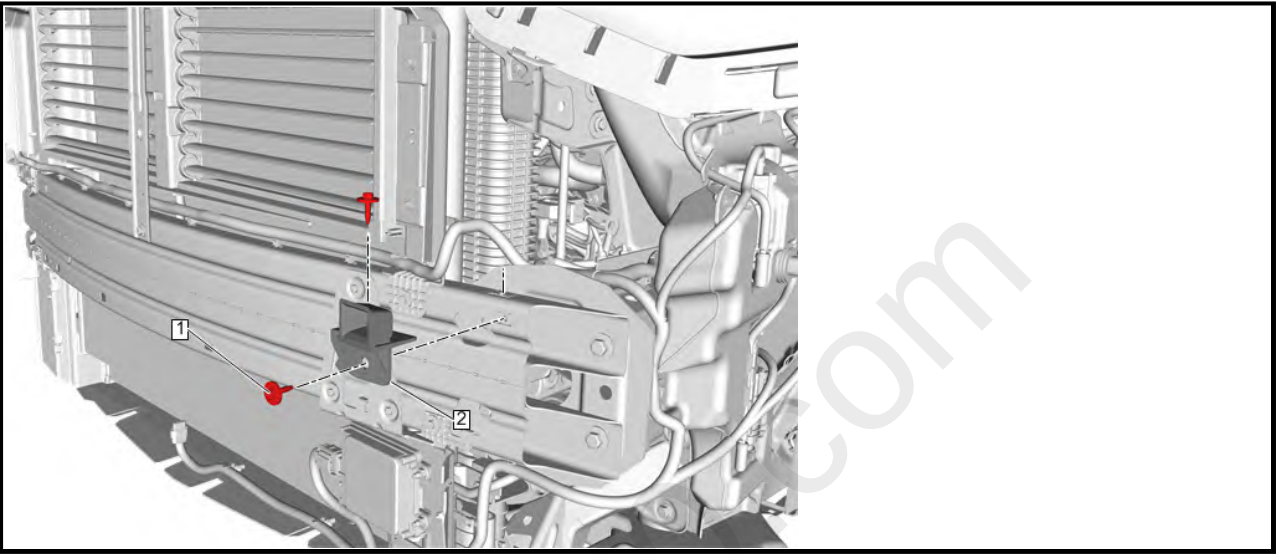
Callout	Component Name
Preliminary Procedure <u>Hood Secondary Latch Release Cable Replacement</u>	
1	Front Bumper Fascia Support Brace Bolt [3x] CAUTION: <u>Fastener Caution</u> Tighten 9 N.m (80 lb in)
2	Front Bumper Fascia Support Brace

FRONT BUMPER FASCIA SUPPORT BRACE REPLACEMENT - LOWER



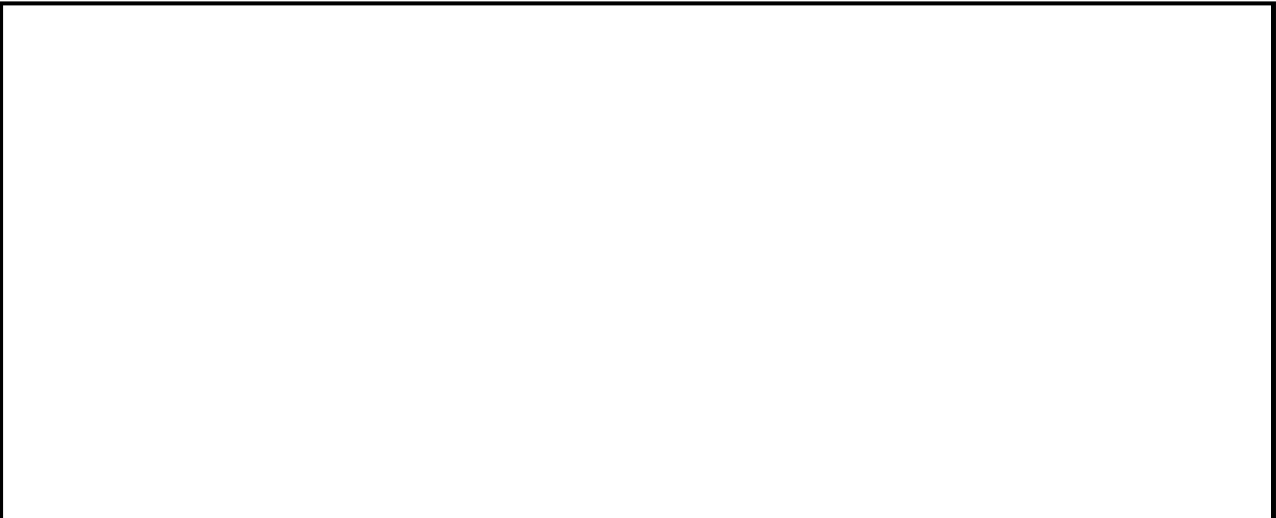
Callout	Component Name
Preliminary Procedure Front Bumper Fascia Replacement	
1	Front Bumper Fascia Support Brace Bolt [2x] CAUTION: Fastener Caution Tighten 9 N.m (80 lb in)
2	Front Bumper Fascia Support Brace

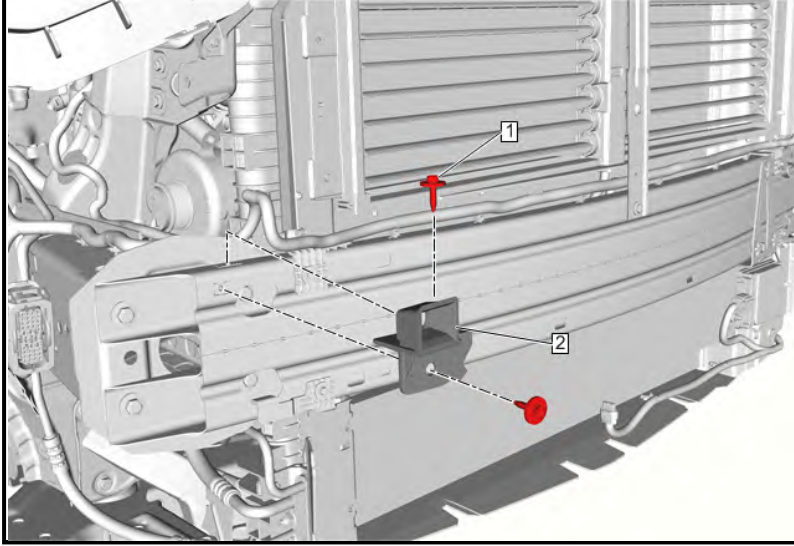
FRONT BUMPER FASCIA REINFORCEMENT REPLACEMENT - LEFT SIDE



Callout	Component Name
Preliminary Procedure Front Bumper Fascia Replacement	
1	Front Bumper Fascia Reinforcement Bolt [2x] CAUTION: Refer to Fastener Caution . Tighten 2.5 N.m (22 lb in)
2	Front Bumper Fascia Reinforcement-Left Side

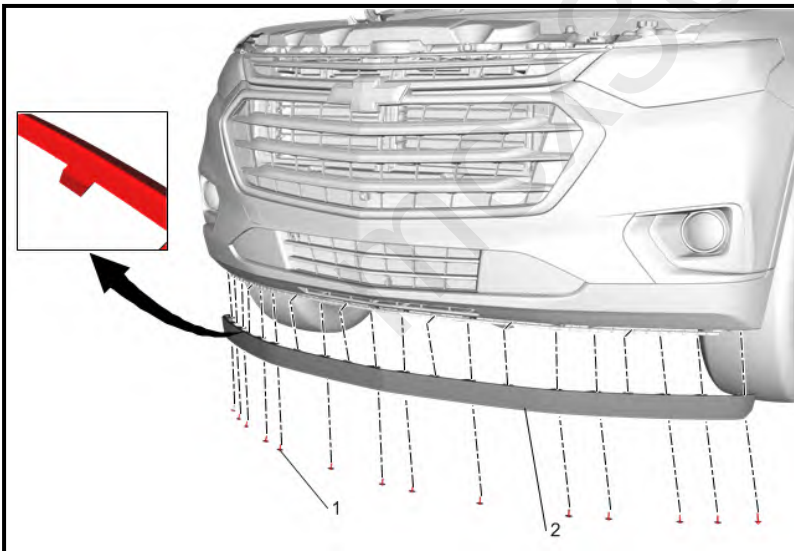
FRONT BUMPER FASCIA REINFORCEMENT REPLACEMENT - RIGHT SIDE





Callout	Component Name
Preliminary Procedure Front Bumper Fascia Replacement	
1	Front Bumper Fascia Reinforcement Bolt [2x] CAUTION: Refer to Fastener Caution . Tighten 2.5 N.m (22 lb in)
2	Front Bumper Fascia Reinforcement-Right Side

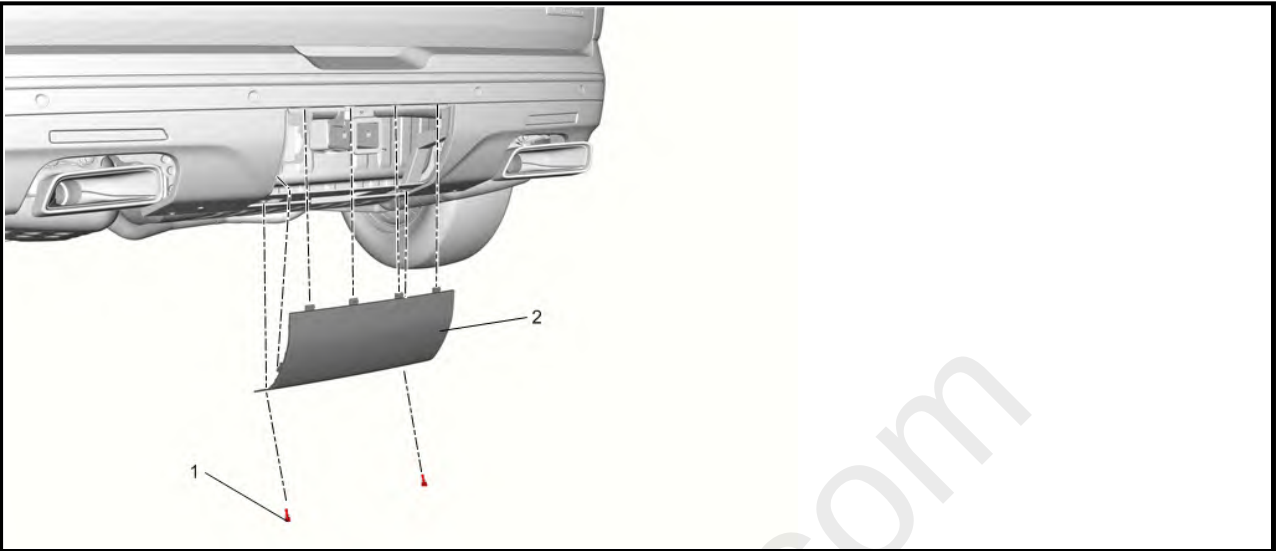
FRONT BUMPER FASCIA CENTER AIR DEFLECTOR REPLACEMENT



Callout	Component Name
Preliminary Procedure Raise the vehicle. Lifting and Jacking the Vehicle	
1	Front Bumper Fascia Center Air Deflector Bolt [14x] CAUTION: Refer to Fastener Caution . Tighten 2.5 N.m (22 lb in)

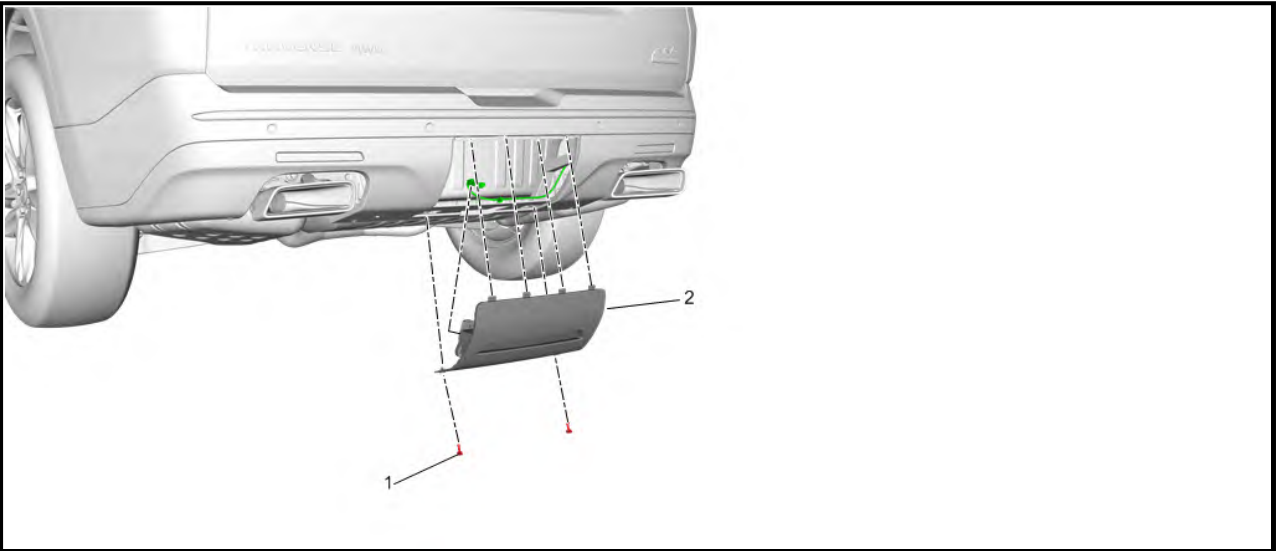
Callout	Component Name
2	Front Bumper Fascia Center Air Deflector Procedure 1. Using a trim tool, release the 6 locking tabs. 2. Lower the vehicle.

REAR BUMPER FASCIA REAR MULTIFUNCTION CARRIER OPENING COVER REPLACEMENT (WITHOUT T79)



Callout	Component Name
1	Rear Bumper Fascia Rear Multifunction Carrier Opening Cover Bolt [2x] Procedure Turn the rear bumper fascia rear multifunction carrier opening cover bolt 1/4 turn counter clockwise and remove.
2	Rear Bumper Fascia Rear Multifunction Carrier Opening Cover Procedure Carefully release the tabs and pull the rear bumper fascia trailer hitch access hole cover down from the rear bumper fascia.

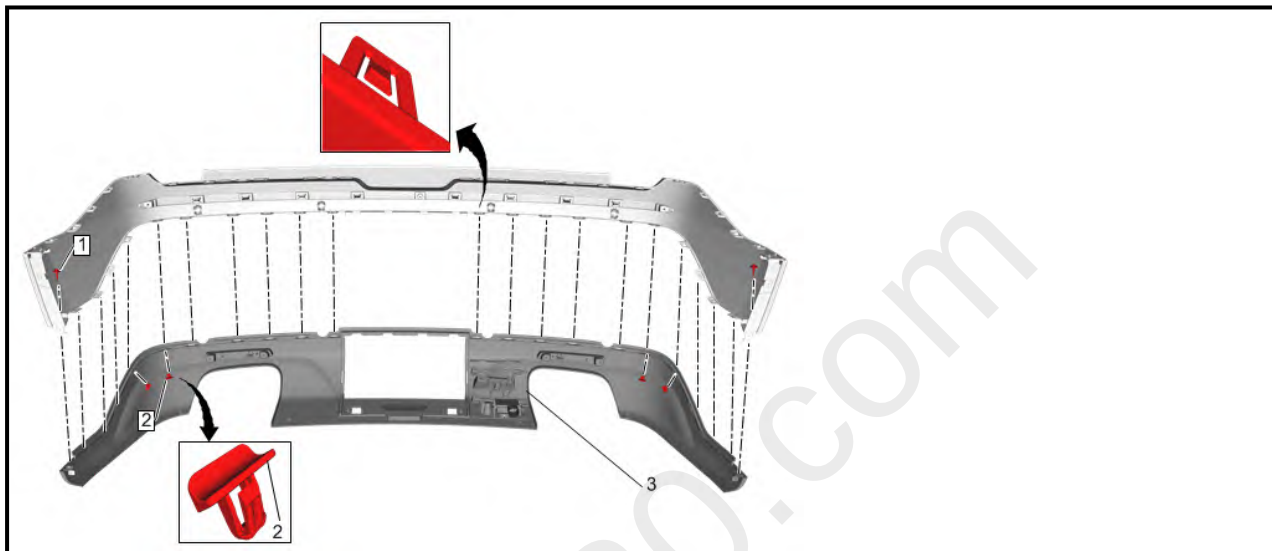
REAR BUMPER FASCIA REAR MULTIFUNCTION CARRIER OPENING COVER REPLACEMENT (WITH T79)



Callout	Component Name

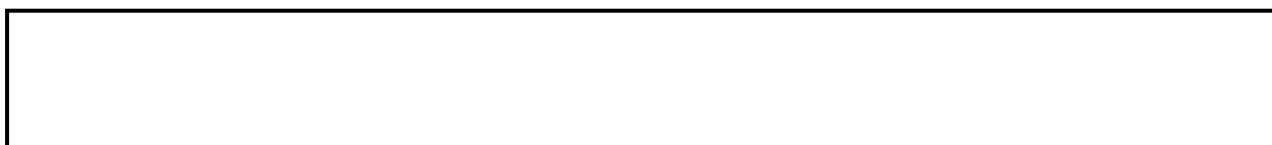
Callout	Component Name
1	Rear Bumper Fascia Rear Multifunction Carrier Opening Cover Bolt [2x] Procedure Turn the rear bumper fascia rear multifunction carrier opening cover bolt 1/4 turn counter clockwise and remove.
2	Rear Bumper Fascia Rear Multifunction Carrier Opening Cover Procedure 1. Carefully release the tabs and pull the rear bumper fascia rear multifunction carrier opening cover down from the rear bumper fascia. 2. Disconnect the electrical connector.

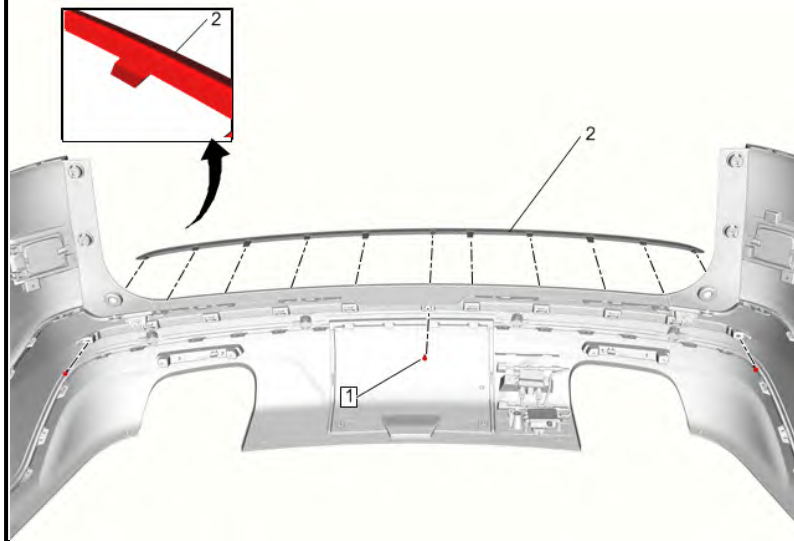
REAR BUMPER VALANCE PANEL REPLACEMENT



Callout	Component Name
Preliminary Procedure <u>Rear Bumper Fascia Energy Absorber Replacement</u>	
1	Rear Bumper Valance Panel Bolt [2x] CAUTION: Refer to <u>Fastener Caution</u> . Tighten 2.5 N.m (22 lb in)
2	Rear Bumper Valance Panel Clip [4x]
3	Rear Bumper Valance Panel Procedure 1. Carefully push a small nylon wedge between the lower fascia and the rear bumper valance panel. Insert a small flat-bladed tool into the fascia slot and depress the snaps one at a time and pull on the fascia at the same time to gradually remove the lower fascia from the rear bumper valance panel. 2. Transfer components as necessary.

REAR BUMPER FASCIA LOWER MOLDING REPLACEMENT



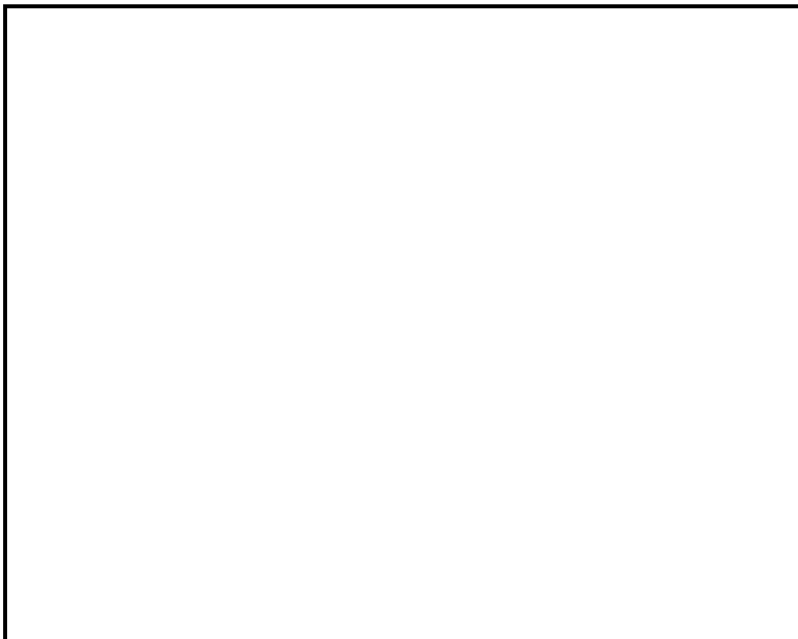


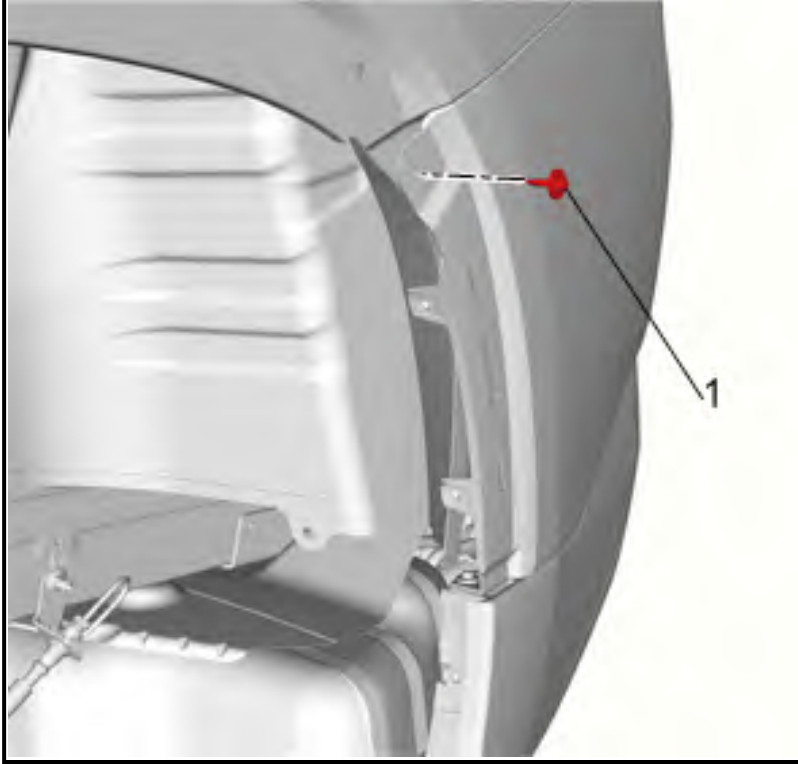
Callout	Component Name
Preliminary Procedure <u>Rear Bumper Fascia Energy Absorber Replacement</u>	
1	Rear Bumper Fascia Molding Bolt [3x] CAUTION: Refer to <u>Fastener Caution</u> . Tighten 2.5 N.m (22 lb in)
2	Rear Bumper Fascia Molding Procedure 1. Place the bumper fascia face down on a clean protective surface. 2. Release the retainer tabs and push the rear bumper fascia molding out from the rear bumper fascia.

REAR BUMPER FASCIA REPLACEMENT

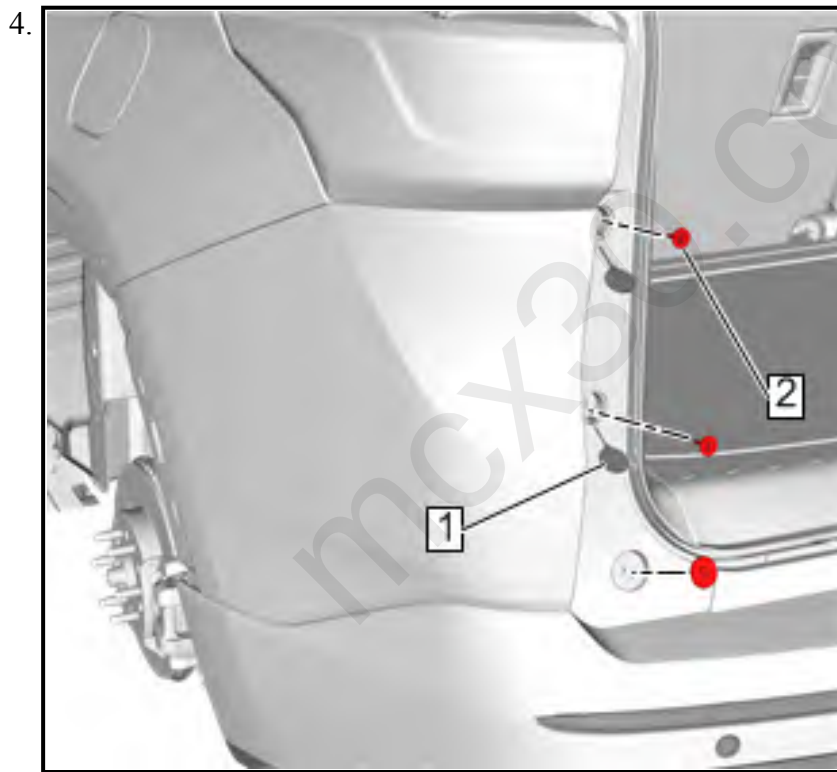
Removal Procedure

1. Remove the right and left rear wheel opening molding. **Rear Wheel Opening Molding Replacement**
2. Remove the right and left rear wheelhouse liner. **Rear Wheelhouse Liner Replacement**
- 3.





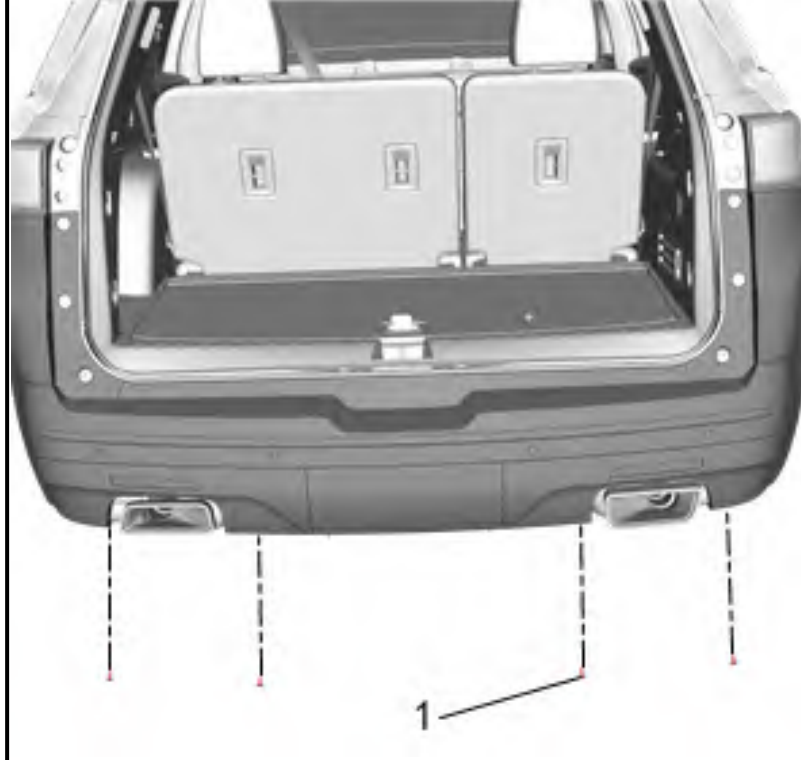
Rear Bumper Fascia Bolt (1) - Remove [2x]



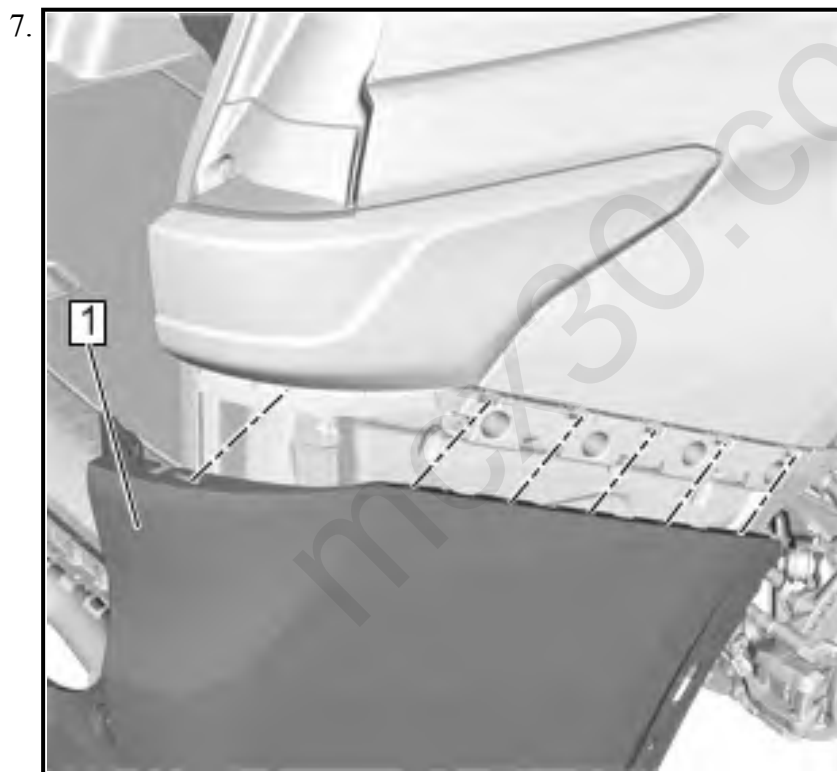
Remove the rear bumper fascia bolt cap. (1) [4x]

5. Rear Bumper Fascia Bolt (2) - Remove [6x]





Rear Bumper Fascia Lower Bolt (1) - Remove [4x]



Carefully push a small nylon wedge between the fascia (1) and the 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.





Rear Bumper Fascia (1) - Remove

9. Disconnect all electrical connectors.

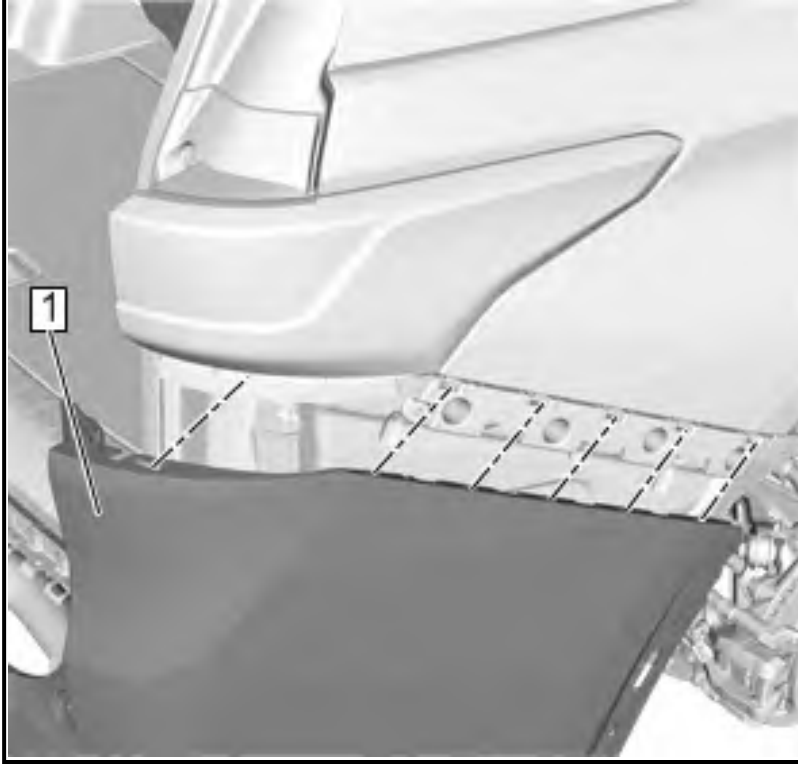
Installation Procedure



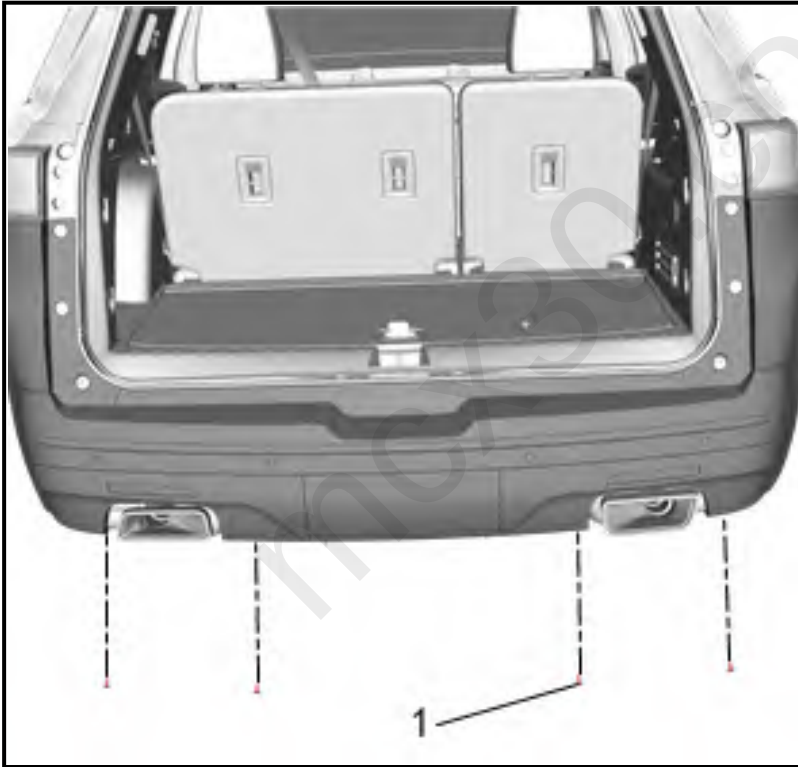
1. Transfer components as necessary.
2. Connect the electrical connectors.
3. Rear Bumper Fascia (1) - Install

- 4.





Install the rear bumper fascia (1) to the rear fascia guide.

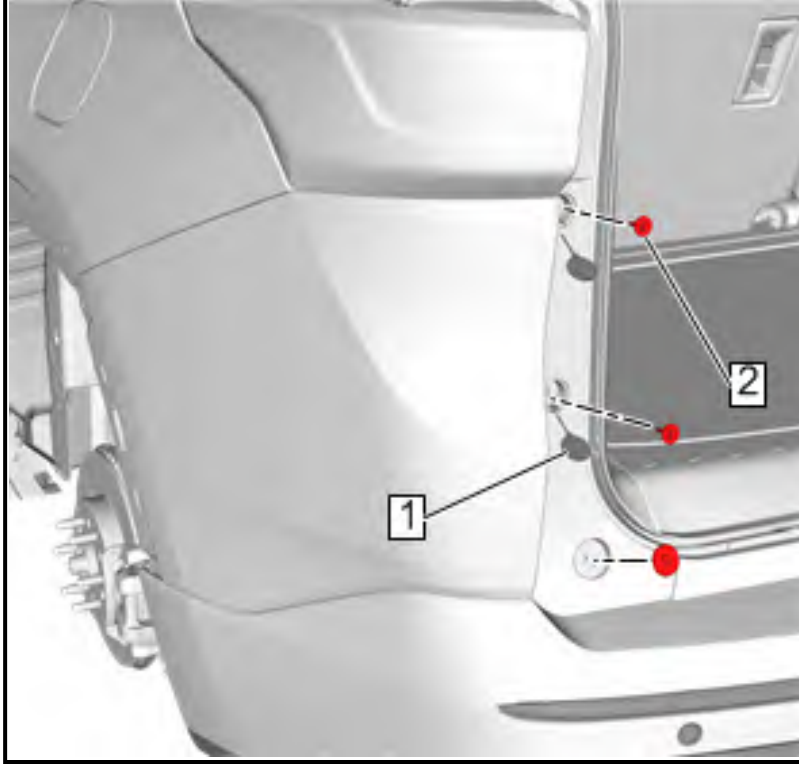


CAUTION: Refer to [Fastener Caution](#) .

Rear Bumper Fascia Lower Bolt (1) - Install and tighten [4x] 2.5 N.m (22 lb ft)

5.

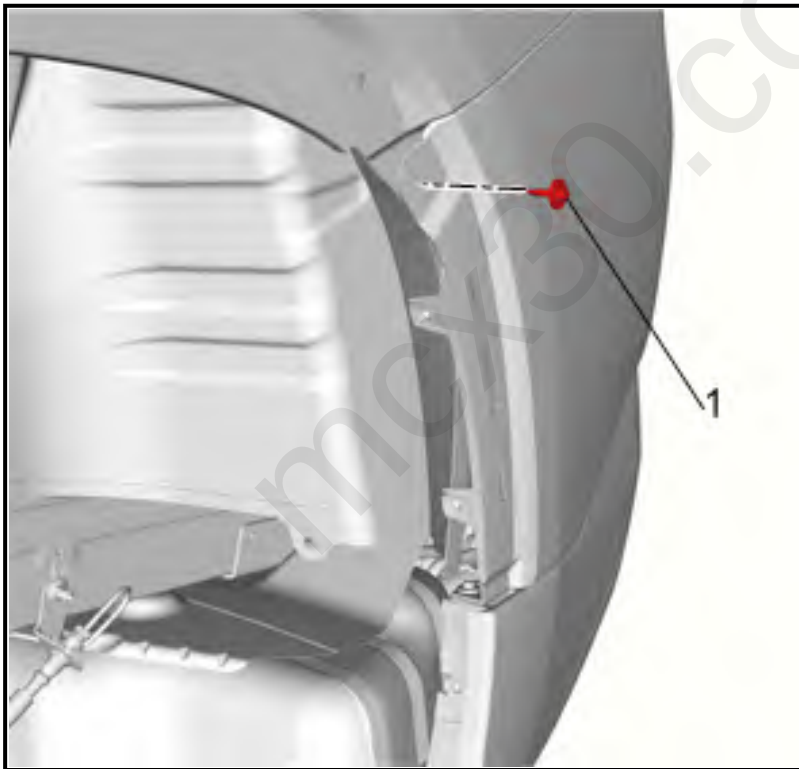




Rear Bumper Fascia Bolt (1) - Install and tighten [6x] 2.5 N.m (22 lb ft)

6. Install the rear bumper fascia bolt cap. (1) [4x]

7.



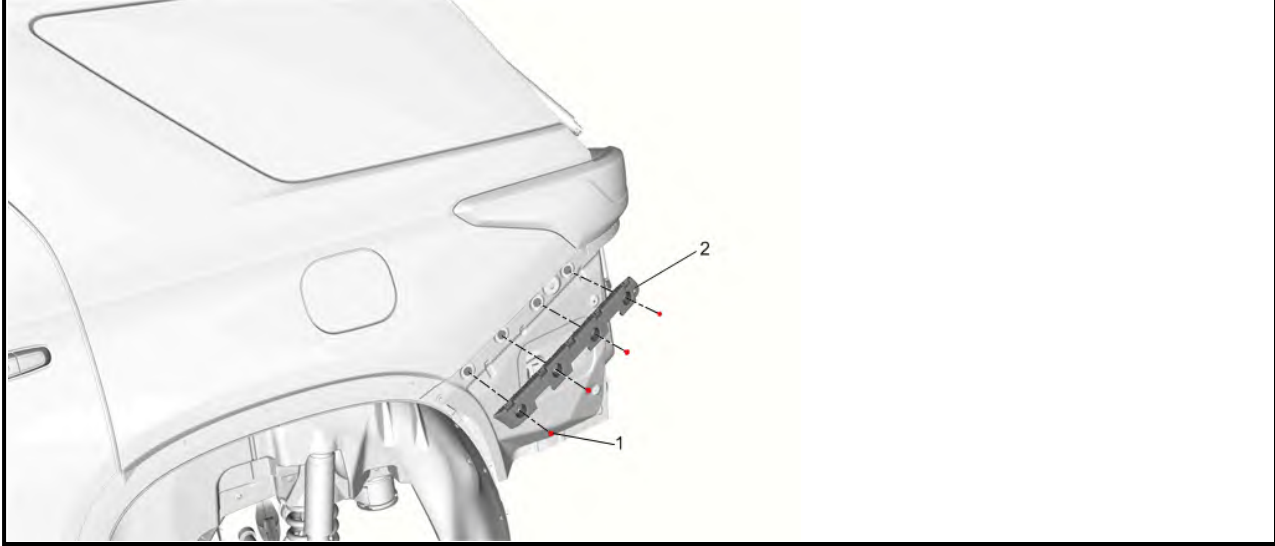
Rear Bumper Fascia Bolt (1) Install and tighten [2x] 2.5 N.m (22 lb ft)

8. Install the right and left rear wheelhouse liner. [Rear Wheelhouse Liner Replacement](#)

9. Install the right and left rear wheel opening molding. [Rear Wheel Opening Molding Replacement](#)

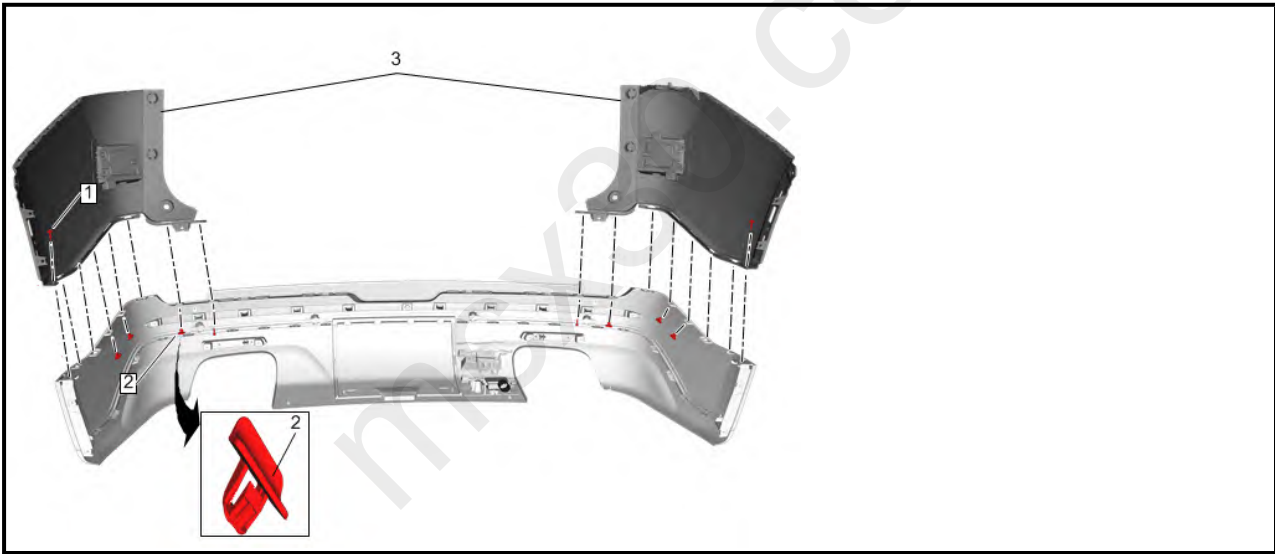
REAR BUMPER FASCIA GUIDE REPLACEMENT





Callout	Component Name
WARNING: Refer to Eye Protection Warning .	
Preliminary Procedure Rear Bumper Fascia Replacement	
1	Rear Bumper Fascia Guide Rivet [4x]
2	Rear Bumper Fascia Guide

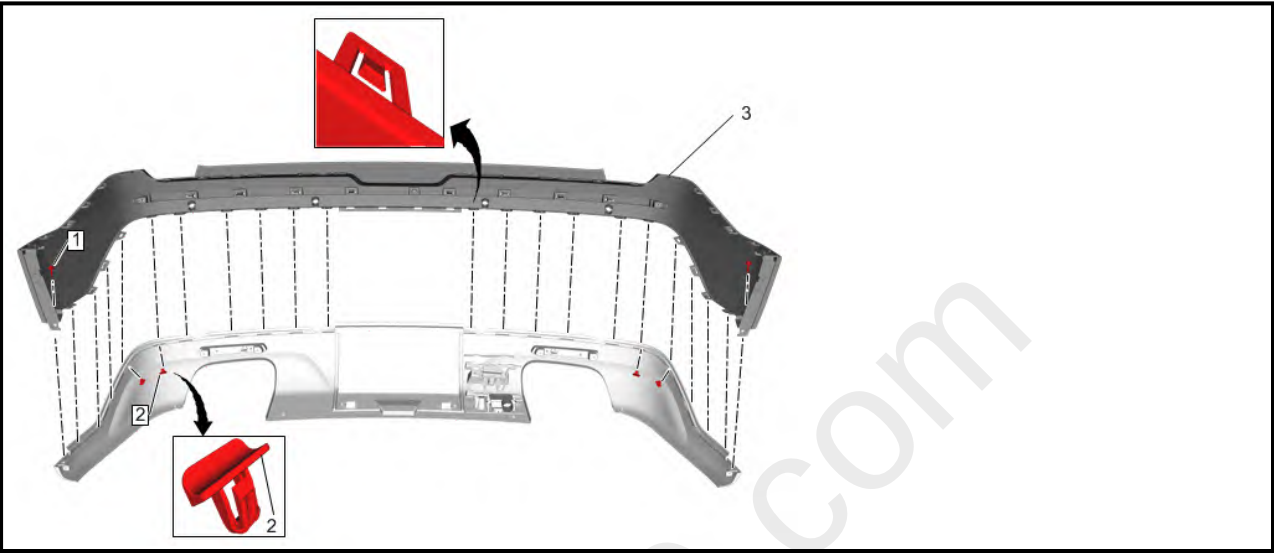
REAR BUMPER UPPER FASCIA REPLACEMENT



Callout	Component Name
Preliminary Procedure Rear Bumper Fascia Energy Absorber Replacement	
1	Rear Bumper Fascia Bolt [4x] CAUTION: Refer to Fastener Caution . Tighten 2.5 N.m (22 lb in)
2	Rear Bumper Upper Fascia Clip [6x]

Callout	Component Name
3	Rear Bumper Upper Fascia Procedure - Carefully push a small nylon wedge between the upper fascia and the lower fascia. Insert a small flat-bladed tool into the fascia slot and depress the snaps one at a time and pull on the fascia at the same time to gradually remove the upper fascia from the lower fascia. - Transfer components as necessary.

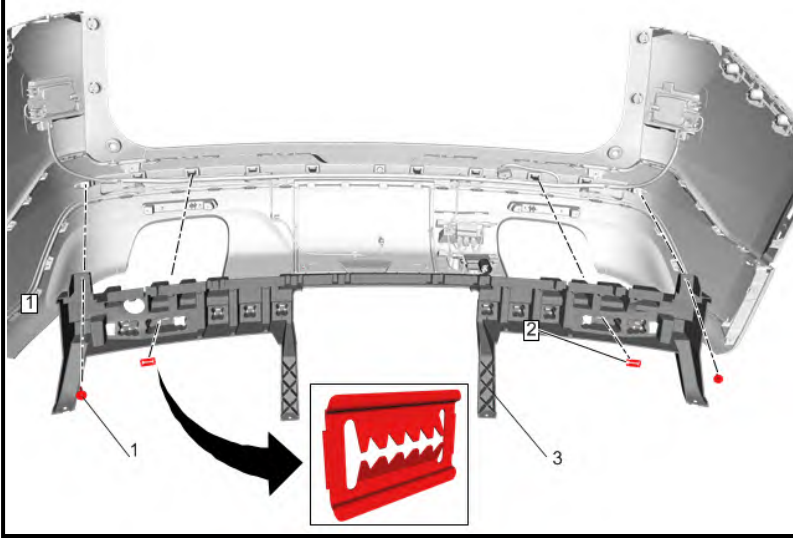
REAR BUMPER LOWER FASCIA REPLACEMENT



Callout	Component Name
Preliminary Procedure <u>Rear Bumper Fascia Energy Absorber Replacement</u>	
1	Rear Bumper Fascia Bolt [2x] CAUTION: Refer to <u>Fastener Caution</u> . Tighten 2.5 N.m (22 lb in)
2	Rear Bumper Lower Fascia Clip [4x]
3	Rear Bumper Lower Fascia Procedure - Carefully push a small nylon wedge between the fascia and the lower fascia. Insert a small flat-bladed tool into the fascia slot and depress the tabs one at a time and pull on the fascia at the same time to gradually remove the lower fascia from the fascia. - Transfer components as necessary.

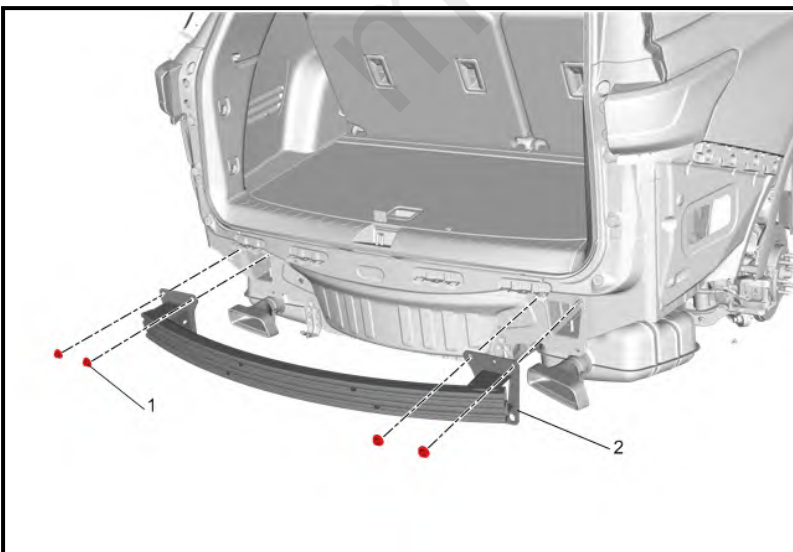
REAR BUMPER FASCIA ENERGY ABSORBER REPLACEMENT





Callout	Component Name
Preliminary Procedures Rear Bumper Fascia Replacement - Reposition the wiring harness.	
1	Rear Bumper Fascia Energy Absorber Bolt [2x] CAUTION: Refer to Fastener Caution . Tighten 2.5 N.m (22 lb in)
2	Rear Bumper Fascia Energy Absorber Clip [2x]
3	Rear Bumper Fascia Energy Absorber Procedure Transfer components as necessary.

REAR BUMPER IMPACT BAR REPLACEMENT



Callout	Component Name
Preliminary Procedures Rear Bumper Fascia Replacement Exhaust Rear Muffler Rear Hanger Replacement (LFY)	

Callout	Component Name
1	Rear Bumper Impact Bar Nut [4x] CAUTION: Refer to Fastener Caution . Tighten 58 N.m (43 lb ft)
2	Rear Bumper Impact Bar Procedure Transfer components as necessary.

DESCRIPTION AND OPERATION

ACTIVE GRILLE AIR SHUTTER DESCRIPTION AND OPERATION

The active grille air shutter system closes shutters 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 system will open one or both shutters. The control signal from the engine control module, ignition and ground circuits enable the active grille air shutter actuators to operate. If the conditions for opening the shutters are reached the engine control module commands the active grille air shutter actuators to open one or both shutters.

The dual active grille air shutter system consists of two aero shutter mechanisms located in the front grille for controlling the amount of air flowing through the grille. It includes three wires; ground, power and a Local Interconnect Network (LIN) Bus serial data circuit from the engine control module to the shutter actuator. The engine 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 engine control module has the ability to command each shutter individually to the open or closed positions through communications on the LIN Bus.

The actuators are 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 a shutter begins to move. If low ambient temperature is detected, the shutters will remain in the closed position.