

2018 ACCESSORIES & EQUIPMENT

Vehicle Access - Equinox & Terrain

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 Side Door Latch Bolt	9 N.m (80 lb in)
Front Side Door Lock Cylinder Cover Screw	4 N.m (31 lb in)
Front Side Door Lock Striker Screw	22 N.m (16 lb in)
Front Side Door Outside Handle Bracket Screw	5 N.m (44 lb in)
Front Side Door Outside Handle Lock Cylinder Screw	4 N.m (31 lb in)
Liftgate Latch Bolt	22 N.m (16 lb in)
Liftgate Latch Striker Bolt	22 N.m (16 lb in)
Liftgate Side Sensor Bolt	6 N.m (53 lb in)
Rear Closure Hands Free Module Bolt	5 N.m (44 lb in)
Rear Side Door Latch Bolt	9 N.m (80 lb in)
Rear Side Door Lock Cylinder Cover Screw	4 N.m (31 lb in)
Rear Side Door Lock Striker Screw	22 N.m (16 lb in)
Rear Side Door Outside Handle Bracket Screw	5 N.m (44 lb in)
Rear Side Door Outside Handle Lock Cylinder Cover Screw	4.7 N.m (42 lb in)

SCHEMATIC WIRING DIAGRAMS

DOOR LOCK/INDICATOR WIRING SCHEMATICS

Lock Switches

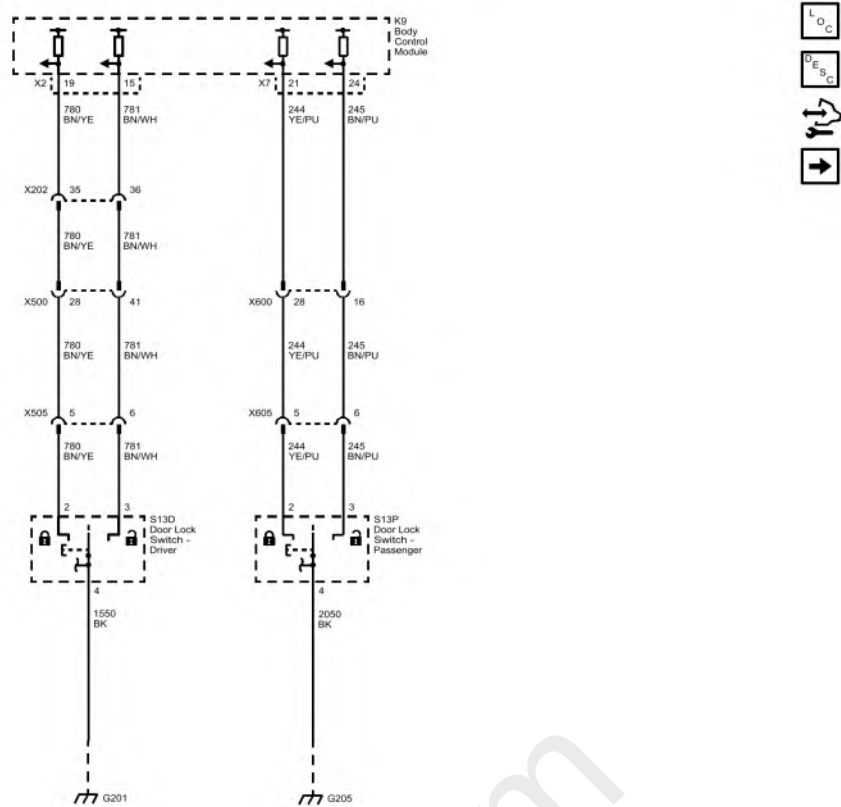


Fig. 1: Lock Switches

Courtesy of GENERAL MOTORS COMPANY

Ajar Switches and Lock Indicators

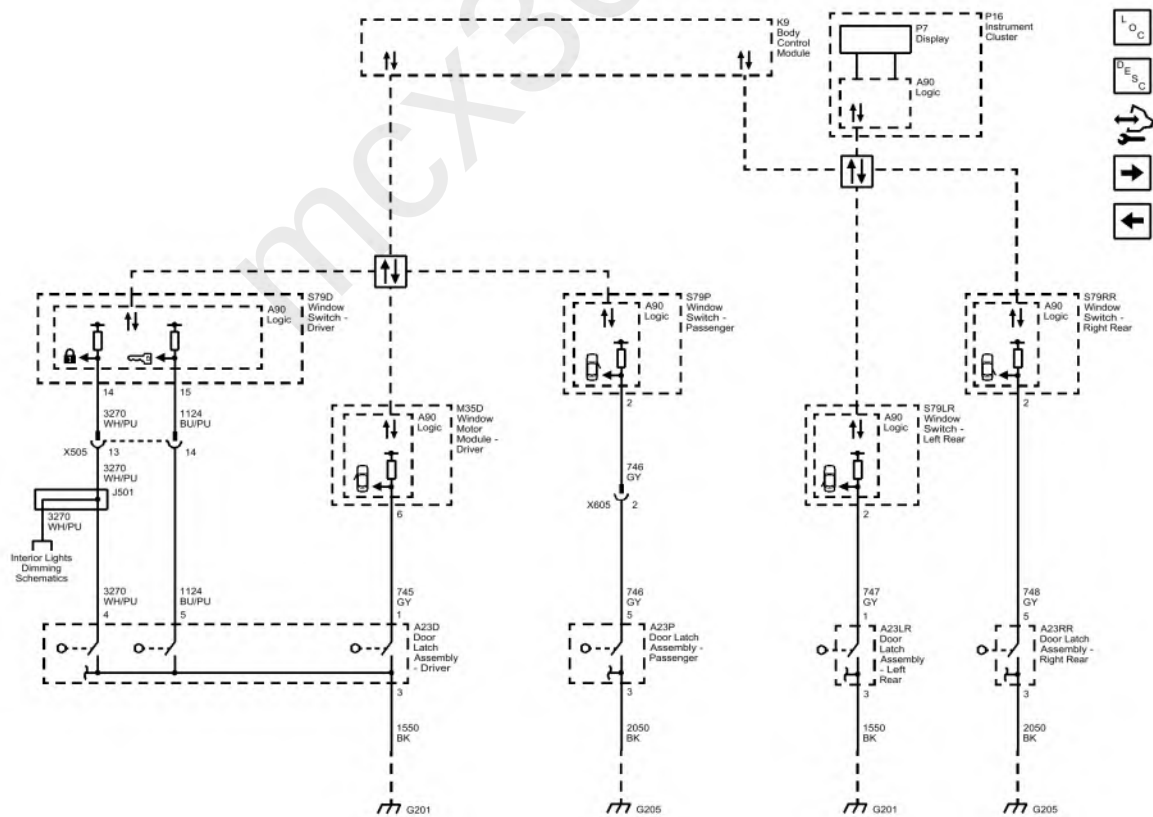


Fig. 2: Ajar Switches and Lock Indicators

Courtesy of GENERAL MOTORS COMPANY

Actuators

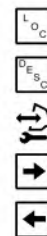
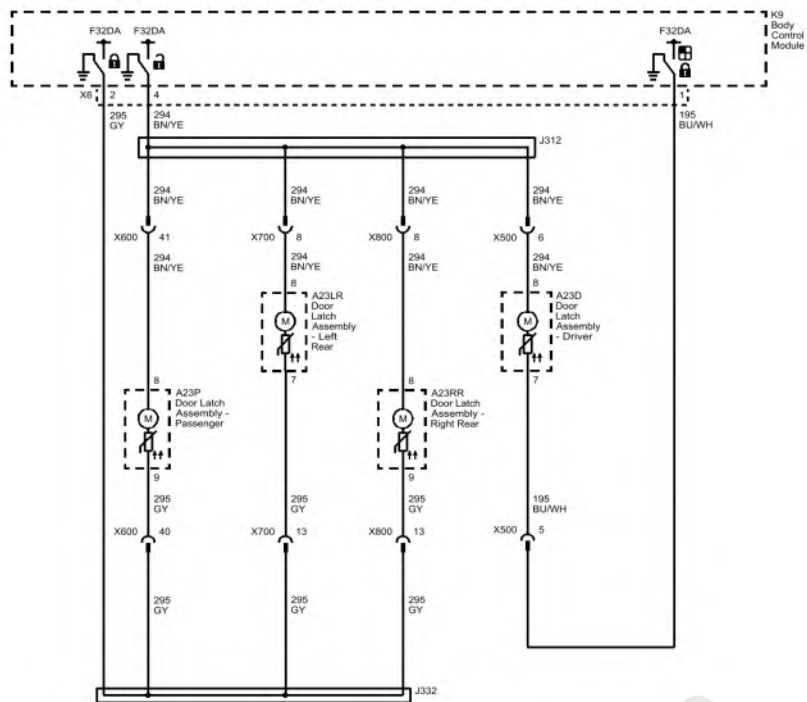


Fig. 3: Actuators

Courtesy of GENERAL MOTORS COMPANY

Door Handle Switches

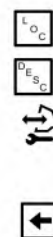
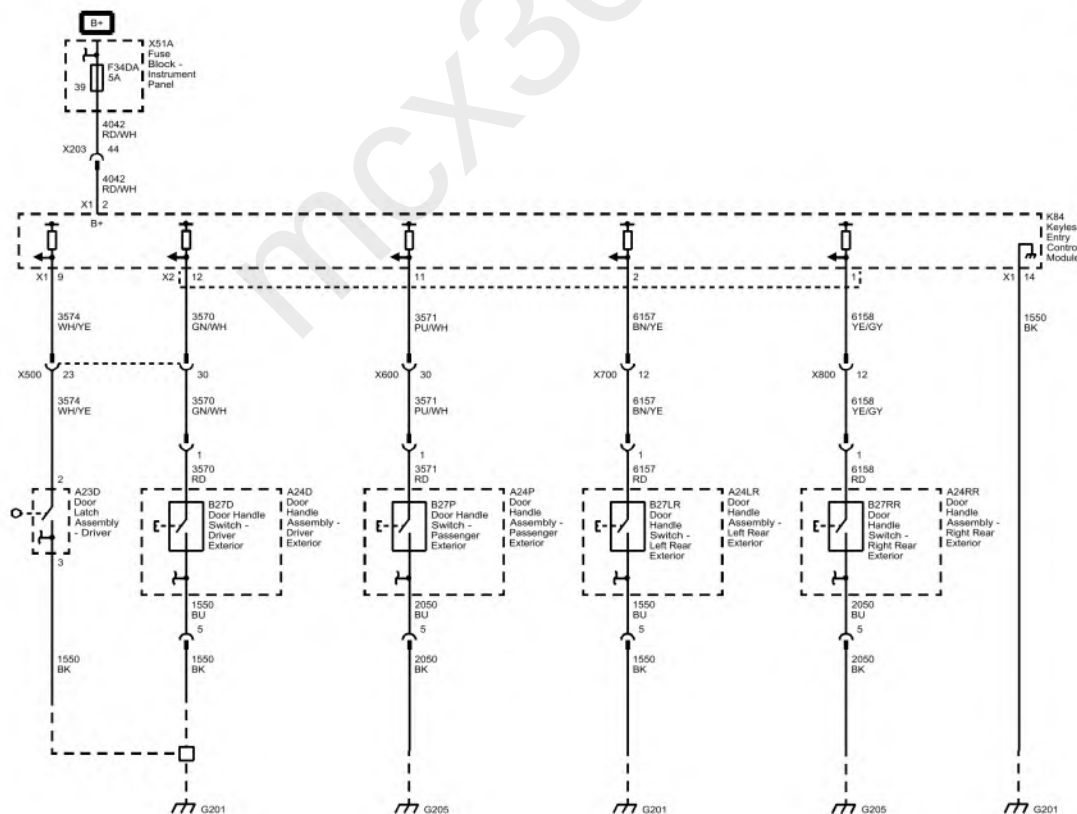


Fig. 4: Door Handle Switches

Courtesy of GENERAL MOTORS COMPANY

RELEASE SYSTEMS WIRING SCHEMATICS

Liftgate Release (TB4)

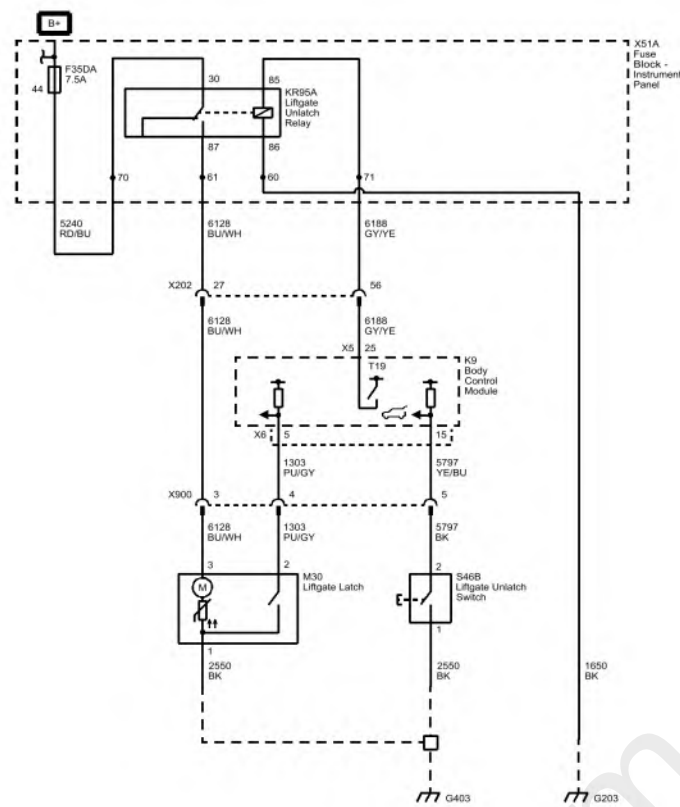


Fig. 5: Liftgate Release (TB4)

Courtesy of GENERAL MOTORS COMPANY

LIFTGATE WIRING SCHEMATICS

Power, Ground, Serial Data and Front Controls

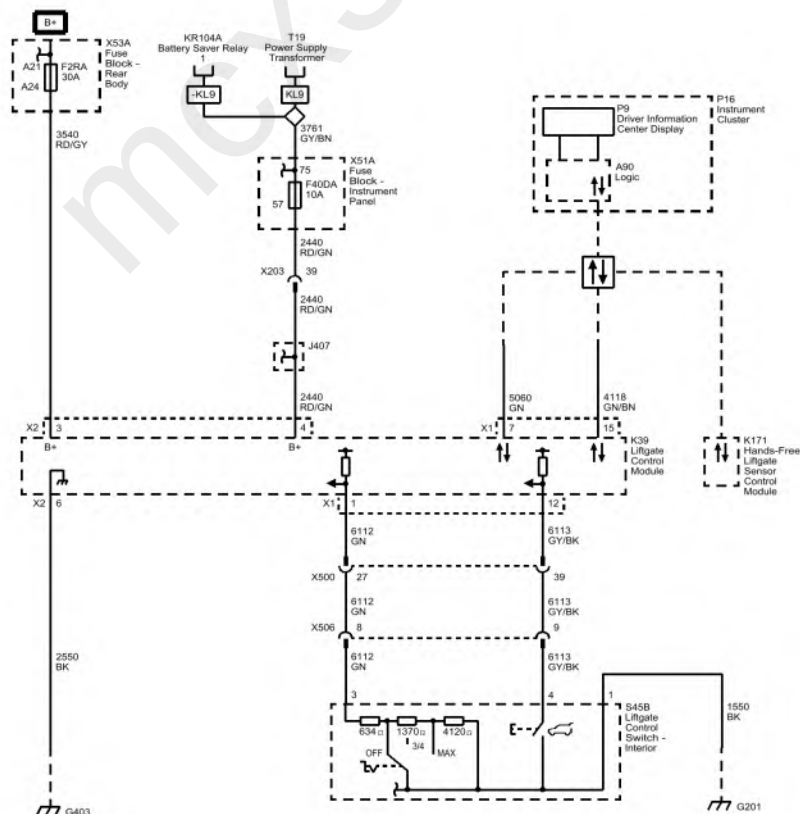


Fig. 6: Power, Ground, Serial Data and Front Controls

Courtesy of GENERAL MOTORS COMPANY

Liftgate Actuation and Rear Controls

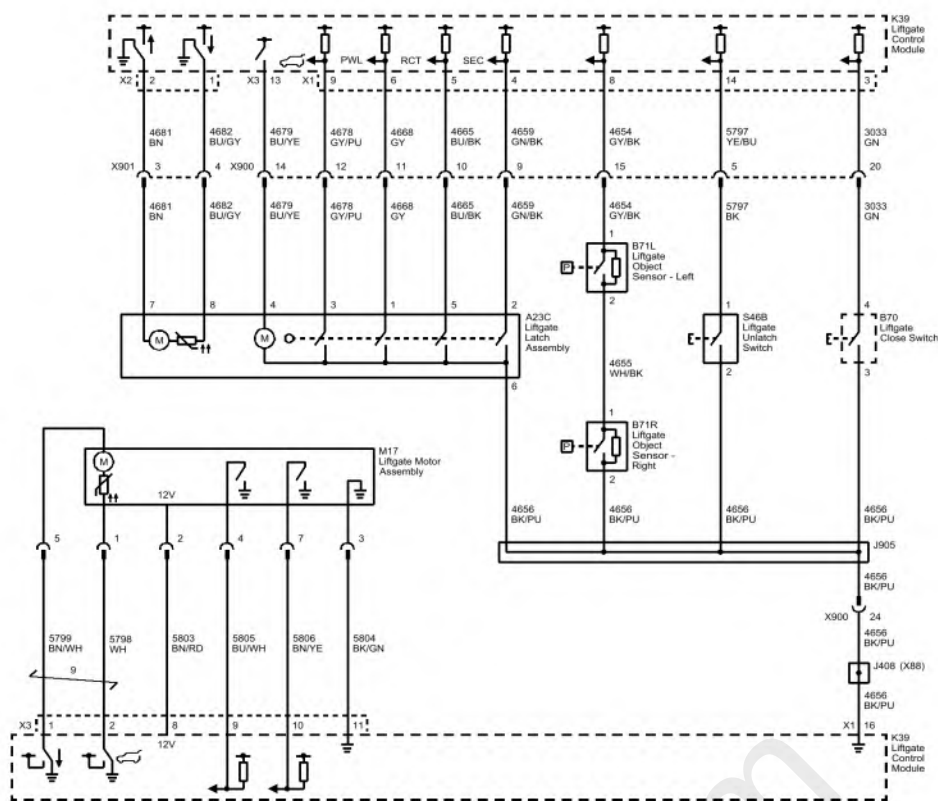


Fig. 7: Liftgate Actuation and Rear Controls
Courtesy of GENERAL MOTORS COMPANY

Hands Free Liftgate Sensing (TC2)

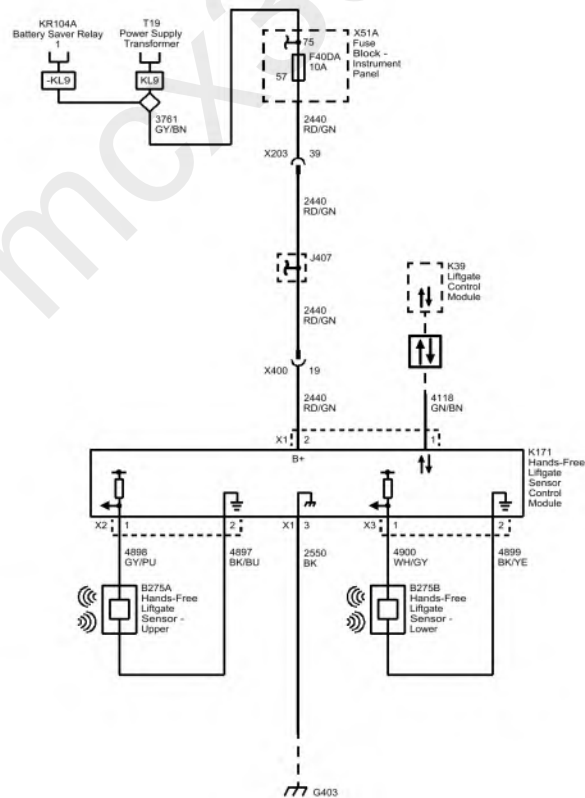


Fig. 8: Hands Free Liftgate Sensing (TC2)
Courtesy of GENERAL MOTORS COMPANY

DIAGNOSTIC INFORMATION AND PROCEDURES

DTC B1019: SYSTEM CONFIGURATION ERROR

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 Descriptor

DTC B1019 00

System Configuration Error

Circuit/System Description

When calibrating the liftgate position, the liftgate control module is placed in a functional state to learn the liftgate travel limits. DTC B1019 00 will set automatically as an indicator that the system is in learn mode and not as a fault indicator. Once the travel limits are learned by the liftgate control module, the liftgate control module will exit calibration mode and DTC B1019 00 become a history code.

Conditions for Running the DTC

The system voltage is 9 - 18 V.

Conditions for Setting the DTC

Whenever the liftgate control module is replaced or in learn mode.

Action Taken When the DTC Sets

The power liftgate system will be disabled.

Conditions for Clearing the DTC

- The DTC will be current until the liftgate calibration procedure has been completed.
- When the calibration procedure has been completed the DTC will be a history DTC.

Diagnostic Aids

Setting B1019 00 is normal after programming the liftgate control module. This DTC will be current after programming and the DTC will go to history after learning. This is a normal behavior by design and is not necessary to replace the liftgate control module.

Reference Information

Schematic Reference

Liftgate Wiring Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Description and Operation

Liftgate Description and Operation

Electrical Information Reference

- [Circuit Testing](#)
- [Connector Repairs](#)
- [Testing for Intermittent Conditions and Poor Connections](#)
- [Wiring Repairs](#)

[Control Module References](#) for scan tool information

Circuit/System Testing

1. Ignition ON.
2. Perform the [Liftgate Calibration](#). The K39 Liftgate Control Module should learn the travel limits, exit the calibration mode, and B1019 00 will become a history code.
 - If the K39 Liftgate Control Module does not exit the calibration mode or if B1019 00 does not become a history code.

Replace the K39 Liftgate Control Module

- Go to next step: If the K39 Liftgate Control Module does exit the calibration mode and B1019 00 becomes a history code.
3. All OK.

Repair Instructions

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

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

DTC B1474 OR B3849: PASSENGER/DRIVER EXTERIOR DOOR HANDLE SWITCH CIRCUIT

Diagnostic Instructions

- Perform the Diagnostic System Check prior to using this diagnostic procedure: [Diagnostic System Check - Vehicle](#)
- Review the description of Strategy Based Diagnosis: [Strategy Based Diagnosis](#)
- An overview of each diagnostic category can be found here: [Diagnostic Procedure Instructions](#)

DTC Descriptor

DTC B1474

Passenger Exterior Door Handle Switch Circuit

DTC B3849

Driver Exterior Door Handle Switch Circuit

Symptom Byte Information: [Symptom Byte List](#)

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Signal - B27D Door Handle Switch - Driver Exterior	B3849 02	1	1	-
Signal - B27P Door Handle Switch - Passenger Exterior	B1474 02	2	2	-
Ground - A24D Door Handle Assembly - Driver Exterior	-	1	-	-
Ground - A24P Door Handle Assembly - Passenger Exterior	-	2	-	-

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
1. B27D Door Handle Switch - Driver Exterior = Disabled 2. B27P Door Handle Switch - Passenger Exterior = Disabled				

Circuit/System Description

For an overview of the component/system, refer to: [Power Door Locks Description and Operation](#)

Circuit	Description
Signal	The control module input circuit has an internal resistance connected to 12 V.
Ground	Chassis Ground

Component	Description
B27D Door Handle Switch - Driver Exterior	The switch has a normally open contact. When the switch is activated, the signal circuit to the control module is grounded.
B27P Door Handle Switch - Passenger Exterior	The switch has a normally open contact. When the switch is activated, the signal circuit to the control module is grounded.
K84 Keyless Entry Control Module	The control module also reads various switches and sensors and makes their values available via serial data.

Conditions for Running the DTC

Ignition - On / Vehicle - In Service Mode

Conditions for Setting the DTC

- B1474 02: Signal circuit@B27P Door Handle Switch - Passenger Exterior = Short to Ground - For greater than 60 s
- B3849 02: Signal circuit@B27D Door Handle Switch - Driver Exterior = Short to Ground - For greater than 60 s

Actions Taken When the DTC Sets

- B1474 02: B27P Door Handle Switch - Passenger Exterior = Disabled
- B3849 02: B27D Door Handle Switch - Driver Exterior = Disabled

Conditions for Clearing the DTC

- A current DTC will clear when the diagnostic runs and passes.
- A history DTC will clear after 50 consecutive malfunction-free ignition cycles.

Reference Information

Schematic Reference

[Door Lock/Indicator Wiring Schematics](#)

Connector End View Reference

[COMPONENT CONNECTOR END VIEWS - INDEX](#)

Component View Reference

[Door Component Views](#)

Electrical Information Reference

- [Circuit Testing](#)
- [Connector Repairs](#)
- [Testing for Intermittent Conditions and Poor Connections](#)
- [Wiring Repairs](#)

Scan Tool Reference

[Control Module References](#)

[Circuit/System Verification](#)

1. Ignition - On / Vehicle - In Service Mode
2. Verify the scan tool parameter: Exterior Driver Door Handle Switch = Inactive
 - **If not the specified state**
Refer to: Circuit/System Testing
 - **Go to next step: If the specified state**
3. Operate the component: B27D Door Handle Switch - Driver Exterior - Pressed
Verify the scan tool parameter: Exterior Driver Door Handle Switch = Active
 - **If not the specified state**
Refer to: Circuit/System Testing
 - **Go to next step: If the specified state**
4. Verify the scan tool parameter: Exterior Passenger Door Handle Switch = Inactive
 - **If not the specified state**
Refer to: Circuit/System Testing
 - **Go to next step: If the specified state**
5. Operate the component: B27P Door Handle Switch - Passenger Exterior - Pressed
Verify the scan tool parameter: Exterior Passenger Door Handle Switch = Active
 - **If not the specified state**
Refer to: Circuit/System Testing
 - **Go to next step: If the specified state**
6. All OK.

[Circuit/System Testing](#)

NOTE: It may take up to 2 min for all vehicle systems to power down before an accurate ground or low reference circuit continuity test can be performed.

1. Ignition/Vehicle & All vehicle systems - Off
2. Disconnect the appropriate electrical connector: A24D Door Handle Assembly - Driver Exterior or A24P Door Handle Assembly - Passenger Exterior
3. Test for less than 10 ohms between the test points: Ground circuit terminal 5 & Ground
 - **If 10 ohms or greater**
 1. Ground Connection - Disconnect
 2. Test for less than 2 ohms between the test points: Ground circuit terminal 5 @Component harness & Ground Connection
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.

- If less than 2 ohms - Repair the open/high resistance in the ground connection.
 - **Go to next step: If less than 10 ohms**
4. Ignition - On / Vehicle - In Service Mode
 5. Verify the scan tool parameter: Exterior Door Handle Switch Circuit = Inactive
 - **If not the specified state**
 1. Ignition/Vehicle - Off
 2. Disconnect the electrical connector: X2 @K84 Keyless Entry Control Module
 3. Test for infinite resistance between the test points: Signal circuit terminal 1 @Component harness & Ground
 - If less than infinite resistance - Repair the short to ground on the circuit.
 - If infinite resistance - Replace the component: K84 Keyless Entry Control Module
 - **Go to next step: If the specified state**
 6. Connect a 3 A fused jumper wire between the test points: Signal circuit terminal 1 & Ground circuit terminal 5
 7. Verify the scan tool parameter: Exterior Door Handle Switch Circuit = Active
 - **If not the specified state**
 1. Ignition/Vehicle - Off & Remove - Jumper wire(s)
 2. Disconnect the electrical connector: X2 @K84 Keyless Entry Control Module
 3. Ignition - On / Vehicle - In Service Mode
 4. Test for less than 1 V between the test points: Signal circuit terminal 1 @Component harness & Ground
 - If 1 V or greater - Repair the short to voltage on the circuit.
 - If less than 1 V
 5. Ignition/Vehicle - Off
 6. Test for less than 2 ohms between the test points:
 - Signal circuit terminal 1 @A24D Door Handle Assembly - Driver Exterior & Terminal 12 X2 @Control module harness
 - Signal circuit terminal 1 @A24P Door Handle Assembly - Passenger Exterior & Terminal 11 X2 @Control module harness
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Replace the component: K84 Keyless Entry Control Module
 - **Go to next step: If the specified state**
 8. Test or replace the component: A24 Door Handle Assembly

Component Testing

1. Ignition/Vehicle - Off
2. Disconnect the appropriate electrical connector: A24D Door Handle Assembly - Driver Exterior or A24P Door Handle Assembly - Passenger Exterior
3. Test for infinite resistance between the test points: Signal terminal 1 & Ground terminal 5 - Switch - Not Pressed
 - **If less than infinite resistance**

Replace the component: A24 Door Handle Assembly
 - **Go to next step: If infinite resistance**
4. Test for less than 3 ohms between the test points: Signal terminal 1 & Ground terminal 5 - Switch - Pressed
 - **If 3 ohms or greater**

Replace the component: A24 Door Handle Assembly
 - **Go to next step: If less than 3 ohms**

5. All OK.

Repair Instructions

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

- [Front Side Door Outside Handle Replacement](#)
- For control module replacement, programming, and setup refer to: [Control Module References](#)

DTC B1534 OR B1535: LEFT/RIGHT REAR DOOR HANDLE SWITCH CIRCUIT

Diagnostic Instructions

- Perform the Diagnostic System Check prior to using this diagnostic procedure: [Diagnostic System Check - Vehicle](#)
- Review the description of Strategy Based Diagnosis: [Strategy Based Diagnosis](#)
- An overview of each diagnostic category can be found here: [Diagnostic Procedure Instructions](#)

DTC Descriptor

DTC B1534

Left Rear Door Handle Switch Circuit

DTC B1535

Right Rear Door Handle Switch Circuit

Symptom Byte Information: [Symptom Byte List](#)

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Signal - B27LR Door Handle Switch - Left Rear Exterior	B1534 02	1	1	-
Signal - B27RR Door Handle Switch - Right Rear Exterior	B1535 02	2	2	-
Ground - B27LR Door Handle Switch - Left Rear Exterior	-	1	-	-
Ground - B27RR Door Handle Switch - Right Rear Exterior	-	2	-	-
1. B27LR Door Handle Switch - Left Rear Exterior = Disabled 2. B27RR Door Handle Switch - Right Rear Exterior = Disabled				

Circuit/System Description

For an overview of the component/system, refer to: [Power Door Locks Description and Operation](#)

Circuit	Description
Signal	The control module input circuit has an internal resistance connected to 12 V.
Ground	Chassis Ground

Component	Description

Component	Description
B27LR Door Handle Switch - Left Rear Exterior	The switch has a normally open contact. When the switch is activated, the signal circuit to the control module is grounded.
B27RR Door Handle Switch - Right Rear Exterior	The switch has a normally open contact. When the switch is activated, the signal circuit to the control module is grounded.
K84 Keyless Entry Control Module	The control module also reads various switches and sensors and makes their values available via serial data.

Conditions for Running the DTC

Ignition - On / Vehicle - In Service Mode

Conditions for Setting the DTC

B1534 02

Signal @B27LR Door Handle Switch - Left Rear Exterior = Short to Ground - For greater than 60 s

B1535 02

Signal @B27RR Door Handle Switch - Right Rear Exterior = Short to Ground - For greater than 60 s

Actions Taken When the DTC Sets

B1534 02

B27LR Door Handle Switch - Left Rear Exterior = Disabled

B1535 02

B27RR Door Handle Switch - Right Rear Exterior = Disabled

Conditions for Clearing the DTC

- A current DTC will clear when the diagnostic runs and passes.
- A history DTC will clear after 50 consecutive malfunction-free ignition cycles.

Reference Information

Schematic Reference

Door Lock/Indicator Wiring Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Component View Reference

Door Component Views

Electrical Information Reference

- [Circuit Testing](#)
- [Connector Repairs](#)
- [Testing for Intermittent Conditions and Poor Connections](#)
- [Wiring Repairs](#)

Scan Tool Reference

Control Module References

Circuit/System Verification

1. Ignition - On / Vehicle - In Service Mode
2. Verify the scan tool parameter: Exterior Left Rear Door Handle Switch = Inactive
 - **If not the specified state**

Refer to: Circuit/System Testing
 - **Go to next step: If the specified state**
3. Verify the scan tool parameter: Exterior Right Rear Door Handle Switch = Inactive
 - **If not the specified state**

Refer to: Circuit/System Testing
 - **Go to next step: If the specified state**
4. Operate the component: B27LR Door Handle Switch - Left Rear Exterior - Pressed

Verify the scan tool parameter: Exterior Left Rear Door Handle Switch = Active
 - **If not the specified state**

Refer to: Circuit/System Testing
 - **Go to next step: If the specified state**
5. Operate the component: B27RR Door Handle Switch - Right Rear Exterior - Pressed

Verify the scan tool parameter: Exterior Right Rear Door Handle Switch = Active
 - **If not the specified state**

Refer to: Circuit/System Testing
 - **Go to next step: If the specified state**
6. All OK.

Circuit/System Testing

NOTE: It may take up to 2 min for all vehicle systems to power down before an accurate ground or low reference circuit continuity test can be performed.

1. Ignition/Vehicle & All vehicle systems - Off
2. Disconnect the appropriate electrical connector: A24LR Door Handle Assembly - Left Rear Exterior or A24RR Door Handle Assembly - Right Rear Exterior
3. Test for less than 10 ohms between the test points: Ground circuit terminal 5 & Ground
 - **If 10 ohms or greater**
 1. Ground Connection - Disconnect
 2. Test for less than 2 ohms between the test points: Ground circuit terminal 5 @Component harness & Ground Connection
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Repair the open/high resistance in the ground connection.
 - **Go to next step: If less than 10 ohms**
4. Ignition - On / Vehicle - In Service Mode
5. Verify the scan tool parameter: Exterior Door Handle Switch Circuit = Inactive
 - **If not the specified state**
 1. Ignition/Vehicle - Off
 2. Disconnect the electrical connector: X2 @K84 Keyless Entry Control Module

3. Test for infinite resistance between the test points: Signal circuit terminal 1 @Component harness & Ground
 - If less than infinite resistance - Repair the short to ground on the circuit.
 - If infinite resistance - Replace the component: K84 Keyless Entry Control Module
- **Go to next step: If the specified state**
6. Connect a 3 A fused jumper wire between the test points: Signal circuit terminal 1 & Ground circuit terminal 5
7. Verify the scan tool parameter: Exterior Door Handle Switch Circuit = Active
 - **If not the specified state**
 1. Ignition/Vehicle - Off & Remove - Jumper wire(s)
 2. Disconnect the electrical connector: X2 @K84 Keyless Entry Control Module
 3. Ignition On/Vehicle in Service Mode.
 4. Test for less than 1 V between the test points: Signal circuit terminal 1 @Component harness & Ground
 - If 1 V or greater - Repair the short to voltage on the circuit.
 - If less than 1 V
 5. Ignition/Vehicle - Off
 6. Test for less than 2 ohms between the test points:
 - Signal circuit terminal 1 @A24LR Door Handle Assembly - Left Rear Exterior & Terminal 2 X2@Control module harness
 - Signal circuit terminal 1 @A24RR Door Handle Assembly - Right Rear Exterior & Terminal 1 X2 @Control module harness
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Replace the component: K84 Keyless Entry Control Module
 - **Go to next step: If the specified state**
8. Test or replace the component: A24 Door Handle Assembly

Component Testing

1. Ignition/Vehicle - Off
2. Disconnect the appropriate electrical connector: A24LR Door Handle Assembly - Left Rear Exterior or A24RR Door Handle Assembly - Right Rear Exterior
3. Test for infinite resistance between the test points: Signal terminal 1 & Ground terminal 5 - Not Pressed
 - **If less than infinite resistance**

Replace the component: A24 Door Handle Assembly
 - **Go to next step: If infinite resistance**
4. Test for less than 3 ohms between the test points: Signal terminal 1 & Ground terminal 5 - Pressed
 - **If 3 ohms or greater**

Replace the component: A24 Door Handle Assembly
 - **Go to next step: If less than 3 ohms**
5. All OK.

Repair Instructions

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

- [Rear Side Door Outside Handle Replacement](#)
- For control module replacement, programming, and setup refer to: [Control Module References](#)

DTC B153A: LIFTGATE LATCH SWITCH SIGNAL CIRCUIT

Diagnostic Instructions

- Perform the Diagnostic System Check prior to using this diagnostic procedure: [Diagnostic System Check - Vehicle](#)
- Review the description of Strategy Based Diagnosis: [Strategy Based Diagnosis](#)
- An overview of each diagnostic category can be found here: [Diagnostic Procedure Instructions](#)

DTC Descriptor

DTC B153A

Liftgate Latch Switch Signal Circuit

Symptom Byte Information: [Symptom Byte List](#)

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Rear Closure Ajar Switch Signal 1	1	2	-	-
Rear Closure Ajar Switch Signal 2	1	2	-	-
Rear Closure Ajar Switch Signal 3	1	B153A 08	-	-
Signal - Rear Closure Open	2	B153A 08	-	-
Low Reference - A23C Liftgate Latch Assembly	-	B24A0 05	-	-
1. Driver Information Display - Rear Closure Open = Always On 2. Power Liftgate (TB5) = Disabled				

Circuit/System Description

For an overview of the component/system, refer to: [Liftgate Description and Operation](#)

Circuit	Description
Signal	The control module input circuit has an internal resistance connected to 12 V.
Low Reference	Grounded through the control module.

Component	Description
A23C Liftgate Latch Assembly	The DC motor unlatches the liftgate. Once the liftgate is unlatched, a switch in the latch will close, grounding the signal circuit to the control module K39 indicating liftgate status.
K39 Liftgate Control Module	The control module K39 controls the liftgate motor function depending on inputs from a variety of sensors, switches and serial data information from other control modules.
K9 Body Control Module	The module controls various vehicle functions like lighting, central door locking, power windows, etc.

Conditions for Running the DTC

Ignition - On / Vehicle - In Service Mode

Conditions for Setting the DTC

- Rear Closure Ajar Switch Signal 1 = Short to GroundFor greater than 60 s

- Rear Closure Ajar Switch Signal 2 = Short to GroundFor greater than 60 s
- Rear Closure Ajar Switch Signal 3 = Short to GroundFor greater than 60 s
- Signal circuit - Rear Closure Open = Short to GroundFor greater than 60 s

Actions Taken When the DTC Sets

Power Liftgate (TB5) = Disabled

Conditions for Clearing the DTC

- A current DTC will clear when the diagnostic runs and passes.
- A history DTC will clear after 50 consecutive malfunction-free ignition cycles.

Diagnostic Aids

Incorrect: DTC B153A is set.

Power Liftgate (TB5) - open = Malfunctioned

Rear Closure Ajar Switch/Liftgate Latch Pawl Switch/Liftgate Latch Ratchet Switch/Liftgate Latch Sector Switch: Parameter - Normal Function

Refer to: **DTC B153E**

Reference Information

Schematic Reference

Liftgate Wiring Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Component View Reference

Luggage Compartment/Rear of Vehicle Component Views

Electrical Information Reference

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

Scan Tool Reference

Control Module References

Circuit/System Verification

1. Ignition - On / Vehicle - In Service Mode
2. Operate the component: Open the liftgate.

Verify the scan tool parameter:

- Body Control Module: Rear Closure Ajar Switch = Active
- Liftgate Control Module: Liftgate Latch Pawl Switch = open
- Liftgate Control Module: Liftgate Latch Ratchet Switch = open
- Liftgate Control Module: Liftgate Latch Sector Switch = Inactive
- **If not the specified state**

Refer to: Circuit/System Testing

- **Go to next step: If the specified state**

3. Operate the component: Liftgate - Close & A23C Liftgate Latch Assembly - Latching

Verify the scan tool parameter:

- Body Control Module: Rear Closure Ajar Switch = Active - Inactive
- Liftgate Control Module: Liftgate Latch Pawl Switch = open - Closed
- Liftgate Control Module: Liftgate Latch Ratchet Switch = open - Closed
- Liftgate Control Module: Liftgate Latch Sector Switch = Inactive - Active - Inactive
- **If the parameter value does not change**

Refer to: Circuit/System Testing

- **Go to next step: If the parameter value changes**

4. Operate the component: S45B Liftgate Control Switch - Interior - 3/4orMaximum

5. Perform the scan tool function: Liftgate Open/Close - open & Close

Verify the component works as specified:

- A23C Liftgate Latch Assembly - Unlatch
- Power Liftgate (TB5) - open & Close
- **If the component does not work as specified: Power Liftgate (TB5) - open**

Refer to: [**DTC B153E**](#)

- **Go to next step: If the component opens and closes - Power Liftgate (TB5)**

6. All OK.

Circuit/System Testing

NOTE: It may take up to 2 min for all vehicle systems to power down before an accurate ground or low reference circuit continuity test can be performed.

1. Ignition/Vehicle & All vehicle systems - Off

2. Disconnect the electrical connector: A23C Liftgate Latch Assembly

3. Test for less than 10 ohms between the test points: Low Reference terminal 6 & Ground

- **If 10 ohms or greater**

1. Disconnect the electrical connector: K39 Liftgate Control Module

2. Test for less than 2 ohms between the test points: Low Reference terminal 6 @Component harness & Terminal 16 X1@Control module harness

- If 2 ohms or greater - Repair the open/high resistance in the circuit.
- If less than 2 ohms - Replace the component: K39 Liftgate Control Module

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

4. Ignition - On / Vehicle - In Service Mode

5. Verify the scan tool parameter: Body Control Module: Rear Closure Ajar Switch = Inactive

- **If not the specified state**

1. Ignition/Vehicle - Off

2. Disconnect the electrical connector: K39 Liftgate Control Module

3. Test for infinite resistance between the test points: Signal circuit terminal 3 @Component harness & Ground

- If less than infinite resistance - Repair the short to ground on the circuit.
- If infinite resistance - Replace the component: K39 Liftgate Control Module

- **Go to next step: If the specified state**
6. Verify the scan tool parameter: Liftgate Control Module: Liftgate Latch Ratchet Switch = Closed
 - **If not the specified state**
 1. Ignition/Vehicle - Off
 2. Disconnect the electrical connector: K39 Liftgate Control Module
 3. Test for infinite resistance between the test points: Signal circuit terminal 5 @Component harness & Ground
 - If less than infinite resistance - Repair the short to ground on the circuit.
 - If infinite resistance - Replace the component: K39 Liftgate Control Module
 - **Go to next step: If the specified state**
 7. Verify the scan tool parameter: Liftgate Control Module: Liftgate Latch Pawl Switch = Closed
 - **If not the specified state**
 1. Ignition/Vehicle - Off
 2. Disconnect the electrical connector: K39 Liftgate Control Module
 3. Test for infinite resistance between the test points: Signal circuit terminal 1 @Component harness & Ground
 - If less than infinite resistance - Repair the short to ground on the circuit.
 - If infinite resistance - Replace the component: K39 Liftgate Control Module
 - **Go to next step: If the specified state**
 8. Verify the scan tool parameter: Liftgate Control Module: Liftgate Latch Sector Switch = Inactive
 - **If not the specified state**
 1. Ignition/Vehicle - Off
 2. Disconnect the electrical connector: K39 Liftgate Control Module
 3. Test for infinite resistance between the test points: Signal circuit terminal 2 @Component harness & Ground
 - If less than infinite resistance - Repair the short to ground on the circuit.
 - If infinite resistance - Replace the component: K39 Liftgate Control Module
 - **Go to next step: If the specified state**
 9. Connect a 3 A fused jumper wire between the test points: Signal circuit terminal 3 & Low Reference terminal 6
 10. Verify the scan tool parameter: Body Control Module: Rear Closure Ajar Switch = Active
 - **If not the specified state**
 1. Ignition/Vehicle - Off & Remove - Jumper wire(s)
 2. Disconnect the electrical connector: K39 Liftgate Control Module
 3. Ignition - On / Vehicle - In Service Mode
 4. Test for less than 1 V between the test points: Signal circuit terminal 3 @Component harness & Ground
 - If 1 V or greater - Repair the short to voltage on the circuit.
 - If less than 1 V
 5. Ignition/Vehicle - Off
 6. Test for less than 2 ohms between the test points: Signal circuit terminal 3 @Component harness & Terminal 9 X1 @Control module harness
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Replace the component: K39 Liftgate Control Module
 - **Go to next step: If the specified state**
 11. Connect a 3 A fused jumper wire between the test points: Signal circuit terminal 1 & Low Reference terminal 6
 12. Verify the scan tool parameter: Liftgate Control Module: Liftgate Latch Pawl Switch = open
 - **If not the specified state**
 1. Ignition/Vehicle - Off & Remove - Jumper wire(s)

2. Disconnect the electrical connector: K39 Liftgate Control Module
3. Ignition - On / Vehicle - In Service Mode
4. Test for less than 1 V between the test points: Signal circuit terminal 1 @Component harness & Ground
 - If 1 V or greater - Repair the short to voltage on the circuit.
 - If less than 1 V
5. Ignition/Vehicle - Off
6. Test for less than 2 ohms between the test points: Signal circuit terminal 1 @Component harness & Terminal 6 X1 @Control module harness
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Replace the component: K39 Liftgate Control Module
- **Go to next step: If the specified state**
13. Connect a 3 A fused jumper wire between the test points: Signal circuit terminal 5 & Low Reference terminal 6
14. Verify the scan tool parameter: Liftgate Control Module: Liftgate Latch Ratchet Switch = open
 - **If not the specified state**
 1. Ignition/Vehicle - Off & Remove - Jumper wire(s)
 2. Disconnect the electrical connector: K39 Liftgate Control Module
 3. Ignition - On / Vehicle - In Service Mode
 4. Test for less than 1 V between the test points: Signal circuit terminal 5 @Component harness & Ground
 - If 1 V or greater - Repair the short to voltage on the circuit.
 - If less than 1 V
 5. Ignition/Vehicle - Off
 6. Test for less than 2 ohms between the test points: Signal circuit terminal 5 @Component harness & Terminal 5 X1 @Control module harness
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Replace the component: K39 Liftgate Control Module
 - **Go to next step: If the specified state**
15. Connect a 3 A fused jumper wire between the test points: Signal circuit terminal 2 & Low Reference terminal 6
16. Verify the scan tool parameter: Liftgate Control Module: Liftgate Latch Sector Switch = Active
 - **If not the specified state**
 1. Ignition/Vehicle - Off & Remove - Jumper wire(s)
 2. Disconnect the electrical connector: K39 Liftgate Control Module
 3. Ignition - On / Vehicle - In Service Mode
 4. Test for less than 1 V between the test points: Signal circuit terminal 2 @Component harness & Ground
 - If 1 V or greater - Repair the short to voltage on the circuit.
 - If less than 1 V
 5. Ignition/Vehicle - Off
 6. Test for less than 2 ohms between the test points: Signal circuit terminal 2 @Component harness & Terminal 4 X1 @Control module harness
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Replace the component: K39 Liftgate Control Module
 - **Go to next step: If the specified state**
17. Test or replace the component: A23C Liftgate Latch Assembly

Repair Instructions

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

- [Liftgate Latch Replacement \(Equinox\)](#)[Liftgate Latch Replacement \(Terrain\)](#)
- For control module replacement, programming, and setup refer to: [Control Module References](#)

DTC B153E: LIFTGATE POSITION SENSOR SIGNAL CIRCUIT

Diagnostic Instructions

- Perform the Diagnostic System Check prior to using this diagnostic procedure: [Diagnostic System Check - Vehicle](#)
- Review the description of Strategy Based Diagnosis: [Strategy Based Diagnosis](#)
- An overview of each diagnostic category can be found here: [Diagnostic Procedure Instructions](#)

DTC Descriptor

DTC B153E

Liftgate Position Sensor Signal Circuit

Symptom Byte Information: [Symptom Byte List](#)

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
12 V Reference	B153E 02	B153E 04	-	-
Liftgate Position Sensor 1 Signal Circuit	B153E 02, B153E 08	B153E 04, B153E 08	B153E 01, B153E 08	B153E 08
Liftgate Position Sensor 2 Signal Circuit	B153E 02, B153E 08	B153E 04, B153E 08	B153E 01, B153E 08	B153E 08
Low Reference	-	B153E 04	-	-

Circuit/System Description

For an overview of the component/system, refer to: [Liftgate Description and Operation](#)

Circuit	Description
12 V Reference	Regulated voltage supplied by the control module.
Liftgate Position Sensor 1 Signal Circuit	The control module input circuit has an internal resistance connected to 12 V.
Liftgate Position Sensor 2 Signal Circuit	The control module input circuit has an internal resistance connected to 12 V.
Low Reference	Grounded through the control module.

Component	Description
M17 Liftgate Motor Assembly	• The motor M17 is a bidirectional DC motor that moves the component: Power Liftgate (TB5) • The assembly also contains a 4-wire hall effect current sensor. • When the sensor measures increased electrical current, the control module can detect that the component has reached an endstop.
K39 Liftgate Control Module	The control module K39 controls the liftgate motor function depending on inputs from a variety of sensors, switches and serial data information from other control modules.

Conditions for Running the DTC

Power Liftgate (TB5) - Activated

Conditions for Setting the DTC

B153E 01

Liftgate Position Sensor 1 Signal Circuit = Short to Voltage

Liftgate Position Sensor 2 Signal Circuit = Short to Voltage

B153E 02

12 V Reference circuit = Short to Ground

Liftgate Position Sensor 1 Signal Circuit = Short to Ground

Liftgate Position Sensor 2 Signal Circuit = Short to Ground

B153E 04

12 V Reference circuit = Open/High Resistance

Liftgate Position Sensor 1 Signal Circuit = Open/High Resistance

Liftgate Position Sensor 2 Signal Circuit = Open/High Resistance

Low Reference circuit = Open/High Resistance

B153E 08

Liftgate Position Sensor 1 Signal Circuit = Signal Erratic

Liftgate Position Sensor 2 Signal Circuit = Signal Erratic

Actions Taken When the DTC Sets

Liftgate Open/Close = Erratic

Conditions for Clearing the DTC

- A current DTC will clear when the diagnostic runs and passes.
- A history DTC will clear after 50 consecutive malfunction-free ignition cycles.

Reference Information

Schematic Reference

Liftgate Wiring Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Component View Reference

Luggage Compartment/Rear of Vehicle Component Views

Electrical Information Reference

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

Scan Tool Reference

Control Module References

Circuit/System Verification

1. Ignition - On / Vehicle - In Service Mode
2. Verify DTC B384A 02 is not set.
 - **If the DTC is set**

Refer to: DTC B384A
 - **Go to next step: If the DTC is not set**
3. Perform the scan tool control function: Liftgate Open/Close - open & Close
4. Verify the correct operation: Power Liftgate (TB5) = Full Open & Close
 - **If not the specified state**

Refer to: Circuit/System Testing
 - **Go to next step: If the specified state**
5. All OK.

Circuit/System Testing

1. Ignition/Vehicle & All vehicle systems - Off
2. Disconnect the electrical connector: M17 Liftgate Motor Assembly
3. Verify a test lamp turns On between the test points: Low Reference circuit terminal 2 & B+
 - **If the test lamp does not turn On**
 1. Disconnect the electrical connector: K39 Liftgate Control Module
 2. Test for less than 2 ohms between the test points: Low Reference circuit terminal 3 @Component harness & Terminal 11 @Control module harness
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Replace the component: K39 Liftgate Control Module
 - **Go to next step: If the test lamp turns On**
4. Ignition - On / Vehicle - In Service Mode
5. Test for greater than 11 V between the test points: 12 V Reference circuit terminal 2 & Low Reference circuit terminal 3
 - **If less than 11 V**
 1. Ignition/Vehicle - Off
 2. Disconnect the electrical connector: K39 Liftgate Control Module
 3. Test for infinite resistance between the test points: 12 V Reference circuit terminal 2 @Component harness & Ground
 - If less than infinite resistance - Repair the short to ground on the circuit.
 - If infinite resistance
 4. Test for less than 2 ohms between the test points: 12 V Reference circuit terminal 2 @Component harness & Terminal 8 @Control module harness
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Replace the component: K39 Liftgate Control Module
 - **If greater than 11 V**
6. Test for greater than 11 V between the test points: Signal circuit terminal 4 & Low Reference circuit terminal 3
 - **If less than 11 V**
 1. Ignition/Vehicle - Off
 2. Disconnect the electrical connector: K39 Liftgate Control Module
 3. Test for infinite resistance between the test points: Signal circuit terminal 4 @Component harness & Ground

- If less than infinite resistance - Repair the short to ground on the circuit.
 - If infinite resistance
4. Test for less than 2 ohms between the test points: Signal circuit terminal 4 @Component harness & Terminal 9 @Control module harness
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Replace the component: K39 Liftgate Control Module
 - **If greater than 11 V**
 7. Test for greater than 11 V between the test points: Signal circuit terminal 7 & Low Reference circuit terminal 3
 - **If less than 11 V**
 1. Ignition/Vehicle - Off
 2. Disconnect the electrical connector: K39 Liftgate Control Module
 3. Test for infinite resistance between the test points: Signal circuit terminal 7 @Component harness & Ground
 - If less than infinite resistance - Repair the short to ground on the circuit.
 - If infinite resistance
 4. Test for less than 2 ohms between the test points: Signal circuit terminal 7 @Component harness & Terminal 10 @Control module harness
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Replace the component: K39 Liftgate Control Module
 - **If greater than 11 V**
 8. Test or replace the component: M17 Liftgate Motor Assembly

Repair Instructions

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

- [Liftgate Power Assist Actuator Replacement](#)
- For control module replacement, programming, and setup refer to: [Control Module References](#)

DTC B153F: LIFTGATE OBJECT SENSOR SIGNAL 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 B153F 02

Liftgate Object Sensor Signal Circuit Short to Ground

DTC B153F 05

Liftgate Object Sensor Signal Circuit Short to Battery or Open

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Signal	B153F 02	B153F 05	B153F 05	-
Left/Right Object Sensor Signal	B153F 02	B153F 05	B153F 05	-
Low Reference	-	B153F 05	-	-

Circuit/System Description

The liftgate object sensors are pressure sensitive touch tapes located on either side of the upper inside edge of the liftgate panel. The two liftgate object sensors are placed in series between the liftgate object sensor signal circuit and the liftgate object low reference circuit. Each object sensor has a resistor as well as a switch. The resistors enable the liftgate control module to perform diagnostic functions on the circuits. When both liftgate object sensors are not pressed, the 5 volt reference voltage supplied by the liftgate control module passes through the resistors and the liftgate control module detects approximately 3.3 volts. Pressing a liftgate object sensor will cause the voltage to drop to approximately 2.5 volts indicating an obstruction is present. If the liftgate is in the open position, the liftgate control module will prohibit liftgate movement. If the obstruction occurs during the power close function, the liftgate control module will command the liftgate to reverse direction.

Conditions for Running the DTC

Ignition ON

Conditions for Setting the DTC

B153F 02

The liftgate control module detects a short to ground in the liftgate object sensor signal circuit.

B153F 05

The liftgate control module detects a short to battery or an open/high resistance in the liftgate object sensor signal or an open/high resistance in the low reference circuit.

Action Taken When the DTC Sets

The liftgate control module will prevent any movement of the liftgate while attempting to command the liftgate to power close.

Conditions for Clearing the DTC

- The DTC will be current for as long as the fault is present.
- When the fault is no longer present, the DTC will be a history DTC.
- A history DTC will clear after 50 ignition cycles.

Diagnostic Aids

- Whenever the liftgate control module loses power or is disconnected, the ignition must be cycled OFF then ON in order to reactivate the liftgate control module.
- If the liftgate mode switch is in the Off position, the liftgate will only open and close manually. Before testing the liftgate for power open and power close functions, verify that the liftgate mode switch is in the 3/4 or MAX position.

Reference Information

Schematic Reference

Liftgate Wiring Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Description and Operation

Liftgate Description and Operation

Electrical Information Reference

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

- [Connector Repairs](#)

Scan Tool Reference

[Control Module References](#) for scan tool information

Circuit/System Verification

1. Ignition ON.
2. Verify the scan tool Liftgate Secondary Obstacle Detection parameter is between 3V-3.5V.
 - **If not between 3V-3.5V**
Refer to Circuit/System Testing.
 - **Go to next step: If between 3V-3.5V**
3. Verify the scan tool Liftgate Secondary Obstacle Detection parameter is between 3V-3.5V and changes to 2.25-2.75V as the B71R Liftgate Object Sensor - Right is pressed.
 - **If not between 2.25-2.75V or does not change**
Test or replace the B71R Liftgate Object Sensor - Right.
 - **Go to next step: If between 2.25-2.75V and changes**
4. Verify the scan tool Liftgate Secondary Obstacle Detection parameter is between 3V-3.5V and changes to 2.25-2.75V as the B71L Liftgate Object Sensor - Left is pressed.
 - **If not between 2.25-2.75V or does not change**
Test or replace the B71L Liftgate Object Sensor - Left.
 - **Go to next step: If between 2.25-2.75V and changes**
5. All OK.

Circuit/System Testing

1. Ignition OFF, disconnect the harness connector at the B71R Liftgate Object Sensor - Right.
2. Verify a test lamp illuminates between the low reference circuit terminal 2 and B+.
 - **If the test lamp does not illuminate**
 1. Disconnect the harness connector at the K39 Liftgate 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 K39 Liftgate Control Module.
 - **Go to next step: If the test lamp illuminates**
3. Disconnect the harness connector at the B71L Liftgate Object Sensor - Left.
4. Ignition ON, test for 4.8 - 5.2 V between the 5 V reference circuit terminal 1 and ground.
 - **If less than 4.8 V**
 1. Ignition OFF, disconnect the harness connector at the K39 Liftgate Control Module.
 2. Test for infinite resistance between the 5 V reference 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 5 V 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 K39 Liftgate Control Module.
 - **If greater than 5.2 V**
 1. Ignition OFF, disconnect the harness connector at the K39 Liftgate Control Module, Ignition ON.
 2. Test for less than 1 V between the 5 V reference circuit and ground.
 - If 1 V or greater, repair the short to voltage on the circuit.

- If less than 1 V, replace the K39 Liftgate Control Module.

- **Go to next step: If between 4.8 - 5.2 V**

5. Test or replace the B71 Liftgate Object Sensors.

Component Testing

1. Ignition OFF, disconnect the harness connector at the appropriate B71 Liftgate Object Sensor.
2. Test for 8k-12k Ω between the signal terminal 1 and the low reference circuit terminal 2.

- **If not between 8k-12k**

Replace the B71 Liftgate Object Sensor.

- **Go to next step: If between 8k-12k Ω**

3. All OK

Repair Instructions

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

- [Liftgate Side Sensor Replacement \(Equinox\)](#)[Liftgate Side Sensor Replacement \(Terrain\)](#).
- [Control Module References](#) for liftgate control module replacement, setup and programming

DTC B2494: LIFTGATE HANDLE SWITCH CIRCUIT (WITHOUT TB5)

Diagnostic Instructions

- Perform the Diagnostic System Check prior to using this diagnostic procedure: [Diagnostic System Check - Vehicle](#)
- Review the description of Strategy Based Diagnosis: [Strategy Based Diagnosis](#)
- An overview of each diagnostic category can be found here: [Diagnostic Procedure Instructions](#)

DTC Descriptor

DTC B2494 00

Liftgate Handle Switch Circuit

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Signal	B2494 00	1	1	-
Ground	-	1	-	-
1. S46B Liftgate Unlatch Switch = Disabled				

Circuit/System Description

For an overview of the component/system, refer to: [Rear Hatch/Gate Description and Operation](#)

Circuit	Description
Signal	The control module input circuit has an internal resistance connected to 12 V.
Ground	Chassis Ground

Component	Description

Component	Description
S46B Liftgate Unlatch Switch	- The switch has a normally open contact. - When the switch is activated, the signal circuit to the control module is grounded.
K9 Body Control Module	The module controls various vehicle functions like lighting, central door locking, power windows, etc.

Conditions for Running the DTC

Ignition - On / Vehicle - In Service Mode

Conditions for Setting the DTC

Signal circuit = Short to Ground - For greater than 12 s

Actions Taken When the DTC Sets

S46B Liftgate Unlatch Switch = Disabled

Conditions for Clearing the DTC

- A current DTC will clear when the diagnostic runs and passes.
- A history DTC will clear after 50 consecutive malfunction-free ignition cycles.

Reference Information

Schematic Reference

Release Systems Wiring Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Component View Reference

Luggage Compartment/Rear of Vehicle Component Views

Electrical Information Reference

- [Circuit Testing](#)
- [Connector Repairs](#)
- [Testing for Intermittent Conditions and Poor Connections](#)
- [Wiring Repairs](#)

Scan Tool Reference

Control Module References

Circuit/System Verification

- Ignition - On / Vehicle - In Service Mode
- Verify the scan tool parameter: Trunk Lid/Liftgate Window Exterior Unlatch Switch = Inactive
 - If not the specified state**

Refer to: Circuit/System Testing

- Go to next step: If the specified state**
- Operate the component: S46B Liftgate Unlatch Switch - Pressed

Verify the scan tool parameter: Trunk Lid/Liftgate Window Exterior Unlatch Switch = Active

- **If not the specified state**

Refer to: Circuit/System Testing

- **Go to next step: If the specified state**

4. All OK.

Circuit/System Testing

NOTE: It may take up to 2 min for all vehicle systems to power down before an accurate ground or low reference circuit continuity test can be performed.

1. Ignition/Vehicle & All vehicle systems - Off
2. Disconnect the electrical connector: S46B Liftgate Unlatch Switch
3. Test for less than 10 ohms between the test points: Ground circuit terminal 1 & Ground
 - **If 10 ohms or greater**
 1. Ground Connection - Disconnect
 2. Test for less than 2 ohms between the test points: Ground circuit terminal 1 @Component harness & Ground Connection
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Repair the open/high resistance in the ground connection.
 - **Go to next step: If less than 10 ohms**
4. Ignition - On / Vehicle - In Service Mode
5. Verify the scan tool parameter: Trunk Lid/Liftgate Window Exterior Unlatch Switch = Inactive
 - **If not the specified state**
 1. Ignition/Vehicle - Off
 2. Disconnect the electrical connector: K9 Body Control Module
 3. Test for infinite resistance between the test points: Signal circuit terminal 2 @Component harness & Ground
 - If less than infinite resistance - Repair the short to ground on the circuit.
 - If infinite resistance - Replace the component: K9 Body Control Module
 - **Go to next step: If the specified state**
6. Connect a 3 A fused jumper wire between the test points: Signal circuit terminal 2 & Ground circuit terminal 1
7. Verify the scan tool parameter: Trunk Lid/Liftgate Window Exterior Unlatch Switch = Active
 - **If not the specified state**
 1. Ignition/Vehicle - Off & Remove - Jumper wire(s)
 2. Disconnect the electrical connector: K9 Body Control Module
 3. Ignition - On / Vehicle - In Service Mode
 4. Test for less than 1 V between the test points: Signal circuit terminal 2 @Component harness & Ground
 - If 1 V or greater - Repair the short to voltage on the circuit.
 - If less than 1 V
 5. Ignition/Vehicle - Off
 6. Test for less than 2 ohms between the test points: Signal circuit terminal 2 @Component harness & Terminal 15 X6 @Control module harness
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Replace the component: K9 Body Control Module
 - **Go to next step: If the specified state**
8. Test or replace the component: S46B Liftgate Unlatch Switch

Component Testing

1. Ignition/Vehicle - Off
2. Disconnect the electrical connector: S46B Liftgate Unlatch Switch
3. Test for infinite resistance between the test points: Signal terminal 2 & Ground terminal 1 - The switch is in the open position.
 - **If less than infinite resistance**

Replace the component: S46B Liftgate Unlatch Switch
 - **Go to next step: If infinite resistance**
4. Test for less than 3 ohms between the test points: Signal terminal 2 & Ground terminal 1 - The switch is in the closed position.
 - **If 3 ohms or greater**

Replace the component: S46B Liftgate Unlatch Switch
 - **Go to next step: If less than 3 ohms**
5. All OK.

Repair Instructions

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

- [Liftgate Release Switch Replacement - Exterior \(Equinox\)](#)[Liftgate Release Switch Replacement - Exterior \(Terrain\)](#)
- For control module replacement, programming, and setup refer to: [Control Module References](#)

DTC B2494: LIFTGATE HANDLE SWITCH CIRCUIT - SHORT TO GROUND (WITH TB5)

Diagnostic Instructions

- Perform the Diagnostic System Check prior to using this diagnostic procedure: [Diagnostic System Check - Vehicle](#)
- Review the description of Strategy Based Diagnosis: [Strategy Based Diagnosis](#)
- An overview of each diagnostic category can be found here: [Diagnostic Procedure Instructions](#)

DTC Descriptor

NOTE: This procedure may also diagnose malfunctions that are not detected by a DTC.

DTC B2494 02

Liftgate Handle Switch Circuit - Short to Ground

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Signal	B2494 02	1	1	-
Low Reference	-	1	-	-
1. Liftgate Handle Switch = Disabled				

Circuit/System Description

For an overview of the component/system, refer to: [Liftgate Description and Operation](#)

Circuit	Description
Signal	The control module input circuit has an internal resistance connected to 12 V.

Circuit	Description
Low Reference	Grounded through the control module.

Component	Description
S46B Liftgate Unlatch Switch	When the switch is activated, the signal circuit to the control module is grounded.
K39 Liftgate Control Module	The control module K39 controls the liftgate motor function depending on inputs from a variety of sensors, switches and serial data information from other control modules.

Conditions for Running the DTC

Ignition - On / Vehicle - In Service Mode

Conditions for Setting the DTC

Signal circuit = Short to Ground - For greater than 60 s

Actions Taken When the DTC Sets

S46B Liftgate Unlatch Switch = Disabled

Conditions for Clearing the DTC

- A current DTC will clear when the diagnostic runs and passes.
- A history DTC will clear after 50 consecutive malfunction-free ignition cycles.

Reference Information

Schematic Reference

Liftgate Wiring Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Component View Reference

Luggage Compartment/Rear of Vehicle Component Views

Electrical Information Reference

- [Circuit Testing](#)
- [Connector Repairs](#)
- [Testing for Intermittent Conditions and Poor Connections](#)
- [Wiring Repairs](#)

Scan Tool Reference

Control Module References

Circuit/System Verification

1. Ignition - On / Vehicle - In Service Mode
2. Verify the scan tool parameter: Liftgate Handle Switch = Inactive
 - **If not the specified state**
Refer to: Circuit/System Testing
 - **Go to next step: If the specified state**

3. Operate the component: S46B Liftgate Unlatch Switch - Pressed

Verify the scan tool parameter: Liftgate Handle Switch = Active

- **If not the specified state**

Refer to: Circuit/System Testing

- **Go to next step: If the specified state**

4. All OK.

Circuit/System Testing

NOTE: It may take up to 2 min for all vehicle systems to power down before an accurate ground or low reference circuit continuity test can be performed.

1. Ignition/Vehicle & All vehicle systems - Off

2. Disconnect the electrical connector: S46B Liftgate Unlatch Switch

3. Test for less than 10 ohms between the test points: Low Reference circuit terminal 2 & Ground

- **If 10 ohms or greater**

1. Disconnect the electrical connector: K39 Liftgate Control Module

2. Test for less than 2 ohms between the test points: Low Reference circuit terminal 2 @Component harness & Terminal 16 X1 @Control module harness

- If 2 ohms or greater - Repair the open/high resistance in the circuit.
- If less than 2 ohms - Replace the component: K39 Liftgate Control Module

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

4. Ignition - On / Vehicle - In Service Mode

5. Verify the scan tool parameter: Liftgate Handle Switch = Inactive

- **If not the specified state**

1. Ignition/Vehicle - Off

2. Disconnect the electrical connector: K39 Liftgate Control Module

3. Test for infinite resistance between the test points: Signal circuit terminal 1 @Component harness & Ground

- If less than infinite resistance - Repair the short to ground on the circuit.
- If infinite resistance - Replace the component: K39 Liftgate Control Module

- **Go to next step: If the specified state**

6. Connect a 3 A fused jumper wire between the test points: Signal circuit terminal 1 & Low Reference circuit terminal 2

7. Verify the scan tool parameter: Liftgate Handle Switch = Active

- **If not the specified state**

1. Ignition/Vehicle - Off & Remove - Jumper wire(s)

2. Disconnect the electrical connector: K39 Liftgate Control Module

3. Ignition - On / Vehicle - In Service Mode

4. Test for less than 1 V between the test points: Signal circuit terminal 1 @Component harness & Ground

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

5. Ignition/Vehicle - Off

6. Test for less than 2 ohms between the test points: Signal circuit terminal 1 @Component harness & Terminal 14 X1 @Control module harness

- If 2 ohms or greater - Repair the open/high resistance in the circuit.
- If less than 2 ohms - Replace the component: K39 Liftgate Control Module

- **Go to next step: If the specified state**

8. Test or replace the component: S46B Liftgate Unlatch Switch

Component Testing

1. Ignition/Vehicle - Off
2. Disconnect the electrical connector: S46B Liftgate Unlatch Switch
3. Test for infinite resistance between the test points: Signal terminal 1 & Low Reference terminal 2
- Switch Not Pressed
 - **If less than infinite resistance**

Replace the component: S46B Liftgate Unlatch Switch
 - **Go to next step: If infinite resistance**
4. Test for less than 3 ohms between the test points: Signal terminal 1 & Low Reference terminal 2 - Switch - Pressed
 - **If 3 ohms or greater**

Replace the component: S46B Liftgate Unlatch Switch
 - **Go to next step: If less than 3 ohms**
5. All OK.

Repair Instructions

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

- [Liftgate Release Switch Replacement - Exterior \(Equinox\)](#)[Liftgate Release Switch Replacement - Exterior \(Terrain\)](#)
- For control module replacement, programming, and setup refer to: [Control Module References](#)

DTC B2495 OR B24A0: LIFTGATE LATCH CONTROL 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 B2495

Liftgate Latch Control Circuit

DTC B24A0

Liftgate Latch Control Circuit 2

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

Diagnostic Fault Information

Circuit	Short to Ground	Open	High Resistance	Short to Voltage	Signal Performance
Liftgate Latch Release Control	B24A0 02	B24A0 05	B24A0 08	B24A0 01	-
Cinch Latch Motor Open Control	B2495 02	B2495 04, B24A0 05	B2495 04, B24A0 05	B2495 01	-
Cinch Latch Motor Close Control	B2495 02	B2495 04, B24A0 05	B2495 04, B24A0 05	B2495 01	-

Circuit/System Description

The liftgate control module controls the liftgate release motor by supplying 12V to the release control circuit. The motor control circuits are monitored by the liftgate control module prior to activation for a high or low condition and during motor operation for an insufficient current flow condition.

The ratchet, pawl, and sector switches are part of the liftgate latch assembly and are used by the liftgate control module to determine the state of the latch during the process of latching or unlatching. The ratchet and pawl switches will be inactive when the primary and secondary latches are latched, and the sector switch will be active during the power cinch function. Each of the latch switch signal circuits are supplied battery voltage through a resistor and monitored within the liftgate control module. When the switch contacts close the signal circuit goes low and the liftgate control module determines the switch to be active.

The latch motor is a bi-directional motor and cinch or unlatch operation is the result of the direction of the motor rotation. The liftgate control module controls the latch motor through the control circuits by supplying power and ground in the appropriate polarity. The motor control circuits are monitored by the liftgate control module prior to activation for a high or low condition and during motor operation for an insufficient current flow condition.

Conditions for Running the DTC

The system voltage is 9 - 16 V.

Conditions for Setting the DTC

B2495 01

The liftgate control module detects a short to battery in the liftgate latch motor cinch control circuit.

B2495 02

The liftgate control module detects a short to ground in the liftgate latch motor cinch control circuit.

B2495 04, B24A0 05

The liftgate control module detects an open/high resistance in the liftgate latch motor cinch control circuit when cinching the liftgate to the closed position.

B24A0 01

The liftgate control module detects a short to battery in the liftgate latch motor release control circuit while commanding the liftgate latch to release.

B24A0 02

The liftgate control module detects a short to ground in the liftgate latch motor release control circuit while commanding the liftgate latch to release.

B24A0 08

The liftgate control module detects high resistance in the liftgate latch motor release control circuit while commanding the liftgate latch to release.

Action Taken When the DTC Sets

B24A0 01, B24A0 02, B24A0 08

The liftgate will not release and will be inoperative in the power and manual modes.

B2495 01, B2495 02, B2495 04, B24A0 05

- Manual Mode: Liftgate will not cinch closed.
- Power Mode: The liftgate will not release and will be inoperative.

Conditions for Clearing the DTC

- The DTC will be current for as long as the fault is present.
- When the fault is no longer present, the DTC will be a history DTC.
- A history DTC will clear after 50 ignition cycles.

Diagnostic Aids

- If the liftgate will not release from the closed position, refer to [Opening the Liftgate Without Electrical Power](#) for the appropriate procedure.
- Whenever the liftgate control module loses power or is disconnected, the ignition must be cycled OFF then ON in order to reactivate the liftgate control module.

Reference Information

Schematic Reference

[Liftgate Wiring Schematics](#)

Connector End View Reference

[COMPONENT CONNECTOR END VIEWS - INDEX](#)

Description and Operation

[Liftgate Description and Operation](#)

Electrical Information Reference

- [Testing for Intermittent Conditions and Poor Connections](#)
- [Circuit Testing](#)
- [Wiring Repairs](#)
- [Connector Repairs](#)

Scan Tool Reference

[Control Module References](#) for scan tool information

Circuit/System Verification

1. Ignition ON.
2. Verify the A23C Liftgate Latch Assembly releases the liftgate when pressing the S46B Liftgate Unlatch Switch.
 - **If the A23C Liftgate Latch Assembly does not release**
Refer to Circuit/System Testing - Liftgate Release Inoperative.
 - **Go to next step: If the A23C Liftgate Latch Assembly does release**
3. Verify the A23C Liftgate Latch Assembly cinches the liftgate to the fully closed position while gently pushing the liftgate closed.
 - **If the A23C Liftgate Latch Assembly does not cinch**
Refer to Circuit/System Testing - Liftgate Cinch Inoperative.
 - **Go to next step: If the A23C Liftgate Latch Assembly cinch works**
4. All OK.

Circuit/System Testing

Liftgate Release Inoperative

1. Ignition OFF and all vehicle systems OFF, disconnect the harness connector at the A23C Liftgate Latch Assembly. It may take up to 2 minutes for all vehicle systems to power down.

2. Test for less than 10 Ω between the low reference circuit terminal 6 and ground.

- **If 10 Ω or greater**

1. Disconnect the harness connector at the K39 Liftgate 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 K39 Liftgate Control Module.

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

3. Connect the harness connector at the A23C Liftgate Latch Assembly.

4. Disconnect the X3 harness connector at the K39 Liftgate Control Module. Ignition ON.

5. Test for less than 1 V between the control circuit terminal 13 and ground.

- **If 1 V or greater**

1. Ignition OFF, disconnect the harness connector at the A23C Liftgate Latch Assembly, ignition ON.

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

- If 1 V or greater, repair the short to voltage on the circuit.
- If less than 1 V, test or replace the A23C Liftgate Latch Assembly.

- **Go to next step: If less than 1 V**

6. Manually move the latch to cinched position.

7. Briefly connect a 30 A fused jumper wire between the control circuit terminal 13 and 12 V.

8. Verify the A23C Liftgate Latch Assembly performs the release function.

- **If the A23C Liftgate Latch Assembly does not release**

1. Ignition OFF, disconnect the harness connector at the A23C Liftgate Latch Assembly.

2. Test for infinite resistance the control 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 control circuit end to end.

- If 2 Ω or greater, repair the open/high resistance in the circuit.
- If less than 2 Ω , replace the A23C Liftgate Latch Assembly.

- **Go to next step: If the A23C Liftgate Latch Assembly releases**

9. Replace the K39 Liftgate Control Module.

Liftgate Cinch Inoperative

1. Ignition OFF, disconnect the X2 harness connector at the K39 Liftgate Control Module.

2. Test for less than 1 V between the control circuit terminals listed below and ground:

- Control circuit terminal 1 X2
- Control circuit terminal 2 X2

- **If 1 V or greater**

1. Ignition OFF, disconnect the harness connector at the A23C Liftgate Latch Assembly, ignition ON.

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

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

- **Go to next step: If less than 1 V**

3. Test for infinite resistance between the control circuit terminals listed below and ground:

- Control circuit terminal 1 X2
- Control circuit terminal 2 X2

- **If less than infinite resistance**

1. Ignition OFF, disconnect the harness connector at the A23C Liftgate Latch Assembly.

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

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

- If infinite resistance, replace the A23C Liftgate Latch Assembly.
 - **Go to next step: If infinite resistance**
4. Test for less than 10 Ω between the control circuit terminal 1 and the control circuit terminal 2.
 - **If 10 Ω or greater**
 1. Ignition OFF, disconnect the harness connector at the A23C Liftgate Latch Assembly.
 2. Test for less than 2 Ω between the K39 Liftgate Control Module control circuit terminal 1 and the A23C Liftgate Latch Assembly control circuit terminal 7.
 - If 2 Ω or greater, repair the open/high resistance on the circuit.
 3. Test for less than 2 Ω between the K39 Liftgate Control Module control circuit terminal 2 and the A23C Liftgate Latch Assembly control circuit terminal 8.
 - If 2 Ω or greater, repair the open/high resistance on the circuit.
 - If less than 2 Ω , replace the A23C Liftgate Latch Assembly.
 - **Go to next step: If less than 10 Ω**
 5. Replace the K39 Liftgate Control Module.

Repair Instructions

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

- [Liftgate Latch Replacement \(Equinox\)](#)[Liftgate Latch Replacement \(Terrain\)](#)
- [Control Module References](#) for liftgate control module replacement, programming and setup

DTC B297B OR B297C: DRIVER DOOR OPEN SWITCH CIRCUIT

Diagnostic Instructions

- Perform the Diagnostic System Check prior to using this diagnostic procedure: [Diagnostic System Check - Vehicle](#)
- Review the description of Strategy Based Diagnosis: [Strategy Based Diagnosis](#)
- An overview of each diagnostic category can be found here: [Diagnostic Procedure Instructions](#)

DTC Descriptor

DTC B297B

Driver Door Open Switch Circuit

Symptom Byte Information: [Symptom Byte List](#)

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Signal - Terminal 1 @A23D Door Latch Assembly - Driver	B297B 5A	B297B 5A	B297B 5A	-
Signal - Terminal 2 @A23D Door Latch Assembly - Driver	B297B 5A	B297B 5A	B297B 5A	-
Ground - Terminal 3 @A23D Door Latch Assembly - Driver	-	1	-	-
1. Door Ajar Indicator = Always Off				

Typical Scan Tool Data

Body Control Module - Driver Door Ajar Switch

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Circuit	Short to Ground	Open	Short to Voltage
Operating Conditions: Ignition - On / Vehicle - In Service Mode Parameter Normal Range: - Inactive - Driver Door - Closed - Active - Driver Door - Open			
Signal	Active	Inactive	Inactive
Ground	-	Inactive	-

Keyless Entry Control Module - Driver Door Ajar Switch

Circuit	Short to Ground	Open	Short to Voltage
Operating Conditions: Ignition - On / Vehicle - In Service Mode Parameter Normal Range: - Inactive - Driver Door - Closed - Active - Driver Door - Open			
Signal	Active	Inactive	Inactive
Ground	-	Inactive	-

Circuit/System Description

For an overview of the component/system, refer to: [Keyless Entry System Description and Operation \(Without ATH\)](#), [Keyless Entry System Description and Operation \(With ATH\)](#).

Circuit	Description
Signal	The control module input circuit has an internal resistance connected to 12 V.
Ground	Chassis Ground

Component	Description
A23D Door Latch Assembly - Driver	The switch has a normally open contact. When the switch is activated, the signal circuit to the control module is grounded.
K84 Keyless Entry Control Module	The control module also reads various switches and sensors and makes their values available via serial data.

Conditions for Running the DTC

Ignition - On / Vehicle - In Service Mode

Conditions for Setting the DTC

DTC B297B 5A may set when there is a condition with the component circuits:

- Condition 1

Driver Door Open Switch Circuit = Open/High Resistance & Left Front Door Ajar Circuit = Normal

- Condition 2

Driver Door Open Switch Circuit = Short to Ground & Left Front Door Ajar Circuit = Normal

- Condition 3

Left Front Door Ajar Circuit = Open/High Resistance & Driver Door Open Switch Circuit = Normal

- Condition 4

Actions Taken When the DTC Sets

- Driver Information Display = Service Driver Door Switch
- Audible Reminders = Continuously

Conditions for Clearing the DTC

- The conditions for setting the DTC no longer exist.
- A history DTC will clear after 50 consecutive malfunction-free ignition cycles.

Reference Information

Schematic Reference

- [Door Lock/Indicator Wiring Schematics](#)
- [Remote Function Wiring Schematics](#)

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Component View Reference

Door Component Views

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. Operate the component: Driver Door - Open

Verify the scan tool parameter: Body Control Module - Driver Door Ajar Switch = Active

- **If not the specified state**

Refer to: [Door Ajar Indicator Malfunction](#)

- **Go to next step: If the specified state**

3. Operate the component: Driver Door - Closed

Verify the scan tool parameter: Body Control Module - Driver Door Ajar Switch = Inactive

- **If not the specified state**

Refer to: [Door Ajar Indicator Malfunction](#)

- **Go to next step: If the specified state**

4. Operate the component: Driver Door - Open

Verify the scan tool parameter: Keyless Entry Control Module - Driver Door Ajar Switch = Active

- **If not the specified state**

Refer to: Circuit/System Testing

- **Go to next step: If the specified state**

5. Operate the component: Driver Door - Closed

Verify the scan tool parameter: Keyless Entry Control Module - Driver Door Ajar Switch = Inactive

- **If not the specified state**

Refer to: Circuit/System Testing

- **Go to next step: If the specified state**

6. All OK.

Circuit/System Testing

NOTE: It may take up to 2 min for all vehicle systems to power down before an accurate ground or low reference circuit continuity test can be performed.

1. Ignition/Vehicle & All vehicle systems - Off

2. Disconnect the electrical connector: A23D Door Latch Assembly - Driver

3. Test for less than 10 ohms between the test points: Ground circuit terminal 3 & Ground

- **If 10 ohms or greater**

1. Ground Connection - Disconnect

2. Test for less than 2 ohms between the test points: Ground circuit terminal 3 @Component harness & Ground Connection

- If 2 ohms or greater - Repair the open/high resistance in the circuit.
- If less than 2 ohms - Repair the open/high resistance in the ground connection.

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

4. Ignition - On / Vehicle - In Service Mode

5. Verify the scan tool parameter: Driver Door Ajar Switch = Inactive

- **If not the specified state**

1. Ignition/Vehicle - Off

2. Disconnect the electrical connector: K84 Keyless Entry Control Module

3. Test for infinite resistance between the test points: Signal circuit terminal 2 @Component harness & Ground

- If less than infinite resistance - Repair the short to ground on the circuit.
- If infinite resistance - Replace the component: K84 Keyless Entry Control Module

- **Go to next step: If the specified state**

6. Connect a 3 A fused jumper wire between the test points: Signal circuit terminal 2 & Ground circuit terminal 3

7. Verify the scan tool parameter: Driver Door Ajar Switch = Active

- **If not the specified state**

1. Ignition/Vehicle - Off & Remove - Jumper wire(s)

2. Disconnect the electrical connector: K84 Keyless Entry Control Module

3. Ignition - On / Vehicle - In Service Mode

4. Test for less than 1 V between the test points: Signal circuit terminal 2 @Component harness & Ground

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

5. Ignition/Vehicle - Off

6. Test for less than 2 ohms between the test points: Signal circuit terminal 2 @ & Signal circuit terminal 9 X1 @Control module harness
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Replace the component: K84 Keyless Entry Control Module
- **Go to next step: If the specified state**
8. Test or replace the component: A23D Door Latch Assembly - Driver

Component Testing

1. Ignition/Vehicle - Off
2. Disconnect the electrical connector: A23D Door Latch Assembly - Driver
3. Test for infinite resistance between the test points: Signal terminal 2 & Ground terminal 3 - The switch is in the open position.
 - **If less than infinite resistance**

Replace the component: A23D Door Latch Assembly - Driver
 - **Go to next step: If infinite resistance**
4. Test for less than 3 ohms between the test points: Signal terminal 2 & Ground terminal 3 - The switch is in the closed position.
 - **If 3 ohms or greater**

Replace the component: A23D Door Latch Assembly - Driver
 - **Go to next step: If less than 3 ohms**
5. All OK.

Repair Instructions

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

- [Front Side Door Latch Replacement](#)
- For control module replacement, programming, and setup refer to: [Control Module References](#)

DTC B3125, B3130, OR B3135: DOORS UNLOCK/LOCK CIRCUITS

Diagnostic Instructions

- Perform the Diagnostic System Check prior to using this diagnostic procedure: [Diagnostic System Check - Vehicle](#)
- Review the description of Strategy Based Diagnosis: [Strategy Based Diagnosis](#)
- An overview of each diagnostic category can be found here: [Diagnostic Procedure Instructions](#)

DTC Descriptor

DTC B3125

Driver Door Only Unlock Circuit

DTC B3130

All Doors Unlock Circuit

DTC B3135

All Doors Lock Circuit

Symptom Byte Information:

[Symptom Byte List](#)

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Short to Voltage
B+ - K9 Body Control Module	B3125 02, B3130 02, B3135 02	B3125 02, B3130 02, B3135 02	-	-
Ground - K9 Body Control Module	-	1, 2, 3, 4	-	-
Control - A23D Door Latch Assembly - Driver	B3125 02, B3130 02, B3135 02	1	B3125 01, B3130 01, B3135 01	-
Control - A23P Door Latch Assembly - Passenger	B3125 02, B3130 02, B3135 02	2	B3125 01, B3130 01, B3135 01	-
Control - A23LR Door Latch Assembly - Left Rear	B3125 02, B3130 02, B3135 02	3	B3125 01, B3130 01, B3135 01	-
Control - A23RR Door Latch Assembly - Right Rear	B3125 02, B3130 02, B3135 02	4	B3125 01, B3130 01, B3135 01	-
1. A23D Door Latch Assembly - Driver = Inoperative 2. A23P Door Latch Assembly - Passenger = Inoperative 3. A23LR Door Latch Assembly - Left Rear = Inoperative 4. A23RR Door Latch Assembly - Right Rear = Inoperative				

Circuit/System Description

For an overview of the component/system, refer to: [Power Door Locks Description and Operation](#)

Circuit	Description
B+ - K9 Body Control Module	Supplied from a fuse.
Ground - K9 Body Control Module	Chassis Ground
Control - Driver Door Unlock	The output circuit is switched from ground to 12 V to activate the component.
Control - All Doors Lock	The output circuit is switched from ground to 12 V to activate the component.
Control - Passenger Door Unlock	The output circuit is switched from ground to 12 V to activate the component.

Component	Description
A23 Door Latch Assembly	The door locks are actuated by a bidirectional DC motor that locks/unlocks the door so that it can not be opened from outside the vehicle (but still from inside).
K9 Body Control Module	The module controls various vehicle functions like lighting, central door locking, power windows, etc. The control module also reads various switches and sensors and makes their values available via serial data.

Conditions for Running the DTC

Ignition - On / Vehicle - In Service Mode

Conditions for Setting the DTC

B3125 01, B3130 01, B3135 01

A23 Door Latch Assembly - Control Circuit = Short to Battery

B3125 02, B3130 02, B3135 02 Condition 1

A23 Door Latch Assembly - Control Circuit = Short to Ground

B3125 02, B3130 02, B3135 02 Condition 2

B+ circuit terminal 4 X2 @K9 Body Control Module = Open

B3125 02, B3130 02, B3135 02 Condition 3

B+ circuit terminal 4 X2 @K9 Body Control Module = Short to Ground

Actions Taken When the DTC Sets

All Doors Lock Command & All Doors Unlock Command = Inoperative

Conditions for Clearing the DTC

- A current DTC will clear when the diagnostic runs and passes.
- A history DTC will clear after 50 consecutive malfunction-free ignition cycles.

Reference Information

Schematic Reference

- [Door Lock/Indicator Wiring Schematics](#)
- [Body Control System Wiring Schematics](#)

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Component View Reference

Door Component Views

Electrical Information Reference

- [Circuit Testing](#)
- [Connector Repairs](#)
- [Testing for Intermittent Conditions and Poor Connections](#)
- [Wiring Repairs](#)
- [Relay Replacement \(Attached to Wire Harness\) Relay Replacement \(Within an Electrical Center\)](#)

Scan Tool Reference

Control Module References

Circuit/System Verification

1. Ignition - On / Vehicle - In Service Mode
2. Operate the component: S13D Door Lock Switch - Driver - Lock & Unlock

Verify the scan tool parameter: Driver Door Lock Switch = Inactive & Lock & Unlock

- **If not the specified state**

Refer to: [Power Door Locks Malfunction](#)

- **Go to next step: If the specified state**

3. Operate the component: S13P Door Lock Switch - Passenger - Lock & Unlock

Verify the scan tool parameter: Passenger Door Lock Switch = Inactive & Lock & Unlock

- **If not the specified state**

Refer to: [Power Door Locks Malfunction](#)

- **Go to next step: If the specified state**

4. Operate the component: S13D Door Lock Switch - Driver - Lock & Unlock

Verify the component works as specified:

- A23D Door Latch Assembly - Driver = Lock & Unlock
- A23LR Door Latch Assembly - Left Rear = Lock & Unlock
- A23P Door Latch Assembly - Passenger = Lock & Unlock
- A23RR Door Latch Assembly - Right Rear = Lock & Unlock
- **If the component does not activate - A23D Door Latch Assembly - Driver**

Refer to: Circuit/System Testing - Test 1

- **If the component does not activate - A23LR Door Latch Assembly - Left Rear**

Refer to: Circuit/System Testing - Test 2

- **If the component does not activate - A23P Door Latch Assembly - Passenger**

Refer to: Circuit/System Testing - Test 2

- **If the component does not activate - A23RR Door Latch Assembly - Right Rear**

Refer to: Circuit/System Testing - Test 2

- **If none of the components operate**

Refer to: Circuit/System Testing - Test 3

- **Go to next step: If all functions work properly**

5. All OK.

Circuit/System Testing

Test 1

1. Ignition/Vehicle & All vehicle systems - Off
2. Disconnect the electrical connector: A23D Door Latch Assembly - Driver
3. Connect a test lamp between the test points: Control circuit terminal 7 & Control circuit terminal 8
4. Ignition - On / Vehicle - In Service Mode
5. Operate the component: S13D Door Lock Switch - Driver - Lock & Unlock
6. Verify the test lamp does not turn On and Off.

- **If the test lamp turns On and Off**

Test or replace the component: A23D Door Latch Assembly - Driver

- **Go to next step: If the test lamp does not turn On and Off**

7. Ignition/Vehicle - Off
8. Disconnect the electrical connector: X6 @K9 Body Control Module
9. Test for less than 2 ohms between the test points:
 - Control circuit terminal 7 @A23D Door Latch Assembly - Driver & Terminal 1 X6 @Control module harness

- Control circuit terminal 8 @A23D Door Latch Assembly - Driver & Terminal 4 X6 @Control module harness
- If 2 ohms or greater - Repair the open/high resistance in the circuit.
- **Go to next step: If less than 2 ohms**

10. Test or replace the component: K9 Body Control Module

Test 2

1. Ignition/Vehicle & All vehicle systems - Off
2. Disconnect the appropriate electrical connector:
 - A23LR Door Latch Assembly - Left Rear
 - A23P Door Latch Assembly - Passenger
 - A23RR Door Latch Assembly - Right Rear
3. Connect a test lamp between the test points:
 - A23P Door Latch Assembly - Passenger: Control circuit terminal 8 & Control circuit terminal 9
 - A23LR Door Latch Assembly - Left Rear: Control circuit terminal 7 & Control circuit terminal 8
 - A23RR Door Latch Assembly - Right Rear: Control circuit terminal 8 & Control circuit terminal 9
4. Ignition - On / Vehicle - In Service Mode
5. Operate the component: S13D Door Lock Switch - Driver - Lock & Unlock
6. Verify the test lamp does not turn On and Off.
 - **If the test lamp turns On and Off**

Test or replace the component: A23 Door Latch Assembly

- **Go to next step: If the test lamp does not turn On and Off**
7. Ignition/Vehicle - Off
 8. Disconnect the electrical connector: X6 @K9 Body Control Module
 9. Ignition - On / Vehicle - In Service Mode
 10. Test for less than 2 ohms between the test points:
 - Control circuit terminal 7 @A23LR Door Latch Assembly - Left Rear & Terminal 2 X6 @Control module harness
 - Control circuit terminal 8 @A23LR Door Latch Assembly - Left Rear & Terminal 4 X6 @Control module harness
 - Control circuit terminal 8 @A23P Door Latch Assembly - Passenger & Terminal 4 X6 @Control module harness
 - Control circuit terminal 9 @A23P Door Latch Assembly - Passenger & Terminal 2 X6 @Control module harness
 - Control circuit terminal 8 @A23RR Door Latch Assembly - Right Rear & Terminal 4 X6 @Control module harness
 - Control circuit terminal 9 @A23RR Door Latch Assembly - Right Rear & Terminal 2 X6 @Control module harness
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - **Go to next step: If less than 2 ohms**
 11. Test or replace the component: K9 Body Control Module

Test 3

NOTE: It may take up to 2 min for all vehicle systems to power down before an accurate ground or low reference circuit continuity test can be performed.

1. Ignition/Vehicle & All vehicle systems - Off

2. Disconnect the electrical connector: X2 & X6 @K9 Body Control Module

3. Test for less than 10 ohms between the test points: Ground circuit terminal 3 X6 & Ground

- **If 10 ohms or greater**

1. Ground Connection - Disconnect

2. Test for less than 2 ohms between the test points: Ground circuit terminal 3 X6 & Ground Connection

- If 2 ohms or greater - Repair the open/high resistance in the circuit.
- If less than 2 ohms - Repair the open/high resistance in the ground connection.

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

4. Ignition - On / Vehicle - In Service Mode

5. Verify a test lamp turns On between the test points: B+ circuit terminal 4 X2 & Ground

- **If the test lamp does not turn On and the circuit fuse is OK**

1. Ignition/Vehicle - Off & Remove - Test lamp

2. Test for less than 2 ohms between the test points: B+ circuit terminal 4 X2 & Output terminal @Fuse

- If 2 ohms or greater - Repair the open/high resistance in the circuit.
- If less than 2 ohms - Verify the fuse is OK and there is voltage at the fuse.

- **If the test lamp does not turn On and the circuit fuse is open**

1. Ignition/Vehicle - Off & Remove - Test lamp

2. Disconnect the electrical connector:

- A23D Door Latch Assembly - Driver
- A23LR Door Latch Assembly - Left Rear
- A23P Door Latch Assembly - Passenger
- A23RR Door Latch Assembly - Right Rear

3. Test for infinite resistance between the test points:

- Control circuit terminal 1 X6 @K9 Body Control Module & Ground
- Control circuit terminal 2 X6 @K9 Body Control Module & Ground
- Control circuit terminal 4 X6 @K9 Body Control Module & Ground
- If less than infinite resistance - Repair the short to ground on the circuit.
- If infinite resistance - Replace the component: A23 Door Latch Assembly

- **Go to next step: If the test lamp turns On**

6. Ignition/Vehicle - Off

7. Connect the electrical connector: X2 @K9 Body Control Module

8. Ignition - On / Vehicle - In Service Mode

9. Test for less than 1 V between the test points:

- Control circuit terminal 1 X6 @K9 Body Control Module & Ground
- Control circuit terminal 2 X6 @K9 Body Control Module & Ground
- Control circuit terminal 4 X6 @K9 Body Control Module & Ground
- **If greater than 1 V**

Repair the short to voltage on the circuit.

- **Go to next step: If 1 V or less**

10. Ignition/Vehicle - Off

11. Test for infinite resistance between the test points:

- Control circuit terminal 1 X6 @K9 Body Control Module & Ground
- Control circuit terminal 2 X6 @K9 Body Control Module & Ground
- Control circuit terminal 4 X6 @K9 Body Control Module & Ground
- **If less than infinite resistance**

Repair the short to ground on the circuit.

- **Go to next step: If infinite resistance**

12. Replace the component: K9 Body Control Module

Component Testing

1. Ignition/Vehicle - Off
2. Disconnect the appropriate electrical connector:
 - A23D Door Latch Assembly - Driver
 - A23P Door Latch Assembly - Passenger
 - A23LR Door Latch Assembly - Left Rear
 - A23RR Door Latch Assembly - Right Rear
3. Connect a 25 A fused jumper wire between the test points:
 - A23D Door Latch Assembly - Driver: Control terminal 7 & B+
 - A23P Door Latch Assembly - Passenger: Control terminal 8 & B+
 - A23LR Door Latch Assembly - Left Rear: Control terminal 7 & B+
 - A23RR Door Latch Assembly - Right Rear: Control terminal 8 & B+

CAUTION: Complete the testing as quickly as possible in order to prevent overheating and damaging the component.

4. Momentarily connect a jumper wire between the test points:
 - A23D Door Latch Assembly - Driver: Control terminal 8 & Ground
 - A23P Door Latch Assembly - Passenger: Control terminal 9 & Ground
 - A23LR Door Latch Assembly - Left Rear: Control terminal 8 & Ground
 - A23RR Door Latch Assembly - Right Rear: Control terminal 9 & Ground
5. Reverse the jumper wires 2 times between the terminals.

Verify the component works as specified: A23 Door Latch Assembly = Lock & Unlock

- **If not the specified state**

Replace the component: A23 Door Latch Assembly

- **Go to next step: If the specified state**

6. All OK.

Repair Instructions

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

- [Front Side Door Latch Replacement](#)
- [Rear Side Door Latch Replacement](#)
- For control module replacement, programming, and setup refer to: [Control Module References](#)

DTC B3140, B3145, B3150, OR B3155: DRIVER AND PASSENGER DOOR UNLOCK/LOCK SWITCH CIRCUIT

Diagnostic Instructions

- Perform the Diagnostic System Check prior to using this diagnostic procedure: [Diagnostic System Check - Vehicle](#)
- Review the description of Strategy Based Diagnosis: [Strategy Based Diagnosis](#)
- An overview of each diagnostic category can be found here: [Diagnostic Procedure Instructions](#)

DTC Descriptor

DTC B3140

DTC B3145

Passenger Door Unlock Switch Circuit

DTC B3150

Driver Door Lock Switch Circuit

DTC B3155

Passenger Door Lock Switch Circuit

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Signal terminal 2 @S13D Door Lock Switch - Driver	B3150	2	2	-
Signal terminal 2 @S13D Door Lock Switch - Driver	B3155	3	3	-
Signal terminal 2 @S13P Door Lock Switch - Passenger	B3155	4	4	-
Signal terminal 3 @S13P Door Lock Switch - Passenger	B3145	5	5	-
Ground - S13D Door Lock Switch - Driver	-	1	-	-
Ground - S13P Door Lock Switch - Passenger	-	6	-	-
1. S13D Door Lock Switch - Driver = Inoperative 2. Driver Door Lock Switch = Inoperative 3. Driver Door Unlock Switch = Inoperative 4. Passenger Door Lock Switch = Inoperative 5. Passenger Door Unlock Switch = Inoperative 6. S13P Door Lock Switch - Passenger = Inoperative				

Circuit/System Description

For an overview of the component/system, refer to: [Power Door Locks Description and Operation](#)

Circuit	Description
Signal	The control module input circuit has an internal resistance connected to 12 V.
Ground	Chassis Ground

Component	Description
S13D Door Lock Switch - Driver	The switch has a normally open contact. When the switch is activated, the signal circuit to the control module is grounded.
S13P Door Lock Switch - Passenger	The switch has a normally open contact. When the switch is activated, the signal circuit to the control module is grounded.
K9 Body Control Module	The module controls various vehicle functions like lighting, central door locking, power windows, etc.

Conditions for Running the DTC

Ignition/Vehicle = On

Conditions for Setting the DTC

Signal circuit = Short to Ground - For greater than 60 s

Actions Taken When the DTC Sets

B3140, B3145

Unlock Switch = Disabled

B3150, B3155

Lock Switch = Disabled

Conditions for Clearing the DTC

- A current DTC will clear when the diagnostic runs and passes.
- A history DTC will clear after 50 consecutive malfunction-free ignition cycles.

Reference Information

Schematic Reference

Door Lock/Indicator Wiring Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Component View Reference

Door Component Views

Electrical Information Reference

- [Circuit Testing](#)
- [Connector Repairs](#)
- [Testing for Intermittent Conditions and Poor Connections](#)
- [Wiring Repairs](#)

Scan Tool Reference

Control Module References

Circuit/System Verification

1. Ignition - On / Vehicle - In Service Mode
2. Verify the scan tool parameter: Driver Door Lock Switch = Inactive
 - **If not the specified state**

Refer to: Circuit/System Testing - Test 1
 - **Go to next step: If the specified state**
3. Operate the component: S13D Door Lock Switch - Driver - Lock & Unlock

Verify the scan tool parameter: Driver Door Lock Switch = Lock & Unlock

- **If not the specified state**

Refer to: Circuit/System Testing - Test 1

- **Go to next step: If the specified state**

4. Verify the scan tool parameter: Passenger Door Lock Switch = Inactive

- **If not the specified state**

Refer to: Circuit/System Testing - Test 2

- **Go to next step: If the specified state**

5. Operate the component: S13P Door Lock Switch - Passenger - Lock & Unlock

Verify the scan tool parameter: Passenger Door Lock Switch = Lock & Unlock

- **If not the specified state**

Refer to: Circuit/System Testing - Test 2

- **Go to next step: If the specified state**

6. All OK.

Circuit/System Testing

Test 1

NOTE: It may take up to 2 min for all vehicle systems to power down before an accurate ground or low reference circuit continuity test can be performed.

1. Ignition/Vehicle & All vehicle systems - Off

2. Disconnect the electrical connector: S13D Door Lock Switch - Driver

3. Test for less than 10 ohms between the test points: Ground circuit terminal 4 & Ground

- **If 10 ohms or greater**

1. Ground Connection - Disconnect

2. Test for less than 2 ohms between the test points: Ground circuit terminal 2 @Component harness & Ground Connection

- If 2 ohms or greater - Repair the open/high resistance in the circuit.
- If less than 2 ohms - Repair the open/high resistance in the ground connection.

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

4. Ignition - On / Vehicle - In Service Mode

5. Verify the scan tool parameter: Driver Door Lock Switch = Inactive

- **If not the specified state**

1. Ignition/Vehicle - Off

2. Disconnect the electrical connector: X2 @K9 Body Control Module

3. Test for infinite resistance between the test points:

- Signal circuit terminal 2 @Component harness & Ground
- Signal circuit terminal 3 @Component harness & Ground
- If less than infinite resistance - Repair the short to ground on the circuit.
- If infinite resistance - Replace the component: K9 Body Control Module

- **Go to next step: If the specified state**

6. Connect a 3 A fused jumper wire between the test points: Signal circuit terminal 2 & Ground circuit terminal 4

7. Verify the scan tool parameter: Driver Door Lock Switch = Lock

- **If not the specified state**

1. Ignition/Vehicle - Off & Remove - Jumper wire(s)

2. Disconnect the electrical connector: X2 @K9 Body Control Module

3. Ignition - On / Vehicle - In Service Mode

4. Test for less than 1 V between the test points: Signal circuit terminal 2 @Component harness & Ground

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

5. Ignition/Vehicle - Off

6. Test for less than 2 ohms between the test points: Signal circuit terminal 2 @Component harness & Terminal 19 X2 @Control module harness

- If 2 ohms or greater - Repair the open/high resistance in the circuit.
- If less than 2 ohms - Replace the component: K9 Body Control Module

• **Go to next step: If the specified state**

8. Connect a 3 A fused jumper wire between the test points: Signal circuit terminal 3 & Ground circuit terminal 4

9. Verify the scan tool parameter: Driver Door Lock Switch = Unlock

• **If not the specified state**

1. Ignition/Vehicle - Off & Remove - Jumper wire(s)

2. Disconnect the electrical connector: X2 @K9 Body Control Module

3. Ignition - On / Vehicle - In Service Mode

4. Test for less than 1 V between the test points: Signal circuit terminal 3 @Component harness & Ground

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

5. Ignition/Vehicle - Off

6. Test for less than 2 ohms between the test points: Signal circuit terminal 3 @Component harness & Terminal 15 X2 @Control module harness

- If 2 ohms or greater - Repair the open/high resistance in the circuit.
- If less than 2 ohms - Replace the component: K9 Body Control Module

• **Go to next step: If the specified state**

10. Test or replace the component: S13D Door Lock Switch - Driver

Test 2

NOTE: It may take up to 2 min for all vehicle systems to power down before an accurate ground or low reference circuit continuity test can be performed.

1. Ignition/Vehicle & All vehicle systems - Off

2. Disconnect the electrical connector: S13P Door Lock Switch - Passenger

3. Test for less than 10 ohms between the test points: Ground circuit terminal 4 & Ground

• **If 10 ohms or greater**

1. Ground Connection - Disconnect

2. Test for less than 2 ohms between the test points: Ground circuit terminal 4 @Component harness & Ground Connection

- If 2 ohms or greater - Repair the open/high resistance in the circuit.
- If less than 2 ohms - Repair the open/high resistance in the ground connection.

• **Go to next step: If less than 10 ohms**

4. Ignition - On / Vehicle - In Service Mode

5. Verify the scan tool parameter: Passenger Door Lock Switch = Inactive

• **If not the specified state**

1. Ignition/Vehicle - Off

2. Disconnect the electrical connector: X7 @K9 Body Control Module

3. Test for infinite resistance between the test points:

- Signal circuit terminal 2 @Component harness & Ground

- Signal circuit terminal 3 @Component harness & Ground
 - If less than infinite resistance - Repair the short to ground on the circuit.
 - If infinite resistance - Replace the component: K9 Body Control Module
 - **Go to next step: If the specified state**
6. Connect a 3 A fused jumper wire between the test points: Signal circuit terminal 2 & Ground circuit terminal 4
 7. Verify the scan tool parameter: Passenger Door Lock Switch = Lock
 - **If not the specified state**
 1. Ignition/Vehicle - Off & Remove - Jumper wire(s)
 2. Disconnect the electrical connector: X7 @K9 Body Control Module
 3. Ignition - On / Vehicle - In Service Mode
 4. Test for less than 1 V between the test points: Signal circuit terminal 2 @Component harness & Ground
 - If 1 V or greater - Repair the short to voltage on the circuit.
 - If less than 1 V
 5. Ignition/Vehicle - Off
 6. Test for less than 2 ohms between the test points: Signal circuit terminal 2 @Component harness & Terminal 21 X7 @Control module harness
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Replace the component: K9 Body Control Module
 - **Go to next step: If the specified state**
 8. Connect a 3 A fused jumper wire between the test points: Signal circuit terminal 3 & Ground circuit terminal 4
 9. Verify the scan tool parameter: Passenger Door Lock Switch = Unlock
 - **If not the specified state**
 1. Ignition/Vehicle - Off & Remove - Jumper wire(s)
 2. Disconnect the electrical connector: X7 @K9 Body Control Module
 3. Ignition - On / Vehicle - In Service Mode
 4. Test for less than 1 V between the test points: Signal circuit terminal 3 @Component harness & Ground
 - If 1 V or greater - Repair the short to voltage on the circuit.
 - If less than 1 V
 5. Ignition/Vehicle - Off
 6. Test for less than 2 ohms between the test points: Signal circuit terminal 3 @Component harness & Terminal 24 X7 @Control module harness
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Replace the component: K9 Body Control Module
 - **Go to next step: If the specified state**
 10. Test or replace the component: S13P Door Lock Switch - Passenger

Component Testing

S13 Door Lock Switch - Test

1. Ignition/Vehicle - Off
2. Disconnect the appropriate electrical connector: S13 Door Lock Switch
3. Test for infinite resistance between the test points:
 - Signal terminal 2 & Ground terminal 4 - Switch - Not Pressed
 - Signal terminal 3 & Ground terminal 4 - Switch - Not Pressed
 - **If less than infinite resistance**

Replace the component: S13 Door Lock Switch

- **Go to next step: If infinite resistance**

4. Test for less than 3 ohms between the test points: Signal terminal 2 & Ground terminal 4 - Lock Switch - Pressed

- **If 3 ohms or greater**

Replace the component: S13 Door Lock Switch

- **Go to next step: If less than 3 ohms**

5. Test for less than 3 ohms between the test points: Signal terminal 3 & Ground terminal 4 - Unlock Switch - Pressed

- **If 3 ohms or greater**

Replace the component: S13 Door Lock Switch

- **Go to next step: If less than 3 ohms**

6. All OK.

Repair Instructions

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

- [Door Lock Switch Replacement - Driver Side \(Equinox\)](#)[Door Lock Switch Replacement - Driver Side \(Terrain\)](#)
- [Door Lock Switch Replacement - Passenger Front \(Equinox\)](#)[Door Lock Switch Replacement - Passenger Front \(Terrain\)](#)
- For control module replacement, programming, and setup refer to: [Control Module References](#)

DTC B323A-B323C: HANDS FREE SENSOR SIGNAL INVALID/HANDS FREE LIFTGATE SENSOR MODULE

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 B323A 08

Upper Hands Free Sensor Signal Invalid

DTC B323B 08

Lower Hands Free Sensor Signal Invalid

DTC B323C 39

Hands Free Liftgate Sensor Module Internal Hardware Failure

DTC B323C 42

Hands Free Liftgate Sensor Module Invalid Calibration Set

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Liftgate Hands-Free Control Module B+	U1510 00	U1510 00	-	-
Upper Hands Free Sensor Signal	B232A 08	B232A 08	B232A 08	B232A 08

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Lower Hands Free Sensor Signal	B232A 08	B232A 08	B232A 08	B232B 08
Liftgate Hands-Free Control Module Ground	-	U1510 00	-	-

Circuit/System Description

The power liftgate has a feature that detects the motion of a foot under the rear fascia, this allows the operator to open the liftgate when his or her hands are full of packages. As an indicator that the action has been properly performed, the liftgate hands-free sensor control module will send a serial data message to the liftgate control module to command the liftgate to release and power open and the liftgate control module will send a serial data message to the body control module to command the tail lights to flash 3 times

Conditions for Running the DTC

Battery voltage is between 9 - 16 V.

Conditions for Setting the DTC

B323A 08

- The liftgate control module has received a serial data message that an invalid signal from the upper hands free sensor has been detected by the hands-free liftgate sensor control module.
- The condition must be present for greater than 30 seconds

B323B 08

- The liftgate control module has received a serial data message that an invalid signal from the lower hands free sensor has been detected by the hands-free liftgate sensor control module.
- The condition must be present for greater than 30 seconds.

B323C 39

An internal malfunction has been detected by the liftgate control module

B323C 42

The liftgate control module detects the calibration files in the hands-free liftgate sensor control module does not match the calibration files contained within the liftgate control module.

Action Taken When the DTC Sets

The hands-free feature will be inoperative

Conditions for Clearing the DTC

- The DTC will be current for as long as the fault is present.
- When the fault is no longer present, the DTC will be a history DTC.
- A history DTC will clear after 50 ignition cycles.

Diagnostic Aids

The hands-free function will only be allowed if certain operating criteria are met. Any of the following may cause the hands-free system not to function:

- The keyless entry transmitter is not within range
- The kicking motion is incorrectly performed
- The interior liftgate control switch has not been set to the 3/4 or Max position
- A loose or misaligned hands-free sensor

Reference Information

Schematic Reference

Liftgate Wiring Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Description and Operation

Liftgate 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.

NOTE: The keyless entry transmitter must be within 1 meter (3 feet) of the liftgate

2. Verify the tail lights flash 3 times and the power liftgate opens while performing a kicking motion behind and under the rear fascia.

- **If the tail lamps flash but the liftgate does not open**

Refer to Power Liftgate Malfunction

- **If the tail lamps do not flash**

Refer to Circuit/System Testing.

- **Go to next step: If the tail lamps flash and the liftgate does open**

3. All OK.

Circuit/System Testing

1. Ignition OFF, disconnect the X2 harness connector at the K171 Hands-Free Liftgate Sensor Control Module.

2. Test for less than 1 Ω between the B275A Hands-Free Liftgate Sensor - Upper signal circuit terminal 1 and the signal circuit terminal 2.

- **If 1 Ω or greater**
- Replace the B275A Hands-Free Liftgate Sensor - Upper
- **Go to next step: If less than 1 Ω**

3. Ignition OFF, disconnect the X3 harness connector at the K171 Hands-Free Liftgate Sensor Control Module.

4. Test for less than 1 Ω between the B275B Hands-Free Liftgate Sensor-Lower signal circuit terminal 1 and the signal circuit terminal 2.

- **If 1 Ω or greater**
- Replace the B275B Hands-Free Liftgate Sensor-Lower

- Go to next step: If less than 1 Ω

5. If all circuits test normal, replace the K171 Hands-Free Liftgate Sensor Control Module.

Repair Instructions

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

- [Rear Closure Hands Free Sensor Replacement](#)
- [Control Module References](#) for liftgate hands-free sensor control module replacement, programming and setup

DTC B324A OR B3245: REAR CARGO DOOR LOCK/UNLOCK ACTUATOR CIRCUIT

Diagnostic Instructions

- Perform the Diagnostic System Check prior to using this diagnostic procedure: [Diagnostic System Check - Vehicle](#)
- Review the description of Strategy Based Diagnosis: [Strategy Based Diagnosis](#)
- An overview of each diagnostic category can be found here: [Diagnostic Procedure Instructions](#)

DTC Descriptor

DTC B3245

Rear Cargo Door Lock Actuator Circuit

DTC B324A

Rear Cargo Door Unlock Actuator Circuit

Symptom Byte Information: [Symptom Byte List](#)

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Control - Relay Coil	B3245 02, B324A 02	1	1	-
Ground - Relay Coil	-	1	-	-
1. M30 Liftgate Latch = Disabled				

Circuit/System Description

For an overview of the component/system, refer to: [Rear Hatch/Gate Description and Operation](#)

Circuit	Description
Control - Relay Coil	The output circuit is switched to 12 V to activate the component.
Ground - Relay Coil	Chassis Ground

Component	Description
KR95A Liftgate Unlatch Relay	A relay is a switch that is actuated by a solenoid.
K9 Body Control Module	The module controls various vehicle functions like lighting, central door locking, power windows, etc.

KR95A Liftgate Unlatch Relay - The component is commanded On.

Conditions for Setting the DTC

- B3245 02 - Control Circuit = Short to Ground

- B3245 02 - Control Circuit = Short to Ground

Actions Taken When the DTC Sets

M30 Liftgate Latch = Disabled

Conditions for Clearing the DTC

- A current DTC will clear when the diagnostic runs and passes.
- A history DTC will clear after 50 consecutive malfunction-free ignition cycles.

Reference Information

Schematic Reference

Release Systems Wiring Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Component View Reference

Electrical Center Identification Views

Electrical Information Reference

- **Circuit Testing**
- **Connector Repairs**
- **Relay Replacement (Attached to Wire Harness) Relay Replacement (Within an Electrical Center)**
- **Testing for Intermittent Conditions and Poor Connections**
- **Wiring Repairs**

Scan Tool Reference

Control Module References

Circuit/System Verification

1. Ignition - On / Vehicle - In Service Mode
2. Perform the scan tool control function: All Doors Lock/Unlock - Passenger Door(s) Unlock Command
3. Operate the component: S46B Liftgate Unlatch Switch - Pressed

Verify the component produces a clicking sound: M30 Liftgate Latch

- **If the component does not produce a sound**

Refer to: Circuit/System Testing

- **Go to next step: If the component produces a sound**

4. All OK.

Circuit/System Testing

NOTE: It may take up to 2 min for all vehicle systems to power down before an accurate ground or low reference circuit continuity test can be performed.

1. Ignition/Vehicle & All vehicle systems - Off
2. Remove the component: KR95A Liftgate Unlatch Relay

3. Test for less than 10 ohms between the test points: Ground circuit terminal 86 & Ground

- **If 10 ohms or greater**

1. Ground Connection - Disconnect

2. Test for less than 10 ohms between the test points: Ground circuit terminal 86 & Ground Connection

- If 2 ohms or greater - Repair the open/high resistance in the circuit.

- If less than 2 ohms - Repair the open/high resistance in the ground connection.

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

4. Connect a test lamp between the test points: Control circuit terminal 85 & Ground circuit terminal 86

5. Ignition - On / Vehicle - In Service Mode

6. Operate the component: S46B Liftgate Unlatch Switch - Pressed

Verify the test lamp turns On and Off.

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

1. Ignition/Vehicle - Off & Remove - Test lamp

2. Disconnect the electrical connector: K9 Body Control Module

3. Test for infinite resistance between the test points: Control circuit terminal 85 @Relay Socket & Ground

- If less than infinite resistance - Repair the short to ground on the circuit.

- If infinite resistance

4. Test for less than 2 ohms between the test points: Control circuit terminal 85 @Relay Socket & Terminal 25 X5 @Control module harness

- If 2 ohms or greater - Repair the open/high resistance in the circuit.

- If less than 2 ohms - Replace the component: K9 Body Control Module

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

1. Ignition/Vehicle - Off & Remove - Test lamp

2. Disconnect the electrical connector: K9 Body Control Module

3. Ignition - On / Vehicle - In Service Mode

4. Test for less than 1 V between the test points: Control circuit terminal 85 @Relay Socket & Ground

- If 1 V or greater - Repair the short to voltage on the circuit.

- If less than 1 V - Replace the component: K9 Body Control Module

- **Go to next step: If the test lamp turns On and Off**

7. Test or replace the component: KR95A Liftgate Unlatch Relay

Component Testing

Relay Test

1. Ignition/Vehicle - Off

2. Remove the component: KR95A Liftgate Unlatch Relay

3. Test for 70 to 110 ohms between the test points: Component terminal 85 & 86

- **If not between 70 and 110 ohms**

Replace the component: KR95A Liftgate Unlatch Relay

- **Go to next step: If between 70 and 110 ohms**

4. Test for infinite resistance between the test points:

- Component terminal 30 & 85

- Component terminal 30 & 86

- Component terminal 30 & 87

- Component terminal 85 & 87
- **If less than infinite resistance**

Replace the component: KR95A Liftgate Unlatch Relay

- **Go to next step: If infinite resistance**

5. Connect a 3 A fused jumper wire between the test points: Component terminal 85 & 12V

Connect a jumper wire between the test points: Component terminal 85 & Ground

6. Test for less than 2 ohms between the test points: Component terminal 30 & 87

- **If 2 ohms or greater**

Replace the component: KR95A Liftgate Unlatch Relay

- **Go to next step: If less than 2 ohms**

7. All OK.

Repair Instructions

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

- [Relay Replacement \(Attached to Wire Harness\)](#), [Relay Replacement \(Within an Electrical Center\)](#)
- For control module replacement, programming, and setup refer to: [Control Module References](#)

DTC B384A: LIFTGATE CLOSE SWITCH INDICATOR 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 Descriptor

DTC B384A

Liftgate Close Switch Indicator 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
Control	B384A 02, B153E 02	1	B384A 01	-
Ground	-	1	-	-
1. Switch Backlight Inoperative				

Circuit/System Description

The liftgate control module will receive a serial data message from the body control module that the backlights for the interior switches have been commanded ON, the liftgate control module in response will provide voltage to the backlight within the liftgate close switch.

Conditions for Running the DTC

The system voltage is 9 - 16 V.

Conditions for Setting the DTC

B384A 01

The liftgate control module has detected a short to battery on the liftgate close switch backlight control circuit for greater than 60 seconds

B384A 02

The liftgate control module has detected a short to ground on the liftgate close switch backlight control circuit for greater than 60 seconds

Action Taken When the DTC Sets

B384A 01

The liftgate close switch backlight will be continuously illuminated

B384A 02, B153E 02

- The liftgate close switch backlight will inoperative
- The liftgate will only power open a short distance and must be manually pulled to the full open position

Conditions for Clearing the DTC

- The DTC will be current for as long as the fault is present.
- When the fault is no longer present, DTC B384A and B153E will be a history DTC.
- A history DTC will clear after 50 ignition cycles

Reference Information

Schematic Reference

Interior Lights Wiring Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Description and Operation

Interior Lighting Systems 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. Liftgate OPEN
2. Verify the backlight within the B70 Liftgate Close Switch is illuminated
 - **If the backlight is not illuminated**

Refer to Circuit/System Testing.
 - **Go to next step: If the backlight is illuminated**
3. All OK.

1. Ignition OFF and all vehicle systems OFF, disconnect the harness connector at the B70 Liftgate Close 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 1 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.
 - **Go to next step: If less than 10 Ω**
3. Ignition ON
4. Verify a test lamp illuminates between the control circuit terminal 2 and ground.
 - **If the test lamp is always OFF**
 1. Ignition OFF, remove the test lamp, disconnect the harness connector at the K39 Liftgate Control Module.
 2. Test for infinite resistance between the control circuit and ground.
 - If less than infinite resistance, repair the short to ground on the circuit.
 - If infinite resistance
 3. Test for less than 2 Ω in the control circuit end to end.
 - If 2 Ω or greater, repair the open/high resistance in the circuit.
 - If less than 2 Ω , replace the K39 Liftgate Control Module.
 - **If the test lamp is always ON**
 1. Ignition OFF, remove the test lamp, disconnect the harness connector at the K39 Liftgate Control Module, ignition ON.
 2. Test for less than 1 V between the control circuit and ground.
 - If 1 V or greater, repair the short to voltage on the circuit.
 - If less than 1 V, replace the K39 Liftgate Control Module.
 - **Go to next step: If the test lamp turns ON and OFF**
5. Test or replace the B70 Liftgate Close Switch.

Repair Instructions

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

- [Liftgate Close Switch Replacement](#)
- [Control Module References](#) for the liftgate control module replacement, programming and setup

DTC B396A: LEFT LIFTGATE MOTOR CONTROL 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 B396A

Left Liftgate Motor Control 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
Liftgate Control Module B+ Terminal 3 X2	B396A 04	B396A 04	-	-
Liftgate Motor Close Control	B396A 02	B396A 04	B396A 01	-
Liftgate Motor Open Control	B396A 02	B396A 04	B396A 01	-

Circuit/System Description

The liftgate motor is a bi-directional motor and open or close operation is the result of the direction of the motor rotation. The liftgate control module controls the liftgate motor through the control circuits by supplying power and ground in the appropriate polarity. The motor control circuits are monitored by the liftgate control module prior to activation for a high or low condition and during motor operation for any irregular current flow conditions.

Conditions for Running the DTC

- The system voltage is 9 - 16 V.
- Power open or close function is initiated.

Conditions for Setting the DTC

B396A 01

The liftgate control module detects a short to battery in the liftgate motor control circuits.

B396A 02

The liftgate control module detects a short to ground in the liftgate motor control circuits.

B396A 04

The liftgate control module detects an open/high resistance in the liftgate motor control circuits or an open/high resistance in the terminal 3 X2 B+ circuit

Action Taken When the DTC Sets

The liftgate will release but will not power open or power close

Conditions for Clearing the DTC

- The DTC will be current for as long as the fault is present.
- When the fault is no longer present, the DTC will be a history DTC.
- A history DTC will clear after 50 ignition cycles.

Diagnostic Aids

Whenever the liftgate control module loses power or is disconnected, the ignition must be cycled OFF then ON in order to reactivate the liftgate control module.

In some circumstances high or low control circuit faults may cause the liftgate control module to react as if the liftgate has encountered an object in its travel and reverse direction.

Reference Information

Schematic Reference

Liftgate Wiring Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Liftgate 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 liftgate will OPEN and CLOSE when commanding the Liftgate Open/Close with a scan tool.
 - **If the liftgate does not OPEN or CLOSE**
Refer to Circuit/System Testing
 - **Go to next step: If the liftgate does OPEN and CLOSE**
3. All OK.

Circuit/System Testing

1. Ignition OFF, disconnect the X2 harness connector at the K39 Liftgate Control Module, Ignition ON
2. Verify a test lamp illuminates between the B+ circuit terminal 3 and ground.
 - **If the test lamp does not illuminate and the circuit fuse is good**
 1. Ignition OFF.
 2. Test for less than 2 Ω in the B+ 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.
 - **If the test lamp does not illuminate and the circuit fuse is open**
 1. Ignition OFF.
 2. Test for infinite resistance between the B+ circuit and ground.
 - If less than infinite resistance, repair the short to ground on the circuit.
 - If infinite resistance
 3. Disconnect the X3 harness connector.
 4. Test for infinite resistance between each control circuit terminal listed below and ground:
 - Control circuit terminal 1 X3
 - Control circuit terminal 2 X3
 - If less than infinite resistance, replace the M17 Liftgate Motor Assembly.
 - If infinite resistance, replace the K39 Liftgate Control Module.
 - **Go to next step: If the test lamp illuminates**
3. Ignition OFF, connect the X2 harness connector and disconnect the X3 harness connector at the K39 Liftgate Control Module.
4. Test for infinite resistance between each control circuit terminal listed below and ground:
 - Control circuit terminal 1 X3
 - Control circuit terminal 2 X3
 - If less than infinite resistance, replace the M17 Liftgate Motor Assembly.

- **Go to next step: If infinite resistance.**

5. Ignition ON

6. Test for less than 1 V between each control circuit terminal listed below and ground:

- Control circuit terminal 1 X3
- Control circuit terminal 2 X3
- **If 1 V or greater, replace the M17 Liftgate Motor Assembly**
- **Go to next step: If less than 1 V**

7. Test for less than 10 Ω between the control circuit terminal 1 and the control circuit terminal 2.

- **If 10 Ω or greater, replace the M17 Liftgate Motor Assembly**
- **Go to next step: If less than 10 Ω**

8. Replace the K39 Liftgate Control Module.

Repair Instructions

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

- [Liftgate Power Assist Actuator Replacement](#)
- [Control Module References](#) for the liftgate control module replacement, programming and setup

DTC B396C: LIFTGATE MODE SWITCH CIRCUIT PERFORMANCE SIGNAL INVALID

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 B396C 08

Liftgate Mode Switch Circuit Performance Signal Invalid

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Off/ 3/4 Open/Max Signal	B396C 08	B396C 08	B396C 08	-
Ground	-	1	-	-
1. The liftgate works only in the full open mode using the liftgate handle				

Circuit/System Description

The interior liftgate rotary control switch contains 3 resistors which are in series for the liftgate mode, depending upon which position is selected will determine which combination of resistors are used. The liftgate module monitors the voltage level in the liftgate mode signal circuit, as each mode is selected, the voltage within the signal circuit incrementally drops. It is this method the liftgate module will determine if mode switch is in the manual mode, garage mode or the maximum open mode.

Conditions for Running the DTC

The system voltage is 9 - 16 V.

Conditions for Setting the DTC

The liftgate control module detects an out of range condition in the mode switch signal circuit.

Action Taken When the DTC Sets

The manual mode function and the garage mode function will be inoperative.

Conditions for Clearing the DTC

- The DTC will be current for as long as the fault is present.
- When the fault is no longer present, the DTC will be a history DTC.
- A history DTC will clear after 50 ignition cycles.

Reference Information

Schematic Reference

Liftgate Wiring Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Description and Operation

Liftgate Description and Operation

Electrical Information Reference

- [Testing for Intermittent Conditions and Poor Connections](#)
- [Circuit Testing](#)
- [Wiring Repairs](#)
- [Connector Repairs](#)

Scan Tool Reference

[Control Module References](#) for scan tool information

Circuit/System Verification

1. Ignition ON.
2. Verify the scan tool Liftgate Mode Switch is between 125 counts and 350 counts and changes to 245 counts while rotating the S45B Liftgate Control Switch-Interior.
 - **If not between 125 counts and 350 counts or does not change**

Refer to Circuit/System Testing
 - **Go to next step: If between 125 counts and 350 counts and changes**
3. All OK.

Circuit/System Testing

1. Ignition OFF and all vehicle systems OFF, disconnect the harness connector at the S45B Liftgate Control Switch-Interior, ignition ON.
2. Verify the scan tool Liftgate Mode Switch parameter is greater than 300 counts.
 - **If 300 counts or less**
 1. Ignition OFF, disconnect the harness connector at the K39 Liftgate Control Module.
 2. Test for infinite resistance between the signal circuit terminal 3 and ground
 - If less than infinite resistance, repair the short to ground on the circuit.
 - If infinite resistance, replace the K39 Liftgate Control Module
 - **Go to next step: If greater than 300 counts**
3. Install a 3 A fused jumper wire between the signal circuit terminal 3 and the ground circuit terminal 1.
4. Verify the scan tool Liftgate Mode Switch parameter is less than 5 counts.
 - **If 5 counts or greater**
 1. Ignition OFF, disconnect the harness connector at the K39 Liftgate Control Module.

2. 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 K39 Liftgate Control Module

• **Go to next step: If less than 5 counts**

5. Test or replace the S45B Liftgate Control Switch-Interior.

Repair Instructions

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

- [Liftgate Release Switch Replacement - Interior \(Equinox\)](#)[Liftgate Release Switch Replacement - Interior \(Terrain\)](#)
- [Control Module References](#) for the liftgate control module replacement, programming and setup

DTC B396D: FRONT LIFTGATE ACTUATOR SWITCH CIRCUIT

Diagnostic Instructions

- Perform the Diagnostic System Check prior to using this diagnostic procedure: [Diagnostic System Check - Vehicle](#)
- Review the description of Strategy Based Diagnosis: [Strategy Based Diagnosis](#)
- An overview of each diagnostic category can be found here: [Diagnostic Procedure Instructions](#)

DTC Descriptor

DTC B396D

Front Liftgate Actuator Switch Circuit

Symptom Byte Information:

[Symptom Byte List](#)

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Signal	B396D 02	1	1	-
Ground	-	2	-	-
1. Liftgate Open/Close = Disabled @S45B Liftgate Control Switch - Interior 2. S45B Liftgate Control Switch - Interior = Inoperative				

Circuit/System Description

For an overview of the component/system, refer to: [Liftgate Description and Operation](#)

Circuit	Description
Signal	The control module input circuit has an internal resistance connected to 12 V.
Ground	Chassis Ground

Component	Description
S45B Liftgate Control Switch - Interior	• The switch has a normally open contact. • When the switch is activated, the signal circuit to the control module is grounded.

Component	Description
K39 Liftgate Control Module	The control module K39 controls the liftgate motor function depending on inputs from a variety of sensors, switches and serial data information from other control modules.

Conditions for Running the DTC

Ignition - On / Vehicle - In Service Mode

Conditions for Setting the DTC

Signal circuit = Short to Ground - For greater than 60 s

Actions Taken When the DTC Sets

S45B Liftgate Control Switch - Interior = Disabled

Conditions for Clearing the DTC

- A current DTC will clear when the diagnostic runs and passes.
- A history DTC will clear after 50 consecutive malfunction-free ignition cycles.

Reference Information

Schematic Reference

Liftgate Wiring Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Component View Reference

Door Component Views

Electrical Information Reference

- Circuit Testing
- Connector Repairs
- Relay Replacement (Attached to Wire Harness) Relay Replacement (Within an Electrical Center)
- Testing for Intermittent Conditions and Poor Connections
- Wiring Repairs

Scan Tool Reference

Control Module References

Circuit/System Verification

1. Ignition - On / Vehicle - In Service Mode
2. Operate the component: S45B Liftgate Control Switch - Interior - Not Pressed

Verify the scan tool parameter: Liftgate Front Control Switch = Inactive

- **If not the specified state**

Refer to: Circuit/System Testing

- **Go to next step: If the specified state**

3. Operate the component: S45B Liftgate Control Switch - Interior - Pressed

Verify the scan tool parameter: Liftgate Front Control Switch = Active

- **If not the specified state**

Refer to: Circuit/System Testing

- **Go to next step: If the specified state**

4. All OK.

Circuit/System Testing

NOTE: It may take up to 2 min for all vehicle systems to power down before an accurate ground or low reference circuit continuity test can be performed.

1. Ignition/Vehicle & All vehicle systems - Off

2. Disconnect the electrical connector: S45B Liftgate Control Switch - Interior

3. Test for less than 10 ohms between the test points: Ground circuit terminal 1 & Ground

- **If 10 ohms or greater**

1. Ground Connection - Disconnect

2. Test for less than 2 ohms between the test points: Ground circuit terminal 1 @Component harness & Ground Connection

- If 2 ohms or greater - Repair the open/high resistance in the circuit.
- If less than 2 ohms - Repair the open/high resistance in the ground connection.

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

4. Ignition - On / Vehicle - In Service Mode

5. Verify the scan tool parameter: Liftgate Front Control Switch = Inactive

- **If not the specified state**

1. Ignition/Vehicle - Off

2. Disconnect the electrical connector: K39 Liftgate Control Module

3. Test for infinite resistance between the test points: Signal circuit terminal 4 @Component harness & Ground

- If less than infinite resistance - Repair the short to ground on the circuit.
- If infinite resistance - Replace the component: K39 Liftgate Control Module

- **Go to next step: If the specified state**

6. Connect a 3 A fused jumper wire between the test points: Signal circuit terminal 4 & Ground circuit terminal 1

7. Verify the scan tool parameter: Liftgate Front Control Switch = Active

- **If not the specified state**

1. Ignition/Vehicle - Off & Remove - Jumper wire(s)

2. Disconnect the electrical connector: K39 Liftgate Control Module

3. Ignition - On / Vehicle - In Service Mode

4. Test for less than 1 V between the test points: Signal circuit terminal 4 @Component harness & Ground

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

5. Ignition/Vehicle - Off

6. Test for less than 2 ohms between the test points: Signal circuit terminal 4 @Component harness & Signal circuit terminal 12 X1 @Control module harness

- If 2 ohms or greater - Repair the open/high resistance in the circuit.
- If less than 2 ohms - Replace the component: K39 Liftgate Control Module

- **Go to next step: If the specified state**

8. Test or replace the component: S45B Liftgate Control Switch - Interior

Component Testing

1. Ignition/Vehicle - Off
2. Disconnect the electrical connector: S45B Liftgate Control Switch - Interior
3. Test for infinite resistance between the test points: Signal terminal 4 & Ground terminal 1 - Not Pressed
 - **If less than infinite resistance**
Replace the component: S45B Liftgate Control Switch - Interior
 - **Go to next step: If infinite resistance**
4. Test for less than 3 ohms between the test points: Signal terminal 4 & Ground terminal 1 - Pressed
 - **If 3 ohms or greater**
Replace the component: S45B Liftgate Control Switch - Interior
 - **Go to next step: If less than 3 ohms**
5. All OK.

Repair Instructions

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

- [Liftgate Release Switch Replacement - Interior \(Equinox\)](#)[Liftgate Release Switch Replacement - Interior \(Terrain\)](#)
- For control module replacement, programming, and setup refer to: [Control Module References](#)

DTC B396E: REAR LIFTGATE ACTUATOR SWITCH CIRCUIT

Diagnostic Instructions

- Perform the Diagnostic System Check prior to using this diagnostic procedure: [Diagnostic System Check - Vehicle](#)
- Review the description of Strategy Based Diagnosis: [Strategy Based Diagnosis](#)
- An overview of each diagnostic category can be found here: [Diagnostic Procedure Instructions](#)

DTC Descriptor

DTC B396E

Rear Liftgate Actuator Switch Circuit

Symptom Byte Information: [Symptom Byte List](#)

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Signal	B396E 02	1	1	-
Low Reference	-	1	-	-
1. Liftgate Close Switch = Disabled				

Circuit/System Description

For an overview of the component/system, refer to: [Liftgate Description and Operation](#)

Circuit	Description
Signal	The control module input circuit has an internal resistance connected to 12 V.

Circuit	Description
Low Reference	Grounded through the control module.

Component	Description
B70 Liftgate Close Switch	When the switch is activated, the signal circuit to the control module is grounded.
K39 Liftgate Control Module	The control module K39 controls the liftgate motor function depending on inputs from a variety of sensors, switches and serial data information from other control modules.

Conditions for Running the DTC

Ignition - On / Vehicle - In Service Mode

Conditions for Setting the DTC

Signal circuit = Short to Ground For greater than 60 s

Actions Taken When the DTC Sets

B70 Liftgate Close Switch = Disabled

Conditions for Clearing the DTC

- A current DTC will clear when the diagnostic runs and passes.
- A history DTC will clear after 50 consecutive malfunction-free ignition cycles.

Reference Information

Schematic Reference

Liftgate Wiring Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Component View Reference

Luggage Compartment/Rear of Vehicle Component Views

Electrical Information Reference

- [Circuit Testing](#)
- [Connector Repairs](#)
- [Testing for Intermittent Conditions and Poor Connections](#)
- [Wiring Repairs](#)

Scan Tool Reference

Control Module References

Circuit/System Verification

1. Ignition - On / Vehicle - In Service Mode
2. Verify the scan tool parameter: Liftgate Rear Close Switch = Inactive
 - **If not the specified state**
Refer to: Circuit/System Testing
 - **Go to next step: If the specified state**

3. Operate the component: B70 Liftgate Close Switch - Pressed

Verify the scan tool parameter: Liftgate Rear Close Switch = Active

- **If not the specified state**

Refer to: Circuit/System Testing

- **Go to next step: If the specified state**

4. All OK.

Circuit/System Testing

NOTE: It may take up to 2 min for all vehicle systems to power down before an accurate ground or low reference circuit continuity test can be performed.

1. Ignition/Vehicle & All vehicle systems - Off

2. Disconnect the electrical connector: B70 Liftgate Close Switch

3. Test for less than 10 ohms between the test points: Low Reference terminal 3 & Ground

- **If 10 ohms or greater**

1. Disconnect the electrical connector: K39 Liftgate Control Module

2. Test for less than 2 ohms between the test points: Low Reference terminal 3 @Component harness & Terminal 16 X1 @Control module harness

- If 2 ohms or greater - Repair the open/high resistance in the circuit.
- If less than 2 ohms - Replace the component: K39 Liftgate Control Module

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

4. Ignition - On / Vehicle - In Service Mode

5. Verify the scan tool parameter: Liftgate Rear Close Switch = Inactive

- **If not the specified state**

1. Ignition/Vehicle - Off

2. Disconnect the electrical connector: K39 Liftgate Control Module

3. Test for infinite resistance between the test points: Signal circuit terminal 4 @Component harness & Ground

- If less than infinite resistance - Repair the short to ground on the circuit.
- If infinite resistance - Replace the component: K39 Liftgate Control Module

- **Go to next step: If the specified state**

6. Connect a 3 A fused jumper wire between the test points: Signal circuit terminal 4 & Low Reference terminal 3

7. Verify the scan tool parameter: Liftgate Rear Close Switch = Active

- **If not the specified state**

1. Ignition/Vehicle - Off & Remove - Jumper wire(s)

2. Disconnect the electrical connector: K39 Liftgate Control Module

3. Ignition - On / Vehicle - In Service Mode

4. Test for less than 1 V between the test points: Signal circuit terminal 4 @Component harness & Ground

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

5. Ignition/Vehicle - Off

6. Test for less than 2 ohms between the test points: Signal circuit terminal 4 @Component harness & Terminal 3 X1 @Control module harness

- If 2 ohms or greater - Repair the open/high resistance in the circuit.
- If less than 2 ohms - Replace the component: K39 Liftgate Control Module

- **Go to next step: If the specified state**

8. Test or replace the component: B70 Liftgate Close Switch

Component Testing

1. Ignition/Vehicle - Off
2. Disconnect the electrical connector: B70 Liftgate Close Switch
3. Test for infinite resistance between the test points: Signal terminal 4 & Low Reference terminal 3 - Switch - Not Pressed
 - **If less than infinite resistance**

Replace the component: B70 Liftgate Close Switch
 - **Go to next step: If infinite resistance**
4. Test for less than 3 ohms between the test points: Signal terminal 4 & Low Reference terminal 3 - Switch - Pressed
 - **If 3 ohms or greater**

Replace the component: B70 Liftgate Close Switch
 - **Go to next step: If less than 3 ohms**
5. All OK.

Repair Instructions

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

- [Liftgate Close Switch Replacement](#)
- For control module replacement, programming, and setup refer to: [Control Module References](#)

SYMPTOMS - VEHICLE ACCESS

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 the following system descriptions:
 - [Door Ajar Indicator Description and Operation](#)
 - [Rear Hatch/Gate Description and Operation](#)
 - [Mechanical System Description and Operation](#)
 - [Liftgate Description and Operation](#)
 - [Power Door Locks Description and Operation](#)
 - [Liftgate Ajar Indicator Description and Operation](#)

Visual/Physical Inspection

- Inspect for aftermarket devices which could 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 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 a symptom diagnostic procedure from the following list in order to diagnose the symptom:

- [Door Lock Indicator Malfunction](#)
- [Exterior Door Handle Switch Malfunction](#)
- [Liftgate Handsfree Sensor Malfunction](#)
- [Liftgate Latch Release/Cinch Malfunction](#)
- [Liftgate Release Malfunction \(With TB5\)](#)[Liftgate Release Malfunction \(Without TB5\)](#)
- [Liftgate Ajar Indicator Malfunction \(Without TB5\)](#)[Liftgate Ajar Indicator Malfunction \(With TB5\)](#)
- [Door Ajar Indicator Malfunction](#)
- [Power Door Lock Key Cylinder Switches Malfunction](#)
- [Power Door Locks Malfunction](#)
- [Power Liftgate Malfunction](#)
- [Door Will Not Open/Close, Door Binding, or Locks, Handles, or Cylinders Do Not Function](#)

DOOR LOCK INDICATOR MALFUNCTION

Diagnostic Instructions

- Perform the Diagnostic System Check prior to using this diagnostic procedure: [Diagnostic System Check - Vehicle](#)
- Review the description of Strategy Based Diagnosis: [Strategy Based Diagnosis](#)
- An overview of each diagnostic category can be found here: [Diagnostic Procedure Instructions](#)

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Control - LED Backlight Dimming	B2625 02	2	-	-
Control - Terminal 4 @ A23D Door Latch Assembly - Driver	1	2	-	-
Control - Terminal 2 @ A23D Door Latch Assembly - Passenger	1	2	-	-
1. P8D Door Lock Indicator - Driver = Always On 2. P8D Door Lock Indicator - Driver = Always Off 3. P8P Door Lock Indicator - Passenger = Always On 4. P8P Door Lock Indicator - Passenger = Always Off				

Circuit/System Description

For an overview of the component/system, refer to: [Power Door Locks Description and Operation](#)

Circuit	Description
ControlAll Doors Lock	The output circuit is switched to ground to activate the component.

Component	Description
P8D Door Lock Indicator - Driver	The door lock indicator is illuminated when the doors are locked or dead locked.
P8P Door Lock Indicator - Passenger	The door lock indicator is illuminated when the doors are locked or dead locked.

Reference Information

- [Door Lock/Indicator Wiring Schematics](#)
- [Interior Lights Dimming Wiring Schematics](#)

Connector End View Reference

[COMPONENT CONNECTOR END VIEWS - INDEX](#)

Component View Reference

[Door Component Views](#)

Electrical Information Reference

- [Circuit Testing](#)
- [Connector Repairs](#)
- [Testing for Intermittent Conditions and Poor Connections](#)
- [Wiring Repairs](#)
- [Relay Replacement \(Attached to Wire Harness\)](#) [Relay Replacement \(Within an Electrical Center\)](#)

Scan Tool Reference

[Control Module References](#)

[Circuit/System Verification](#)

1. Ignition - On / Vehicle - In Service Mode
2. Operate the component: S13D Door Lock Switch - Driver - Lock & Unlock

Verify the component operates in both directions: A23D Door Latch Assembly - Driver & A23P Door Latch Assembly - Passenger

- **If the component does not work as specified**

Refer to: [Power Door Locks Malfunction](#)

- **Go to next step: If all functions work properly**

3. Operate the component: Driver Door - Open

Verify the scan tool parameter: Driver Door Ajar Switch = Active

- **If not the specified state**

Refer to: [Door Ajar Indicator Malfunction](#)

- **Go to next step: If the specified state**

4. Operate the component: Driver Door - Closed

Verify the scan tool parameter: Driver Door Ajar Switch = Inactive

- **If not the specified state**

Refer to: [Door Ajar Indicator Malfunction](#)

- **Go to next step: If the specified state**

5. Operate the component: Passenger Door - Open

Verify the scan tool parameter: Passenger Door Ajar Switch = Active

- **If not the specified state**

Refer to: [Door Ajar Indicator Malfunction](#)

- **Go to next step: If the specified state**

6. Operate the component: Passenger Door - Closed

Verify the scan tool parameter: Passenger Door Ajar Switch = Inactive

- **If not the specified state**

Refer to: [Door Ajar Indicator Malfunction](#)

- **Go to next step: If the specified state**

7. Operate the component: S13D Door Lock Switch - Driver - Lock & Unlock

Verify the component turns On and Off: P8D Door Lock Indicator - Driver & P8P Door Lock Indicator - Passenger

- **If the component does not turn On and Off - P8D Door Lock Indicator - Driver**

Refer to: Circuit/System Testing - Test 1

- **If the component does not turn On and Off**

Refer to: Circuit/System Testing - Test 2

- **If the component is always Off**

Refer to: Circuit/System Testing - Test 2

- **Go to next step: If the component works as specified: P8D Door Lock Indicator - Driver & P8P Door Lock Indicator - Passenger**

8. All OK.

Circuit/System Testing

Test 1

1. Ignition/Vehicle & All vehicle systems - Off

2. Disconnect the electrical connector: S13D Door Lock Switch - Driver

3. Ignition $\tilde{A}, \hat{A}$ » On / Vehicle $\tilde{A}, \hat{A}$ » In Service Mode

4. Verify a test lamp turns On between the test points: Control circuit terminal 5 & Ground

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

1. Ignition/Vehicle - Off & Remove - Test lamp

2. Disconnect the electrical connector: A23D Door Latch Assembly - Driver

3. Test for less than 2 ohms between the test points: Control circuit terminal 6 @Component harness & Control circuit terminal 4 @A23D Door Latch Assembly - Driver

- If 2 ohms or greater - Repair the open/high resistance in the circuit.

- If less than 2 ohms - Replace the component: A23D Door Latch Assembly - Driver

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

1. Ignition/Vehicle - Off & Remove - Test lamp

2. Disconnect the electrical connector: A23D Door Latch Assembly - Driver

3. Test for infinite resistance between the test points: Control circuit terminal 6 @Component harness & Ground

- If less than infinite resistance - Repair the short to ground on the circuit.

- If infinite resistance - Replace the component: A23D Door Latch Assembly - Driver

- **Go to next step: If the test lamp turns On and Off**

5. Test or replace the component: S13D Door Lock Switch - Driver

Test 2

1. Ignition/Vehicle & All vehicle systems - Off
2. Disconnect the electrical connector: S13P Door Lock Switch - Passenger
3. Ignition $\tilde{A}, \hat{A}$ On / Vehicle $\tilde{A}, \hat{A}$ In Service Mode
4. Verify a test lamp turns On between the test points: Control circuit terminal 5 & Ground
 - **If the test lamp is always Off**
 1. Ignition/Vehicle - Off & Remove - Test lamp
 2. Disconnect the electrical connector: A23P Door Latch Assembly - Passenger
 3. Test for less than 2 ohms between the test points: Control circuit terminal 6 @Component harness & Control circuit terminal 2 @A23P Door Latch Assembly - Passenger
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Replace the component: A23P Door Latch Assembly - Passenger
 - **If the test lamp is always On**
 1. Ignition/Vehicle - Off & Remove - Test lamp
 2. Disconnect the electrical connector: A23P Door Latch Assembly - Passenger
 3. Test for infinite resistance between the test points: Control circuit terminal 6 @Component harness & Ground
 - If less than infinite resistance - Repair the short to ground on the circuit.
 - If infinite resistance - Replace the component: A23P Door Latch Assembly - Passenger
 - **Go to next step: If the test lamp turns On and Off**
5. Test or replace the component: S13P Door Lock Switch - Passenger

Test 3

1. Ignition/Vehicle & All vehicle systems - Off
2. Disconnect the electrical connector: S13D Door Lock Switch - Passenger
3. Ignition $\tilde{A}, \hat{A}$ On / Vehicle $\tilde{A}, \hat{A}$ In Service Mode
4. Verify a test lamp turns On between the test points: Control circuit terminal 5 & Ground
 - **If the test lamp does not turn On**
 1. Ignition/Vehicle - Off & Remove - Test lamp
 2. Disconnect the electrical connector: K9 Body Control Module
 3. Test for infinite resistance between the test points: Control circuit terminal 5 X1 @Control module harness & Ground
 - If less than infinite resistance - Repair the short to ground on the circuit.
 - If infinite resistance
 4. Test for less than 2 ohms between the test points: Control circuit terminal 5 @Control module harness & Control circuit terminal 5 X1 @S13D Door Lock Switch - Driver & S13P Door Lock Switch - Passenger
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Refer to: [**DTC B2625**](#)
 - **Go to next step: If the test lamp is ON**
5. Test or replace the component: S13D Door Lock Switch - Driver & S13P Door Lock Switch - Passenger

Repair Instructions

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

- [**Door Lock Switch Replacement - Driver Side \(Equinox\)Door Lock Switch Replacement - Driver Side \(Terrain\)**](#)
- [**Door Lock Switch Replacement - Passenger Front \(Equinox\)Door Lock Switch Replacement - Passenger Front \(Terrain\)**](#)

- [Front Side Door Latch Replacement](#)
- For control module replacement, programming, and setup refer to: [Control Module References](#)

EXTERIOR DOOR HANDLE SWITCH MALFUNCTION

Diagnostic Instructions

- Perform the Diagnostic System Check prior to using this diagnostic procedure: [Diagnostic System Check - Vehicle](#)
- Review the description of Strategy Based Diagnosis: [Strategy Based Diagnosis](#)
- An overview of each diagnostic category can be found here: [Diagnostic Procedure Instructions](#)

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Signal - B27D Door Handle Switch - Driver Exterior	B3849 02	1	1	-
Signal - B27P Door Handle Switch - Passenger Exterior	B1474 02	2	2	-
Signal - B27LR Door Handle Switch - Left Rear Exterior	B1534 02	3	3	-
Signal - B27RR Door Handle Switch - Right Rear Exterior	B1535 02	4	4	-
Ground - B27D Door Handle Switch - Driver Exterior	-	1	-	-
Ground - B27P Door Handle Switch - Passenger Exterior	-	2	-	-
Ground - B27LR Door Handle Switch - Left Rear Exterior	-	3	-	-
Ground - B27RR Door Handle Switch - Right Rear Exterior	-	4	-	-
1. B27D Door Handle Switch - Driver Exterior = Disabled 2. B27P Door Handle Switch - Passenger Exterior = Disabled 3. B27LR Door Handle Switch - Left Rear Exterior = Disabled 4. B27RR Door Handle Switch - Right Rear Exterior = Disabled				

Circuit/System Description

For an overview of the component/system, refer to: [Power Door Locks Description and Operation](#)

Circuit	Description
Signal	The control module input circuit has an internal resistance connected to 12 V.
Ground	Chassis Ground

Component	Description
B27 Door Handle Switch	The switch has a normally open contact. When the switch is activated, the signal circuit to the control module is grounded.
K84 Keyless Entry Control Module	The keyless entry control module communicates via serial data with the body control module and the auxiliary body control module.

Reference Information

Door Lock/Indicator Wiring Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Component View Reference

Door Component Views

Electrical Information Reference

- [Circuit Testing](#)
- [Connector Repairs](#)
- [Testing for Intermittent Conditions and Poor Connections](#)
- [Wiring Repairs](#)

Scan Tool Reference

Control Module References

Circuit/System Verification

1. Ignition - On / Vehicle - In Service Mode

2. Verify the scan tool parameter:

- Exterior Driver Door Handle Switch = Inactive
- Exterior Passenger Door Handle Switch = Inactive
- Exterior Left Rear Door Handle Switch = Inactive
- Exterior Right Rear Door Handle Switch = Inactive
- **If not the specified state**

Refer to: Circuit/System Testing

- **Go to next step: If the specified state**

3. Operate the component: B27D Door Handle Switch - Driver Exterior - Pressed

Verify the scan tool parameter: Exterior Driver Door Handle Switch = Active

- **If not the specified state**

Refer to: Circuit/System Testing

- **Go to next step: If the specified state**

4. Operate the component: B27P Door Handle Switch - Passenger Exterior - Pressed

Verify the scan tool parameter: Exterior Passenger Door Handle Switch = Active

- **If not the specified state**

Refer to: Circuit/System Testing

- **Go to next step: If the specified state**

5. Operate the component: B27LR Door Handle Switch - Left Rear Exterior - Pressed

Verify the scan tool parameter: Exterior Left Rear Door Handle Switch = Active

- **If not the specified state**

Refer to: Circuit/System Testing

- **Go to next step: If the specified state**

6. Operate the component: B27RR Door Handle Switch - Right Rear Exterior - Pressed

Verify the scan tool parameter: Exterior Right Rear Door Handle Switch = Active

- **If not the specified state**

Refer to: Circuit/System Testing

- **Go to next step: If the specified state**

7. All OK.

Circuit/System Testing

NOTE: It may take up to 2 min for all vehicle systems to power down before an accurate ground or low reference circuit continuity test can be performed.

1. Ignition/Vehicle & All vehicle systems - Off

2. Disconnect the appropriate electrical connector: A24 Door Handle Assembly

3. Test for less than 10 ohms between the test points: Ground circuit terminal 5 & Ground

- **If 10 ohms or greater**

1. Ground Connection - Disconnect

2. Test for less than 2 ohms between the test points: Ground circuit terminal 5 @Component harness & Ground Connection

- If 2 ohms or greater - Repair the open/high resistance in the circuit.
- If less than 2 ohms - Repair the open/high resistance in the ground connection.

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

4. Ignition - On / Vehicle - In Service Mode

5. Verify the scan tool parameter: Exterior Door Handle Switch Circuit = Inactive

- **If not the specified state**

1. Ignition/Vehicle - Off

2. Disconnect the electrical connector: X2 @K84 Keyless Entry Control Module

3. Test for infinite resistance between the test points: Signal circuit terminal 1 @Component harness & Ground

- If less than infinite resistance - Repair the short to ground on the circuit.
- If infinite resistance - Replace the component: K84 Keyless Entry Control Module

- **Go to next step: If the specified state**

6. Connect a 3 A fused jumper wire between the test points: Signal circuit terminal 1 & Ground circuit terminal 5

7. Verify the scan tool parameter: Exterior Door Handle Switch Circuit = Active

- **If not the specified state**

1. Ignition/Vehicle - Off & Remove - Jumper wire(s)

2. Disconnect the electrical connector: X2 @K84 Keyless Entry Control Module

3. Ignition - On / Vehicle - In Service Mode

4. Test for less than 1 V between the test points: Signal circuit terminal 1 @Component harness & Ground

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

5. Ignition/Vehicle - Off

6. Test for less than 2 ohms between the test points:

- Signal circuit terminal 1 @B27D Door Handle Switch - Driver Exterior & Terminal 12 X2 @Control module harness

- Signal circuit terminal 1 @B27P Door Handle Switch - Passenger Exterior & Terminal 11 X2 @Control module harness
 - Signal circuit terminal 1 @B27LR Door Handle Switch - Left Rear Exterior & Terminal 2 X2 @Control module harness
 - Signal circuit terminal 1 @B27RR Door Handle Switch - Right Rear Exterior & Terminal 1 X2 @Control module harness
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Replace the component: K84 Keyless Entry Control Module
 - **Go to next step: If the specified state**
8. Test or replace the component: A24 Door Handle Assembly

Component Testing

1. Ignition/Vehicle - Off
2. Disconnect the appropriate electrical connector: A24 Door Handle Assembly
3. Test for infinite resistance between the test points: Signal terminal 1 & Ground terminal 5 - Not Pressed
 - **If less than infinite resistance**
Replace the component: A24 Door Handle Assembly
 - **Go to next step: If infinite resistance**
4. Test for less than 3 ohms between the test points: Signal terminal 1 & Ground terminal 5 - Pressed
 - **If 3 ohms or greater**
Replace the component: A24 Door Handle Assembly
 - **Go to next step: If less than 3 ohms**
5. All OK.

Repair Instructions

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

- [Front Side Door Outside Handle Replacement](#)
- [Rear Side Door Outside Handle Replacement](#)
- For control module replacement, programming, and setup refer to: [Control Module References](#)

LIFTGATE HANDSFREE SENSOR 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 B323A 08

Upper Hands Free Sensor Signal Invalid

DTC B323B 08

Lower Hands Free Sensor Signal Invalid

DTC B323C 39

Hands Free Liftgate Sensor Module Internal Hardware Failure

DTC B323C 42

Hands Free Liftgate Sensor Module Invalid Calibration Set

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Liftgate Hands-Free Control Module B+	U1510 00	U1510 00	-	-
Upper Hands Free Sensor Signal	B232A 08	B232A 08	B232A 08	B232A 08
Lower Hands Free Sensor Signal	B232A 08	B232A 08	B232A 08	B232B 08
Liftgate Hands-Free Control Module Ground	-	U1510 00	-	-

Circuit/System Description

The power liftgate has a feature that detects the motion of a foot under the rear fascia, this allows the operator to open the liftgate when his or her hands are full of packages. As an indicator that the action has been properly preformed, the liftgate hands-free sensor control module will send a serial data message to the liftgate control module to command the liftgate to release and power open and the liftgate control module will send a serial data message to the body control module to command the tail lights to flash 3 times

Conditions for Running the DTC

Battery voltage is between 9 - 16 V.

Conditions for Setting the DTC

B323A 08

- The liftgate control module has received a serial data message that an invalid signal from the upper hands free sensor has been detected by the hands-free liftgate sensor control module.
- The condition must be present for greater than 30 seconds

B323B 08

- The liftgate control module has received a serial data message that an invalid signal from the lower hands free sensor has been detected by the hands-free liftgate sensor control module.
- The condition must be present for greater than 30 seconds.

B323C 39

An internal malfunction has been detected by the liftgate control module

B323C 42

The liftgate control module detects the calibration files in the hands-free liftgate sensor control module does not match the calibration files contained within the liftgate control module.

Action Taken When the DTC Sets

The hands-free feature will be inoperative

Conditions for Clearing the DTC

- The DTC will be current for as long as the fault is present.
- When the fault is no longer present, the DTC will be a history DTC.
- A history DTC will clear after 50 ignition cycles.

Diagnostic Aids

The hands-free function will only be allowed if certain operating criteria are met. Any of the following may cause the hands-free system not to function:

- The keyless entry transmitter is not within range
- The kicking motion is incorrectly performed
- The interior liftgate control switch has not been set to the 3/4 or Max position
- A loose or misaligned hands-free sensor

Reference Information

Schematic Reference

Liftgate Wiring Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Description and Operation

Liftgate 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.

NOTE: The keyless entry transmitter must be within 1 meter (3 feet) of the liftgate

2. Verify the tail lights flash 3 times and the power liftgate opens while performing a kicking motion behind and under the rear fascia.

- **If the tail lamps flash but the liftgate does not open**

Refer to Power Liftgate Malfunction

- **If the tail lamps do not flash**

Refer to Circuit/System Testing.

- **Go to next step: If the tail lamps flash and the liftgate does open**

3. All OK.

Circuit/System Testing

1. Ignition OFF, disconnect the X2 harness connector at the K171 Hands-Free Liftgate Sensor Control Module.

2. Test for less than 1 Ω between the B275A Hands-Free Liftgate Sensor - Upper signal circuit terminal 1 and the signal circuit terminal 2.

- **If 1 Ω or greater**

- Replace the B275A Hands-Free Liftgate Sensor - Upper
 - **Go to next step: If less than 1 Ω**
3. Ignition OFF, disconnect the X3 harness connector at the K171 Hands-Free Liftgate Sensor Control Module.
 4. Test for less than 1 Ω between the B275B Hands-Free Liftgate Sensor-Lower signal circuit terminal 1 and the signal circuit terminal 2.
 - **If 1 Ω or greater**
 - Replace the B275B Hands-Free Liftgate Sensor-Lower
 - **Go to next step: If less than 1 Ω**
 5. If all circuits test normal, replace the K171 Hands-Free Liftgate Sensor Control Module.

Repair Instructions

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

- [Rear Closure Hands Free Sensor Replacement](#)
- [Control Module References](#) for liftgate hands-free sensor control module replacement, programming and setup

LIFTGATE LATCH RELEASE/CINCH 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 B2495

Liftgate Latch Control Circuit

DTC B24A0

Liftgate Latch Control Circuit 2

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

Diagnostic Fault Information

Circuit	Short to Ground	Open	High Resistance	Short to Voltage	Signal Performance
Liftgate Latch Release Control	B24A0 02	B24A0 05	B24A0 08	B24A0 01	-
Cinch Latch Motor Open Control	B2495 02	B2495 04, B24A0 05	B2495 04, B24A0 05	B2495 01	-
Cinch Latch Motor Close Control	B2495 02	B2495 04, B24A0 05	B2495 04, B24A0 05	B2495 01	-

Circuit/System Description

The liftgate control module controls the liftgate release motor by supplying 12V to the release control circuit. The motor control circuits are monitored by the liftgate control module prior to activation for a high or low condition and during motor operation for an insufficient current flow condition.

The ratchet, pawl, and sector switches are part of the liftgate latch assembly and are used by the liftgate control module to determine the state of the latch during the process of latching or unlatching. The ratchet and pawl switches will be inactive when the primary and secondary latches are latched, and the sector switch will be active during the power cinch function. Each of the latch switch signal circuits are supplied battery voltage through a resistor and monitored within the liftgate control module. When the

switch contacts close the signal circuit goes low and the liftgate control module determines the switch to be active.

The latch motor is a bi-directional motor and cinch or unlatch operation is the result of the direction of the motor rotation. The liftgate control module controls the latch motor through the control circuits by supplying power and ground in the appropriate polarity. The motor control circuits are monitored by the liftgate control module prior to activation for a high or low condition and during motor operation for an insufficient current flow condition.

Conditions for Running the DTC

The system voltage is 9 - 16 V.

Conditions for Setting the DTC

B2495 01

The liftgate control module detects a short to battery in the liftgate latch motor cinch control circuit.

B2495 02

The liftgate control module detects a short to ground in the liftgate latch motor cinch control circuit.

B2495 04, B24A0 05

The liftgate control module detects an open/high resistance in the liftgate latch motor cinch control circuit when cinching the liftgate to the closed position.

B24A0 01

The liftgate control module detects a short to battery in the liftgate latch motor release control circuit while commanding the liftgate latch to release.

B24A0 02

The liftgate control module detects a short to ground in the liftgate latch motor release control circuit while commanding the liftgate latch to release.

B24A0 08

The liftgate control module detects high resistance in the liftgate latch motor release control circuit while commanding the liftgate latch to release.

Action Taken When the DTC Sets

B24A0 01, B24A0 02, B24A0 08

The liftgate will not release and will be inoperative in the power and manual modes.

B2495 01, B2495 02, B2495 04, B24A0 05

- Manual Mode: Liftgate will not cinch closed.
- Power Mode: The liftgate will not release and will be inoperative.

Conditions for Clearing the DTC

- The DTC will be current for as long as the fault is present.
- When the fault is no longer present, the DTC will be a history DTC.
- A history DTC will clear after 50 ignition cycles.

Diagnostic Aids

- If the liftgate will not release from the closed position, refer to [Opening the Liftgate Without Electrical Power](#) for the appropriate procedure.

- Whenever the liftgate control module loses power or is disconnected, the ignition must be cycled OFF then ON in order to reactivate the liftgate control module.

Reference Information

Schematic Reference

Liftgate Wiring Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Description and Operation

Liftgate Description and Operation

Electrical Information Reference

- [Testing for Intermittent Conditions and Poor Connections](#)
- [Circuit Testing](#)
- [Wiring Repairs](#)
- [Connector Repairs](#)

Scan Tool Reference

[Control Module References](#) for scan tool information

Circuit/System Verification

1. Ignition ON.
2. Verify the A23C Liftgate Latch Assembly releases the liftgate when pressing the S46B Liftgate Unlatch Switch.
 - **If the A23C Liftgate Latch Assembly does not release**
Refer to Circuit/System Testing - Liftgate Release Inoperative.
 - **Go to next step: If the A23C Liftgate Latch Assembly does release**
3. Verify the A23C Liftgate Latch Assembly cinches the liftgate to the fully closed position while gently pushing the liftgate closed.
 - **If the A23C Liftgate Latch Assembly does not cinch**
Refer to Circuit/System Testing - Liftgate Cinch Inoperative.
 - **Go to next step: If the A23C Liftgate Latch Assembly cinch works**
4. All OK.

Circuit/System Testing

Liftgate Release Inoperative

1. Ignition OFF and all vehicle systems OFF, disconnect the harness connector at the A23C Liftgate Latch Assembly. It may take up to 2 minutes for all vehicle systems to power down.
2. Test for less than 10 Ω between the low reference circuit terminal 6 and ground.
 - **If 10 Ω or greater**
 1. Disconnect the harness connector at the K39 Liftgate 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 K39 Liftgate Control Module.
 - **Go to next step: If less than 10 Ω**

3. Connect the harness connector at the A23C Liftgate Latch Assembly.
4. Disconnect the X3 harness connector at the K39 Liftgate Control Module. Ignition ON.
5. Test for less than 1 V between the control circuit terminal 13 and ground.
 - **If 1 V or greater**
 1. Ignition OFF, disconnect the harness connector at the A23C Liftgate Latch Assembly, ignition ON.
 2. Test for less than 1 V between the control circuit and ground.
 - If 1 V or greater, repair the short to voltage on the circuit.
 - If less than 1 V, test or replace the A23C Liftgate Latch Assembly.
 - **Go to next step: If less than 1 V**
6. Manually move the latch to cinched position.
7. Briefly connect a 30 A fused jumper wire between the control circuit terminal 13 and 12 V.
8. Verify the A23C Liftgate Latch Assembly performs the release function.
 - **If the A23C Liftgate Latch Assembly does not release**
 1. Ignition OFF, disconnect the harness connector at the A23C Liftgate Latch Assembly.
 2. Test for infinite resistance the control 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 control circuit end to end.
 - If 2 Ω or greater, repair the open/high resistance in the circuit.
 - If less than 2 Ω , replace the A23C Liftgate Latch Assembly.
 - **Go to next step: If the A23C Liftgate Latch Assembly releases**
9. Replace the K39 Liftgate Control Module.

Liftgate Cinch Inoperative

1. Ignition OFF, disconnect the X2 harness connector at the K39 Liftgate Control Module.
2. Test for less than 1 V between the control circuit terminals listed below and ground:
 - Control circuit terminal 1 X2
 - Control circuit terminal 2 X2
- **If 1 V or greater**
 1. Ignition OFF, disconnect the harness connector at the A23C Liftgate Latch Assembly, ignition ON.
 2. Test for less than 1 V between the control circuit and ground.
 - If 1 V or greater, repair the short to voltage on the circuit.
- **Go to next step: If less than 1 V**
3. Test for infinite resistance between the control circuit terminals listed below and ground:
 - Control circuit terminal 1 X2
 - Control circuit terminal 2 X2
- **If less than infinite resistance**
 1. Ignition OFF, disconnect the harness connector at the A23C Liftgate Latch Assembly.
 2. Test for infinite resistance between the control circuit and ground.
 - If less than infinite resistance, repair the short to ground on the circuit.
 - If infinite resistance, replace the A23C Liftgate Latch Assembly.
- **Go to next step: If infinite resistance**
4. Test for less than 10 Ω between the control circuit terminal 1 and the control circuit terminal 2.
 - **If 10 Ω or greater**
 1. Ignition OFF, disconnect the harness connector at the A23C Liftgate Latch Assembly.
 2. Test for less than 2 Ω between the K39 Liftgate Control Module control circuit terminal 1 and the A23C Liftgate Latch Assembly control circuit terminal 7.

- If 2 Ω or greater, repair the open/high resistance on the circuit.
3. Test for less than 2 Ω between the K39 Liftgate Control Module control circuit terminal 2 and the A23C Liftgate Latch Assembly control circuit terminal 8.
 - If 2 Ω or greater, repair the open/high resistance on the circuit.
 - If less than 2 Ω , replace the A23C Liftgate Latch Assembly.
 - **Go to next step: If less than 10 Ω**
5. Replace the K39 Liftgate Control Module.

Repair Instructions

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

- [Liftgate Latch Replacement \(Equinox\)](#)[Liftgate Latch Replacement \(Terrain\)](#)
- [Control Module References](#) for liftgate control module replacement, programming and setup

LIFTGATE RELEASE MALFUNCTION (WITH TB5)

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 B2495

Liftgate Latch Control Circuit

DTC B24A0

Liftgate Latch Control Circuit 2

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

Diagnostic Fault Information

Circuit	Short to Ground	Open	High Resistance	Short to Voltage	Signal Performance
Liftgate Latch Release Control	B24A0 02	B24A0 05	B24A0 08	B24A0 01	-
Cinch Latch Motor Open Control	B2495 02	B2495 04, B24A0 05	B2495 04, B24A0 05	B2495 01	-
Cinch Latch Motor Close Control	B2495 02	B2495 04, B24A0 05	B2495 04, B24A0 05	B2495 01	-

Circuit/System Description

The liftgate control module controls the liftgate release motor by supplying 12V to the release control circuit. The motor control circuits are monitored by the liftgate control module prior to activation for a high or low condition and during motor operation for an insufficient current flow condition.

The ratchet, pawl, and sector switches are part of the liftgate latch assembly and are used by the liftgate control module to determine the state of the latch during the process of latching or unlatching. The ratchet and pawl switches will be inactive when the primary and secondary latches are latched, and the sector switch will be active during the power cinch function. Each of the latch switch signal circuits are supplied battery voltage through a resistor and monitored within the liftgate control module. When the switch contacts close the signal circuit goes low and the liftgate control module determines the switch to be active.

The latch motor is a bi-directional motor and cinch or unlatch operation is the result of the direction of the motor rotation. The liftgate control module controls the latch motor through the control circuits by supplying power and ground in the appropriate polarity. The motor control circuits are monitored by the liftgate control module prior to activation for a high or low condition and during motor operation for an insufficient current flow condition.

Conditions for Running the DTC

The system voltage is 9 - 16 V.

Conditions for Setting the DTC

B2495 01

The liftgate control module detects a short to battery in the liftgate latch motor cinch control circuit.

B2495 02

The liftgate control module detects a short to ground in the liftgate latch motor cinch control circuit.

B2495 04, B24A0 05

The liftgate control module detects an open/high resistance in the liftgate latch motor cinch control circuit when cinching the liftgate to the closed position.

B24A0 01

The liftgate control module detects a short to battery in the liftgate latch motor release control circuit while commanding the liftgate latch to release.

B24A0 02

The liftgate control module detects a short to ground in the liftgate latch motor release control circuit while commanding the liftgate latch to release.

B24A0 08

The liftgate control module detects high resistance in the liftgate latch motor release control circuit while commanding the liftgate latch to release.

Action Taken When the DTC Sets

B24A0 01, B24A0 02, B24A0 08

The liftgate will not release and will be inoperative in the power and manual modes.

B2495 01, B2495 02, B2495 04, B24A0 05

- Manual Mode: Liftgate will not cinch closed.
- Power Mode: The liftgate will not release and will be inoperative.

Conditions for Clearing the DTC

- The DTC will be current for as long as the fault is present.
- When the fault is no longer present, the DTC will be a history DTC.
- A history DTC will clear after 50 ignition cycles.

Diagnostic Aids

- If the liftgate will not release from the closed position, refer to [**Opening the Liftgate Without Electrical Power**](#) for the appropriate procedure.
- Whenever the liftgate control module loses power or is disconnected, the ignition must be cycled OFF then ON in order to reactivate the liftgate control module.

Reference Information

Schematic Reference

Liftgate Wiring Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Description and Operation

Liftgate Description and Operation

Electrical Information Reference

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

Scan Tool Reference

Control Module References for scan tool information

Circuit/System Verification

1. Ignition ON.
2. Verify the A23C Liftgate Latch Assembly releases the liftgate when pressing the S46B Liftgate Unlatch Switch.
 - **If the A23C Liftgate Latch Assembly does not release**
Refer to Circuit/System Testing - Liftgate Release Inoperative.
 - **Go to next step: If the A23C Liftgate Latch Assembly does release**
3. Verify the A23C Liftgate Latch Assembly cinches the liftgate to the fully closed position while gently pushing the liftgate closed.
 - **If the A23C Liftgate Latch Assembly does not cinch**
Refer to Circuit/System Testing - Liftgate Cinch Inoperative.
 - **Go to next step: If the A23C Liftgate Latch Assembly cinch works**
4. All OK.

Circuit/System Testing

Liftgate Release Inoperative

1. Ignition OFF and all vehicle systems OFF, disconnect the harness connector at the A23C Liftgate Latch Assembly. It may take up to 2 minutes for all vehicle systems to power down.
2. Test for less than 10 Ω between the low reference circuit terminal 6 and ground.
 - **If 10 Ω or greater**
 1. Disconnect the harness connector at the K39 Liftgate 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 K39 Liftgate Control Module.
 - **Go to next step: If less than 10 Ω**
3. Connect the harness connector at the A23C Liftgate Latch Assembly.
4. Disconnect the X3 harness connector at the K39 Liftgate Control Module. Ignition ON.

5. Test for less than 1 V between the control circuit terminal 13 and ground.

- **If 1 V or greater**

1. Ignition OFF, disconnect the harness connector at the A23C Liftgate Latch Assembly, ignition ON.

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

- If 1 V or greater, repair the short to voltage on the circuit.
- If less than 1 V, test or replace the A23C Liftgate Latch Assembly.

- **Go to next step: If less than 1 V**

6. Manually move the latch to cinched position.

7. Briefly connect a 30 A fused jumper wire between the control circuit terminal 13 and 12 V.

8. Verify the A23C Liftgate Latch Assembly performs the release function.

- **If the A23C Liftgate Latch Assembly does not release**

1. Ignition OFF, disconnect the harness connector at the A23C Liftgate Latch Assembly.

2. Test for infinite resistance the control 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 control circuit end to end.

- If 2 Ω or greater, repair the open/high resistance in the circuit.
- If less than 2 Ω , replace the A23C Liftgate Latch Assembly.

- **Go to next step: If the A23C Liftgate Latch Assembly releases**

9. Replace the K39 Liftgate Control Module.

Liftgate Cinch Inoperative

1. Ignition OFF, disconnect the X2 harness connector at the K39 Liftgate Control Module.

2. Test for less than 1 V between the control circuit terminals listed below and ground:

- Control circuit terminal 1 X2
- Control circuit terminal 2 X2

- **If 1 V or greater**

1. Ignition OFF, disconnect the harness connector at the A23C Liftgate Latch Assembly, ignition ON.

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

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

- **Go to next step: If less than 1 V**

3. Test for infinite resistance between the control circuit terminals listed below and ground:

- Control circuit terminal 1 X2
- Control circuit terminal 2 X2

- **If less than infinite resistance**

1. Ignition OFF, disconnect the harness connector at the A23C Liftgate Latch Assembly.

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

- If less than infinite resistance, repair the short to ground on the circuit.
- If infinite resistance, replace the A23C Liftgate Latch Assembly.

- **Go to next step: If infinite resistance**

4. Test for less than 10 Ω between the control circuit terminal 1 and the control circuit terminal 2.

- **If 10 Ω or greater**

1. Ignition OFF, disconnect the harness connector at the A23C Liftgate Latch Assembly.

2. Test for less than 2 Ω between the K39 Liftgate Control Module control circuit terminal 1 and the A23C Liftgate Latch Assembly control circuit terminal 7.

- If 2 Ω or greater, repair the open/high resistance on the circuit.

3. Test for less than 2 Ω between the K39 Liftgate Control Module control circuit terminal 2 and the A23C Liftgate Latch Assembly control circuit terminal 8.

- If 2 Ω or greater, repair the open/high resistance on the circuit.
- If less than 2 Ω , replace the A23C Liftgate Latch Assembly.

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

5. Replace the K39 Liftgate Control Module.

Repair Instructions

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

- [Liftgate Latch Replacement \(Equinox\)](#)[Liftgate Latch Replacement \(Terrain\)](#)
- [Control Module References](#) for liftgate control module replacement, programming and setup

LIFTGATE RELEASE MALFUNCTION (WITHOUT TB5)

Diagnostic Instructions

- Perform the Diagnostic System Check prior to using this diagnostic procedure: [Diagnostic System Check - Vehicle](#)
- Review the description of Strategy Based Diagnosis: [Strategy Based Diagnosis](#)
- An overview of each diagnostic category can be found here: [Diagnostic Procedure Instructions](#)

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
B+ - Relay Switch	2	2	-	-
Signal - S46B Liftgate Unlatch Switch	B2494 00	1	1	-
Control - Relay Coil	B3245 02, B324A 02	2	2	-
Control - M30 Liftgate Latch	2	2	2	-
Ground - S46B Liftgate Unlatch Switch	-	2	-	-
Ground - M30 Liftgate Latch	-	2	-	-
Ground - Relay Coil	-	2	-	-
1. S46B Liftgate Unlatch Switch = Disabled 2. M30 Liftgate Latch = Disabled				

Circuit/System Description

For an overview of the component/system, refer to: [Rear Hatch/Gate Description and Operation](#)

Circuit	Description
B+ - Relay Switch	Supplied from a fuse.
Signal	The control module input circuit has an internal resistance connected to 12 V.
Control - Component	The output circuit is switched to 12 V to activate the component.
Control - Relay Coil	The output circuit is switched to 12 V to activate the component.
Ground - Component	Chassis Ground
Ground - Relay Coil	Chassis Ground

Component	Description
S46B Liftgate Unlatch Switch	When the switch is activated, the signal circuit to the control module is grounded.
M30 Liftgate Latch	The DC motor unlatches the liftgate. Once the liftgate is unlatched, a switch in the latch will close, grounding the signal circuit to the BCM.
K9 Body Control Module	The module controls various vehicle functions like lighting, central door locking, power windows, etc.

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Scan Tool Reference

Control Module References

Circuit/System Verification

1. Ignition - On / Vehicle - In Service Mode
2. Verify the scan tool parameter: Trunk Lid/Liftgate Window Exterior Unlatch Switch = Inactive
 - **If not the specified state**

Refer to: Circuit/System Testing - Test 1

- **Go to next step: If the specified state**

3. Operate the component: S46B Liftgate Unlatch Switch - Pressed

Verify the scan tool parameter: Trunk Lid/Liftgate Window Exterior Unlatch Switch = Active

- **If not the specified state**

Refer to: Circuit/System Testing - Test 1

- **Go to next step: If the specified state**

4. Operate the component: S46B Liftgate Unlatch Switch - Pressed

Verify a click can be heard or felt at the component when it is turned On and Off: M30 Liftgate Latch

- **If a click cannot be heard or felt**

- **Go to next step: If a click can be heard or felt**

5. All OK.

Circuit/System Testing

Test 1

NOTE: It may take up to 2 min for all vehicle systems to power down before an accurate ground or low reference circuit continuity test can be performed.

1. Ignition/Vehicle & All vehicle systems - Off
2. Disconnect the electrical connector: S46B Liftgate Unlatch Switch
3. Test for less than 10 ohms between the test points: Ground circuit terminal 1 & Ground
 - **If 10 ohms or greater**
 1. Ground Connection - Disconnect
 2. Test for less than 2 ohms between the test points: Ground circuit terminal 1 @Component harness & Ground Connection
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Repair the open/high resistance in the ground connection.
 - **Go to next step: If less than 10 ohms**
4. Ignition - On / Vehicle - In Service Mode
5. Verify the scan tool parameter: Trunk Lid/Liftgate Window Exterior Unlatch Switch = Inactive
 - **If not the specified state**
 1. Ignition/Vehicle - Off
 2. Disconnect the electrical connector: K9 Body Control Module
 3. Test for infinite resistance between the test points: Signal circuit terminal 2 @Component harness & Ground
 - If less than infinite resistance - Repair the short to ground on the circuit.
 - If infinite resistance - Replace the component: K9 Body Control Module
 - **Go to next step: If the specified state**
6. Connect a 3 A fused jumper wire between the test points: Signal circuit terminal 2 & Ground circuit terminal 1
7. Verify the scan tool parameter: Trunk Lid/Liftgate Window Exterior Unlatch Switch = Active
 - **If not the specified state**
 1. Ignition/Vehicle - Off & Remove - Jumper wire(s)
 2. Disconnect the electrical connector: K9 Body Control Module
 3. Ignition - On / Vehicle - In Service Mode
 4. Test for less than 1 V between the test points: Signal circuit terminal 2 @Component harness & Ground
 - If 1 V or greater - Repair the short to voltage on the circuit.
 - If less than 1 V
 5. Ignition/Vehicle - Off
 6. Test for less than 2 ohms between the test points: Signal circuit terminal 2 @Component harness & Terminal 15 X6 @Control module harness
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Replace the component: K9 Body Control Module
 - **Go to next step: If the specified state**
8. Test or replace the component: S46B Liftgate Unlatch Switch

Test 2

NOTE:

It may take up to 2 min for all vehicle systems to power down before an accurate ground or low reference circuit continuity test can be performed.

1. Ignition/Vehicle & All vehicle systems - Off
2. Remove the component: KR95A Liftgate Unlatch Relay
3. Test for less than 10 ohms between the test points: Ground circuit terminal 86 & Ground
 - **If 10 ohms or greater**
 1. Ground Connection - Disconnect
 2. Test for less than 2 ohms between the test points: Ground circuit terminal 86 & Ground Connection
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Repair the open/high resistance in the ground connection.
 - **Go to next step: If less than 10 ohms**
4. Connect a test lamp between the test points: Control circuit terminal 85 & Ground circuit terminal 86
5. Ignition - On / Vehicle - In Service Mode
6. Operate the component: S46B Liftgate Unlatch Switch - Pressed

Verify the test lamp turns On and Off.

- **If the test lamp is always Off**
 1. Ignition/Vehicle - Off & Remove - Test lamp
 2. Disconnect the electrical connector: K9 Body Control Module
 3. Test for infinite resistance between the test points: Control circuit terminal 85 @Relay Socket & Ground
 - If less than infinite resistance - Repair the short to ground on the circuit.
 - If infinite resistance
 4. Test for less than 2 ohms between the test points: Control circuit terminal 85 @Relay Socket & Terminal 25 X5 @Control module harness
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Replace the component: K9 Body Control Module
 - **If the test lamp is always On**
 1. Ignition/Vehicle - Off & Remove - Test lamp
 2. Disconnect the electrical connector: K9 Body Control Module
 3. Ignition - On / Vehicle - In Service Mode
 4. Test for less than 1 V between the test points: Control circuit terminal 85 @Relay Socket & Ground
 - If 1 V or greater - Repair the short to voltage on the circuit.
 - If less than 1 V - Replace the component: K9 Body Control Module
 - **Go to next step: If the test lamp turns On and Off**
7. Verify a test lamp turns On between the test points: B+ circuit terminal 30 & Ground
 - **If the test lamp does not turn On and the circuit fuse is OK**
 1. Ignition/Vehicle - Off & Remove - Test lamp
 2. Test for less than 2 ohms between the test points: B+ circuit terminal 30 @Relay Socket & Output terminal@Fuse
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Verify the fuse is OK and there is voltage at the fuse.
 - **If the test lamp does not turn On and the circuit fuse is open**
 1. Ignition/Vehicle - Off & Remove - Test lamp
 2. Test for infinite resistance between the test points: B+ circuit terminal 30 & Ground
 - If less than infinite resistance - Repair the short to ground on the circuit.

- If infinite resistance
3. Disconnect the electrical connector: M30 Liftgate Latch
 4. Test for infinite resistance between the test points: Control circuit terminal 87 @Relay Socket & Ground
 - If less than infinite resistance - Repair the short to ground on the circuit.
 - If infinite resistance
 5. Replace the component: Fuse
 6. Install the component: KR95A Liftgate Unlatch Relay
 7. Connect a test lamp between the test points: Control circuit terminal 3 & Ground circuit terminal 1
 8. Ignition - On / Vehicle - In Service Mode
 9. Operate the component: S46B Liftgate Unlatch Switch - Pressed

Verify the test lamp turns On and Off.

- If the test lamp does not turn On and Off - Test or replace the component: KR95A Liftgate Unlatch Relay
 - If the test lamp turns On and Off - Test or replace the component: M30 Liftgate Latch
 - **Go to next step: If the test lamp turns On**
8. Momentarily connect a 7.5 A fused jumper wire between the test points: B+ circuit terminal 30 & Control circuit terminal 87

Verify the component does not turn On and Off when connecting and disconnecting the jumper wire: M30 Liftgate Latch

- **If the component turns On and Off**

Test or replace the component: KR95A Liftgate Unlatch Relay

- **Go to next step: If the component does not turn On and Off**

9. Ignition/Vehicle & All vehicle systems - Off
10. Install the component: KR95A Liftgate Unlatch Relay
11. Disconnect the electrical connector: M30 Liftgate Latch
12. Test for less than 10 ohms between the test points: Ground circuit terminal 1 & Ground

- **If 10 ohms or greater**

1. Ground Connection - Disconnect
2. Test for less than 2 ohms between the test points: Ground circuit terminal 1 @Component harness & Ground Connection
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Repair the open/high resistance in the ground connection.

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

13. Connect a test lamp between the test points: Control circuit terminal 3 & Ground circuit terminal 1
14. Ignition - On / Vehicle - In Service Mode
15. Operate the component: S46B Liftgate Unlatch Switch - Pressed

Verify the test lamp turns On and Off.

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

Repair the open/high resistance in the circuit: Control Circuit

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

Repair the short to voltage on the circuit: Control Circuit

- **Go to next step: If the test lamp turns On and Off**

16. Test or replace the component: M30 Liftgate Latch

Component Testing

M30 Liftgate Latch-Dynamic Test

1. Ignition/Vehicle - Off
2. Disconnect the electrical connector: M30 Liftgate Latch
3. Connect a jumper wire between the test points: Ground terminal 1 & Ground
4. Momentarily connect a 7.5 A fused jumper wire between the test points: Control terminal 2 & 12 V

Verify the component turns On and Off when connecting and disconnecting the jumper wire: M30 Liftgate Latch

- **If the component does not turn On and Off**

Replace the component: M30 Liftgate Latch

- **Go to next step: If the component turns On and Off**

5. All OK.

S46B Liftgate Unlatch Switch

1. Ignition/Vehicle - Off
2. Disconnect the electrical connector: S46B Liftgate Unlatch Switch
3. Test for infinite resistance between the test points: Signal terminal 2 & Ground terminal 1 - The switch is in the open position.

- **If less than infinite resistance**

Replace the component: S46B Liftgate Unlatch Switch

- **Go to next step: If infinite resistance**

4. Test for less than 3 ohms between the test points: Signal terminal 2 & Ground terminal 1 - The switch is in the closed position.

- **If 3 ohms or greater**

Replace the component: S46B Liftgate Unlatch Switch

- **Go to next step: If less than 3 ohms**

Relay Test

1. Ignition/Vehicle - Off
2. Remove the component: KR95A Liftgate Unlatch Relay
3. Test for 70 to 110 ohms between the test points: Component terminal 85 & 86

- **If not between 70 and 110 ohms**

Replace the component: KR95A Liftgate Unlatch Relay

- **Go to next step: If between 70 and 110 ohms**

4. Test for infinite resistance between the test points:

- Component terminal 30 & 85
- Component terminal 30 & 86
- Component terminal 30 & 87
- Component terminal 85 & 87
- **If less than infinite resistance**

Replace the component: KR95A Liftgate Unlatch Relay

- **Go to next step: If infinite resistance**

5. Connect a 3 A fused jumper wire between the test points: Component terminal 86 & 12 V

Connect a jumper wire between the test points: Component terminal 85 & Ground

6. Test for less than 2 ohms between the test points: Component terminal 30 & 87

- **If 2 ohms or greater**

Replace the component: KR95A Liftgate Unlatch Relay

- **Go to next step: If less than 2 ohms**

7. All OK.

Repair Instructions

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

- [Liftgate Latch Replacement \(Equinox\)](#)[Liftgate Latch Replacement \(Terrain\)](#)
- [Liftgate Release Switch Replacement - Exterior \(Equinox\)](#)[Liftgate Release Switch Replacement - Exterior \(Terrain\)](#)
- For control module replacement, programming, and setup refer to: [Control Module References](#)

LIFTGATE AJAR INDICATOR MALFUNCTION (WITHOUT TB5)

Diagnostic Instructions

- Perform the Diagnostic System Check prior to using this diagnostic procedure: [Diagnostic System Check - Vehicle](#)
- Review the description of Strategy Based Diagnosis: [Strategy Based Diagnosis](#)
- An overview of each diagnostic category can be found here: [Diagnostic Procedure Instructions](#)

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Signal	1	2	2	-
Ground	-	3	-	-
1. Driver Information Display - Rear Access Open = Always On 2. Driver Information Display - Rear Access Open = Always Off 3. M30 Liftgate Latch = Inoperative				

Circuit/System Description

For an overview of the component/system, refer to: [Liftgate Ajar Indicator Description and Operation](#)

Circuit	Description
Signal	The control module input circuit has an internal resistance connected to 12 V.
Ground	Chassis Ground

Component	Description
M30 Liftgate Latch	The DC motor unlatches the liftgate. Once the liftgate is unlatched, a switch in the latch will close, grounding the signal circuit to the control module K9 indicating liftgate status.
K9 Body Control Module	The module controls various vehicle functions like lighting, central door locking, power windows, etc.

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- [Wiring Repairs](#)

Scan Tool Reference

Control Module References

Circuit/System Verification

1. Ignition - On / Vehicle - In Service Mode
2. Operate the component: Close the liftgate.

Verify the scan tool parameter: Rear Closure Ajar Switch = Inactive

- **If not the specified state**

Refer to: Circuit/System Testing

- **Go to next step: If the specified state**

3. Operate the component: Open the liftgate.

Verify the scan tool parameter: Rear Closure Ajar Switch = Active

- **If not the specified state**

Refer to: Circuit/System Testing

- **Go to next step: If the specified state**

4. All OK.

Circuit/System Testing

1. Ignition/Vehicle - Off
2. Disconnect the electrical connector: M30 Liftgate Latch
3. Ignition - On / Vehicle - In Service Mode
4. Verify the scan tool parameter: Rear Closure Ajar Switch = Inactive

- **If not the specified state**

1. Ignition/Vehicle - Off

2. Disconnect the electrical connector: K9 Body Control Module

3. Test for infinite resistance between the test points: Signal circuit terminal 2 @Component harness & Ground

- If less than infinite resistance - Repair the short to ground on the circuit.

- If infinite resistance - Replace the component: K9 Body Control Module
 - **Go to next step: If the specified state**
5. Connect a 3 A fused jumper wire between the test points: Signal circuit terminal 2 & Ground circuit terminal 1
 6. Verify the scan tool parameter: Rear Closure Ajar Switch = Active
 - **If not the specified state**
 1. Ignition/Vehicle - Off & Remove - Jumper wire(s)
 2. Disconnect the electrical connector: K9 Body Control Module
 3. Ignition - On / Vehicle - In Service Mode
 4. Test for less than 1 V between the test points: Signal circuit terminal 2 @Component harness & Ground
 - If 1 V or greater - Repair the short to voltage on the circuit.
 - If less than 1 V
 5. Ignition/Vehicle - Off
 6. Test for less than 2 ohms between the test points: Signal circuit terminal 2 @Component harness & Terminal 5 X6 @Control module harness
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Replace the component: K9 Body Control Module
 - **Go to next step: If the specified state**
 7. Test or replace the component: M30 Liftgate Latch

Component Testing

1. Ignition/Vehicle - Off
2. Disconnect the electrical connector: M30 Liftgate Latch
3. Test for infinite resistance between the test points: Signal terminal 2 & Ground terminal 1 - The switch is in the open position.
 - **If less than infinite resistance**
Replace the component: M30 Liftgate Latch
 - **Go to next step: If infinite resistance**
4. Test for less than 3 ohms between the test points: Signal terminal 2 & Ground terminal 1 - The switch is in the closed position.
 - **If 3 ohms or greater**
Replace the component: M30 Liftgate Latch
 - **Go to next step: If less than 3 ohms**
5. All OK.

Repair Instructions

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

- [Liftgate Latch Replacement \(Equinox\)](#)[Liftgate Latch Replacement \(Terrain\)](#)
- For control module replacement, programming, and setup refer to: [Control Module References](#)

LIFTGATE AJAR INDICATOR MALFUNCTION (WITH TB5)

Diagnostic Instructions

- Perform the Diagnostic System Check prior to using this diagnostic procedure: [Diagnostic System Check - Vehicle](#)
- Review the description of Strategy Based Diagnosis: [Strategy Based Diagnosis](#)
- An overview of each diagnostic category can be found here: [Diagnostic Procedure Instructions](#)

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Signal - Liftgate Latch Ratchet Switch	1	2	-	-
Signal - Liftgate Latch Pawl Switch	1	2	-	-
Signal - Rear Closure Ajar Switch	1	B153A 08	-	-
Low Reference - A23C Liftgate Latch Assembly	-	B24A0 05	-	-
1. Driver Information Display - Rear Access Open = Always On 2. Power Liftgate (TB5) = Disabled				

Typical Scan Tool Data

Body Control Module: Rear Closure Ajar Switch

Circuit	Short to Ground	Open	Short to Voltage
Operating Conditions: Ignition - On / Vehicle - In Service Mode Parameter Normal Range: Active/Inactive - Active - Liftgate - Ajar - Inactive - Liftgate - Closed			
Signal	Active	Inactive	-
Low Reference	-	Inactive	-

Liftgate Control Module: Liftgate Latch Pawl Switch

Circuit	Short to Ground	Open	Short to Voltage
Operating Conditions: Ignition - On / Vehicle - In Service Mode Parameter Normal Range: open/Closed - open - Liftgate - Ajar - Closed - Liftgate - Close			
Signal	open	Closed	-
Low Reference	-	Closed	-

Liftgate Control Module: Liftgate Latch Ratchet Switch

Circuit	Short to Ground	Open	Short to Voltage
Operating Conditions: Ignition - On / Vehicle - In Service Mode Parameter Normal Range: open/Closed - open - Liftgate - Ajar - Closed - Liftgate - Close			
Signal	Open	Closed	-
Low Reference	-	Closed	-

Circuit/System Description

For an overview of the component/system, refer to: [Liftgate Ajar Indicator Description and Operation](#)

Circuit	Description

Circuit	Description
Signal	The control module input circuit has an internal resistance connected to 12 V.
Low Reference	Grounded through the control module.

Component	Description
A23C Liftgate Latch Assembly	The DC motor unlatches the liftgate. Once the liftgate is unlatched, a switch in the latch will close, grounding the signal circuit to the control module K39 indicating liftgate status.
K39 Liftgate Control Module	The control module K39 controls the liftgate motor function depending on inputs from a variety of sensors, switches and serial data information from other control modules.
K9 Body Control Module	The module controls various vehicle functions like lighting, central door locking, power windows, etc.

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Scan Tool Reference

Control Module References

Circuit/System Verification

1. Ignition - On / Vehicle - In Service Mode
2. Operate the component: Open the liftgate.

Verify the scan tool parameter:

- Body Control Module: Rear Closure Ajar Switch = Active
- Liftgate Control Module: Liftgate Latch Pawl Switch = open
- Liftgate Control Module: Liftgate Latch Ratchet Switch = open
- **If not the specified state**

Refer to: Circuit/System Testing

- **Go to next step: If the specified state**

3. All OK.

Circuit/System Testing

NOTE: It may take up to 2 min for all vehicle systems to power down before an accurate ground or low reference circuit continuity test can be performed.

1. Ignition/Vehicle & All vehicle systems - Off
2. Disconnect the electrical connector: A23C Liftgate Latch Assembly
3. Test for less than 10 ohms between the test points: Low Reference terminal 6 & Ground
 - **If 10 ohms or greater**
 1. Disconnect the electrical connector: K39 Liftgate Control Module
 2. Test for less than 2 ohms between the test points: Low Reference terminal 6 @Component harness & Terminal 6 X1 @Control module harness
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Replace the component: K39 Liftgate Control Module
 - **Go to next step: If less than 10 ohms**
4. Ignition - On / Vehicle - In Service Mode
5. Verify the scan tool parameter: Body Control Module: Rear Closure Ajar Switch = Inactive
 - **If not the specified state**
 1. Ignition/Vehicle - Off
 2. Disconnect the electrical connector: K39 Liftgate Control Module
 3. Test for infinite resistance between the test points: Signal circuit terminal 3 @Component harness & Ground
 - If less than infinite resistance - Repair the short to ground on the circuit.
 - If infinite resistance - Replace the component: K39 Liftgate Control Module
 - **Go to next step: If the specified state**
6. Verify the scan tool parameter: Liftgate Control Module: Liftgate Latch Ratchet Switch = Closed
 - **If not the specified state**
 1. Ignition/Vehicle - Off
 2. Disconnect the electrical connector: K39 Liftgate Control Module
 3. Test for infinite resistance between the test points: Signal circuit terminal 5 @Component harness & Ground
 - If less than infinite resistance - Repair the short to ground on the circuit.
 - If infinite resistance - Replace the component: K39 Liftgate Control Module
 - **Go to next step: If the specified state**
7. Verify the scan tool parameter: Liftgate Control Module: Liftgate Latch Pawl Switch = Closed
 - **If not the specified state**
 1. Ignition/Vehicle - Off
 2. Disconnect the electrical connector: K39 Liftgate Control Module
 3. Test for infinite resistance between the test points: Signal circuit terminal 1 @Component harness & Ground
 - If less than infinite resistance - Repair the short to ground on the circuit.
 - If infinite resistance - Replace the component: K39 Liftgate Control Module
 - **Go to next step: If the specified state**
8. Connect a 3 A fused jumper wire between the test points: Signal circuit terminal 3 & Low Reference terminal 6
9. Verify the scan tool parameter: Body Control Module: Rear Closure Ajar Switch = Active
 - **If not the specified state**
 1. Ignition/Vehicle - Off & Remove - Jumper wire(s)
 2. Disconnect the electrical connector: K39 Liftgate Control Module
 3. Ignition - On / Vehicle - In Service Mode
 4. Test for less than 1 V between the test points: Signal circuit terminal 3 @Component harness & Ground

- If 1 V or greater - Repair the short to voltage on the circuit.
 - If less than 1 V
5. Ignition/Vehicle - Off
6. Test for less than 2 ohms between the test points: Signal circuit terminal 3 @Component harness & Terminal 9 X1 @Control module harness
- If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Replace the component: K39 Liftgate Control Module
- **Go to next step: If the specified state**
10. Connect a 3 A fused jumper wire between the test points: Signal circuit terminal 1 & Low Reference terminal 6
11. Verify the scan tool parameter: Liftgate Control Module: Liftgate Latch Pawl Switch = open
- **If not the specified state**
1. Ignition/Vehicle - Off & Remove - Jumper wire(s)
 2. Disconnect the electrical connector: K39 Liftgate Control Module
 3. Ignition - On / Vehicle - In Service Mode
 4. Test for less than 1 V between the test points: Signal circuit terminal 1 @Component harness & Ground
- If 1 V or greater - Repair the short to voltage on the circuit.
 - If less than 1 V
5. Ignition/Vehicle - Off
6. Test for less than 2 ohms between the test points: Signal circuit terminal 1 @Component harness & Terminal 6 X1 @Control module harness
- If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Replace the component: K39 Liftgate Control Module
- **Go to next step: If the specified state**
12. Connect a 3 A fused jumper wire between the test points: Signal circuit terminal 5 & Low Reference terminal 6
13. Verify the scan tool parameter: Liftgate Control Module: Liftgate Latch Ratchet Switch = open
- **If not the specified state**
1. Ignition/Vehicle - Off & Remove - Jumper wire(s)
 2. Disconnect the electrical connector: K39 Liftgate Control Module
 3. Ignition - On / Vehicle - In Service Mode
 4. Test for less than 1 V between the test points: Signal circuit terminal 5 @Component harness & Ground
- If 1 V or greater - Repair the short to voltage on the circuit.
 - If less than 1 V
5. Ignition/Vehicle - Off
6. Test for less than 2 ohms between the test points: Signal circuit terminal 5 @Component harness & Terminal 5 X1 @Control module harness
- If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Replace the component: K39 Liftgate Control Module
- **Go to next step: If the specified state**
14. Test or replace the component: A23C Liftgate Latch Assembly

Repair Instructions

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

- [Liftgate Latch Replacement \(Equinox\)](#)[Liftgate Latch Replacement \(Terrain\)](#)
- For control module replacement, programming, and setup refer to: [Control Module References](#)

DOOR AJAR INDICATOR MALFUNCTION

Diagnostic Instructions

- Perform the Diagnostic System Check prior to using this diagnostic procedure: [Diagnostic System Check - Vehicle](#)
- Review the description of Strategy Based Diagnosis: [Strategy Based Diagnosis](#)
- An overview of each diagnostic category can be found here: [Diagnostic Procedure Instructions](#)

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Signal - Ajar@A23D Door Latch Assembly - Driver	1	2	2	-
Signal - Ajar@A23P Door Latch Assembly - Passenger	1	2	2	-
Signal - Ajar@A23LR Door Latch Assembly - Left Rear	1	2	2	-
Signal - Ajar@A23RR Door Latch Assembly - Right Rear	1	2	2	-
Ground - A23D Door Latch Assembly - Driver	-	2	-	-
Ground - A23P Door Latch Assembly - Passenger	-	2	-	-
Ground - A23LR Door Latch Assembly - Left Rear	-	2	-	-
Ground - A23RR Door Latch Assembly - Right Rear	-	2	-	-
1. Door Ajar Indicator = Always On 2. Door Open - Door Ajar Indicator = Not Displayed				

Circuit/System Description

For an overview of the component/system, refer to: [Door Ajar Indicator Description and Operation](#)

Circuit	Description
Signal	The control module input circuit has an internal resistance connected to 12 V.
Ground	Chassis Ground

Component	Description
A23 Door Latch Assembly	The lock assemblies also contain a door ajar switch that is open when the door is closed.
M35D Window Motor Module - Driver	• Power Window Control • The control module also reads various switches and sensors and makes their values available via serial data.
S79D Window Switch - Driver	• Power Window Control • The control module also reads various switches and sensors and makes their values available via serial data.

Component	Description
S79P Window Switch - Passenger	• Power Window Control • The control module also reads various switches and sensors and makes their values available via serial data.
S79LR Window Switch - Left Rear	• Power Window Control • The control module also reads various switches and sensors and makes their values available via serial data.
S79RR Window Switch - Right Rear	• Power Window Control • The control module also reads various switches and sensors and makes their values available via serial data.

Reference Information

Schematic Reference

Door Lock/Indicator Wiring Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Component View Reference

Door Component Views

Electrical Information Reference

- [Circuit Testing](#)
- [Connector Repairs](#)
- [Testing for Intermittent Conditions and Poor Connections](#)
- [Wiring Repairs](#)
- [Relay Replacement \(Attached to Wire Harness\)](#) [Relay Replacement \(Within an Electrical Center\)](#)

Scan Tool Reference

Control Module References

Circuit/System Verification

1. Ignition - On / Vehicle - In Service Mode
2. Verify the appropriate scan tool door ajar switch parameter changes when opening and closing the vehicle doors.
 - **{Driver Door Ajar Switch}**If the parameter state does not change
Refer to: Circuit/System Testing - Test 1
 - **{Passenger Door Ajar Switch}**If the parameter state does not change
Refer to: Circuit/System Testing - Test 2
 - **{Left Rear Door Ajar Switch}**If the parameter state does not change

Refer to: Circuit/System Testing - Test 3

- **{Right Rear Door Ajar Switch}**If the parameter state does not change

Refer to: Circuit/System Testing - Test 4

- **Go to next step: If the parameter state changes**

3. All OK.

Circuit/System Testing

Test 1

NOTE: It may take up to 2 min for all vehicle systems to power down before an accurate ground or low reference circuit continuity test can be performed.

1. Ignition/Vehicle & All vehicle systems - Off
2. Disconnect the electrical connector: A23D Door Latch Assembly - Driver
3. Test for less than 10 ohms between the test points: Ground circuit terminal 3 & Ground
 - **If 10 ohms or greater**
 1. Ground Connection - Disconnect
 2. Test for less than 2 ohms between the test points: Ground circuit terminal 3 @Component harness & Ground Connection
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Repair the open/high resistance in the ground connection.
 - **Go to next step: If less than 10 ohms**
4. Ignition - On / Vehicle - In Service Mode
5. Verify the scan tool parameter: Driver Door Ajar Switch = Inactive
 - **If not the specified state**
 1. Ignition/Vehicle - Off
 2. Disconnect the appropriate electrical connector: M35D Window Motor Module - Driver or S79D Window Switch - Driver
 3. Test for infinite resistance between the test points: Signal circuit terminal 1 @Component harness & Ground
 - If less than infinite resistance - Repair the short to ground on the circuit.
 - If infinite resistance - Replace the component: M35D Window Motor Module - Driver or S79D Window Switch - Driver
 - **Go to next step: If the specified state**
6. Connect a 3 A fused jumper wire between the test points: Signal circuit terminal 1 & Ground circuit terminal 3
7. Verify the scan tool parameter: Driver Door Ajar Switch = Active
 - **If not the specified state**
 1. Ignition/Vehicle - Off & Remove - Jumper wire(s)
 2. Disconnect the appropriate electrical connector: M35D Window Motor Module - Driver or S79D Window Switch - Driver
 3. Ignition - On / Vehicle - In Service Mode
 4. Test for less than 1 V between the test points: Signal circuit terminal 1 @Component harness & Ground
 - If 1 V or greater - Repair the short to voltage on the circuit.
 - If less than 1 V
 5. Ignition/Vehicle - Off
 6. Test for less than 2 ohms between the test points:

- Signal circuit terminal 1 @Component harness & Signal circuit terminal 6 @M35D Window Motor Module - Driver
- Signal circuit terminal 1 @Component harness & Signal circuit terminal 10 @S79D Window Switch - Driver
- If 2 ohms or greater - Repair the open/high resistance in the circuit.
- If less than 2 ohms - Replace the component: M35D Window Motor Module - Driver or S79D Window Switch - Driver
- **Go to next step: If the specified state**

8. Test or replace the component: A23D Door Latch Assembly - Driver

Test 2

NOTE: It may take up to 2 min for all vehicle systems to power down before an accurate ground or low reference circuit continuity test can be performed.

1. Ignition/Vehicle & All vehicle systems - Off
2. Disconnect the electrical connector: A23P Door Latch Assembly - Passenger
3. Test for less than 10 ohms between the test points: Ground circuit terminal 3 & Ground
 - **If 10 ohms or greater**
 1. Ground Connection - Disconnect
 2. Test for less than 2 ohms between the test points: Ground circuit terminal 3 @Component harness & Ground Connection
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Repair the open/high resistance in the ground connection.
 - **Go to next step: If less than 10 ohms**
4. Ignition - On / Vehicle - In Service Mode
5. Verify the scan tool parameter: Passenger Door Ajar Switch = Inactive
 - **If not the specified state**
 1. Ignition/Vehicle - Off
 2. Disconnect the electrical connector: S79P Window Switch - Passenger
 3. Test for infinite resistance between the test points: Signal circuit terminal 5 @Component harness & Ground
 - If less than infinite resistance - Repair the short to ground on the circuit.
 - If infinite resistance - Replace the component: S79P Window Switch - Passenger
 - **Go to next step: If the specified state**
6. Connect a 3 A fused jumper wire between the test points: Signal circuit terminal 5 & Ground circuit terminal 3
7. Verify the scan tool parameter: Passenger Door Ajar Switch = Active
 - **If not the specified state**
 1. Ignition/Vehicle - Off & Remove - Jumper wire(s)
 2. Disconnect the electrical connector: S79P Window Switch - Passenger
 3. Ignition - On / Vehicle - In Service Mode
 4. Test for less than 1 V between the test points: Signal circuit terminal 5 @Component harness & Ground
 - If 1 V or greater - Repair the short to voltage on the circuit.
 - If less than 1 V
 5. Ignition/Vehicle - Off
 6. Test for less than 2 ohms between the test points: Signal circuit terminal 5 @Component harness & Signal circuit terminal 2 @S79P Window Switch - Passenger
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Replace the component: S79P Window Switch - Passenger

- **Go to next step: If the specified state**

8. Test or replace the component: A23P Door Latch Assembly - Passenger

Test 3

NOTE: It may take up to 2 min for all vehicle systems to power down before an accurate ground or low reference circuit continuity test can be performed.

1. Ignition/Vehicle & All vehicle systems - Off
2. Disconnect the electrical connector: A23LR Door Latch Assembly - Left Rear
3. Test for less than 10 ohms between the test points: Ground circuit terminal 3 & Ground
 - **If 10 ohms or greater**
 1. Ground Connection - Disconnect
 2. Test for less than 2 ohms between the test points: Ground circuit terminal 3 @Component harness & Ground Connection
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Repair the open/high resistance in the ground connection.
 - **Go to next step: If less than 10 ohms**
4. Ignition - On / Vehicle - In Service Mode
5. Verify the scan tool parameter: Left Rear Door Ajar Switch = Inactive
 - **If not the specified state**
 1. Ignition/Vehicle - Off
 2. Disconnect the electrical connector: S79LR Window Switch - Left Rear
 3. Test for infinite resistance between the test points: Signal circuit terminal 1 @Component harness & Ground
 - If less than infinite resistance - Repair the short to ground on the circuit.
 - If infinite resistance - Replace the component: S79LR Window Switch - Left Rear
 - **Go to next step: If the specified state**
6. Connect a 3 A fused jumper wire between the test points: Signal circuit terminal 1 & Ground circuit terminal 3
7. Verify the scan tool parameter: Left Rear Door Ajar Switch = Active
 - **If not the specified state**
 1. Ignition/Vehicle - Off & Remove - Jumper wire(s)
 2. Disconnect the electrical connector: S79LR Window Switch - Left Rear
 3. Ignition - On / Vehicle - In Service Mode
 4. Test for less than 1 V between the test points: Signal circuit terminal 1 @Component harness & Ground
 - If 1 V or greater - Repair the short to voltage on the circuit.
 - If less than 1 V
 5. Ignition/Vehicle - Off
 6. Test for less than 2 ohms between the test points: Signal circuit terminal 1 @Component harness & Terminal 2 @S79LR Window Switch - Left Rear
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Replace the component: S79LR Window Switch - Left Rear
 - **Go to next step: If the specified state**
8. Test or replace the component: A23LR Door Latch Assembly - Left Rear

Test 4

NOTE: It may take up to 2 min for all vehicle systems to power down before an accurate ground or low reference circuit continuity test can be performed.

1. Ignition/Vehicle & All vehicle systems - Off
2. Disconnect the electrical connector: A23RR Door Latch Assembly - Right Rear
3. Test for less than 10 ohms between the test points: Ground circuit terminal 3 & Ground
 - **If 10 ohms or greater**
 1. Ground Connection - Disconnect
 2. Test for less than 2 ohms between the test points: Ground circuit terminal 3 @Component harness & Ground Connection
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Repair the open/high resistance in the ground connection.
 - **Go to next step: If less than 10 ohms**
4. Ignition - On / Vehicle - In Service Mode
5. Verify the scan tool parameter: Right Rear Door Ajar Switch = Inactive
 - **If not the specified state**
 1. Ignition/Vehicle - Off
 2. Disconnect the electrical connector: S79RR Window Switch - Right Rear
 3. Test for infinite resistance between the test points: Signal circuit terminal 5 @Component harness & Ground
 - If less than infinite resistance - Repair the short to ground on the circuit.
 - If infinite resistance - Replace the component: S79RR Window Switch - Right Rear
 - **Go to next step: If the specified state**
6. Connect a 3 A fused jumper wire between the test points: Signal circuit terminal 5 & Ground circuit terminal 3
7. Verify the scan tool parameter: Right Rear Door Ajar Switch = Active
 - **If not the specified state**
 1. Ignition/Vehicle - Off & Remove - Jumper wire(s)
 2. Disconnect the electrical connector: S79RR Window Switch - Right Rear
 3. Ignition - On / Vehicle - In Service Mode
 4. Test for less than 1 V between the test points: Signal circuit terminal 5 @Component harness & Ground
 - If 1 V or greater - Repair the short to voltage on the circuit.
 - If less than 1 V
 5. Ignition/Vehicle - Off
 6. Test for less than 2 ohms between the test points: Signal circuit terminal 5 @Component harness & Terminal 2 @S79RR Window Switch - Right Rear
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Replace the component: S79RR Window Switch - Right Rear
 - **Go to next step: If the specified state**
8. Test or replace the component: A23RR Door Latch Assembly - Right Rear

Component Testing

1. Ignition/Vehicle - Off
2. Disconnect the appropriate electrical connector: A23 Door Latch Assembly
3. Test for infinite resistance between the test points:
 - A23D Door Latch Assembly - Driver: Signal terminal 1 & Ground terminal 3 - The switch is in the open position.
 - A23P Door Latch Assembly - Passenger: Signal terminal 5 & Ground terminal 3 - The switch is in the open position.
 - A23LR Door Latch Assembly - Left Rear: Signal terminal 1 & Ground terminal 3 - The switch is in the open position.
 - A23RR Door Latch Assembly - Right Rear: Signal terminal 5 & Ground terminal 3 - The switch is in the open position.

- **If less than infinite resistance**

Replace the component: A23 Door Latch Assembly

- **Go to next step: If infinite resistance**

4. Test for less than 3 ohms between the test points:

- A23D Door Latch Assembly - Driver: Signal terminal 1 & Ground terminal 3 - The switch is in the closed position.
- A23P Door Latch Assembly - Passenger: Signal terminal 5 & Ground terminal 3 - The switch is in the closed position.
- A23LR Door Latch Assembly - Left Rear: Signal terminal 1 & Ground terminal 3 - The switch is in the closed position.
- A23RR Door Latch Assembly - Right Rear: Signal terminal 5 & Ground terminal 3 - The switch is in the closed position.
- **If 3 ohms or greater**

Replace the component: A23 Door Latch Assembly

- **Go to next step: If less than 3 ohms**

5. All OK.

Repair Instructions

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

- [Rear Side Door Window Switch Replacement \(Equinox\)](#), [Rear Side Door Window Switch Replacement \(Terrain\)](#)
- [Front Side Door Window Switch Replacement - Right Side \(Equinox\)](#), [Front Side Door Window Switch Replacement - Right Side \(Terrain\)](#)
- [Front Side Door Window Control Switch Replacement \(Equinox\)](#), [Front Side Door Window Control Switch Replacement \(Terrain\)](#)
- [Front Side Door Window Regulator Motor Replacement](#)
- [Rear Side Door Window Regulator Motor Replacement](#)
- [Front Side Door Latch Replacement](#)
- [Rear Side Door Latch Replacement](#)

POWER DOOR LOCK KEY CYLINDER SWITCHES MALFUNCTION

Diagnostic Instructions

- Perform the Diagnostic System Check prior to using this diagnostic procedure: [Diagnostic System Check - Vehicle](#)
- Review the description of Strategy Based Diagnosis: [Strategy Based Diagnosis](#)
- An overview of each diagnostic category can be found here: [Diagnostic Procedure Instructions](#)

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Signal - Terminal 4 @A23D Door Latch Assembly - Driver	1*	1	1	-
Ground	-	1	-	-
*All Doors Lock Malfunction = Intermittent 1. B29D Door Lock Key Cylinder Switch - Driver = Inoperative				

Circuit/System Description

For an overview of the component/system, refer to: [Power Door Locks Description and Operation](#)

Circuit	Description
Signal	The control module input circuit has an internal resistance connected to 12 V.
Ground	Chassis Ground

Component	Description
A23 Door Latch Assembly	The door locks are actuated by a bidirectional DC motor that locks/unlocks the door so that it can not be opened from outside the vehicle (but still from inside).
S79D Window Switch - Driver	The S79D sends a serial data message to the K9 indicating the A23 function that has been requested.

Reference Information

Schematic Reference

Door Lock/Indicator Wiring Schematics

Connector End View Reference

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Component View Reference

Door Component Views

Electrical Information Reference

- [Circuit Testing](#)
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- [Testing for Intermittent Conditions and Poor Connections](#)
- [Wiring Repairs](#)
- [Relay Replacement \(Attached to Wire Harness\)](#) [Relay Replacement \(Within an Electrical Center\)](#)

Scan Tool Reference

Control Module References

Circuit/System Verification

1. Operate the component: S13D Door Lock Switch - Driver - Unlock Switch
2. Verify the component activates: A23LR Door Latch Assembly - Left Rear & A23P Door Latch Assembly - Passenger & A23RR Door Latch Assembly - Right Rear = Unlock
 - **If the component does not work as specified**
Refer to: [Power Door Locks Malfunction](#)
 - **Go to next step: If all functions work properly**
3. Operate the component: B29D Door Lock Key Cylinder Switch - Driver - Turn the ignition key to the LOCK position.
4. Verify the component activates: A23LR Door Latch Assembly - Left Rear & A23P Door Latch Assembly - Passenger & A23RR Door Latch Assembly - Right Rear = Lock
 - **If the component does not work as specified**
Refer to: Circuit/System Testing
 - **Go to next step: If all functions work properly**
5. All OK.

NOTE: It may take up to 2 min for all vehicle systems to power down before an accurate ground or low reference circuit continuity test can be performed.

1. Ignition/Vehicle & All vehicle systems - Off
2. Disconnect the electrical connector.A23D Door Latch Assembly - Driver
3. Test for less than 10 ohms between the test points: Ground circuit terminal 3 & Ground
 - **If 10 ohms or greater**
 1. Ground Connection - Disconnect
 2. Test for less than 2 ohms between the test points: Ground circuit terminal 3 @Component harness & Ground Connection
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Repair the open/high resistance in the ground connection.
 - **Go to next step: If less than 10 ohms**
4. Connect the electrical connector: A23D Door Latch Assembly - Driver
5. Disconnect the electrical connector.S79D Window Switch - Driver
6. Connect a test lamp between the test points: Signal circuit terminal 14 & B+
7. Operate the component: B29D Door Lock Key Cylinder Switch - Driver - Lock & Unlock

Verify the test lamp turns On and Off.

- **If the test lamp is always Off**
 1. Ignition/Vehicle - Off & Remove - Test lamp
 2. Disconnect the electrical connector: A23D Door Latch Assembly - Driver
 3. Ignition - On / Vehicle - In Service Mode
 4. Test for less than 1 V between the test points: Signal circuit terminal 14 @ Component harness & Ground
 - If 1 V or greater - Repair the short to voltage on the circuit.
 - If less than 1 V
 5. Ignition/Vehicle - Off
 6. Test for less than 2 ohms between the test points: Signal circuit terminal 14 @Component harness & Terminal 4 @A23D Door Latch Assembly - Driver
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Replace the component: A23D Door Latch Assembly - Driver
 - **If the test lamp is always On**
 1. Ignition/Vehicle - Off & Remove - Test lamp
 2. Disconnect the electrical connector: A23D Door Latch Assembly - Driver
 3. Test for infinite resistance between the test points: Signal circuit terminal 14 @Component harness & Ground
 - If less than infinite resistance - Repair the short to ground on the circuit.
 - If infinite resistance - Replace the component: A23D Door Latch Assembly - Driver
 - **Go to next step: If the test lamp turns On and Off**
8. Test or replace the component: S79D Window Switch - Driver

Component Testing

1. Ignition/Vehicle - Off
2. Disconnect the electrical connector.A23D Door Latch Assembly - Driver
3. Test for infinite resistance between the test points: Signal terminal 4 & Ground terminal 3 - The switch is in the open position.
 - **If less than infinite resistance**

Replace the component: A23D Door Latch Assembly - Driver

- **Go to next step: If infinite resistance**

4. Test for less than 3 ohms between the test points: Signal terminal 4 & Ground terminal 3 - The switch is in the closed position.

- **If 3 ohms or greater**

Replace the component: A23D Door Latch Assembly - Driver

- **Go to next step: If less than 3 ohms**

5. All OK.

Repair Instructions

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

- [Front Side Door Window Control Switch Replacement \(Equinox\)](#), [Front Side Door Window Control Switch Replacement \(Terrain\)](#)
- [Front Side Door Latch Replacement](#)

POWER DOOR LOCKS MALFUNCTION

Diagnostic Instructions

- Perform the Diagnostic System Check prior to using this diagnostic procedure: [Diagnostic System Check - Vehicle](#)
- Review the description of Strategy Based Diagnosis: [Strategy Based Diagnosis](#)
- An overview of each diagnostic category can be found here: [Diagnostic Procedure Instructions](#)

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Short to Voltage
B+ - K9 Body Control Module	B3125 02, B3130 02, B3135 02	B3125 02, B3130 02, B3135 02	-	-
Signal terminal 2 @S13D Door Lock Switch - Driver	B3150 00	2	2	-
Signal terminal 3 @S13D Door Lock Switch - Driver	B3140 00	3	3	-
Signal terminal 2 @S13P Door Lock Switch - Passenger	B3155 00	4	4	-
Signal terminal 3 @S13P Door Lock Switch - Passenger	B3145 00	5	5	-
Control - A23D Door Latch Assembly - Driver	B3125 02, B3130 02, B3135 02	7	B3125 01, B3130 01, B3135 01	-
Control - A23P Door Latch Assembly - Passenger	B3125 02, B3130 02, B3135 02	8	B3125 01, B3130 01, B3135 01	-
Control - A23LR Door Latch Assembly - Left Rear	B3125 02, B3130 02, B3135 02	9	B3125 01, B3130 01, B3135 01	-
Control - A23RR Door Latch Assembly - Right Rear	B3125 02, B3130 02, B3135 02	10	B3125 01, B3130 01, B3135 01	-
Ground - S13P Door Lock Switch - Passenger	-	6	-	-
Ground - S13D Door Lock Switch - Driver	-	1	-	-

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Short to Voltage
Ground - K9 Body Control Module	-	7, 8, 9, 10	-	-
1. S13D Door Lock Switch - Driver = Inoperative 2. Driver Door Lock Switch = Inoperative 3. Driver Door Unlock Switch = Inoperative 4. Passenger Door Lock Switch = Inoperative 5. Passenger Door Unlock Switch = Inoperative 6. S13P Door Lock Switch - Passenger = Inoperative 7. A23D Door Latch Assembly - Driver = Inoperative 8. A23P Door Latch Assembly - Passenger = Inoperative 9. A23LR Door Latch Assembly - Left Rear = Inoperative 10. A23RR Door Latch Assembly - Right Rear = Inoperative				

Circuit/System Description

For an overview of the component/system, refer to: [Power Door Locks Description and Operation](#)

Circuit	Description
B+ - K9 Body Control Module	Supplied from a fuse.
Signal	The control module input circuit has an internal resistance connected to 12 V.
Control - Driver Door Unlock	The output circuit is switched from ground to 12 V to activate the component.
Control - All Doors Lock	The output circuit is switched from ground to 12 V to activate the component.
Control - Passenger Door Unlock	The output circuit is switched from ground to 12 V to activate the component.
Ground - S13D Door Lock Switch - Driver	Chassis Ground
Ground - S13P Door Lock Switch - Passenger	Chassis Ground
Ground - K9 Body Control Module	Chassis Ground

Component	Description
A23 Door Latch Assembly	The door locks are actuated by a bidirectional DC motor that locks/unlocks the door so that it can not be opened from outside the vehicle (but still from inside).
K9 Body Control Module	The module controls various vehicle functions like lighting, central door locking, power windows, etc.
S13P Door Lock Switch - Passenger	• The switch has a normally open contact. • When the switch is activated, the signal circuit to the control module is grounded.
S13D Door Lock Switch - Driver	• The switch has a normally open contact. • When the switch is activated, the signal circuit to the control module is grounded.

Reference Information

Schematic Reference

- [Door Lock/Indicator Wiring Schematics](#)
- [Body Control System Wiring Schematics](#)

Connector End View Reference

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Scan Tool Reference

[Control Module References](#)

[Circuit/System Verification](#)

1. Ignition - On / Vehicle - In Service Mode
2. Verify the scan tool parameter: Driver Door Lock Switch = Inactive
 - **If not the specified state**
Refer to: Circuit/System Testing - Test 1
 - **Go to next step: If the specified state**
3. Operate the component: S13D Door Lock Switch - Driver - Lock & Unlock
Verify the scan tool parameter: Driver Door Lock Switch = Lock & Unlock
 - **If not the specified state**
Refer to: Circuit/System Testing - Test 1
 - **Go to next step: If the specified state**
4. Verify the scan tool parameter: Passenger Door Lock Switch = Inactive
 - **If not the specified state**
Refer to: Circuit/System Testing - Test 1
 - **Go to next step: If the specified state**
5. Operate the component: S13P Door Lock Switch - Passenger - Lock & Unlock
Verify the scan tool parameter: Passenger Door Lock Switch = Lock & Unlock
 - **If not the specified state**
Refer to: Circuit/System Testing - Test 1
 - **Go to next step: If the specified state**
6. Operate the component: S13D Door Lock Switch - Driver - Lock & Unlock
Verify the component works as specified:

- A23D Door Latch Assembly - Driver = Lock & Unlock
- A23LR Door Latch Assembly - Left Rear = Lock & Unlock
- A23P Door Latch Assembly - Passenger = Lock & Unlock
- A23RR Door Latch Assembly - Right Rear = Lock & Unlock
- **If the component does not activate - A23D Door Latch Assembly - Driver**

Refer to: Circuit/System Testing - Test 2

- **If the component does not activate - A23LR Door Latch Assembly - Left Rear**

Refer to: Circuit/System Testing - Test 3

- **If the component does not activate - A23P Door Latch Assembly - Passenger**

Refer to: Circuit/System Testing - Test 3

- **If the component does not activate - A23RR Door Latch Assembly - Right Rear**

Refer to: Circuit/System Testing - Test 3

- **If none of the components operate**

Refer to: Circuit/System Testing - Test 4

- **Go to next step: If all functions work properly**

7. All OK.

Circuit/System Testing

Test 1

NOTE: It may take up to 2 min for all vehicle systems to power down before an accurate ground or low reference circuit continuity test can be performed.

1. Ignition/Vehicle & All vehicle systems - Off
2. Disconnect the appropriate electrical connector: S13D Door Lock Switch - Driver/S13P Door Lock Switch - Passenger
3. Test for less than 10 ohms between the test points: Ground circuit terminal 4 & Ground
 - **If 10 ohms or greater**
 1. Ground Connection - Disconnect
 2. Test for less than 2 ohms between the test points: Ground circuit terminal 4 @Component harness & Ground Connection
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Repair the open/high resistance in the ground connection.
 - **Go to next step: If less than 10 ohms**
4. Ignition - On / Vehicle - In Service Mode
5. Verify the scan tool parameter: Driver Door Lock Switch or Passenger Door Lock Switch = Inactive
 - **If not the specified state**
 1. Ignition/Vehicle - Off
 2. Disconnect the electrical connector: X2 / X7 @K9 Body Control Module
 3. Test for infinite resistance between the test points:
 - Signal circuit terminal 2 @Component harness & Ground
 - Signal circuit terminal 3 @Component harness & Ground
 - If less than infinite resistance - Repair the short to ground on the circuit.
 - If infinite resistance - Replace the component: K9 Body Control Module

- **Go to next step: If the specified state**

6. Connect a 3 A fused jumper wire between the test points: Signal circuit terminal 3 & Ground circuit terminal 4

7. Verify the scan tool parameter: Driver Door Lock Switch or Passenger Door Lock Switch = Unlock

- **If not the specified state**

1. Ignition/Vehicle - Off & Remove - Jumper wire(s)

2. Disconnect the electrical connector: X2 or X7 @K9 Body Control Module

3. Ignition - On / Vehicle - In Service Mode

4. Test for less than 1 V between the test points: Signal circuit terminal 3 @Component harness & Ground

- If 1 V or greater - Repair the short to voltage on the circuit.

- If less than 1 V

5. Ignition/Vehicle - Off

6. Test for less than 2 ohms between the test points:

- Signal circuit terminal 3 @S13D Door Lock Switch - Driver & Terminal 15 X2 @Control module harness

- Signal circuit terminal 3 @S13P Door Lock Switch - Passenger & Terminal 24 X7 @Control module harness

- If 2 ohms or greater - Repair the open/high resistance in the circuit.

- If less than 2 ohms - Replace the component: K9 Body Control Module

- **Go to next step: If the specified state**

8. Connect a 3 A fused jumper wire between the test points: Signal circuit terminal 2 & Ground circuit terminal 4

9. Verify the scan tool parameter: Driver Door Lock Switch or Passenger Door Lock Switch = Lock

- **If not the specified state**

1. Ignition/Vehicle - Off & Remove - Jumper wire(s)

2. Disconnect the electrical connector: X2 or X7 @K9 Body Control Module

3. Ignition - On / Vehicle - In Service Mode

4. Test for less than 1 V between the test points: Signal circuit terminal 2 @Component harness & Ground

- If 1 V or greater - Repair the short to voltage on the circuit.

- If less than 1 V

5. Ignition/Vehicle - Off

6. Test for less than 2 ohms between the test points:

- Signal circuit terminal 2 @S13D Door Lock Switch - Driver & Terminal 19 X2 @Control module harness

- Signal circuit terminal 2 @S13P Door Lock Switch - Passenger & Terminal 21 X7 @Control module harness

- If 2 ohms or greater - Repair the open/high resistance in the circuit.

- If less than 2 ohms - Replace the component: K9 Body Control Module

- **Go to next step: If the specified state**

10. Test or replace the component: S13D Door Lock Switch - Driver/S13P Door Lock Switch - Passenger

Test 2

1. Ignition/Vehicle - Off

2. Disconnect the electrical connector: A23D Door Latch Assembly - Driver

3. Connect a test lamp between the test points: Control circuit terminal 7 & Control circuit terminal 8

4. Ignition - On / Vehicle - In Service Mode

5. Operate the component: S13D Door Lock Switch - Driver - Lock & Unlock

6. Verify the test lamp does not turn On and Off.

- **If the test lamp turns On and Off**

Test or replace the component: A23D Door Latch Assembly - Driver

- **Go to next step: If the test lamp does not turn On and Off**

7. Ignition/Vehicle - Off

8. Disconnect the electrical connector: X6 @K9 Body Control Module

9. Test for less than 2 ohms between the test points:

- Control circuit terminal 7 @Component harness & Terminal 1 X6 @Control module harness
- Control circuit terminal 8 @Component harness & Terminal 4 X6 @Control module harness
- If 2 ohms or greater - Repair the open/high resistance in the circuit.
- **Go to next step: If less than 2 ohms**

10. Test or replace the component: K9 Body Control Module

Test 3

1. Ignition/Vehicle & All vehicle systems - Off

2. Disconnect the appropriate electrical connector:

- A23LR Door Latch Assembly - Left Rear
- A23P Door Latch Assembly - Passenger
- A23RR Door Latch Assembly - Right Rear

3. Connect a test lamp between the test points:

- A23P Door Latch Assembly - Passenger: Control circuit terminal 9 & Control circuit terminal 8
- A23LR Door Latch Assembly - Left Rear: Control circuit terminal 7 & Control circuit terminal 8
- A23RR Door Latch Assembly - Right Rear: Control circuit terminal 9 & Control circuit terminal 8

4. Ignition - On / Vehicle - In Service Mode

5. Operate the component: S13D Door Lock Switch - Driver - Lock & Unlock

6. Verify the test lamp does not turn On and Off.

- **If the test lamp turns On and Off**

Test or replace the component: A23 Door Latch Assembly

- **Go to next step: If the test lamp does not turn On and Off**

7. Ignition/Vehicle - Off

8. Disconnect the electrical connector: X6 @K9 Body Control Module

9. Ignition - On / Vehicle - In Service Mode

10. Test for less than 2 ohms between the test points:

- Control circuit terminal 7 @A23LR Door Latch Assembly - Left Rear & Terminal 2 X6 @Control module harness
- Control circuit terminal 8 @A23LR Door Latch Assembly - Left Rear & Terminal 4 X6 @Control module harness
- Control circuit terminal 8 @A23P Door Latch Assembly - Passenger & Terminal 2 X6 @Control module harness
- Control circuit terminal 9 @A23P Door Latch Assembly - Passenger & Terminal 2 X6 @Control module harness
- Control circuit terminal 8 @A23RR Door Latch Assembly - Right Rear & Terminal 4 X6 @Control module harness

- Control circuit terminal 9 @A23RR Door Latch Assembly - Right Rear & Terminal 2 X6 @Control module harness
- If 2 ohms or greater - Repair the open/high resistance in the circuit.
- **Go to next step: If less than 2 ohms**

11. Test or replace the component: K9 Body Control Module

Test 4

NOTE: It may take up to 2 min for all vehicle systems to power down before an accurate ground or low reference circuit continuity test can be performed.

1. Ignition/Vehicle - Off
2. Disconnect the electrical connector: X2 & X6 @K9 Body Control Module
3. Test for less than 10 ohms between the test points: Ground circuit terminal 3 X6 & Ground
 - **If 10 ohms or greater**
 1. Ground Connection - Disconnect
 2. Test for less than 2 ohms between the test points: Ground circuit terminal 3 X6 & Ground Connection
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Repair the open/high resistance in the ground connection.
 - **Go to next step: If less than 10 ohms**
4. Ignition - On / Vehicle - In Service Mode
5. Verify a test lamp turns On between the test points: B+ circuit terminal 4 X2 & Ground
 - **If the test lamp does not turn On and the circuit fuse is OK**
 1. Ignition/Vehicle - Off & Remove - Test lamp
 2. Test for less than 2 ohms between the test points: B+ circuit terminal 4 X2 & Output terminal @Fuse
 - If 2 ohms or greater - Repair the open/high resistance in the circuit.
 - If less than 2 ohms - Verify the fuse is OK and there is voltage at the fuse.
 - **If the test lamp does not turn On and the circuit fuse is open**
 1. Ignition/Vehicle - Off & Remove - Test lamp
 2. Disconnect the electrical connector:
 - A23D Door Latch Assembly - Driver
 - A23LR Door Latch Assembly - Left Rear
 - A23P Door Latch Assembly - Passenger
 - A23RR Door Latch Assembly - Right Rear
 3. Test for infinite resistance between the test points:
 - Control circuit terminal 1 X6 @K9 Body Control Module & Ground
 - Control circuit terminal 2 X6 @K9 Body Control Module & Ground
 - Control circuit terminal 4 X6 @K9 Body Control Module & Ground
 - If less than infinite resistance - Repair the short to ground on the circuit.
 - If infinite resistance - Replace the component: A23 Door Latch Assembly
 - **Go to next step: If the test lamp turns On**
6. Ignition/Vehicle - Off
7. Connect the electrical connector: X2 @K9 Body Control Module
8. Ignition - On / Vehicle - In Service Mode
9. Test for less than 1 V between the test points:
 - Control circuit terminal 1 X6 @K9 Body Control Module & Ground
 - Control circuit terminal 2 X6 @K9 Body Control Module & Ground
 - Control circuit terminal 4 X6 @K9 Body Control Module & Ground

- **If greater than 1 V**

Repair the short to voltage on the circuit.

- **Go to next step: If 1 V or less**

10. Ignition/Vehicle - Off

11. Test for infinite resistance between the test points:

- Control circuit terminal 1 X6 @K9 Body Control Module & Ground
- Control circuit terminal 2 X6 @K9 Body Control Module & Ground
- Control circuit terminal 4 X6 @K9 Body Control Module & Ground
- **If less than infinite resistance**

Repair the short to ground on the circuit.

- **Go to next step: If infinite resistance**

12. Replace the component: K9 Body Control Module

Component Testing

S13 Door Lock Switch - Test

1. Ignition/Vehicle - Off

2. Disconnect the appropriate electrical connector: S13 Door Lock Switch

3. Test for infinite resistance between the test points:

- Signal terminal 2 & Ground terminal 4 - Switch - Not Pressed
- Signal terminal 3 & Ground terminal 4 - Switch - Not Pressed
- **If less than infinite resistance**

Replace the component: S13 Door Lock Switch

- **Go to next step: If infinite resistance**

4. Test for less than 3 ohms between the test points: Signal terminal 2 & Ground terminal 4 - Lock Switch - Pressed

- **If 3 ohms or greater**

Replace the component: S13 Door Lock Switch

- **Go to next step: If less than 3 ohms**

5. Test for less than 3 ohms between the test points: Signal terminal 2 & Ground terminal 4 - Unlock Switch - Pressed

- **If 3 ohms or greater**

Replace the component: S13 Door Lock Switch

- **Go to next step: If less than 3 ohms**

6. All OK.

A23 Door Latch Assembly

1. Ignition/Vehicle - Off

2. Disconnect the appropriate electrical connector:

- A23D Door Latch Assembly - Driver
- A23P Door Latch Assembly - Passenger
- A23LR Door Latch Assembly - Left Rear
- A23RR Door Latch Assembly - Right Rear

3. Connect a 25 A fused jumper wire between the test points: Control terminal 8 & B+

CAUTION: Complete the testing as quickly as possible in order to prevent overheating and damaging the component.

4. Momentarily connect a jumper wire between the test points:

- A23D Door Latch Assembly - Driver: Control terminal 7 & Ground
- A23P Door Latch Assembly - Passenger: Control terminal 9 & Ground
- A23LR Door Latch Assembly - Left Rear: Control terminal 7 & Ground
- A23RR Door Latch Assembly - Right Rear: Control terminal 9 & Ground

5. Reverse the jumper wires 2 times between the terminals.

Verify the component works as specified: A23 Door Latch Assembly = Lock & Unlock

- **If not the specified state**

Replace the component: A23 Door Latch Assembly

- **Go to next step: If the specified state**

6. All OK.

Repair Instructions

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

- [Door Lock Switch Replacement - Driver Side \(Equinox\)](#)[Door Lock Switch Replacement - Driver Side \(Terrain\)](#)
- [Door Lock Switch Replacement - Passenger Front \(Equinox\)](#)[Door Lock Switch Replacement - Passenger Front \(Terrain\)](#)
- [Front Side Door Latch Replacement](#)
- [Rear Side Door Latch Replacement](#)
- For control module replacement, programming, and setup refer to: [Control Module References](#)

POWER LIFTGATE 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.

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Liftgate Control Module B+ Terminal 4 X2	U0230 00	U0230 00	-	-
Liftgate Control Module B+ Terminal 3 X2	B396A 04	B396A 04	-	-
Liftgate Position Sensor 12 V Reference Voltage	B153E 02	B153E 04	-	-
Interior Liftgate Control Switch Signal	B396D 02	2	2	-
Liftgate Unlatch Switch Signal	B2494 02	1	1	-
Liftgate Close Switch Signal	B396E 02	3	3	-
Pawl Switch Signal	B153A 08	B153A 08	B153A 08	-
Ratchet Switch Signal	B153A 08	B153A 08	B153A 08	-
Sector Switch Signal	B153A 08	B153A 08	B153A 08	-
Left Object Sensor Signal	B153F 02	B153F 05	B153F 05	-

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Liftgate Position Sensor 1 Signal	B153E 02, B153E 08	B153E 04, B153E 08	B153E 01, B153E 08	B153E 08
Liftgate Position Sensor 2 Signal	B153E 02, B153E 08	B153E 04, B153E 08	B153E 01, B153E 08	B153E 08
Liftgate Motor Close Control	B396A 02	B396A 04	B396A 01	-
Liftgate Motor Open Control	B396A 02	B396A 04	B396A 01	-
liftgate Latch Cinch Control	B2495 02	B2495 04	B2495 01	-
liftgate Latch Release Control	B2495 02	B2495 04	B2495 01	-
Liftgate Position Sensor Low Reference	-	B153E 04	-	-
Liftgate Close Switch Low Reference	-	3	-	-
Liftgate Unlatch Switch Low Reference	-	1	-	-
Right Object Sensor Low Reference	-	B153F 05	-	-
Interior Liftgate Control Switch Ground	-	2	-	-
Liftgate Control Module Ground	-	U0230 00	-	-
1. Liftgate unlatch switch inoperative 2. Interior liftgate control switch inoperative 3. Liftgate close switch inoperative				

Circuit/System Description

The unlatch, ratchet, pawl, and sector switches are part of the liftgate latch assembly and are used by the liftgate control module to determine the state of the latch during the process of cinching or unlatching. The ratchet and pawl switches will be inactive when the primary and secondary latches are latched, and the sector switch will be active during the power cinch function. Each of the latch switch signal circuits are supplied signal through a resistor and monitored within the liftgate control module. The latch switches share a common low reference circuit from the liftgate control module and when the switch contacts close, the signal circuit goes low and the liftgate control module determines the switch to be active.

The liftgate control module continuously monitors power liftgate operation and calculates its location and direction of travel using 2 Hall effect sensors that are part of the liftgate motor. The Hall effect sensors are 12 V 3-wire sensors and are supplied with a 12 V reference, ground and signal circuits from the liftgate control module. The Hall effect sensor signal circuits are referenced from voltage within the liftgate control module and pulsed low by the Hall effect sensors.

Diagnostic Aids

- Whenever the liftgate control module loses power or is disconnected, the ignition must be cycled OFF then ON in order to reactivate the liftgate control module.
- Check the calibration software installed on the liftgate control module prior to performing extensive diagnostics, vehicles with the handsfree liftgate control option (TC2) require specific calibration software. Incorrect calibration software may cause the power liftgate system to become inoperative without setting any DTCs
- Remote power liftgate functions may be disabled if a second keyless entry transmitter is inside the vehicle

Reference Information

Schematic Reference

Liftgate Wiring Schematics

COMPONENT CONNECTOR END VIEWS - INDEX

Description and Operation

Liftgate 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 Liftgate Front Control Switch parameter changes between Inactive and Active when pressing the S45B Liftgate Control Switch-Interior.
 - **If the parameter does not change**
Refer to Circuit/System Testing - Test 1
 - **Go to next step: If the parameter changes**
3. Verify the scan tool Liftgate Mode Switch is between 125 counts and 350 counts and changes while rotating the S45B Liftgate Control Switch-Interior.
 - **If not between 125 counts and 350 counts or does not change**
Refer to Circuit/System Testing - Test 2
 - **Go to next step: If between 125 counts and 350 counts and changes**
4. Verify the scan tool Liftgate Handle Switch parameter changes between Active and Inactive when pressing the S46B Liftgate Unlatch Switch.
 - **If the parameter does not change**
Refer to Circuit/System Testing - Test 3
 - **Go to next step: If the parameter changes**
5. Verify the scan tool Liftgate Latch Pawl Switch, Liftgate Latch Ratchet Switch and Liftgate Latch Sector Switch parameters are as listed below:
 - Liftgate Latch Pawl Switch parameter Close
 - Liftgate Latch Ratchet Switch parameter Close
 - Liftgate Latch Sector Switch parameter Inactive
 - **If any of the parameters are not as listed**
Refer to Circuit/System Testing - Test 4
 - **Go to next step: If the parameters are as listed**
6. Verify the scan tool Body Control Module Rear Closure Ajar Switch parameter is Inactive.
 - **If the parameter is not Inactive**
Refer to Circuit/System Testing - Test 4
 - **Go to next step: If the parameter is Inactive**

7. Verify the A23C Liftgate Latch Assembly will release the liftgate from the closed position when pressing the S46B Liftgate Unlatch Switch.

- **If the A23C Liftgate Latch Assembly does not release**

Refer to: [Liftgate Latch Release/Cinch Malfunction](#)

- **Go to next step: If the A23C Liftgate Latch Assembly will release the liftgate**

8. Liftgate Open

9. Verify the scan tool Liftgate Latch Pawl Switch and Liftgate Latch Ratchet Switch parameters are as listed below:

- Liftgate Latch Pawl Switch parameter Open
- Liftgate Latch Ratchet Switch parameter Open
- **If any of the parameter are not as listed**

Refer to Circuit/System Testing - Test 4

- **Go to next step: If the parameters are as listed**

10. Verify the scan tool Body Control Module Rear Closure Ajar Switch parameter is Active.

- **If the parameter is not Active**

Refer to Circuit/System Testing - Test 4

- **Go to next step: If the parameter is Active**

11. Verify the scan tool Liftgate Rear Close Switch parameter changes between Inactive to Active when pressing the B70 Liftgate Close Switch.

- **If the parameter does not change**

Refer to Circuit/System Testing - Test 5

- **Go to next step: If the parameter changes**

12. Verify the scan tool Liftgate Secondary Obstacle Detection parameter is between 3V-3.5V.

- **If not between 3V-3.5V**

Refer to Circuit/System Testing - Test 6

- **Go to next step: If between 3V-3.5V**

13. Verify the scan tool Liftgate Secondary Obstacle Detection parameter is between 3V-3.5V and changes to 2.25-2.75V as the B71R Liftgate Object Sensor - Right is pressed.

- **If not between 2.25-2.75V or does not change**

Test or replace the B71R Liftgate Object Sensor - Right.

- **Go to next step: If between 2.25-2.75V and changes**

14. Verify the scan tool Liftgate Secondary Obstacle Detection parameter is between 3V-3.5V and changes to 2.25-2.75V as the B71L Liftgate Object Sensor - Left is pressed.

- **If not between 2.25-2.75V or does not change**

Test or replace the B71L Liftgate Object Sensor - Left.

- **Go to next step: If between 2.25-2.75V and changes**

15. Verify the liftgate will smoothly power open and close when commanding Liftgate Open/Close with a scan tool.

- **If the liftgate does not power open or power close**

Refer to Circuit/System Testing - Test 7

- **If the liftgate performs an erratic power open or close motion**

Refer to Circuit/System Testing - Test 8

- **Go to next step: If the liftgate does smoothly power open and close**

16. All OK.

Circuit/System Testing

Test 1

1. Ignition OFF and all vehicle systems OFF, disconnect the harness connector at the S45B Liftgate Control Switch-Interior. It may take up to 2 minutes for all vehicle systems to power down.
2. Test for less than 10 Ω between the ground circuit terminal 1 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.
 - **Go to next step: If less than 10 Ω**
3. Ignition ON.
4. Verify the scan tool Liftgate Front Control Switch parameter is Inactive.
 - **If not Inactive**
 1. Ignition OFF, disconnect the harness connector at the K39 Liftgate Control Module.
 2. Test for infinite resistance between the signal circuit terminal 4 and ground.
 - If less than infinite resistance, repair the short to ground on the circuit.
 - If infinite resistance, replace the K39 Liftgate Control Module.
 - **Go to next step: If Inactive**
5. Install a 3 A fused jumper wire between the signal circuit terminal 4 and the ground circuit terminal 1.
6. Verify the scan tool Liftgate Front Control Switch parameter is Active.
 - **If not Active**
 1. Ignition OFF, disconnect the harness connector at the K39 Liftgate 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. 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 K39 Liftgate Control Module.
 - **Go to next step: If Active**
7. Test or replace the S45B Liftgate Control Switch-Interior.

Test 2

1. Ignition OFF and all vehicle systems OFF, disconnect the harness connector at the S45B Liftgate Control Switch-Interior, ignition ON.
2. Verify the scan tool Liftgate Mode Switch parameter is greater than 300 counts.
 - **If 300 counts or less**
 1. Ignition OFF, disconnect the harness connector at the K39 Liftgate Control Module.
 2. Test for infinite resistance between the signal circuit terminal 3 and ground
 - If less than infinite resistance, repair the short to ground on the circuit.
 - If infinite resistance, replace the K39 Liftgate Control Module
 - **Go to next step: If greater than 300 counts**
3. Install a 3 A fused jumper wire between the signal circuit terminal 3 and the ground circuit terminal 1.

4. Verify the scan tool Liftgate Mode Switch parameter is less than 5 counts.

- **If 5 counts or greater**

1. Ignition OFF, disconnect the harness connector at the K39 Liftgate Control Module.

2. 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 K39 Liftgate Control Module

- **Go to next step: If less than 5 counts**

5. Test or replace the S45B Liftgate Control Switch-Interior.

Test 3

1. Ignition OFF and all vehicle systems OFF, disconnect the harness connector at the S46B Liftgate Unlatch Switch. It may take up to 2 minutes for all vehicle systems to power down.

2. Test for less than 30 Ω between the low reference circuit terminal 2 and ground.

- **If 30 Ω or greater**

1. Ignition OFF, disconnect the harness connector at the K39 Liftgate 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 , repair the open/high resistance in the low reference connection.

- **Go to next step: If less than 30 Ω**

3. Ignition ON.

4. Verify the scan tool Liftgate Handle Switch parameter is Inactive.

- **If not Inactive**

1. Ignition OFF, disconnect the harness connector at the K39 Liftgate Control Module.

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

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

- If infinite resistance, replace the K39 Liftgate Control Module.

- **Go to next step: If Inactive**

5. Install a 3 A fused jumper wire between the signal circuit terminal 1 and the low reference circuit terminal 2.

6. Verify the scan tool Liftgate Handle Switch parameter is Active.

- **If not Active**

1. Ignition OFF, remove the 3 A fused jumper wire, disconnect the harness connector at the K39 Liftgate 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. 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 K39 Liftgate Control Module.

- **Go to next step: If Active**

7. Test or replace the S46B Liftgate Unlatch Switch.

Test 4

1. Ignition OFF and all vehicle systems OFF, disconnect the X2 harness connector at the K39 Liftgate Control Module. It may take up to 2 minutes for all vehicle systems to power down.

2. Test for less than 10 Ω between the ground circuit terminal 6 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.
 - **Go to next step: If less than 10 Ω**
3. Ignition ON.
4. Verify a test lamp illuminates between the B+ circuit terminal 3 and ground.
- **If the test lamp does not illuminate and the circuit fuse is good**
 1. Ignition OFF.
 2. Test for less than 2 Ω in the B+ 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.
 - **If the test lamp does not illuminate and the circuit fuse is open**
 1. Ignition OFF.
 2. Test for infinite resistance between the B+ circuit and ground.
 - If less than infinite resistance, repair the short to ground on the circuit.
 - If infinite resistance, replace the K39 Liftgate Control Module.
 - **Go to next step: If the test lamp illuminates**
5. Ignition OFF and all vehicle systems OFF, connect the X2 harness connector at the K39 Liftgate Control Module. Disconnect the harness connector at the A23C Liftgate Latch Assembly. It may take up to 2 minutes for all vehicle systems to power down.
6. Test for less than 10 Ω between the low reference circuit terminal 6 and ground.
- **If 10 Ω or greater**
 1. Disconnect the harness connector at the K39 Liftgate 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 K39 Liftgate Control Module.
 - **Go to next step: If less than 10 Ω**
7. Ignition ON.
8. Verify the scan tool Liftgate Latch Pawl Switch parameter is Closed.
- **If not Closed**
 1. Ignition OFF, disconnect the harness connector at the K39 Liftgate Control Module.
 2. Test for infinite resistance between the signal circuit terminal 1 and ground.
 - If less than infinite resistance, repair the short to ground on the circuit.
 - If infinite resistance, replace the K39 Liftgate Control Module.
 - **Go to next step: If Closed**
9. Install a 3 A fused jumper wire between the signal circuit terminal 1 and the low reference circuit terminal 6.
10. Verify the scan tool Liftgate Latch Pawl Switch parameter is Open
- **If not Open**
 1. Ignition OFF, remove the 3 A fused jumper wire, disconnect the harness connector at the K39 Liftgate 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. 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 K39 Liftgate Control Module.
 - **Go to next step: If Open**
11. Verify the scan tool Liftgate Latch Ratchet Switch parameter is Closed.
- **If not Closed**

1. Ignition OFF, disconnect the harness connector at the K39 Liftgate Control Module.
2. Test for infinite resistance between the signal circuit terminal 5 and ground.
 - If less than infinite resistance, repair the short to ground on the circuit.
 - If infinite resistance, replace the K39 Liftgate Control Module.
- **Go to next step: If Closed**
12. Install a 3 A fused jumper wire between the signal circuit terminal 5 and the low reference circuit terminal 6.
13. Verify the scan tool Liftgate Latch Ratchet Switch parameter is Open
 - **If not Open**
 1. Ignition OFF, remove the 3 A fused jumper wire, disconnect the harness connector at the K39 Liftgate 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. 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 K39 Liftgate Control Module.
 - **Go to next step: If Open**
14. Verify the scan tool Liftgate Latch Sector Switch parameter is Inactive.
 - **If not Inactive**
 1. Ignition OFF, disconnect the harness connector at the K39 Liftgate Control Module.
 2. Test for infinite resistance between the signal circuit terminal 2 and ground.
 - If less than infinite resistance, repair the short to ground on the circuit.
 - If infinite resistance, replace the K39 Liftgate Control Module.
 - **Go to next step: If Inactive**
15. Install a 3 A fused jumper wire between the signal circuit terminal 2 and the low reference circuit terminal 6.
16. Verify the scan tool Liftgate Latch Sector Switch parameter is Active
 - **If not Active**
 1. Ignition OFF, remove the 3 A fused jumper wire, disconnect the harness connector at the K39 Liftgate 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. 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 K39 Liftgate Control Module.
 - **Go to next step: If Active**
17. Verify the scan tool Body Control Module Rear Closure Ajar Switch parameter is Inactive
 - **If not Inactive**
 1. Ignition OFF, disconnect the harness connector at the K39 Liftgate Control Module.
 2. Test for infinite resistance between the signal circuit terminal 3 and ground.
 - If less than infinite resistance, repair the short to ground on the circuit.
 - If infinite resistance, replace the K39 Liftgate Control Module.
 - **Go to next step: If Inactive**
18. Install a 3 A fused jumper wire between the signal circuit terminal 3 and the low reference circuit terminal 6.
19. Verify the scan tool Body Control Module Rear Closure Ajar Switch parameter is Active
 - **If not Active**

1. Ignition OFF, remove the 3 A fused jumper wire, disconnect the harness connector at the K39 Liftgate 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. 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 K39 Liftgate Control Module.

- **Go to next step: If Active**

20. Test or replace the A23C Liftgate Latch Assembly.

Test 5

1. Ignition OFF and all vehicle systems OFF. Disconnect the harness connector at the B70 Liftgate Close Switch. It may take up to 2 minutes for all vehicle systems to power down.
2. Test for less than 30 Ω between the low reference circuit terminal 3 and ground.
 - **If 30 Ω or greater**
 1. Disconnect the harness connector at the K39 Liftgate 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 , repair the open/high resistance in the low reference connection.
 - **Go to next step: If less than 30 Ω**
3. Ignition ON
4. Verify the scan tool Liftgate Rear Close Switch parameter is Inactive.
 - **If not Inactive**
 1. Ignition OFF, disconnect the harness connector at the K39 Liftgate Control Module.
 2. Test for infinite resistance between the signal circuit terminal 4 and ground.
 - If less than infinite resistance, repair the short to ground on the circuit.
 - If infinite resistance, replace the K39 Liftgate Control Module.
 - **Go to next step: If Inactive**
5. Install a 3 A fused jumper wire between the signal circuit terminal 4 and the low reference circuit terminal 3.
6. Verify the scan tool Liftgate Rear Close Switch parameter is Active.
 - **If not Active**
 1. Ignition OFF, disconnect the harness connector at the K39 Liftgate 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. 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 K39 Liftgate Control Module.
 - **Go to next step: If Active**
7. Test or replace the B70 Liftgate Close Switch.

Test 6

1. Ignition OFF, disconnect the harness connector at the B71R Liftgate Object Sensor - Right. It may take up to 2 minutes for all vehicle systems to power down.
2. Test for less than 30 Ω between the low reference circuit terminal 2 and ground.
 - **If 30 Ω or greater**
 1. Ignition OFF.

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.
 - **Go to next step: If less than 30 Ω**
3. Disconnect the harness connector at the B71L Liftgate Object Sensor - Left.
4. Ignition ON, test for 4.8 - 5.2 V between the 5 V reference circuit terminal 1 and ground.
 - **If less than 4.8 V**
 1. Ignition OFF, disconnect the harness connector at the K39 Liftgate Control Module.
 2. Test for infinite resistance between the 5 V reference 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 5 V 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 K39 Liftgate Control Module.
 - **If greater than 5.2 V**
 1. Ignition OFF, disconnect the harness connector at the K39 Liftgate Control Module, Ignition ON.
 2. Test for less than 1 V between the 5 V reference circuit and ground.
 - If 1 V or greater, repair the short to voltage on the circuit.
 - If less than 1 V, replace the K39 Liftgate Control Module.
 - **Go to next step: If between 4.8 - 5.2 V**
5. Test or replace the B71 Liftgate Object Sensors.

Test 7

1. Ignition OFF, disconnect the X2 harness connector at the K39 Liftgate Control Module, Ignition ON
2. Verify a test lamp illuminates between the B+ circuit terminal 3 and ground.
 - **If the test lamp does not illuminate and the circuit fuse is good**
 1. Ignition OFF
 2. Test for less than 2 Ω in the B+ 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.
 - **If the test lamp does not illuminate and the circuit fuse is open**
 1. Ignition OFF
 2. Test for infinite resistance between the B+ circuit and ground.
 - If less than infinite resistance, repair the short to ground on the circuit.
 - If infinite resistance
 3. Disconnect the X3 harness connector.
 4. Test for infinite resistance between each control circuit listed below and ground:
 - Control circuit terminal 1 X3
 - Control circuit terminal 2 X3
 - If less than infinite resistance, repair the short to ground on the circuit.
 - If infinite resistance, replace the M31 Liftgate Motor.
 - **Go to next step: If the test lamp illuminates**
3. Ignition OFF, connect the X2 harness connector at the K39 Liftgate Control Module and disconnect the harness connector at the M17 Liftgate Motor Assembly.
4. Connect a test lamp between the control circuit terminal 1 and control circuit terminal 5, ignition ON.
5. Liftgate closed and latched, verify the test lamp turns ON and OFF when pressing the S46 Liftgate Handle Switch.
 - **If the test lamp remains OFF**

NOTE:

The liftgate must be opened and allowed to cinch closed each time this test is performed, repeating this test without opening and closing the liftgate will result in a misdiagnosis and replacement of a functional K39 Liftgate Control Module

6. Open and completely close the liftgate, verify the test lamp turns ON and OFF when pressing the S46 Liftgate Handle Switch.

- **If the test lamp remains OFF**

1. Ignition OFF, remove the test lamp, disconnect the X3 harness connector at the K39 Liftgate Control Module.

2. Test for infinite resistance between each control 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 control circuits end to end.

- If 2 Ω or greater, repair the open/high resistance in the circuit.
- If less than 2 Ω , replace the K39 Liftgate Control Module.

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

1. Ignition OFF, remove the test lamp, disconnect the X3 harness connector at the K39 Liftgate Control Module, ignition ON.

2. Test for less than 1 V between each control circuit and ground.

- If 1 V or greater, repair the short to voltage on the circuit.
- If less than 1 V, replace the K39 Liftgate Control Module

- **Go to next step: If the test lamp turns ON and Off**

7. Replace the M17 Liftgate Motor Assembly.

Test 8

1. Ignition OFF, disconnect the X3 harness connector at the K39 Liftgate Control Module.

2. Test for infinite resistance between each circuit terminal listed below and ground:

- Voltage reference circuit terminal 8 X3
- Signal circuit terminal 9 X3
- Signal circuit terminal 10 X3
- Low reference circuit terminal 11 X3
- **If less than infinite resistance**
- Replace the M17 Liftgate Motor Assembly
- **Go to next step: If infinite resistance**

3. Ignition ON

4. Test for less than 1 V between each circuit terminal listed below and ground:

- Voltage reference circuit terminal 8 X3
- Signal circuit terminal 9 X3
- Signal circuit terminal 10 X3
- Low reference circuit terminal 11 X3
- **If 1 V or greater**
- Replace the M17 Liftgate Motor Assembly
- **Go to next step: If less than 1 V**

5. Connect a 3A fused jumper wire between the voltage reference circuit terminal 8 and B+.

6. Connect a 3A fused jumper wire between the low reference circuit terminal 11 and ground.

7. Connect a DMM between the signal circuit terminal 9 and ground.

8. Verify the voltage varies while manually opening and closing the liftgate.

- **If the voltage does not vary**
- Replace the M17 Liftgate Motor Assembly

- **Go to next step: If the voltage varies**
- 9. Connect a DMM between the signal circuit terminal 10 and ground.
- 10. Verify the voltage varies while manually opening and closing the liftgate.
 - **If the voltage does not vary**
 - Replace the M17 Liftgate Motor Assembly
 - **Go to next step: If the voltage varies**
- 11. Replace the K39 Liftgate Control Module

Component Testing

Liftgate Unlatch Switch

1. Ignition OFF, disconnect the harness connector at the S46B Liftgate Unlatch Switch.
2. Test for infinite resistance between the signal terminal 1 and the low reference terminal 2 with the switch in the open position.
 - **If less than infinite resistance**

Replace the S46B Liftgate Unlatch Switch.
 - **Go to next step: If infinite resistance**
3. Test for less than 3 Ω between the signal terminal 1 and the low reference terminal 2 with the switch in the closed position.
 - **If 3 Ω or greater**

Replace the S46B Liftgate Unlatch Switch.
 - **Go to next step: If less than 3 Ω**
4. All OK

Liftgate Close Switch

1. Ignition OFF, disconnect the harness connector at the B70 Liftgate Close Switch.
2. Test for infinite resistance between the signal terminal 4 and the low reference terminal 3 with the switch in the open position.
 - **If less than infinite resistance**

Replace the B70 Liftgate Close Switch.
 - **Go to next step: If infinite resistance**
3. Test for less than 3 Ω between the signal terminal 4 and the low reference terminal 3 with the switch in the closed position.
 - **If 3 Ω or greater**

Replace the B70 Liftgate Close Switch.
 - **Go to next step: If less than 3 Ω**
4. All OK

Interior Liftgate Control Switch

1. Ignition OFF, disconnect the harness connector at the S45B Liftgate Control Switch-Interior.
2. Test for infinite resistance between the signal terminal 4 and the ground terminal 2 with the switch in the open position.
 - **If less than infinite resistance**

Replace the S45B Liftgate Control Switch-Interior.
 - **Go to next step: If infinite resistance**

3. Test for less than 3 Ω between the signal terminal 4 and the ground terminal 2 with the switch in the closed position.

- **If 3 Ω or greater**

Replace the S45B Liftgate Control Switch-Interior.

- **Go to next step: If less than 3 Ω**

4. All OK

Repair Instructions

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

- [Liftgate Release Switch Replacement - Exterior \(Equinox\)](#)[Liftgate Release Switch Replacement - Exterior \(Terrain\)](#)
- [Liftgate Release Switch Replacement - Interior \(Equinox\)](#)[Liftgate Release Switch Replacement - Interior \(Terrain\)](#)
- [Liftgate Side Sensor Replacement \(Equinox\)](#)[Liftgate Side Sensor Replacement \(Terrain\)](#)
- [Liftgate Latch Replacement \(Equinox\)](#)[Liftgate Latch Replacement \(Terrain\)](#)
- [Liftgate Power Assist Actuator Replacement](#)
- [Control Module References](#) for the liftgate control module replacement, programming and setup

DOOR WILL NOT OPEN/CLOSE, DOOR BINDING, OR LOCKS, HANDLES, OR CYLINDERS DO NOT FUNCTION

Step	Action	Yes	No
DEFINITION: This diagnostic table is designed to address the mechanical diagnosis of the door latching system, which could include the inside and outside handles, latch rods/cables, latches, or latch cylinders.			
1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to Diagnostic System Check - Vehicle
2	Were you sent here from a Vehicle Access Symptom Table?	Go to Step 3	Go to Symptoms - Vehicle
3	Does the door open with the outside handle?	Go to Step 4	Go to Step 10
4	Does the door open with the inside handle?	Go to Step 5	Go to Step 11
5	Does the manual latch knob latch and unlatch the latch smoothly without binding?	Go to Step 6	Go to Step 12
6	Does the door latch switch and/or the keyless entry transmitter latch and unlatch the door latch or door latches?	Go to Step 7	Go to Step 14
7	Is the outside key cylinder loose or does it rattle or fall out? (if equipped)	Go to Step 15	Go to Step 8
8	Does the outside key cylinder latch and unlatch the latch and function smoothly without binding? (if equipped)	Go to Step 9	Go to Step 16
9	Does the door bind, does it take excessive effort to open, or is it misaligned?	Go to Step 17	Go to Step 18

Step	Action	Yes	No
10	If the door will not open with the outside handle, or the handle is obstructed or loose, check the following: • For cold weather freezing, thaw as necessary. • Check the handle for foreign material. Remove material as necessary. • Check the handle grab bar for looseness or damage. Repair as necessary. • Check the handle for full travel. If the issue is not resolved, remove the trim panel as necessary to gain access to door hardware and check the following: • Check the handle chassis for loose fasteners, broken chassis inserts, loose or missing spring, or a loose, missing or bent rod lever. • Check for bent rod to the outside handle. • Check that the handle grab bar engages the rod lever properly. • Check for interference of rod and handle to other components in the door. • Check that handle rod is securely attached at both latch and handle. • Check if rod is positioned properly in the clip on the latch. At rest position, the handle should be fully against the down stop and the latch lever should be at the bottom of its travel. Correct by opening clip, repositioning rod in clip and closing clip till it snaps, as necessary. Did you find and correct the condition?	Go to Step 18	Go to Step 11
11	Door will not open with the inside handle: • Check the inside handle for foreign material. Remove material as necessary. • Check that the handle is secure. Correct as necessary. • If rear door, verify child security is not engaged. • Remove the trim panel as necessary to and check the inside handle rod/cable attachments at both the latch and handle. If the cable is kinked or pinched, correct as necessary. Did you find and correct the condition?	Go to Step 18	Go to Step 12

Step	Action	Yes	No
12	The door will not or is difficult to unlatch with the inside manual latch knob: • For cold weather freezing, thaw as necessary • Check the latch knob for a loose condition. Repair or replace as necessary. Check the latch knob for binding or dragging using the following procedure: 1. Remove the latch knob. 2. If condition goes away, check for drag/interference of the latch knob against the inner belt seal, or the trim panel. Correct as required. If further action is required, remove the trim panel and check the latch rod and latch knob for interference with the following: • Water deflector/paper • Side impact foam • Rod grommet in sheet metal • Glass run channel • Other rods or cables • Trim panel Did you find and correct the condition?	Go to Step 18	Go to Step 13
13	With a manual lock, if the latch will not function properly do the following: 1. Function the lock/unlatch lever on the latch to unlatch the latch. Check for high internal resistance. 2. With the door open, manually close the latch with a screwdriver. 3. Check the latch for internal binding by actuating the latch with the inside door handle lever. 4. Manually close the latch with a screwdriver again. 5. Check the latch for internal binding by actuating the latch with the outside door handle lever. Did you find and correct the condition?	Go to Step 18	Go to Step 14

Step	Action	Yes	No
14	If power locks are included in vehicle options and do not function with either the keyless entry transmitter or switch: 1. For cold weather freezing, thaw as necessary. 2. Remove trim pad as required and check the following: • Verify door harness has appropriate power connectors for switches and latch. • Check harness connector pins for corrosion. • Assure wire harness connectors are seated and locked properly at latch and switch. Remove and re-seat if required. • Check door harness for cuts/chafing/corrosion. Correct/replace as required. • Check for 12V at latch and door switch. Correct/proceed accordingly. • Check BCM for trouble codes. Correct/proceed accordingly. 3. If power locks still do not function do the following: 1. Remove latch from door cavity. 2. Connect latch to electrical connector outside the door. 3. Function power lock/unlatch switch in both latch and unlatch directions. Watch for lock/unlatch lever on latch to move completely from one position to the other. 4. If lever does not move, remove connector from old latch and attach to new latch outside of door cavity. 5. Verify new latch is functional, if so, attach rods and install new latch in door. Did you find and correct the condition?	Go to Step 18	Go to Step 15
15	If the key cylinder is loose do the following: • Remove the trim if necessary. • Check that the retaining clip is properly seated. (if equipped) • Check that the fastener is properly torqued. (if equipped) Did you find and correct the condition?	Go to Step 18	Go to Step 16

Step	Action	Yes	No
16	The outside key cylinder will not latch and unlatch the latch and function smoothly without binding: 1. For cold weather freezing, thaw as necessary 2. Remove trim if required. 3. Check that the key cylinder rod is securely attached both to the key cylinder pawl and the latch. 4. Check that key cylinder lever, rod and latch lever are free of interferences. Remove interferences as required. 5. Check that latch cylinder rod is routed properly. Re-route as required. 6. Remove rod from latch cylinder and actuate cylinder. Check for internal resistance. Lubricate latch cylinder as required 7. Verify Cylinder rotates with vehicle key. If not, code and replace cylinder to match vehicle key. See latch cylinder coding and replacing. Did you find and correct the condition?	Go to Step 18	Go to Step 17
17	The door is difficult to open: • Check for interference with the fender, adjacent door, body opening or door striker and adjust as necessary. • Check for binding door hinges. Lubricate or align/adjust as necessary. • Check the door check link for binding. Lubricate as necessary. • Adjust the door as necessary. Did you find and correct the condition?	Go to Step 18	Go to appropriate Door Lock Striker Adjustment procedure.
18	Verify proper operation of the door closing system. • Outside handle • Inside handle • Manual lock/unlatch • Outside key cylinder • Inside latch knob • Double pull handle • Power lock/unlatch • Key fob • Door switches • Door opening/closing effort Is the condition still present?	Go to Step 1	System OK

REPAIR INSTRUCTIONS

FUEL TANK FILLER DOOR LOCK ACTUATOR REPLACEMENT

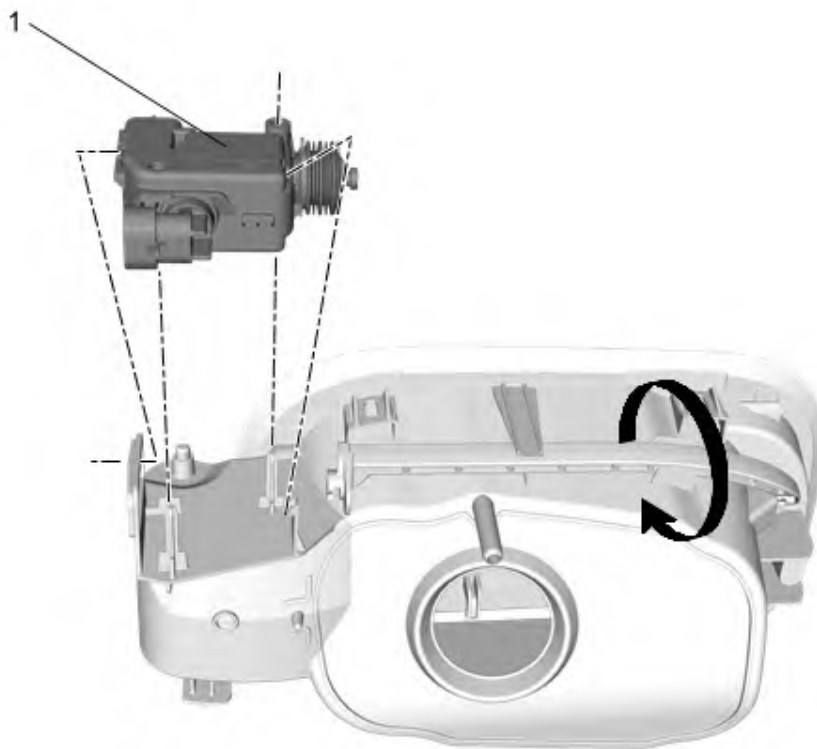


Fig. 9: Fuel Tank Filler Door Lock Actuator
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure <u>Fuel Tank Filler Pipe Housing Replacement (Equinox), Fuel Tank Filler Pipe Housing Replacement (Terrain)</u>	
1	Fuel Tank Filler Door Lock Actuator Procedure 1. Disconnect the electrical connector. 2. Remove the actuator rod from the actuator shaft, with light pressure, pressing sideways on the rod at the shafts end, and rotating the rod outward from the housing. 3. Release the 4 retainers while using light outward pressure on the actuator.

FRONT SIDE DOOR INSIDE HANDLE CABLE REPLACEMENT

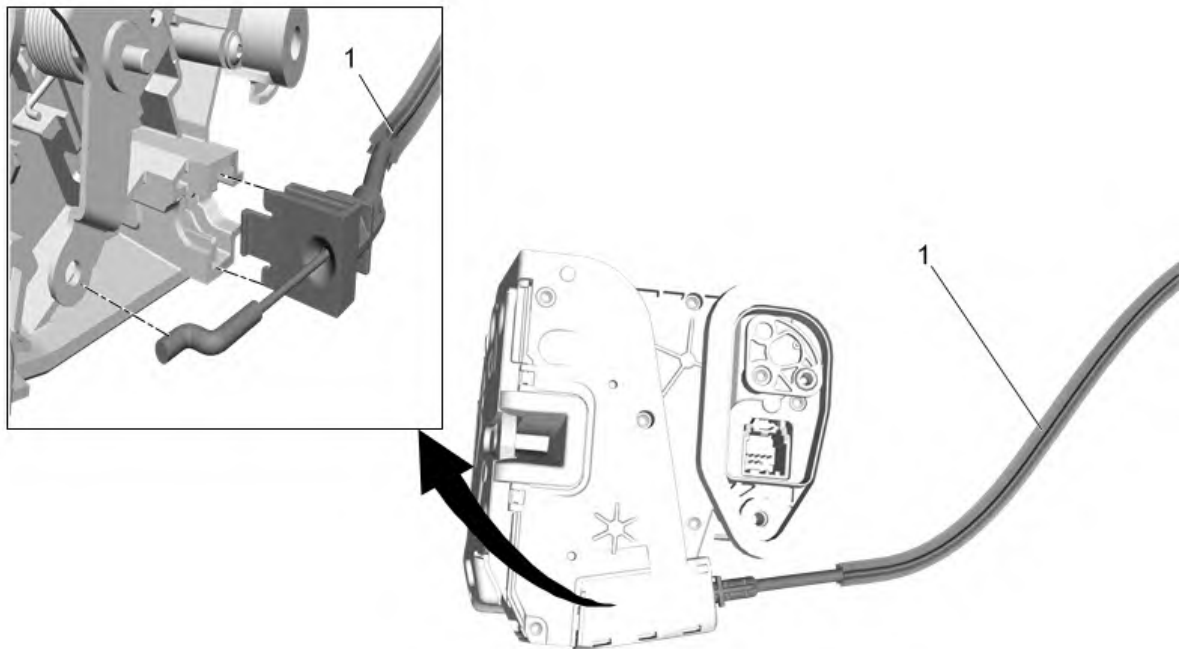


Fig. 10: Front Side Door Inside Handle Cable
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure <u>Front Side Door Latch Replacement</u>	
1	Front Side Door Inside Handle Cable Procedure Using the appropriate tool, open the access cover to release the cable from the latch assembly. NOTE: Ensure that the door lock system operates properly before installing the door trim.

REAR SIDE DOOR INSIDE HANDLE CABLE REPLACEMENT

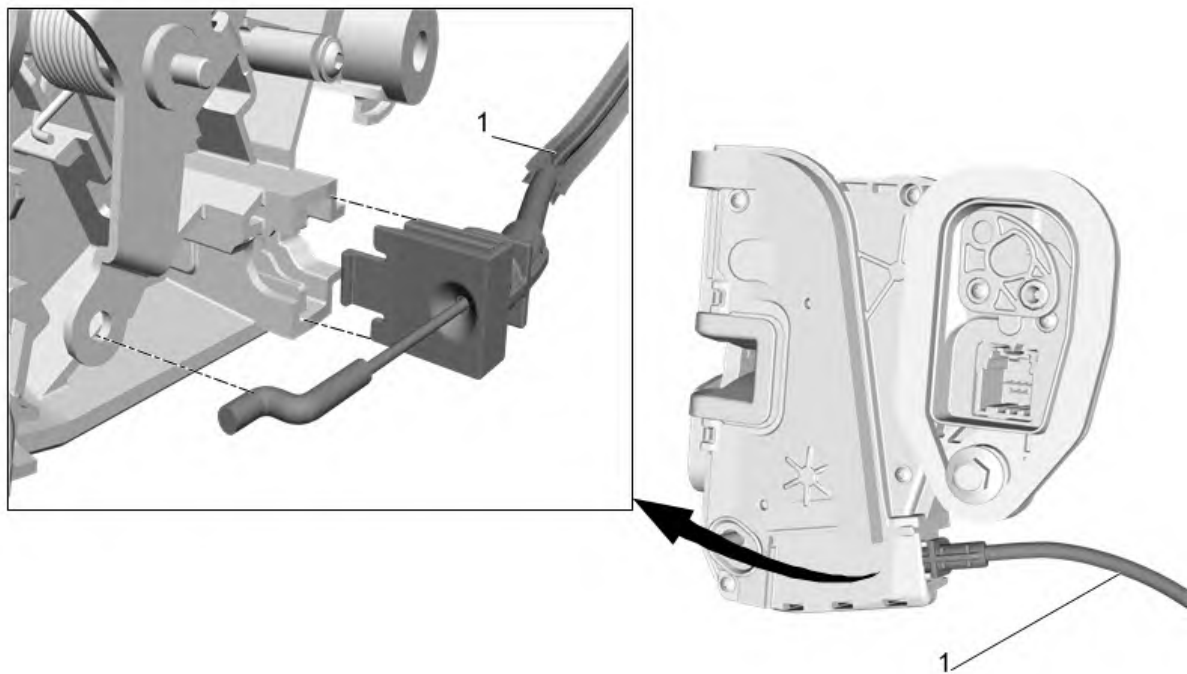


Fig. 11: Rear Side Door Inside Handle Cable
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Rear Side Door Latch Replacement	
1	Rear Side Door Inside Handle Cable Procedure 1. Using the appropriate tool, open the access cover to view the cable end. 2. Release the cable from the latch assembly. 3. Ensure that the door lock system operates properly before installing the door trim.

FRONT SIDE DOOR LOCK CYLINDER REPLACEMENT

Removal Procedure

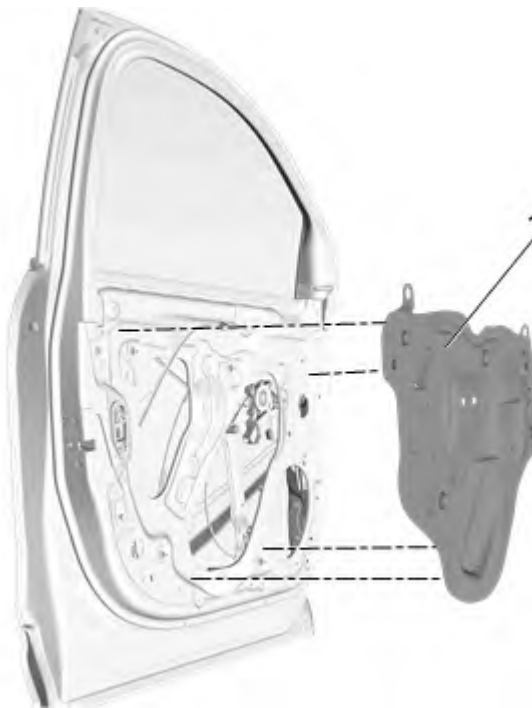


Fig.12: Front Side Door Water Deflector
Courtesy of GENERAL MOTORS COMPANY

1. Remove Front Side Door Water Deflector (1) **Front Side Door Water Deflector Replacement (Equinox). Front Side Door Water Deflector Replacement (Terrain).**

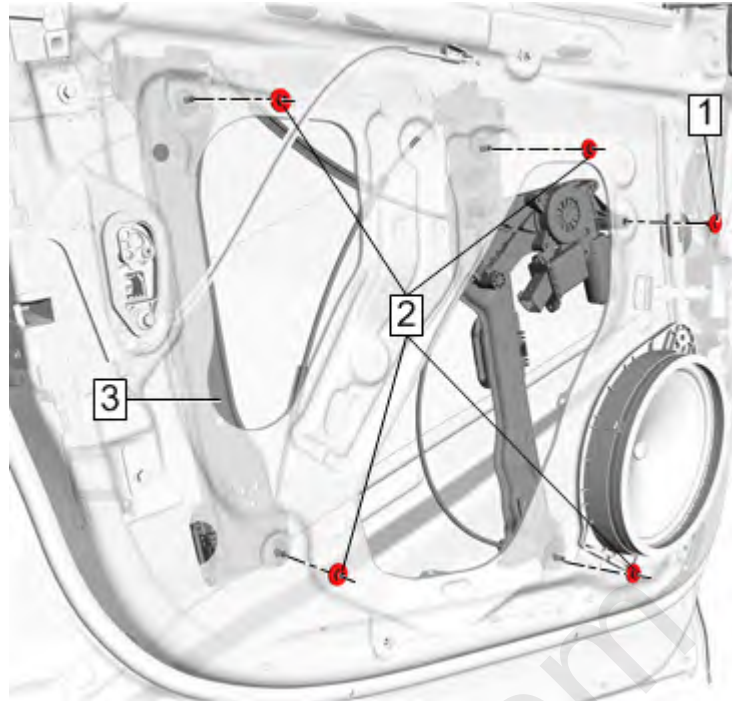


Fig.13: Front Side Door Window Regulator
Courtesy of GENERAL MOTORS COMPANY

2. Remove Front Side Door Window Regulator (3) **Front Side Door Window Regulator Replacement**

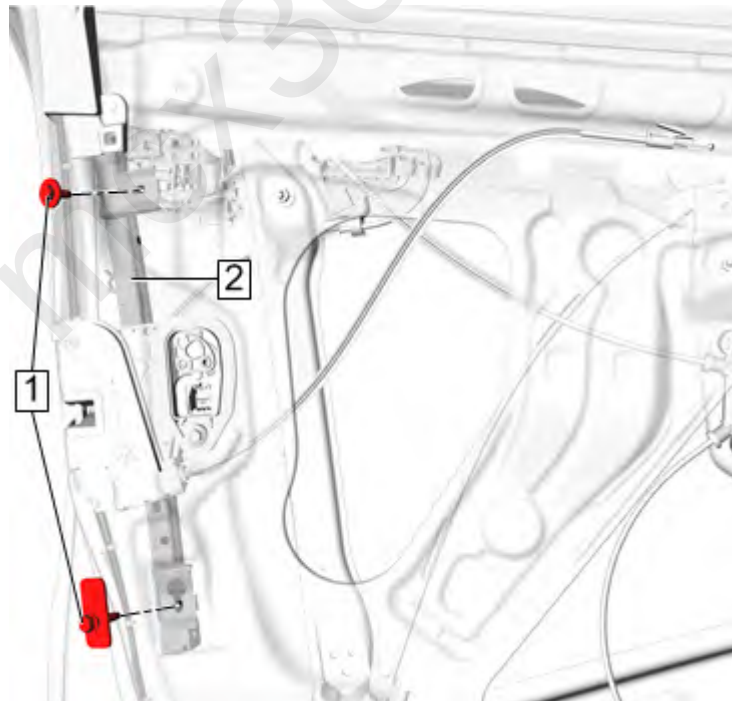


Fig.14: Front Side Door Window Channel Retainer
Courtesy of GENERAL MOTORS COMPANY

3. Remove Front Side Door Window Channel Retainer (2) **Front Side Door Window Channel Retainer Replacement**

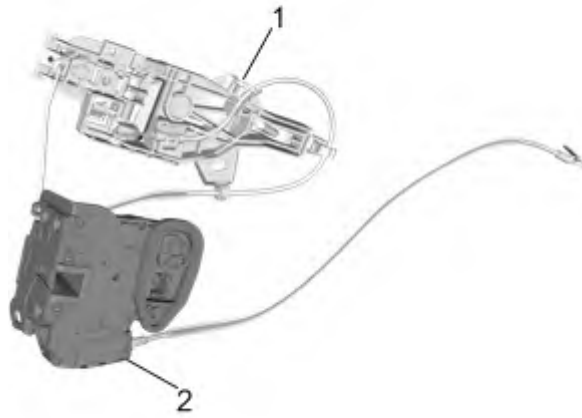


Fig. 15: Rear Side Door Outside Handle Bracket And Rear Side Door Latch
 Courtesy of GENERAL MOTORS COMPANY

NOTE: When performing this procedure the latch and handle bracket assembly Must be removed from the vehicle to replace the door lock cylinder assembly.

4. Remove Front Side Door Latch (1) **Front Side Door Latch Replacement**



Fig. 16: Front Side Door Lock Cylinder Rod
 Courtesy of GENERAL MOTORS COMPANY

NOTE: Its not necessary to disconnect the inside or outside handle cables to replace the door lock cylinder.

5. Remove Front Side Door Lock Cylinder Rod (1)

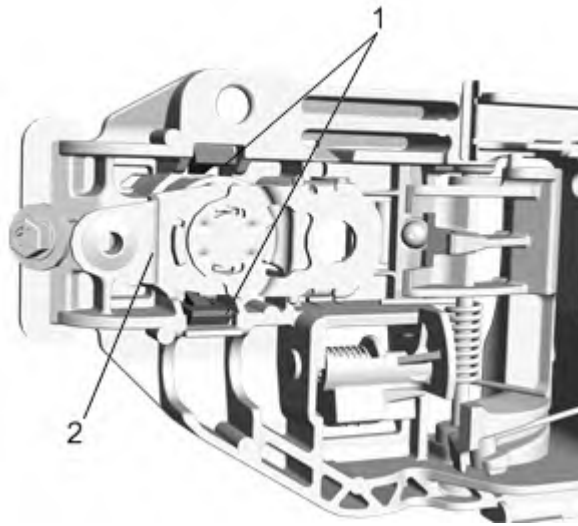


Fig. 17: Lock Cylinder Retainers

Courtesy of GENERAL MOTORS COMPANY

6. From the back side of the outside handle bracket, use a suitable tool, push up and down on the lock cylinder retainers (1) releasing the retainer from the cylinder.(2)

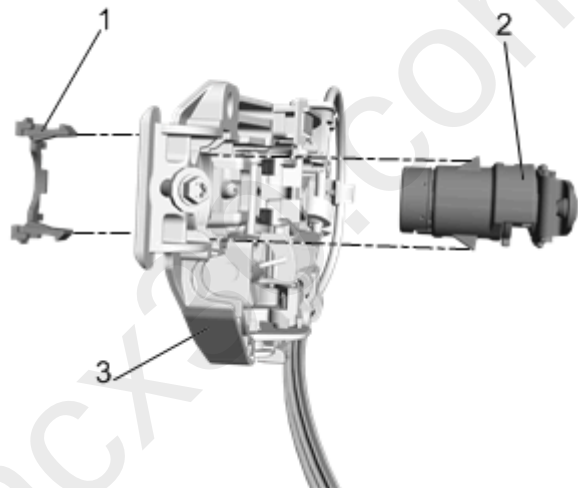
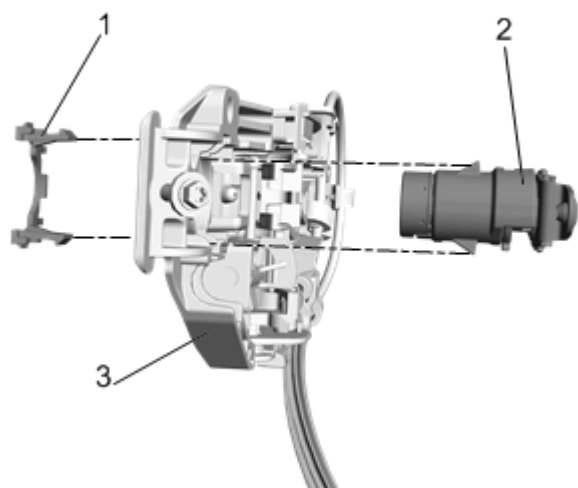


Fig. 18: Lock Cylinder Retainer, Lock Cylinder And Handle Bracket

Courtesy of GENERAL MOTORS COMPANY

7. With the lock cylinder retainer (1) removed, pull the lock cylinder (2) rearward releasing it from the handle bracket.(3)

Installation Procedure



NOTE: Ensure that the door lock cylinder is engage all the way into the side door handle locator tabs. Insert the key into the door lock cylinder, turn left to right checking for binding before install the assembly to the vehicle.

1. Install the lock cylinder retainer (1) to the front side door outside handle bracket assembly.(3)
2. Install the door lock cylinder (2) in the front side door outside handle bracket, push forward locking the lock cylinder (2) into the lock cylinder retainer.



Fig. 20: Front Side Door Lock Cylinder Rod
Courtesy of GENERAL MOTORS COMPANY

3. Install Front Side Door Lock Cylinder Rod (1)

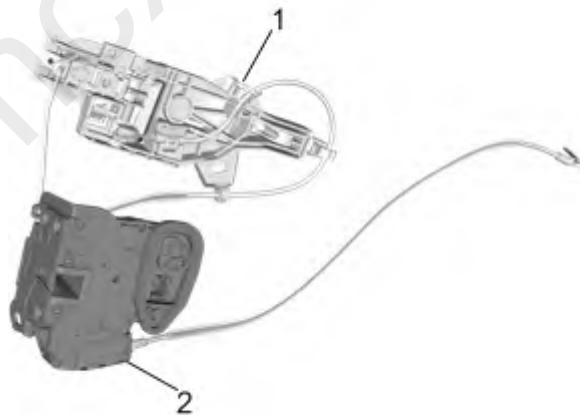


Fig. 21: Rear Side Door Outside Handle Bracket And Rear Side Door Latch
Courtesy of GENERAL MOTORS COMPANY

4. Install Front Side Door Latch (2) **Front Side Door Latch Replacement**

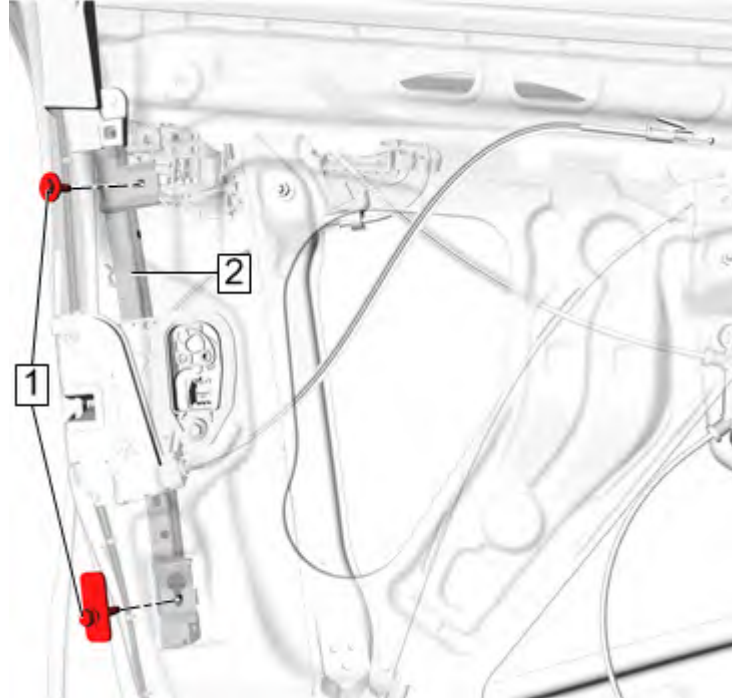


Fig. 22: Front Side Door Window Channel Retainer
 Courtesy of GENERAL MOTORS COMPANY

5. Install Front Side Door Window Channel Retainer (2) **Front Side Door Window Channel Retainer Replacement**

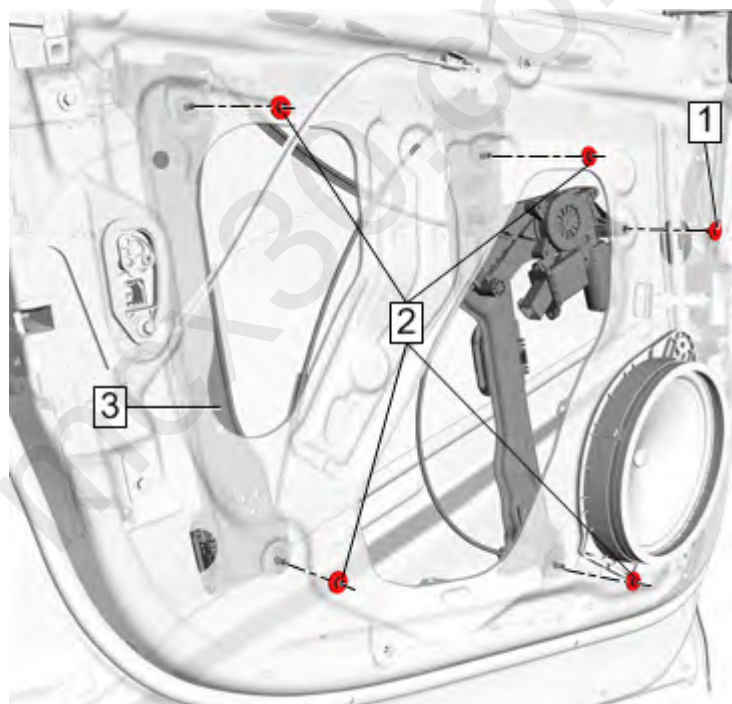


Fig. 23: Front Side Door Window Regulator
 Courtesy of GENERAL MOTORS COMPANY

6. Install Front Side Door Window Regulator (3) **Front Side Door Window Regulator Replacement**

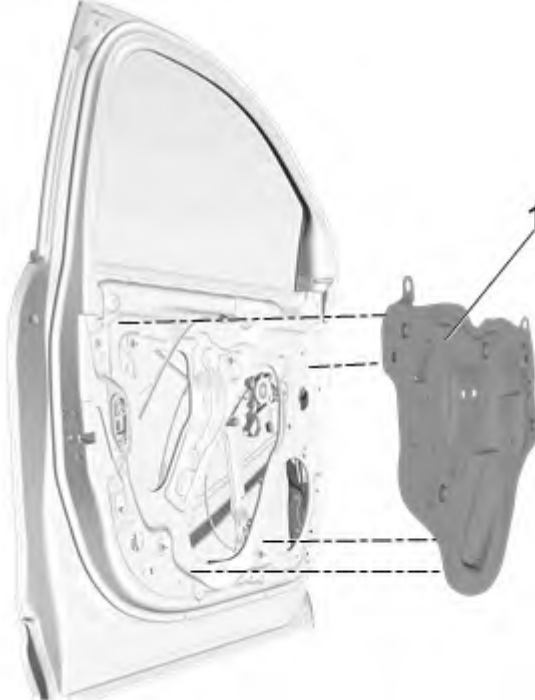


Fig. 24: Front Side Door Water Deflector

Courtesy of GENERAL MOTORS COMPANY

7. Install Front Side Door Water Deflector (1) [Front Side Door Water Deflector Replacement \(Equinox\)](#) [Front Side Door Water Deflector Replacement \(Terrain\)](#)
8. Ensure that the door lock system operates properly before installing the trim.

LIFTGATE CALIBRATION

Liftgate Relearn

NOTE: To ensure proper relearning of the liftgate, the liftgate assembly must be at room temperature during the relearn process.

NOTE: DTC B1019 00 will set automatically as an indicator that the system is in learn mode and not as a fault indicator. Once the travel limits are learned by the liftgate module, the liftgate module will exit learn mode and DTC B1019 00 become a history code.

If any portion of the power liftgate assembly is replaced, repaired or disassembled, perform the following liftgate relearn procedure:

1. Connect the scan tool to the vehicle.
2. Select Module Diagnosis:
3. Select Liftgate Control Module:
4. Select Configuration/Reset Functions:
5. Select Liftgate Maximum Open Position Learn:
6. Press "Enter" and follow the on screen instructions:

Garage Height Calibration

If any portion of the power liftgate assembly is replaced, repaired or disassembled, perform the following liftgate relearn procedure:

1. Ensure that the rotary switch on the overhead console or driver door panel is set to 3/4.
2. Press the liftgate handle switch and allow the liftgate to power open.
3. Stop movement at the desired height by pressing any operation switch.
4. If required, manually move the stopped liftgate to the desired position.

NOTE: The opening height of the liftgate should be positioned

approximately parallel with the roof, the liftgate control module will reject the setting if the liftgate is positioned too low.

5. Press and hold the liftgate close switch for at least 3 seconds. The tail lights will flash if the setting has been successfully programmed.
6. Close the liftgate completely using one of the following switches:
 - The rotary switch on the overhead console or driver door panel
 - The liftgate close switch on the liftgate
 - The remote control switch on the keyless entry transmitter

OPENING THE LIFTGATE WITHOUT ELECTRICAL POWER

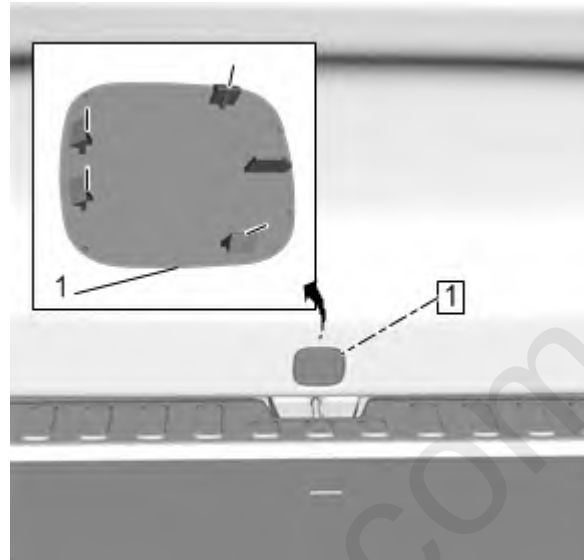


Fig. 25: Latch Cover

Courtesy of GENERAL MOTORS COMPANY

NOTE: Gain access to the liftgate from inside vehicle.

1. Using a flat bladed tool, release the latch cover (1) to access the rear latch.

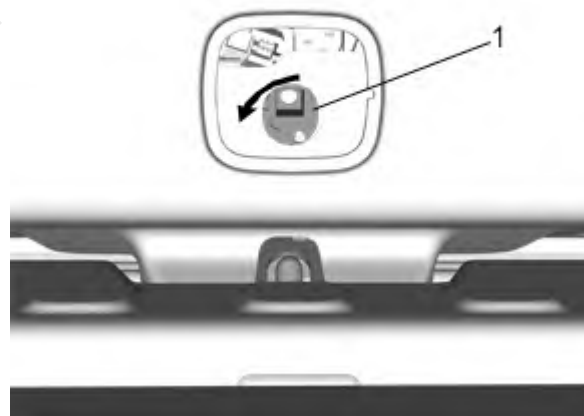


Fig. 26: Flat Bladed Service Type Tool Into Square Hole

Courtesy of GENERAL MOTORS COMPANY

- NOTE:**
- Gate may not open at this point.
 - Rotation to release latch should be approximately 30 degrees. Excessive rotation can cause damage to the latch.

2. Insert a flat bladed service type tool into the square hole (1) and turn it counterclockwise until the primary latch releases.

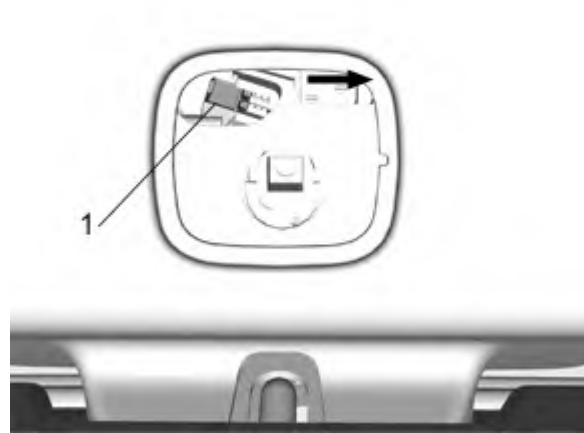


Fig. 27: White Plastic Lever

Courtesy of GENERAL MOTORS COMPANY

NOTE: The latch does not need to be restaged.

3. To disengage the gear train of the latch, use a small flat blade tool to push the white plastic lever (1) all the way to the right and at the same time pushing on the liftgate to release the secondary latch.

FRONT SIDE DOOR OUTSIDE HANDLE REPLACEMENT

Removal Procedure

1. Remove Front Side Door Water Deflector - [Front Side Door Water Deflector Replacement \(Equinox\)](#), [Front Side Door Water Deflector Replacement \(Terrain\)](#).

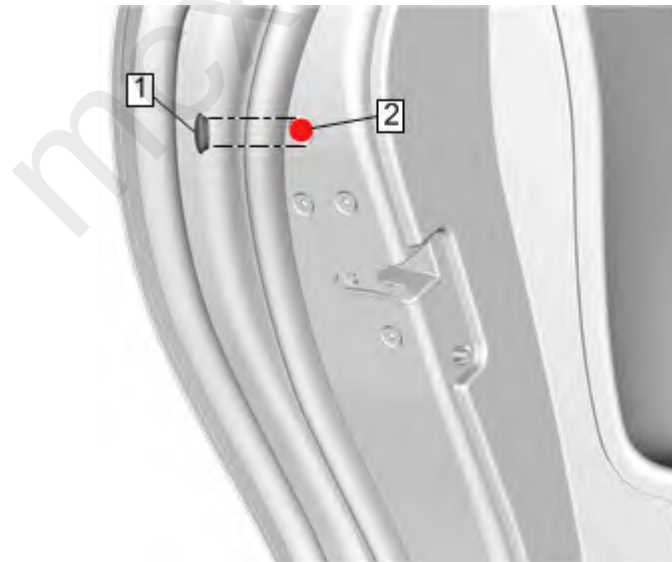


Fig. 28: Front Side Door Outside Handle Lock Cylinder Screw

Courtesy of GENERAL MOTORS COMPANY

2. Remove Front Side Door Access Hole Cover (1)

NOTE:

- **USE HAND TOOL ONLY.** Using a battery operated gun or power tool can **BREAK** the component.
- Loosen the Front Side Door Lock Cylinder Opening Cover Screw enough to allow the Front Side Door Lock Cylinder Opening Cover to be removed.

3. Loosen Front Side Door Lock Cylinder Opening Cover Screw (2)



Fig. 29: Front Side Door Outside Handle
Courtesy of GENERAL MOTORS COMPANY

4. Pull the front side door outside handle (1) to the open position.



Fig. 30: Front Side Door Lock Cylinder Opening Cover
Courtesy of GENERAL MOTORS COMPANY

5. Remove Front Side Door Lock Cylinder Opening Cover (1) [Front Side Door Lock Cylinder Opening Cover Replacement](#)



Fig. 31: Electrical Connector

Courtesy of GENERAL MOTORS COMPANY

6. Disconnect the electrical connector. (1)

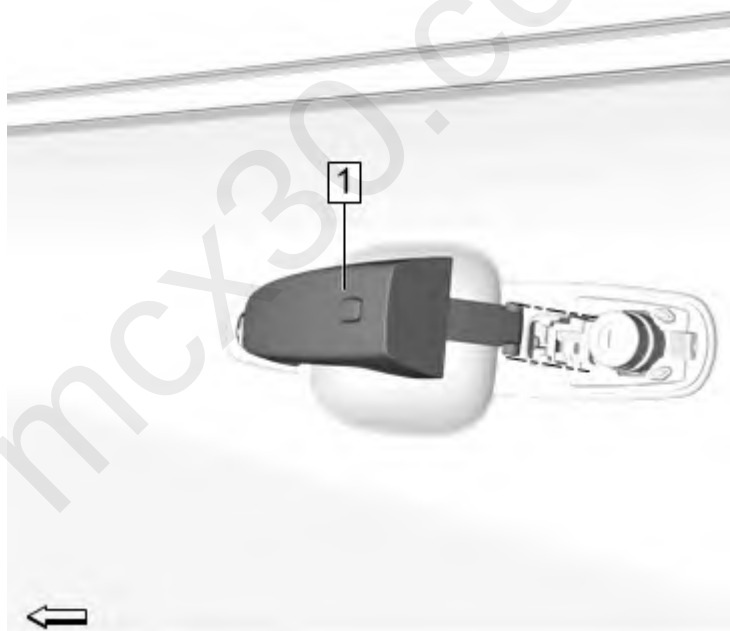


Fig. 32: Front Side Door Outside Handle

Courtesy of GENERAL MOTORS COMPANY

7. Slide the front side door outside handle (1) rearward and then outwards in a swing motion releasing the rear part of the handle from the front side door outside handle bracket.

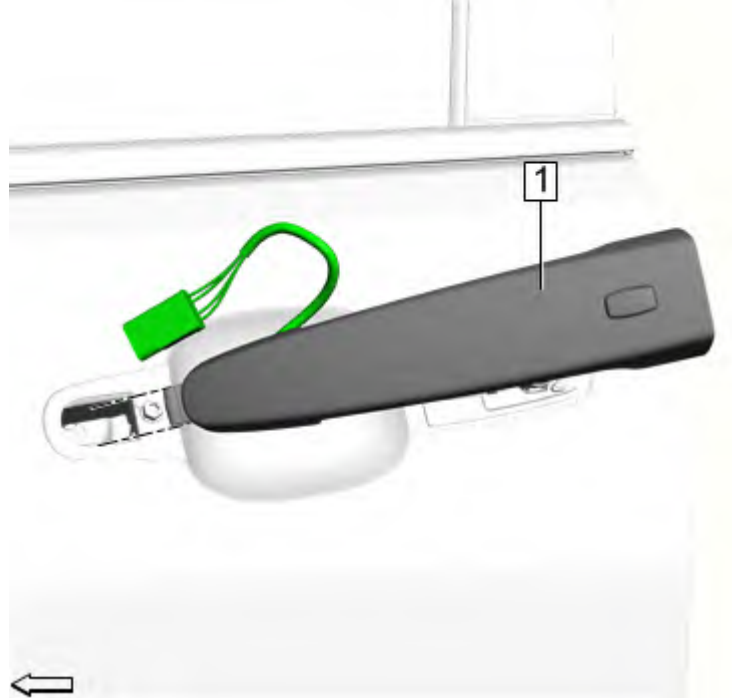


Fig. 33: Front Side Door Outside Handle
Courtesy of GENERAL MOTORS COMPANY

8. Swing the front part of the front side door outside handle (1) to remove.

Installation Procedure

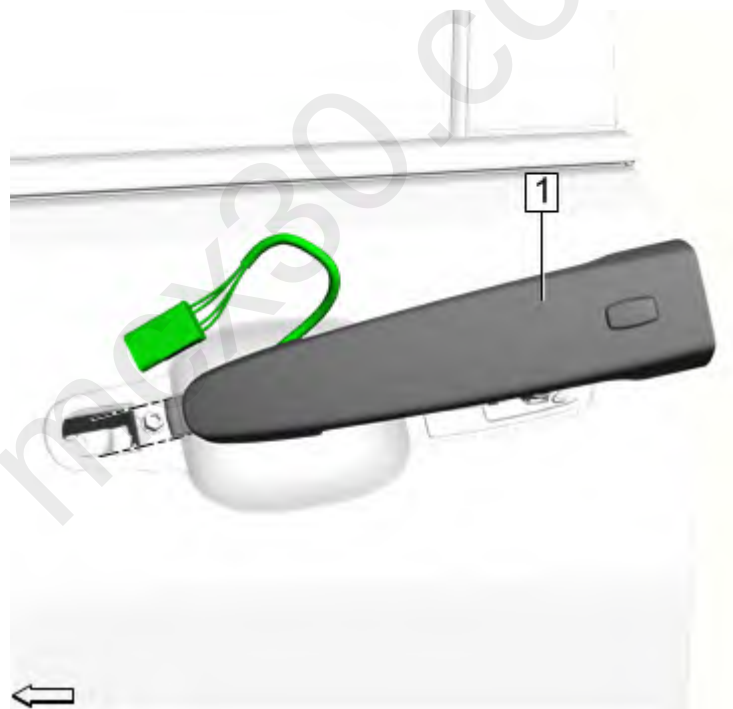


Fig. 34: Front Side Door Outside Handle
Courtesy of GENERAL MOTORS COMPANY

1. Install the front part of the front side door outside handle (1) into the front side door outside handle bracket.

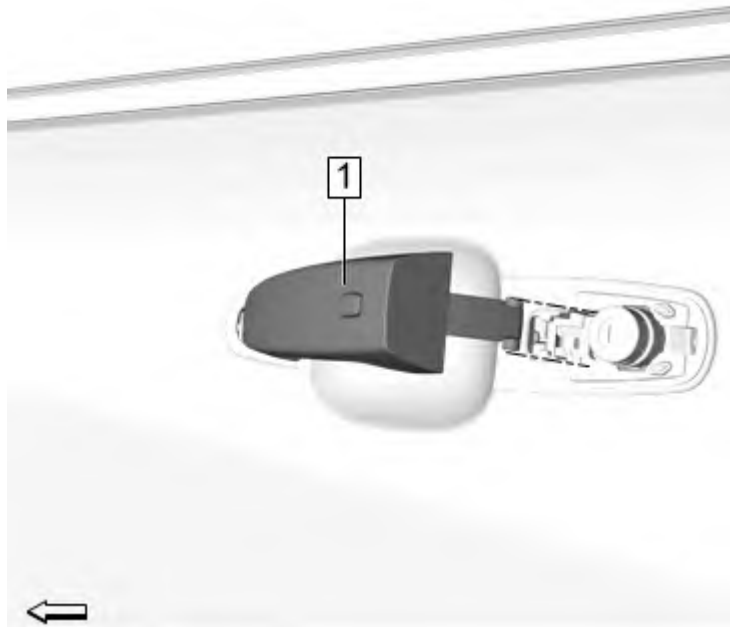


Fig. 35: Front Side Door Outside Handle

Courtesy of GENERAL MOTORS COMPANY

2. Install the rear part of the front side door outside handle (1) into the front side door outside handle bracket and slide the front side door outside handle forward.

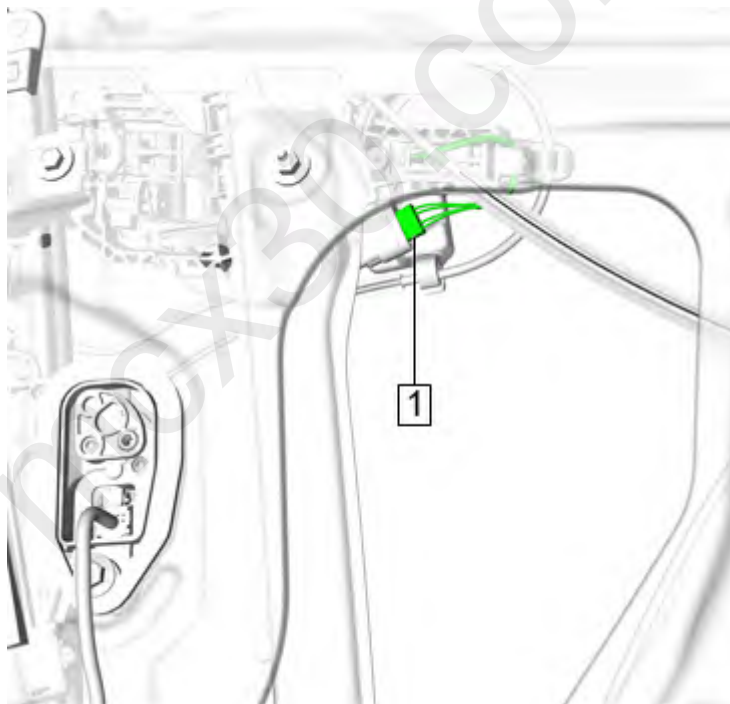


Fig. 36: Electrical Connector

Courtesy of GENERAL MOTORS COMPANY

3. Connect the electrical connector.(1)

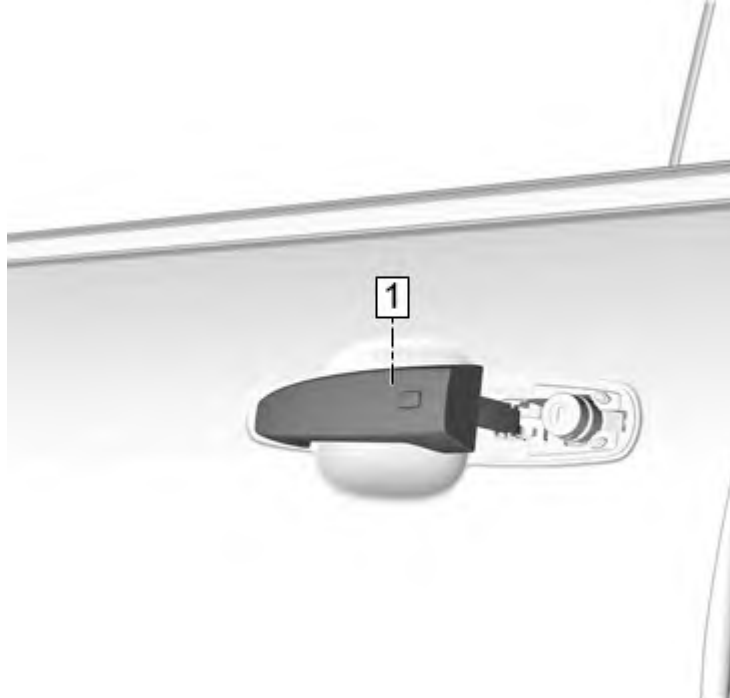


Fig. 37: Front Side Door Outside Handle

Courtesy of GENERAL MOTORS COMPANY

4. Pull the front side door outside handle (1) to the open position.



Fig. 38: Front Side Door Lock Cylinder Opening Cover

Courtesy of GENERAL MOTORS COMPANY

5. Install Front Side Door Lock Cylinder Opening Cover (1) **Front Side Door Lock Cylinder Opening Cover Replacement**

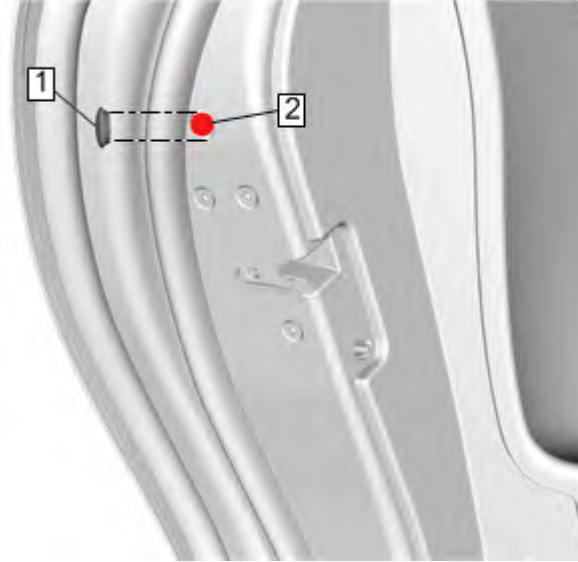


Fig. 39: Front Side Door Outside Handle Lock Cylinder Screw
Courtesy of GENERAL MOTORS COMPANY

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

6. Front Side Door Lock Cylinder Opening Cover Screw (2) - Tighten 4 N.m (31 lb in)
7. Install Front Side Door Access Hole Cover (1).
8. Install Front Side Door Water Deflector [Front Side Door Water Deflector Replacement \(Equinox\)](#) [Front Side Door Water Deflector Replacement \(Terrain\)](#).

FRONT SIDE DOOR OUTSIDE HANDLE BRACKET REPLACEMENT

Removal Procedure

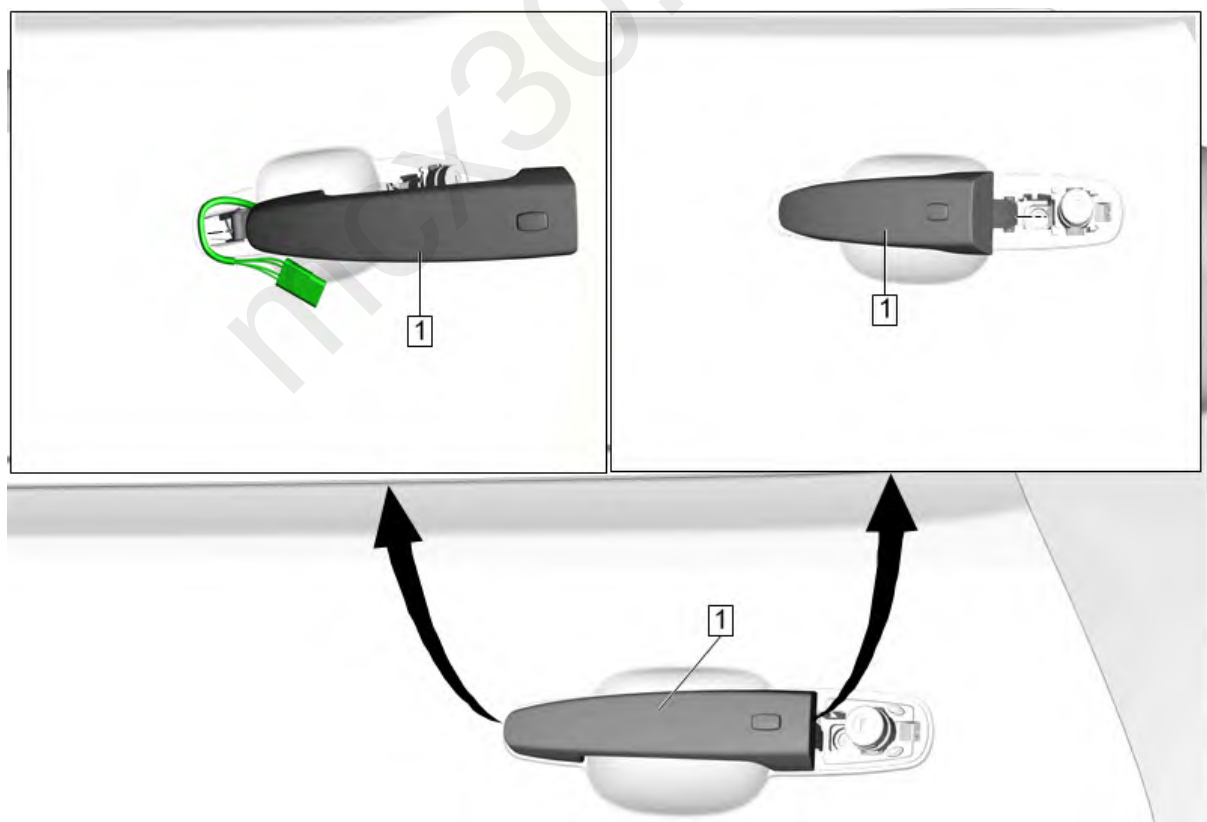


Fig. 40: Front Side Door Outside Handle
Courtesy of GENERAL MOTORS COMPANY

1. Remove Front Side Door Outside Handle (1) [Front Side Door Outside Handle Replacement](#)

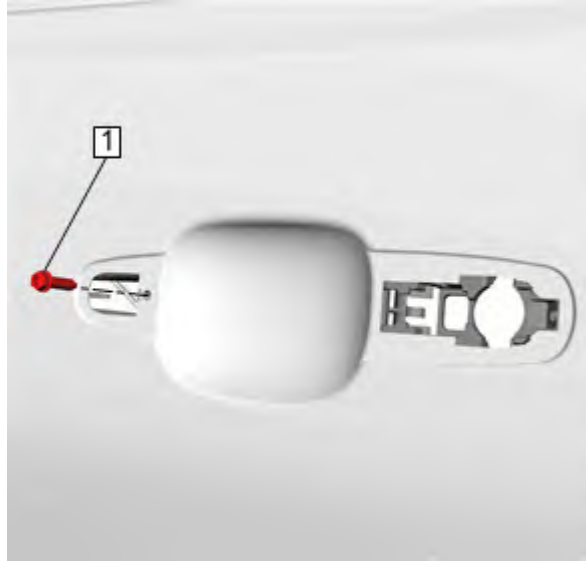


Fig. 41: Front Side Door Outside Handle Bracket Screw
Courtesy of GENERAL MOTORS COMPANY

2. Remove Front Side Door Outside Handle Bracket Screw (2)

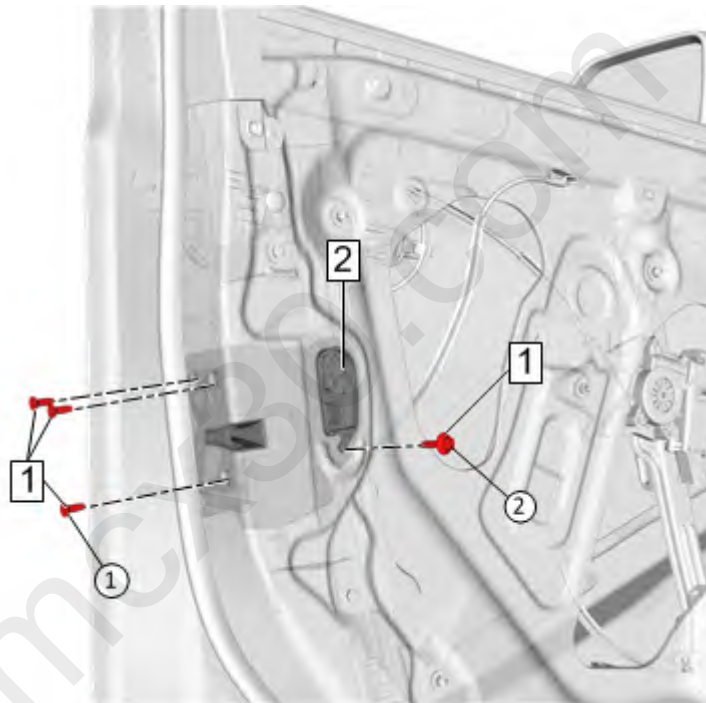


Fig. 42: Front Side Door Latch
Courtesy of GENERAL MOTORS COMPANY

3. Remove Front Side Door Latch (2) **Front Side Door Latch Replacement**



Fig. 43: Front Side Door Lock Rod, Front Side Door Lock Cylinder
Courtesy of GENERAL MOTORS COMPANY

4. Remove Front Side Door Lock Rod (1) @Front Side Door Lock Cylinder (2)

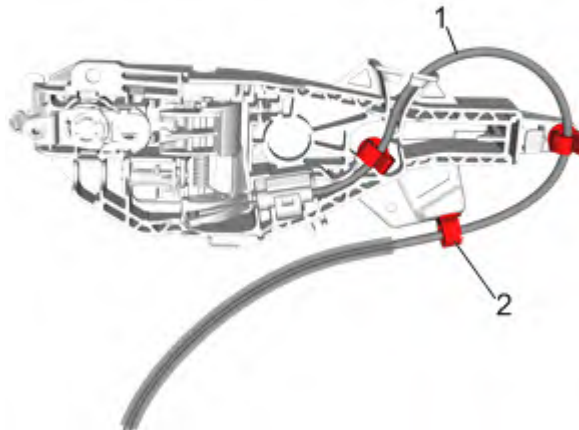


Fig. 44: Side Door Outside Cable And Retainers
Courtesy of GENERAL MOTORS COMPANY

5. Remove Front Side Door Outside Handle Bracket Cable (1) @Front Side Door Outside Handle Bracket Retainer (2)

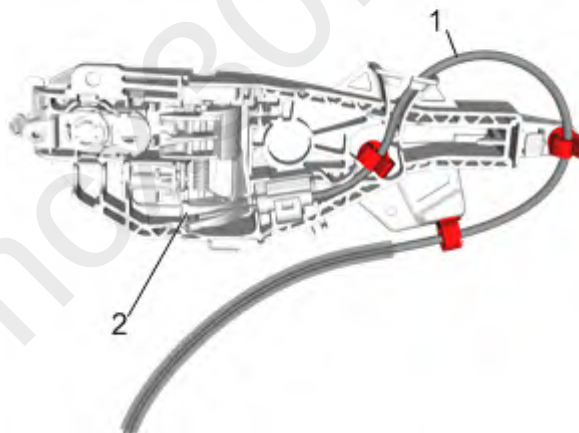


Fig. 45: Side Door Outside Handle Bracket Cable And Counter Balance
Courtesy of GENERAL MOTORS COMPANY

6. Remove Front Side Door Outside Handle Bracket Cable (1) @Counter Balance (2)

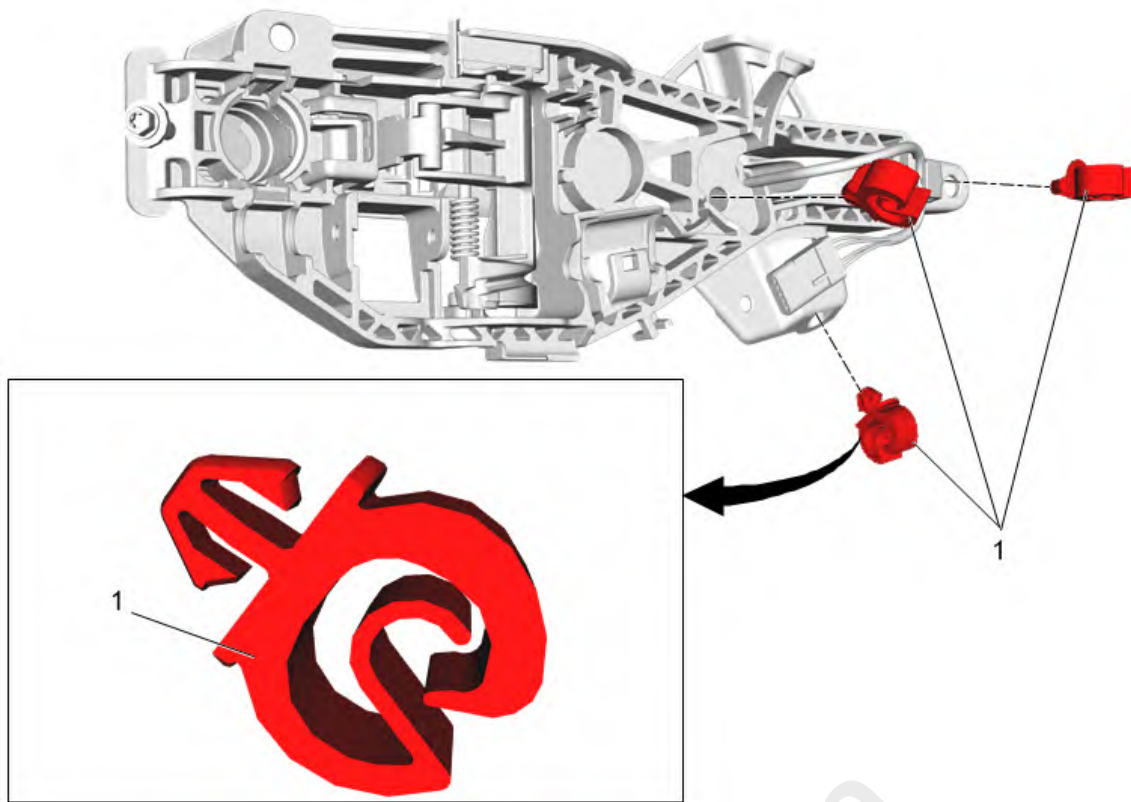


Fig. 46: Front Side Door Outside Handle Cable Retainer

Courtesy of GENERAL MOTORS COMPANY

NOTE: It may be necessary to transfer the wire harness retainers (1) from the old handle bracket.

7. Remove Front Side Door Outside Handle Cable Retainer (1) **Front Side Door Outside Handle Cable Retainer Replacement**

Installation Procedure

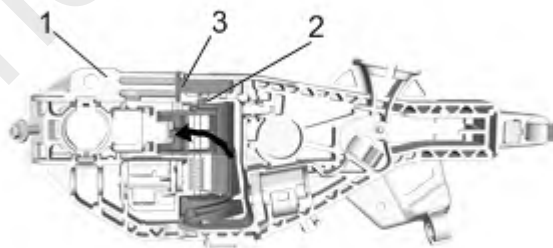


Fig. 47: Side Door Outside Handle Bracket, Counter Balance And Bracket Clip

Courtesy of GENERAL MOTORS COMPANY

1. Reset the front side door outside handle bracket counter balance (2) as follows:
 1. The outside door handle Can Not be installed until the counter balance (2) is reset.
 2. Grasp the front side door outside handle bracket (1) with one hand.
 3. From the back side of the counter balance (2), push forward on the counter balance (2) until it can be held in place using the bracket clip.(3)

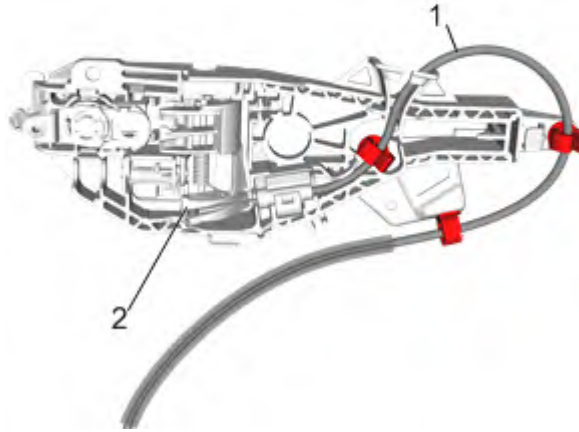


Fig. 48: Side Door Outside Handle Bracket Cable And Counter Balance
 Courtesy of GENERAL MOTORS COMPANY

2. Install Front Side Door Outside Handle Bracket Cable (1) @Counter Balance (2)

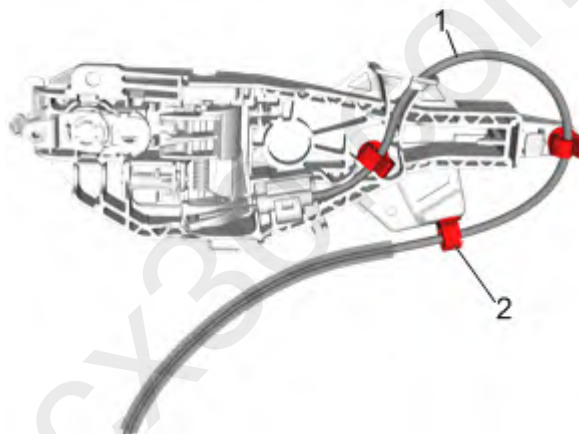


Fig. 49: Side Door Outside Cable And Retainers
 Courtesy of GENERAL MOTORS COMPANY

3. Install Front Side Door Outside Handle Bracket Cable (1) @Front Side Door Outside Handle Bracket Retainer (2)



Fig. 50: Front Side Door Lock Rod, Front Side Door Lock Cylinder
 Courtesy of GENERAL MOTORS COMPANY

4. Install Front Side Door Lock Rod (1) @Front Side Door Lock Cylinder (2)

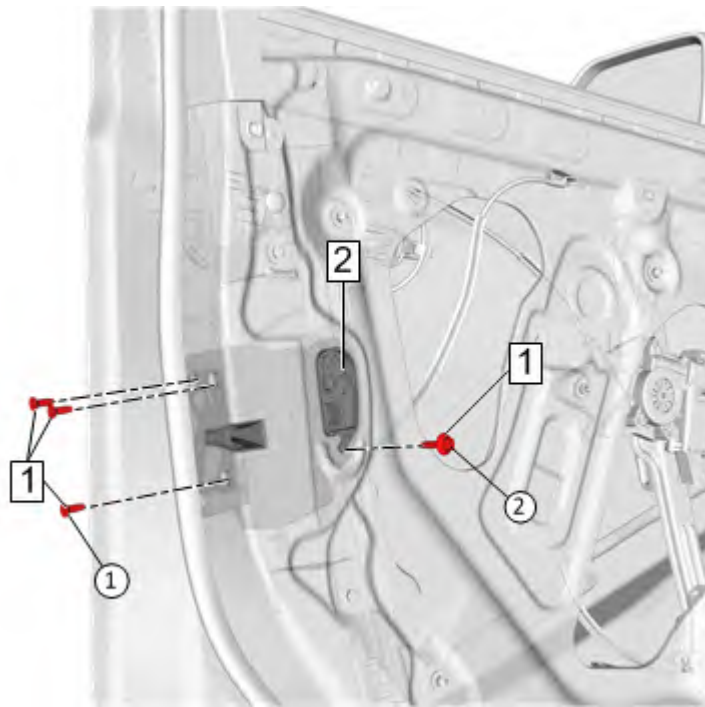


Fig. 51: Front Side Door Latch

Courtesy of GENERAL MOTORS COMPANY

5. Install Front Side Door Latch (2) **Front Side Door Latch Replacement**

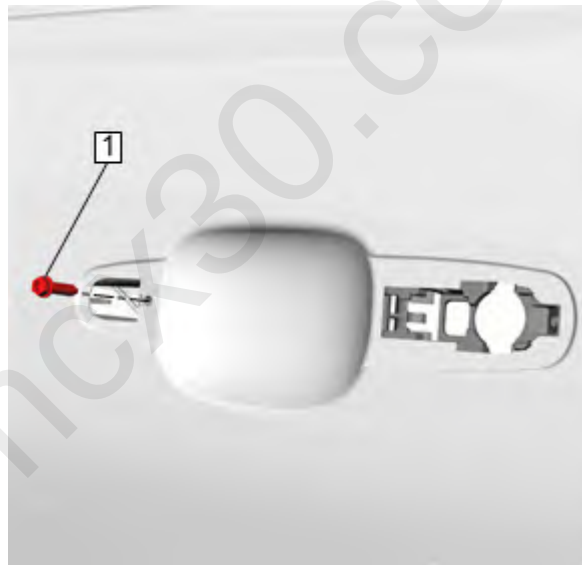


Fig. 52: Front Side Door Outside Handle Bracket Screw

Courtesy of GENERAL MOTORS COMPANY

CAUTION: Refer to **Fastener Caution** .

6. Install Front Side Door Outside Handle Bracket Screw (1) and tighten 5 N.m (44 lb in)

NOTE:

- Ensure that the counter balance is reset and locked in the detent of the handle bracket. The counter balance Can Not be reset after the handle bracket has been reinstalled in the door.
- Bracket should be slid full rearward prior to tightening bracket screw.

7.

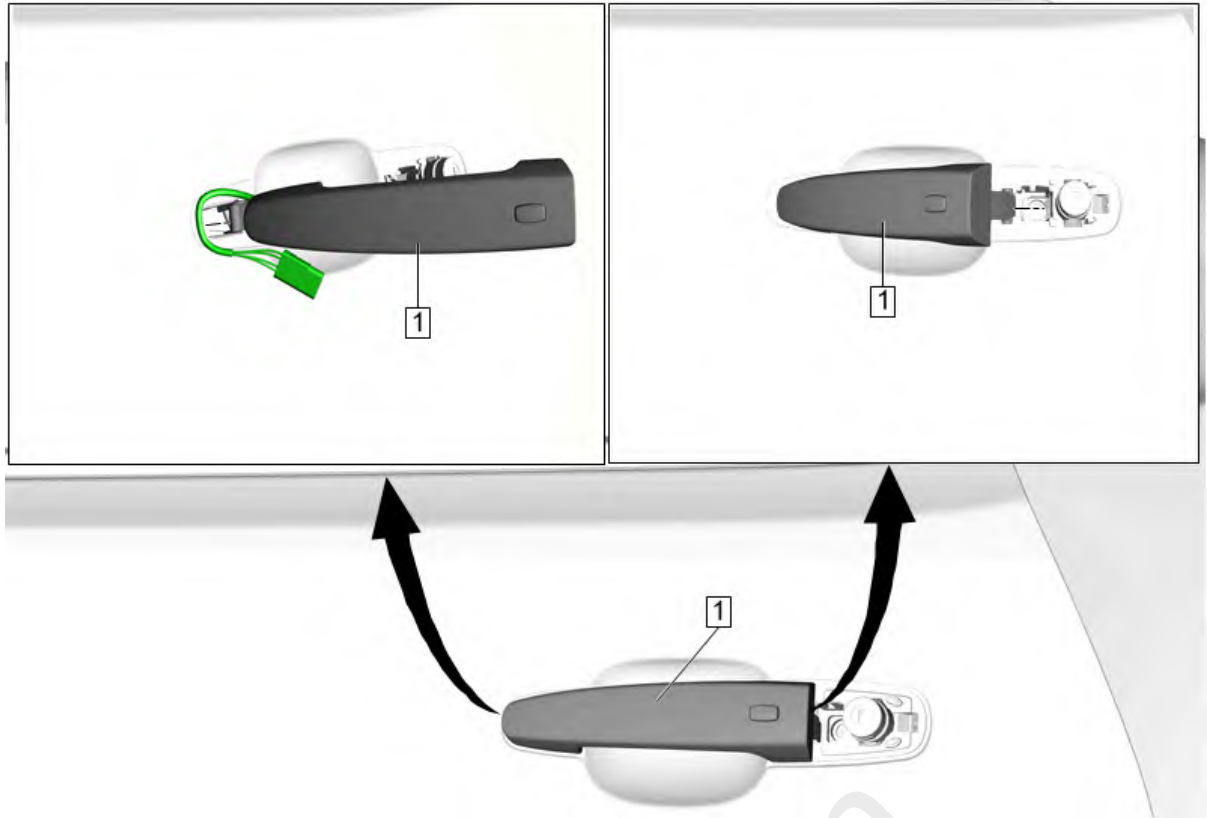


Fig. 53: Front Side Door Outside Handle
Courtesy of GENERAL MOTORS COMPANY

8. Install Front Side Door Outside Handle (1) [Front Side Door Outside Handle Replacement](#)
9. Ensure the door system operates properly.

FRONT SIDE DOOR OUTSIDE HANDLE CABLE REPLACEMENT

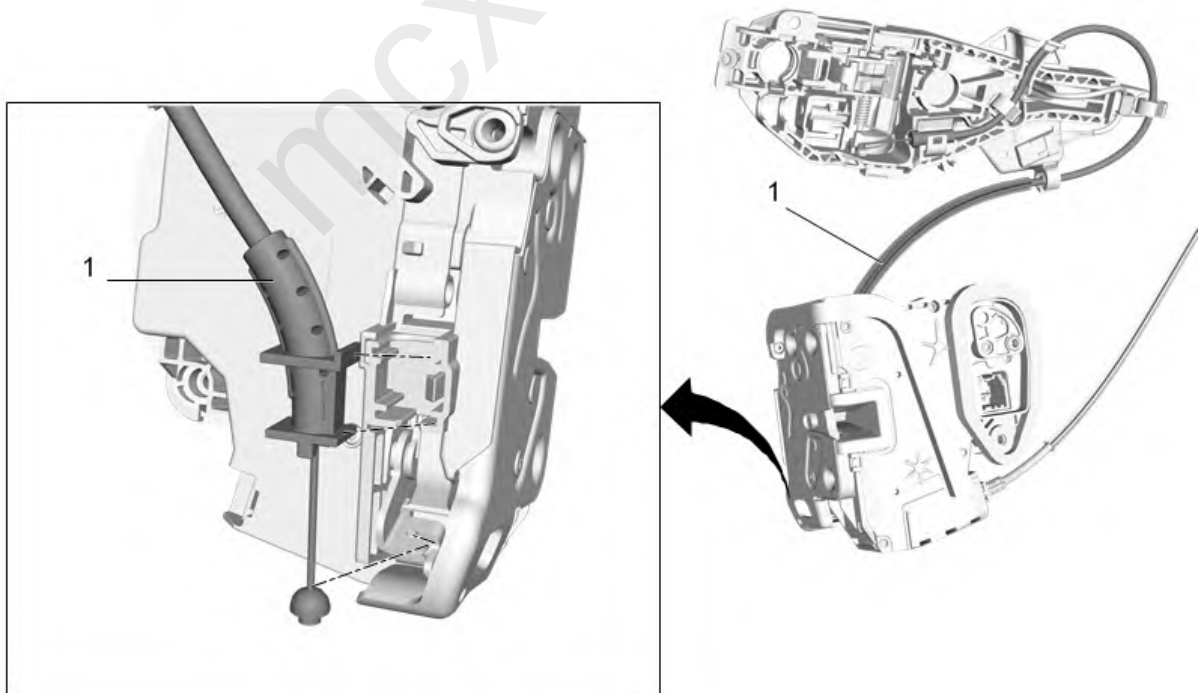


Fig. 54: Front Side Door Outside Handle Cable
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure	
Front Side Door Latch Replacement	

Callout	Component Name
1	Front Side Door Outside Handle Cable Procedure 1. Remove the front side door outside handle cable from the handle retainers. 2. Release the cable from the back of the latch assembly. 3. Remove the front side door outside handle cable from the front side door outside handle bracket.

REAR SIDE DOOR OUTSIDE HANDLE BRACKET REPLACEMENT

Removal Procedure

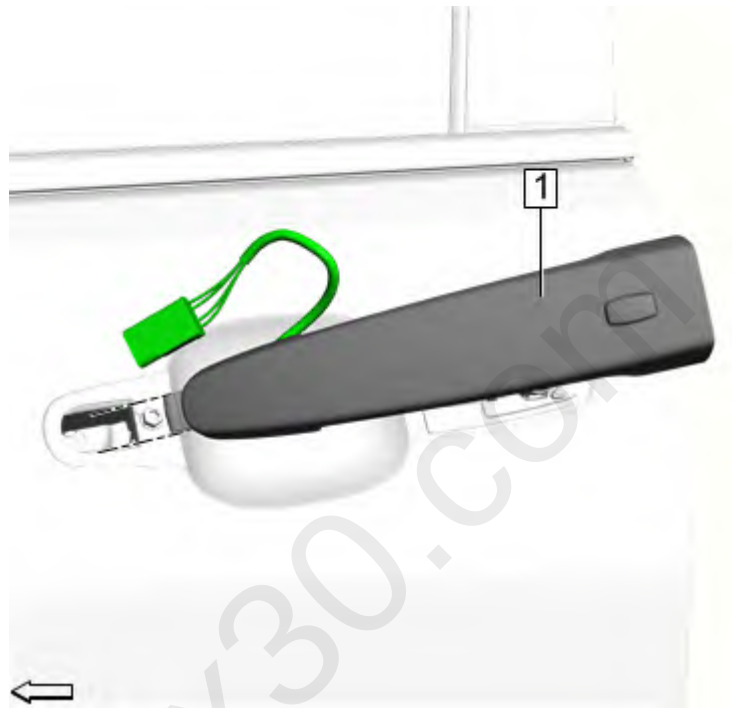


Fig. 55: Front Side Door Outside Handle
Courtesy of GENERAL MOTORS COMPANY

1. Remove Rear Side Door Outside Handle (1) [Rear Side Door Outside Handle Replacement](#)

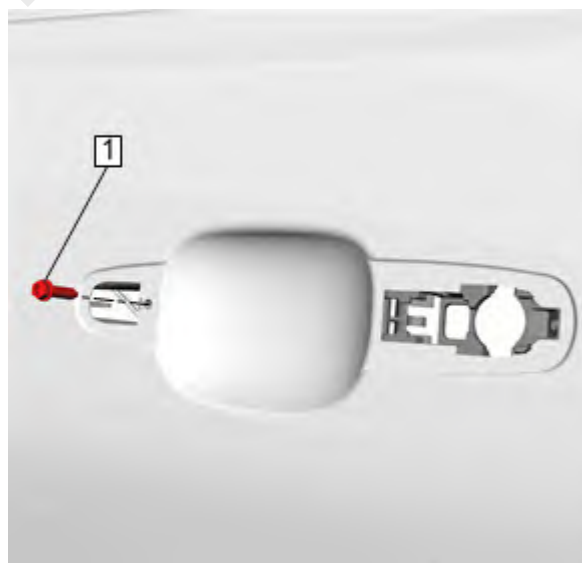


Fig. 56: Front Side Door Outside Handle Bracket Screw
Courtesy of GENERAL MOTORS COMPANY

2. Remove Rear Side Door Outside Handle Bracket Screw (1)

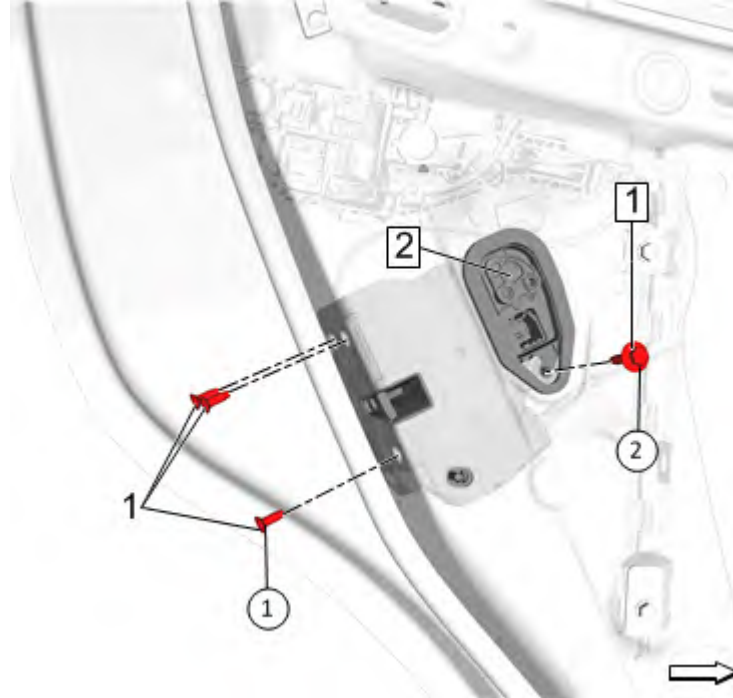


Fig. 57: Rear Side Door Latch

Courtesy of GENERAL MOTORS COMPANY

3. Remove Rear Side Door Latch (2) **Rear Side Door Latch Replacement**

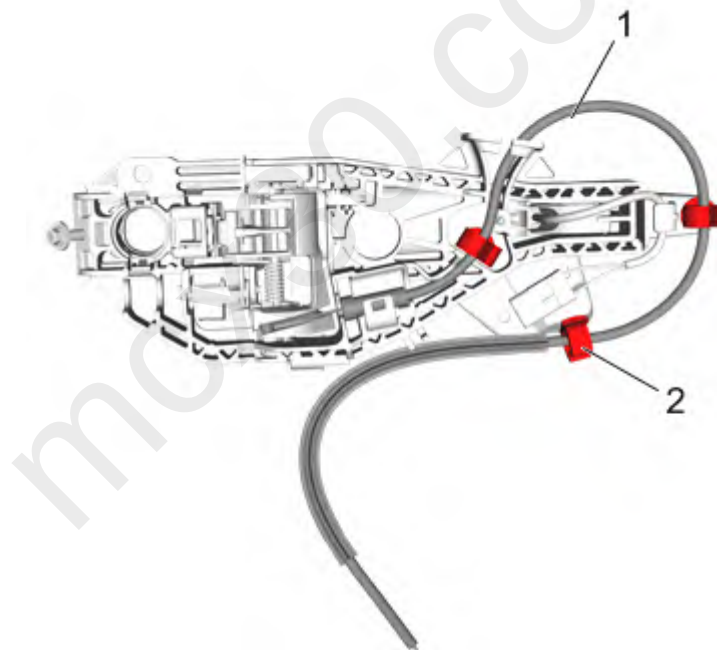


Fig. 58: Rear Side Door Outside Handle Bracket Cable

Courtesy of GENERAL MOTORS COMPANY

4. Remove Rear Side Door Outside Handle Bracket Cable (1) @Rear Side Door Outside Handle Bracket Retainer (2)

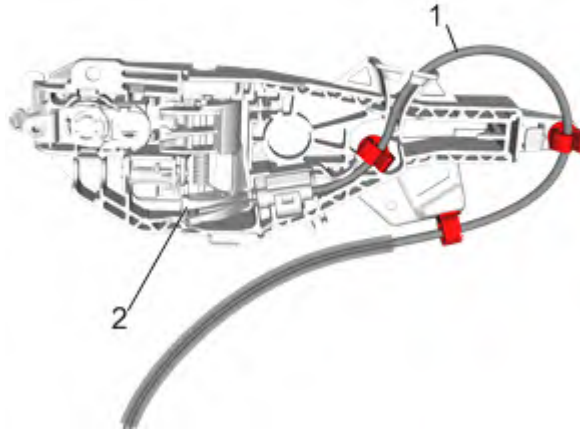


Fig. 59: Side Door Outside Handle Bracket Cable And Counter Balance
 Courtesy of GENERAL MOTORS COMPANY

5. Remove Rear Side Door Outside Handle Bracket Cable (1) @Counter Balance (2)

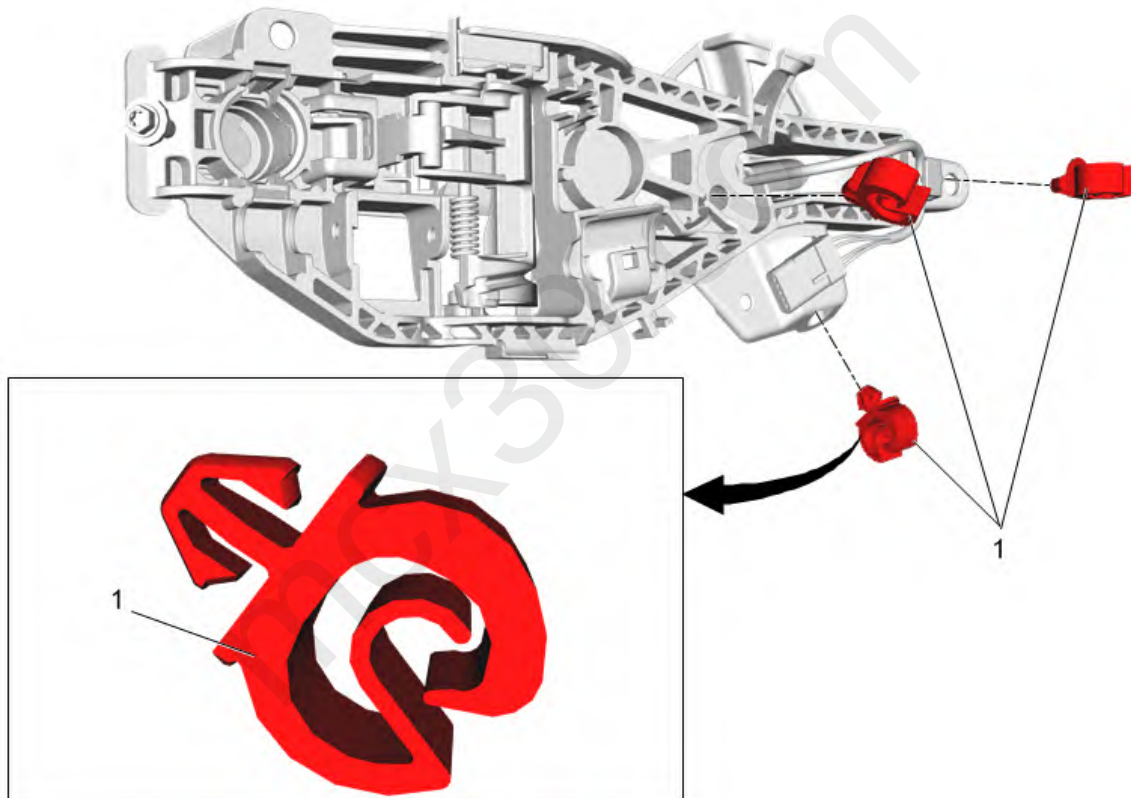


Fig. 60: Front Side Door Outside Handle Cable Retainer
 Courtesy of GENERAL MOTORS COMPANY

NOTE: It may be necessary to transfer the wire harness retainers (1) from the old handle bracket.

6. Remove Rear Side Door Outside Handle Cable Retainer (1) Rear Side Door Outside Handle Cable Retainer Replacement

Installation Procedure

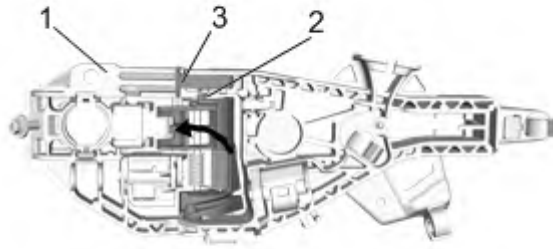


Fig. 61: Side Door Outside Handle Bracket, Counter Balance And Bracket Clip
Courtesy of GENERAL MOTORS COMPANY

1. Reset the rear side door outside handle bracket counter balance (2) as follows:
 1. The outside door handle Can Not be installed until the counter balance (2) is reset.
 2. Grasp the rear side door outside handle bracket (1) with one hand.
 3. From the back side of the counter balance (2), push forward on the counter balance (2) until it can be held in place using the bracket clip.(3)

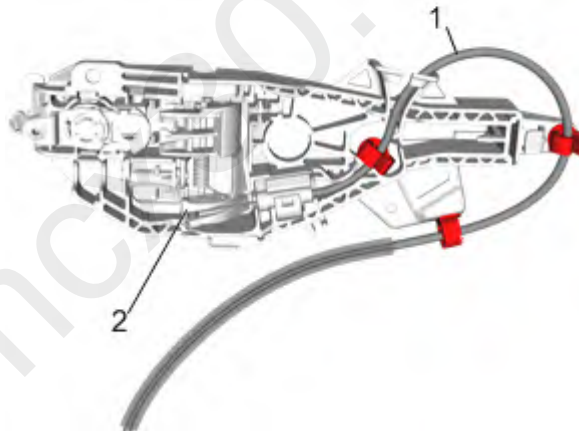


Fig. 62: Side Door Outside Handle Bracket Cable And Counter Balance
Courtesy of GENERAL MOTORS COMPANY

2. Install Rear Side Door Outside Handle Bracket Cable (1) @Counter Balance (2)

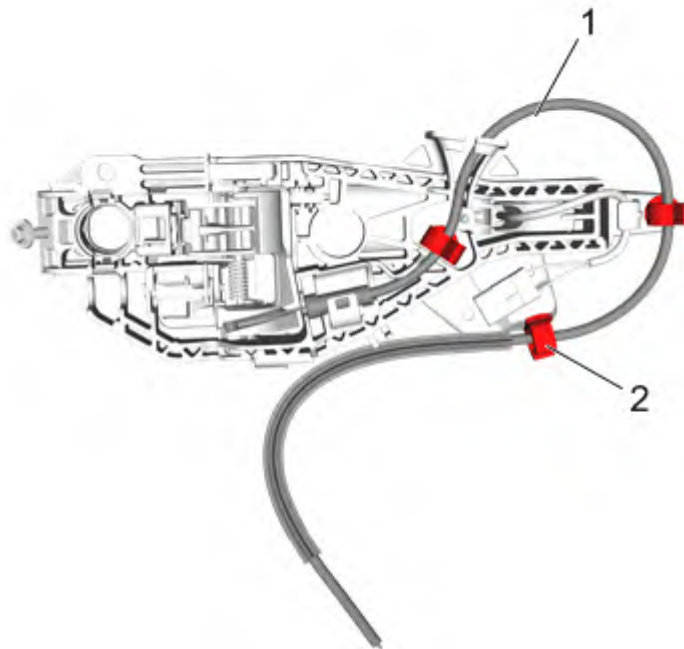


Fig. 63: Rear Side Door Outside Handle Bracket Cable

Courtesy of GENERAL MOTORS COMPANY

3. Install Rear Side Door Outside Handle Bracket Cable (1) @Rear Side Door Outside Handle Bracket Retainer (2)

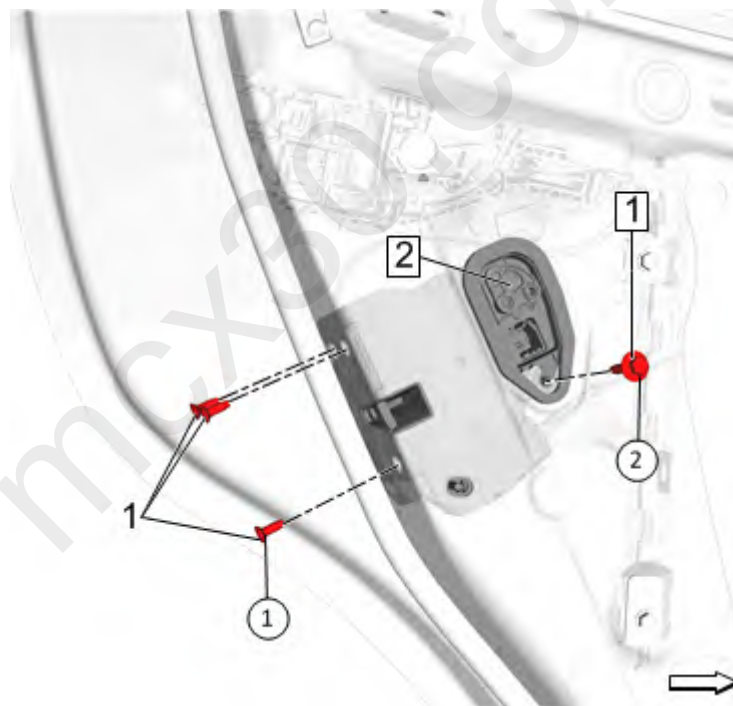


Fig. 64: Rear Side Door Latch

Courtesy of GENERAL MOTORS COMPANY

4. Install Rear Side Door Latch (2) Rear Side Door Latch Replacement

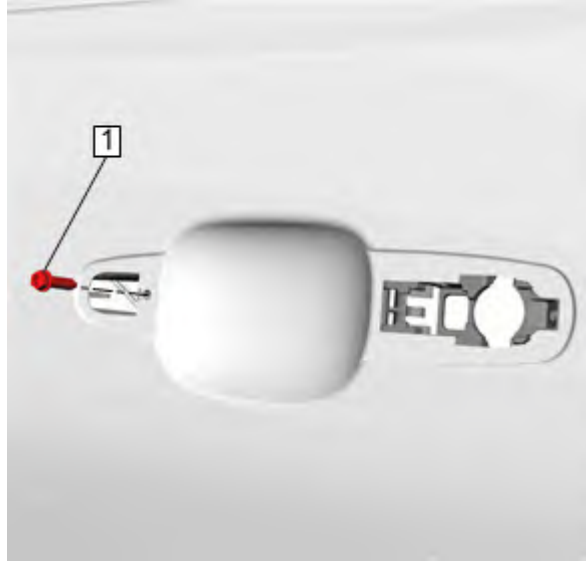


Fig. 65: Front Side Door Outside Handle Bracket Screw
 Courtesy of GENERAL MOTORS COMPANY

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

NOTE:

- Ensure that the counter balance is reset and locked in the detent of the handle bracket. The counter balance Can Not be reset after the latch and handle bracket has been reinstalled in the door.
- Bracket should be slid full rearward prior to tightening bracket screw.

5. Install Rear Side Door Outside Handle Bracket Screw (1) and tighten 5 N.m (44 lb in)



Fig. 66: Front Side Door Outside Handle
 Courtesy of GENERAL MOTORS COMPANY

6. Install Rear Side Door Outside Handle (1) [Rear Side Door Outside Handle Replacement](#)
7. Ensure that the door system operates properly before installing the trim.

LIFTGATE LATCH REPLACEMENT (EQUINOX)

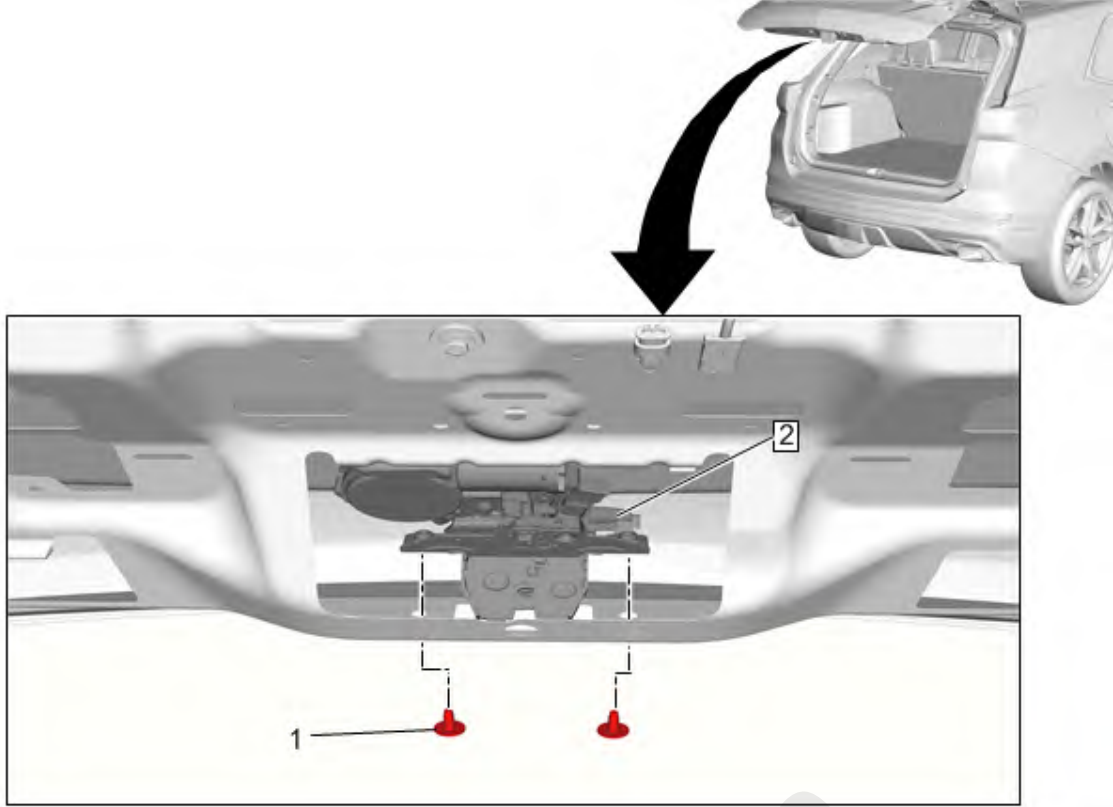


Fig. 67: Liftgate Latch (Equinox)

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure <u>Liftgate Lower Trim Finish Panel Replacement</u>	
1	Liftgate Latch Bolt [2x] CAUTION: Refer to <u>Fastener Caution</u> . Tighten 22 N.m (16 lb ft)
2	Liftgate Latch Procedure Disconnect the electrical connector.

LIFTGATE LATCH REPLACEMENT (TERRAIN)

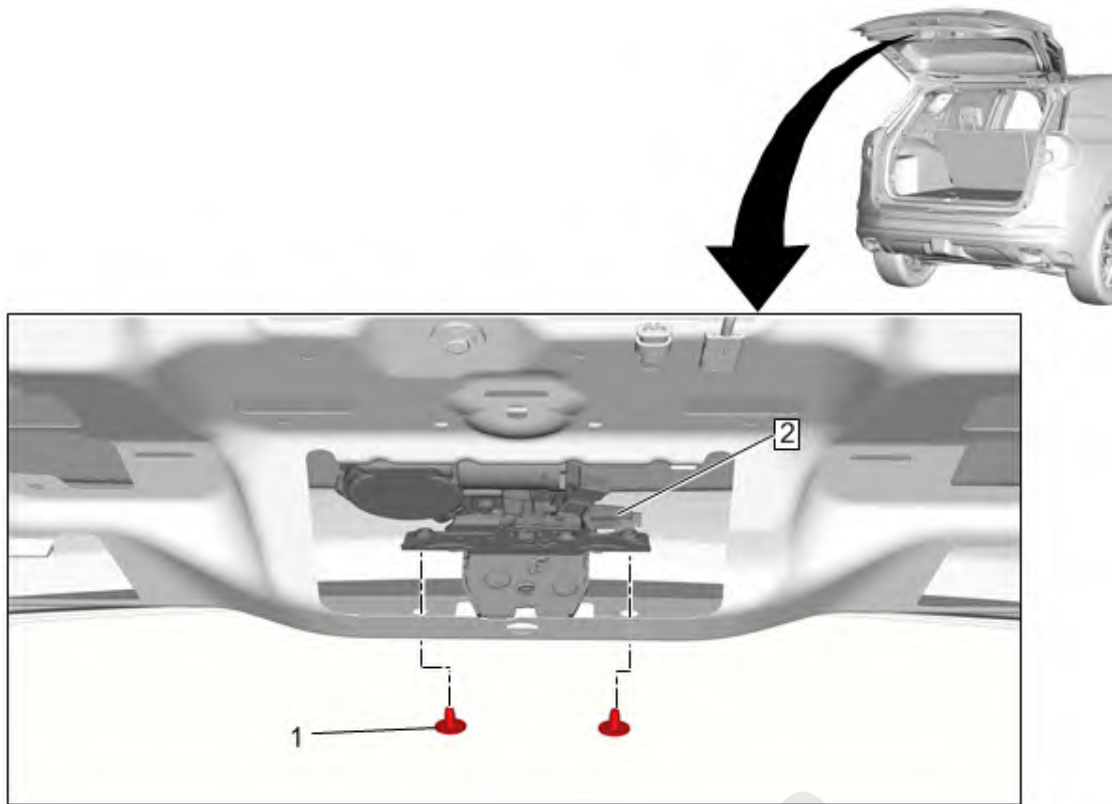


Fig. 68: Liftgate Latch (Terrain)

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Liftgate Lower Trim Finish Panel Replacement	
1	Liftgate Latch Bolt [2x] CAUTION: Refer to Fastener Caution . Tighten 22 N.m (16 lb ft)
2	Liftgate Latch Procedure Disconnect the electrical connector.

REAR SIDE DOOR OUTSIDE HANDLE REPLACEMENT

Removal Procedure

1. Remove Rear Side Door Water Deflector - **Rear Side Door Water Deflector Replacement (Equinox)** **Rear Side Door Water Deflector Replacement (Terrain)**.

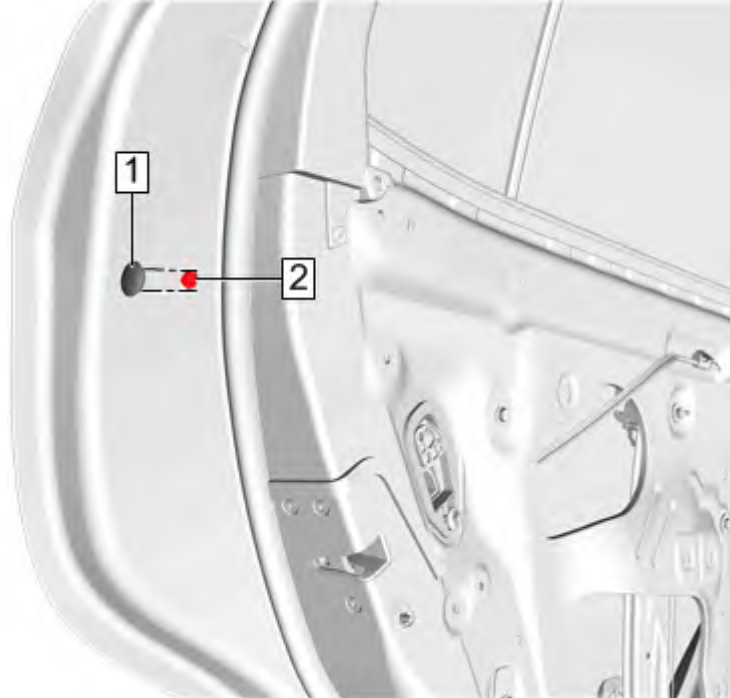


Fig. 69: Door Lock Cylinder Opening Cover Screw And Rear Side Door Access Hole Cover
 Courtesy of GENERAL MOTORS COMPANY

NOTE:

- **USE HAND TOOL ONLY.** Using a battery operated gun or power tool can **BREAK** the component.
- **Loosen the Rear Side Door Outside Handle Lock Cylinder Screw enough to allow the Rear Side Door Lock Cylinder Opening Cover to be removed.**

2. Remove Rear Side Door Access Hole Cover (1)
3. Loosen Rear Side Door Lock Cylinder Opening Cover Screw (2)



Fig. 70: Front Side Door Outside Handle
 Courtesy of GENERAL MOTORS COMPANY

4. Pull the rear side door outside handle (1) to the open position.



Fig. 71: Rear Side Door Lock Cylinder Opening Cover
Courtesy of GENERAL MOTORS COMPANY

5. Remove Rear Side Door Lock Cylinder Opening Cover (1) **Rear Side Door Lock Cylinder Opening Cover Replacement**

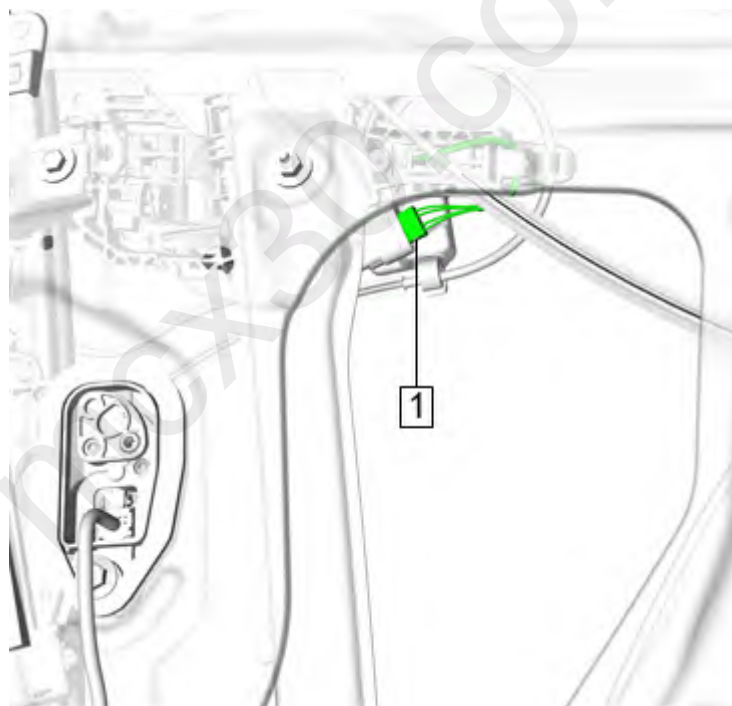


Fig. 72: Electrical Connector
Courtesy of GENERAL MOTORS COMPANY

6. Disconnect the electrical connector. (1)



Fig. 73: Rear Side Door Outside Handle

Courtesy of GENERAL MOTORS COMPANY

7. Slide the rear side door outside handle (1) rearward and then outwards in a swing motion releasing the rear part of the handle from the rear side door outside handle bracket.



Fig. 74: Front Side Door Outside Handle

Courtesy of GENERAL MOTORS COMPANY

8. Swing the front part of the rear side door outside handle (1) to remove.

Installation Procedure

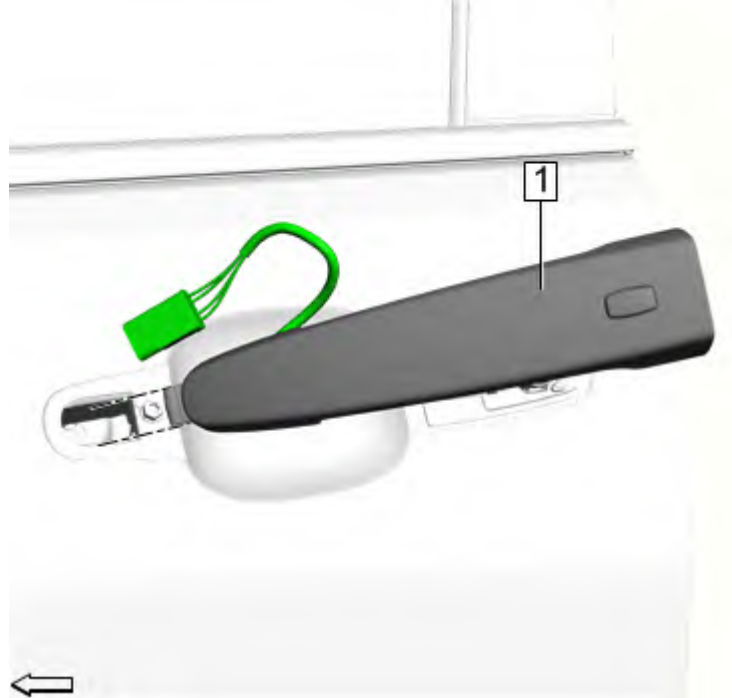


Fig. 75: Front Side Door Outside Handle

Courtesy of GENERAL MOTORS COMPANY

1. Install the front part of the rear side door outside handle (1) into the rear side door outside handle bracket.

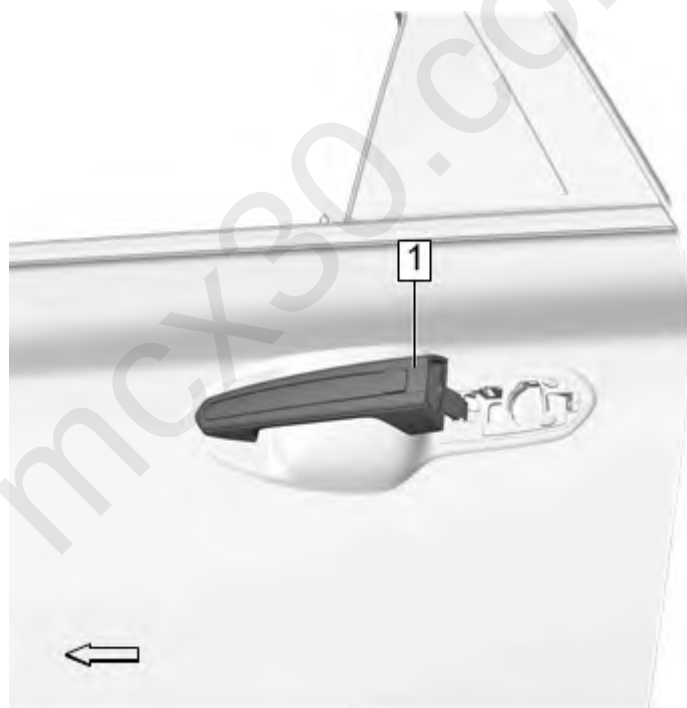


Fig. 76: Rear Side Door Outside Handle

Courtesy of GENERAL MOTORS COMPANY

2. Install the rear part of the rear side door outside handle (1) into the rear side door outside handle bracket and slide the rear side door outside handle forward.



Fig. 77: Electrical Connector

Courtesy of GENERAL MOTORS COMPANY

3. Connect the electrical connector. (1)



Fig. 78: Rear Side Door Outside Handle

Courtesy of GENERAL MOTORS COMPANY

4. Pull the rear side door outside handle (1) to the open position.



Fig. 79: Rear Side Door Lock Cylinder Opening Cover
 Courtesy of GENERAL MOTORS COMPANY

5. Install Rear Side Door Lock Cylinder Opening Cover (1) **Rear Side Door Lock Cylinder Opening Cover Replacement**

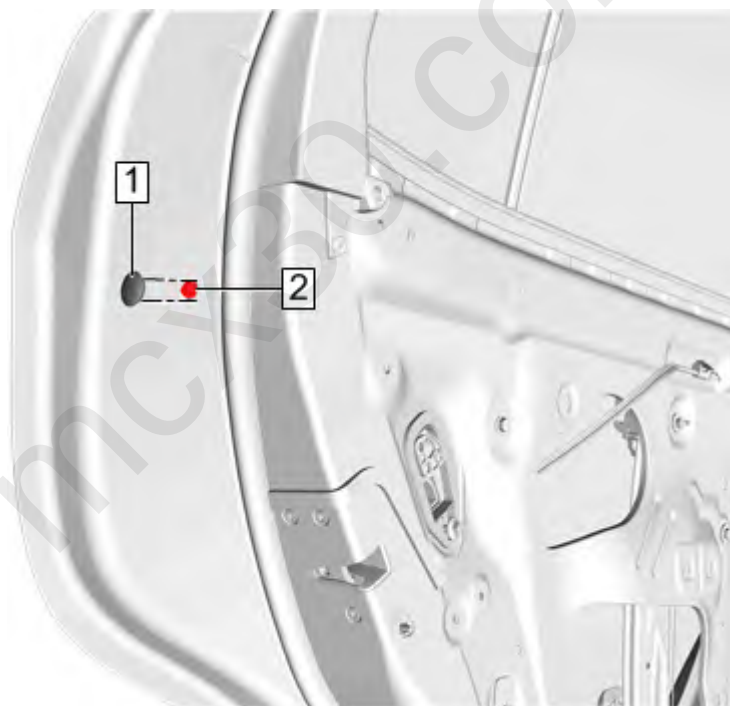


Fig. 80: Door Lock Cylinder Opening Cover Screw And Rear Side Door Access Hole Cover
 Courtesy of GENERAL MOTORS COMPANY

CAUTION: Refer to **Fastener Caution**

6. Rear Side Door Lock Cylinder Opening Cover Screw (2) -Tighten 4 N.m (31 lb in)
7. Install Rear Side Door Access Hole Cover (1)
8. Install Rear Side Door Water Deflector **Rear Side Door Water Deflector Replacement (Equinox)** **Rear Side Door Water Deflector Replacement (Terrain)**

REAR SIDE DOOR OUTSIDE HANDLE CABLE REPLACEMENT

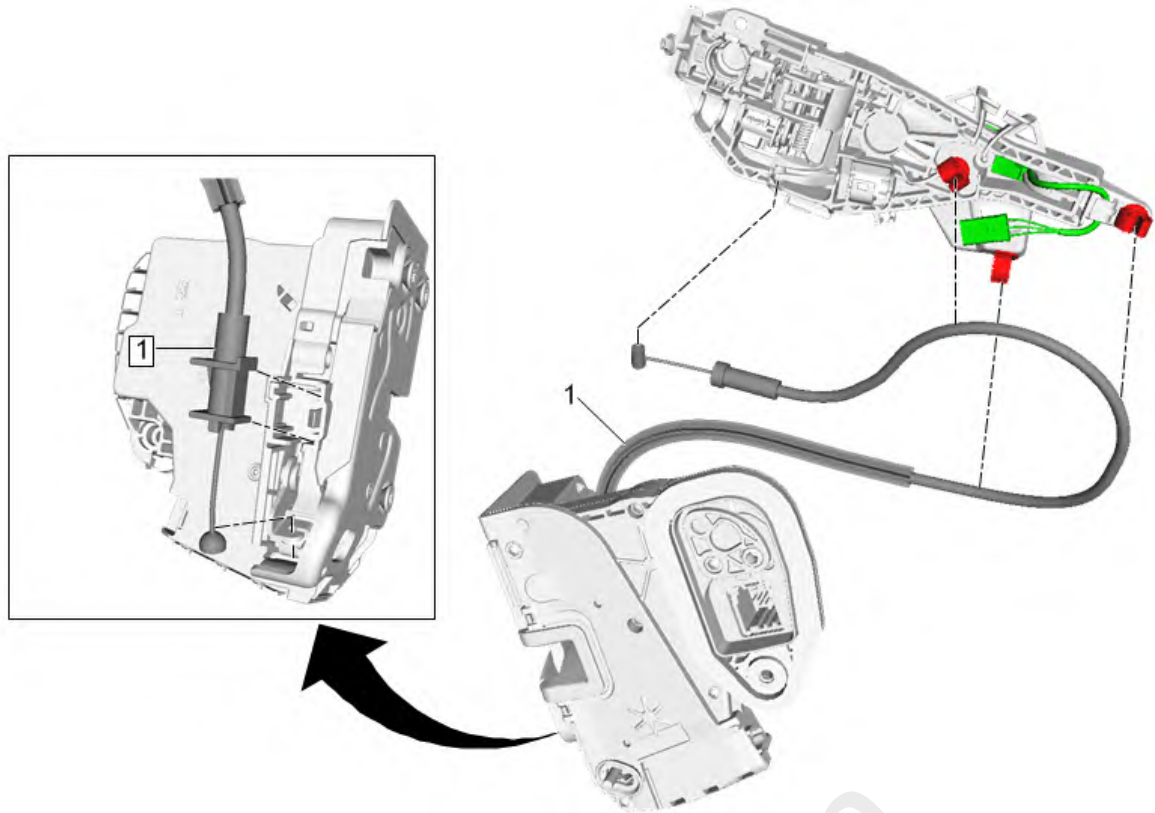


Fig. 81: Rear Side Outside Handle Cable
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure <u>Rear Side Door Latch Replacement</u>	
1	Rear Side Door Outside Handle Cable Procedure 1. Remove the rear side door outside handle cable from the handle retainers. 2. Release the cable from the back of the latch assembly. 3. Remove the rear side door outside handle cable from the rear side door outside handle bracket.

REAR SIDE DOOR OUTSIDE HANDLE CABLE RETAINER REPLACEMENT

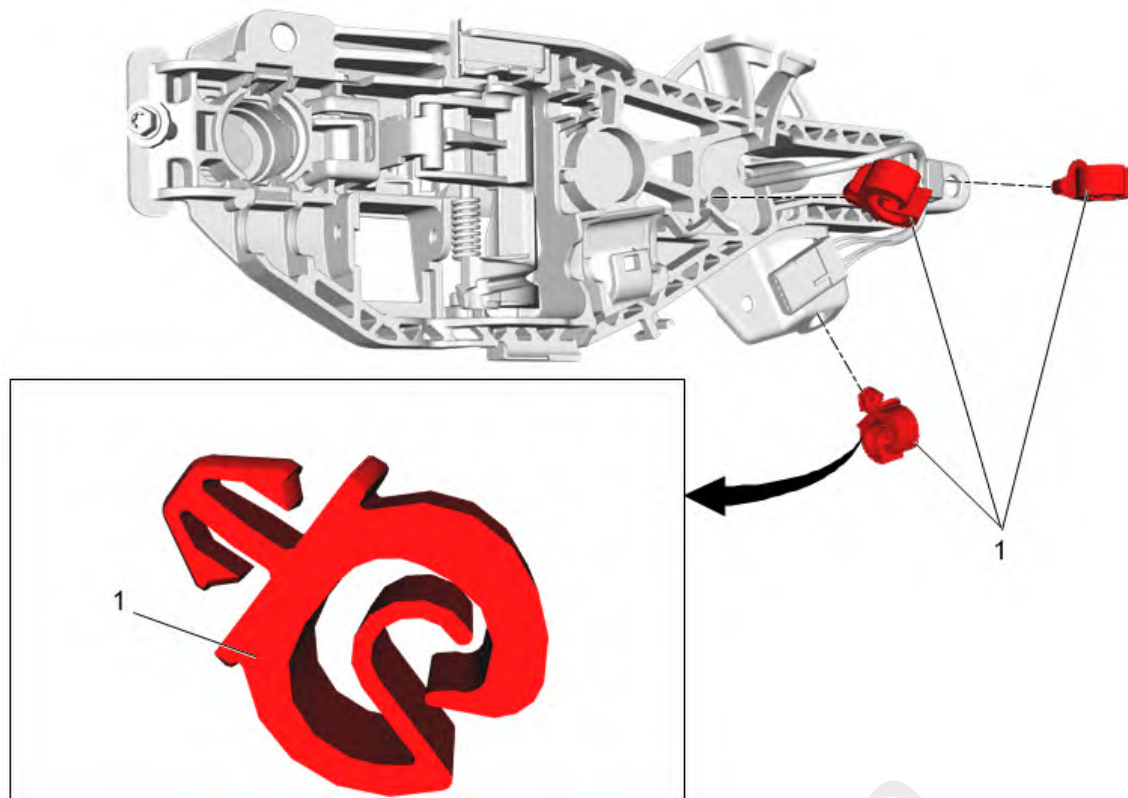


Fig. 82: Front Side Door Outside Handle Cable Retainer

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure	
<u>Rear Side Door Outside Handle Bracket Replacement</u>	
1	Rear Side Door Outside Handle Cable Retainer [3x] Procedure Squeeze end of retainer and pull retainer from handle bracket.

FRONT SIDE DOOR LATCH REPLACEMENT

Removal Procedure

1. Remove Front Side Door Water Deflector - **Front Side Door Water Deflector Replacement (Equinox)** **Front Side Door Water Deflector Replacement (Terrain)**

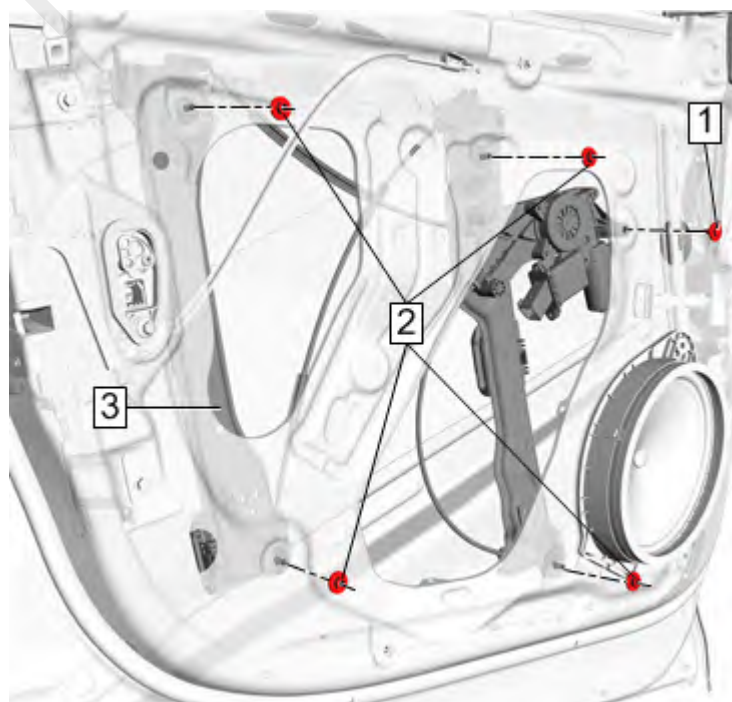


Fig. 83: Front Side Door Window Regulator
Courtesy of GENERAL MOTORS COMPANY

2. Remove Front Side Door Window Regulator (3) **Front Side Door Window Regulator Replacement**

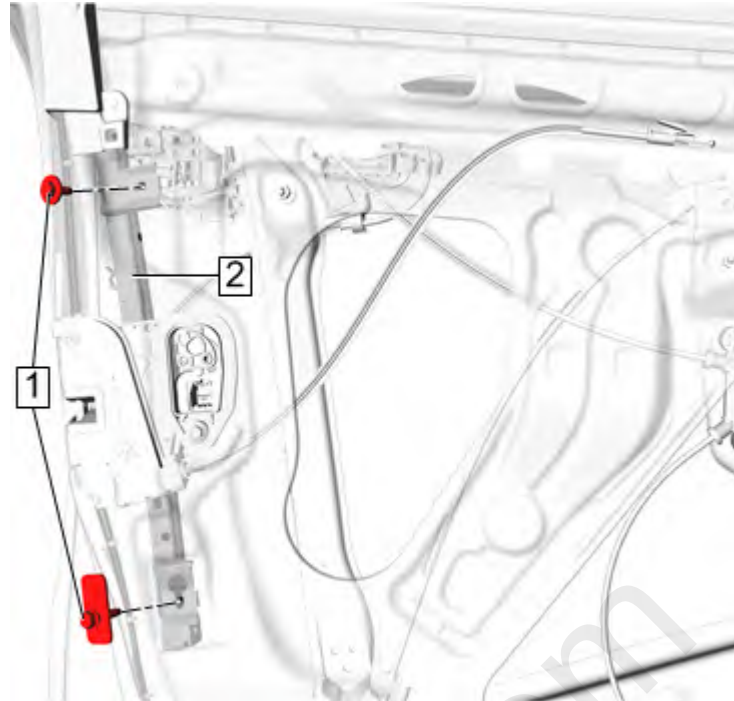


Fig. 84: Front Side Door Window Channel Retainer
Courtesy of GENERAL MOTORS COMPANY

3. Remove Front Side Door Window Rear Channel Retainer (2) - **Front Side Door Window Channel Retainer Replacement**

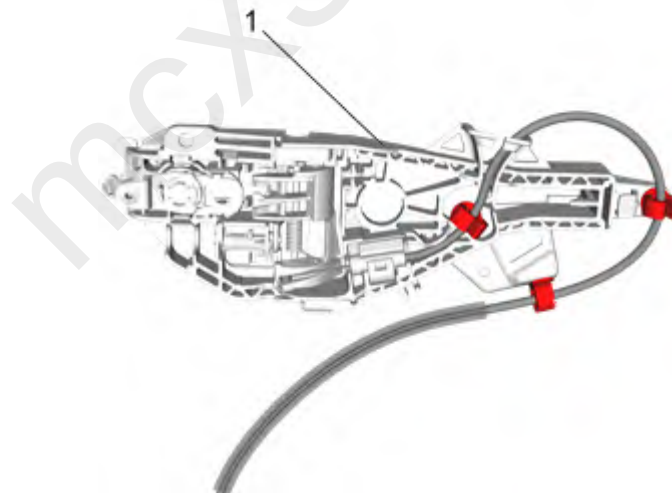


Fig. 85: Side Door Outside Handle Bracket
Courtesy of GENERAL MOTORS COMPANY

4. Remove Front Side Door Outside Handle Bracket (1) - **Front Side Door Outside Handle Bracket Replacement**
5. Disconnect the electrical connector.

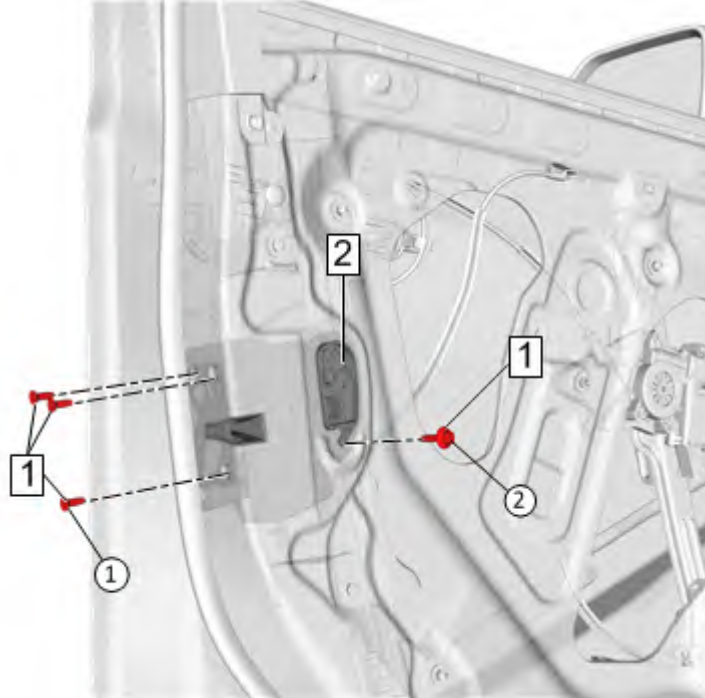


Fig. 86: Front Side Door Latch

Courtesy of GENERAL MOTORS COMPANY

6. Remove Front Side Door Latch Bolt (1) @Front Side Door Latch (2).

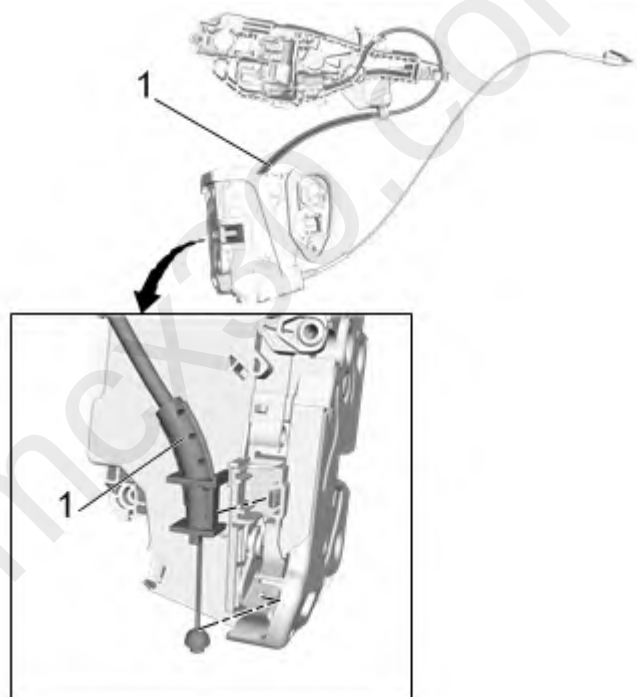


Fig. 87: Front Side Door Outside Handle Cable

Courtesy of GENERAL MOTORS COMPANY

7. Remove Front Side Door Outside Handle Cable (1) **Front Side Door Outside Handle Cable Replacement**

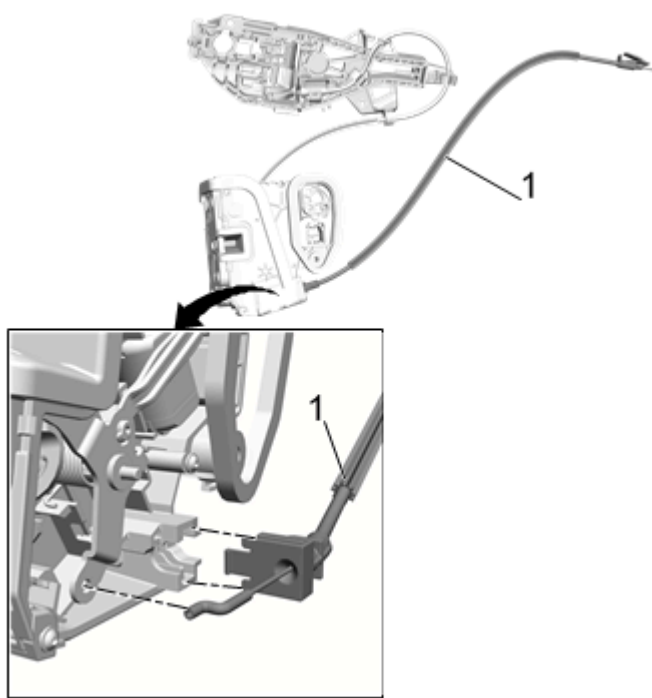


Fig. 88: Front Side Door Inside Handle Cable
Courtesy of GENERAL MOTORS COMPANY

8. Remove Front Side Door Inside Handle Cable (1) **Front Side Door Inside Handle Cable Replacement**

Installation Procedure

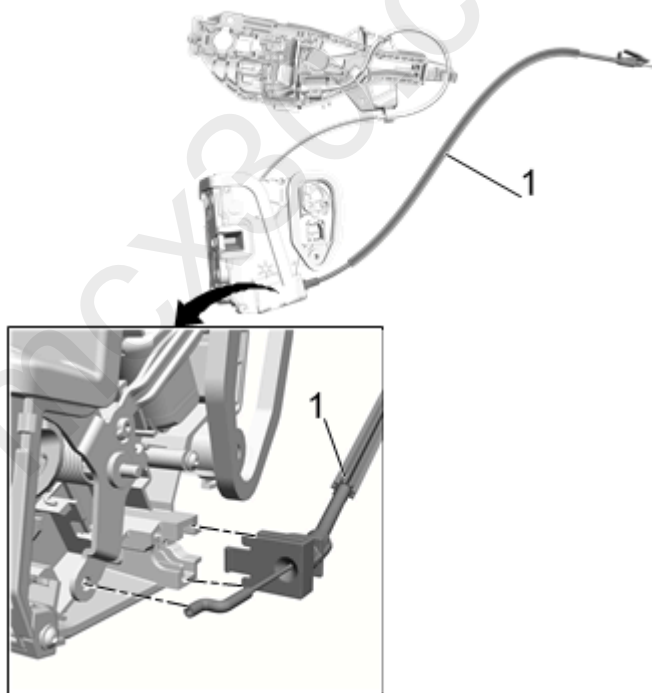


Fig. 89: Front Side Door Inside Handle Cable
Courtesy of GENERAL MOTORS COMPANY

1. Install Front Side Door Inside Handle Cable (1) **Front Side Door Inside Handle Cable Replacement**

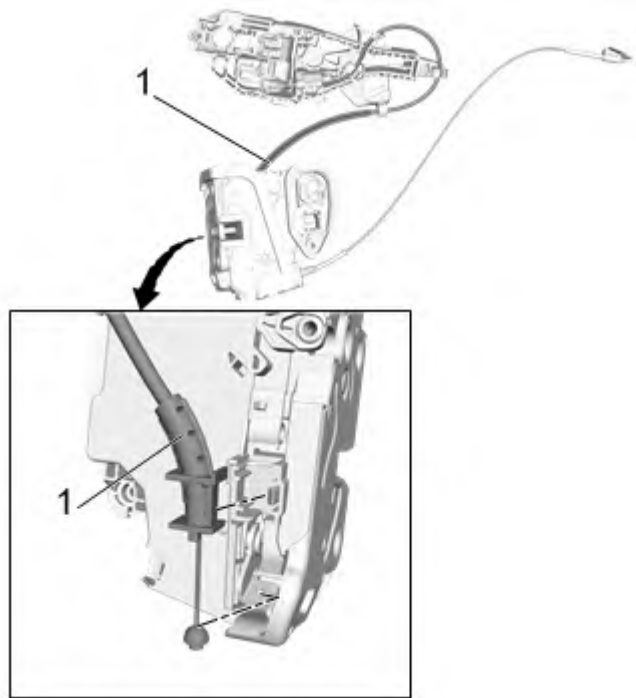


Fig. 90: Front Side Door Outside Handle Cable
Courtesy of GENERAL MOTORS COMPANY

2. Install Front Side Door Outside Handle Cable (1) [Front Side Door Outside Handle Cable Replacement](#)
3. Transfer components as necessary.

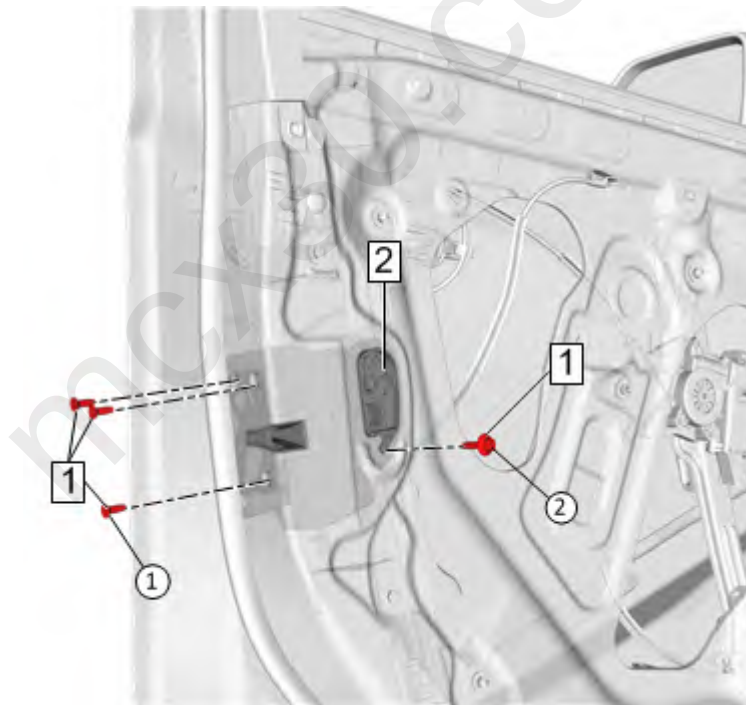


Fig. 91: Front Side Door Latch
Courtesy of GENERAL MOTORS COMPANY

CAUTION: Refer to [Fastener Caution](#)

NOTE: Install and torque the four latch bolts in proper sequence to prevent damage to the latch mechanism.

4. Install Front Side Door Latch Bolt (1) @Front Side Door Latch (2) and tighten 9 N.m (80 lb in)

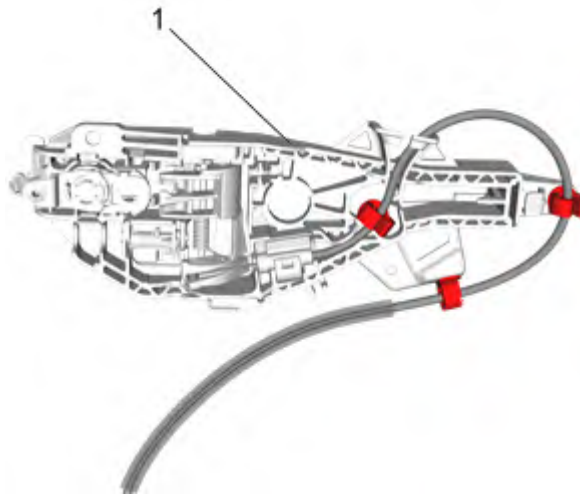


Fig. 92: Side Door Outside Handle Bracket
 Courtesy of GENERAL MOTORS COMPANY

5. Install Front Side Door Outside Handle Bracket (1) **Front Side Door Outside Handle Bracket Replacement**

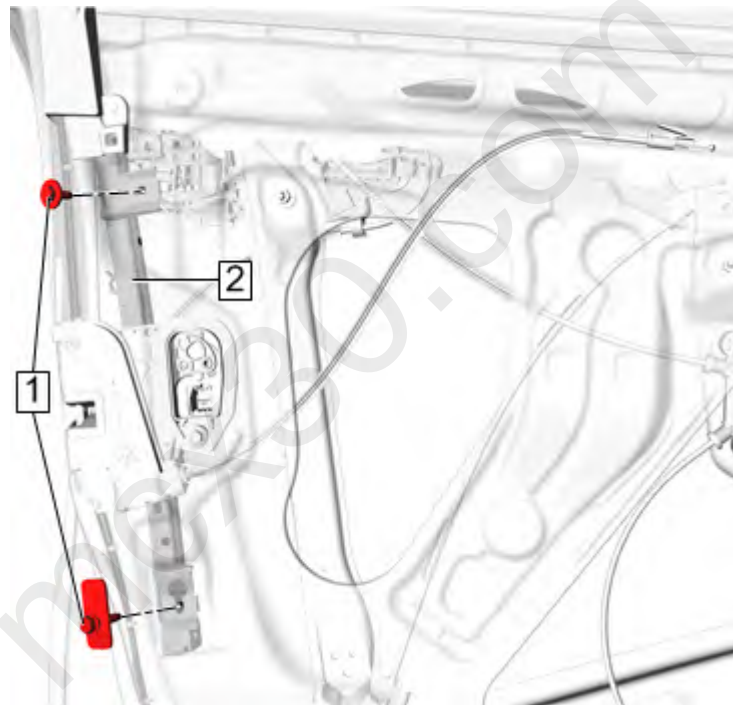


Fig. 93: Front Side Door Window Channel Retainer
 Courtesy of GENERAL MOTORS COMPANY

6. Install Front Side Door Window Rear Channel Retainer (2) **Front Side Door Window Channel Retainer Replacement**

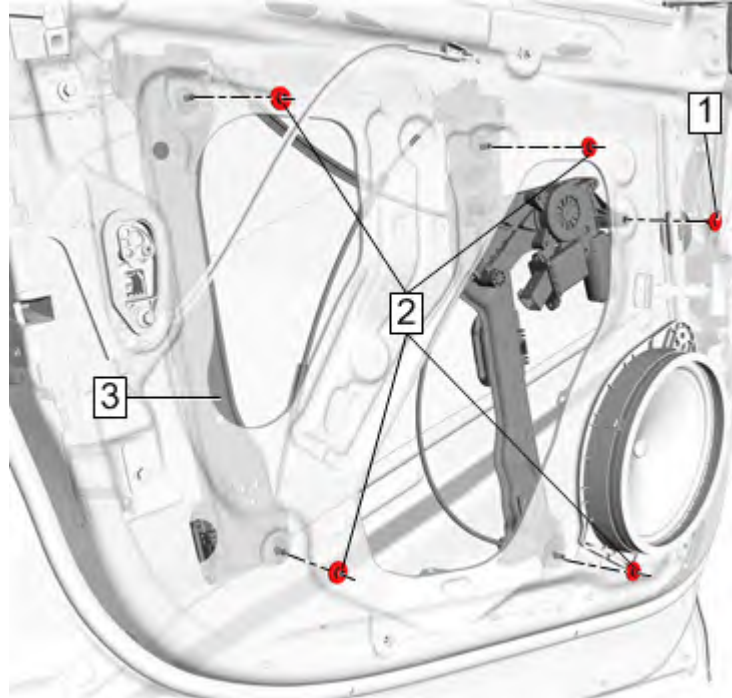


Fig. 94: Front Side Door Window Regulator
Courtesy of GENERAL MOTORS COMPANY

7. Install Front Side Door Window Regulator (3) **Front Side Door Window Regulator Replacement**
8. Connect the electrical connector.
9. Install Front Side Door Water Deflector - **Front Side Door Water Deflector Replacement (Equinox)** **Front Side Door Water Deflector Replacement (Terrain)**
10. Inspect the door latch and outside handle for proper operation before installing the door trim.
11. Remove the tape from the front side door window and frame.

REAR SIDE DOOR LATCH REPLACEMENT

Removal Procedure

1. Remove Rear Side Door Water Deflector - **Rear Side Door Water Deflector Replacement (Equinox)** **Rear Side Door Water Deflector Replacement (Terrain)**

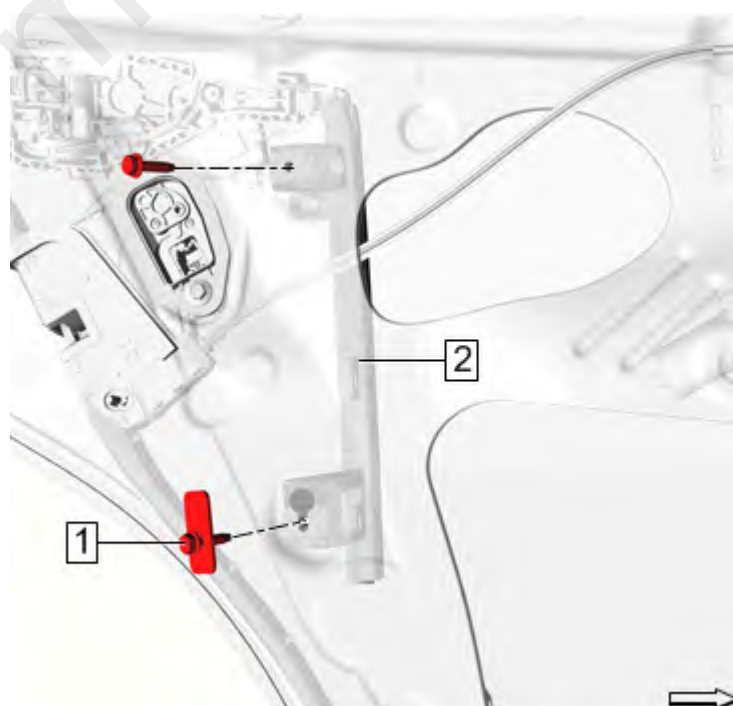


Fig. 95: Rear Side Door Window Channel Rear Retainer
Courtesy of GENERAL MOTORS COMPANY

2. Remove Rear Side Door Window Channel Rear Retainer (2) [Rear Side Door Window Channel Rear Retainer Replacement](#)

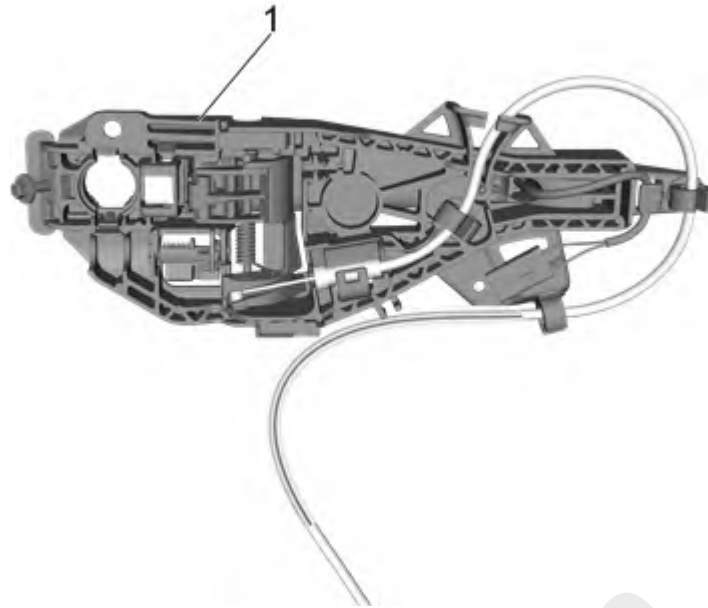


Fig. 96: Rear Side Door Outside Handle Bracket
Courtesy of GENERAL MOTORS COMPANY

3. Remove Rear Side Door Outside Handle Bracket (1) [Rear Side Door Outside Handle Bracket Replacement](#)

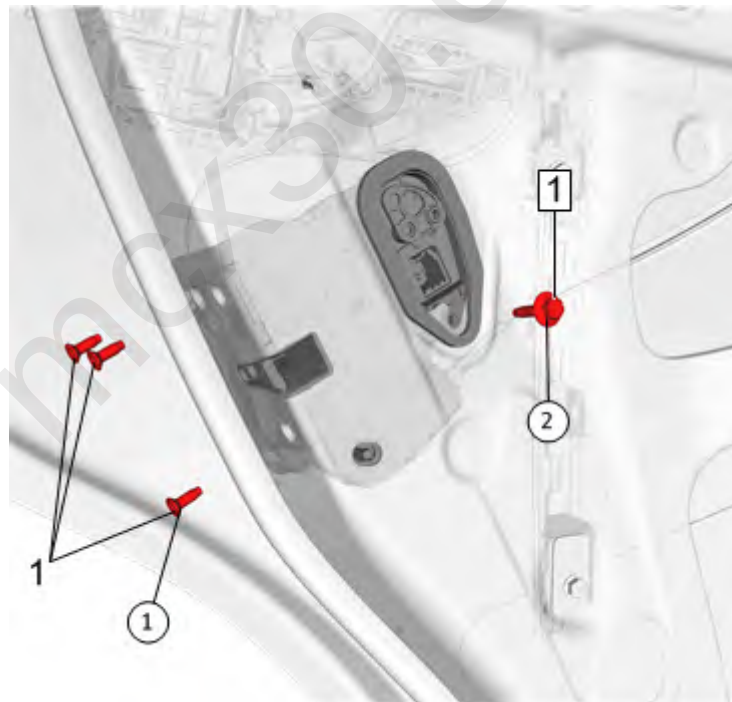


Fig. 97: Rear Side Door Latch Bolt
Courtesy of GENERAL MOTORS COMPANY

4. Disconnect the electrical connector.
5. Remove Rear Side Door Latch Bolt (1)

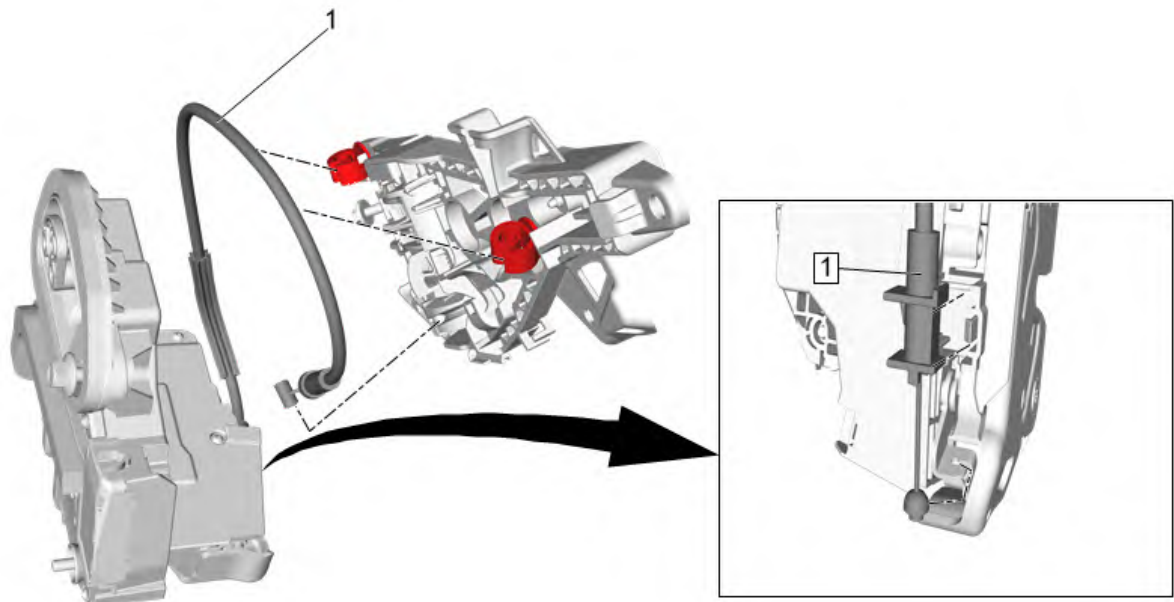


Fig. 98: Rear Side Door Outside Handle Cable
 Courtesy of GENERAL MOTORS COMPANY

6. Remove Rear Side Door Outside Handle Cable (1) **Rear Side Door Outside Handle Cable Replacement**

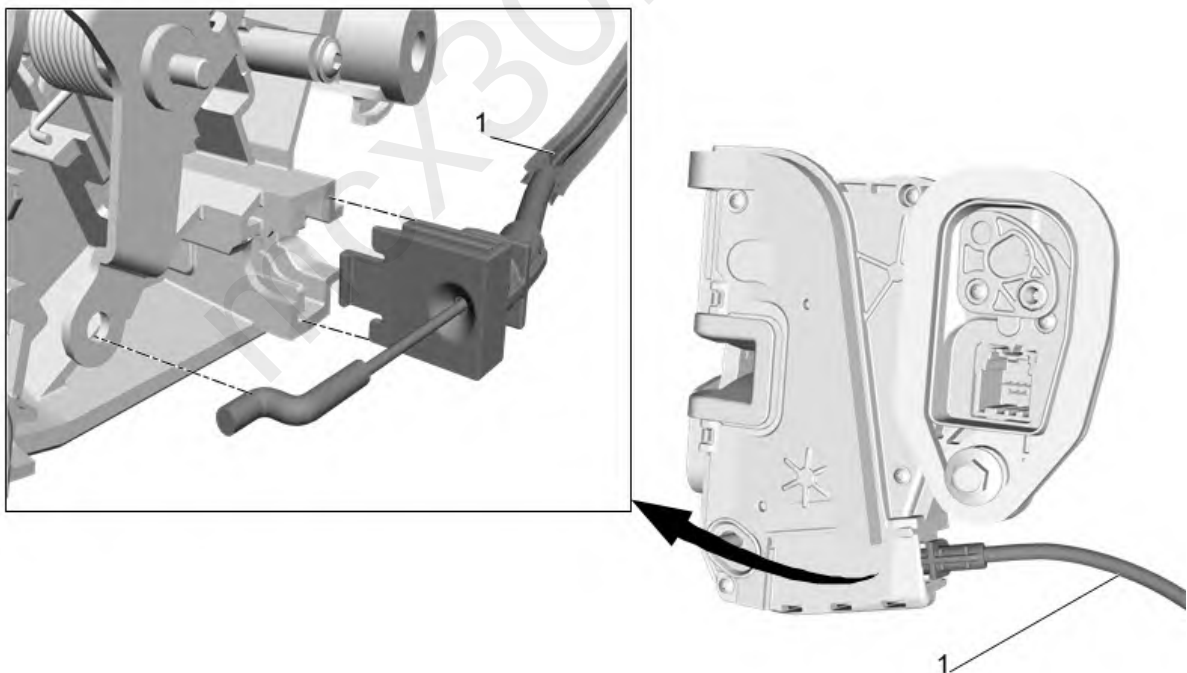


Fig. 99: Rear Side Door Inside Handle Cable
 Courtesy of GENERAL MOTORS COMPANY

7. Remove Rear Side Door Inside Handle Cable (1) **Rear Side Door Inside Handle Cable Replacement**

Installation Procedure

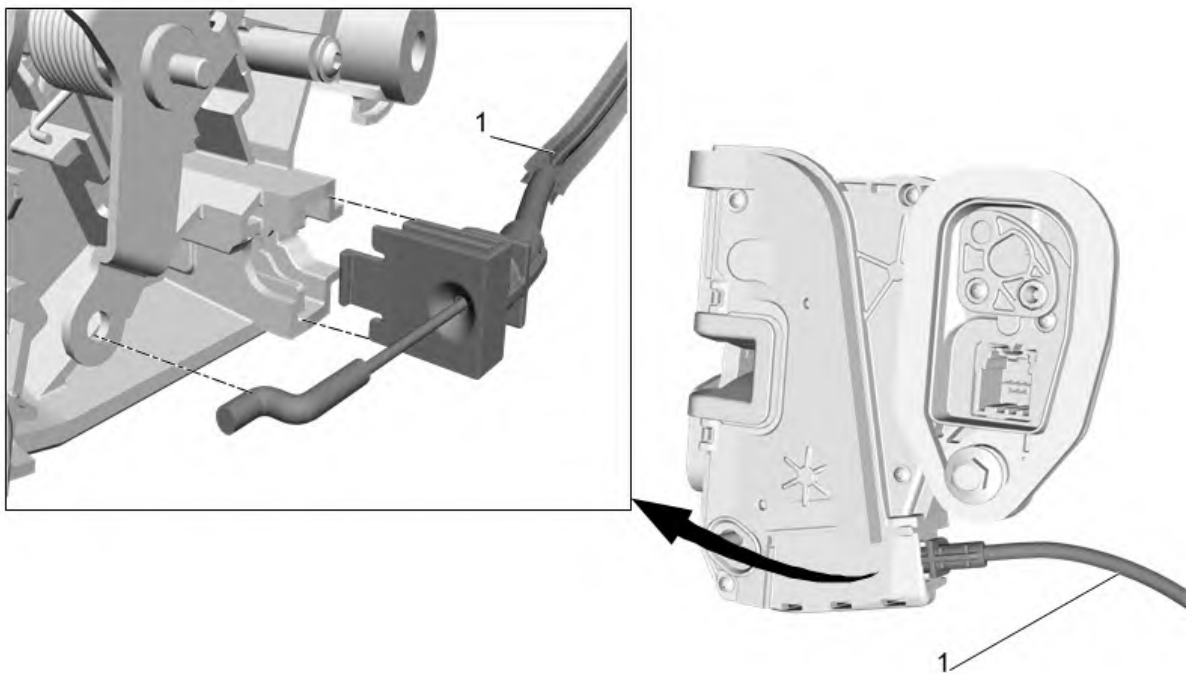


Fig. 100: Rear Side Door Inside Handle Cable
Courtesy of GENERAL MOTORS COMPANY

1. Install Rear Side Door Inside Handle Cable (1) **Rear Side Door Inside Handle Cable Replacement**

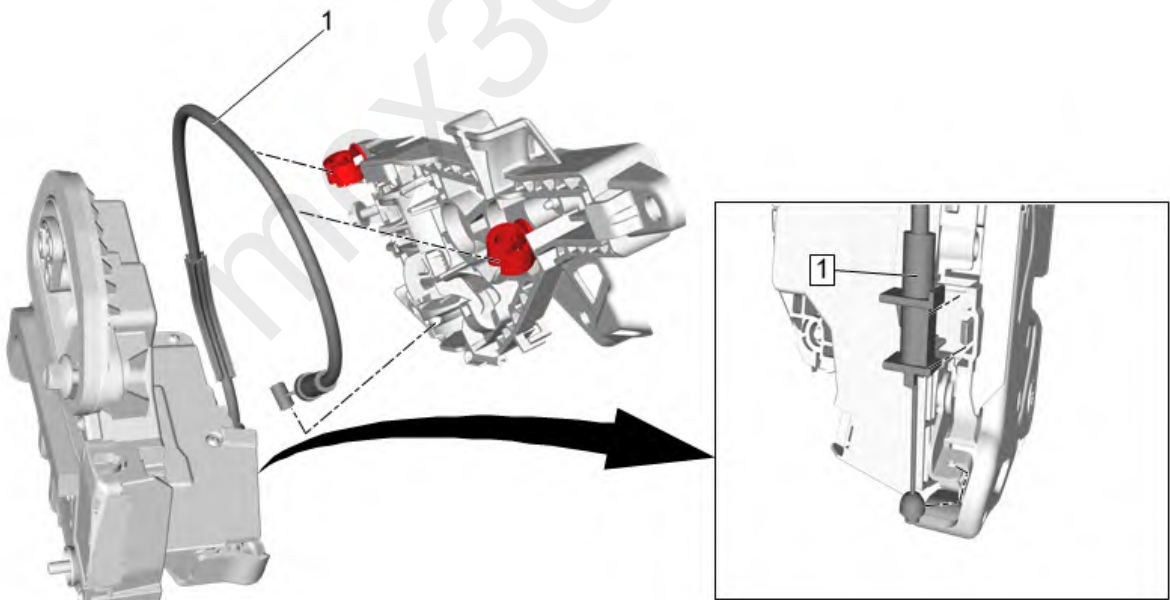


Fig. 101: Rear Side Door Outside Handle Cable
Courtesy of GENERAL MOTORS COMPANY

2. Install Rear Side Door Outside Handle Cable (1) **Rear Side Door Outside Handle Cable Replacement**
3. Transfer components as necessary.

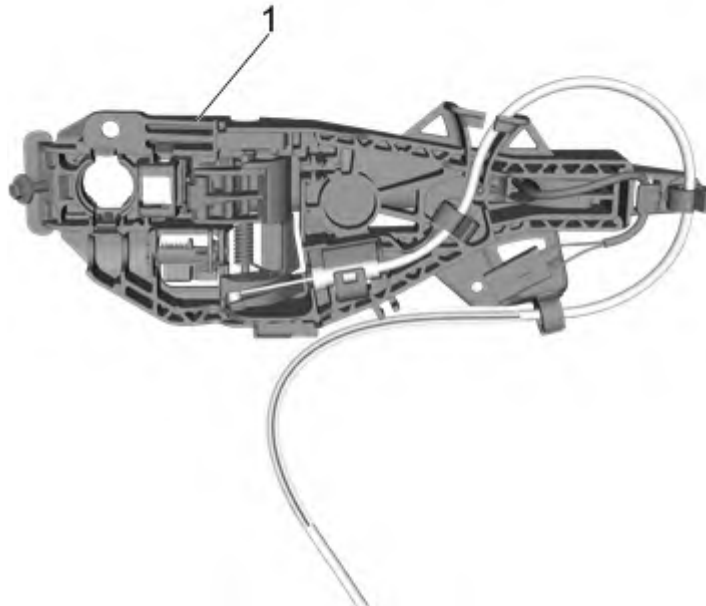


Fig. 102: Rear Side Door Outside Handle Bracket
 Courtesy of GENERAL MOTORS COMPANY

4. Install Rear Side Door Outside Handle Bracket (1) **Rear Side Door Outside Handle Bracket Replacement**

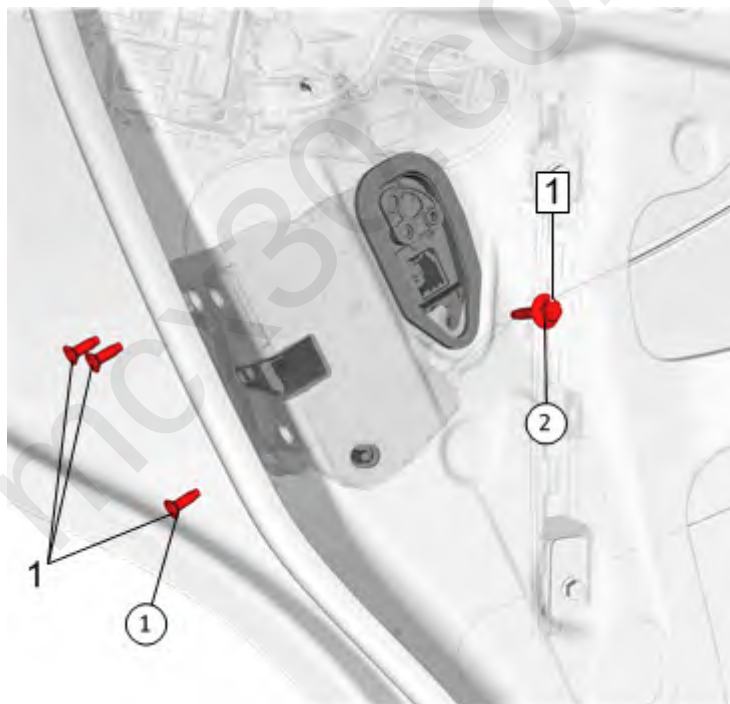


Fig. 103: Rear Side Door Latch Bolt
 Courtesy of GENERAL MOTORS COMPANY

CAUTION: Refer to **Fastener Caution**

NOTE: Tighten in proper sequence to prevent damage to the latch mechanism.

5. Install Rear Side Door Latch Bolt (1) and tighten [4x] 9 Nm (80 lb in)

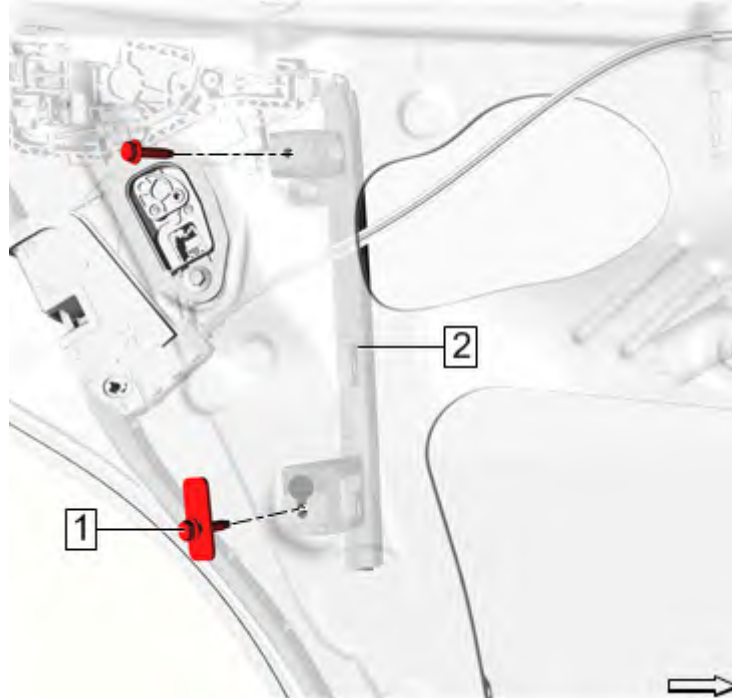


Fig. 104: Rear Side Door Window Channel Rear Retainer
Courtesy of GENERAL MOTORS COMPANY

6. Install Rear Side Door Window Channel Rear Retainer (2) **Rear Side Door Window Channel Rear Retainer Replacement**
7. Connect the electrical connector.
8. Install Rear Side Door Water Deflector - **Rear Side Door Water Deflector Replacement (Equinox)** **Rear Side Door Water Deflector Replacement (Terrain)**
9. Inspect the door latch, window and outside handle for proper operation before installing the door trim.

FRONT SIDE DOOR LOCK CYLINDER OPENING COVER REPLACEMENT

Removal Procedure

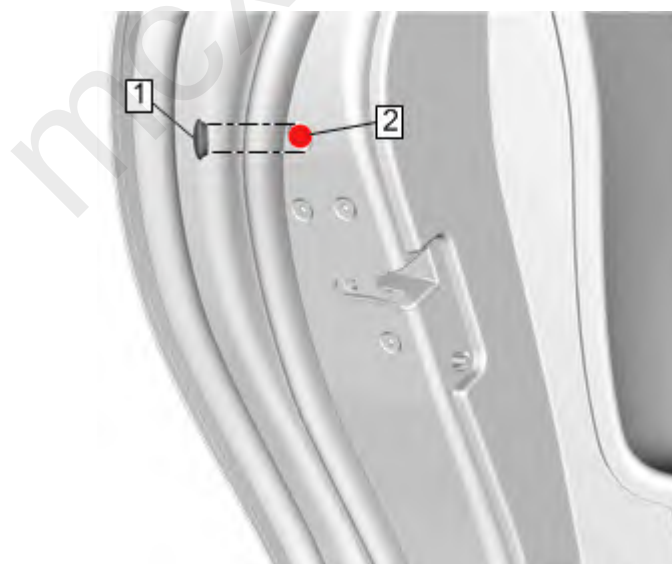


Fig. 105: Front Side Door Outside Handle Lock Cylinder Screw
Courtesy of GENERAL MOTORS COMPANY

1. Remove Front Side Door Access Hole Cover (1)

NOTE:

- **USE HAND TOOL ONLY.** Using a battery operated gun or power tool can **BREAK** the component.
- **Around 10 - 12 rotations is enough to allow the Front Side Door Outside Handle Lock Cylinder to be removed.**

2. Loosen Front Side Door Outside Handle Lock Cylinder Cover Screw (2)

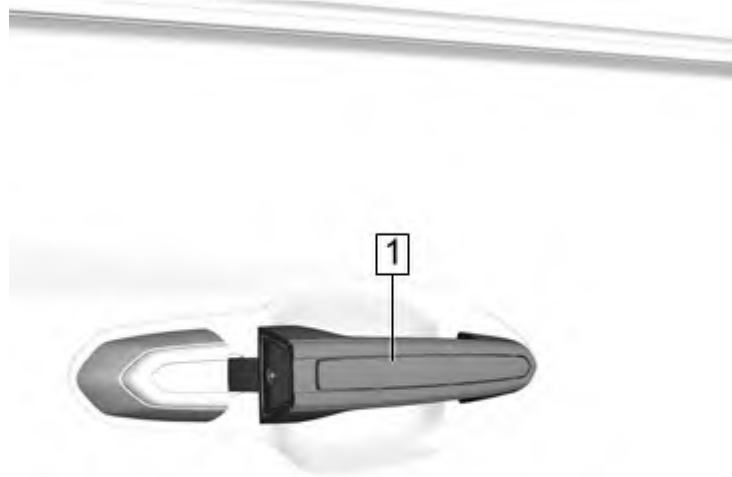


Fig. 106: Door Handle

Courtesy of GENERAL MOTORS COMPANY

3. Pull the door handle (1) out to the open position.

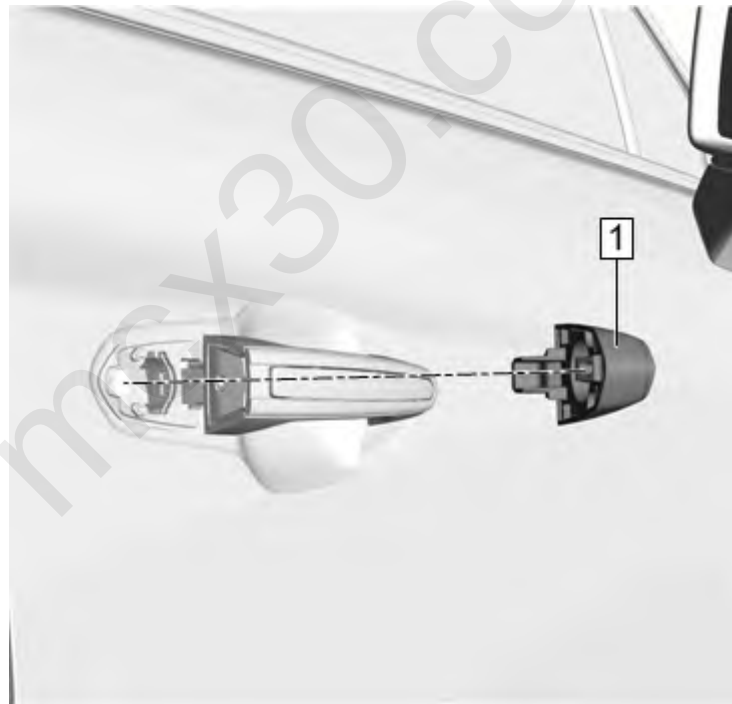


Fig. 107: Front Side Door Lock Cylinder Opening Cover

Courtesy of GENERAL MOTORS COMPANY

4. Remove Front Side Door Lock Cylinder Opening Cover (1)

Installation Procedure

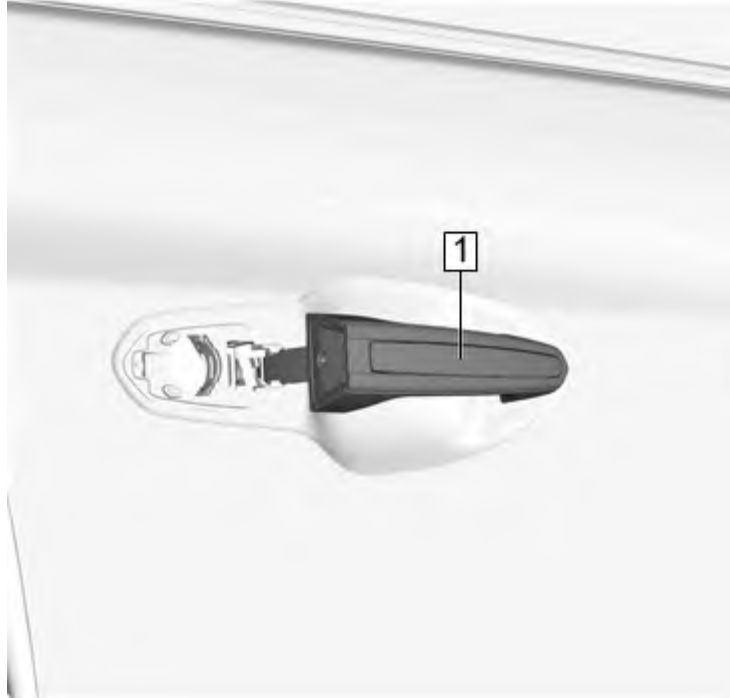


Fig. 108: Door Handle

Courtesy of GENERAL MOTORS COMPANY

1. Pull the door handle (1) out to the open position.



Fig. 109: Front Side Door Lock Cylinder Opening Cover

Courtesy of GENERAL MOTORS COMPANY

2. Install Front Side Door Lock Cylinder Opening Cover (1)

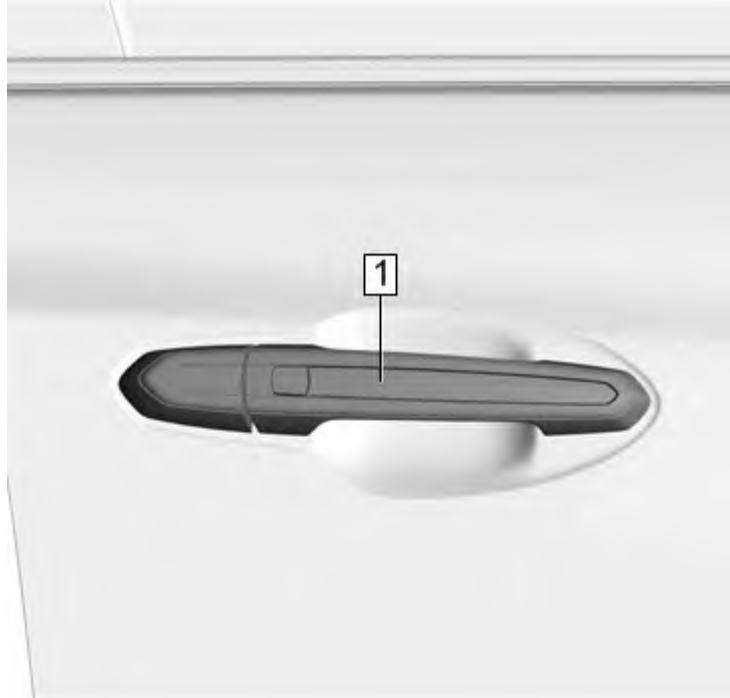


Fig. 110: Front Side Door Outside Handle
 Courtesy of GENERAL MOTORS COMPANY

3. Place the front side door outside handle (1) in the closed position.

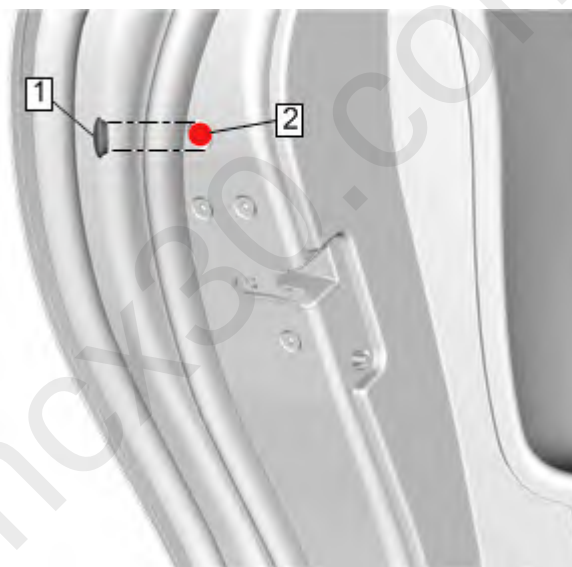


Fig. 111: Front Side Door Outside Handle Lock Cylinder Screw
 Courtesy of GENERAL MOTORS COMPANY

CAUTION: Refer to **Fastener Caution** .

4. Front Side Door Lock Cylinder Opening Cover Screw (2) - Tighten 4.7 N.m (42 lb in)
5. Install Front Side Door Access Hole Cover (1)

REAR SIDE DOOR LOCK CYLINDER OPENING COVER REPLACEMENT

Removal Procedure

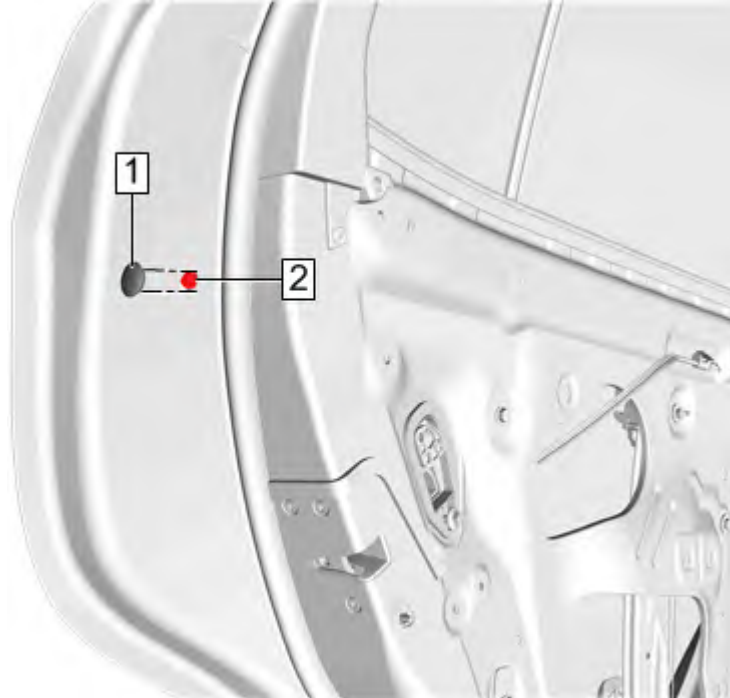


Fig. 112: Door Lock Cylinder Opening Cover Screw And Rear Side Door Access Hole Cover
 Courtesy of GENERAL MOTORS COMPANY

1. Remove Rear Side Door Access Hole Cover (1)

NOTE:

- **USE HAND TOOL ONLY.** Using a battery operated gun or power tool can **BREAK** the component.
- **Loosen the rear side door outside handle lock cylinder cover screw enough to allow the Front Side Door Outside Handle Lock Cylinder Cover to be removed.**

2. Loosen Rear Side Door Outside Handle Lock Cylinder Cover Screw (2)

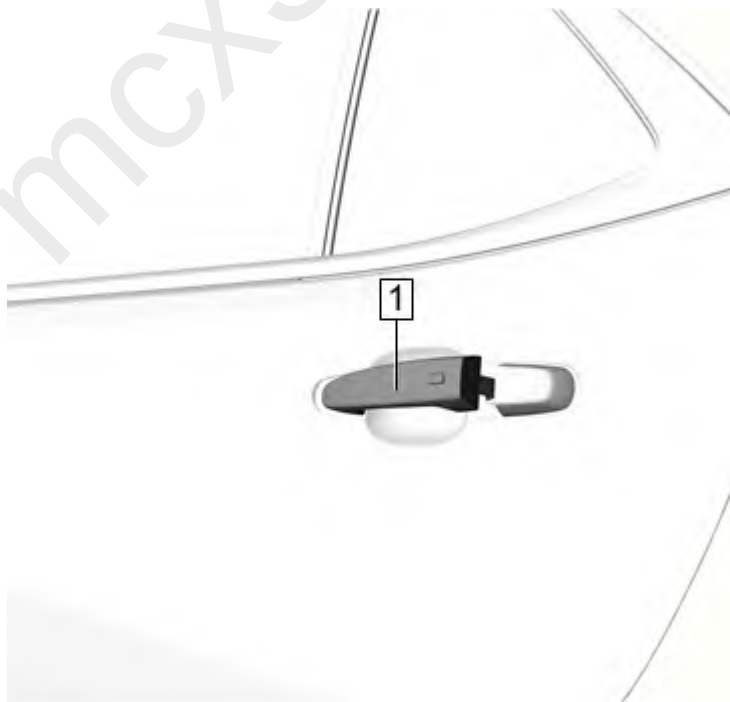


Fig. 113: Rear Side Door Outside Handle
 Courtesy of GENERAL MOTORS COMPANY

3. Pull the rear side door outside handle (1) out to the open position.



Fig. 114: Rear Side Door Lock Cylinder Opening Cover
Courtesy of GENERAL MOTORS COMPANY

4. Remove Rear Side Door Lock Cylinder Opening Cover (1)

Installation Procedure

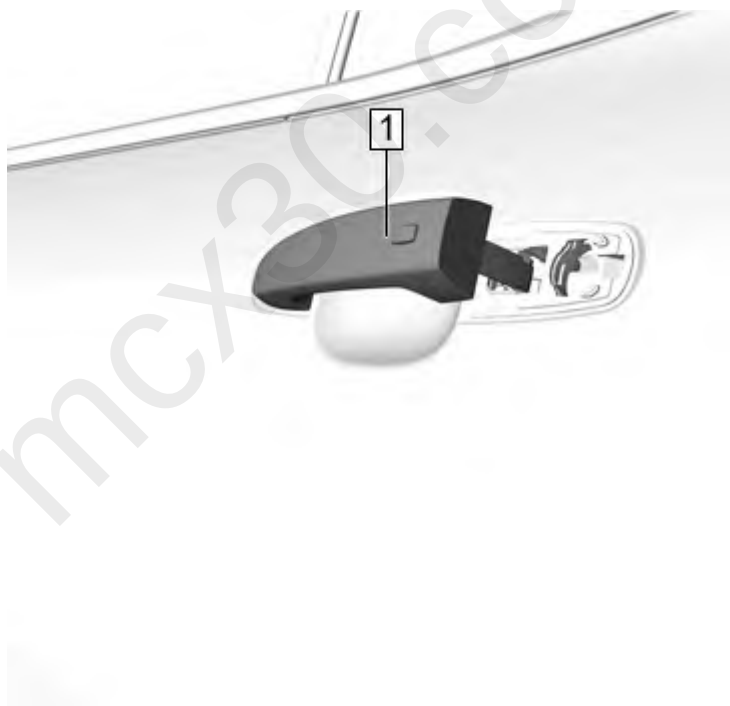


Fig. 115: Door Handle
Courtesy of GENERAL MOTORS COMPANY

1. Pull the door handle (1) out to the open position.



Fig. 116: Rear Side Door Lock Cylinder Opening Cover
Courtesy of GENERAL MOTORS COMPANY

2. Install Rear Side Door Lock Cylinder Opening Cover (1)

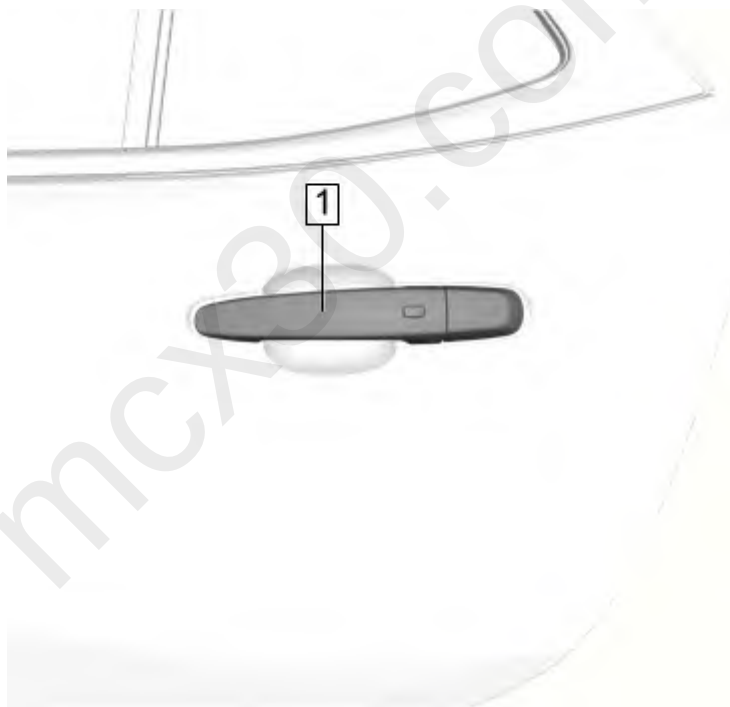


Fig. 117: Rear Side Door Outside Handle
Courtesy of GENERAL MOTORS COMPANY

3. Place the rear side door outside handle (1) in the closed position.

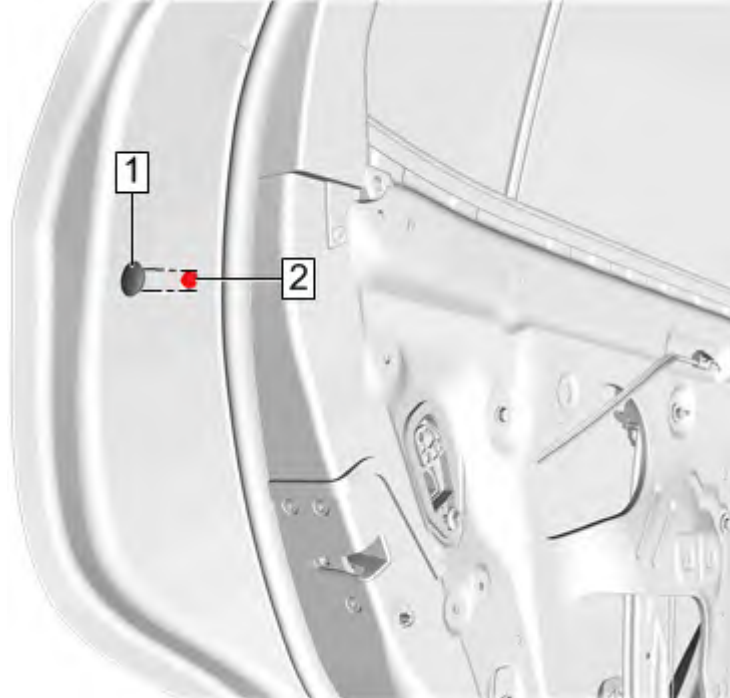


Fig. 118: Door Lock Cylinder Opening Cover Screw And Rear Side Door Access Hole Cover
Courtesy of GENERAL MOTORS COMPANY

CAUTION: Refer to **Fastener Caution** .

4. Rear Side Door Lock Cylinder Opening Cover Screw (2) - Tighten 4.7N.m (42 lb in)
5. Install Rear Side Door Access Hole Cover (1)

ACCESSORY AND LIFTGATE CONTROL MODULE REPLACEMENT

Removal Procedure

1. Remove Quarter Lower Rear Trim Panel - **Quarter Lower Rear Trim Panel Replacement (Left Side)**, **Quarter Lower Rear Trim Panel Replacement (Right Side)**

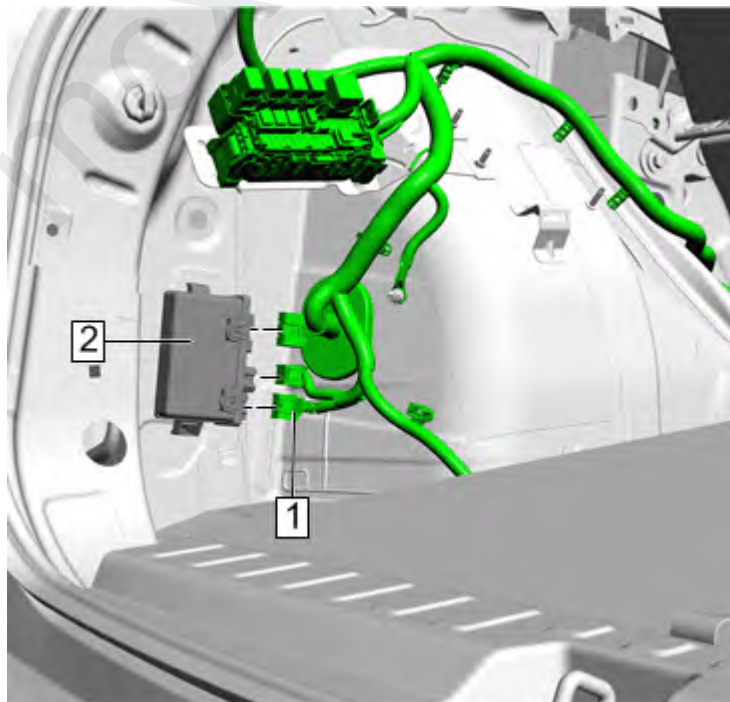


Fig. 119: Accessory And Liftgate Control Module And Electrical Connector
Courtesy of GENERAL MOTORS COMPANY

2. Disconnect Electrical Connector (1) @Accessory and Liftgate Control Module (2)

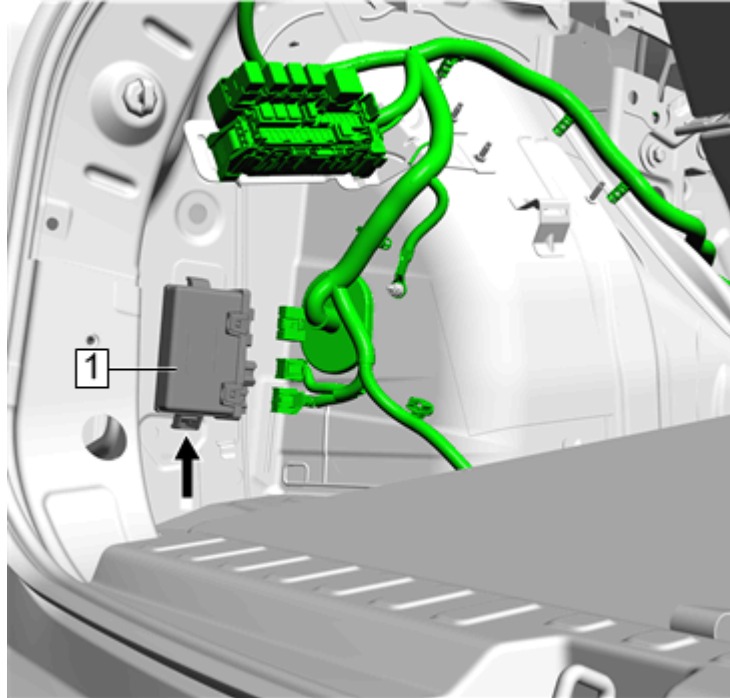


Fig. 120: Accessory And Liftgate Control Module
Courtesy of GENERAL MOTORS COMPANY

3. Remove Accessory and Liftgate Control Module (1)

Installation Procedure

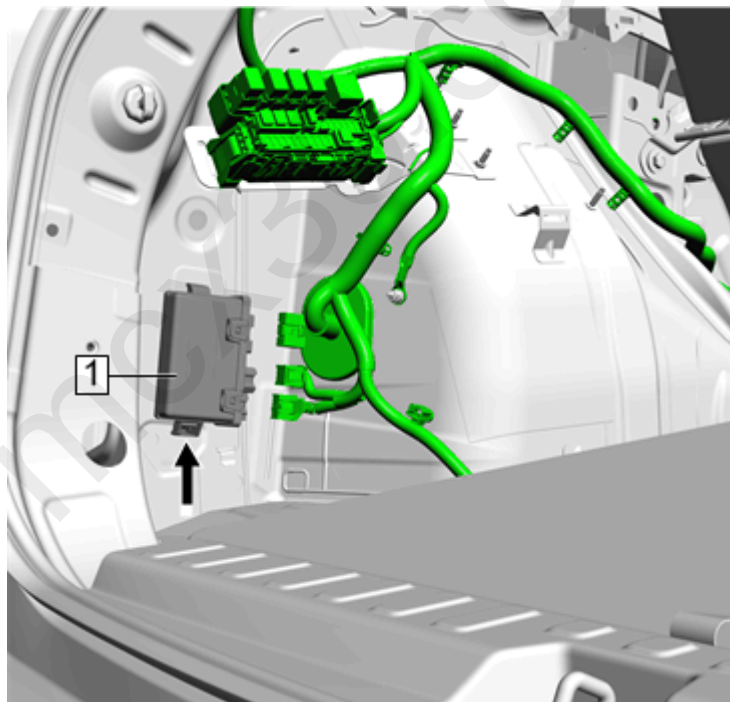


Fig. 121: Accessory And Liftgate Control Module
Courtesy of GENERAL MOTORS COMPANY

1. Install Accessory and Liftgate Control Module (1)

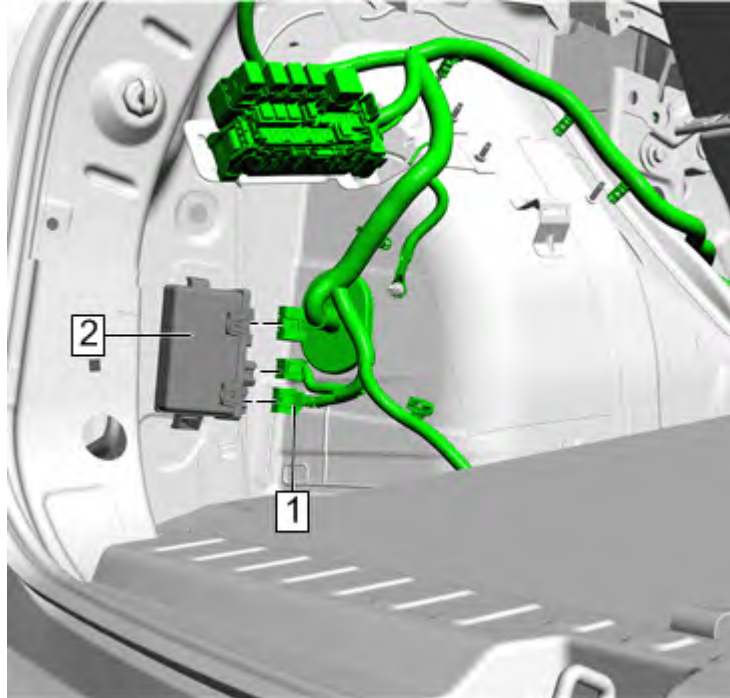


Fig. 122: Accessory And Liftgate Control Module And Electrical Connector
 Courtesy of GENERAL MOTORS COMPANY

2. Connect Electrical Connector (1) @Accessory and Liftgate Control Module (2)
3. Install Quarter Lower Rear Trim Panel (1)[Quarter Lower Rear Trim Panel Replacement \(Left Side\)](#) [Quarter Lower Rear Trim Panel Replacement \(Right Side\)](#)
4. Perform the necessary programming and setup procedure: [Control Module References](#)

REAR CLOSURE HANDS FREE MODULE REPLACEMENT

Removal Procedure

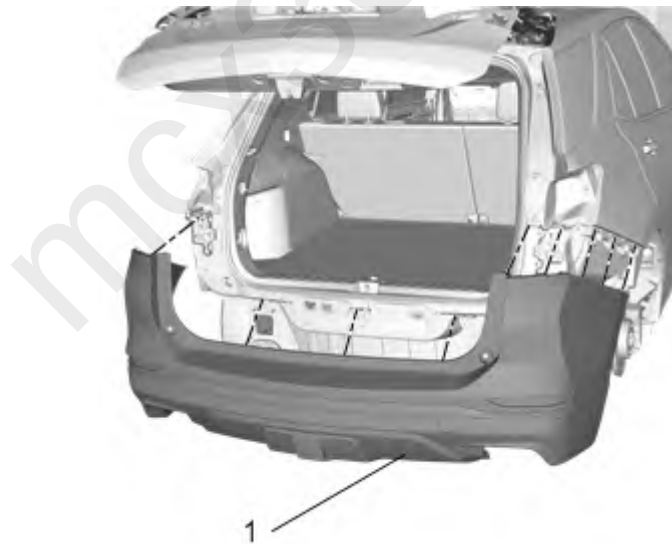


Fig. 123: Rear Bumper Fascia
 Courtesy of GENERAL MOTORS COMPANY

1. Remove Rear Bumper Fascia (1)[Rear Bumper Fascia Replacement \(Equinox\)](#) [Rear Bumper Fascia Replacement \(Terrain\)](#)
2. Disconnect the electrical connector.

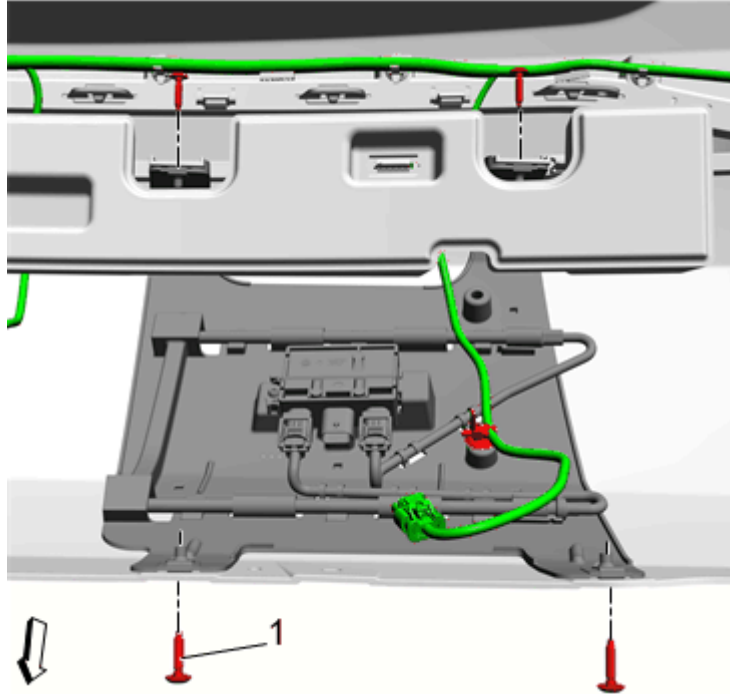


Fig. 124: Rear Closure Hands Free Module Bolt
Courtesy of GENERAL MOTORS COMPANY

3. Remove Rear Closure Hands Free Module Bolt (1)

Installation Procedure

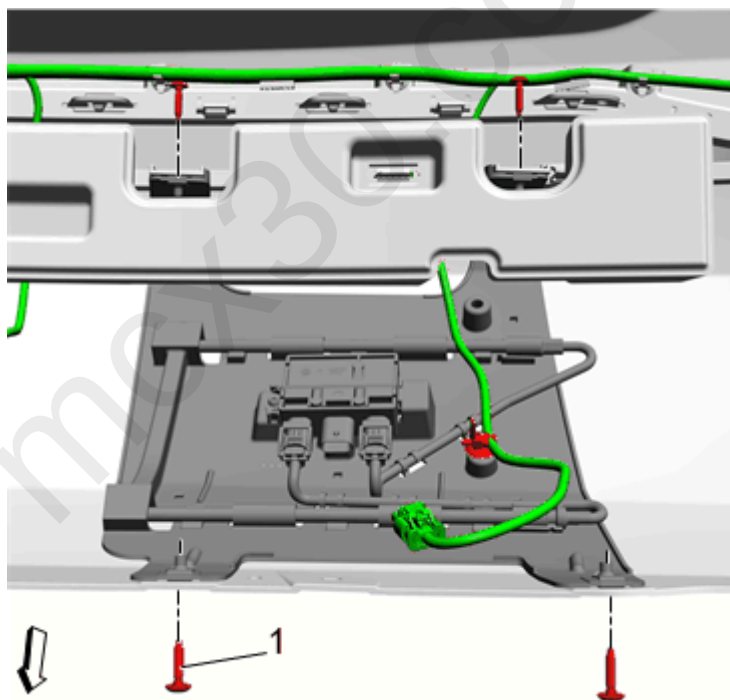


Fig. 125: Rear Closure Hands Free Module Bolt
Courtesy of GENERAL MOTORS COMPANY

CAUTION: Refer to **Fastener Caution** .

1. Install Rear Closure Hands Free Module Bolt (1) and tighten [4x] 5 N.m (44 lb in)
2. Connect the electrical connector.

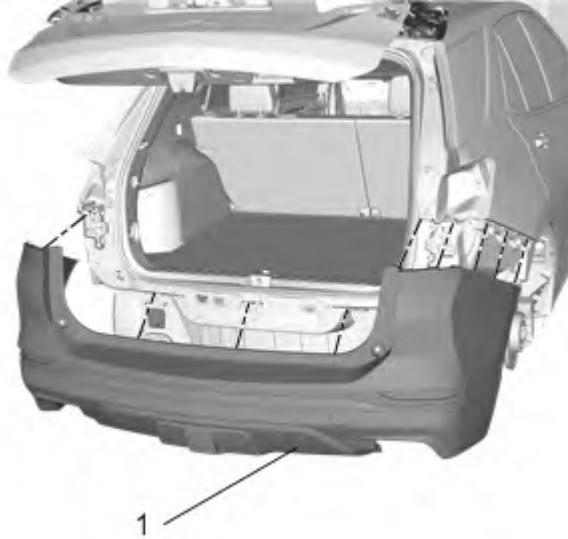


Fig. 126: Rear Bumper Fascia

Courtesy of GENERAL MOTORS COMPANY

3. Install Rear Bumper Fascia (1) [Rear Bumper Fascia Replacement \(Equinox\)](#) [Rear Bumper Fascia Replacement \(Terrain\)](#).
4. Perform the necessary programming and setup procedure: [Control Module References](#)

REAR CLOSURE HANDS FREE SENSOR REPLACEMENT

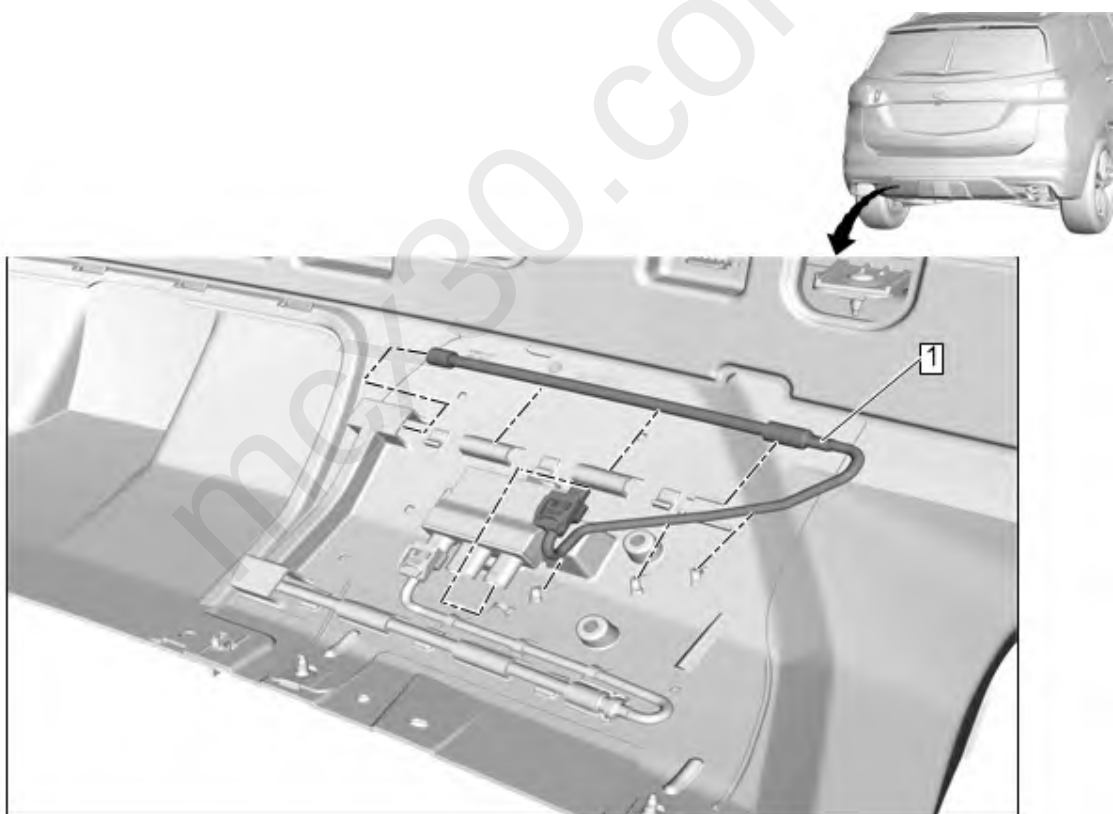


Fig. 127: Rear Closure Hands Free Sensor

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure	
Remove the 2 rear bumper fascia lower bolts to gain access to hands free sensor. Rear Bumper Fascia Replacement (Equinox) Rear Bumper Fascia Replacement (Terrain) .	

Callout	Component Name
1	Rear Closure Hands Free Sensor Procedure 1. Disconnect the electrical connector. 2. Disengage the wire at the connector, disengage opposite end, then pull back on each tab, and apply slight force on sensor to push the sensor out of the tabs.

REAR CLOSURE HANDS FREE LOWER SENSOR REPLACEMENT

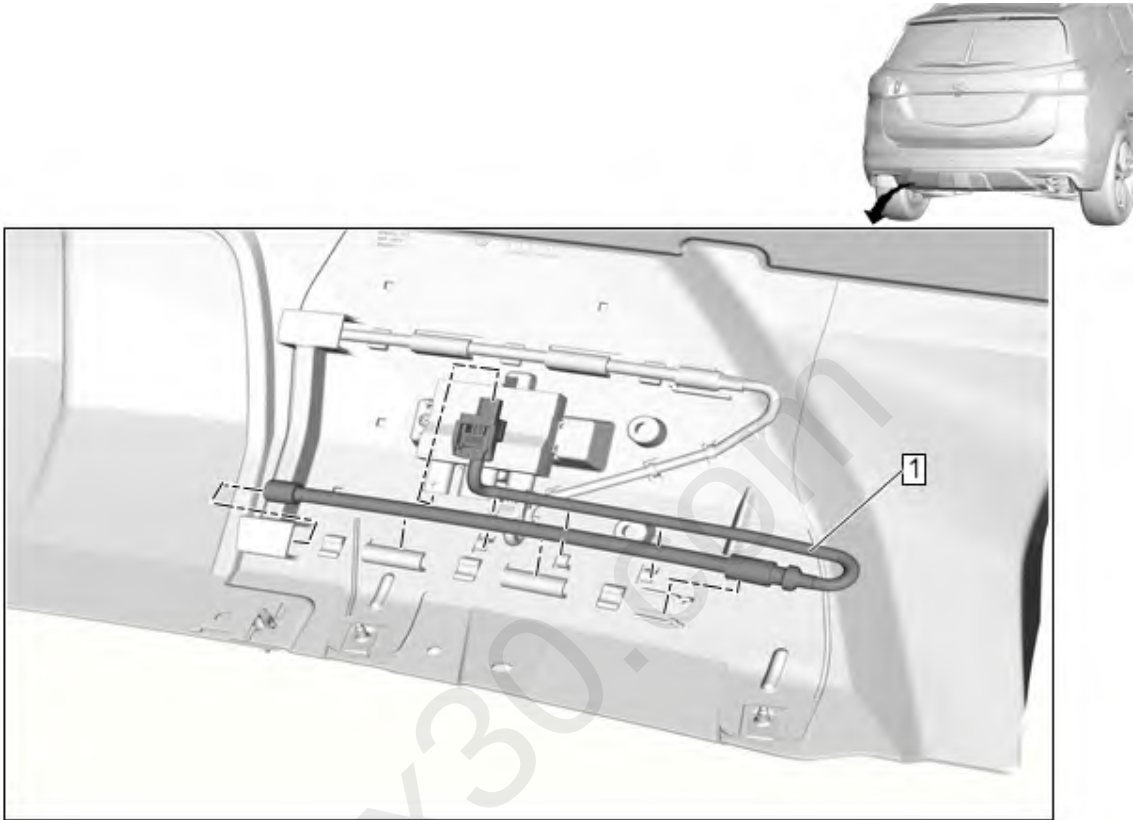


Fig. 128: Rear Closure Hands Free Lower Sensor
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Remove the 2 rear bumper fascia lower bolts to gain access to hands free sensor. Rear Bumper Fascia Replacement (Equinox) Rear Bumper Fascia Replacement (Terrain)	
1	Rear Closure Hands Free Lower Sensor Procedure 1. Disconnect the electrical connector. 2. Disengage the wire at the connector, disengage opposite end, then pull back on each tab, and apply slight force on sensor to push the sensor out of the tabs.

FRONT SIDE DOOR LOCKING ROD KNOB REPLACEMENT

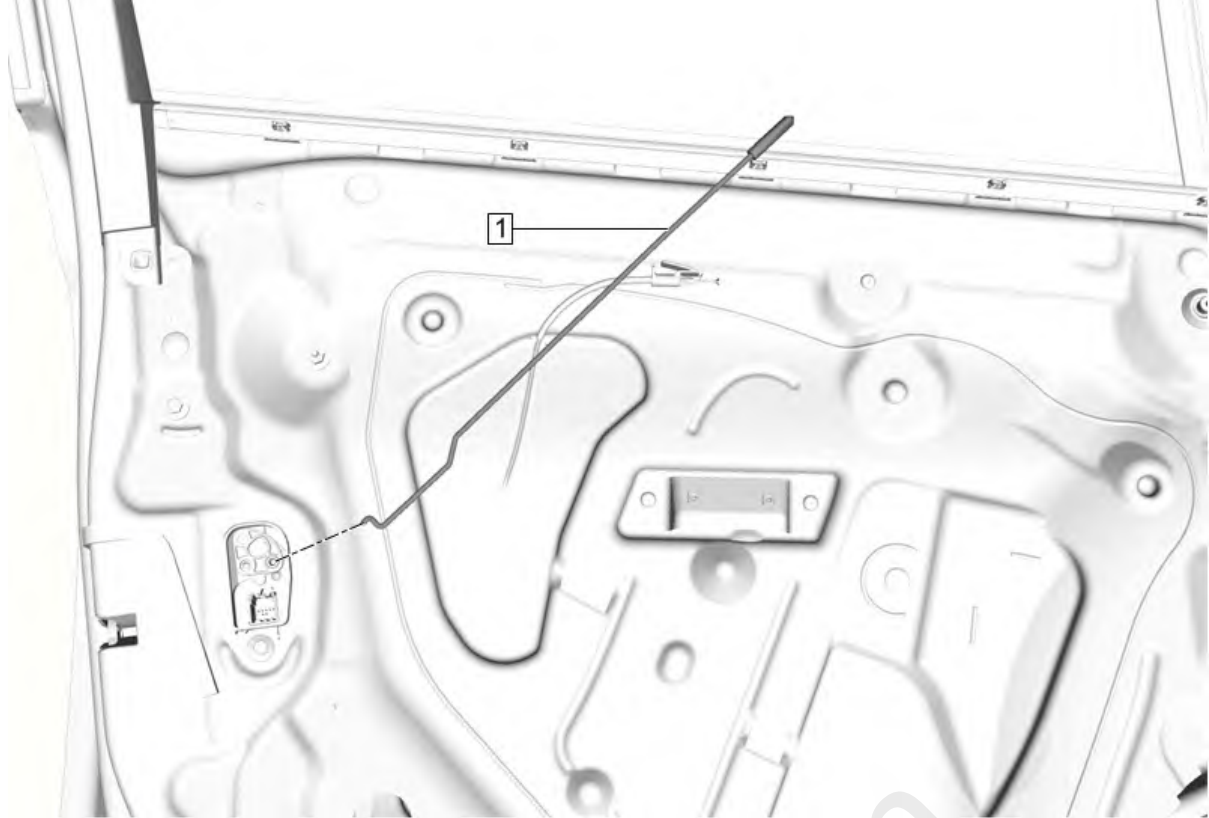


Fig. 129: Front Side Door Locking Rod Knob
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure <u>Front Side Door Trim Replacement (Equinox)</u> <u>Front Side Door Trim Replacement (Terrain)</u>	
1	Front Side Door Locking Rod Knob Procedure Turn the locking rod down, while twisting it out to releasing it from the latch.

FRONT SIDE DOOR LOCK CYLINDER ROD REPLACEMENT

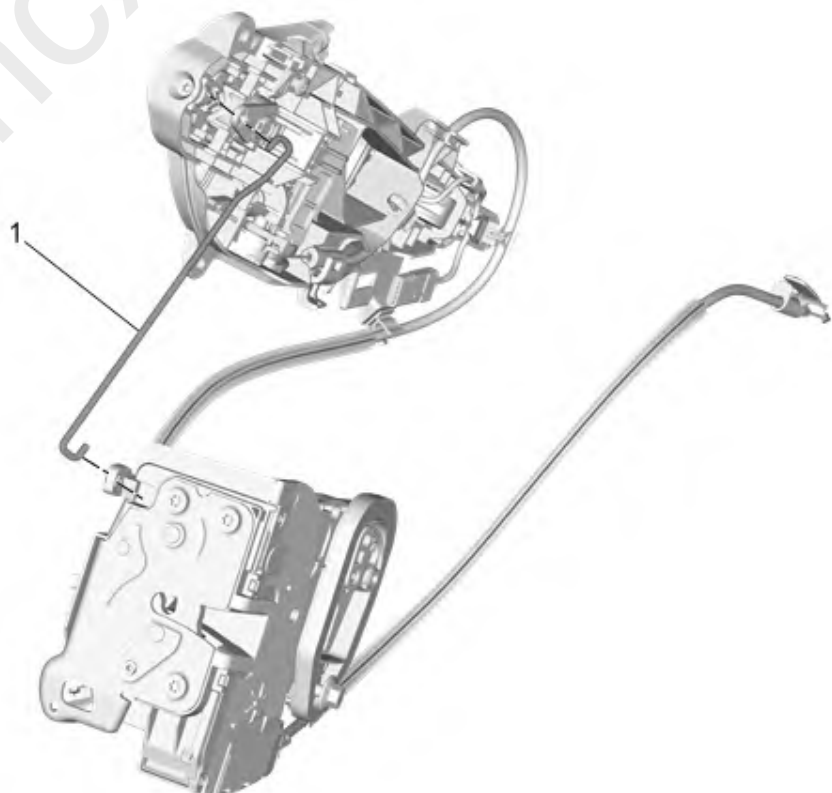


Fig. 130: Front Side Door Lock Cylinder Rod
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure	
Front Side Door Latch Replacement	
1	Front Side Door Lock Cylinder Rod Procedure 1. Remove the front side door lock cylinder rod from the lock cylinder by turning the housing bracket clockwise. 2. Release the lock cylinder rod from the latch only.Do NOT remove the door handle cables from the latch.

FRONT SIDE DOOR OUTSIDE HANDLE CABLE RETAINER REPLACEMENT

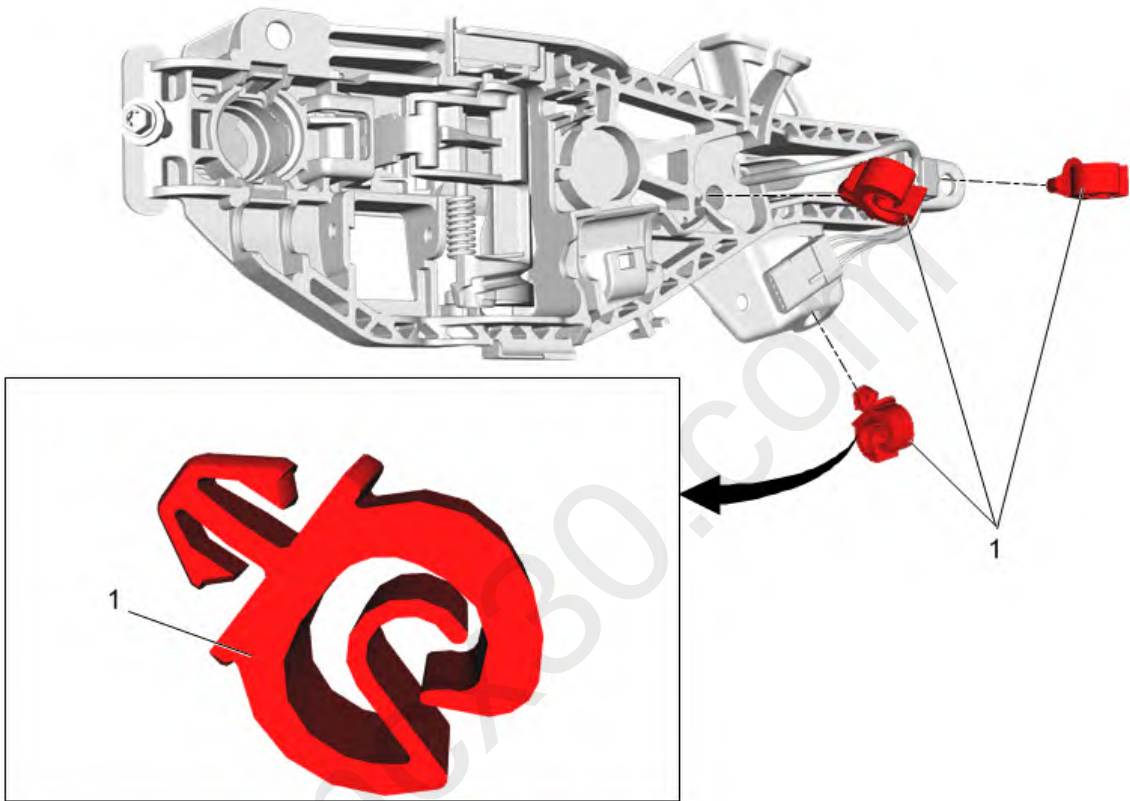


Fig. 131: Front Side Door Outside Handle Cable Retainer
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure	
Front Side Door Outside Handle Bracket Replacement	
1	Front Side Door Outside Handle Cable Retainer [3x] Procedure Squeeze end of retainer and pull retainer from handle bracket.

LIFTGATE POWER ASSIST ACTUATOR REPLACEMENT

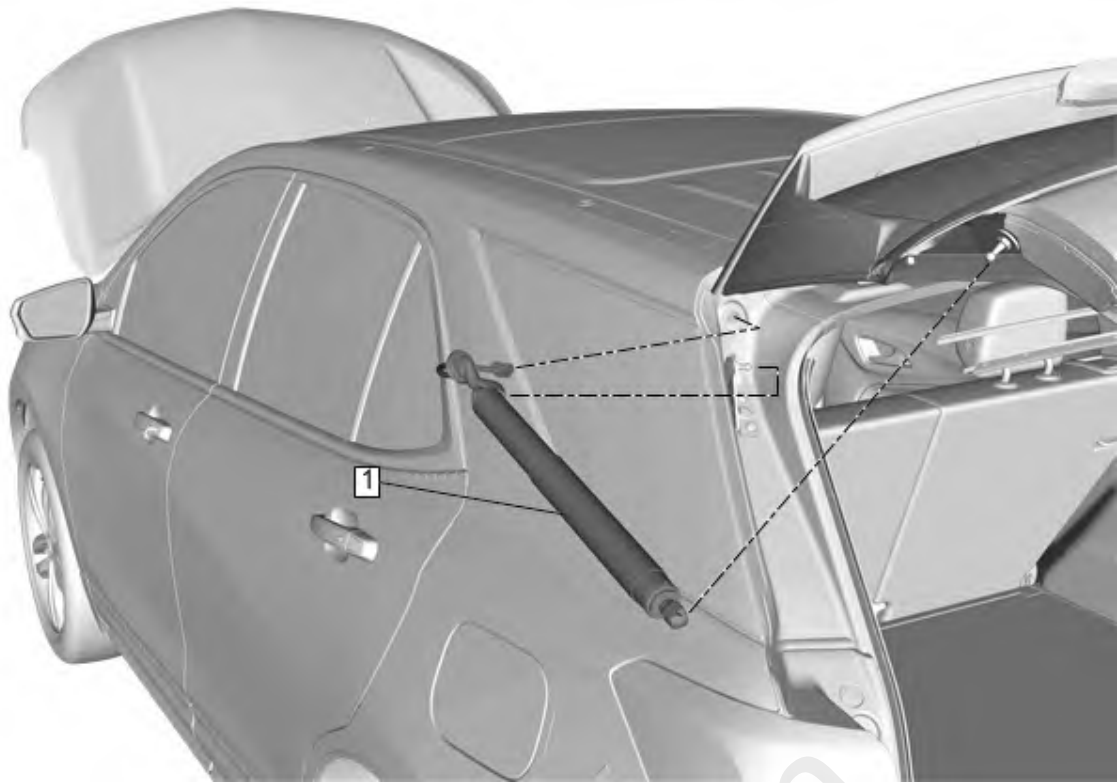


Fig. 132: Liftgate Power Assist Actuator
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Lower the rear of the headliner to access the connector. Headlining Trim Panel Replacement	
1	Liftgate Power Assist Actuator WARNING: When a lift gate hold open device is being removed or installed, provide alternate support to avoid the possibility of damage to the vehicle or personal injury. Procedure 1. Disconnect the pass through grommet. 2. Disconnect the electrical connector. 3. Release the strut clips. 4. Ensure the clip is fully seated when rod is reinstalled. If clip cannot be fully seated, a new rod should be installed.

REAR SIDE DOOR LOCKING ROD KNOB REPLACEMENT

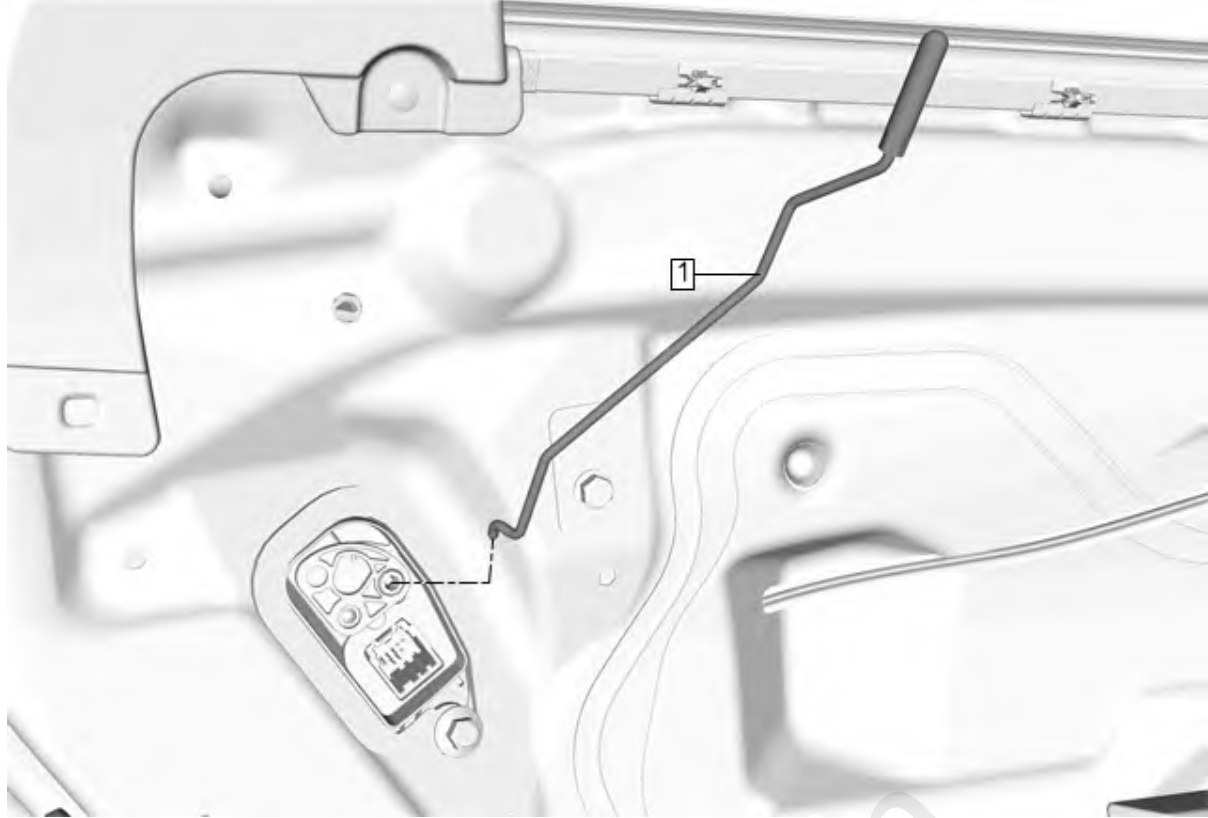


Fig.133: Rear Side Door Locking Rod Knob
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure <u>Rear Side Door Trim Replacement (Equinox)</u> , <u>Rear Side Door Trim Replacement (Terrain)</u>	
1	Rear Side Door Locking Rod Knob Procedure Turn the locking rod down, while twisting it out to release it from the latch.

LIFTGATE SIDE SENSOR REPLACEMENT (EQUINOX)

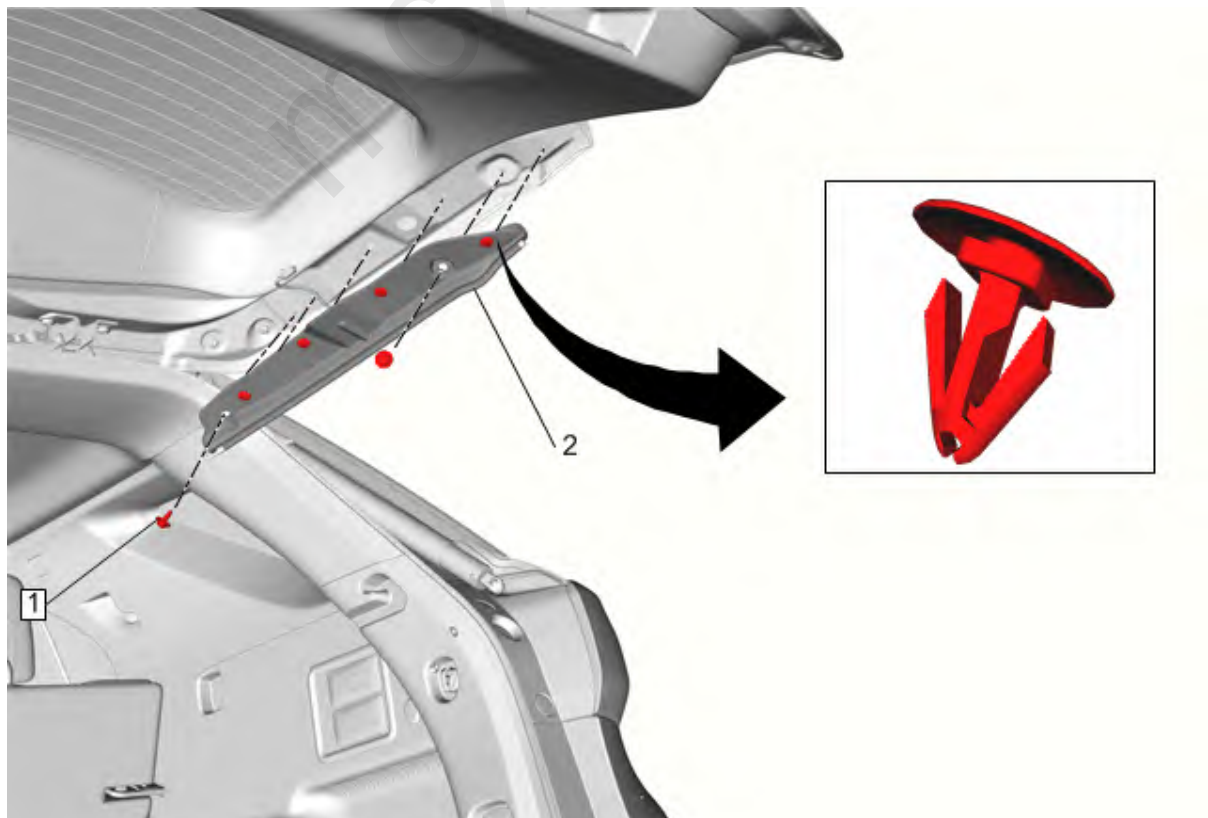


Fig.134: Liftgate Side Sensor (Equinox)
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Open the liftgate.	
1	Liftgate Side Sensor Bolt [2x] CAUTION: Refer to <u>Fastener Caution</u> . 6 N.m (53 lb in)
2	Liftgate Side Sensor Procedure 1. Using a trim type tool release the 4 remaining retainers. 2. Disconnect the electrical connector.

LIFTGATE SIDE SENSOR REPLACEMENT (TERRAIN)

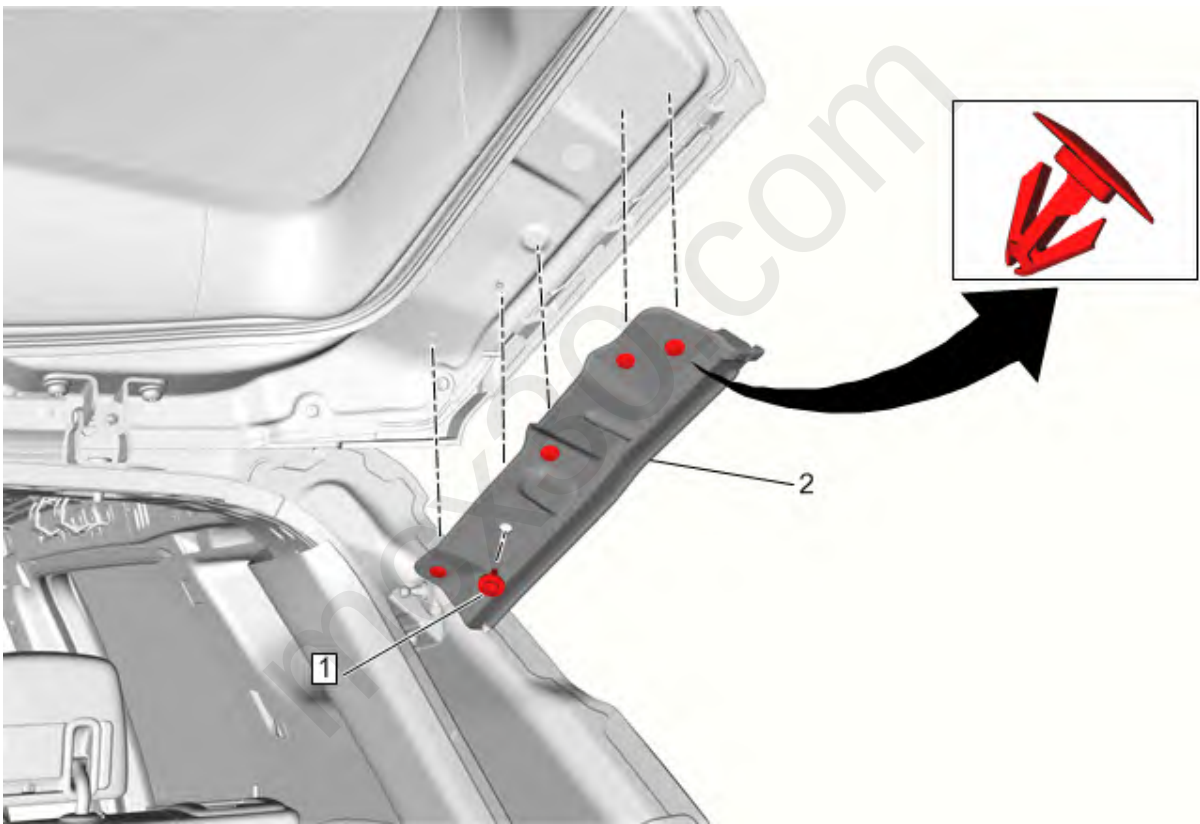


Fig. 135: Liftgate Side Sensor (Terrain)
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure <u>Liftgate Upper Side Trim Finish Panel Replacement</u>	
1	Liftgate Side Sensor Bolt CAUTION: Refer to <u>Fastener Caution</u> . 6 N.m (53 lb in)

Callout	Component Name
2	Liftgate Side Sensor Procedure 1. Using a trim type tool release the 4 remaining retainers. 2. Disconnect the electrical connector.

DOOR LOCK SWITCH REPLACEMENT - DRIVER SIDE (EQUINOX)

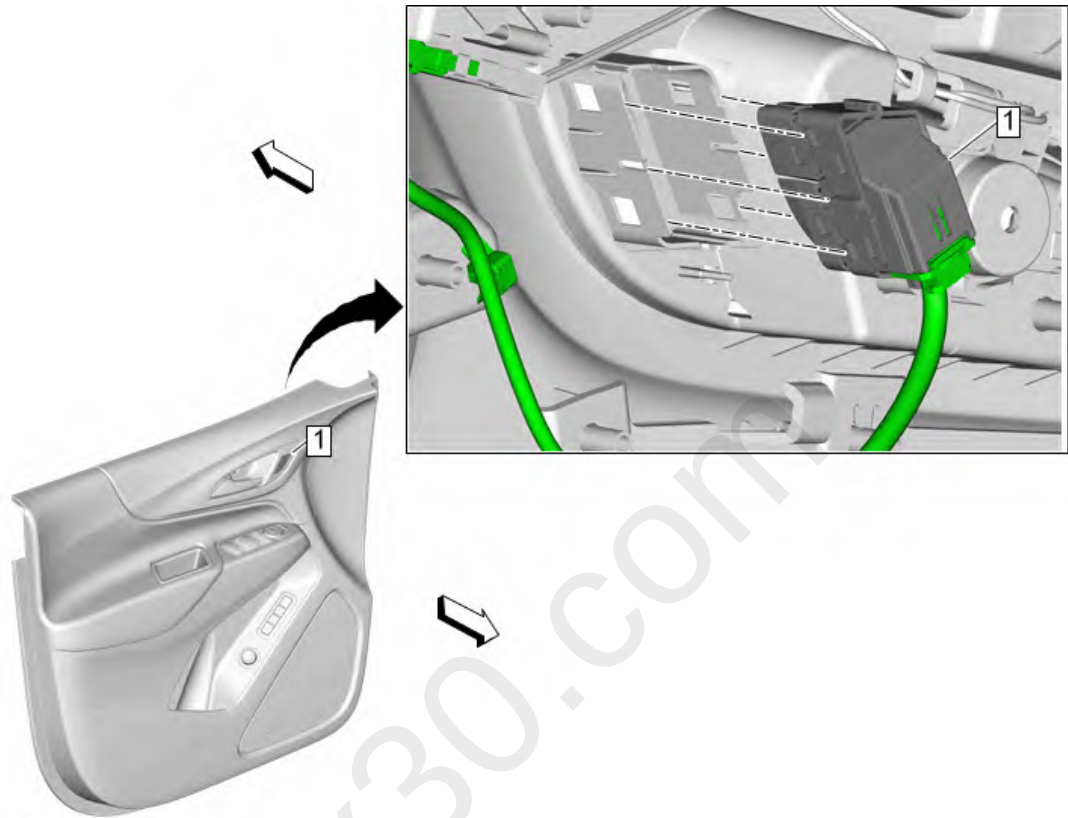


Fig. 136: Door Lock Switch - Driver Side (Equinox)

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedures 1. <u>Front Side Door Trim Replacement (Equinox)</u> . 2. Reposition insulator, as required.	
1	Door Lock Switch - Driver Side Procedure 1. From the backside of the door trim panel, use a plastic trim tool to gently push in on the side tabs to release the switch from the front side door trim. 2. Disconnect the electrical connector.

DOOR LOCK SWITCH REPLACEMENT - DRIVER SIDE (TERRAIN)

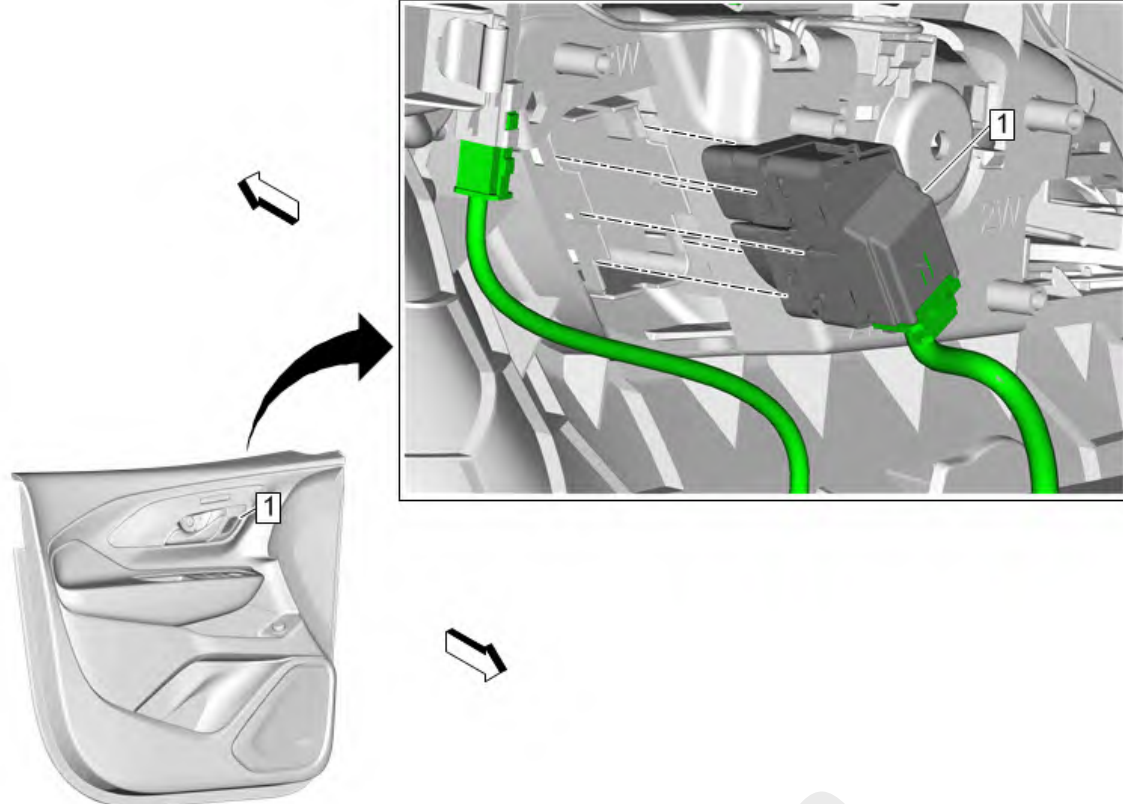


Fig. 137: Door Lock Switch - Driver Side (Terrain)

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure	
Front Side Door Trim Replacement (Terrain)	
1	Door Lock Switch - Driver Side Procedure 1. From the backside of the door trim panel, use a plastic trim tool to gently push in on the side tabs to release the switch from the front side door trim. 2. Disconnect the electrical connector.

FRONT SIDE DOOR LOCK STRIKER ADJUSTMENT

To determine if striker adjustment is required, proceed as follows:

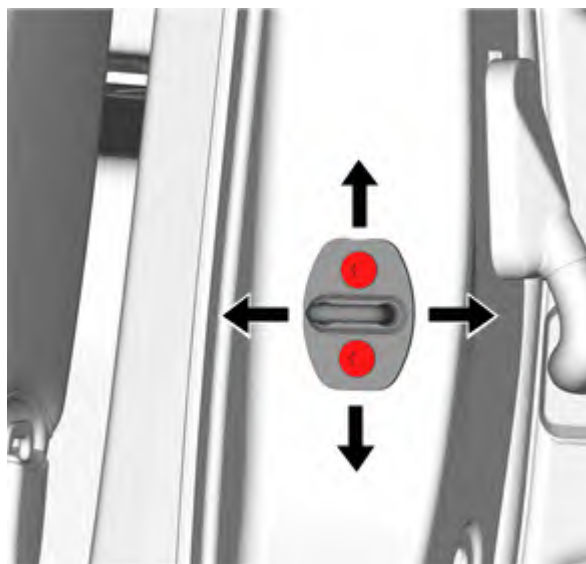


Fig. 138: Front Side Door Lock Striker Adjustment

Courtesy of GENERAL MOTORS COMPANY

1. Ensure the door is properly aligned within the door opening before proceeding with the lock striker adjustment.
2. Close the door onto the striker and note if the door drags on the striker causing the door to move upward or downward upon contact with the striker. Also note the closing effort to fully engage the lock.
3. Using a grease pencil, mark around the striker for reference of the original position. Loosen the striker.
4. Move the striker to eliminate drag on the striker and door lock and to achieve the proper door position within the door opening. Start with the up/down position, then position the striker to achieve proper alignment to the door opening. Set the in/out adjustment for the proper door seal engagement making sure the door closing efforts are correct.

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

5. Tighten the front side door lock striker screws to 22 N.m (16 lb ft).

FRONT SIDE DOOR LOCK STRIKER REPLACEMENT

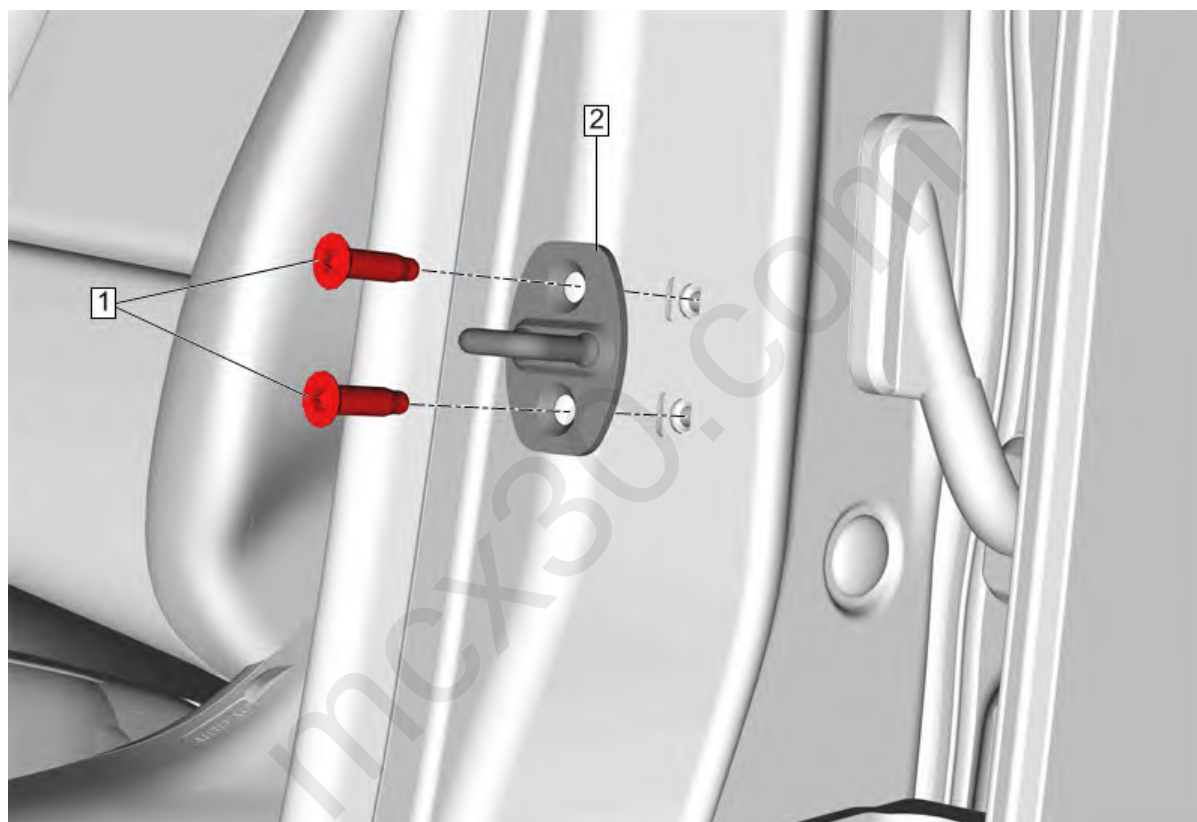


Fig. 139: Front Side Door Lock Striker

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
1	Front Side Door Lock Striker Screw [2x] CAUTION: Refer to Fastener Caution . Tighten 22 N.m (16 lb ft)
2	Front Side Door Lock Striker Procedure Front Side Door Lock Striker Adjustment

LIFTGATE LATCH STRIKER REPLACEMENT

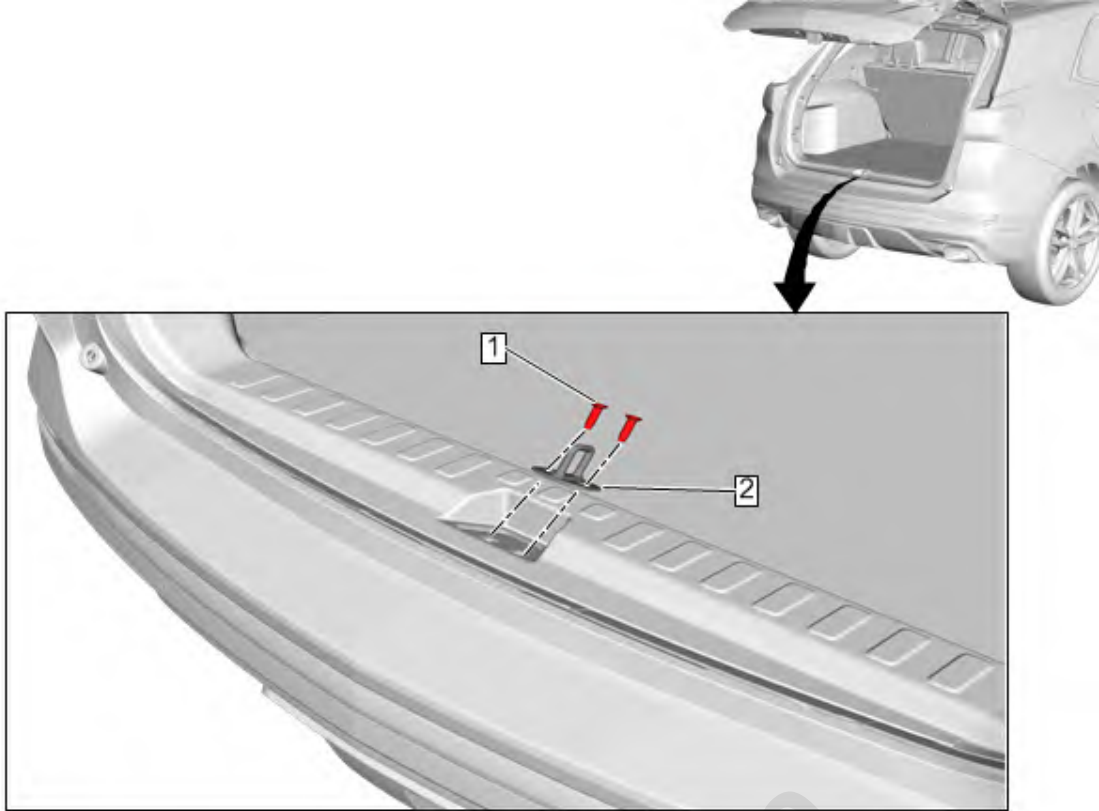


Fig. 140: Liftgate Latch Striker

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
1	Liftgate Latch Striker Bolt [2x] CAUTION: Refer to Fastener Caution . Tighten 22 N.m (16 lb ft)
2	Liftgate Latch Striker Procedure Mark the location of the striker with a grease pencil to ensure proper alignment during installation.

REAR SIDE DOOR LOCK STRIKER ADJUSTMENT

To determine if striker adjustment is required, proceed as follows:

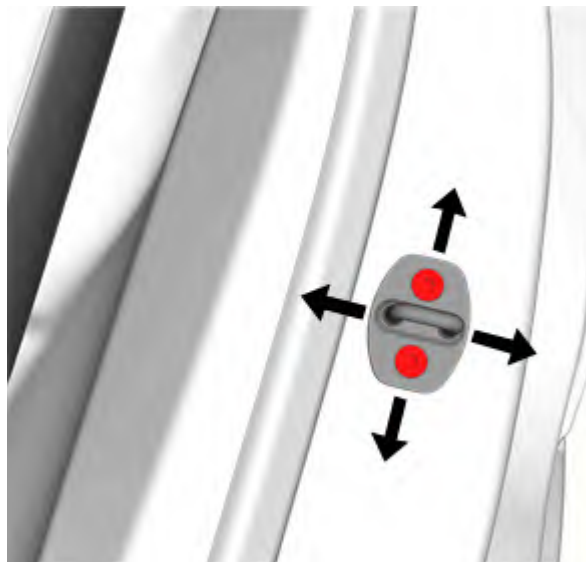


Fig. 141: Rear Side Door Lock Striker Adjustment
 Courtesy of GENERAL MOTORS COMPANY

1. Ensure the door is properly aligned within the door opening before proceeding with the lock striker adjustment.
2. Close the door onto the striker and note if the door drags on the striker causing the door to move upward or downward upon contact with the striker. Also note the closing effort to fully engage the lock.
3. Using a grease pencil, mark around the striker for reference of the original position. Loosen the striker.
4. Move the striker to eliminate drag on the striker and door lock and to achieve the proper door position within the door opening. Start with the up/down position, then position the striker to achieve proper alignment to the door opening. Set the in/out adjustment for the proper door seal engagement making sure the door closing efforts are correct.

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

5. Tighten the rear side door lock striker screws to 22 N.m (16 lb ft).

REAR SIDE DOOR LOCK STRIKER REPLACEMENT

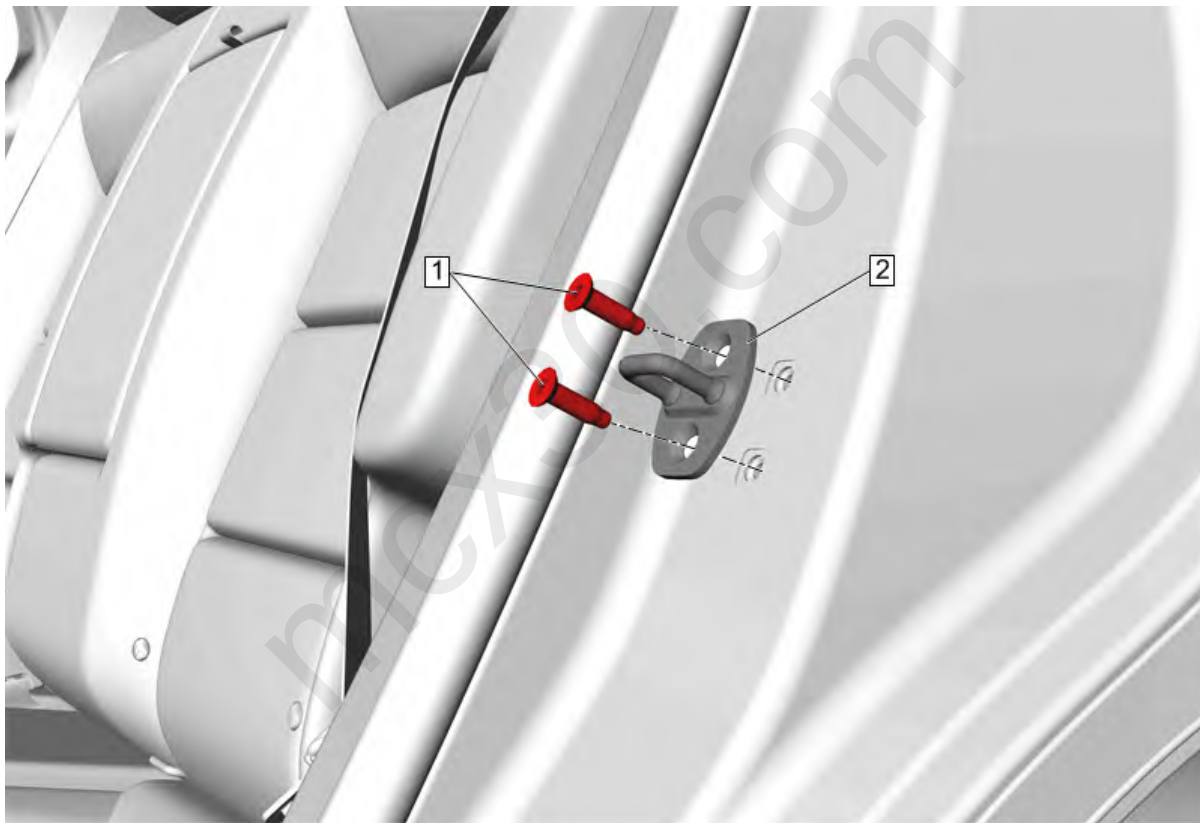


Fig. 142: Rear Side Door Lock Striker
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
1	Rear Side Door Lock Striker Screw [2x] CAUTION: Refer to Fastener Caution . Tighten 22 N.m (16 lb ft)
2	Rear Side Door Lock Striker Procedure Rear Side Door Lock Striker Adjustment

OPENING THE FUEL TANK FILLER DOOR WHEN THE DOOR LOCK MALFUNCTIONS

1. Remove the right rear wheelhouse panel liner.
2. Reach in behind the fuel filler pipe housing and manually slide the actuator rod forward, using light pressure, to override the actuator to release the fuel tank filler door.

LIFTGATE RELEASE SWITCH REPLACEMENT - INTERIOR (EQUINOX)

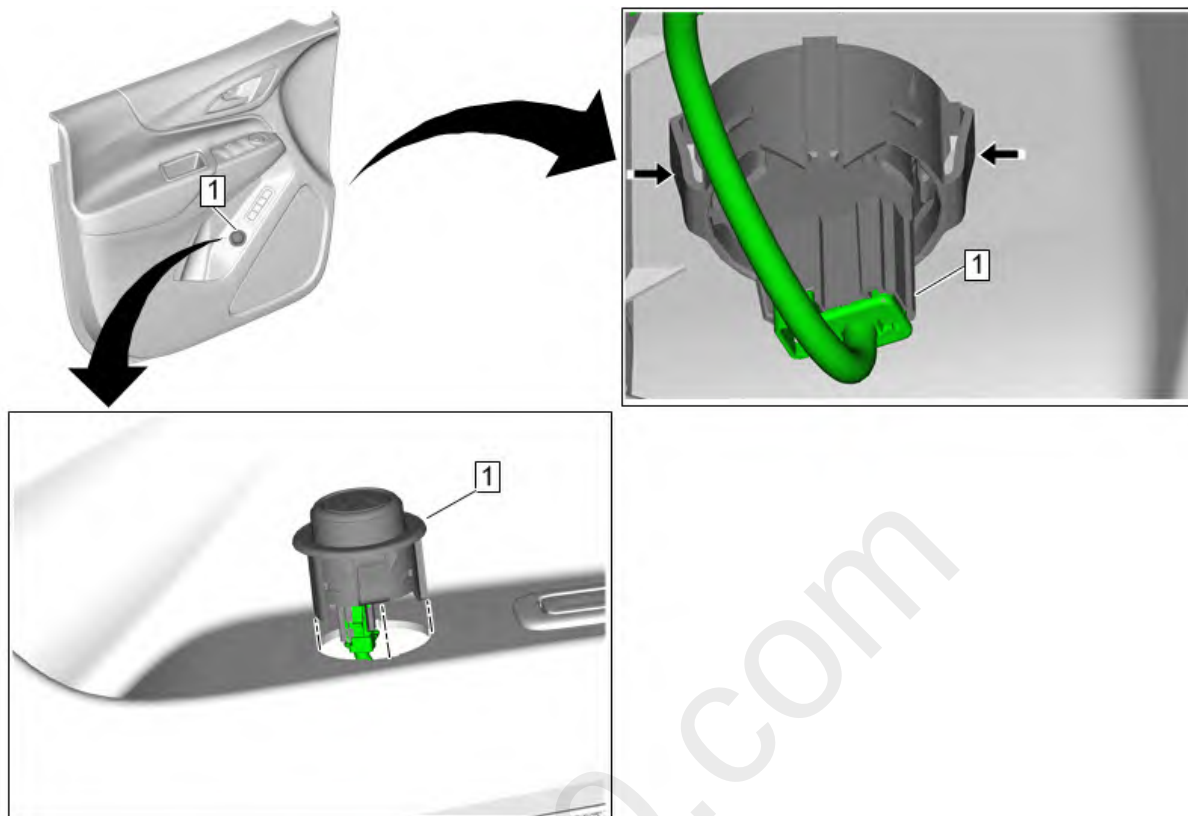


Fig. 143: Liftgate Release Switch - Interior (Equinox)

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure <u>Front Side Door Trim Replacement (Equinox)</u>	
1	Liftgate Release Switch - Interior
	Procedure 1. From the backside of the front side door trim, use a plastic trim tool to gently push in on the side tabs to release the switch. 2. Disconnect the electrical connector.

LIFTGATE RELEASE SWITCH REPLACEMENT - INTERIOR (TERRAIN)

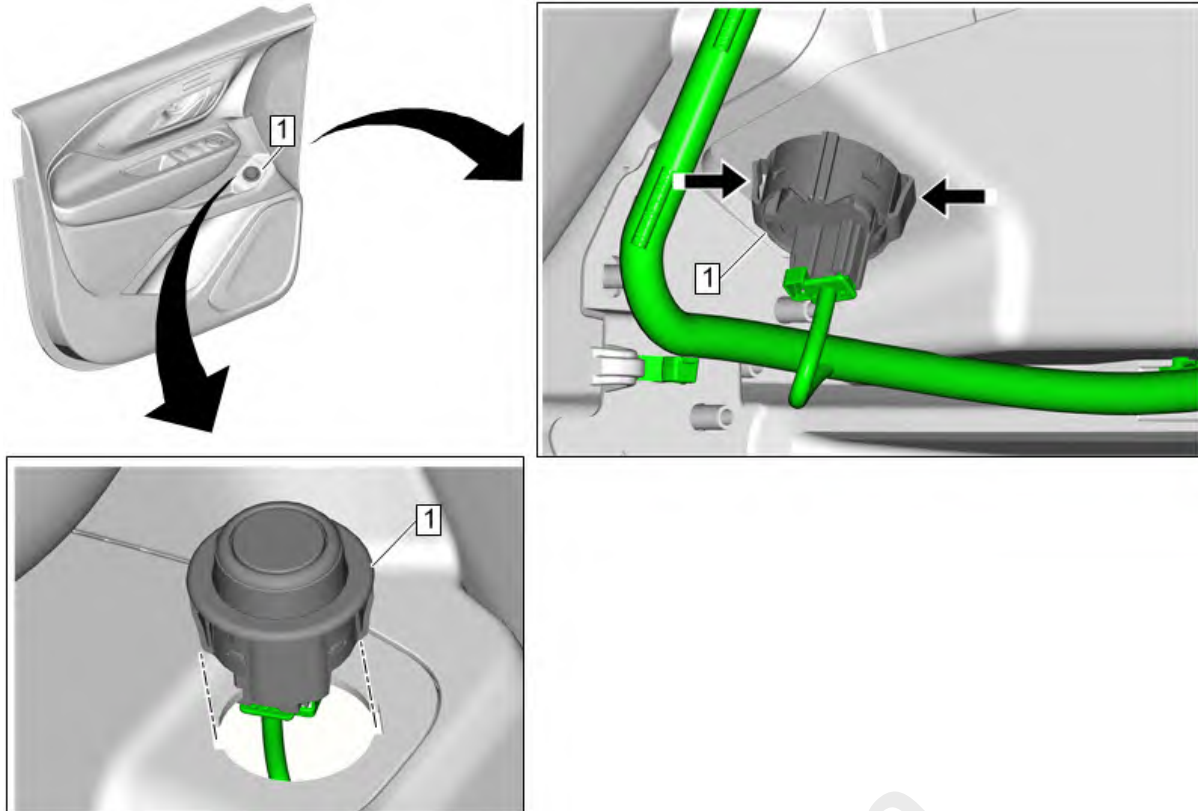


Fig. 144: Liftgate Release Switch - Interior (Terrain).

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure	
<u>Front Side Door Trim Replacement (Terrain).</u>	
1	Liftgate Release Switch - Interior Procedure 1. From the backside of the front side door trim, use a plastic trim tool to gently push in on the side tabs to release the switch. 2. Disconnect the electrical connector.

LIFTGATE RELEASE SWITCH REPLACEMENT - EXTERIOR (EQUINOX)

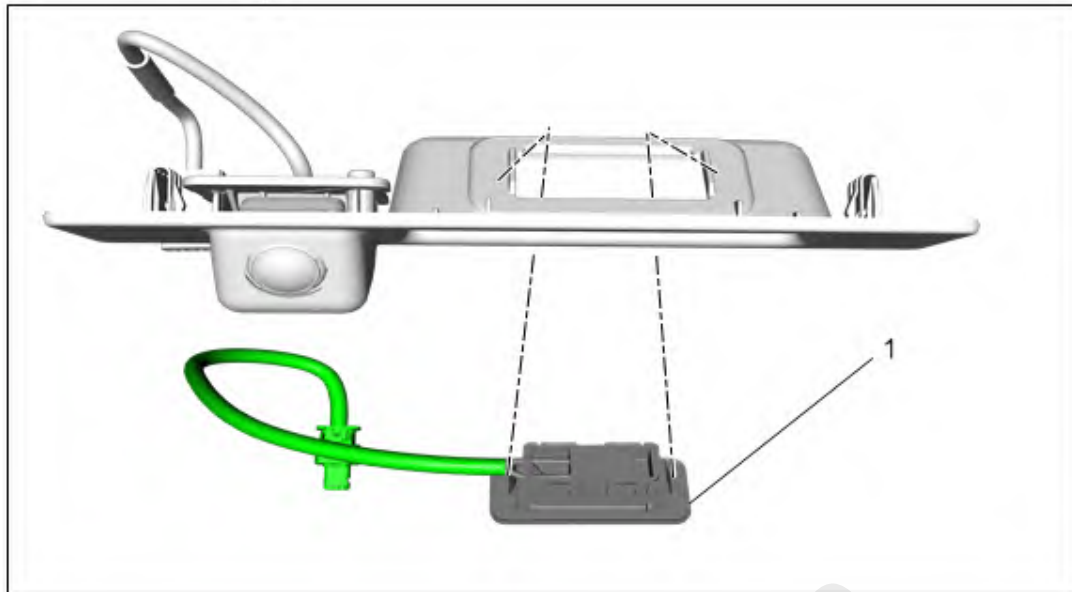


Fig. 145: Liftgate Release Switch - Exterior (Equinox)

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure	
<u>Rear Closure Fixed Handle Applique Replacement (Equinox)</u>	
1	Liftgate Release Switch Procedure 1. Disconnect the electrical connector. 2. Release the liftgate release switch retainers and push out from the rear closure fixed handle applique.

LIFTGATE RELEASE SWITCH REPLACEMENT - EXTERIOR (TERRAIN)

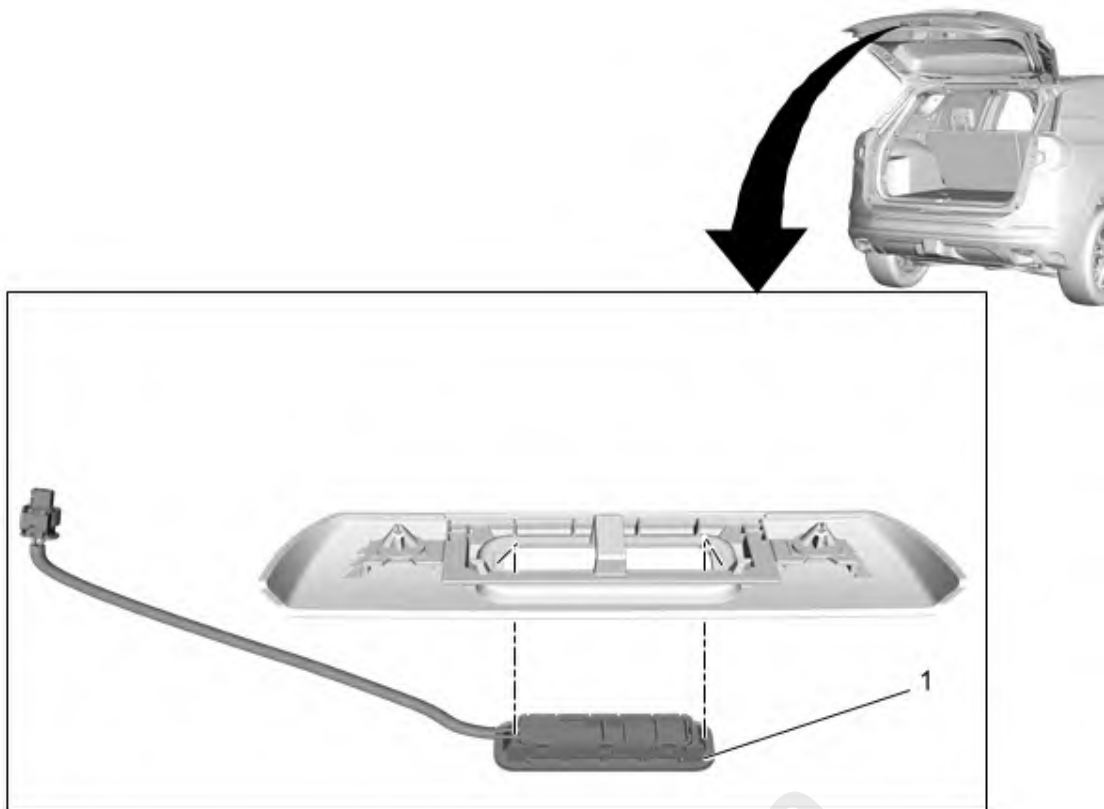


Fig. 146: Liftgate Release Switch - Exterior (Terrain).

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure <u>Rear Closure Fixed Handle Applique Replacement (Terrain).</u>	
1	Liftgate Release Switch Procedure 1. Disconnect the electrical connector. 2. Release the liftgate release switch retainers and push out from the rear closure fixed handle applique.

LIFTGATE CLOSE SWITCH REPLACEMENT

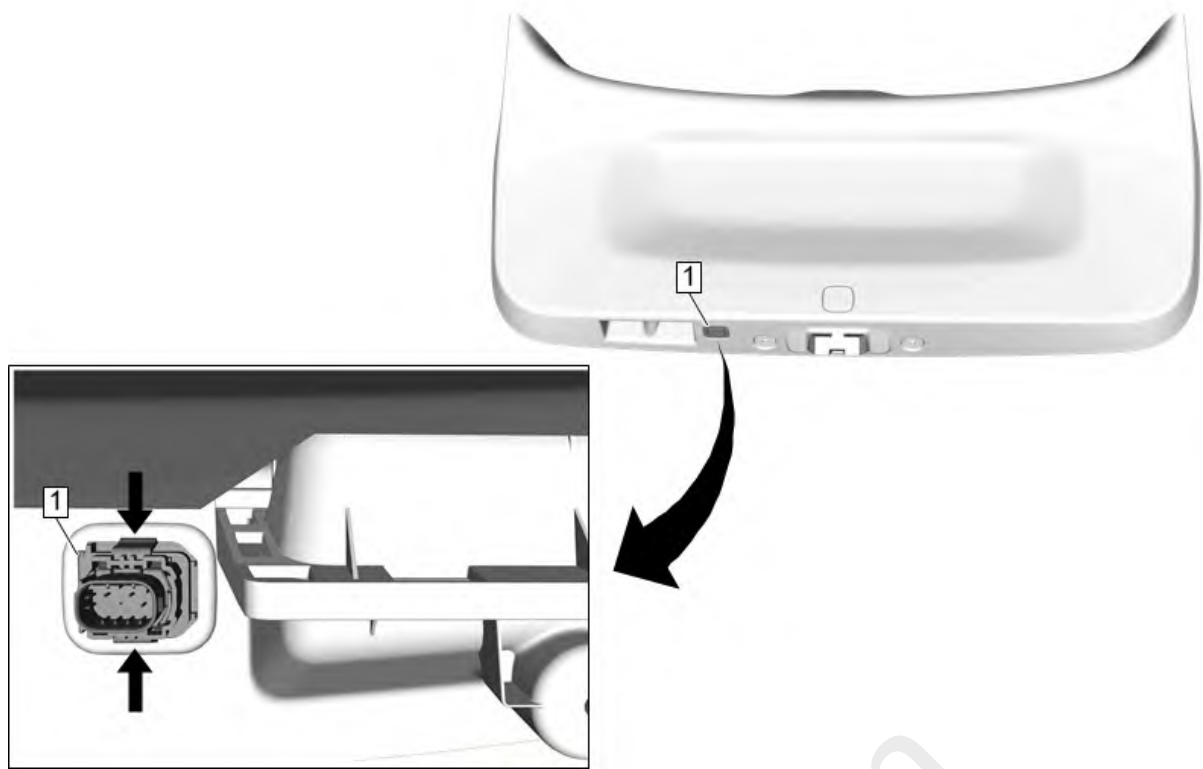


Fig. 147: Liftgate Close Switch

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure	
<u>Liftgate Lower Trim Finish Panel Replacement</u>	
1	Liftgate Close Switch Procedure From the backside of the liftgate lower trim finish panel, use a plastic trim tool to gently push in on the tabs to release the switch.

DOOR LOCK SWITCH REPLACEMENT - PASSENGER FRONT (EQUINOX)

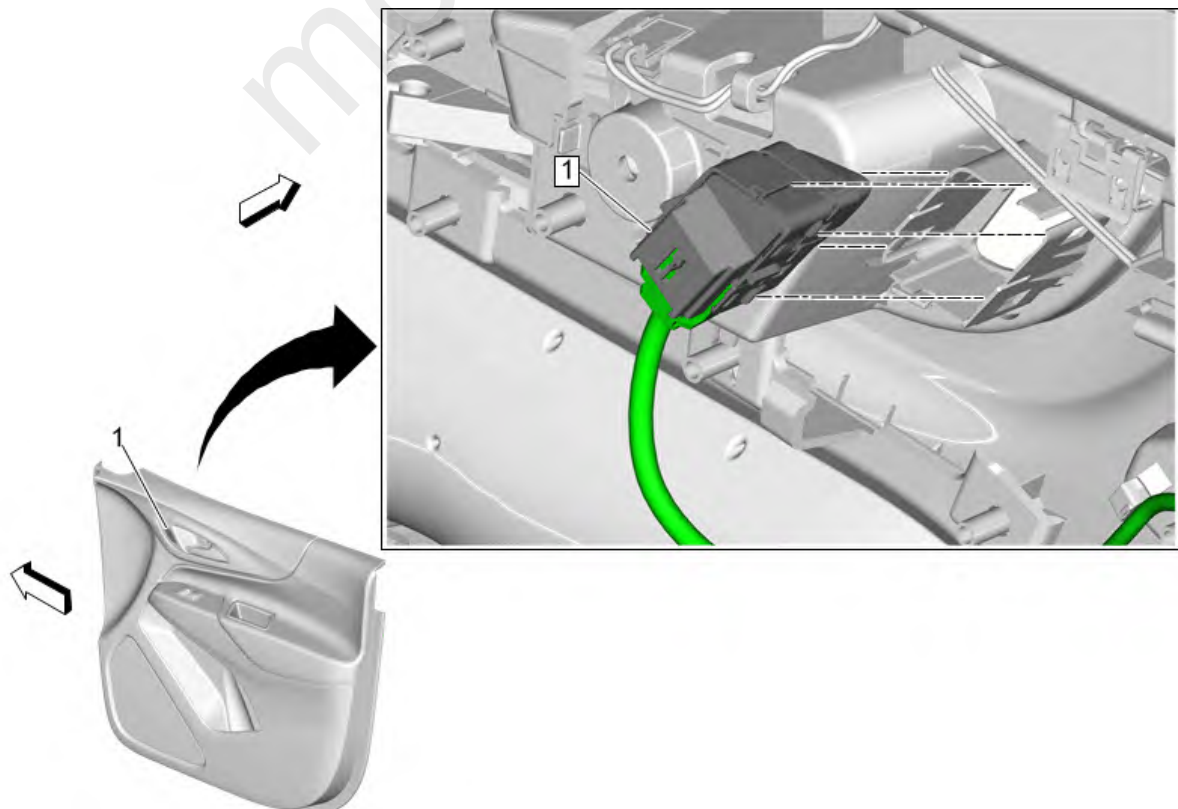


Fig. 148: Door Lock Switch - Passenger Front (Equinox)
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedures 1. Front Side Door Trim Replacement (Equinox) . 2. Reposition insulator, as required.	
1	Door Lock Switch - Passenger Front Procedure 1. From the backside of the door trim panel, use a plastic trim tool to gently push in on the side tabs to release the switch from the front side door trim. 2. Disconnect the electrical connector.

DOOR LOCK SWITCH REPLACEMENT - PASSENGER FRONT (TERRAIN)

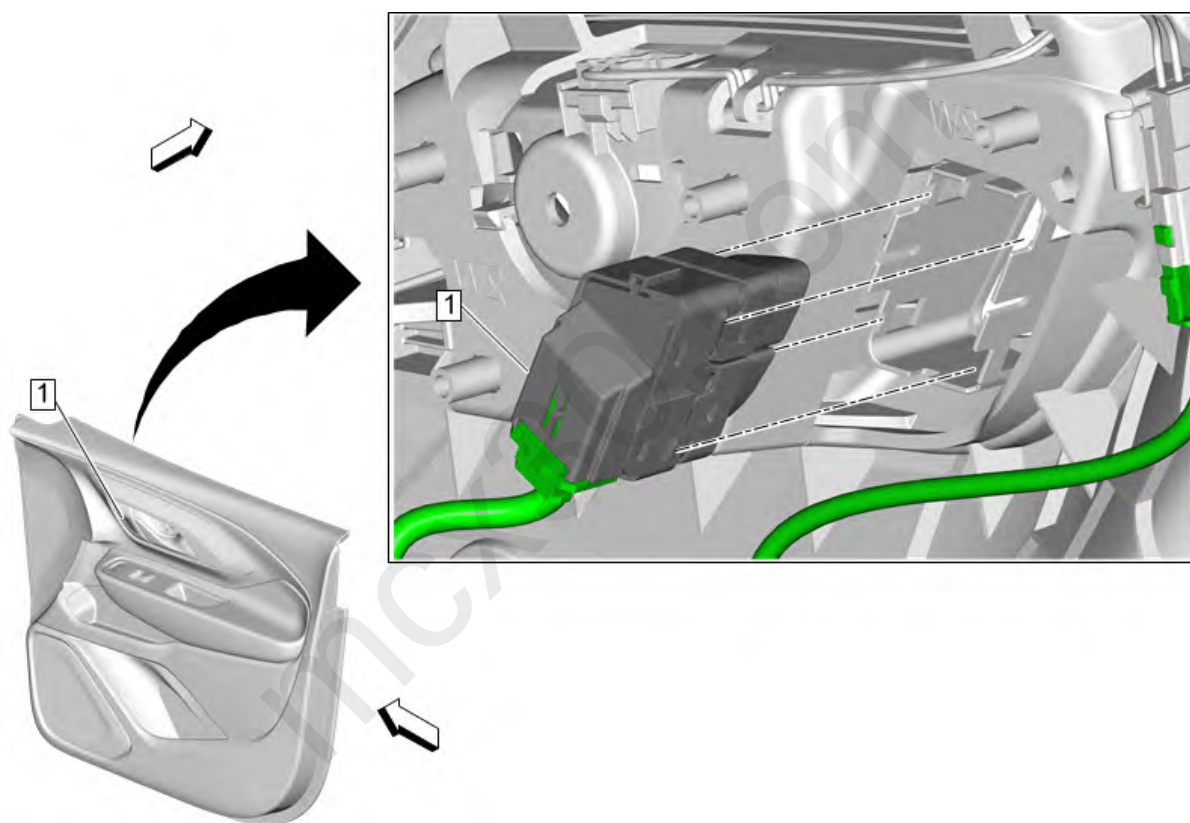


Fig. 149: Door Lock Switch - Passenger Front (Terrain)
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Front Side Door Trim Replacement (Terrain) .	
1	Door Lock Switch - Passenger Front Procedure 1. From the backside of the door trim panel, use a plastic trim tool to gently push in on the side tabs to release the switch from the front side door trim. 2. Disconnect the electrical connector.

REAR CLOSURE FIXED HANDLE APPLIQUE REPLACEMENT (EQUINOX)

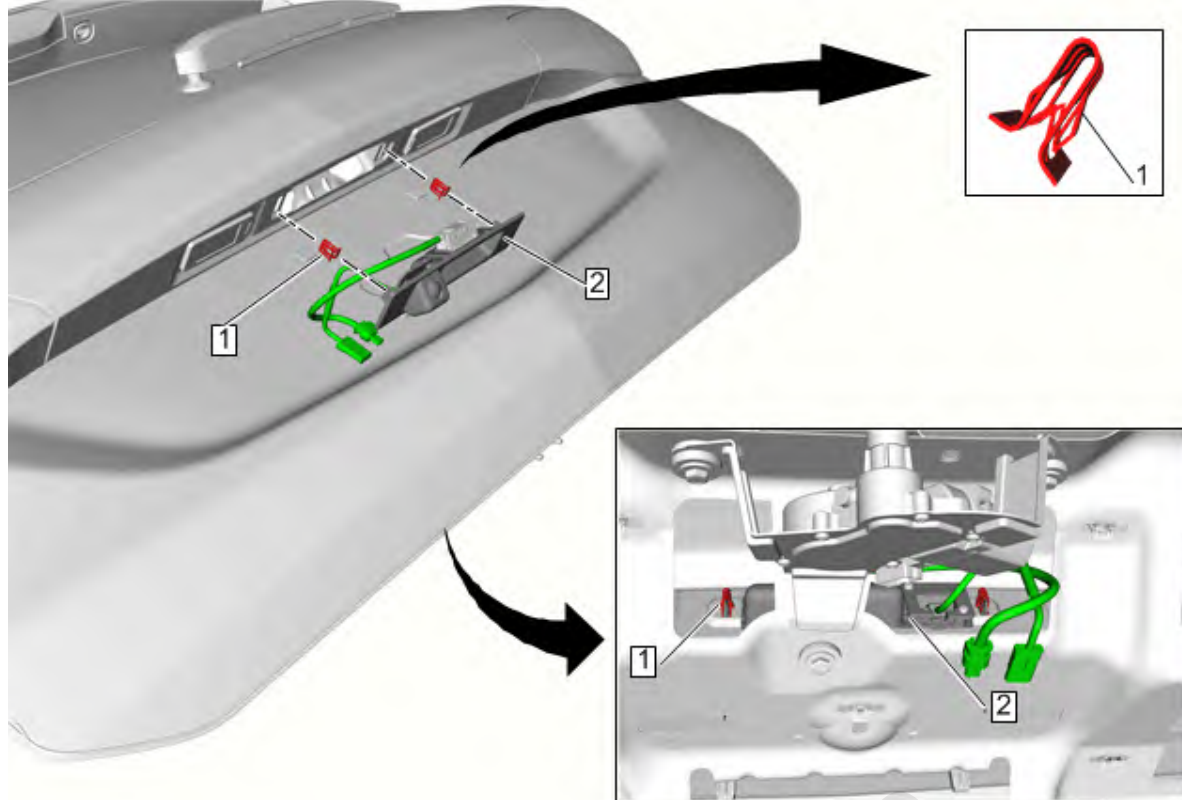


Fig. 150: Rear Closure Fixed Handle Applique (Equinox).

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure	
<u>Liftgate Lower Trim Finish Panel Replacement</u>	
1	Rear Closure Fixed Handle Applique Clip [2x]
2	Rear Closure Fixed Handle Applique Procedure 1. Release the retainers. 2. Disconnect the electrical connector:

REAR CLOSURE FIXED HANDLE APPLIQUE REPLACEMENT (TERRAIN)

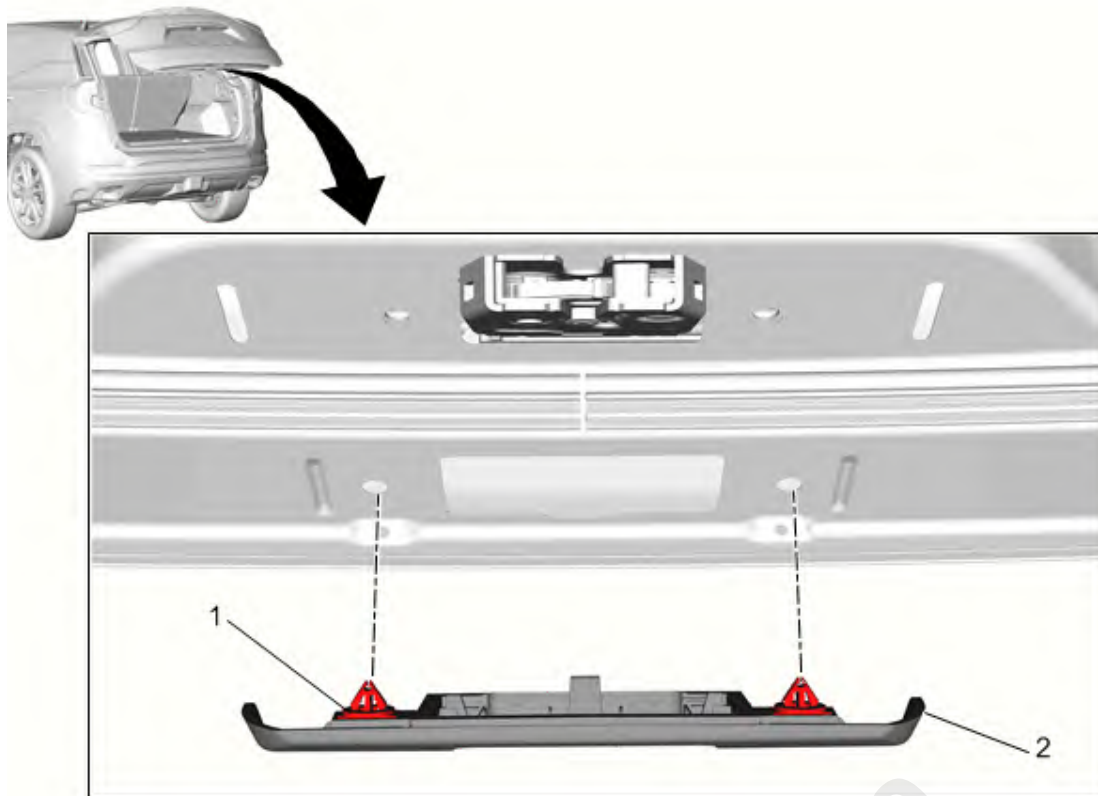


Fig. 151: Rear Closure Fixed Handle Applique (Terrain)

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Open the liftgate.	
1	Rear Closure Fixed Handle Applique Retainer [2x]
2	Rear Closure Fixed Handle Applique Procedure 1. Release the retainers. 2. Disconnect the electrical connector: 3. Close the liftgate.

DESCRIPTION AND OPERATION

DOOR AJAR INDICATOR DESCRIPTION AND OPERATION

Door Ajar Indicator System Components

The door ajar indicator system consists of the following components:

- Body control module (BCM)
- Instrument cluster
- Driver door latch
- Passenger door latch
- Left rear door latch
- Right rear door latch
- Driver window motor (AXG)
- Driver window switch (AEC)
- Passenger window motor (AEF)
- Passenger window switch (AED)
- Left rear window switch

- Right rear window switch

Door Ajar System (Standard and Optional)

It is the power window system that monitors the status of the door ajar switches and either the power window motors or the power window switches will report the status of the door ajar switches to the body control body control module depending upon how the vehicle is configured.

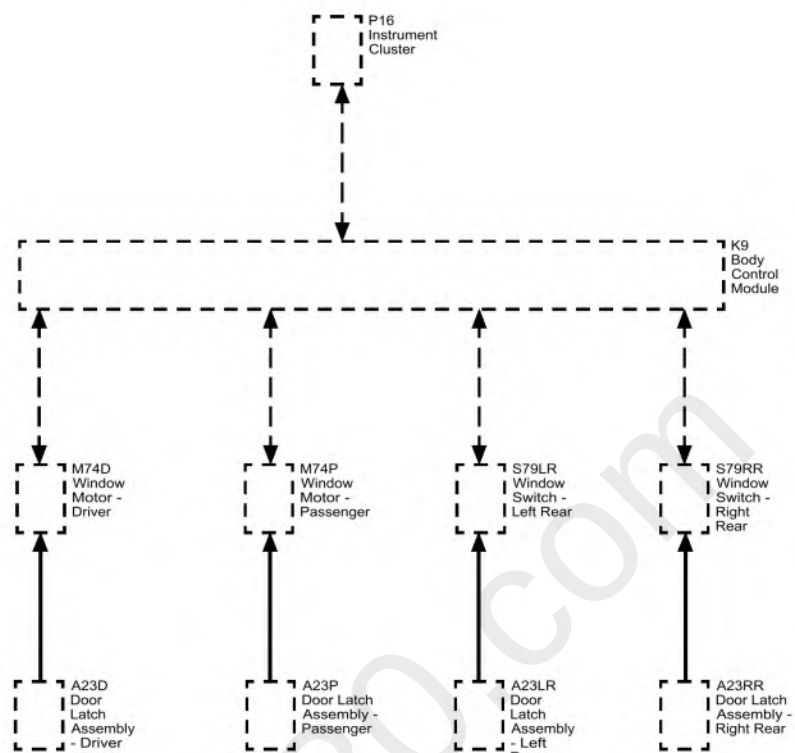


Fig. 152: Door Ajar Indicator System Block Diagram (Standard and Optional)

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
P16	P16 Instrument Cluster
K9	K9 Body Control Module
A23D	A23D Door Latch Assembly - Driver
A23P	A23P Door Latch Assembly - Passenger
A23LR	A23LR Door Latch Assembly - Left Rear
A23RR	A23RR Door Latch Assembly - Right Rear
M74D	M74D Window Motor - Driver
M74P	M74P Window Motor - Passenger
S79LR	S79LR Window Switch - Left Rear
S79RR	S79RR Window Switch - Right Rear

Driver and Passenger Door Ajar (With AXG and AER Power Windows)

The driver and passenger window motors each provide a 12 V signal to their respective door ajar switch signal circuits. The door ajar switches are integral to each door latch assembly. When a door is opened, the normally open door ajar switch closes. With the door ajar switch closed, ground is provided to the door ajar switch signal circuit and the voltage within the signal circuit drops. The window motor will

detect the voltage drop and will send a serial data message to the body control module which will then send a message to the instrument cluster to command the door ajar message

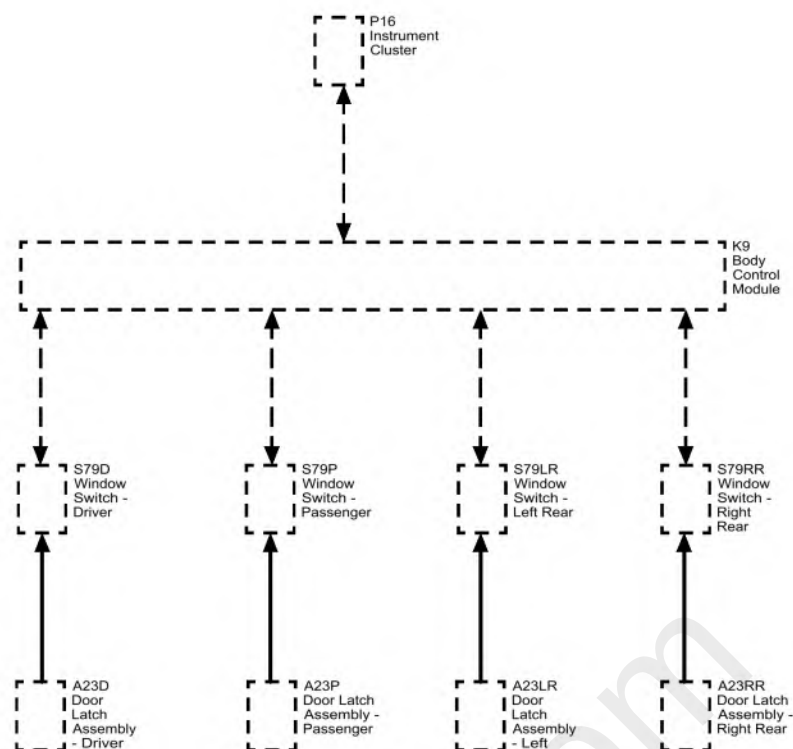


Fig. 153: Driver Door Ajar Block Diagram (With AXG and AER Power Windows)
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
P16	P16 Instrument Cluster
K9	K9 Body Control Module
S79RR	S79RR Window Switch - Right Rear
S79LR	S79LR Window Switch - Left Rear
S79P	S79P Window Switch - Passenger
S79D	S79D Window Switch - Driver
A23D	A23D Door Latch Assembly - Driver
A23P	A23P Door Latch Assembly - Passenger
A23LR	A23LR Door Latch Assembly - Left Rear
A23RR	A23RR Door Latch Assembly - Right Rear

Driver and Passenger Door Ajar (With AEC and AED Power Windows)

The driver and passenger window switches each provide a 12 V signal to their respective door ajar switch signal circuits. The door ajar switches are integral to each door latch assembly. When a driver or passenger door is opened, the normally open door ajar switch closes. With the door ajar switch closed, ground is provided to the door ajar switch signal circuit and the voltage within the signal circuit drops. The window switches will detect the voltage drop and will send a serial data message to the body control module which will then send a message to the instrument panel cluster to command the door ajar message.

Rear Door Ajar

The rear window switches each provide a 12 V signal to their respective rear door ajar switch signal circuits. The door ajar switches are integral to each rear door latch assembly. When a rear door is opened, the normally open door ajar switch closes. With the door ajar switch closed, ground is provided to the door ajar switch signal circuit and the voltage within the signal circuit drops. The rear window switches will detect the voltage drop and will send a serial data message to the body control module which will then send a message to the instrument panel cluster to command the door ajar message.

LIFTGATE AJAR INDICATOR DESCRIPTION AND OPERATION

LIFTGATE OPEN Indicator

Manual Liftgate

The instrument panel cluster illuminates the LIFTGATE OPEN indicator when the body control module (BCM) detects that the liftgate is open. The instrument panel cluster receives a serial data message from the BCM requesting illumination. If the vehicle is in the forward or reverse gear position, the BCM activates an audible warning.

Power Liftgate

The liftgate control module detects the liftgate ratchet switch is closed to ground indicating the liftgate is open. The instrument panel cluster receives a serial data message from the liftgate control module indicating the liftgate ajar status and the driver information center illuminates the LIFTGATE OPEN indicator.

LIFTGATE DESCRIPTION AND OPERATION

System Description

The power liftgate system consists of the following components:

- Liftgate control module
- Liftgate position sensor (part of the power assist actuator)
- Interior liftgate rotary switch
- Liftgate handle switch
- Liftgate close switch
- Liftgate latch assembly
- Liftgate power assist actuator
- Left and right liftgate object sensors
- Hands free liftgate sensor control module
- Upper and lower liftgate hands free sensors
- Keyless entry transmitter
- Remote control door lock receiver

Operation

The power liftgate can be commanded to power open and power close by the following methods:

- An open or close command from the interior liftgate rotary switch
- An open command from the liftgate handle switch
- A close command from the liftgate close switch
- An open or close request by a signal from the keyless entry transmitter to the remote control door lock receiver
- The kicking motion of a foot and lower leg under the rear fascia - Sensor location may vary depending upon make and model, refer to owner's manual for the location of the sensors

The liftgate control module will respond to a request by commanding the liftgate latch to release the liftgate and activate the liftgate motor in the liftgate power assist actuator and raise the liftgate to the open position or to lower and cinch the liftgate closed.

Power Latch

The liftgate control module continuously monitors power liftgate operation and calculates its location and direction of travel from an liftgate position sensor (part of the power assist actuator). One input returns the position of the liftgate relative to the x-axis and y-axis. The liftgate control module then uses these 2 inputs together to calculate its angle relative to the liftgate. The interior liftgate rotary switch contains resistors which will incrementally drop the voltage level in the signal circuit as the switch rotated from the OFF position to the 3/4 position or the MAX position, the liftgate control module will detect the change in voltage and will monitor the x-axis and y-axis as the liftgate is in motion to stop the liftgate parallel to the vehicle roof if the rotary switch is in the 3/4 setting or to open fully if the rotary switch is in the MAX setting.

The liftgate latch assembly is a bi-directional motor and latch or unlatch operation is the result of the direction of the motor rotation. The liftgate control module controls the liftgate latch assembly through the control circuits by supplying power and ground in the appropriate polarity. The motor control circuits are monitored by the liftgate control module prior to activation for a high or low condition and during motor operation for an insufficient current flow condition. The unlatch, ratchet, pawl, and sector switches are part of the liftgate latch assembly and are used by the liftgate control module to determine the state of the latch during the process of latching or unlatching and will send the status of the latches to the body control module which is used to determine if the liftgate is closed or ajar. Each of the latch switch signal circuits are supplied battery voltage and monitored within the liftgate control module. The latch switches share a common low reference circuit from the liftgate control module and when the switch contacts close the signal circuit goes low and the liftgate control module determines the switch to be active.

The liftgate handle switch and liftgate close switch signal circuit are each supplied battery voltage by the liftgate control module. The switches share a common low reference circuit from the liftgate control module and when the switch is pressed the contacts close and the appropriate signal circuit goes low, the liftgate control module will detect the voltage drop and will command the liftgate to release and power open or to power close.

For vehicles without the optional passive keyless entry, when the liftgate handle switch is pressed, the liftgate control module will check the status of the vehicle door locks by sending a serial data message to the body control module requesting the door lock status. If the vehicle doors are locked, the liftgate control module will ignore the signal from the liftgate handle switch. If the vehicle doors are unlocked, the liftgate control module will permit the liftgate to unlatch and power open when the liftgate handle switch is pressed.

For vehicles with the optional passive keyless entry system, the keyless entry control module monitors the proximity of the keyless entry transmitter. If the liftgate handle switch is pressed and the keyless entry transmitter is within range, the keyless entry control module will send a serial data message to the liftgate control module indicating the presence of the keyless entry transmitter and the liftgate control module will permit the liftgate to unlatch and power open. If the doors are locked and the keyless entry transmitter is not within range, the liftgate control module will ignore the signal from the liftgate handle switch.

Liftgate Hands Free Sensor

The sensors are located behind the rear fascia (location may vary depending upon make and model, refer to owner's manual for the location of the sensors) and is designed to detect the motion of the operator's foot by way of a kicking motion. When the keyless entry transmitter is within 3 feet (1 meter) of the liftgate and the operator kicks his or her foot under the rear fascia, the sensors will detect the motion of the foot and the lower leg and if the procedure has been performed correctly the hands free liftgate sensor control module will send a serial data message to the liftgate control module. The tail lamps will then flash to indicate that the command has been received and the liftgate will power open or power close.

Object Detection

The power liftgate system uses an object detection method which consists of object sensors fixed to both sides of the liftgate near the seal area. The object sensors consist of an internal fixed resistor and normally open switch contacts which when closed will bypass the resistor. The signal circuit is supplied 5 V through a resistor and monitored within the liftgate control module, and during normal power

liftgate operation the signal circuit should remain a fixed value. When an object presses one of the sensors the contacts close and the resistor is bypassed causing the signal circuit voltage at the module to go low. If the liftgate is being power closed at that time, the liftgate control module will command the power liftgate to reverse direction. All power close liftgate operations will be suspended until the obstruction pressing on the object sensor is removed

Manual Liftgate Operation

The operator has the option to disable the power liftgate operations by selecting the "OFF" position on the interior liftgate rotary switch. The releasing and cinching for the liftgate latch will function normally, however, the operator must manually pull the liftgate open and push the liftgate closed. All power liftgate operations will be suspended for as long as the liftgate rotary switch is in the "OFF" position.

MECHANICAL SYSTEM DESCRIPTION AND OPERATION

System Description

The side door handle/latch system consists of the following components:

- Outside handle bracket
- Side door latch
- Outside handle cable
- Inside handle cable
- Inside handle
- Outside handle
- Outside handle lock cylinder cover
- Door lock cylinder rod (driver door only)
- Door lock cylinder (driver door only)
- Side door locking rod knob

Operation

The handle latching system can be mechanically unlocked by the following methods:

- Pulling the inside handle
- Rotating the key cylinder (driver door only)
- Lifting the side door locking rod knob (when not flush to the door trim)

The handle latching system can be mechanically locked by the following methods:

- Rotating the key cylinder (driver door only)
- Pushing down the side door locking rod knob

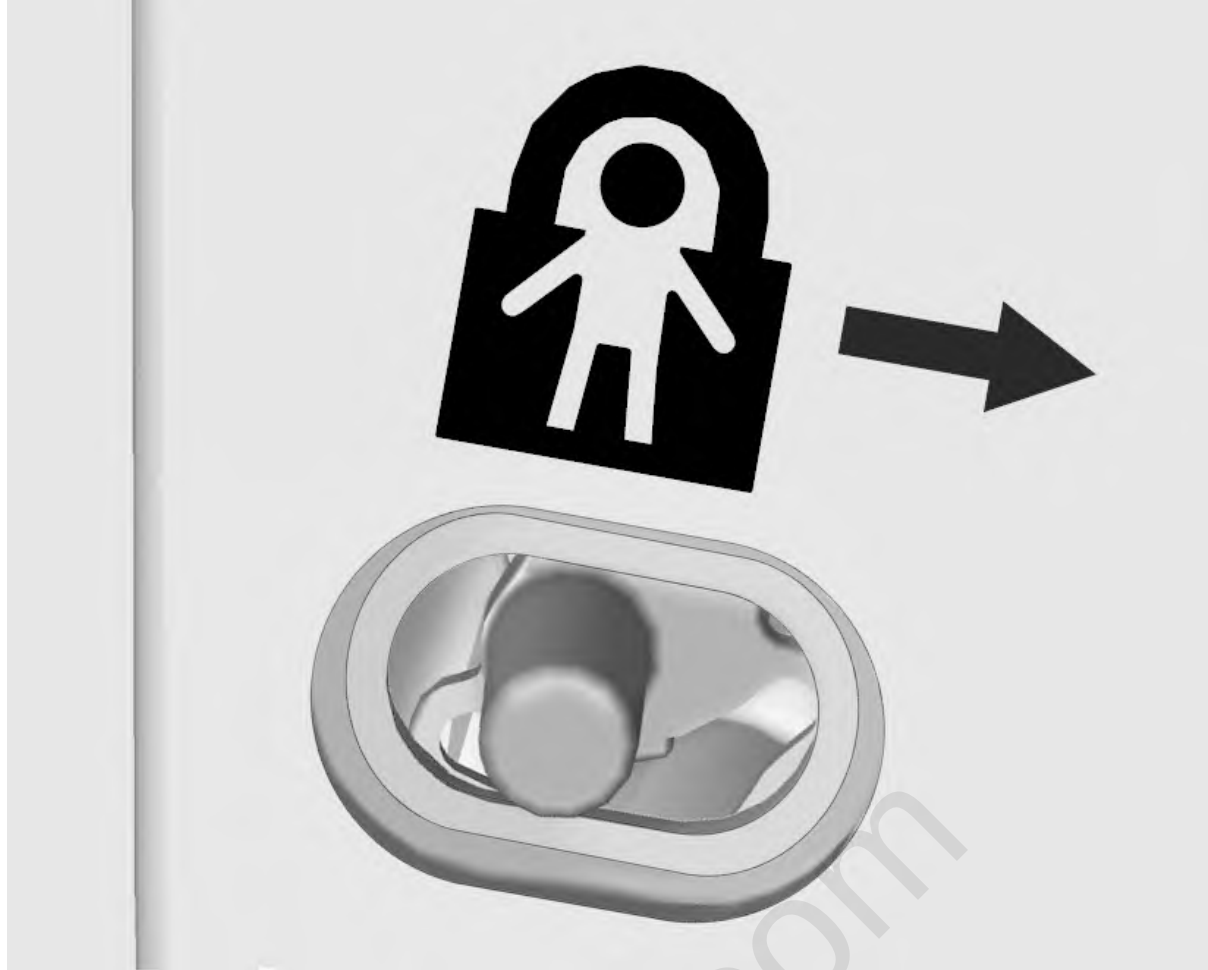


Fig. 154: Mechanical Safety Lock Lever
Courtesy of GENERAL MOTORS COMPANY

If equipped, the rear door handle latching system can be mechanically safety locked (child lock/disable inside handle release function) by sliding the safety lock lever forward as pictured below (located on the edge of the rear door)

The handle latching system can be released by the following methods:

- When unlocked, pulling the outside door handle rotates the counter balance which pulls the outside release cable attached to the outside release lever on the latch.
- When unlocked, pulling the inside door handle which pulls the inside release cable attached to the inside release lever on the latch.
- When locked and safety locks are disengaged (rear door only), pull the inside door handle twice, first pull to unlock and second pull to release the latch.

NOTE: Inside and outside door latch release levers need to be returned completely to the home position for the latch to be unlocked. Failure to return the latch levers to the home position will internally lock the latch, even if the locking rod knob shows unlocked.

POWER DOOR LOCKS DESCRIPTION AND OPERATION

Door Lock System Components

The power door lock system consists of the following components:

- Driver door lock switch
- Passenger door lock switch
- Key cylinder switch
- Body control module (BCM)
- Driver door latch
- Passenger door latch

- Left rear door latch
- Right rear door latch
- Exterior door handle switches
- Keyless entry control module

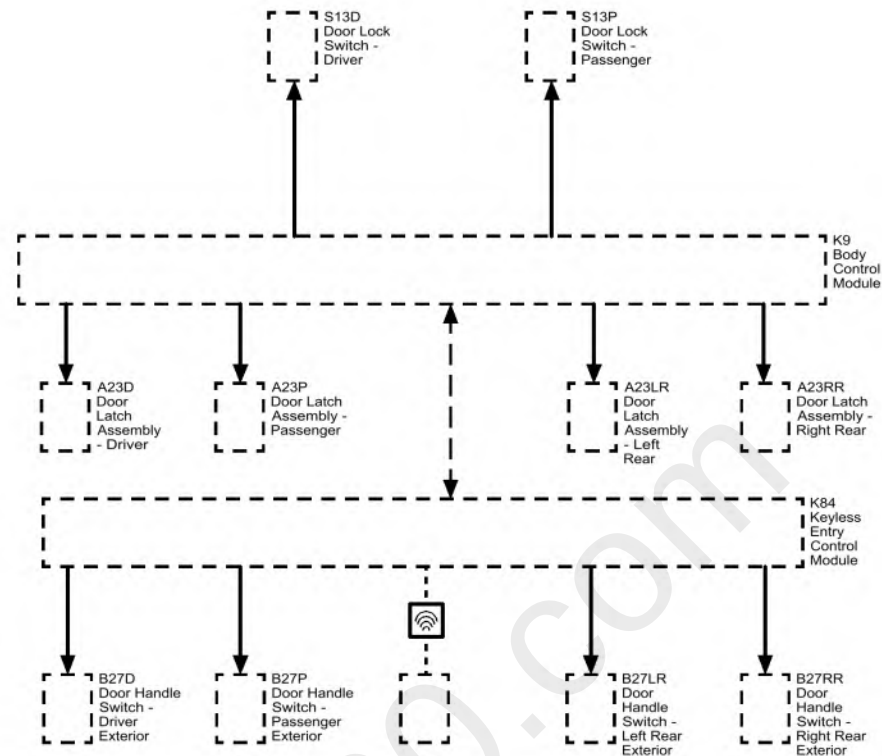


Fig. 155: Power Door Locks System Block Diagram
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
S13D	S13D Door Lock Switch - Driver
S13P	S13P Door Lock Switch - Passenger
K9	K9 Body Control Module
A23RR	A23RR Door Latch Assembly - Right Rear
A23LR	A23LR Door Latch Assembly - Left Rear
A23P	A23P Door Latch Assembly - Passenger
A23D	A23D Door Latch Assembly - Driver
K84	K84 Keyless Entry Control Module
B27RR	B27RR Door Handle Switch - Right Rear Exterior
B27LR	B27LR Door Handle Switch - Left Rear Exterior
B27P	B27P Door Handle Switch - Passenger Exterior
B27D	B27D Door Handle Switch - Driver Exterior

Door Lock and Unlock Operation

When the driver or passenger door lock switch is activated in the lock or unlock position, the BCM will receive a ground signal on either the door lock switch lock or unlock signal circuits.

The BCM, upon receipt of a lock switch lock or unlock signal, will supply battery voltage to the door lock actuator lock or unlock control circuits. Since the opposite side of the lock actuator is connected to ground through the other lock actuator control circuit, the doors will then lock or unlock as commanded.

The following three circuits are used to operate the lock:

- Driver door unlock
- Passenger door unlock
- All door lock

The driver door lock actuator is isolated so it can be unlocked by itself using the keyless entry transmitter.

Key Cylinder Switch

The driver window switch monitors the voltage level of the driver door lock motor status signal circuit. When the key is inserted into the driver door key cylinder and turned to the Lock position, a switch within the driver door latch closes causing the voltage to drop within the driver door lock motor status signal circuit. The driver window switch will detect the drop in voltage and will send a serial data message to the BCM commanding all the doors to Lock.

The driver key cylinder switch is used by the customer for programming the keyless entry transmitters. The driver window/outside rearview mirror switch monitors the voltage level of the key switch unlock signal circuit and when it detects a reprogramming request, it will send a serial data message to the body control module.

Passive Door Lock/Unlock Operation

The exterior door handle switch signal circuits provide inputs to the keyless entry control module when the exterior door handle switches are activated. These inputs allow the keyless entry control module to detect a door lock or a door unlock request. The keyless entry control module provides a 12 V signal to each exterior door handle switch via the door handle switch signal circuits. When a door handle switch is pressed, the switch closes and the voltage signal within the signal circuit is pulled to ground. The keyless entry control module will detect the voltage drop and a low frequency antenna will transmit a challenge to the keyless entry transmitter. If the challenge is met, the keyless entry transmitter will respond and the keyless entry control module will send a serial data message to the body control module to command the door(s) to be locked or unlocked

REAR HATCH/GATE DESCRIPTION AND OPERATION

Liftgate Release System Components

- Body control module (BCM)
- Liftgate unlatch switch
- Liftgate latch assembly
- Liftgate unlatch relay

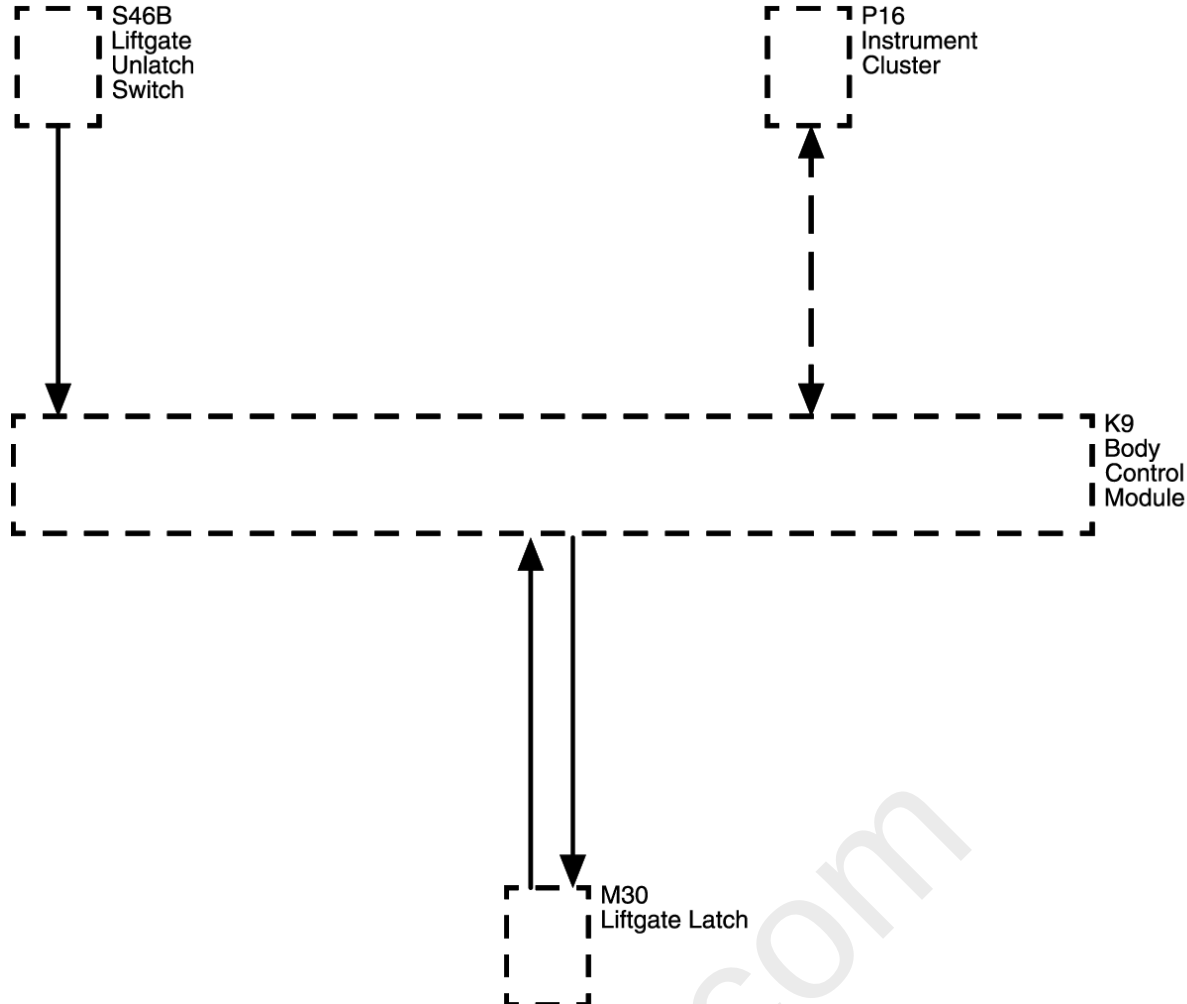


Fig. 156: Liftgate Release Block Diagram
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
P16	P16 Instrument Cluster
K9	K9 Body Control Module
M30	M30 Liftgate Latch
S46B	S46B Liftgate Unlatch Switch

Liftgate Release Operation

Liftgate Unlatch Switch

The BCM monitors supplies a 12 V signal to the liftgate unlatch switch so that when the switch is pressed, the voltage within the signal circuit is pulled low and in response, the BCM will detect the voltage drop and check the status of the door lock system. If the doors are locked, the BCM will ignore the request, if the All Doors Unlocked has been commanded, the BCM will recognize the request and command the liftgate to release.

Liftgate Latch

When BCM receives a liftgate release command from the liftgate unlatch switch, the BCM applies voltage and ground to the liftgate unlatch relay control circuit, which energizes the coil side of the relay. The switch side of the release relay then momentarily closes, supplying a brief pulse of battery positive voltage to the liftgate latch. The liftgate latch is continuously grounded and when it receives the voltage pulse, it will become energized and the latch will activate releasing the liftgate so that it may be manually raised to an open position.